AFFORDABILITY OF URBAN PUBLIC TRANSPORT

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THE WORLD BANK

Presented by
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GENERAL CONTEXT
OF THE PAPER:

PUBLIC POLICY MAKING
IN URBAN PUBLIC TRANSPORT
REGARDING SERVICE QUALITY
AND FARES/SUBSIDIES

URBAN PUBLIC TRANSPORT IN
DEVELOPING COUNTRIES

SERVICE AND FARE POLICIES IN THE
PRESENCE OF POVERTY
SPECIFIC CONTEXT AND ISSUES:

SITUATIONS WHERE DEREGULATION OR RE-REGULATION HAVE RESULTED IN HIGHER-QUALITY SERVICES AT HIGHER FARES

FOCUS ON MEASURING THE WILLINGNESS AND ABILITY OF LOW-INCOME PASSENGERS TO PAY FOR BETTER-QUALITY SERVICES, OR SIMPLY ABILITY TO PAY NEW (HIGHER) FARES
CONTRASTING THE CONCEPTS OF
FARE ELASTICITY OF DEMAND
AND FARE AFFORDABILITY
PFARE ELASTICITY OF DEMAND:

- Concept a part of standard economic theory
- Clear and rigorous
- Established measurement methods and interpretation
- Has predictive power
- Useful in operations planning, transport policy making, pre-investment studies

But

- Supply-side oriented
- Difficult to place in the context of household revenues and expenditures
- Therefore insufficient for poverty-related work in urban transport and, more generally, social aspects of pricing of municipal utilities
CONCEPT OF AFFORDABILITY:

• DRAWN FROM EVERYDAY LANGUAGE
• PRESENTS SPENDING FOR URBAN PUBLIC TRANSPORT SERVICES BY INDIVIDUALS OR HOUSEHOLDS RELATIVE TO INCOME, TYPICALLY ON MONTHLY BASIS
• CAN BE USED FOR ANY MUNICIPAL UTILITY, OR ALL UTILITIES COMBINED
• EASY TO MEASURE AND UNDERSTAND
• ALLOWS MAKING COMPARISONS AMONG OPERATORS, CITIES AND COUNTRIES
• EASY TO FOCUS ON SPECIFIC INCOME STRATA
• INTERPRETATION REQUIRES JUDGEMENT
• NO PREDICTIVE POWER
USES OF THE AFFORDABILITY INDICATORS IN URBAN PUBLIC TRANSPORT

MAXIMAL:

- SETTING FARE CEILINGS

MINIMAL:

- CITY-SPECIFIC DIAGNOSTIC STUDIES
- COMPARISONS BETWEEN CITIES
- PUBLIC DISCOURSE ON FARES AND POVERTY
- GUIDEPOST ROLE IN POLICY MAKING
MEASUREMENT OF AFFORDABILITY:

- ESTIMATED FROM TRAVEL OR EXPENDITURE SURVEYS OF INDIVIDUALS OR HOUSEHOLDS, OR

- CALCULATED FROM PUBLISHED FARE AND INCOME DATA, AND “SYNTHETIC” TRAVEL SCENARIOS
THE PAPER PRESENTS THE FIRST-STAGE RESULTS OF AN EFFORT BY THE WORLD BANK (WB) TO STUDY AFFORDABILITY OF URBAN PUBLIC TRANSPORT SERVICES IN 27 CITIES FROM MANY COUNTRIES.

THE STUDY IS PART OF A LARGE-SCALE, CONTINUOUS WB PROGRAM AIMING AT POVERTY ALLEVIATION
AFFORDABILITY INDEX IN THE WORLD BANK STUDY

- DEFINED AS A RATIO BETWEEN POTENTIAL URBAN TRANSPORT EXPENDITURE AND INCOME PER CAPITA (in %)

- EXPENDITURE BASED ON A SYNTHETIC TRAVEL SCENARIO: SINGLE-TICKET PUBLISHED FARE (AS OF AUGUST 2004) FOR A 10-KM TRIP LENGTH, AND 60 TRIPS PER MONTH

- PER CAPITA MONTHLY INCOME (IN PPP $) FOR TWO INCOME CATEGORIES, THE AVERAGE AND THE BOTTOM QUINTILE

- INCOME DATA BASED ON IMF NATIONAL STATISTICS FOR 2004 MODIFIED TO REFLECT NATIONAL/URBAN DIFFERENCES
## RESULTS

<table>
<thead>
<tr>
<th>City</th>
<th>Per capita income USPPP</th>
<th>Bottom quintile income as % of average</th>
<th>Fare for 10km travel (PPP U$cents)</th>
<th>Affordability Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sao Paulo</td>
<td>8,732</td>
<td>10.0%</td>
<td>130.1</td>
<td>11% 107%</td>
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<td>Rio de Janeiro</td>
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<td>125.4</td>
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<td>Brasilia</td>
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<td>Cape Town</td>
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<td>B. Aires</td>
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<td>87.6</td>
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<td>Mumbai</td>
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<td>Kuala Lumpur</td>
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<tr>
<td>Mexico City</td>
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<td>15.5%</td>
<td>39.3</td>
<td>3% 19%</td>
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<td>Chennai</td>
<td>3,717</td>
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<td>39.3</td>
<td>8% 19%</td>
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<tr>
<td>Manila</td>
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<td>63.0</td>
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<td>36.5%</td>
<td>130.6</td>
<td>6% 17%</td>
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<td>Amsterdam</td>
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<td>226.6</td>
<td>6% 16%</td>
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<td>Moscow</td>
<td>16,154</td>
<td>24.5%</td>
<td>84.6</td>
<td>4% 15%</td>
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<td>Guangzhou</td>
<td>9,165</td>
<td>30.0%</td>
<td>55.1</td>
<td>4% 14%</td>
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<td>Warsaw</td>
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<td>36.5%</td>
<td>142.5</td>
<td>4% 11%</td>
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<td>51,739</td>
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<td>Chicago</td>
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<td>Singapore</td>
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<td>25.0%</td>
<td>130.3</td>
<td>2% 10%</td>
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<tr>
<td>Beijing</td>
<td>14,379</td>
<td>30.0%</td>
<td>55.1</td>
<td>3% 9%</td>
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<td>Seoul</td>
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<td>85.5</td>
<td>4% 9%</td>
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<td>30.0%</td>
<td>55.1</td>
<td>2% 6%</td>
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<td>26.1</td>
<td>3% 6%</td>
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<td>Budapest</td>
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<td>50.0%</td>
<td>89.3</td>
<td>3% 6%</td>
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<td>London</td>
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<td>30.5%</td>
<td>116.4</td>
<td>2% 5%</td>
</tr>
<tr>
<td>Prague</td>
<td>32,757</td>
<td>52.0%</td>
<td>88.0</td>
<td>2% 4%</td>
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<tr>
<td>Bangkok</td>
<td>20,386</td>
<td>31.0%</td>
<td>32.2</td>
<td>1% 4%</td>
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</tbody>
</table>

**Sources:**

Income derived from Millennium Cities Database, WB Country Income Data  
Bottom quintile derived from WB database  
Fares for 10km of travel derived from internet data and World Bank Country offices
DISCUSSION OF RESULTS:

- LARGE VARIABILITY BETWEEN CITIES
- FARES ARE APPARENTLY REASONABLE FOR AVERAGE INCOME EARNERS ACROSS THE RANGE OF CITIES
- FARES ARE ONEROUS FOR THE BOTTOM QUINTILE EARNERS IN BOTH DEVELOPING AND DEVELOPED COUNTRIES
- FARES ARE UNAFFORDABLE FOR THE BOTTOM QUINTILE IN SEVERAL BRAZILIAN CITIES
DISCUSSION OF THE INDEX ITSELF

• TRAVEL DECISIONS ARE HOUSEHOLD-BASED, SO THE USE OF PERSON-BASED APPROACH GIVES AN INCOMPLETE PICTURE OF AFFORDABILITY

• IN SOME CITIES, MOST REGULAR PASSENGERS USE MONTHLY PASSES, CALLING FOR A MORE REFINED ANALYTIC EFFORT

• ANALYSIS WEAKENED BY ABSENCE OF CITY DATA ON COST RECOVERY (DEGREE OF SUBSIDY) AND QUALITY OF TRANSPORT SERVICE. IN OTHER WORDS, THE INDEX IS NON-HOMOGENEOUS.

• INDEX USEFUL FOR FIRST-CUT DIAGNOSTIC WORK, TO BE FOLLOWED BY IN-DEPTH DATA COLLECTION
DIRECTIONS FOR FUTURE RESEARCH:

• EXPANDING THE NUMBER OF CITIES IN THE DATA SET

• EXPANDING THE NUMBER OF VARIABLES INCLUDED

• INTRODUCING HOUSEHOLD-BASED SCENARIOS

• COLLATION AND COMPARATIVE ASSESSMENT OF CITY-SPECIFIC MEASURES TAKEN TO IMPROVE AFFORDABILITY (NEXT SLIDE HAS A TAXONOMY OF THESE)
Categorization of Measures to Improve Affordability

a) Typology of measures

Non subsidy measures
1. More competition and quality regulation
2. Transport management, including bus priority measures
3. Transfer ticketing
4. Road pricing revenue transfers

Subsidy measures
5. Fare regulation
6. Fare policy (fixed system fare)
7. Fare subsidy to targeted users (students, pensioners, disabled etc)
8. Income support to employees

Indirect measures
9. Improve physical access to public urban transport
10. Housing subsidies
11. Land use planning

b) Characteristics of measures

Who is the immediate beneficiary of the measure?
   i passengers
   ii operators
   iii others

Who pays for the measure?
   i other passengers,
   ii operator,
   iii municipality,
   iv employer
   v other

Is the measure:
   i Targeted
   ii General
Cities/Countries that have adopted specific measures

**Non subsidy measures**

i. More competition and quality regulation
   **Uzbekistan, Kazakhstan**

ii. Transport management, including bus priority measures
    **Guangzhou, Dhaka,**

iii. Transfer ticketing
    **London, Paris, Madrid, Amsterdam, Washington**

iv. Road pricing revenue transfers
    **London, Singapore and Trondheim**

**Subsidy measures**

v. Fare regulation
    **Cairo, Mumbai, Madrid**

vi. Fare policy (fixed system fare)
    **Wuhan, Buenos Aires, Sao Paulo**

vii. Fare subsidy to targeted users (students, pensioners, disabled etc)
    **Paris, London, Madrid**

viii. Income support to employees
    **Brazil (vale transporte), France**

**Indirect measures**

ix. Improve physical access to public urban transport
    **Kyrgyz, Manila, Lima,**

x. Housing subsidies
    **Sofia, Bucharest**

xi. Land use planning
    **Curitiba, Singapore**