Construct or Constrain?

Intermodal Inconsistencies in Infrastructure Interventions

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Why build transport infrastructure?

• Economy
  – Stimulate growth
  – Reduce costs

• Efficiency
  – Reduce congestion
  – Reduce journey times

• Environment
  – Reduce emissions
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“Transport is an engine for growth… well connected and high-performing networks with sufficient capacity are vital to meet the country’s long term needs and support a prosperous economy”

(DfT, 2013)
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“I should have been fiercer in climate change review”
“Governments are fooling themselves if they think this [climate change] will only have a modest impact on their economies”

Lord Stern, Jan 2014

• IPCC report due imminently expected to emphasise potential economic impact of climate change
• UK committed to 80% reduction in emissions from 1990 baseline by 2050

...but is this reflected in our infrastructure policy?
Approaches to infrastructure provision

- Build infrastructure to meet demand
- Do nothing
- Restrict access to manage demand
Paradigms in transport infrastructure provision: Predict and Provide

• Private sector:
  – Inland waterways (1750-1830)
  – Railways (1825-1900)

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• Public sector:
  – Latent demand release
  – Huge externalities
  – Increasing public opposition

Source: www.foe.co.uk
Source: en.wikipedia.org
Paradigms in transport infrastructure provision: Demand management

- Can’t build your way out of congestion
- No more large scale road construction
- Focus on pinchpoints
- Move towards pricing to constrain and redistribute demand?
Current infrastructure planning: Roads

- Have the lessons been learned?
- National road pricing “ruled out”
- Demand constraint, smarter choices, and public transport don’t reduce pressure on SRN
- New capacity may be needed “to meet demand”
- Environmental case questionable
- Growth seen as inevitable but not desirable?
Current infrastructure planning: Railways

• Substantial investment in capacity
  – HS2 – predict and provide?

• Substantial increases in fares
  – Commuters – price and constrain?

• Capacity expansion environmentally justified?

• Growth seen as desirable but expensive?

Source: bbc.co.uk
Current infrastructure planning: Air

• Crucial for economic success?

• Airports Commission
  – Predict and Provide?

• Latent demand release
  – Most air travel discretionary
  – Latent demand means efficiency gains are short-lived
  – Passenger numbers still 4.8% below 2007 peak
  – ITRC model predicts huge growth....
Current infrastructure planning: Air

• Latent demand release
  – ITRC model predicts huge growth....
    ....if capacity is provided
  – If not, then constraint is binding
  – Constraint a (relatively) painless way to limit emissions?
Airports and climate change

- Air emissions:
  - 21% of UK total from transport
  - 6% of all UK emissions
  - 102% increase 1990-2010

- Can this trend be allowed to continue?

Source: Transport Statistics GB
Future aircraft emissions: ITRC modelling
Do aircraft emissions matter?

1990:
- Air: 2%
- Other transport: 16%
- Other: 82%

2010:
- Other transport: 21%
- Other: 73%

2050 TR0:
- Air: 27%
- Other transport: 17%
- Other: 56%

2050 TR5:
- Air: 22%
- Other transport: 18%
- Other: 60%

2050 TR5 no new infrastructure:
- Air: 15%
- Other transport: 19%
- Other: 66%
Emissions v Economy?

- Is air’s importance to economy sufficient to account for 22% of emissions?
- Aviation responsible for £18b GVA and £7.3b tax in 2009
  - Total UK GVA in 2009 £1234b
- 22% of trips via British airports made by business travellers
- 60% of international trips made by British tourists (World Bank)
  - Net economic impact of air passengers negative?
  - Total spend abroad by British residents travelling by air £27.5 billion pa
  - Total spend in UK by overseas residents travelling by air £15.6 billion pa
Emissions v Economy

• Focus investment on less carbon-intensive industries?
• Invest in infrastructure for alternative modes
• Airports are not like roads
  – Congestion is controllable
• Legislate to limit landing slots
• Reallocate slots to prioritise business destinations
• Increase tax on charter/tourist flights?
  – Side-effect – boost to domestic tourism!
Infrastructure investment – ways forward

• 80% emission reduction should be the starting point
• Focus on environmental efficiency
  – Prioritise economically/socially essential trips
  – Mode shift rather than growth
  – Economic benefits a welcome (and likely) side-effect
• Multimodal infrastructure planning authority?
  – Using consistent emissions-based criteria
ITRC – How sustainable is our travel?

• Average GB resident made 1.05 return flights in 2013

• “He that is without sin among you, let him first cast a stone...”
Questions?