Recent evolution of research into the wider economic benefits of transport infrastructure investments

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Introduction

• Why wider benefits?
• Raison d’être
  – Investment appraisal
  – Overall impact of transport
• Objectives
  – Output
  – Productivity
  – Employment
  – Welfare
• Issues
  – Link or network effects
  – Geographic scale
Approaches

• Macro approaches
  – Overall impact
  – Misses detail of way transport is used

• Market (meso) approaches
  – Overall impacts but better recognition of individual markets
  – Use of labour market effective in urban studies

• Micro approaches
  – Examine changes in behaviour in response to transport change
  – Identify how internal reorganisation rather than level of activity may be source of productivity gain
Evidence – macro studies

• The Aschauer legacy
  – The productivity of public infrastructure
  – Public infrastructure and the enhancement of the productivity of private infrastructure
  – Debunking crowding out
  – Excessive optimism
  – Geographic scale

• Econometric problems
  – Causality
  – Spatial autocorrelation and spatial spillovers

• What should we measure?
  – Output/productivity
  – Employment
Evidence – macro studies

• Alternatives to aggregate econometrics
  – Land Use Transport Interaction Models
    • Multiple markets with specific transport use
    • Based on static input-output relations
    • Need to allow for dynamic behavioural response
  – Computable General Equilibrium Models
    • Allow for whole network evaluation
    • More interaction between markets
    • Identify case specificity of results
    • Imply larger wider benefits/user benefits

• Ex post studies of impacts
  – Rare and less encouraging
Evidence – market studies

• Exploring detail of agglomeration models
• Competition effects
  – Ambiguity
  – Pro-competitive effects from lower transport costs
  – Limited by existence of imperfect competition and rent seeking
• Agglomeration effects
  – Localisation economies
  – Urbanisation economies
  – Productivity effects – elasticities higher for services than traditional estimates for manufacturing (Graham)
  – Spatial scale variations
• Linkage effects
  – Labour market thickening (Venables)
Evidence – micro studies

• Why micro studies?
  – changes in behaviour and organisation

• Labour market effects
  – Accessibility and property prices
  – Jubilee Line impact (Gibbons and Machin)
    • Increase in values +9.3% in areas with new stations
    • 1km reduction in access led to 1.5% increase in values

• Business organisation
  – TGV effects and internal restructuring
  – Concentration towards access to network rather than along network
Implications for appraisal

• From theoretical model to method of appraisal for individual projects.
  – Towards a more theoretically correct CBA recognising externalities and imperfect competition.
  – CGE models and scale of projects: link estimates and network effects

• Wider benefits include:
  – User benefits (journey time savings)
  – Productivity effects,
  – Agglomeration effects,
  – Competition effects
  – Labour market effects.

• Data requirements
  – Evidence at more detailed level then typical in CGE studies
Implications for policy

• Simple rules are dangerous
  – Investment in transport can damage your health
  – Failure to invest in transport can damage it too

• Appraisal rules need to be comprehensive but transparent
  – Decisions have to be robust
  – But clearly understood by all stakeholders

• Levels of decision making
  – Spillovers
  – Policy refraction in multi-level governments
  – Jurisdictional competition and over- or under-investment
Concluding remarks

• Full circle on wider benefits
  – From “transport is critical”
  – To “beware double counting”
  – To “wider benefits are the key”
• But beware all simple rules in transport appraisal
• There remains much on the research agenda
  – Imperfect competition and the productivity gains from transport
  – Micro-behavioural evidence
  – Link versus network effects
  – Spillovers and jurisdictional competition
  – More ex post studies, does transport investment really make the difference claimed?