Outline

• Public sector funding sources
• Considerations for selecting sources of taxes for roads
  – Revenue adequacy
  – Equity
  – Efficiency
  – Simplicity
• Pricing urban expansion
• Conclusions
Public sector revenue sources

Specific taxes

General Taxes

User charges
Sources of funding

Excludability

Pure public goods

Traditional infrastructure scope

Infrastructure potential

Pure private goods

Price-ability

Rivalry

Calitz and Fourie, 2007
Source of funding

• General taxes
  – Constitutional requirements on equitable share of national revenue

• Specific taxes
  – Constitutional bill of rights
  – Discourages efficiency and value for money
  – Weakens accountability
  – Limits the legislature’s powers
## Selecting sources of funding

<table>
<thead>
<tr>
<th>Question</th>
<th>On budget – general taxes</th>
<th>Alternative financing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is it a public good/service?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Are there significant private benefits?</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Can the beneficiaries be identified?</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Are there significant social benefits?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Are there negative externalities</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Is there intergenerational equity</td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>
Considerations for selecting form of taxation for roads

<table>
<thead>
<tr>
<th>Adequacy</th>
<th>Equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Compared to needs</td>
<td>• Fairness with respect to the ability to pay and benefits received</td>
</tr>
<tr>
<td>• Stability of revenue over time</td>
<td>• Distribution of wealth, vertical equity to ensure that those with a greater ability to pay for services do so</td>
</tr>
<tr>
<td>• Response to inflation</td>
<td>• Equity in relation to geographic area</td>
</tr>
<tr>
<td>• Potential for needed increases</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Efficiency</th>
<th>Simplicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>• In relation to paying costs imposed on others</td>
<td>• Administrative ease</td>
</tr>
<tr>
<td>• Better decisions on travel and investment</td>
<td>• Compliance and enforcement costs, including evasion of cost potential</td>
</tr>
<tr>
<td>• Creating disincentives for unnecessary travel</td>
<td>• Impact on investment</td>
</tr>
<tr>
<td>• Enabling economic growth</td>
<td></td>
</tr>
</tbody>
</table>
Revenue adequacy

- Fuel levy revenue estimates for 2016/17 revised downwards to R64.3 billion

- Fuel efficiency and revenue buoyancy

- Budget estimates at main budget
  - Consolidated road infrastructure: R45.8 billion

Source: Department of Energy, 2014
Equity considerations

• Geography
  – Should all tax payers or only users pay?

• Income equity
  – Low income households spend more on fuel per km travelled

• Freight
  – Heavy vehicles damage roads more than the light vehicles
Efficiency considerations

- Economic value of transport
- Urban form is shaped by investments in transport infrastructure
Efficiency considerations

- Road usage has externalities
  - Congestion
  - Pollution
  - Accidents

- Changing demand and land uses through pricing

- Impact on public transport
Efficiency considerations – cost of urban sprawl

Source: FFC, 2011
Efficiency considerations – cost of urban sprawl

Source: FFC, 2011
Simplicity

• Costs of administration low for national fuel levy

• Transaction costs for tolls relatively high
## Fuel levy or user charge

<table>
<thead>
<tr>
<th></th>
<th>Fuel levy</th>
<th>User charge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Equitable</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Efficient</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Simple</td>
<td>✓</td>
<td>✗</td>
</tr>
</tbody>
</table>
Pricing urban road expansion

• Congestion
  – excess demand
  – social costs
• If costs are not internalised, creates perverse incentives
• Distorts the choice of mode in favour of private cars
  – Encourages excessive use of infrastructure
  – Illogical to use conventional investment criteria to determine how much capacity must be provided
  – Inadequate provisions for maintenance
• Land and property prices influenced by road pricing
  – More compact urban form
  – More mixed land use
Conclusion

• Efficient road pricing levels the playing field for public transport
• Allows for road users to internalise the externalities such as congestion and pollution
• Ensures that only those who benefit from the improved roads pay for it
• Ensures that those who cause the most damage on the road pays for it
• Allows for the exemption of some users such as public transport operators and the disabled
Thank you