

Does Transport Investment Really Boost Economic Growth?

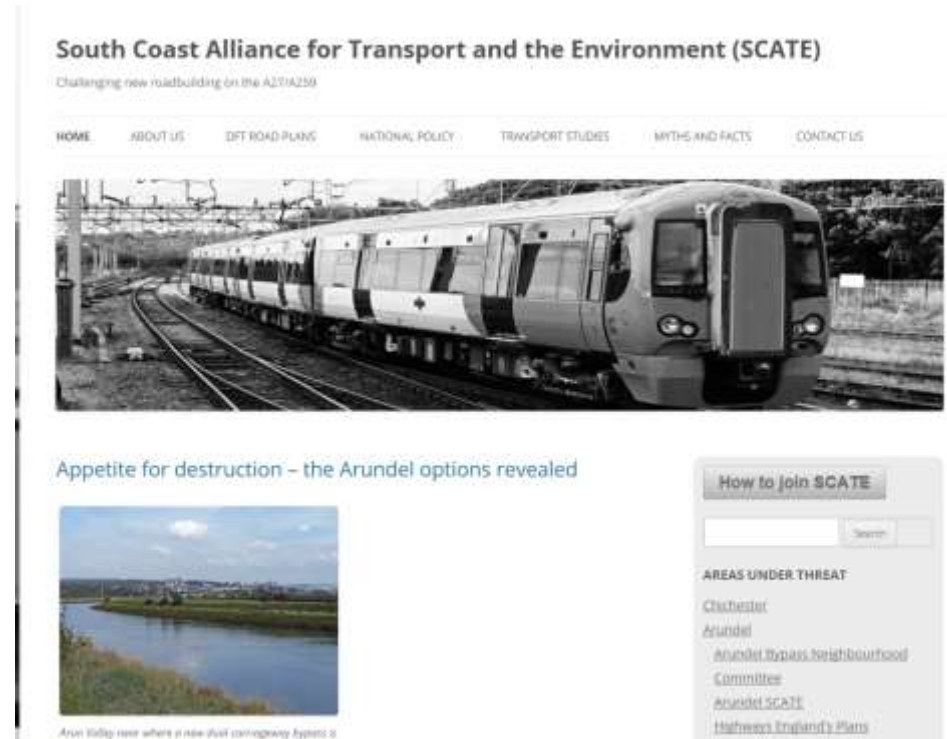
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Origins of this Study



See: Melia (2017)



Forthcoming report: ITP Ltd and UWE for SCATE

SACTRA (1999) - DOUBT

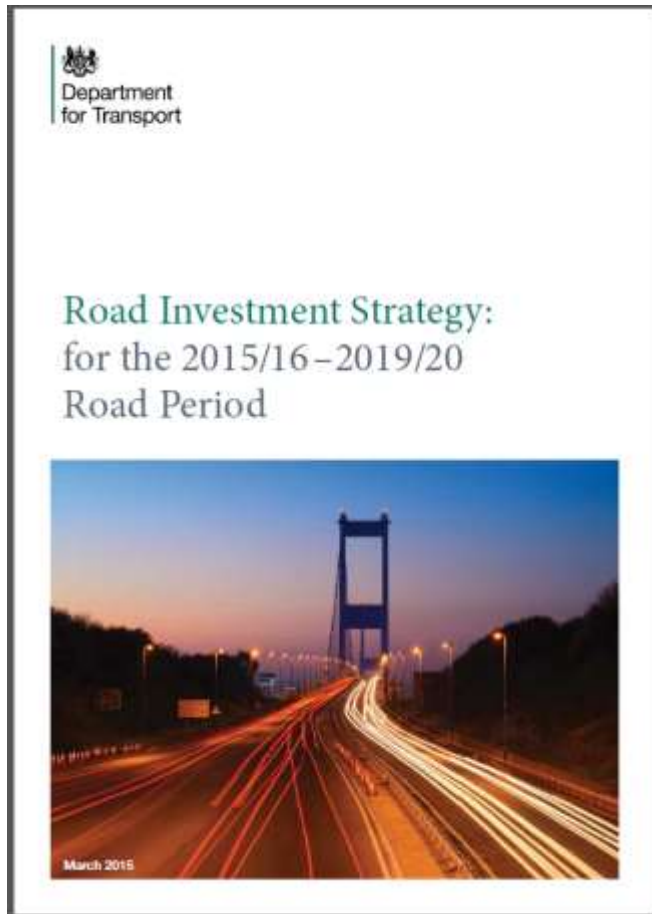
Transport and the economy: full report (SACTRA)

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“We are provided with a **strong theoretical expectation** that ...transport cost reduction may... subsequently be converted into... improved economic performance. ..**Empirical evidence** of the scale and significance of such linkages is, however, **weak and disputed.**”

DOUBT DISAPPEARS:



“Continuing to invest in the skills and infrastructure that will support the jobs of the future.”

Budget Speech 2017

“In the next five years, our network will directly contribute to economic growth through, ...improved connectivity”

Answering the Key Questions:

Does the evidence today lead to different conclusions from SACTRA (1999)?

1. Theoretical framework
2. Empirical Evidence and its interpretation

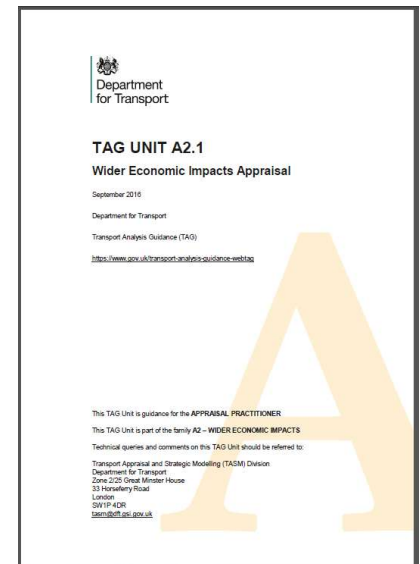
What are the implications for policy and project appraisal?

Positive Mechanisms

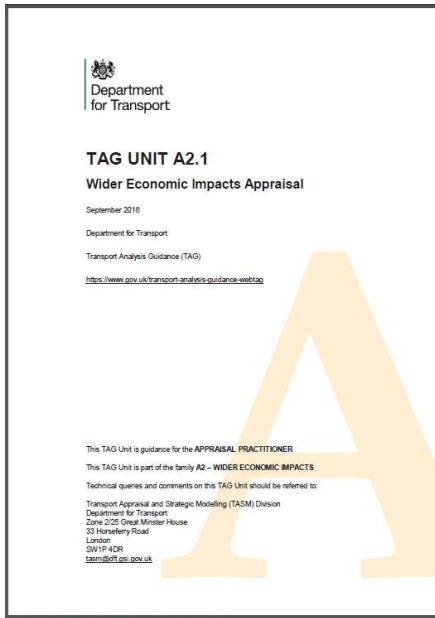
1. Business user benefits
2. Productivity Increases through Proximity and Agglomeration
3. Labour market improvements
4. Land-use changes

2 – 4 are “wider economic impacts”
not captured by a standard CBA

(after Laird and Venables, 2017)



“Wider Economic Impacts”



- Implies a strong claim about causality
- Often used to inflate BCRs of marginal projects (M4 increase from 1.62 to 2.34 ➡ “high value for money”)
- To be valid, this must be a net ***national*** impact



Countervailing Mechanisms

1. Deadweight Loss
2. Opportunity Costs
3. The Aggregation Problem
4. Induced Traffic
5. Spatial Changes and Urban Sprawl
6. Constraints as a Spur to Innovation
(the Porter hypothesis)
7. Climate Change and Longer-term
Uncertainties

Implications of the Countervailing Mechanisms:

- A causal effect cannot be demonstrated on theoretical grounds.
- It cannot be inferred from evidence on the positive mechanisms alone.
- The net national impact must be tested empirically.

Empirical Evidence

- Article looks at recent meta-studies and some specific studies of causality
- Most studies use GDP as dependent variable
- More positive than negative elasticities
- Some evidence of publication bias: “effects exhibiting high precision are clustered around zero” (Holmgren and Merkel 2017)
- Differing interpretations of the evidence

The Problem of Causality

Transport infrastructure



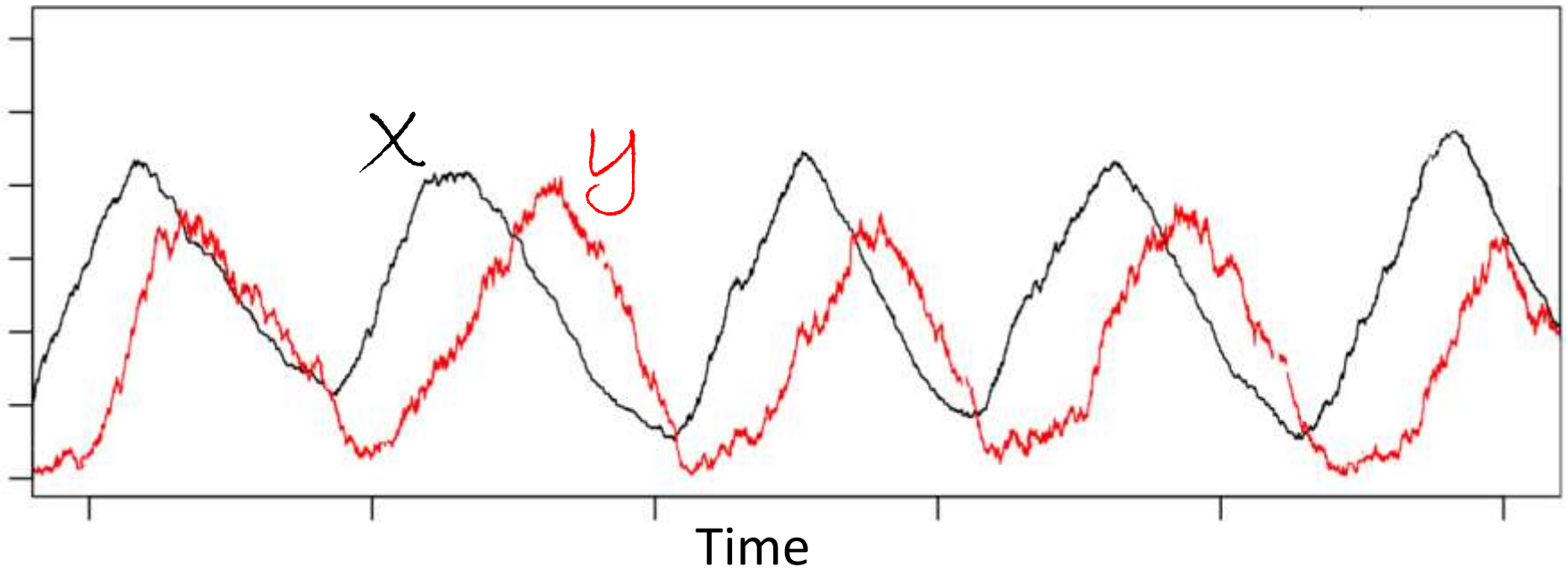
Economic Activity



What causes what?

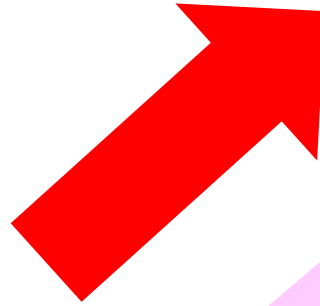
Granger Causality Analysis

- Findings are mixed: some evidence of association in both directions



The Wrong Nul Hypothesis:

Expected direction of
causality

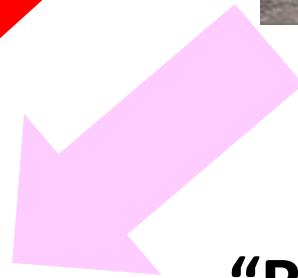


Economic Activity



Transport infrastructure

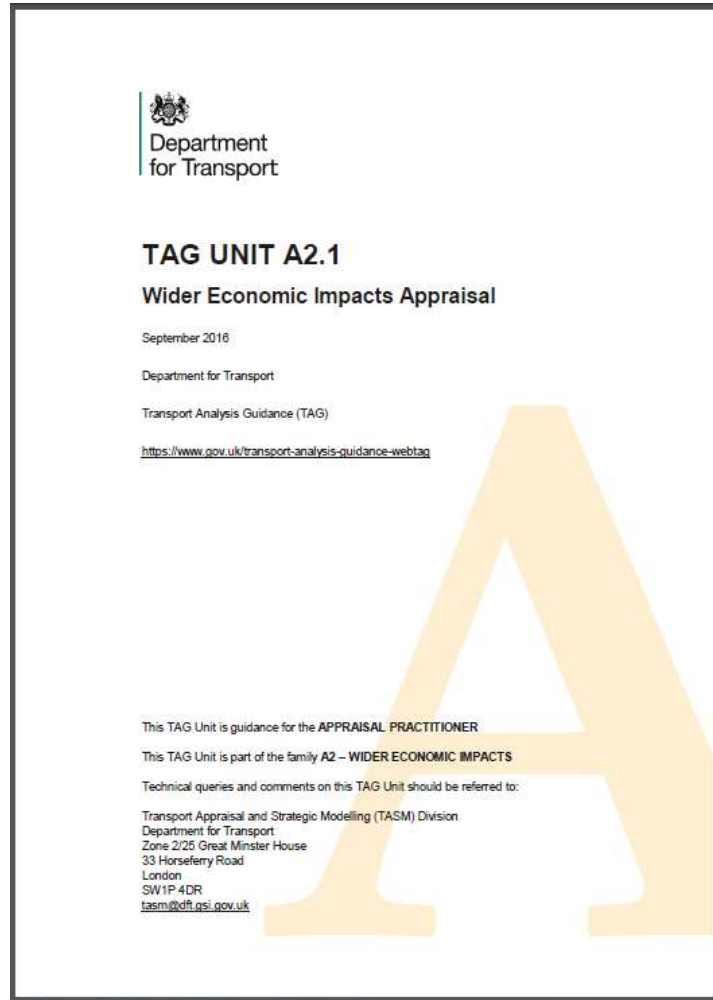
“Reverse causality”



Hypotheses Unproven

- Positive elasticities are to be expected – they tell us nothing about causality
- Granger causality studies can't solve the problem because:
 - Transport infrastructure often built in anticipation of growth for other reasons
 - Complex relationship between public spending, borrowing and physical investment

“Wider Economic Impacts”



- Strong claim about causal impacts and their potential quantification difficult to reconcile with the evidence
- Draft guidance errs in its belief that promoters can demonstrate national causality through measuring positive mechanisms e.g. local productivity increases

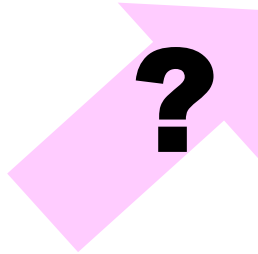
A Causal or a Facilitative Relationship?



Economic Activity



Transport infrastructure



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