

Article

# Activities, spending and productivity in the Fire and Rescue Services since 2009

How the Fire and Rescue Services (FRSs) have changed since 2009 and whether there is evidence of productivity improvement.

Contact:  
Jonathan Gardner  
efficiencymeasurementunit@ons.  
gov.uk

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## **1 . The service is smaller, fire incidents have fallen and there is evidence of productivity improvement**

The UK Fire and Rescue Services (FRSs) have fewer resources to work with than in 2009 but are also responding to fewer fire incidents. Non-fire incidents are taking up an increasing proportion of the FRSs workload in England, while activities aimed at preventing fires also remain an important element of the services workload <sup>1,2</sup>.

The FRSs key activities have not declined as much as the staffing and other resources used to deliver these activities. In other words, there is evidence that FRSs have been delivering similar activities with fewer resources, resulting in productivity growth between 2009 and 2016.

## **2 . The workforce for Fire and Rescue Services in England is smaller and more diverse**

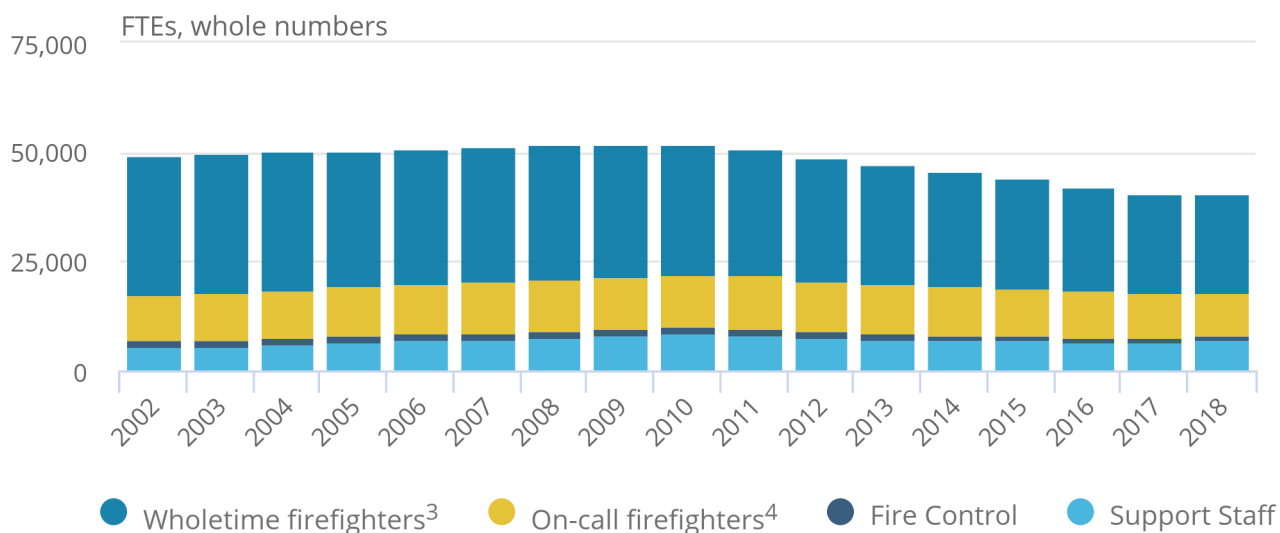
The total workforce in England has decreased by 22%, from a high of 51,700 in 2009 to 40,500 in 2018 <sup>3</sup>.

## Figure 1: The Fire and Rescue Services' workforce has decreased from 2009

Total staff employed (FTE) in England by staff type, 2002 to 2018

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Total staff employed (FTE) in England by staff type, 2002 to 2018



Source: Home Office, Fire statistics data tables, Workforce and workforce diversity, FIRE1101: Staff in post (Full Time Equivalent) employed by fire and rescue authorities by role, Table 1101

#### Notes:

1. Position at 31 March of each year.
2. Full-time equivalent employees (FTEs) - Full-time officers and staff are counted as 1.0, and part-time are counted according to the proportion of full-time worked (for example, a firefighter working 60 per cent of full-time hours is counted as 0.6).
3. A wholetime firefighter is a full-time firefighter, regardless of their rank.
4. An On Call Firefighter (also known as a retained firefighter or an RDS Firefighter) is a firefighter who does not work full-time but is paid to spend long periods of time on call to respond to emergencies through the Retained Duty System. Many have full-time jobs outside of the fire service.

In England, the most common reason that staff left the FRSs in 2017 to 2018 was because of retirement, which accounted for 31% of those leaving. The second most common reason for leaving was to take up employment elsewhere (23%)<sup>4</sup>. On-call firefighters (43%) and support staff (40%) make up the majority of those leaving to take up employment elsewhere.

Salaries of FRSs workers across the UK were frozen in 2009 and 2010. From 2011, staff received a 1% pay rise, which has continued each year. In 2018, they were awarded a 2% pay increase, so that in 2018, a full-time "competent" firefighter received £30,533 basic annual pay, while an on-call "competent" firefighter received a full annual retainer of £3,053<sup>5</sup>.

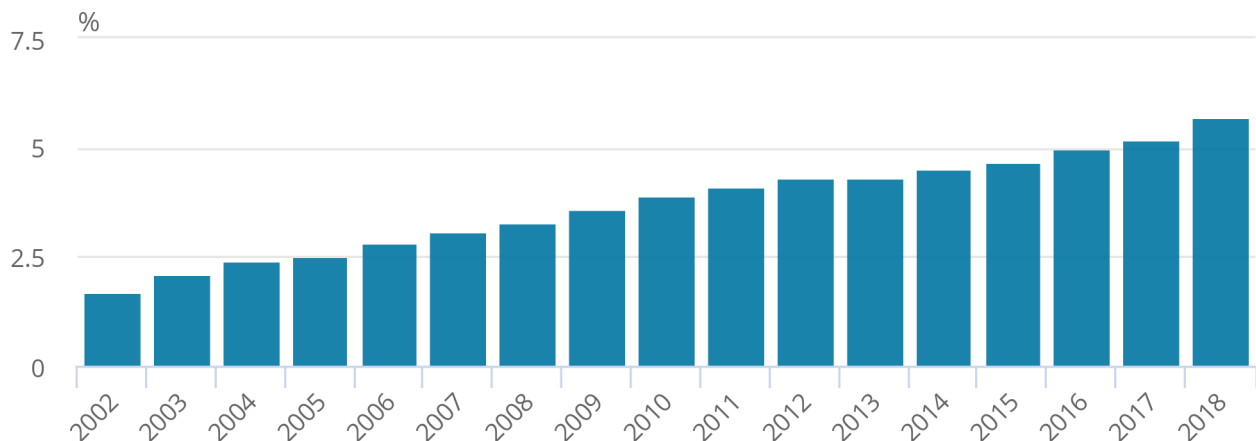
### 3 . There are more female and Black, Asian and Minority Ethnic firefighters in the workforce than ever before

Figure 2: There are more female firefighters in the workforce compared with 2009

Gender of firefighters in England, 2002 to 2018

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Gender of firefighters in England, 2002 to 2018



Source: Home Office, Fire statistics data tables, Workforce and workforce diversity, FIRE1103: Staff headcount by gender, fire and rescue authority and role, Table 1103

Notes:

1. Calendar year.
2. Totals will be slightly different to the Figure 1. This figure looks at the actual number of staff (headcount) whereas the previous Figure 1 looks at FTEs. This figure also looks at firefighters only and excludes fire control or fire support staff.

Of the 33,000 firefighters in England at 31 March 2018, 5.7% were women, compared with 3.6% in 2009<sup>6</sup>. This increase is mainly due to a decrease in the number of male firefighters. The number of women firefighters slightly increased by around 350, whereas the number of male firefighters decreased by just over 9,900<sup>7</sup>.

4.1% of firefighters in England at 31 March 2018 are from Black, Asian and Minority Ethnic (BAME) backgrounds, compared with 3.5% in 2011<sup>8</sup>.

## 4 . Fire and Rescue Services in the UK are using fewer resources compared with 2009

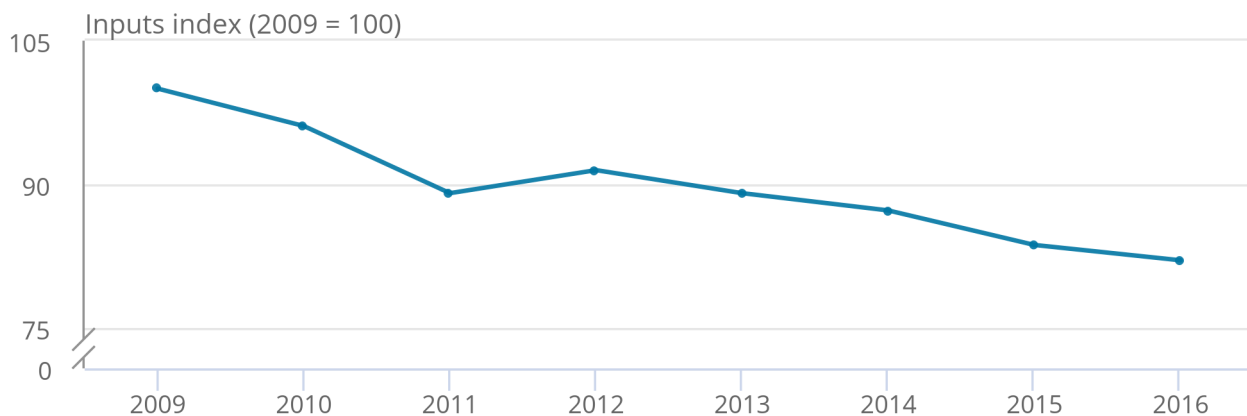
Despite a 2.6% annual increase in the service's overall resource in 2012 (increased real expenditure on labour, goods, services and capital such as staff, uniforms, fire engines and buildings), total inputs available to the service were 18% lower in 2016 compared with 2009<sup>9</sup>.

**Figure 3: Total inputs have fallen since 2009**

Public service fire and rescue inputs, UK, 2009 to 2016

Figure 3: Total inputs have fallen since 2009

Public service fire and rescue inputs, UK, 2009 to 2016



Source: Office for National Statistics

Notes:

1. Calendar year.
2. A volume index helps compare how different quantities, when taken as a whole, differ between time periods or geographical locations. The base year is set to 100 so that all future years can be compared to this year.
3. The inputs index is calculated by taking government expenditure on labour, goods and services, and consumption of fixed capital, removing any changes that are due to inflation (using appropriate price deflators), and weighting these components together (based on their expenditure shares) to create a volume index.

## **5 . Fire and Rescue Services in England are attending fewer fire incidents compared with 2009 to 2010**

Firefighters in England attended 241,500 fire incidents (excluding false alarms) in 2009 to 2010 compared with 167,300 incidents in 2017 to 2018, a 31% decrease<sup>10</sup>. Flame-retardant foam-filled furniture, government legislation on smoking, increased ownership of working smoke alarms (by 2016 to 2017 90% of households had one) and other behavioural changes may have contributed to this overall decline in incidents<sup>11</sup>.

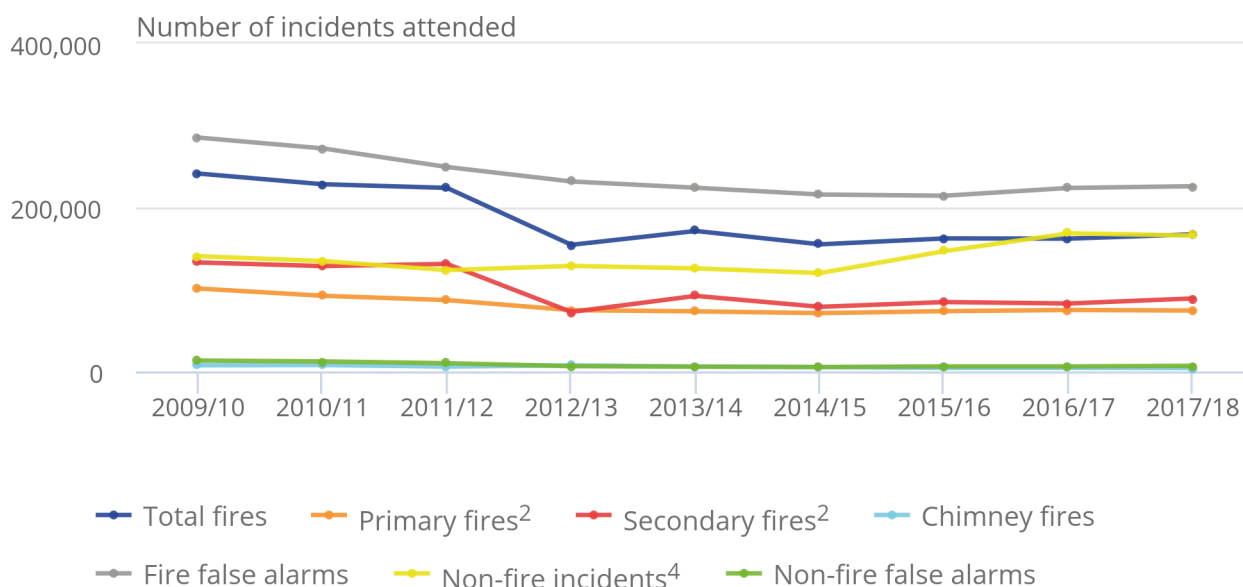
FRSs are also tasked with promoting safety, helping prevent fires and managing risk so it is also possible that historic work in this area may have contributed to the fall in incidents. However, assessing the impact of preventative activities on the overall trends in incidents is challenging and any impact the FRSs may have had in this area cannot be established from these trends alone.

**Figure 4: The Fire and Rescue Services are attending fewer fires compared with 2009, although they are attending more non-fire incidents**

Incidents attended by fire and rescue services in England, by incident type and fire and rescue authority, between 2009 to 2010 and 2017 to 2018

Figure 4: The Fire and Rescue Services are attending fewer fires compared with 2009, although they are attending more non-fire incidents

Incidents attended by fire and rescue services in England, by incident type and fire and rescue authority, between 2009 to 2010 and 2017 to 2018



Source: Home Office, Fire statistics data tables, FIRE0102: Incidents attended by fire and rescue services in England, by incident type and fire and rescue authority, Table 0102

Notes:

1. Financial year ending March 31.
2. Primary fires generally involve property and include buildings, caravans, motor vehicles and plant machinery. Primary fires are defined as fires that meet at least one of the following conditions: any fire that occurred in a (non-derelict) building, vehicle or outdoor structure; any fire involving fatalities, casualties or rescues; and/or any fire attended by five or more pumping appliances.
3. Secondary fires are often minor and include the burning of rubbish, grass and derelict properties.
4. Non-fire incidents are also known as special services incidents attended by fire and rescue services.

Fire false alarms are more numerous than the total number of fire incidents each year, although they were less prevalent in 2017 to 2018 than in 2009 to 2010. The majority (67%) of false alarms in 2017 to 2018 were “due to apparatus”. “Good intent” (30%) and malicious calls (3%) accounted for the rest.

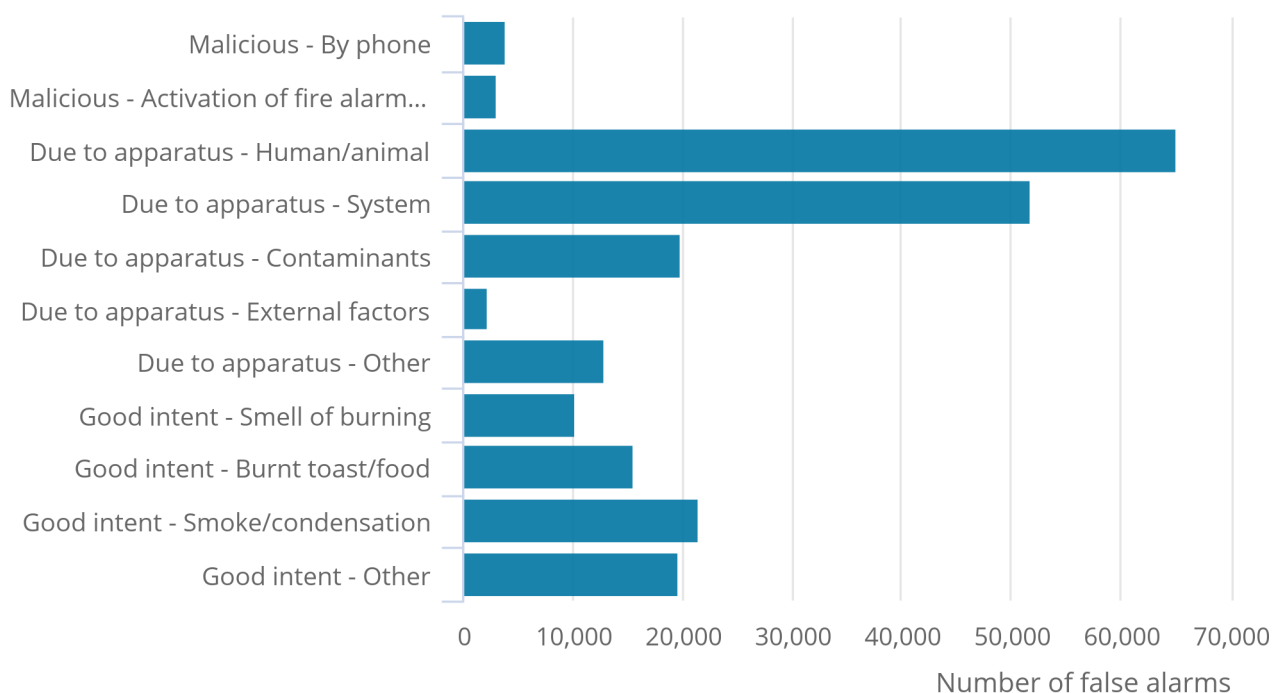
The most common reasons for apparatus false alarms were accidental triggering by a human or animal (for example cooking food such as toast, carelessness, smoking), system issues (for example faulty, damaged or unsuitable equipment) and contaminants such as dust or steam<sup>12</sup>. “Good intent” false alarms are calls made in good faith, such as when people smell or see smoke, whilst malicious calls usually involve a hoax call or deliberate activation of an alarm.

**Figure 5: Reasons for fire false alarms**

Total fire false alarms by reason, England, 2017 to 2018

### Figure 5: Reasons for fire false alarms

Total fire false alarms by reason, England, 2017 to 2018



Source: Home Office, Fire statistics data tables, Incidents attended, FIRE0104: Fire false alarms by reason for false alarm, England, Table 0104

**Notes:**

1. Financial year ending March 31.



## **6 . Non-fire incident attendances account for an increasing proportion of the service's workload in England**

Firefighters in England attended more non-fire incidents in 2017 to 2018 than in 2009 to 2010 <sup>13</sup>. These incidents are also making up an increasing percentage of the FRSs total workload. Non-fire incidents in England accounted for 50% of all incidents in 2017 to 2018 compared with 37% in 2009 to 2010 <sup>14</sup>.

Non-fire incidents rose sharply between 2014 to 2015 and 2016 to 2017, with nearly two-thirds due to increases in medical incidents. This coincided with the introduction of discretionary trials of emergency medical responding in 2015, where some FRSs formed an agreement with ambulance trusts to undertake health and care related work (for example co-responding to time critical incidents such as cardiac arrests). However, with the Fire Brigades Union removing support for these trials in September 2017 some of this work has now stopped.

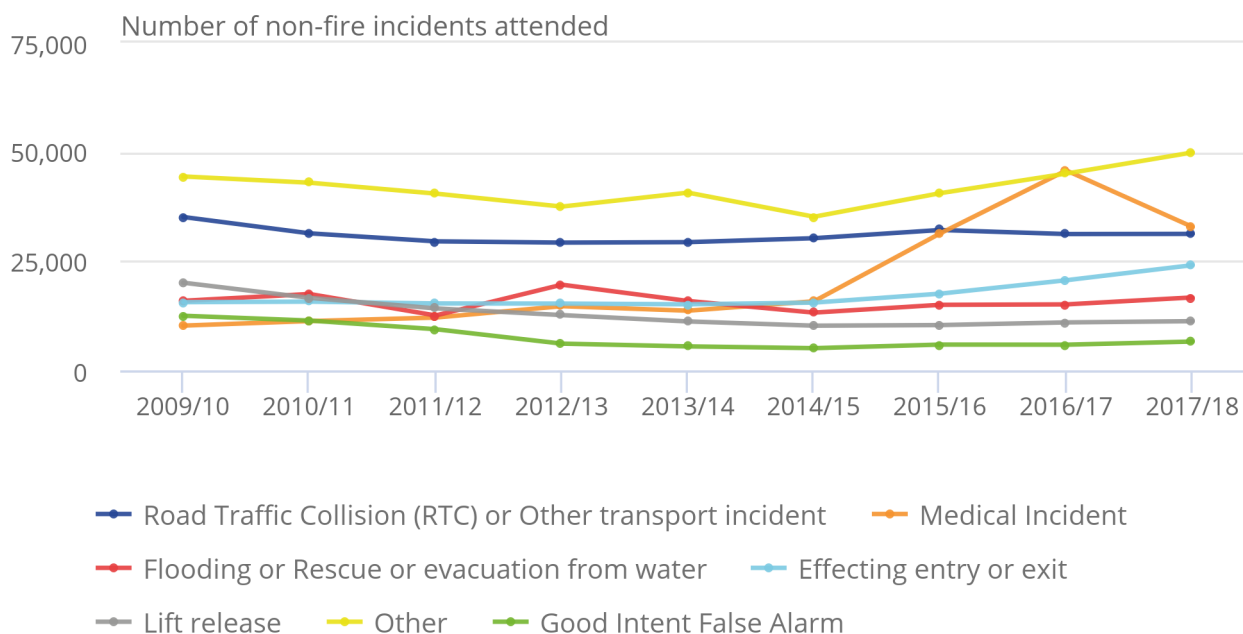
There were also recent increases in non-fire incidents "effecting entry or exit" and in less numerous non-fire incidents categorised under "other" (which includes assisting other agencies).

**Figure 6: Medical incidents rose sharply between 2014 to 2015 and 2015 to 2016**

Non-fire incidents attended, by type of incident, England, between 2009 to 2010 and 2017 to 2018

Figure 6: Medical incidents rose sharply between 2014 to 2015 and 2015 to 2016

Non-fire incidents attended, by type of incident, England, between 2009 to 2010 and 2017 to 2018



Source: Home Office, Fire statistics data tables, FIRE0901: Non-fire incidents attended, by type of incident and fire and rescue authority, England, Table 0901

**Notes:**

1. Financial year ending 31 March.
2. Non-fire incidents are also known as special services incidents attended by fire and rescue services.

## 7. Fire and Rescue Services also undertake many activities that aim to prevent fires

FRSs also undertake many activities that aim to prevent or reduce the risk of fires. These include Home Fire Safety Checks (HFSCs) for the more vulnerable members of the community to mitigate the risk of fire in the home, arson prevention, promotional work with young people and other vulnerable groups as well as other campaigns and initiatives<sup>15</sup>. However, it is much more difficult to assess how the service’s overall volume of preventative work has changed over time. The activities local services undertake are highly variable, priorities will vary depending on local need and the recording of all activities in this area would be very resource intensive.

When calculating the output and productivity of FRSs, we collate data for the more common preventative activities. These include the number of hours spent on fire safety audits or inspections, petroleum and explosives inspections, enforcement activity, youth campaigns and initiatives<sup>16</sup> and HFSCs.

Hours spent on fire inspection activities<sup>17</sup> have declined between 2009 to 2010 and 2017 to 2018. Although common community safety activities<sup>18</sup> increased between 2015 to 2016 and 2017 to 2018 they have not yet returned to 2009 to 2010 levels. These categories cover the most common preventative activities, however, care should be taken when looking at the series over time as some preventative work is not covered by these categories or may be replaced by unrecorded activity<sup>19</sup>.

**Figure 7: The Fire and Rescue Services are spending fewer hours on common prevention activities compared with 2009 to 2010, although others may have taken their place**

Total hours spent on common fire prevention activities, England, between 2009 to 2010 and 2017 to 2018

Figure 7: The Fire and Rescue Services are spending fewer hours on common prevention activities compared with 2009 to 2010, although others may have taken their place

Total hours spent on common fire prevention activities, England, between 2009 to 2010 and 2017 to 2018



Source: Home Office, FIRE1204: Fire safety returns, by fire and rescue authority, Table FS1 (total hours), Table FS2 (total hours), Table FS2 (total hours), Table FS9 (total hours) Home Office

Notes:

1. Financial year ending 31 March.
2. Fire prevention inspections include: Fire Safety Audits and Inspections; Other enforcement activity; and Petroleum, explosives and dangerous substances inspections.
3. Community safety activities include: Fire and rescue authority campaigns and initiatives, recorded under "Firesetter and anti-social behaviour schemes and other youth diversion" or "Other youth fire safety programmes" categories; Home fire risk checks carried out by fire and rescue authorities and partners; and DCLG, "Personnel hours spent on campaigns and initiatives".

## **8 . The total volume of work has declined by around 10% compared with 2009**

We produce a high-level estimate of the total volume of output (that is the volume of work) produced by the FRSs. The measure uses detailed data on the different types of incidents the service responds to (fire and non-fire) and the key preventative activities it undertakes (inspections, investigations and so on).

These activities are weighted together using unit costs to approximate their relative value or importance to society (responding to a primary fire in a large building requires more resource than the rescue of an animal and is likely to be more important or valuable to society).

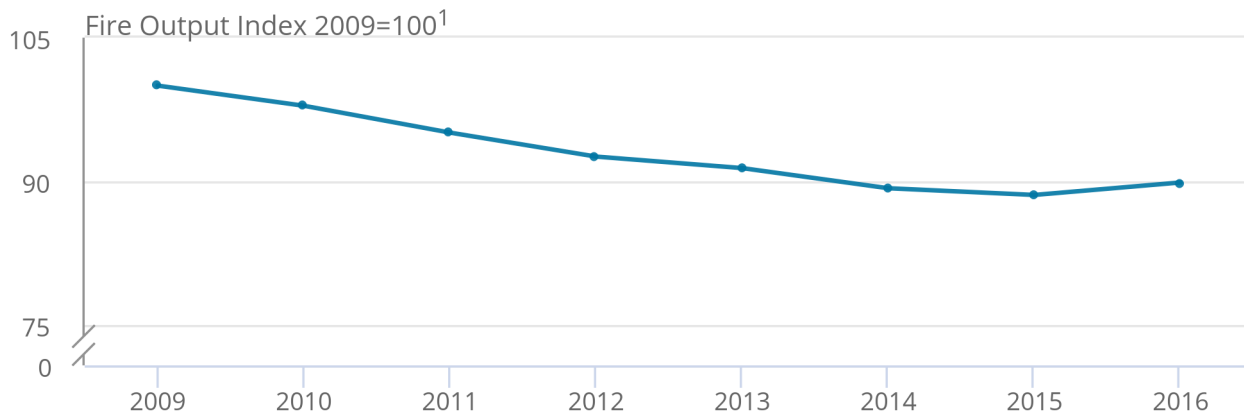
This approach suggests that overall output (the volume of work) in UK FRSs decreased 10% between 2009 and 2016. The inputs used by the UK FRSs to deliver services declined 18% over the same period.

## Figure 8: Total output from the Fire and Rescue Services has fallen since 2009

ONS public service outputs, fire and rescue, UK, 2009 to 2016

### Figure 8: Total output from the Fire and Rescue Services has fallen since 2009

ONS public service outputs, fire and rescue, UK, 2009 to 2016



Source: Office for National Statistics

#### Notes:

1. Calendar year.
2. A volume index helps compare how the production of some goods and/or services, taken as a whole, differs between time periods or geographical locations. The base year is set to 100 so that all future years can be compared to this year.
3. The output index is calculated using a cost-weight activity index approach. Individual growth rates for changes in the quantity of various fire incident activities, non-fire incident activities and preventative activities are calculated. Individual growth rates are weighted together by their unit costs (for the base year) to create a volume index of overall output.

## 9 . There is evidence of productivity growth within the UK FRSs

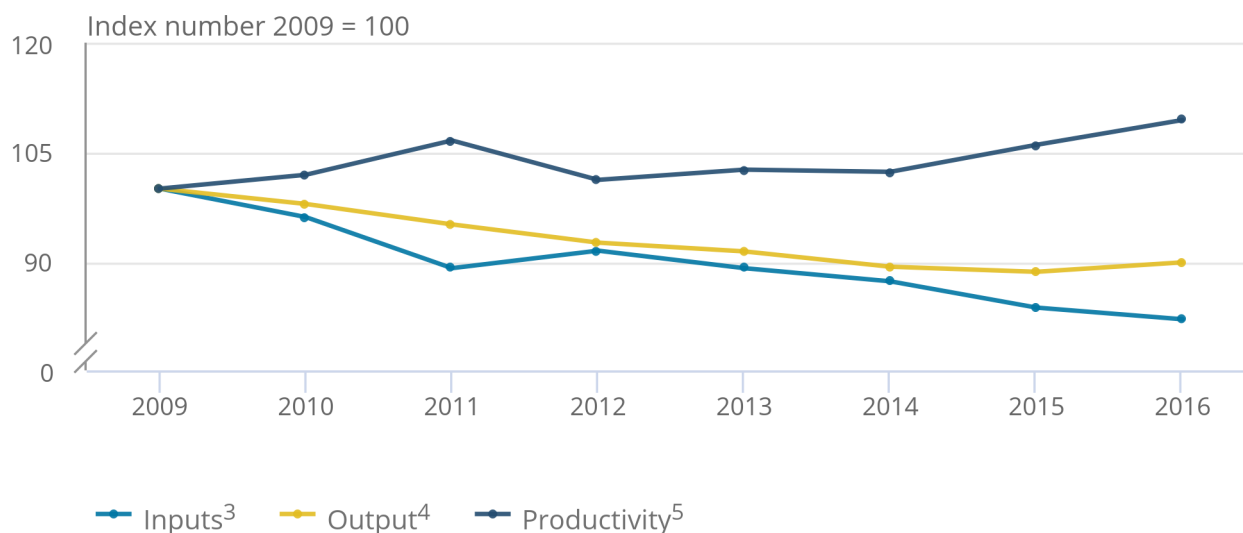
We produce productivity estimates for the UK FRSs by calculating the ratio of overall output to inputs in each year. Both inputs and output have declined since 2009. However, inputs have declined faster than outputs, meaning productivity is estimated to have grown by 9% between 2009 and 2016. The volume of main activities undertaken by UK FRSs has not declined as much as the staffing and other resources used to deliver these activities.

## Figure 9: Productivity in the Fire and Rescue Services is estimated to have grown between 2009 and 2016

ONS public service productivity, fire and rescue, UK, 2009 to 2016

### Figure 9: Productivity in the Fire and Rescue Services is estimated to have grown between 2009 and 2016

ONS public service productivity, fire and rescue, UK, 2009 to 2016



Source: Office for National Statistics

#### Notes:

1. Calendar year.
2. A volume index helps compare how the production of some goods and/or services, taken as a whole, differs between time periods or geographical locations. The base year is set to 100 so that all future years can be compared to this year.
3. The inputs index is calculated by taking government expenditure on labour, goods and services, and consumption of fixed capital, removing any increases that are due to inflation (using appropriate price deflators), and weighting these components together (based on their expenditure shares) to create a volume index.
4. The output index is calculated using a cost-weight activity index approach. Individual growth rates for changes in the quantity of various fire incident activities, non-fire incident activities and preventative activities are calculated. Individual growth rates are weighted together by their unit costs (for the base year) to create a volume index of overall output.
5. The productivity index is calculated by dividing the total volume of output (the output index) by the total volume of inputs (the inputs index).

It must be noted that these statistics are not adjusted for the quality of the services provided and assume that the effectiveness of the service (for example effectiveness of putting out fires, effectiveness of preventing fires) has remained constant over time. If the safety or the quality of the services provided decreased over the same period, then some of these estimated productivity gains would be eroded. Alternatively, if the quality had improved the estimated productivity gains would have been larger. We are investigating the feasibility of incorporating a quality adjustment in the future. These statistics should therefore be assessed alongside other key performance indicators and studies (for example on the FRSs impact on safety statistics, on timeliness and effectiveness) for a complete picture of efficiency and value for money within the Fire and Rescue Service.

More information on public service productivity, including detailed methodology, can be found within our [Public Service Productivity publication](#).

## Notes:

1. Note that this story uses ONS statistics on inputs, output and productivity within FRSs for the UK as a whole. However, statistics on workforce and activities are restricted to FRSs in England only. This is because there are some differences in reporting between devolved administrations (for example FTE versus headcount, financial year versus, calendar year, differences in categories, length of time series). However, while the presentation of some statistics has been restricted to England only for simplicity, the ONS statistics on inputs, output and productivity use data from across the UK where possible. Workforce and activities data for Scotland, Wales and Northern Ireland can be obtained from these sources:  
[Scottish Fire and Rescue Service statistics](#)  
[StatsWales fires service operational statistics](#)  
[Welsh Government Fire and rescue service operational statistics: April 2017 to March 2018](#)  
[StatsWales fire incidents](#)  
[Northern Ireland Fire and Rescue Service](#)
2. Note that some data is presented in calendar year and some in financial year ending 31 March. This is because the ONS generally reports on inputs, output and productivity for calendar year, whereas more granular data is only published in financial year. In general, workforce data and ONS productivity data is presented in calendar year, whereas activity data is presented in financial year. We have restricted our analysis to 2009 onwards due to greater consistency and comparability of data, in particular conventions for incident reporting.
3. Full-time equivalent employees (FTEs) – Full-time officers and staff are counted as 1.0, and part-time are counted according to the proportion of full-time worked (for example, a firefighter working 60% of full-time hours is counted as 0.6).
4. Home Office, 'Fire and rescue workforce and pensions statistics: England, April 2017 to March 2018' (October 2018) page 6. [Fire and rescue workforce and pensions statistics: England April 2017 to March 2018](#).
5. [Fire Brigades Union pay settlement 2018](#) (accessed 20 March 2019).
6. Note that diversity information does not have any impact on ONS statistics on inputs, output or productivity and is included as wider context only.
7. Data source from Home Office, [Fire statistics data tables, Workforce and workforce diversity, FIRE1103: Staff headcount by gender, fire and rescue authority and role](#), Table 1103.
8. Note that this data was only collected consistently from 2011 onwards. Home Office, [Fire statistics data tables, Workforce and workforce diversity, FIRE1104: Staff headcount by ethnicity, fire and rescue authority and role](#), Table 1104.

9. The inputs index is calculated by looking at government expenditure on the service in each year, stripping out any changes that are due to inflation and weighting different expenditure components together. Note that although the number of FTEs in England fell in 2012 overall inputs slightly increased in the same period. As the number of FTEs in Scotland and the staff headcount in Wales also declined between 2011 to 2012 and 2012 to 2013 the small growth in total inputs reflects increases in goods and services, and procurement costs as well as increases in wider labour costs (for example including pensions). Differences in how FTEs and spend are allocated to a particular year and the need to deflate labour expenditure data may also be a factor.
10. Home Office, Fire statistics data tables, [FIRE0102: Incidents attended by fire and rescue services in England, by incident type and fire and rescue authority](#), Table 0102.
11. Home Office, 'Fire prevention and protection statistics: England April 2017 to March 2018' (October 2018), page 7.
12. Home Office, Fire statistics data tables, [Incidents attended, FIRE0104: Fire false alarms by reason for false alarm, England](#), Table 0104.
13. Non-fire incidents are also known as special service incidents. Examples include flooding incidents, responding to road traffic collisions, animal assistance and release type incidents such as lift releases and effecting entry or exit (a complete list can be found at Home Office, [FIRE0902: Non-fire incidents attended by detailed type of action](#). A more detailed [analysis of non-fire incidents for FRSs in England only](#) is available).
14. Figures exclude false alarms.
15. Home Office, 'Fire prevention and protection statistics: England April 2017 to March 2018' (October 2018), page 8.
16. Such as Firesetter and anti-social behaviour schemes.
17. Fire prevention inspections include fire safety audits or inspections, other enforcement activity and petroleum, explosives and dangerous substances inspections. [Home Office, FIRE1204: Fire safety returns, by fire and rescue authority, Table FS1 \(total hours\), Table FS2 \(total hours\), Table FS2 \(total hours\), Table FS9 \(total hours\) Home Office](#).
18. Community safety activities include fire and rescue authority campaigns and initiatives (recorded under "firesetter and anti-social behaviour schemes and other youth diversion" or "other youth fire safety programmes" categories), home fire risk checks carried out by fire and rescue authorities and partners and older data on "Personnel hours spent on campaigns and initiatives". Home Office, FIRE1203: [Fire and rescue authority campaigns and initiatives, by fire and rescue authority](#). Home Office, FIRE1201: [Home fire risk checks carried out by fire and rescue authorities and partners, by fire and rescue authority, DCLG / MHCLG, "Personnel hours spent on campaigns and initiatives"](#).
19. Due to the variation in preventative activities and how they are recorded, the ONS uses the trends for inspection and community safety preventative activity and undertakes statistical adjustments to estimate output in this area.