Office for National Statistics

Article

Public service productivity: total, UK, 2023

Updated measures of output, inputs and productivity for UK public services between 1997 and 2023, including service area breakdown, quality adjustment, and latest revisions.

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Notice

13 April 2026

Previous publications (2019 to 2022) contained an error in the calculation of a deflator used in healthcare intermediate consumption.This error has been corrected in this publication. Further detail can be found on the previous publication's notice.

Table of contents

1 . Main points

- Annual UK public service productivity increased by 1.4% in 2023, following a downwardly revised increase of 3.8% in 2022.
- Growth in productivity in 2023 was caused by outputs growing faster than inputs, with the majority of service areas seeing productivity growth.
- Healthcare and education were the largest contributors to productivity growth in 2023, reflecting their size as well as their pace of growth; public order and safety, conversely, was the biggest drag on productivity growth.
- Total public service productivity is estimated to be around 4.1% lower in 2023 than its pre-coronavirus (COVID-19) peak in 2019.
- This article publishes "police" and "immigration and citizenship" services separately for the first time, and for the first time, we include estimates for the growth of police productivity.
- We also include improvements in other areas, most notably the introduction of a quality adjustment measure for tax administration and improvements to coverage in social security administration.

We advise caution when comparing the estimates of the latest years with those before the coronavirus (COVID-19) pandemic, as the structure of inputs and outputs in public services changed in response to the pandemic.

2 . Public service productivity improvements and further developments

This article presents the annual public service productivity estimates for the UK for 2023, detailing information on the growth of inputs and output in 11 service areas, the impact of quality adjustment and the latest revisions. While most of the statistics presented in this article are accredited official statistics, the estimates presented for the following are labelled as official statistics in development:

- police
- immigration and citizenship
- social security administration
- tax administration

This is because they are new and undergoing further development with suppliers and users. For substantial methods improvements, we use the new methods for one publication cycle. Our approach for substantial methods improvements is to use them for one publication cycle and then, once we are content with the robustness of the methodology used, seek accreditation assessment by the Office for Statistics Regulation.

Users should be aware that these estimates and their associated revisions have been affected by development work on public service productivity measurement for the whole public sector. This should be considered as we continue to implement the recommendations of the National Statistician's Independent Review of the Measurement of Public Services Productivity.

Changes reflect improvements to measures of quantity output, quality adjustment and inputs, as well as the separation of "police and immigration" into "police" and "immigration and citizenship". More information can be found in our article on Impact of improved methods on total public service productivity: 1997 to 2022.

We continue to develop and improve the methodologies we use. Some service areas are directly measured (that is, outputs are measured using available activity data). The measures used are as comprehensive as the available activity data allow. This article applies the methodological hierarchy proposed in the Atkinson Review (2005) and System of National Accounts 2008 (PDF, 9.1 MB) where direct measures of output are superior to indirect approaches, as using indirect "inputs equals outputs" methods make productivity growth zero by definition. Quality-adjusted measures are also considered superior to non-quality-adjusted measures.

In the following statistics, please note that output and productivity estimates are quality adjusted, unless otherwise stated.

These annual estimates differ from the public service productivity statistics published in the Public service productivity, quarterly, UK bulletin series. The estimates in the quarterly article are official statistics in development, and they use different data for inputs and output. Further information on how our annual and quarterly estimates differ can be found in Section 6 of our Public service productivity: total, UK, quality and methodology information (QMI).

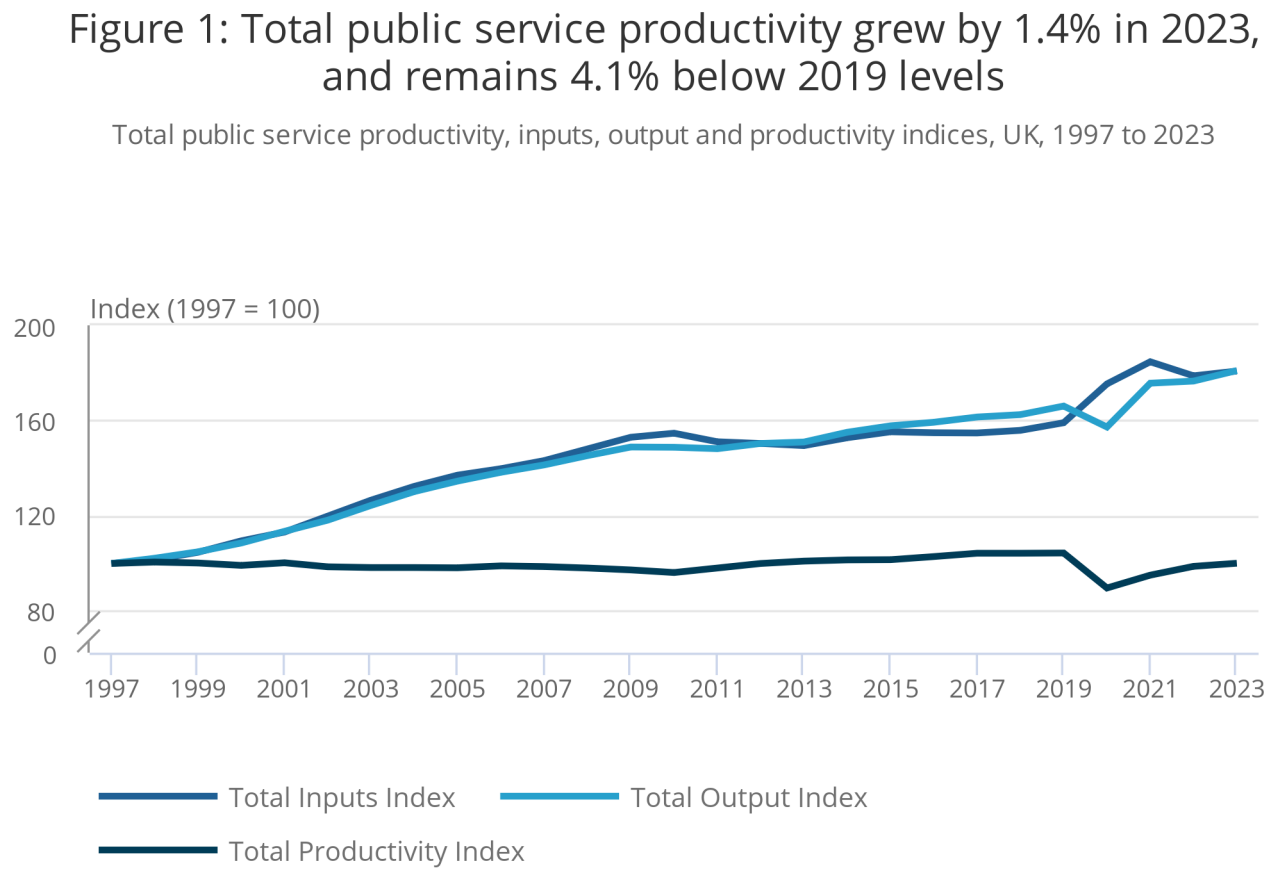
3 . Overview of public service productivity

These estimates are not labour productivity metrics and are not directly comparable with whole-economy labour productivity or market-sector multi-factor estimates also published by the Office for National Statistics. These data instead reflect the volume of services delivered to users relative to the volume of total inputs, which include labour, intermediate consumption, and consumption of fixed capital. More details for each component of productivity are available in Section 13: Data sources and quality.

This article includes updated annual estimates of quality-adjusted (which is a more complete measure) and non-quality-adjusted output, inputs, and productivity, where available, for 11 public service areas in the UK from 1997 to 2023, on a calendar-year basis.

Figure 1: Total public service productivity grew by 1.4% in 2023, and remains 4.1% below 2019 levels

Total public service productivity, inputs, output and productivity indices, UK, 1997 to 2023



Source: Public service productivity from the Office for National Statistics

In 2023, public service productivity increased by 1.4%, reflecting output growing at a faster rate (2.5%) than inputs (1.1%). The growth in productivity in 2023 is higher than the average growth of 0.7% in the decade to 2019. Productivity is 4.1% below 2019 levels. Non-quality-adjusted productivity grew by 1.0% in 2023 and remains 3.5% below 2019 levels.

Non-quality-adjusted output is the main contributor to productivity growth in 2023, growing by 2.1%. This reflects strong growth in healthcare output.

Total inputs grew by 1.1% in 2023, after falling 3.2% in 2022. Labour inputs continued to grow for most services, with the largest contributions from healthcare and other government services. Spending on goods and services generally continued to wind down following a surge in spending during the pandemic, also primarily caused by healthcare and other services. Elsewhere, there were substantial increases in inputs to immigration and citizenship and defence in 2023, reflecting a rise in asylum spending and government response to Russia's invasion of Ukraine, respectively. However, since there are no corresponding output measures for either immigration and citizenship or defence, productivity growth is assumed to be zero.

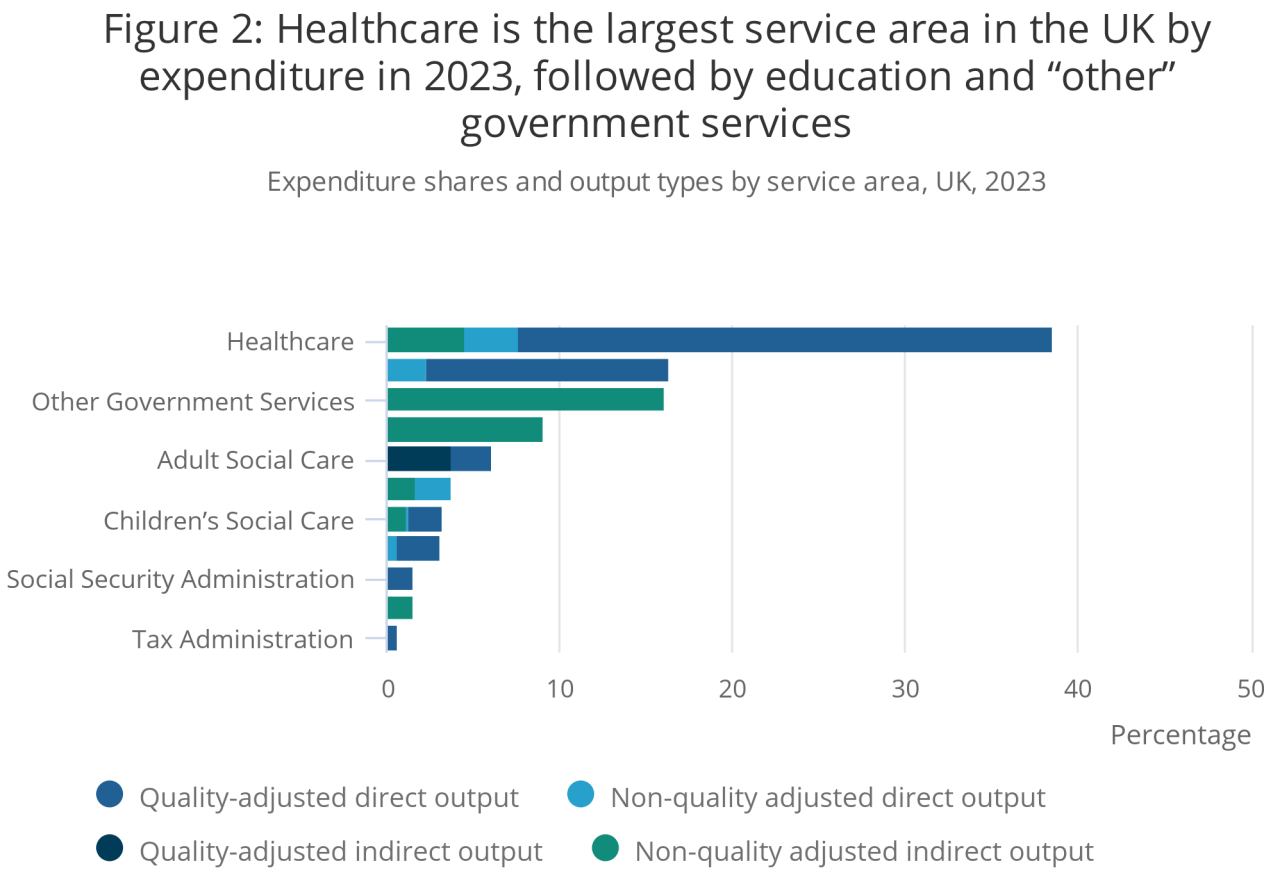
Total public service output and inputs are calculated by aggregating output and inputs of the 11 service areas based on their expenditure shares, as outlined in our Sources and methods for public service productivity estimates methodology, which will be updated shortly after this article is published. A higher expenditure share equates to that service area having a larger contribution towards the estimation of the statistics. The three largest expenditure shares in 2023 were:

- healthcare (38.6%)
- education (16.3%)
- "other" government services, which comprises general government services, economic affairs, environmental protection, housing, recreation, and other public order and safety services (these are not currently subject to direct output measurement or quality adjustment) (16.1%)

As recommended by the Public Services Productivity Review, we are working to disaggregate the "other" grouping into categories that better represent specific public services.

Figure 2: Healthcare is the largest service area in the UK by expenditure in 2023, followed by education and “other” government services

Expenditure shares and output types by service area, UK, 2023



Source: Public service productivity from the Office for National Statistics

Notes:

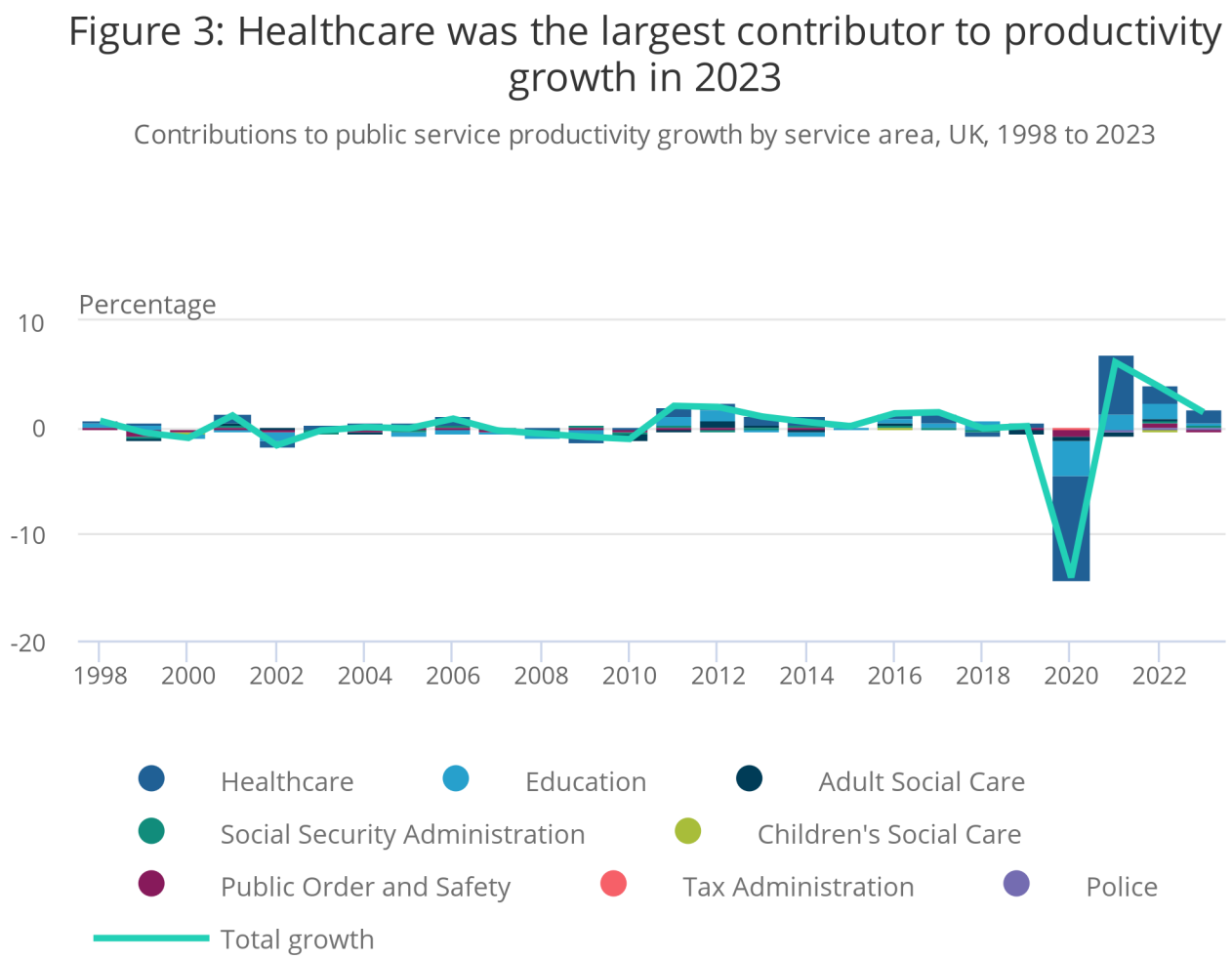
1. Percentage share of components may not sum to 100 or service area totals because of rounding.
2. "Direct" means output is measured using activity indicators (for example, enrolment figures in schools, or number of GP consultations). "Indirect" means output is measured following the "output-equals-inputs" convention.
3. Immigration and citizenship, police, social security administration and tax administration are official statistics in development.

In 2023, 61.9% of total public service output was directly measured, higher than the reported share in last year’s publication, when it was 60.0% for 2022 estimates. For the first time, police, and immigration and citizenship are measured independently and make up 3.8% and 1.5% of total public service expenditure, respectively. See Section 7: Police and Section 13: Immigration and citizenship for more information.

Figure 3 shows the contributions of directly measured service areas towards productivity growth, which are weighted by their relative expenditure shares. Typically, healthcare and education are the largest contributors to productivity growth because of their relative weights.

Figure 3: Healthcare was the largest contributor to productivity growth in 2023

Contributions to public service productivity growth by service area, UK, 1998 to 2023



Source: Public service productivity from the Office for National Statistics

Notes:

1. Immigration, defence, and other government services are all measured using an "inputs equals outputs" approach.

4 . Healthcare

UK healthcare, calendar year 2023

Healthcare is the largest service area included in public service productivity estimates, accounting for the highest share of expenditure in 2023 (38.6% of total public service provision). The UK healthcare productivity estimates have been based on output growth in England, Wales and Scotland only since 2020, because data have not been available to calculate output volumes for Northern Ireland. However, given Northern Ireland accounts for a small proportion of the UK total (around 3.0% in 2019), this is not expected to have skewed the resulting aggregate measures.

Healthcare productivity in the UK increased by 2.8% in 2023, as output grew more strongly than inputs (3.0% and 0.2%, respectively). The increase in productivity is the fourth largest since the series began in 1997. It follows two consecutive years of high growth (13.0% in 2021 and 4.1% in 2022, respectively) after COVID-19.

Although healthcare productivity has increased in consecutive years since 2021, it remains around 7.7% below 2019 levels, following a record fall of 23.7% in 2020 because of the COVID-19 pandemic.

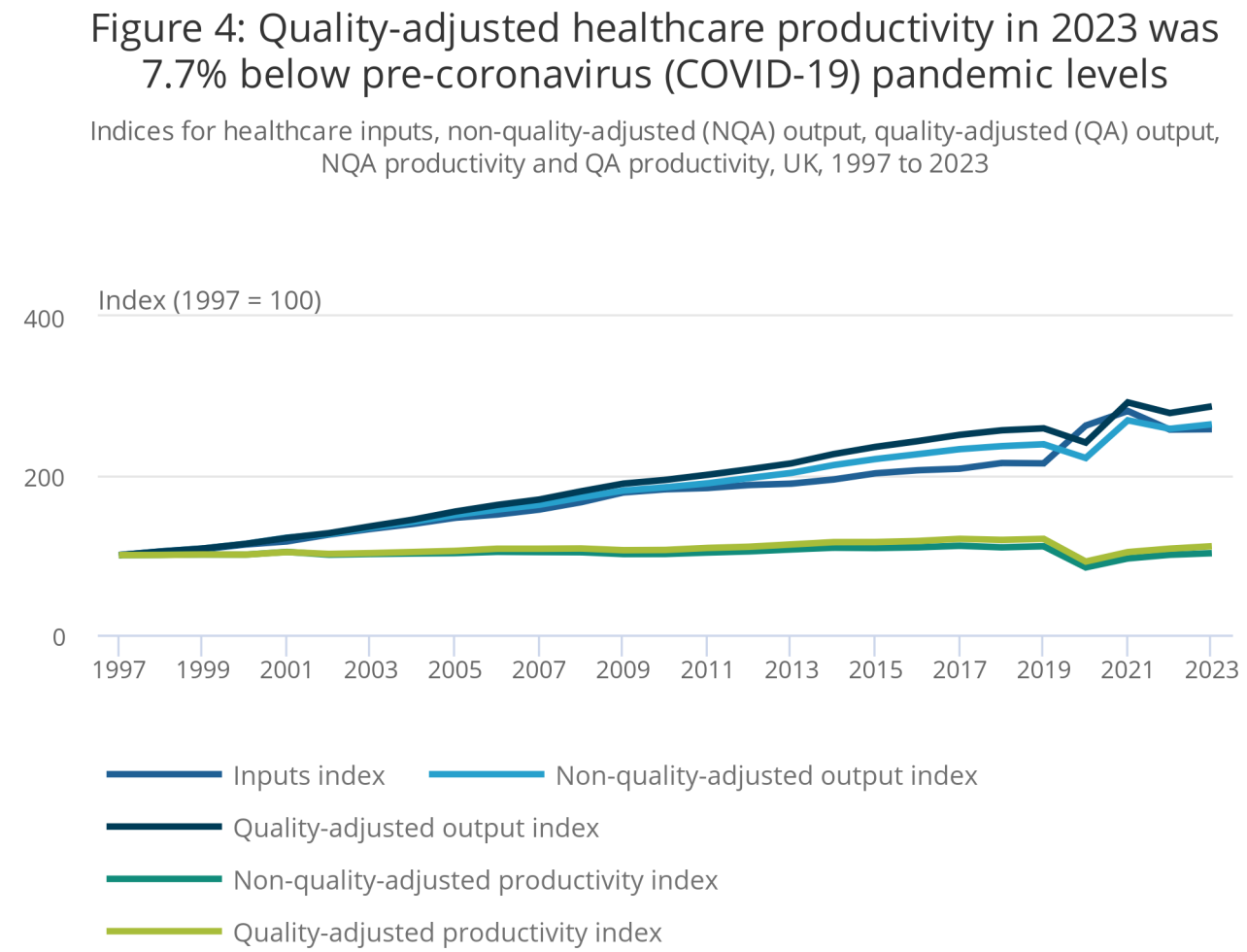
The 0.2% growth in healthcare inputs in 2023 is small compared with the average annual inputs growth of 3.6% between 1997 to 2019. One of the main causes of this is the reduction in expenditure and activities for test, trace and vaccinations related to the COVID-19 pandemic. The small increase in inputs follows only the second fall across the time series in 2022, where inputs fell by 8.3%. The rise in inputs in 2023 is largely attributed to labour growth through increases in staff full-time equivalents.

The 3.0% increase in quality-adjusted output in 2023 is similar to the average annual output growth of 3.2% in the decade to 2019. However, this follows a 4.6% fall in quality-adjusted output in 2022, demonstrating strong recovery to the UK healthcare output in 2023. The main cause of the rise in output in 2023 is largely attributed to growth in the output in hospital and community health services.

Non-quality-adjusted healthcare productivity increased by 2.0% in 2023, while the quality adjustment increased productivity growth by a further 0.8 percentage points, the highest quality adjustment effect since 2006. This is caused by growth in the hospital procedures quality adjustment, which accounts for factors such as postoperative survival and waiting times. It is also supported by a rise in GP patient satisfaction scores, suggesting that quality has improved across different areas of health services. However, Patient Reported Outcome Measures (PROMs), which are used as a component in our elective and non-elective care quality adjustments to identify the estimated change in health outcomes following hospital treatment, were not available this year. In addition, private patient data were also excluded from the quality adjustment for the first time this year. Therefore, comparisons with previous years need to be interpreted with caution.

Figure 4: Quality-adjusted healthcare productivity in 2023 was 7.7% below pre-coronavirus (COVID-19) pandemic levels

Indices for healthcare inputs, non-quality-adjusted (NQA) output, quality-adjusted (QA) output, NQA productivity and QA productivity, UK, 1997 to 2023



Source: Public service productivity from the Office for National Statistics

Notes:

1. The UK estimates for 2020 to 2023 are based on England, Wales and Scotland only, because data are not available for Northern Ireland.

Healthcare in England, financial year ending 2024

Since last year, this article also contains healthcare estimates for England on a financial year basis ending 2024 alongside an accompanying dataset. Because of different coverage and time periods, UK calendar year (January to December) figures cannot be directly compared with the healthcare productivity estimates for England covering the financial year (April to March). Nevertheless, the England financial year figures provide insight into what is contributing to the trends in the UK calendar year figures. This is because England accounts for 86.5% of the UK total and there is a large overlap between the time periods.

Healthcare productivity in England increased by 1.5% in the financial year ending (FYE) 2024. This increase in productivity was a result of both output and inputs increasing, with output seeing a larger rise than inputs (4.7% and 3.2%, respectively). Healthcare productivity for England in FYE 2024 was still around 3.9% below pre-coronavirus (COVID-19) pandemic levels, despite having three consecutive financial years of growth since FYE 2022.

The main contributor of the increase in healthcare inputs in England in FYE 2024 was a 5.3% increase in labour, which accounts for more than four-fifths of inputs growth in this financial year. A rise in expenditure for nurses and health visitors was the main factor in this increase, while an increase in scientific, technical and hospital support staff also made a substantial impact. There was also a substantial increase in capital inputs in England FYE 2024 with a growth rate of 3.6%, the highest capital growth since FYE 2011.

Non-quality-adjusted output grew by 4.0% between FYE 2023 and FYE 2024. Hospital and community health services account for the vast majority of the overall output total with a 66.8% share and a growth rate of 4.5%. Both non-NHS provision and community prescribing also made a substantial impact on the non-quality-adjusted output growth with growth rates of 9.0% and 6.8%, respectively.

The quality-adjusted output growth increased by 4.7% in England FYE 2024, therefore the quality adjustment increased output growth by 0.7 percentage points. As mentioned in the previous UK subsection, this is caused by growth in the hospital procedures quality adjustment, which accounts for factors such as post-operative survival and waiting times, along with a rise in the GP patient satisfaction scores. As also mentioned in the UK subsection, PROMS, which are used as a component in our elective and non-elective care quality adjustments to identify the estimated change in health outcomes following hospital treatment, were not available this year. In addition, private patient data were also excluded from the quality adjustment for the first time this year. Therefore, comparisons with previous years need to be interpreted with caution.

5 . Education

Education is the second largest service area by expenditure share in 2023 (16.3% of public service spending). Education covers activities and outcomes in schools from pre-primary up to the further education phase (by age 19 years).

Education productivity rose by 1.9% in 2023 because of a rise of 2.9% in output and 0.9% in inputs. Excluding quality adjustments, education productivity rose by 0.5%, reflecting a rise of 1.4% in non-quality-adjusted output.

Education productivity in 2023 remains around 4.4% below pre-coronavirus (COVID-19) pandemic levels in 2019. Looking at non-quality-adjusted productivity, while this is also lower (by 1.6%) than the pre-coronavirus (COVID-19) pandemic levels in 2019, the gap to the pre-pandemic level is smaller than for the quality-adjusted measure. This highlights the importance of quality adjustment on education metrics.

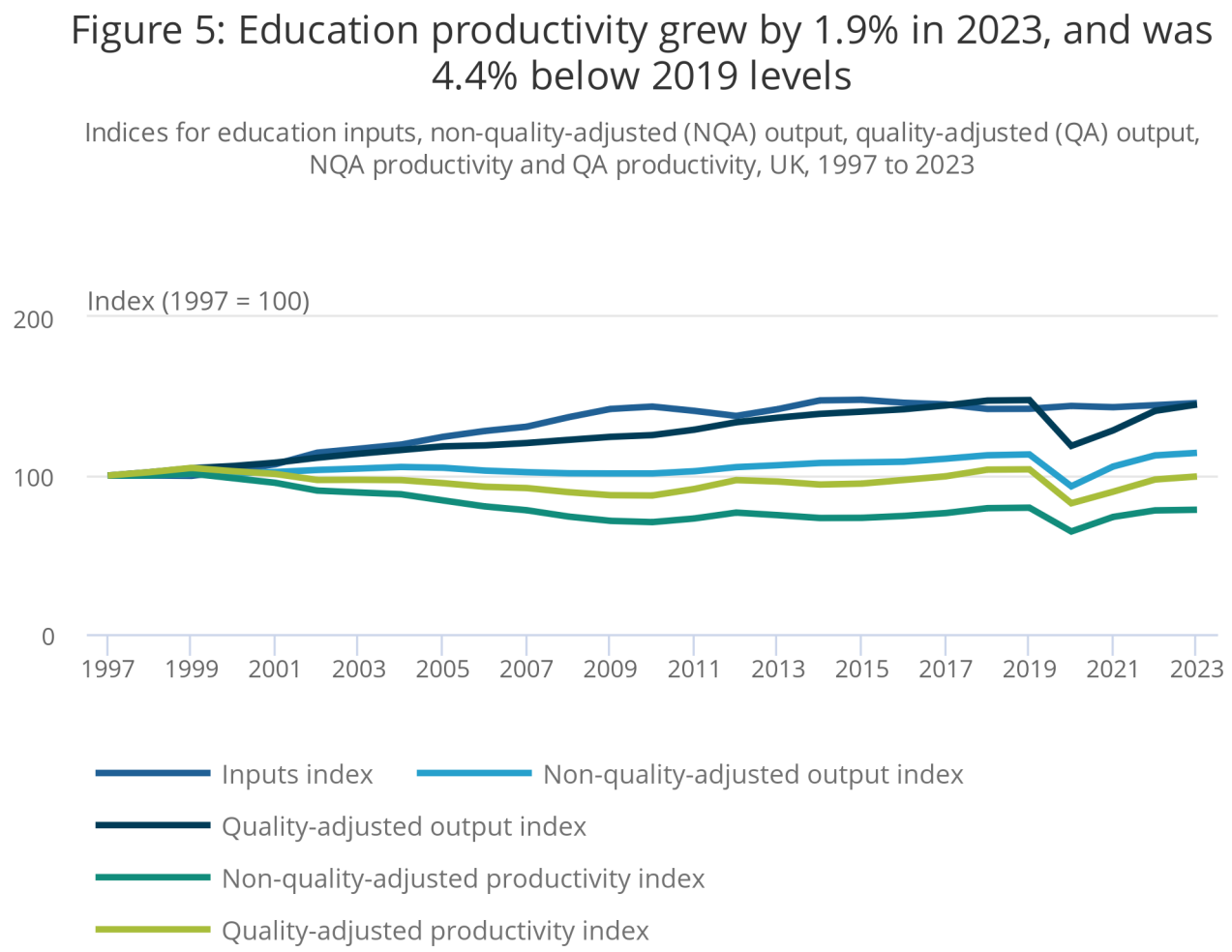
Following 2021 and 2022 (which was the recovery period from the coronavirus (COVID-19) pandemic), non-quality-adjusted output growth in 2023 was similar to average growth observed in the 10 years leading up to 2019. These changes mark a return to pre-coronavirus (COVID-19) pandemic levels in 2023 (0.9% above 2019 levels).

When considering quality adjustment and outcomes, growth in quality-adjusted output and productivity was the result of improvements in attainment. However, overall attainment trends have not returned to pre-coronavirus (COVID-19) pandemic levels. In addition, student well-being declined. As a result, quality-adjusted output for education in 2023 is 1.9% below pre-coronavirus (COVID-19) pandemic levels in 2019, meaning educational outcomes have not fully recovered.

Education faced unprecedented and widespread disruption during the coronavirus (COVID-19) pandemic, which had a substantial impact on the availability of attainment data, and the typical assumptions that would be applied when quality adjusting for attainment did not hold during this period. To account for the effects of the pandemic, we have adjusted methodological parameters, incorporating available data where appropriate. These adjustments have also affected the 2023 estimates, such as using the National Reference Test as a proxy for attainment when conventional data are not available. There remains a degree of uncertainty around the estimates following the coronavirus (COVID-19) pandemic, therefore these need to be interpreted with caution.

Figure 5: Education productivity grew by 1.9% in 2023, and was 4.4% below 2019 levels

Indices for education inputs, non-quality-adjusted (NQA) output, quality-adjusted (QA) output, NQA productivity and QA productivity, UK, 1997 to 2023



Source: Public service productivity from the Office for National Statistics

Notes:

1. The student well-being measure is introduced into quality adjustment from 2003.
2. The further education attainment measure for England is introduced into quality adjustment from 2004.
3. The Key Stage 2 disadvantaged attainment gap measure for England is introduced into quality adjustment from 2011.
4. The education attainment measure for primary and secondary schools is introduced into quality adjustment since the beginning of the series in 1997.

6 . Adult social care

Adult social care (ASC) refers to care and support provided to:

- older people
- adults with learning or physical disabilities
- adults with mental health problems
- drug and alcohol misusers
- carers

ASC is the fifth largest service area according to expenditure shares in 2023, accounting for 6.0% of public service spending. The current ASC estimates will be the last to be informed by the short-and-long-term (SALT) collections with future releases guided by the Adult Social Care Client-Level-Data (CLD).

Given changes in the data sources, we are currently reviewing the methodology used to produce ASC UK estimates. As such, the 2023 estimates have been amended such that inputs growth has been aligned to non-quality-adjusted output growth. Non-quality-adjusted output grew by 3.7% in 2023, and in accordance with the adjustment we have applied, inputs also grew by 3.7%. Quality-adjusted output grew by 4.5%. Quality adjustment (based on adjusted social care-related quality of life measures within the adult social care outcomes framework) contributed 0.7% to output, which is the highest contribution since 2016. Both community care and residential and nursing care users reported increases in client-care related quality of life in 2023. On this basis, ASC productivity grew by 0.7% in 2023, however as noted, this should be treated with caution.

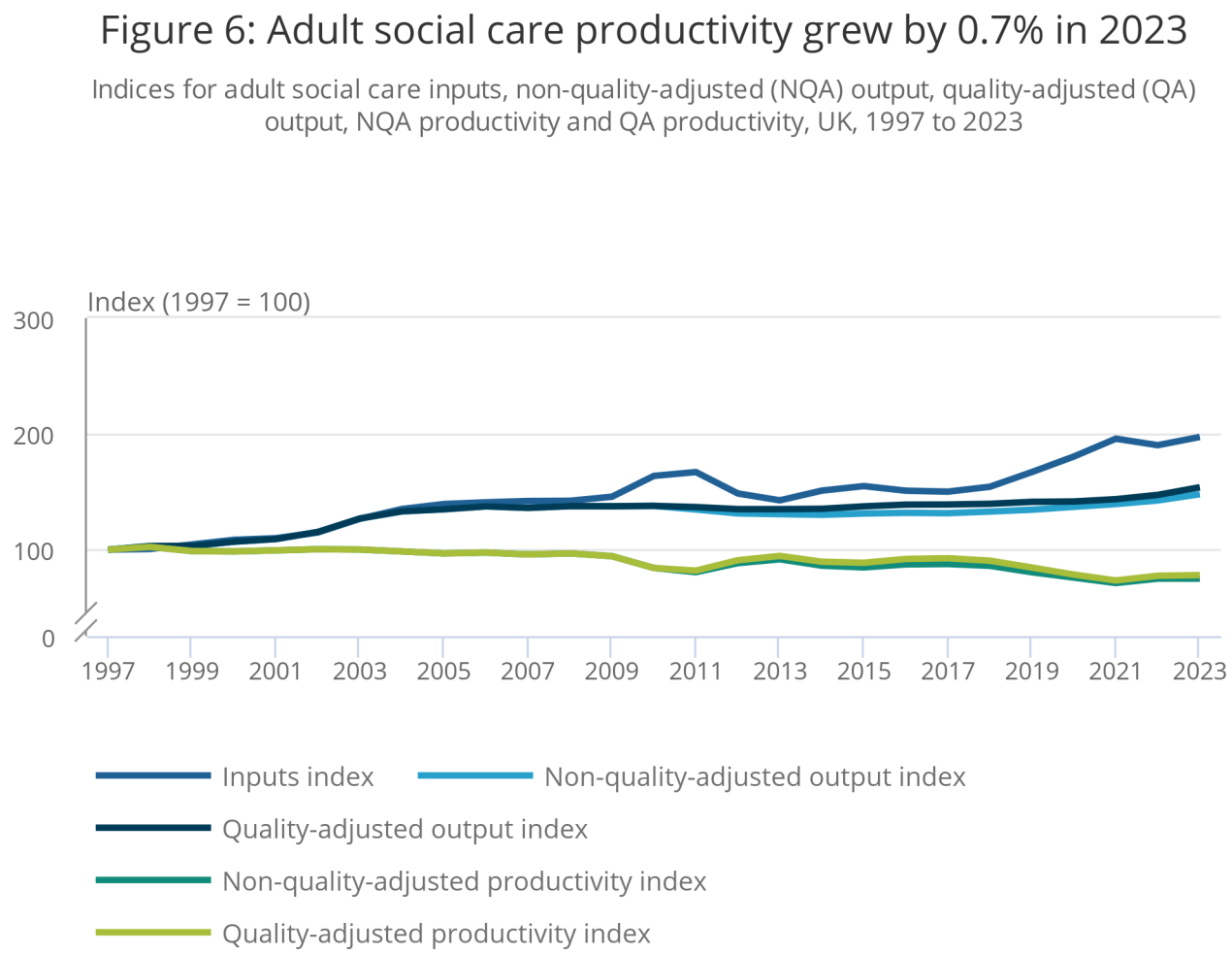
For the upcoming year, ASC was already deemed a priority for further improvements because of new source data (please see future developments section of our Impact of improved methods on total public service productivity: 1997 to 2022 article).

We continue to publish estimates for adult social care productivity for England only, where a consistent expenditure data source is used for both inputs and output. This measure indicates a productivity change of 0.1% in financial year ending 2024, as a result of inputs growth of 4.9% and output growth of 5.0% (please refer to our Public service productivity, adult social care, England: financial year ending 2024 dataset for more information).

Coronavirus-related spending in ASC, such as covering personal protective equipment and hospital discharges. The "commissioning and service delivery" spend, which included coronavirus-related grant support, was removed from output. However, coronavirus-related expenditure may have also filtered through to other cost areas. Please refer to our Public service productivity, adult social care, England: financial year ending 2021 article for more information. As such, the ASC output and productivity estimates need to be interpreted with caution around the years affected by the coronavirus pandemic.

Figure 6: Adult social care productivity grew by 0.7% in 2023

Indices for adult social care inputs, non-quality-adjusted (NQA) output, quality-adjusted (QA) output, NQA productivity and QA productivity, UK, 1997 to 2023



Source: Public service productivity from the Office for National Statistics

Notes:

1. Quality adjustment is introduced from 2010.

2. For 2023, adult social care (ASC) has reverted to an “inputs equals outputs” approach with quality adjustments included because of concerns that have arisen in underlying data sources and the methodology.

7 . Police

Police accounted for 3.8% of total public service productivity by expenditure share in 2023 and covers the period 2013 to 2023. Data for police are published as official statistics in development.

This article also presents police estimates separately from immigration and citizenship for the first time (see our Impact of improved methods article for further detail). The police service area includes operational policing activities, such as crime investigation, crime prevention, and public safety and welfare, as well as central government functions.

Improvements introduced following our Public Service Productivity Review also mean that police productivity growth can be estimated from 2019 onwards for the first time, following the development of an output index. In 2023, 55.1% of police output was directly measured, with the remainder indirectly measured. The directly measured component of output is introduced from 2018 onwards and covers crime investigation and two public safety and welfare activities (missing persons and road traffic collision involving death or serious injury) for England and Wales. Owing to difficulties in measuring other areas of policing and limits in available data, the remaining output continues to follow the "inputs equals outputs" convention. All estimates are currently non-quality-adjusted. We are undertaking work to investigate the possibility of introducing quality adjustment to police output in the future.

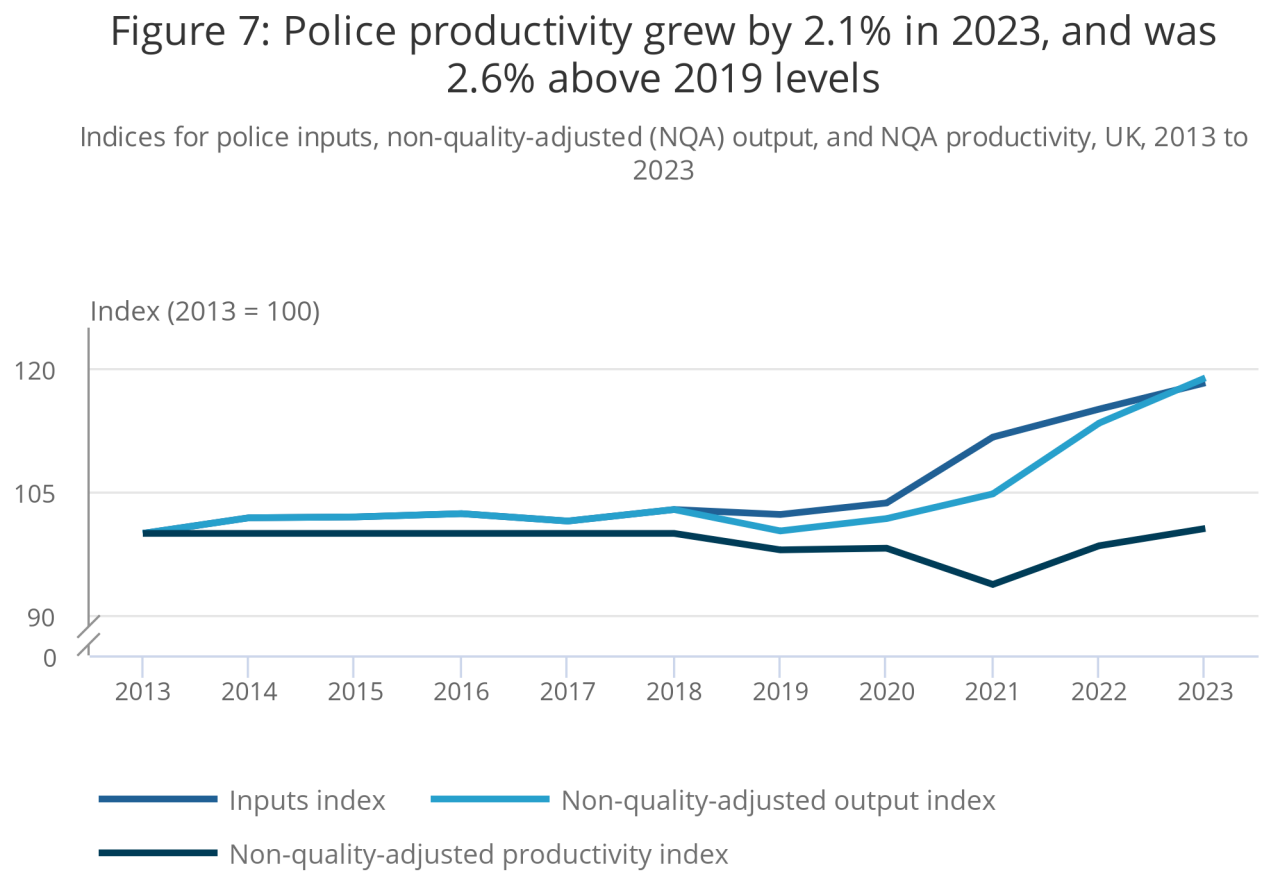
Police productivity grew by 2.1% in 2023, reflecting a greater rise in output than inputs. Police productivity continued its upwards trend in 2023 and was 2.6% above pre-coronavirus (COVID-19) pandemic levels in 2019. A dip in 2021 reflected a greater rise in inputs than output.

Police inputs in 2023 grew by 2.8%. The growth in 2023 is caused by increases in the volume of labour and goods and services purchased, probably resulting in part from the police uplift programme.

Output grew by 4.9% in 2023 and is mainly caused by an increase in crime investigation activity, with police forces closing a higher volume of criminal cases over the year.

Figure 7: Police productivity grew by 2.1% in 2023, and was 2.6% above 2019 levels

Indices for police inputs, non-quality-adjusted (NQA) output, and NQA productivity, UK, 2013 to 2023



Source: Public service productivity from the Office for National Statistics

Notes:

1. Direct measures of output include data for England and Wales only, because data are not available for Scotland and Northern Ireland.

8 . Public order and safety

The public order and safety (POS) service area (excluding police and immigration services) accounted for 3.1% of total public service expenditure in 2023 and includes:

- law courts
- prisons
- probation
- fire and rescue services

POS productivity fell by 9.1% in 2023 and it was the largest decrease outside the pandemic years since 1999. This is largely caused by rising inputs and a substantial decline in quality adjustments.

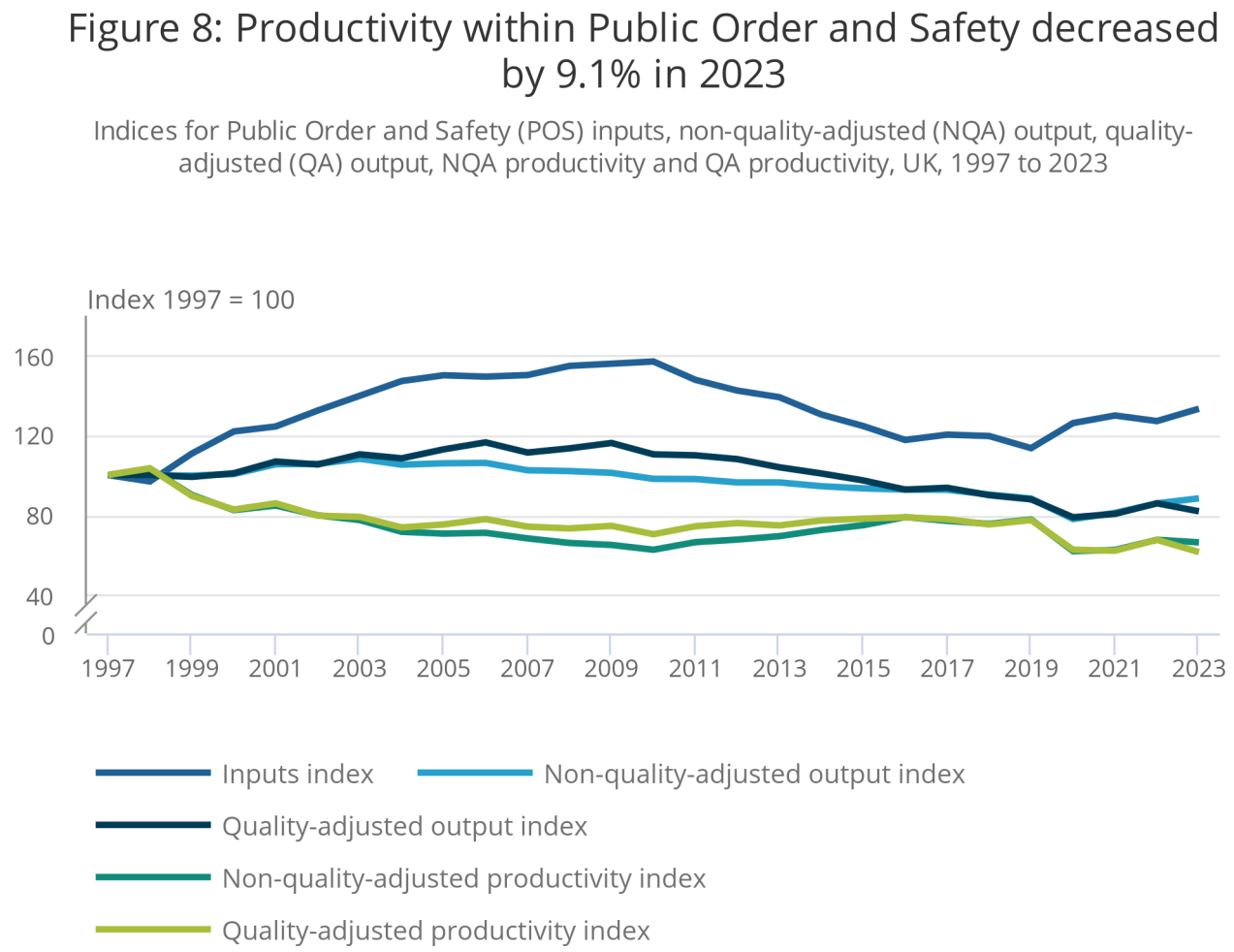
Total inputs increased by 4.9% in 2023, mainly because of a rise in intermediate consumption (reflecting greater spend on digital platform investment and contracted services) and labour inputs, consistent with spend set out in the HMCIP Annual Report. Capital consumption also grew, aligned with ongoing modernisation spending.

Non-quality-adjusted output rose by 2.9% in 2023, the third consecutive year of growth, mainly caused by courts activity and prisons, where caseload and population pressures remained high.

Quality-adjusted output fell by 4.7% in 2023, which was mainly the result of quality adjustments. Court timeliness declined in 2023, reflecting the impact of large backlogs (Performance Tracker 2023: Criminal courts). Re-offending indicators worsened because of a rise in proven reoffences, average reoffences per offender, and a shift towards more prolific offenders (Proven reoffending statistics). Prison safety indicators also worsened as selfharm incidents and serious assaults increased, reflecting pressures from overcrowding, inexperienced staffing and higher remand populations (HMPPS Annual Digest 2023/24).

Figure 8: Productivity within Public Order and Safety decreased by 9.1% in 2023

Indices for Public Order and Safety (POS) inputs, non-quality-adjusted (NQA) output, quality-adjusted (QA) output, NQA productivity and QA productivity, UK, 1997 to 2023



Source: Public service productivity from the Office for National Statistics

Notes:

1. The re-offending measure is introduced into the quality adjustment from 2000.
2. The timeliness measure is introduced into the quality adjustment for magistrate's courts from 2011 and for the Crown Court from 2014.
3. The prison measures are introduced into quality adjustment from the beginning of the series (1997).

9 . Children’s social care

Children's social care (CSC) makes up 3.2% of total public service productivity by expenditure share. In 2023, 62.5% of CSC output was directly measured. Children's social care covers a range of services, including the provision of social work, and protection or social support services to children in need or at risk. Children's social care includes both direct and indirect output. Since the financial year ending 2015, direct measurements have been available for services including safeguarding, non-secure accommodation, secure accommodation, adoptions, and care leavers. See our Sources and methods for public service productivity estimates methodology for full details.

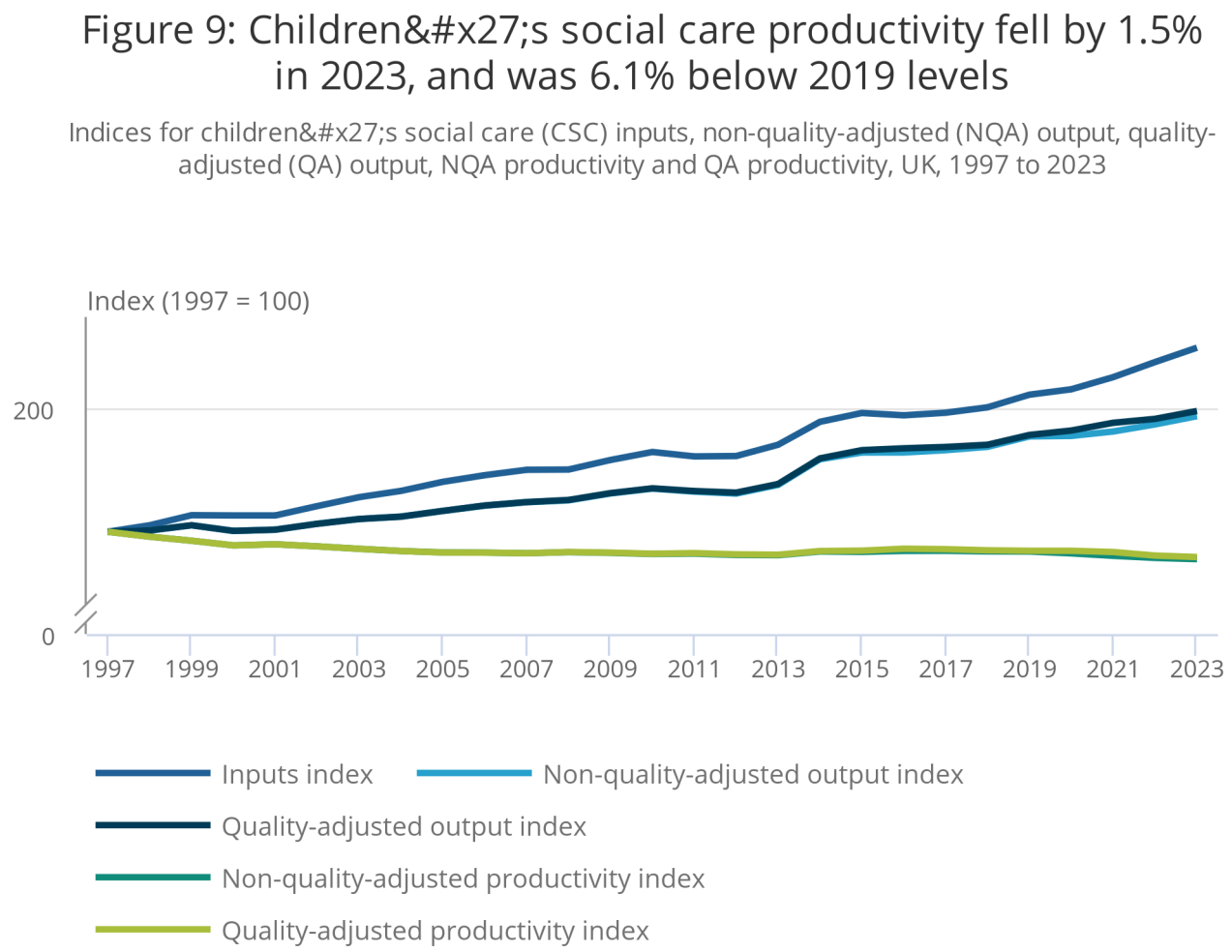
CSC productivity fell by 1.5% in 2023, and was 6.1% below pre-coronavirus (COVID-19) pandemic levels in 2019. The productivity decline in 2023 resulted from inputs growing more than output. Inputs grew by 4.9% compared with the previous year, while output grew by 3.4%. This year, a number of revisions to the inputs were seen because of the addition of new data sources included for the first time, feeding into indirect output, and leading to an increase in output. Increases in the cost of provision for looked after children, owing to a rise in residential care (versus fostering) is likely to have had an impact on the increase in inputs over time.

CSC output grew in 2023 because of a growth in both direct and indirect output. The increase in direct output is influenced primarily by an increase in the amount of looked after care provided.

While indicators measuring the quality of service (such as placement stability, adoption timelines, and duration of care episodes) typically add to output growth, they had minimal impact in 2023 (quality-adjusted output growth of 3.4% versus non-quality-adjusted output growth of 3.5%).

Figure 9: Children's social care productivity fell by 1.5% in 2023, and was 6.1% below 2019 levels

Indices for children's social care (CSC) inputs, non-quality-adjusted (NQA) output, quality-adjusted (QA) output, NQA productivity and QA productivity, UK, 1997 to 2023



Source: Public service productivity from the Office for National Statistics

Notes:

1. Quality adjustments are applied at the country-activity level, with different starting years for each country and activity.

2. For England, quality adjustments began in 2010 for safeguarding, in 2011 for non-secure accommodation and for secure accommodation, and in 2014 for care leavers.

3. In Wales, quality adjustments for safeguarding started in 2010, based on England's quality index. Adjustments for non-secure and secure accommodation began in 2004.

4. For Scotland and Northern Ireland, secure and non-secure accommodation are based on England's quality indices, starting from 2011.

10 . Social security administration

Social security administration (SSA) makes up 1.5% of total public service productivity by expenditure share. Following the improvements introduced in the Public Service Productivity Review to account for Universal Credit in output, further improvements have now been made with the inclusion of HM Revenue and Customs (HMRC) benefits, which include Tax Credits and Child Benefit. More information on these changes can be found in our Impact of improved methods on total public service productivity: 1997 to 2022 article. These are official statistics in development.

SSA productivity grew by 10.6% in 2023, reflecting a fall of 7.4% in inputs and a rise of 2.4% in output. SSA productivity has continued its upward trend in 2023, showing average annual growth of 3.9% since 2018, and is 18.1% above pre-coronavirus (COVID-19) pandemic levels in 2019.

SSA inputs in 2023 saw the largest annual fall since 2017, when it fell by 9.5%. The fall in 2023 is the result of reductions in the volume of labour and goods and services purchased, probably resulting from lower retention of temporary staff.

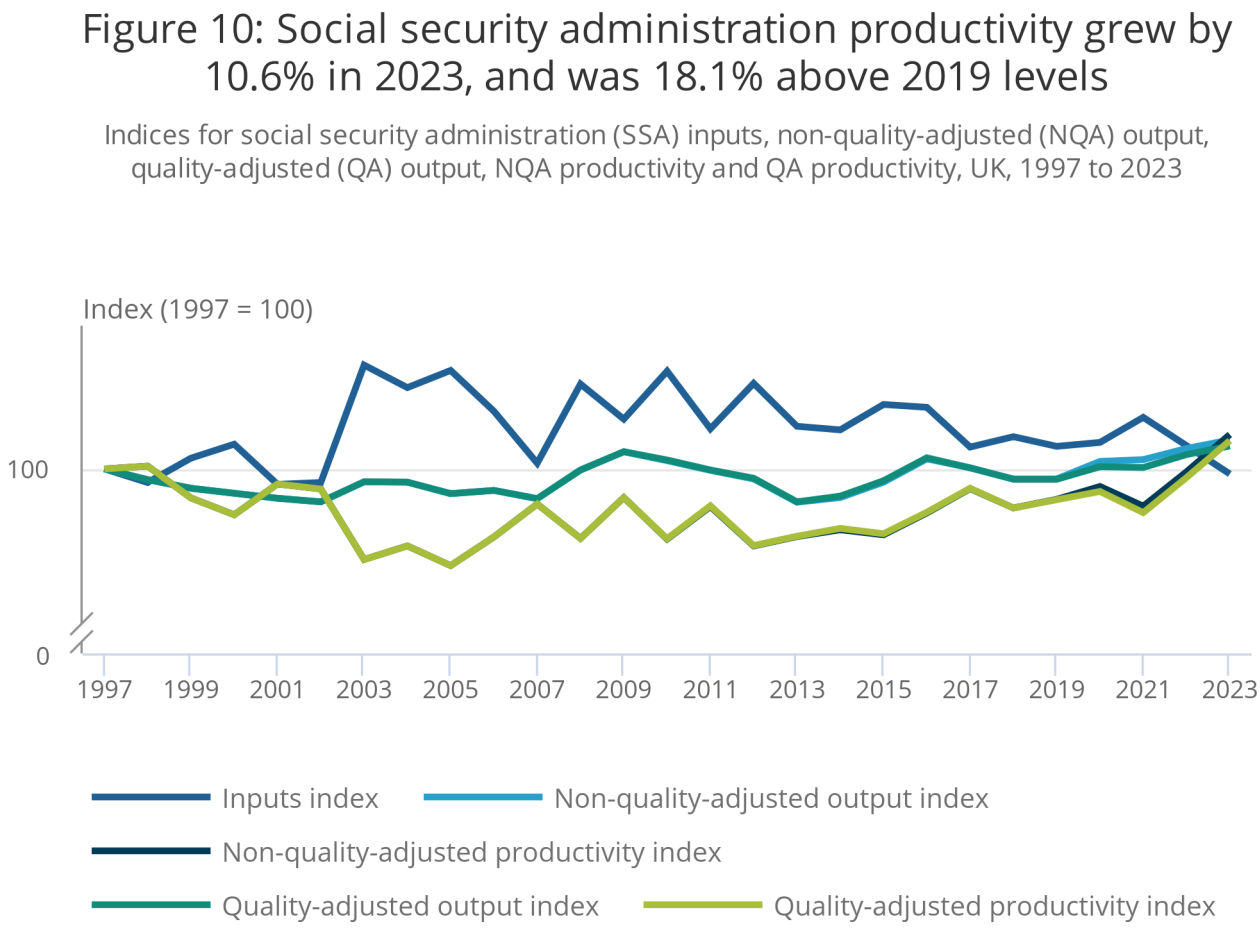
Non-quality-adjusted output growth in 2023 was predominantly caused by growing activity in Universal Credit, largely because of transfers from legacy benefits.

Quality adjustments contributed 0.1 percentage points to output growth in 2023, because of fraud and error rates for benefits administered by the Department for Work and Pensions (DWP) improving in 2023. There are also small revisions to the quality-adjusted series. Underpayments, caused by claimant error, are no longer classified as fraud and error statistics, and this change has caused the revisions. More information can be found in Fraud and error in the benefit system, Financial Year Ending (FYE) 2024.

The recent developments on SSA have caused substantial revisions to output and productivity estimations, and more information on these changes can be found in our Impact of improved methods on total public service productivity: 1997 to 2022 article.

Figure 10: Social security administration productivity grew by 10.6% in 2023, and was 18.1% above 2019 levels

Indices for social security administration (SSA) inputs, non-quality-adjusted (NQA) output, quality-adjusted (QA) output, NQA productivity and QA productivity, UK, 1997 to 2023



Source: Public service productivity from the Office for National Statistics

Notes:

1. The DWP Fraud and Error quality adjustment is introduced from 2008 onwards.
2. These estimates areofficial statistics in development.

11 . Tax administration

Quality-adjusted productivity estimates for tax administration are published for the first time in this article, following the introduction of output measures last year. This quality adjustment is based on the HM Revenue and Customs (HMRC) tax gap, as recommended in the Public Service Productivity Review (Recommendation 97). The measure currently covers the period 2018 to 2023 and accounts for 0.7% of total public service productivity by expenditure share. These are official statistics in development.

The tax administration service area covers inputs and output for taxes administered by HMRC only, excluding customs. Locally administered taxes (such as Council Tax and business rates), and taxes collected by devolved governments are currently not included. The number of taxpayers (or registered traders or operators) for each tax form the basis of the directly measured component of output, which accounts for 89% of tax administration expenditure. The remainder is measured on the "inputs equals outputs" convention.

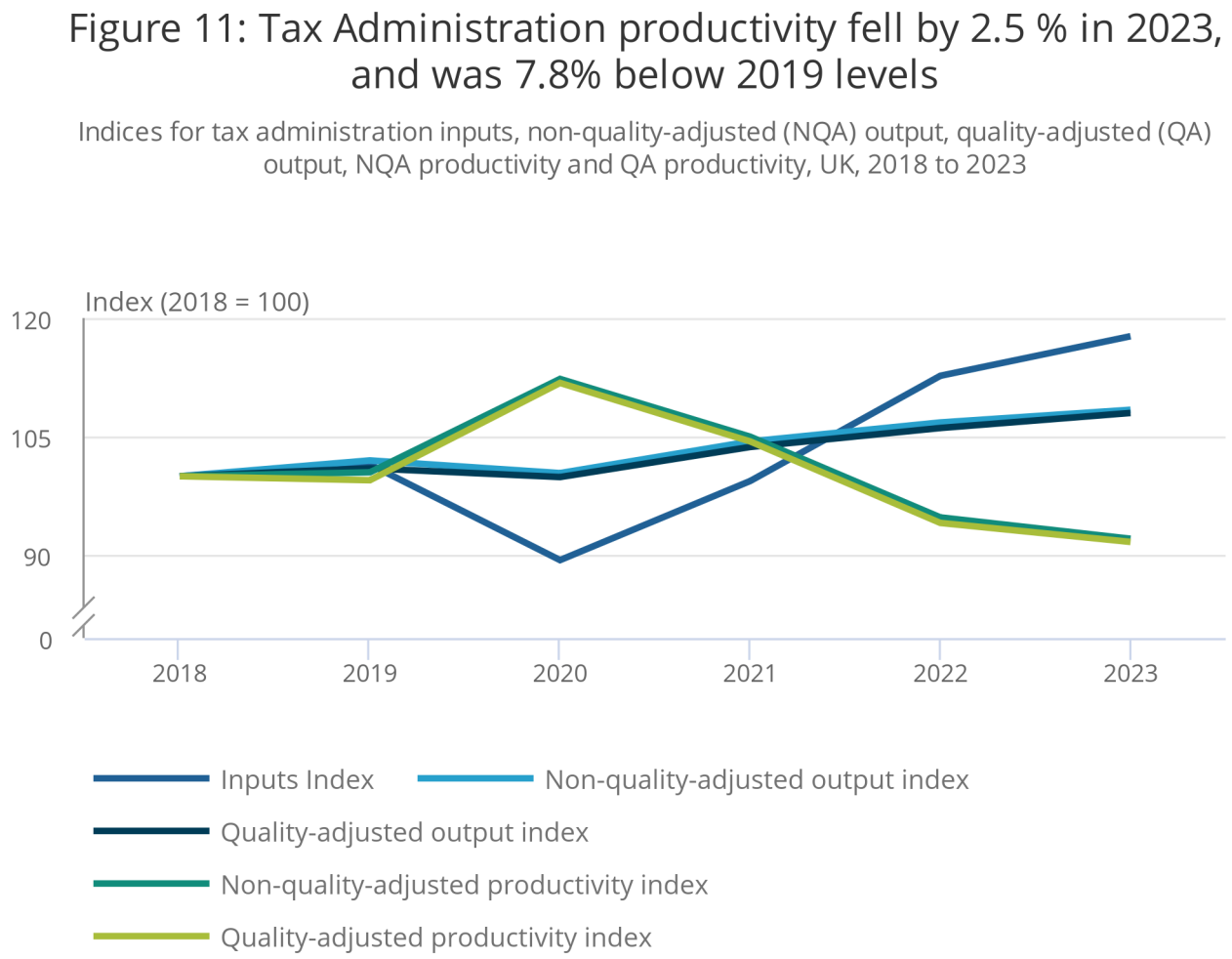
Tax administration productivity fell by 2.5% in 2023. This is reflected by a rise of 4.5% in inputs being greater than a rise of 1.8% in output. Excluding quality adjustments, productivity fell by 2.8% because of a lower rise of 1.5% in output. This is the third consecutive year in which tax administration productivity has fallen, leaving this service area 7.8% below pre-coronavirus (COVID-19) pandemic levels in 2019.

The rate of tax administration inputs growth has slowed down compared with 2021 and 2022. In those years, changes in tax administration productivity were largely caused by inputs. Inputs fell 12.0% in 2020 as resources were diverted to coronavirus (COVID-19) support, before increasing by 11.2% and 13.4% in 2021 and 2022, respectively.

For more information on the addition of the tax gap quality adjustment, and the impact of the methodological changes that have been made as a result of the Public Service Productivity Review, see our Impact of improved methods on total public service productivity: 1997 to 2022 article.

Figure 11: Tax Administration productivity fell by 2.5 % in 2023, and was 7.8% below 2019 levels

Indices for tax administration inputs, non-quality-adjusted (NQA) output, quality-adjusted (QA) output, NQA productivity and QA productivity, UK, 2018 to 2023



Source: Public service productivity from the Office for National Statistics

Notes:

1. This is the first year we have applied a quality adjustment to the index.
2. The quality adjustment has been back casted to 2018.
3. These estimates are official statistics in development.
4. Tax administration and therefore, productivity are revenue-adjusted.

12 . Defence

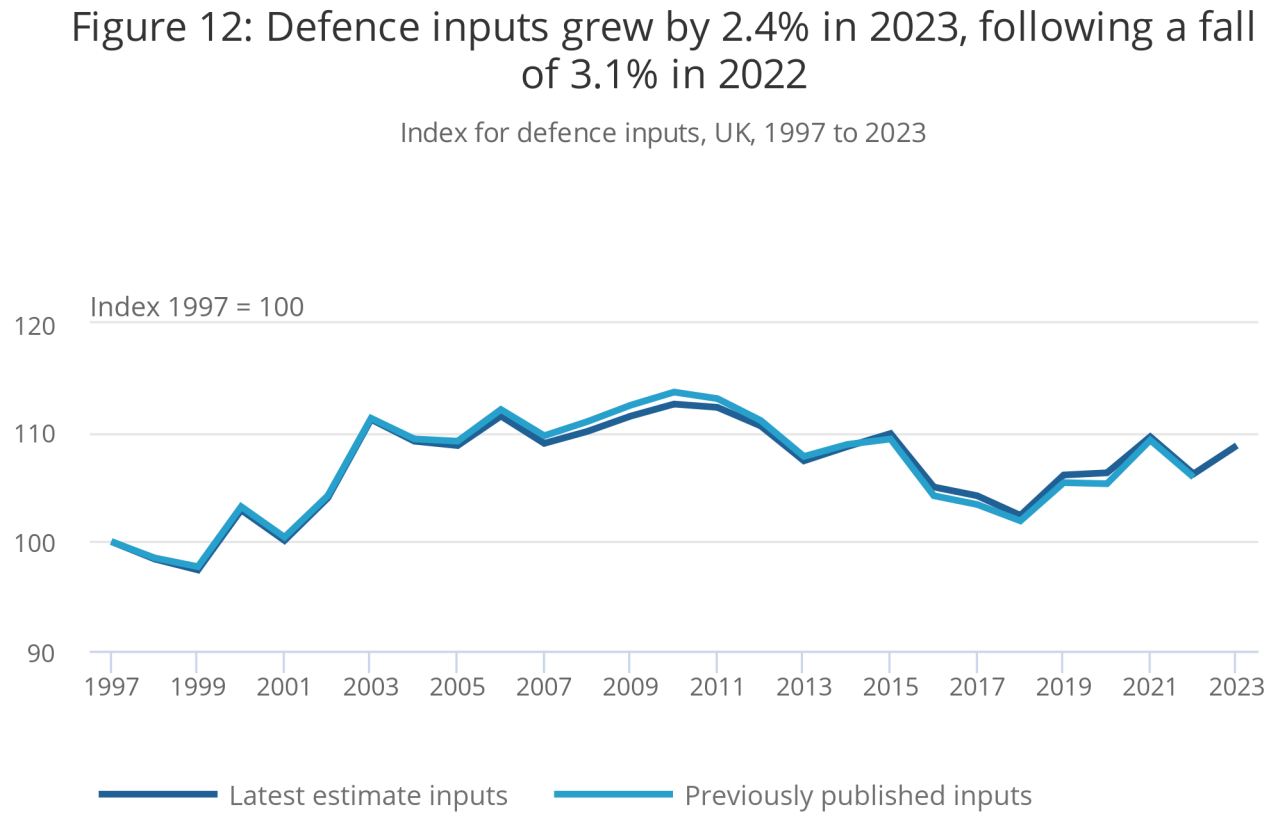
Defence is the fourth largest service area accounting for 9.1% of total public service provision. Defence output is indirectly measured because of difficulties in identifying and measuring the collective nature of services delivered. The Office for National Statistics (ONS) therefore applies the"inputs equals outputs" convention. This means that productivity growth is zero.

Defence inputs increased by 2.4% in 2023, following a 3.0% fall in 2022, and marks the third strongest growth in inputs since 2010. Inputs growth was mainly caused by increases in intermediate consumption and capital, reflecting higher spend towards equipment, munitions and infrastructure, as set out in the Ministry of Defence annual report and accounts 2023 to 2024.

Labour inputs saw the largest decline since 2016, consistent with continued reductions in Armed Forces personnel and workforce levels. Overall, revisions to defence inputs mainly reflect updated capital stocks estimates from the Blue Book 2025 and corresponding deflators.

Figure 12: Defence inputs grew by 2.4% in 2023, following a fall of 3.1% in 2022

Index for defence inputs, UK, 1997 to 2023



Source: Public service productivity from the Office for National Statistics

13 . Immigration and citizenship

Immigration and citizenship is one of the smallest service areas (10th out of 11 in expenditure share, representing 1.5% of total public service productivity). Data for this service cover the period 2013 to 2023, and are published as official statistics in development.

For the first time, immigration and citizenship estimates are presented separately from police estimates (see our Impact of improved methods article for further detail). Immigration and citizenship encompass a broad range of core service areas:

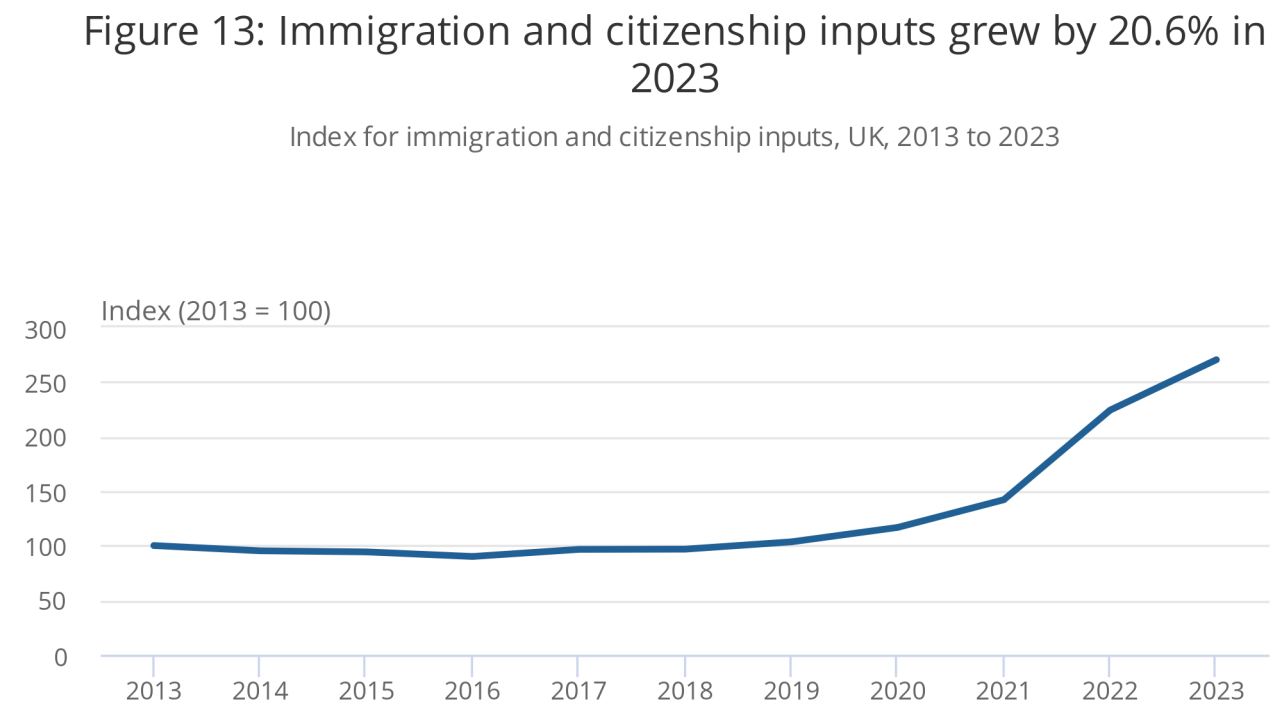
- His Majesty's Passport Office issues passports, maintains identity security, and oversees the General Register Office
- UK Visas and Immigration is responsible for visa applications, citizenship processes, and permissions for people wishing to visit, work, study or settle in the UK
- asylum and protection services assess claims from individuals seeking refuge
- Border Force manages customs and immigration checks to secure the UK border
- Immigration Enforcement works to address illegal migration and support compliance with immigration rules

Output for this service area is currently measured indirectly (that is, output is the value of inputs), reflecting the complexity of multiple immigration and citizenship services and limitations in available activity data. As a result, the "inputs equals outputs" convention is applied, and measured productivity growth is therefore zero.

Inputs rose by 20.6% in 2023, following increases in 2022 and 2021. This sustained growth was mainly caused by continued high demand for asylum services and a smaller contribution from investment in major IT programmes (for example, the Future Border and Immigration System). Rising demand reflects broader global trends in displacement and asylum applications. This effect was further intensified by the COVID-19 pandemic and other changes to the system around that time, which made it difficult for people to be progressed through the system. As a result, increasing numbers required accommodation beyond the usual provision, often at substantially higher cost because of supply constraints. These pressures on asylum expenditure have also been noted in reports by the Home Affairs Committee report. Given the rapid changes being observed in the service area, we will prioritise development of direct output metrics in the coming year.

Figure 13: Immigration and citizenship inputs grew by 20.6% in 2023

Index for immigration and citizenship inputs, UK, 2013 to 2023



Source: Public service productivity from the Office for National Statistics

14 . Other government services

The "other" government services grouping covers areas such as:

- economic affairs
- environmental protection
- housing
- recreation
- general public services

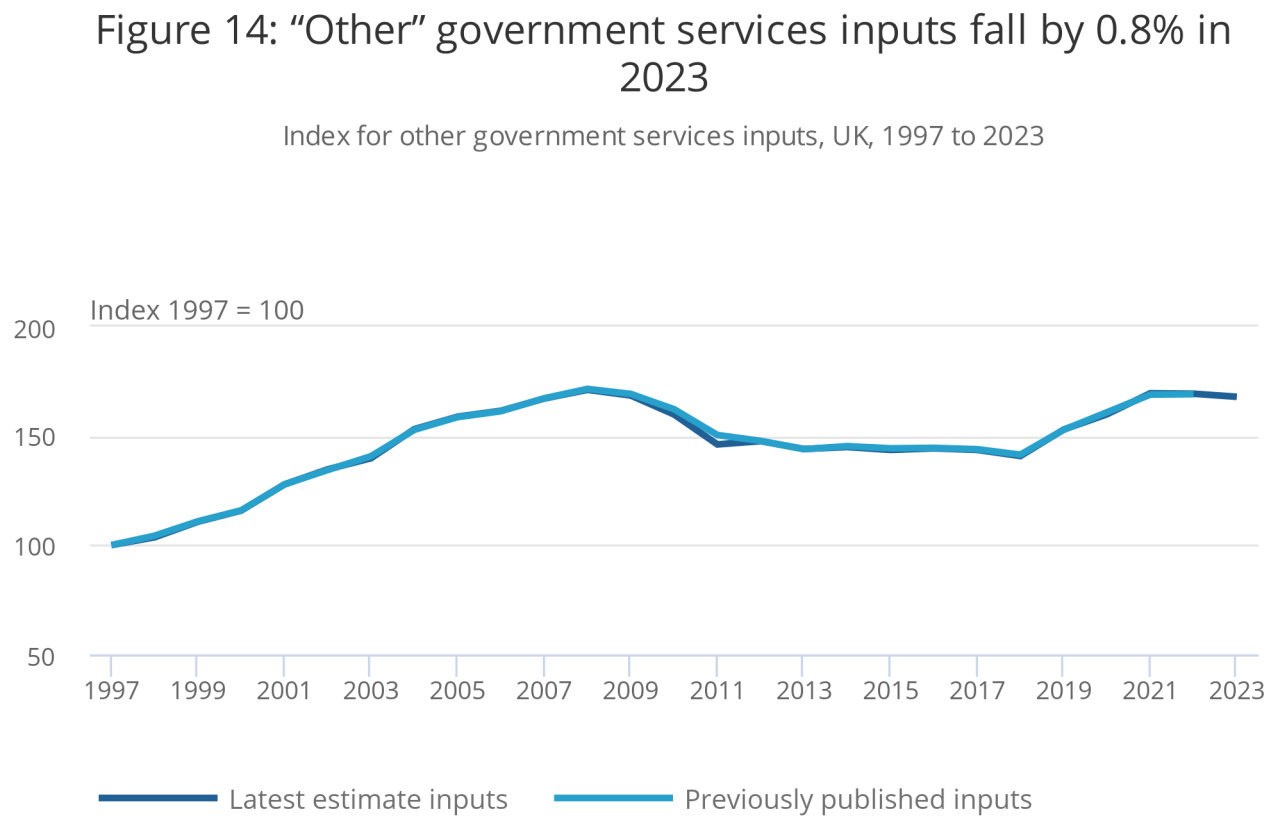
These services are indirectly measured, therefore, the Office for National Statistics (ONS) applies the"inputs equals outputs" convention. This means that productivity growth is zero.

Total inputs fell by 0.8% in 2023, the second consecutive annual decline. The fall was primarily caused by a fall in intermediate consumption, reflecting lower nominal spending across housing, environmental protection and recreation during a period of high inflation. Labour inputs rose in 2023, largely because of increased expenditure within general public services. Capital inputs increased and continue a longterm pattern of annual growth since 2011.

Despite the recent decline in 2023, total inputs remain 9.8% above 2019 levels, with spend on goods and services beginning to ease.

Figure 14: “Other” government services inputs fall by 0.8% in 2023

Index for other government services inputs, UK, 1997 to 2023



Source: Public service productivity from the Office for National Statistics

15 . Public service productivity data

Public service productivity estimates: education
Dataset | Released 30 March 2026
Inputs, output and productivity indices and growth rates for education service. Includes estimates of quality adjustment, sub-service expenditure and revisions.

Public service productivity estimates: healthcare
Dataset | Released 30 March 2026
Public service healthcare growth rates and indices for inputs, quality and non-quality- adjusted output and productivity, totals and components, for UK, 1995 to 2023.

Public service productivity estimates: healthcare, England
Dataset | Released 30 March 2026
Public service healthcare growth rates and indices for inputs, quality and non-quality adjusted output and productivity, totals and components.

Public service productivity, adult social care, England
Dataset | Released 30 March 2026
Trends in publicly funded adult social care inputs, quantity and quality of output, and productivity in England, between financial year ending 1997 and financial year ending 2024.

Public service productivity estimates: total public services
Dataset | Released 30 March 2026
Inputs, output and productivity indices and growth rates for total public services. Includes estimates of quality adjustment, service expenditure and revisions.

16 . Glossary

Public services

These are services delivered by or paid for by government (central or local). This includes publicly funded services delivered by non-government providers, for example, the provision of nursery places by the private sector, where these places were funded by the government.

Direct output measurement

Using an activity-based index (typically cost-weighted) to estimate the non-quality-adjusted output of a service provided, such as the number of students in state schools, adjusted for attendance and weighted by school phase. This differs from indirect output measurement, where output is assumed equal to inputs.

Quality adjustment

A statistical estimate of the change in the quality of a public service, using an appropriate metric, such as safety in prisons as part of the Public Order and Safety adjustment.

Classification of the Functions of Government

The Classification of the Functions of Government (COFOG), as explained on the Eurostat website, is the structure used to classify government activities. It is defined by the United Nations Statistics Division.

Service area

The way we refer to the breakdown of public services into 11 areas, closely following COFOG.

Intermediate consumption

Also referred to as "goods and services", or "intermediate consumption". Intermediate inputs include goods and services used in the provision of a public service, such as utilities, energy, professional services, and medical supplies, among others.

Capital consumption

Also referred to as "consumption of fixed capital". Capital consumption is the decline in the value of fixed assets owned as a result of normal wear and tear when providing public services. An example of this would be emergency vehicles used to attend emergency calls. Another aspect of capital consumption is the coverage of anticipated terminal costs, such as decommissioning costs of medical equipment, or clean-up costs of landfill sites.

Deflator

A price index used to remove inflation effects from current price estimates of expenditure to provide a volume estimate.

17 . Data sources and quality

The estimates presented in this article follow further improvements implemented following the Public Services Productivity Review. This section summarises the main components and service areas that have been changed. Details of the Public service productivity improvements implemented this year can be found in our Impact of improved methods on total public service productivity: 1997 to 2022 article.

In this release, we have published Productivity estimates for "police and immigration" separately as "police" and "immigration and citizenship" for the first time. These are official statistics in development.

We have also improved the outputs for police and social security administration; these estimates are official statistics in development. In addition, we have introduced quality adjustment for tax administration for the first time. These estimates are official statistics in development.

Healthcare

GP Scotland headcount data used was previously supplied by Public Health Scotland and is now published by NHS Education for Scotland (NES). This year, private patient data and Patient Reported Outcome Measures (PROMS) data have been excluded from the quality-adjusted data, where it had been included in previous years. PROMs are used in our elective and non-elective care quality adjustments to identify the estimated change in health outcomes following hospital treatment. PROMs are typically only collected for certain types of treatment, like hip and knee procedures, so the change in health status for all other treatments is fixed at a constant level based on historic academic research. This year, however, no PROMs are available for the latest financial year, meaning that all the fixed proportions are used as a proxy for those treatments too. This means that PROMs as a quality indicator should not have a direct effect on the quality-adjusted growth, but will continue to make an impact indirectly through the interaction with in-hospital survival rates. The quality adjustment derived from the GP Quality and Outcomes Framework had a reduced scope this year, with several usual indicators not used because of changes in coverage.

Adult social care

For adult social care (ASC), a direct volume output measure has been reintroduced in Northern Ireland in 2023, following a three-year period where the necessary data were not available to produce this and output was measured indirectly. The new output now uses the direct volume approach for the majority of ASC spending in Northern Ireland from 2023. This includes the following categories:

- nursing
- residential
- domiciliary and day care

The remaining services, including supported accommodation, are accounted for using the "inputs equals outputs" approach. The combined approach of direct and indirect output measures for 2023 is similar to that used over the period 2012 to 2019.

In the current production round, concerns were identified regarding the underlying data sources and methods used to produce the ASC UK estimates for 2023. These issues are largely caused by differences in scope and coverage between the inputs data sources used for England and those used for the UK. As a result, for 2023 only, the ASC UK productivity estimates have reverted to an "inputs equals outputs" approach, with inputs growth assumed to be equal to non-quality-adjusted output growth, and quality adjustments are retained.

To be clear, these changes apply only to the UK estimates for 2023; the England estimates have not been adjusted. While this is not an ideal position, this approach has allowed us to produce a coherent set of results, given the level of uncertainty in the initial UK estimates.

In collaboration with data suppliers, we will review the ASC methodology in the upcoming financial year, including addressing this issue and supporting the transition to using the Client level dataset to inform output.

Public order and safety

Minor revisions have been made to the Public Order and Safety (POS) output series. The first of these is the result of revisions in the disposals data included in the Criminal Court Statistics Quarterly release used for courts activity data. There is also a minor revision to prisons output resulting from a change to the weighting of male closed Young Offenders Institutions (YOIs) to group these with male Category C prisoners, rather than other YOIs, to improve consistency with the categorisation used for unit costs in the Prison and Probation Performance Statistics release.

Comparison between public service productivity estimates

We publish an annual public service productivity analysis for all service areas in the UK. The methodology used for this analysis is considered the "gold standard" and provides robust productivity estimates. We have been working with government departments and devolved administrations to improve our estimates of inputs, outputs, and productivity, as well as expanding the coverage of UK public services.

However, users should be aware that the productivity estimates we produce may differ from those produced by other institutions or government departments, as we use different methodologies, data, and coverage.

This is particularly the case for healthcare, where our comparative methodology does not capture the same activities as NHS England's statistics on productivity, resulting in different estimates. Similarly, although the trends follow the same patterns, the healthcare productivity we publish will also differ from the Productivity of the English National Health Service report (PDF, 6.0MB), published by the Centre for Health Economics at the University of York.

Our official statistics in development measure of tax administration productivity is also substantially different to the "cost of collection" efficiency measure used by HM Revenue and Customs (HMRC). A detailed comparison of these two measures is presented in our Public Services Productivity Review, impact of improved methods on total public service productivity: 1997 to 2021.

We also publish quarterly estimates on public service productivity, which are official statistics in development. Quarterly methodology and data differ from the approach used in the annual estimates, including the treatment of quality adjustment. Namely, the quarterly statistics do not take account of changes to quality, because the data used to generate these quality adjustments are produced with a two-year lag. As such, we do not update quality adjustment in the quarterly estimates, but we hold the quality adjustment in the annualised quarterly estimates at the level in our latest annual accredited official statistics.

More information on the methodological differences between the annual and quarterly estimates, and a description of the quarterly data, can be found in our Public service productivity estimates: sources and methods article, which we will update in April 2026.

Rounding

Indices and growth rates are calculated using unrounded data and are presented in these statistics to one decimal place. In some cases, indices and growth rates may not sum or reconcile because of rounding.

Producer Price Index (PPI) and the Services Producer Price Indices (SPPI)

As mentioned in last year's publication, we identified a methodological error in the calculation of the Producer Price Index (PPI) and the Services Producer Price Index (SPPI). This resulted in underreported annual inflation rates in both series.

In Public service productivity, PPI and SPPI are used as part of a suite of prices to remove inflation effects from the current price estimates of expenditure to provide a volume estimates in the following service areas:

- education
- public order and safety
- police
- immigration
- tax administration
- social security administration
- adult social care
- children's social care
- defence

Consequently, all affected service areas have experienced downward revisions to real-terms volumes because of the corrected inflation data.

Splining

This year, we have continued to adjust our splining approach as outlined in last year's data sources and quality section to account for the effect of the pandemic years on the cubic spline. The volatility of output growth in healthcare over the COVID-19 pandemic period results in a disparity between calendar year and financial year growth rates caused by splining. This means that an alternative benchmarking approach has been used instead to give more accurate calendar year growth estimates. To improve clarity in the data, we have paused our non-quality adjusted output by component tables within the UK healthcare dataset, as these cannot be produced on an equivalent benchmarked basis. We advise users to refer to the England financial year reference tables for component-level analysis of healthcare output.

18 . Related links

National Statistician's Independent Review of the Measurement of Public Services Productivity
Report | 13 March 2025
Summary of work undertaken by the Office for National Statistics (ONS) to review and improve the measurement of public service productivity in the UK.

Impact of improved methods on total public service productivity 1997 to 2022
Article | Last revised 16 March 2026
This article presents the improvements to public service productivity measures introduced in the Public Services Productivity Review implemented in March 2025.

Public service productivity, quarterly, UK - Office for National Statistics
Article | Last revised 6 February 2026
UK total public service and healthcare productivity, inputs, and output, to provide a short-term, timely indicator of annual productivity estimates. These are official statistics in development.

Public Services Productivity Review: Impact of improved methods on total public service productivity, 1997 to 2021
Article | Last revised 27 March 2025
This article presents the improvements to public service productivity measures introduced in the Public Services Productivity Review implemented in March 2025.

Developing nowcast methodologies for public service productivity, UK
Article | Last revised 11 December 2024
An overview of the latest experimental methods to produce timelier estimates of annual UK public service productivity. These are official statistics in development.

19 . Cite this article

Office for National Statistics (ONS), released 30 March 2026, ONS website, article, Public service productivity: total, UK, 2023