

# Measurement of Output and Productivity of the Fire and Rescue Service

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## Executive summary

- This paper examines the key issues in measuring the output and productivity of the Fire and Rescue service (FRS) and was developed to support the work of the independent Atkinson Review, commissioned in December 2003 by Len Cook, National Statistician, to improve methodologies for measuring output and productivity for the National Accounts across the public sector. This paper assesses current measures, comments on the recommendations of the Atkinson Review and offers a new conceptual approach for further development of measures of output and productivity.
- The FRS has a number of distinctive features that make output and productivity measurement complex. Measuring the full impact of fire safety and prevention work is virtually impossible because the relationship between the activity and final outcomes (reduced fire deaths or property damage) is not observed. This requires measuring what has not happened.
- The FRS also has significant numbers of people on standby, against the possibility of unexpected events, some of which are extremely unlikely but could be extremely large in scale. The speed of response is important to the delivery of an effective service and the resources dedicated to generating each unit of output is influenced by considerations of each of these issues, as well as technological challenges and the safety of fire fighters, who can put their lives at risk.
- Currently, productivity of the FRS is measured as a ratio of outputs to inputs. Output of the FRS is measured using volume measures of three key activities: hours spent attending fires; hours spent on fire prevention inspections and community safety; and hours spent at special service incidents. The main problem with this is that it does not capture the effectiveness of fire prevention work and does not recognise the aim to attend fewer fires over time, which is a key objective of FRS policy.
- The key final recommendation of the Atkinson Review for the FRS was that *"ONS should measure fire response output using an index based on consequential costs, which measure damage to life and property, but should also continue to calculate an alternative index based on response costs which reflect the costs to the Fire Service, and monitor the sensitivity of the index to different weights. We also recommend continued work on the output of fire prevention and non-fire activities."* This represents a modest improvement, but there remain some important shortcomings.
- Firstly, it captures no improvement in the effectiveness of fire prevention output. This means that if the FRS undertakes the same volume of prevention activities, but becomes more effective (e.g. through better targeting towards needs or better activities), there may be fewer fires for the FRS to attend. Perversely this will result in a measured net fall in output.
- Secondly, by weighting prevention and response output measures by expenditure, it assumes that the cost of providing the service is equal to the value of output. We would argue that there should be more value in preventing a fire than responding to it. The FRS could be deemed to be less productive if it undertakes relatively more fire prevention activity, if it is unable to reduce resources dedicated to emergency response.

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- Our approach builds on the original ONS method and improvements suggested by the Atkinson Review, and propose a number of developments to the current measures, some of which were recognised by Sir Tony Atkinson in his final report:
  - a. A new measure for safety and prevention output, based on a basket of FRS outcomes, weighted by the economic and social value of outcomes;
  - b. A fire response output measure that takes account of the 'cover' required and reflect changes in quality or outcome attributable to each unit of fire response output;
  - c. Quality adjustment to emergency fire response output, using response times; and
  - d. A more fire-specific price deflator for capturing volume of inputs.
- Ideally, a National Accounts output measure should measure the incremental impact of the FRS on welfare to society. For the FRS this is the value to society it adds by providing the capacity to respond in an emergency and the value of damage (lives, property) averted or saved through response and prevention.
- In practice, this is difficult to measure, particularly for activity targeted at preventing fires, so second-best solutions have been sought, making better use of available data and understanding of the FRS roles and responsibilities.
- The Atkinson Review and ONS method concentrates on values of output rather than outcomes, as determined by National Accounts criteria. However, our preferred approach to measuring productivity would be based on outcomes, as they provide more direct relevance to the management of the FRS. This paper suggests possible improvements to the National Accounts method, but there is also value in developing an outcome measure of productivity that is not published in the National Accounts.
- Indeed, it is recognised that no single measure will capture the productivity of complex public services. It is therefore important to assess FRS productivity in the context of a range of indicators.
- Direct measures of output are new to the UK and most other countries and so our experimental approach should not be seen as a prescriptive framework for output and productivity for the FRS, but will form part of a continuing process of development with ONS.
- Further work is needed to capture fully the value of prevention output and the interaction between prevention and response outputs. Some key future developments are:
  - Develop a better understanding of the effectiveness of fire safety activity i.e. their contribution to final outcomes. ODPM has evaluated recent Community Fire Safety (CFS) activity and is undertaking further research to model the effectiveness of prevention work;
  - Develop a measure of the risk of fire damage occurring. This could be based on the long-term smoothed average of the number of fires;
  - The introduction of Integrated Risk Management Plans (IRMPs), which all FRAs will be required to produce, could yield some useful information about local risk assessment and predicting the number of fires for setting priorities for intervention. This could help develop more robust weights for combining the mix of fire and SSI response outputs; and
  - Develop value-based weights to more accurately reflect the contribution of FRS activities to achieving outcomes. This could be progressed in a number of ways, by making better use of available data and new research underway into the effectiveness of fire prevention and safety work.