

# SHOULD FORECAST DATA BE INCLUDED IN REGRESSIONS?

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# What was used in RIIO-GD1 cost assessment?

- Cost allowances were set on an average of the TOTEX and bottom-up models over different time periods
  - Historical data top down TOTEX
  - Historical data bottom-up
  - Two year forecast data top-down TOTEX
  - Two year forecast data bottom-up
- Historical data 2008/09 – 2011/12 (first four years of GDPCR1)
- Forecast data 2013/14 – 2014/15\* (first two years of RIIO-GD1)
- Ofgem rejected using the whole 8 years period of RIIO-GD
- High level CAPEX and workload data was provided over a 20 year period (2002/3 onwards) and smoothed rolling average figures used in regressions



# Ensuring comparability

- Costs were normalised prior to modelling in both historical and forecast data sets, in particular:
  - Costs adjusted for regional factors and operating circumstances
  - Assumptions on RPE's in the forecast data removed
  - Forecast workloads were adjusted on the basis of 'qualitative' assessment
  - Non regressed identified costs (Assessed separately)



# Historical data

- Advantages
  - Anchored on actual outturn so benchmark is based on observed performance
  - Actual outturn perceived as achievable
- Disadvantages
  - Becomes less relevant if nature of work changes
  - Intervention approach – OPEX versus CAPEX solutions
  - Ignores different points in the investment cycle
  - Excludes the potential for future innovations and business efficiencies
  - Does not reflect the future increases in unit costs or workload mix



# Forecast data

- Advantages
  - Includes the potential for future innovations and business efficiencies
  - Reflects the future increases in unit costs or workload mix
  - Includes additional information unobtainable through historical data alone
  - Accounts for future work complexity – i.e. changes in technique
  - Aligns with the RIIO principle to put “Greater weight on forecasts”
- Disadvantages
  - Inconsistency on underlying assumptions between GDN's
  - Intervention approach – OPEX versus CAPEX solutions
  - Different profile of costs and workload across period (need, when and where to take out/increase costs)
  - Forecast errors



# Use of data in other price controls/regulators

- Ofgem – RIIO-ED1
  - Used historical data only for its fast track decision
  - Slow track used 13 years of data (5 historical and 8 forecast)
- Ofwat – PR14
  - Historical data coefficients were applied to forecast data to set level of expenditure
- Ofwat – PR19
  - Methodology decision document states historical data will be used to assess but when forecast data is submitted will be considered and benchmarked to identify forward trends
  - Use of forecast data will be particularly relevant where there is little or no historical information and as appropriate



# Recommendations/observations

- Both historical and forecast costs should be considered to inform cost assessment
- Cost drivers will help determine weighting of historical/forecast data
- Normalisation of both historical and forecast costs is key to using both sets of data
- Level of uncertainty should impact weighting between historical/forecast data
- Do you use separate weighting of historic/forecast for non regressed costs



# WHAT CHANGES COULD OFGEM LOOK TO MAKE TO THE STRUCTURE OF THE COST ASSESSMENT APPROACH IN GD2 AND WHY?

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# High level observations from RII0-GD1

- Large number of adjustments made between IP/FP for
  - Model errors
  - Normalisation errors/comparability
- Discounting 8 year forecast data for use – could of pushed back to networks to improve data quality/consistency
- Improving data sharing on regression results when establishing cost drivers



# Improving the approach for RIIO-GD2

- Sharing models early so networks can review and feedback observations
- Work through alternative cost drivers as a group and critically review
- Updating to actuals/forecast through cost assessment process



# Approach considerations

- Important factors to consider:
  - Test cost drivers are still appropriate for both GD1 and for GD1 versus GD2 forecast period
  - Test for structural breaks – are the estimated relationships between costs and cost drivers different over different periods (historical versus forecast)
  - Consider cost estimation approaches when assessing forecast data
  - Look at ways to combine the information gained from historical and forecast data

