Institute for Transport Studies
FACULTY OF ENVIRONMENT

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CQC Efficiency Network – Helping Local Authorities do more with less in Highway Maintenance

Dr Phill Wheat with acknowledgement to Alex Stead

26th April 2017

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Overview

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- CQC: COST, QUALITY, CUSTOMER
- **Collaborative** network of Highway departments in Local Authorities in England
  - **84** participating LAs in 2016/17 analysis round representing
- Aimed at **quantifying** the scope for improvement and **sharing best practice**
- **Joint venture** between the University of Leeds and measure2improve (an SME)
- Supported by the Highways Maintenance Efficiency Programme (**HMEP**)

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The difficulty of conventional benchmarking

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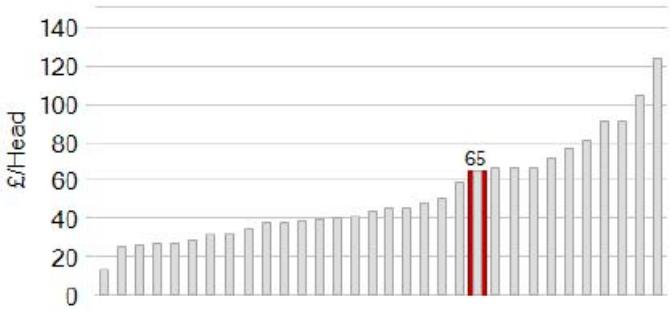
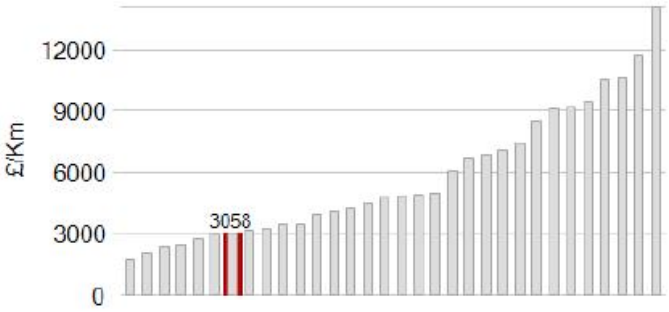
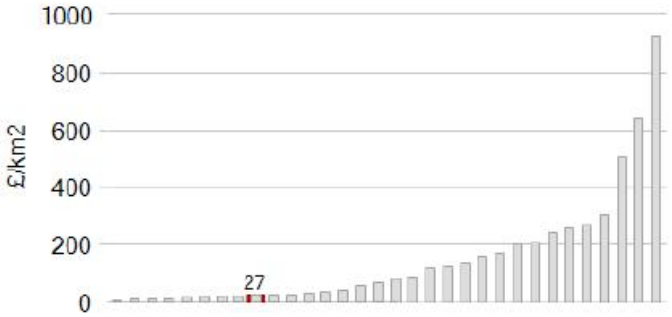
Totex £ per head of population



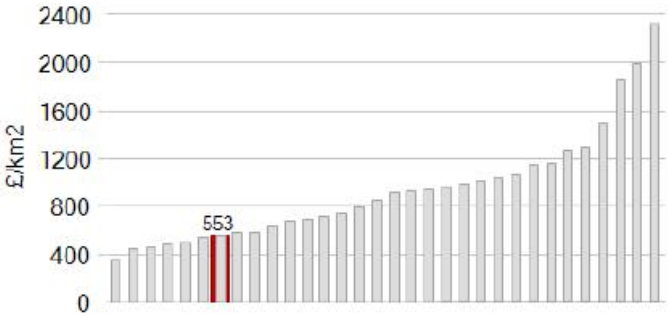
Totex £ per Km of Road Network



Totex £ per Km2 Area Served



Totex £ per Km2 Road Area



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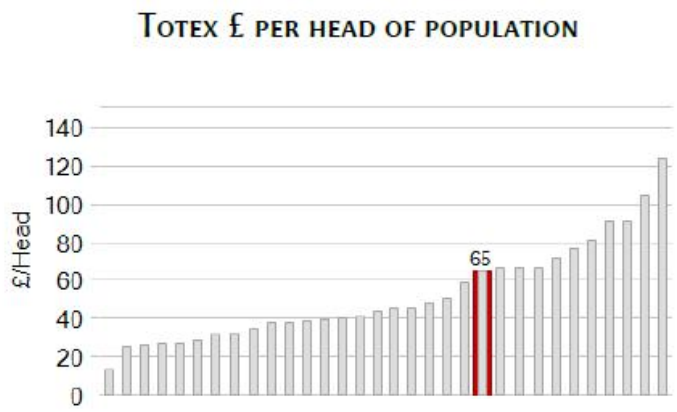
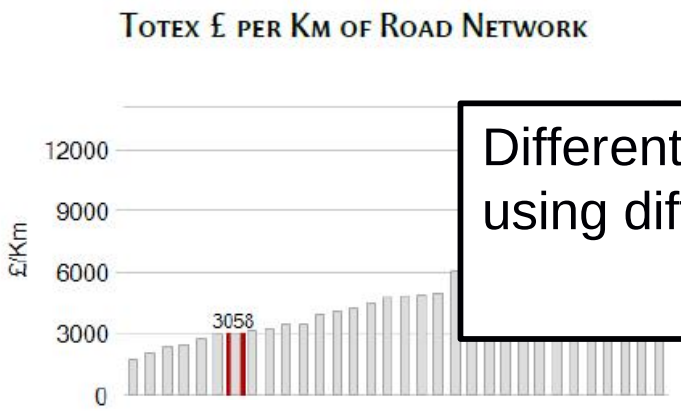
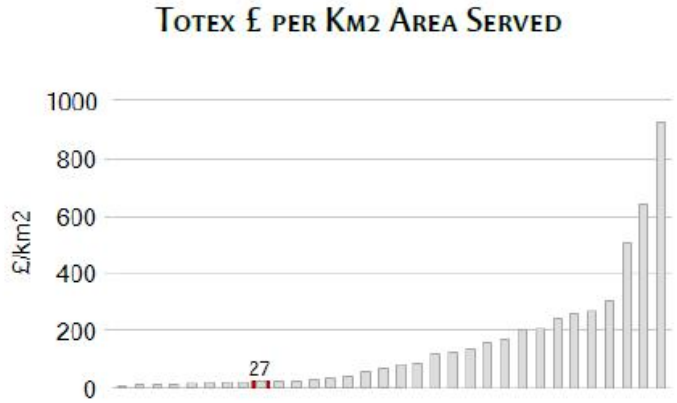
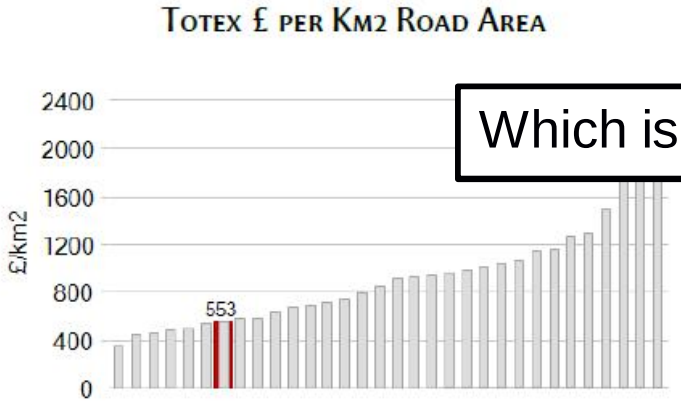




Different answers using different metrics





Which is better?

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The difficulty of conventional benchmarking

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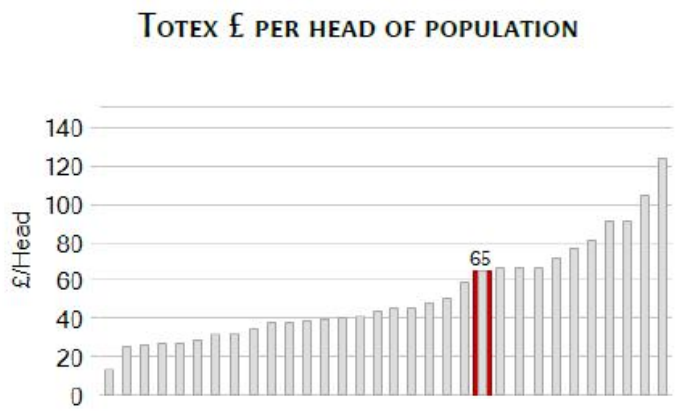

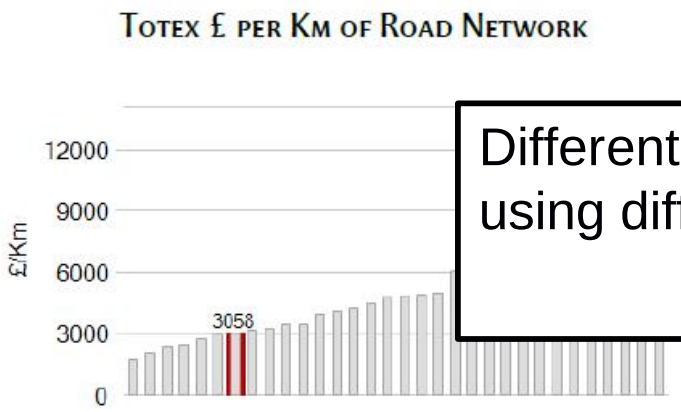

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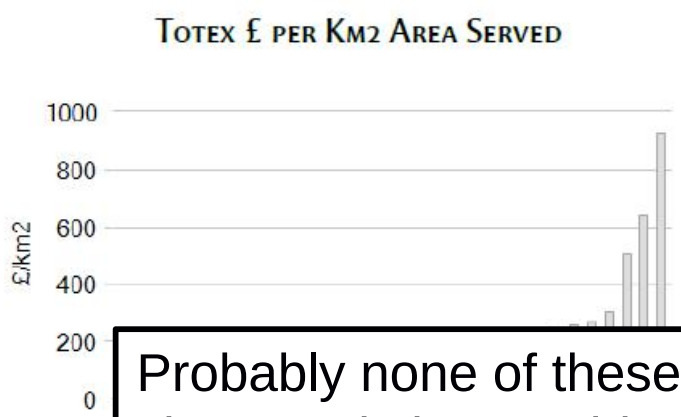

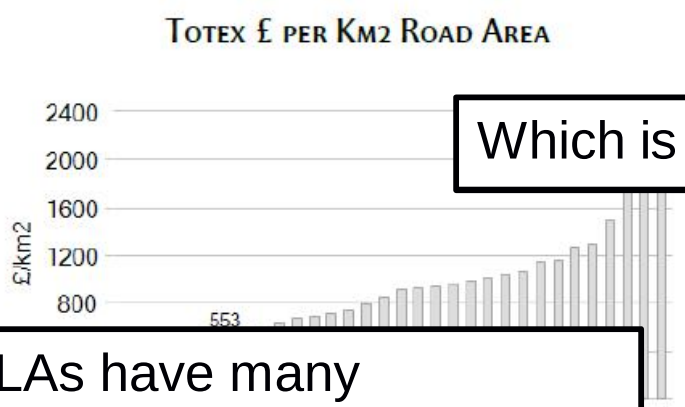

Which is better?

Probably none of these – LAs have many characteristics outside of their control. What matters is what is left over after controlling for these factors. Can the LA make savings?

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Approach

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- Explain this cost with various cost drivers of cost—Lets authorities understand **why their costs differ from others**
- What is left over is an **unexplained gap**
- We quantify the scope of the gap**—Scope for Improvement**
- We chart the gap over time to quantify the extent to which authorities are improving over time**—Realised Savings**
- We bring LAs together to understand **why** there is a gap

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The Science – University of Leeds input

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- We use **Stochastic Frontier Analysis**
  - Statistical technique developed in the economics literature
  - Used in economic regulation e.g. regulation of water companies, railway companies, energy companies
  - Cost function with an allowance for failing to optimise

- Why use this technique?
  - Lets us explain cost differences by factors outside of the control of LAs. In the 2016/17 analysis round we controlled for:
    - Size measures, Traffic, Road condition, Public Satisfaction, Wages
    - Want to net these off before looking at what gap remains
  - Quantify this remaining gap: Give a £ measure of the scope for improvement

- This work feeds into a set of work which:
  - Helps LA identify ‘peers’ to talk to
  - Collates best practice from the identified best performers
  - Undertakes deep regional based examinations of the reasons for differences in gaps – **Iterative process**

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What's the benefit of using statistical modelling (1)

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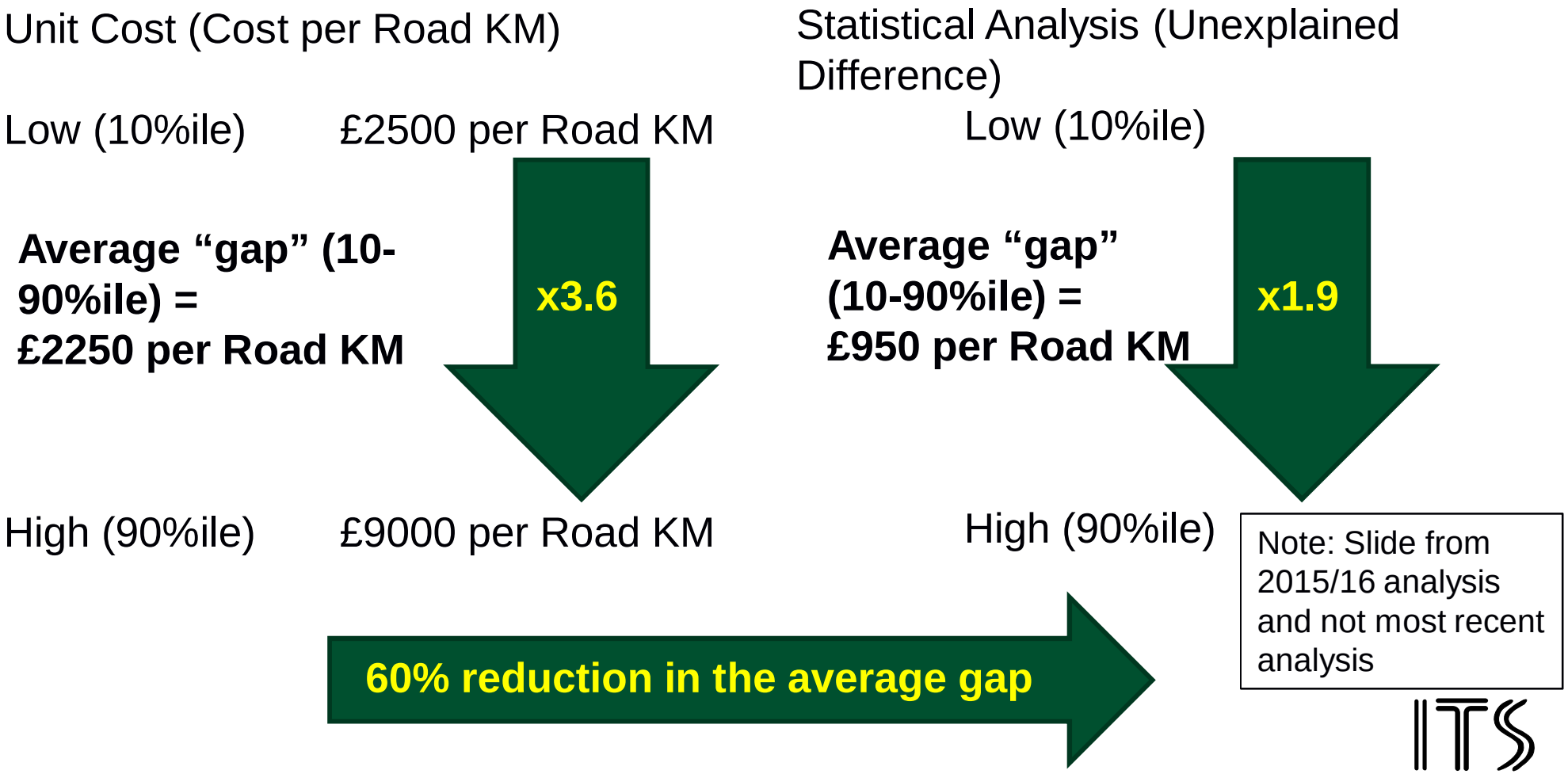
- The gap between what is explained and what remains unexplained is smaller than from conventional benchmarking



Note: Slide from 2015/16 analysis and not most recent analysis

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What's the benefit of using statistical modelling (2)

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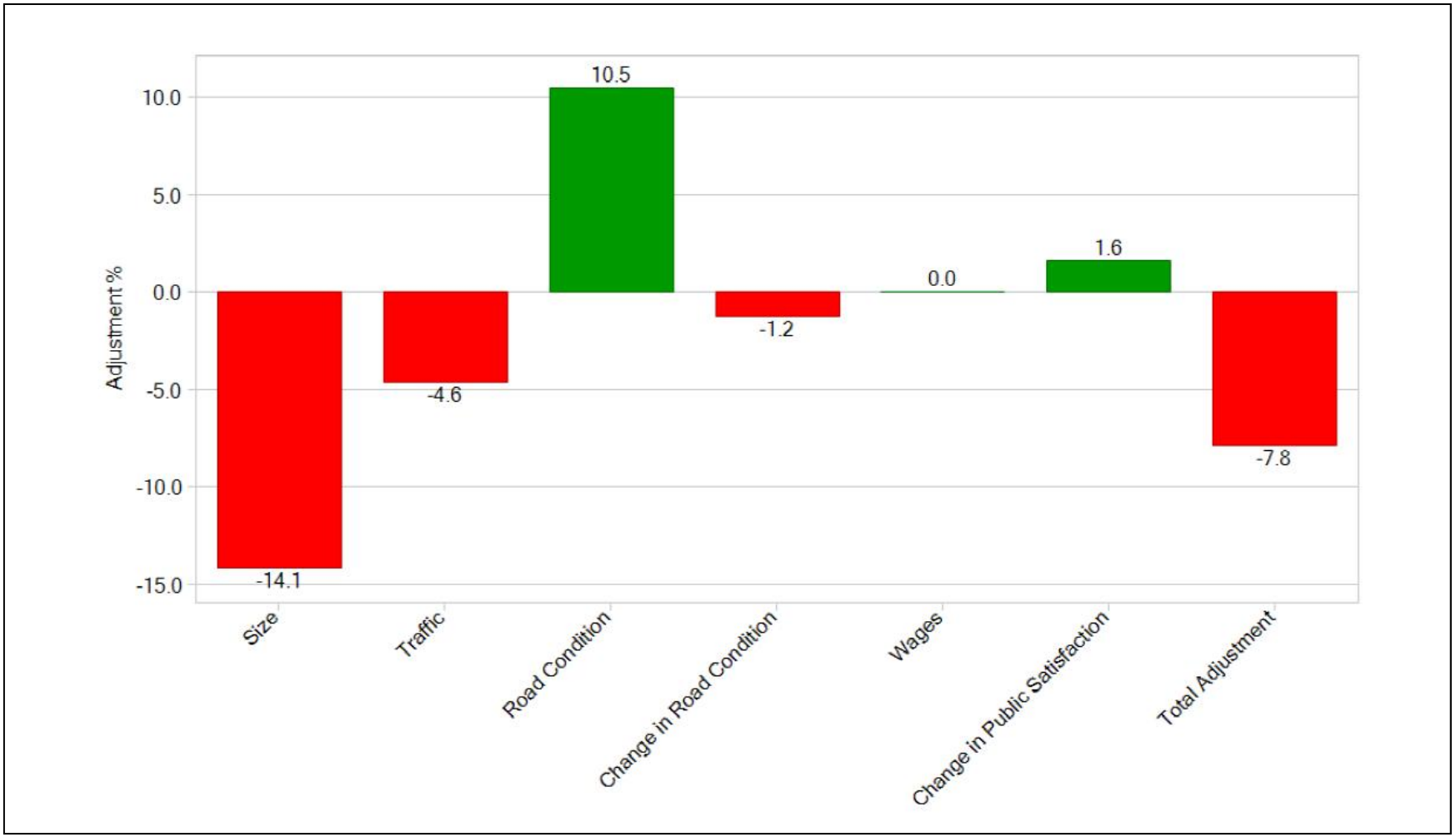
- **Explained** variation in costs – why is my LA different?



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What's the benefit of using statistical modelling (3)

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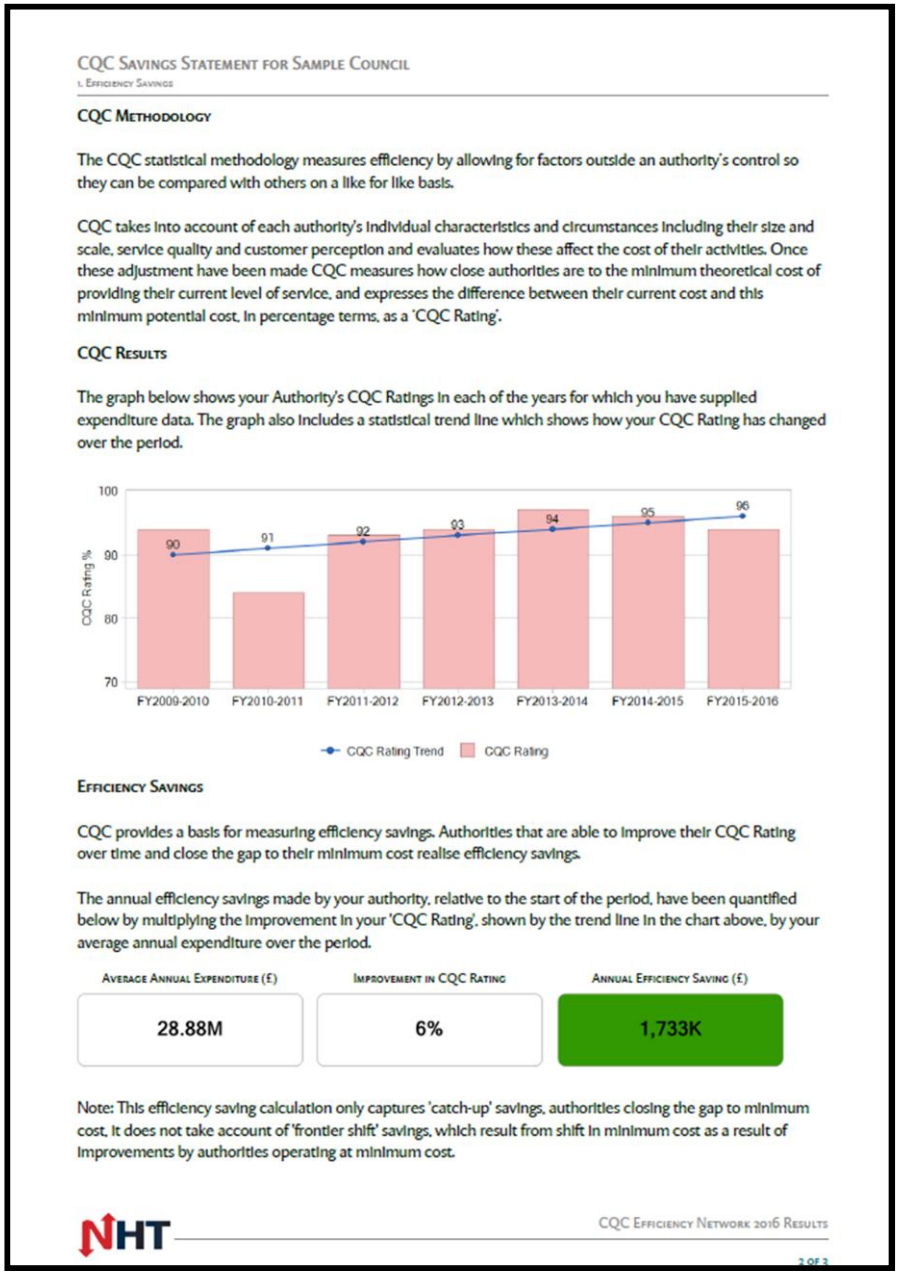

CQC Savings Statement for Sample Council

1. Efficiency Savings

CQC Methodology

The CQC statistical methodology measures efficiency by allowing for factors outside an authority's control so they can be compared with others on a like for like basis.

CQC takes into account of each authority's individual characteristics and circumstances including their size and scale, service quality and customer perception and evaluates how these affect the cost of their activities. Once these adjustment have been made CQC measures how close authorities are to the minimum theoretical cost of providing their current level of service, and expresses the difference between their current cost and this minimum potential cost, in percentage terms, as a 'CQC Rating'.

CQC Results

The graph below shows your Authority's CQC Ratings in each of the years for which you have supplied expenditure data. The graph also includes a statistical trend line which shows how your CQC Rating has changed over the period.

Efficiency Savings

CQC provides a basis for measuring efficiency savings. Authorities that are able to improve their CQC Rating over time and close the gap to their minimum cost realise efficiency savings.

The annual efficiency savings made by your authority, relative to the start of the period, have been quantified below by multiplying the improvement in your 'CQC Rating', shown by the trend line in the chart above, by your average annual expenditure over the period.

Average Annual Expenditure (£)	Improvement in CQC Rating	Annual Efficiency Saving (£)
28.88M	6%	1,733K

Note: This efficiency saving calculation only captures 'catch-up' savings, authorities closing the gap to minimum cost. It does not take account of 'frontier shift' savings, which result from shift in minimum cost as a result of improvements by authorities operating at minimum cost.

NHT

CQC Efficiency Network 2016 Results

3 of 3

- How is the gap changing over time - **Realised Savings**
- Useful for **Incentive Funding** self assessment questionnaire – determines DfT allocation of funding to LAs
- Real money allocated on the basis of demonstrating efficiency improvements
- Other outputs:
  - Cost impacts of merging highway functions across local authorities
  - Strategic web based tool to examine changes in external factors e.g. cost impact of traffic growth

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The funding model: How can universities work with local authorities and SMEs?

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Local Authorities

1) Pooling from resources across LAs – Individual LA funding contribution low
2) Compare themselves across the sector
3) Access to world leading skills and techniques
4) Supported by central government

SME

1) Pool of funding
2) Skills development
3) Access to world leading skills and techniques

University

1) Knowledge exchange and a Pathway to Impact – **Impact Case Study –** long term relationships
2) Pool of funding to support research and new staff
3) SME drives venture forward

Concluding comments

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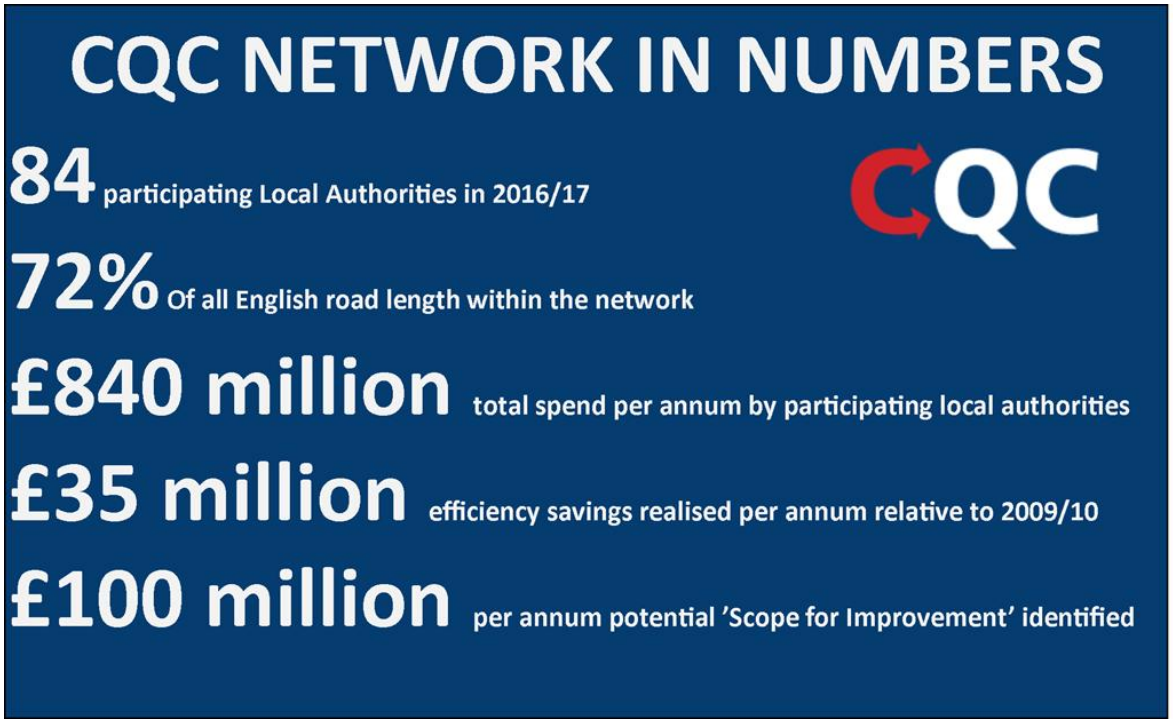
- The University of Leeds is helping Local Authorities quantify the scope (in £) for making savings in their highway maintenance **whilst continuing to maintain quality**
- We use a relatively sophisticated economic technique **for a reason –** to overcome limitations with more standard benchmarking
- This provides Local Authorities with information that they can use to drive improvement initiatives and to respond to the incentives set by central government



- The funding model for the work is relatively novel for the university sector:
  - Aligns with the objectives of all parties
  - Could be used more widely to support engagement?

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Contact Details

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Dr Phill Wheat

Associate Professor

Institute for Transport Studies

University of Leeds

p.e.wheat@its.leeds.ac.uk

www.its.leeds.ac.uk

http://www.nhtnetwork.org/cqc-efficiency-network

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