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

- General Taxes
  - Specific taxes
  - User charges
Sources of funding

Excludability

- Pure public goods
- Traditional infrastructure scope

Infrastructure potential

Price-ability

- Pure private goods

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

**Adequacy**
- Compared to needs
- Stability of revenue over time
- Response to inflation
- Potential for needed increases

**Equity**
- Fairness with respect to the ability to pay and benefits received
- Distribution of wealth, vertical equity to ensure that those with a greater ability to pay for services do so
- Equity in relation to geographic area

**Efficiency**
- In relation to paying costs imposed on others
- Better decisions on travel and investment
- Creating disincentives for unnecessary travel
- Enabling economic growth

**Simplicity**
- Administrative ease
- Compliance and enforcement costs, including evasion of cost potential
- Impact on investment
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 light vehicles

Who pays?

Who benefits?
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>
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<th>Fuel levy</th>
<th>User charge</th>
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<tbody>
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<tr>
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<tr>
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</tr>
<tr>
<td>Simple</td>
<td>✓</td>
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</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