Fiscal Policy and its Economic Effect on Sustainable Urban Transport Development in China

Dr. Yulin JIANG, Professor,

Director, CUSTReC, CATS, MoT, China

Secretary General, National Technical Committee on Urban Passenger Transport of Standardization Administration of China -

Secretary General, National Committee on Rail Transit Operation Management of China Urban Mass Transit Association -
1. Background

Urbanization and Motorization Growth Trend

Urbanization rate: 1.35% on average annually
---- Urban travel demand surges

Urbanization rate has reached 51.3% in 2011

Motorization rate: over 20% in last 5 years
---- Congestion has impacted urban transport development

Private car increase rate peaked (30.7%) in 2008

- China has highest urbanization and motorization growth rate.
1. Background
National Transit Priority Development Strategy

• **State Council of the People's Republic of China**
  – Guidelines on Transit Priority Development Strategies, 2005(#46)
  – **Guidelines on further Strategies of Transit Priority Development, 2012(#64)**

• **Transit Priority Promoting List**
  – Policy and regulation
  – Comprehensive transportation planning
  – TOD
  – Government investment and project financing
  – Right-of-way and signal
  – Vehicles and equipment purchase
  – Intelligent technology application
  – Sustainable development mechanism
Background

The Transit Metropolis Project

◆ 37 pilot cities has been selected to implement “Transit Metropolis”.

◆ MoT apportions fund supporting 4 types of project:
  - Urban multi-modal passenger transport hub
  - Intelligent public transport system
  - BRT operation monitoring system
  - Clean Energy Buses Purchase
2. Background

Urban congestion is worsening and causing more hazards

Consequences = Cost of Time + Health + Energy Consumption + Living Quality + City Image

China is going rapid growth with lower land use density and higher car-dependence, which is un-heath path. That should not the future of China.
2. Vision of sustainable urban transport in China

• Make public transport attractive – so that all social groups including bankers, senior government officials, cleaners and the disadvantaged are all willing to use it.

• Providing safe and convenient environment - for all citizens to walk and cycle.

  Be attractive to all social groups, have low emission and high operation efficiency;
2. Fiscal policies in China

Central Government Fiscal Policy on Urban Transport

Central Government

Fuel Tax

General Fiscal Revenue

Vehicle Purchase Tax (214.5 billion CNY in 2012)

Public Transport Operation Fuel Subsidized Fund

Transit Metropolis Fund

Energy Saving and Emission Reduction Fund

Transportation major project fund
2. Fiscal policies in China
Public Transport Operation Fuel Subsidized Fund

◆ Central government spent over 65 billion CNY in 2012

◆ Data statistics: Subsidy and fuel cost

<table>
<thead>
<tr>
<th>Year</th>
<th>Gas price (CNY/L)</th>
<th>Subsidy to fuel cost Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Urban Transit</td>
</tr>
<tr>
<td>2009</td>
<td>4.49</td>
<td>29.4%</td>
</tr>
<tr>
<td>2010</td>
<td>5.22</td>
<td>39.3%</td>
</tr>
<tr>
<td>2011</td>
<td>6.00</td>
<td>47.2%</td>
</tr>
<tr>
<td>2012</td>
<td>6.19</td>
<td>48.8%</td>
</tr>
</tbody>
</table>

◆ As gas price rises, subsidy covers more than 40% of company operating fuel cost on average in 2012.
2. Fiscal policies in China

Public Transport Operation Fuel Subsidized Fund

◆ Data statistics: **Subsidy and operation cost**

<table>
<thead>
<tr>
<th>City</th>
<th>Passenger volume in 2012 (billion passenger time)</th>
<th>Cost of operation in 2012 (CNY/passenger time)</th>
<th>Subsidy per passenger time in 2012 (CNY)</th>
<th>Subsidy to operation cost ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beijing</td>
<td>5.15</td>
<td>3.15</td>
<td>0.31</td>
<td>10.0%</td>
</tr>
<tr>
<td>Shanghai</td>
<td>2.80</td>
<td>3.60</td>
<td>0.43</td>
<td>12.0%</td>
</tr>
<tr>
<td>Shenzhen</td>
<td>2.28</td>
<td>3.73</td>
<td>0.61</td>
<td>16.4%</td>
</tr>
</tbody>
</table>
2. Fiscal policies in China

Local Government Fiscal Policy on Urban Transport

### Total Urban Rail Transit Line Length

<table>
<thead>
<tr>
<th>Year</th>
<th>Beijing</th>
<th>Shanghai</th>
<th>Guangzhou</th>
<th>Shenzhen</th>
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</thead>
<tbody>
<tr>
<td>2010</td>
<td>300</td>
<td>400</td>
<td>250</td>
<td>150</td>
</tr>
<tr>
<td>2011</td>
<td>350</td>
<td>450</td>
<td>300</td>
<td>200</td>
</tr>
<tr>
<td>2012</td>
<td>400</td>
<td>500</td>
<td>350</td>
<td>250</td>
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</tbody>
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### Annual Urban Rail Transit Passenger Volume

<table>
<thead>
<tr>
<th>Year</th>
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<th>Guangzhou</th>
<th>Shenzhen</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>2 billion</td>
<td>2.5 billion</td>
<td>2.2 billion</td>
<td>1.8 billion</td>
</tr>
<tr>
<td>2011</td>
<td>2.5 billion</td>
<td>3 billion</td>
<td>2.7 billion</td>
<td>2.2 billion</td>
</tr>
<tr>
<td>2012</td>
<td>3 billion</td>
<td>3.5 billion</td>
<td>3.2 billion</td>
<td>2.6 billion</td>
</tr>
</tbody>
</table>

### Total Bus Line Length

<table>
<thead>
<tr>
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<th>Guangzhou</th>
<th>Shenzhen</th>
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</thead>
<tbody>
<tr>
<td>2010</td>
<td>15000</td>
<td>20000</td>
<td>25000</td>
<td>10000</td>
</tr>
<tr>
<td>2011</td>
<td>18000</td>
<td>22000</td>
<td>28000</td>
<td>12000</td>
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<tr>
<td>2012</td>
<td>21000</td>
<td>25000</td>
<td>30000</td>
<td>14000</td>
</tr>
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</table>

### Annual Bus Passenger Volume

<table>
<thead>
<tr>
<th>Year</th>
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<th>Guangzhou</th>
<th>Shenzhen</th>
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</thead>
<tbody>
<tr>
<td>2010</td>
<td>1 billion</td>
<td>1.5 billion</td>
<td>1.2 billion</td>
<td>0.8 billion</td>
</tr>
<tr>
<td>2011</td>
<td>1.5 billion</td>
<td>2 billion</td>
<td>1.7 billion</td>
<td>1.2 billion</td>
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<tr>
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<td>2 billion</td>
<td>2.5 billion</td>
<td>2.2 billion</td>
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2. Fiscal policies in China
Local Government Fiscal Policy on Urban Transport

Note: Average Volkswagen (1400cc) annual tax in Europe
Average Volkswagen (2000cc) annual tax in China
2. Fiscal policies in China

Shanghai’s Private Car Plate Auction Policy

- **Private car increase under control:** 100,000/year. City car ownership reached 550,000 in 2000, and 1.71 mil in 2010. 1.5 mil potential increase neutralized in 10 years.

- **Average car speed during rush hours were 15-18 km/hr in 2000, and has increased to 16.7 km/hr in 2010.**

- **Central city road capacity increase from 15 mil km in 2002 to 30 mil km in 2010**

82% of 2011 total income and 41% of 2012 spent on PT development

- **Public Transport Share Rate**

- **Fiscal policies in China**

- **Shanghai’s Private Car Plate Auction Policy**

82% of 2011 total income and 41% of 2012 spent on PT development
3. Problems

Public transport companies running under deficits

![Diagram showing operating deficit and subsidy for Yinchuan Bus Co. Ltd from 2009 to 2012.](chart.png)
3. Policy Study

China’s Latest Fiscal Reform

Taxation reform that may affect public transport
• Probability of allocating sale tax collection to local government, in which fuel tax is the capital source of fuel subsidy from central government. Total tax revenue of local government may decrease.
• Probability of allocating vehicle purchase tax collection to local government, which is previously collected by central government.
• How to ensure urban transport capital investment is a challenge for local governments.
The reform makes it harder to set public transport fund on national level; Central government should set special fund for transportation development, including an urban transit account (supporting transport hubs and urban rail transit infrastructures).
3. Policy Study
Future Scenario Analysis

◆ State Council pay high attention to congestion relief, transport management enhancement and air quality improvement.

◆ Research on restricting private cars using economic instruments is in progress.

◆ Exploring capital sources for local governments

The Central Government should:
  a) enable city governments to raise sufficient and sustainable local sources of revenue to fund local public transport companies and;
  b) provide targeted financial support for specific projects.
3. Policy Study
Future Scenario Analysis

Setting special fund for public transport development on local level
Utilization of TDM Revenue and other potential funding sources
Fund appropriation methods
Supervision and evaluation

Special Fund for PT development

- Congestion fees
- Vehicle purchase tax
- Parking fees
- Plate auction revenue
- Land sale revenue
3. Policy Study
Future Scenario Analysis

◆ Reform on public goods pricing mechanism is needed. As operation cost increases, innovative fare system is needed.

◆ Establish fare-cost-performance-subsidy mechanism
  ✓ Fare adjustment
  ✓ Cost of service regulation
  ✓ Subsidy appropriation formula
Thank You!

Dr. Yulin JIANG, Professor, Deputy Chief Engineer
jiangyulin@vip.sina.com

China Urban Sustainable Transport Research Center(CUSTReC)
China Academy of Transportation Sciences(CATS), MoT, China