

Background Quality Report

MOD Regional Expenditure with UK Industry and Commerce and Supported Employment

1. Introduction

1.1 Overview

These statistics present information on MOD expenditure with UK industry 2016/17 with some comparisons made to the previous three financial years. This information is analysed by both region and by industry group.

Using this expenditure data, employment data from the Business Register and Employment Survey (BRES) and turnover data from the Annual Business Survey (ABS) (both of which we received from the Office for National Statistics (ONS)) we have calculated an estimate of the number of jobs supported by MOD expenditure with UK industry. Again this information has been presented broken down by both region and industry group.

For further context, the expenditure information has been presented per capita, to take into account the population of the different regions. The number of supported jobs has also been presented per 100,000 people in full-time equivalent (FTE) employment, again to adjust for different regional populations and also different employment levels. This makes the figures between regions more directly comparable to one another.

In addition we have accounted for inflation by quoting comparisons over time only in terms of 2016/17 constant prices. This means that we have used the GDP Deflators from the ONS to calculate how much an amount of money would be worth in 2016/17. This allows for more valuable comparisons between expenditure in different financial years.

1.2 Background and Context

Figures on regional MOD expenditure were published annually by the MOD up until 2009 in the [UK Defence Statistics publication](#). The MOD has recently started producing these figures again to help with the monitoring of various MOD commitments, such as the Prosperity agenda set out in the Strategic Defence and Security Review (SDSR) 2015.

Many improvements have been made to the old methodology that have led to a more accurate estimate of MOD expenditure with UK industry. This is because some expenditure that was previously attributed to the UK is now correctly apportioned overseas. We also have more precise information on the location of expenditure within the UK, and the industries that it is spent in. For more information on these changes see section 1.3 Methodology and Production and this [Statistical Notice](#).

There have been some data quality issues arising from the introduction of the new Contracting, Purchasing and Finance (CP&F) online end to end procurement system. Some issues arose in the accounting processes which resulted in an additional £300 million in unpaid invoices at the end of 2016/17. This means that our figure for expenditure in 2016/17 is likely to be an underestimate and we are likely to see this expenditure reported in the 2017/18 dataset to be used in next year's report.

1.3 Methodology and Production

Expenditure information against headquarter (HQ) contracts recorded on the Liverpool contract payment system and Miscellaneous contract expenditure were used to calculate total MOD expenditure for each of the four financial years. The higher value

contracts were then cleansed to ensure that Standard Industrial Classification (SIC) codes and Location of Work (LOW) codes were as accurate as possible. Overseas expenditure was identified, where possible, and removed. LOW codes were used to break the expenditure down by UK region and SIC codes were used to break it down by industry group.

[Mid-Year regional population figures](#) were taken from the ONS website. These were used to produce figures on MOD expenditure with UK industry, per capita for each region. This was achieved by dividing the regional expenditure by the population of the area to see how much money was spent for each person living in that region. This gives the expenditure figures some context and allows comparisons across different regions to be drawn more easily.

Using employment data from the BRES and turnover data from the ABS we were able to calculate turnover per FTE employment for each financial year. By dividing our figures for MOD expenditure with UK industry by these figures we can estimate how many jobs this expenditure supports in the UK. Again these figures are presented broken down by both region and industry group.

Using the employment data from the BRES we were able to calculate FTE employment for each region. We then used these figures to calculate how many jobs MOD expenditure supports for every 100,000 people in FTE employment in the region. This takes into account both the population of the area and the number of people in employment and therefore, like the per capita expenditure figures, makes it easier to make comparisons across the different regions.

As mentioned in Section 1.2, these figures used to be published annually up until 2009. Information on MOD expenditure with UK industry broken down by industry groups continued to be published in the [Trade, Industry and Contracts](#) Finance and Economics annual bulletin. This methodology was looked at and improvements were made where possible. The differences between the old Trade, Industry and Contracts method and this one are detailed in this [statistical notice](#).

2. Relevance

Statistics on MOD expenditure with UK industry and the employment that this supports were published annually up until [2009](#). This publication has been produced in response to a request from The Secretary of State for Defence to begin producing these statistics again, which was supported by the Permanent Under Secretary in March 2016

The statistics will aid the measurement and monitoring of various regional expenditure and employment targets throughout the MOD, including those set out in the SDSR 2015.

The scope of the publication to meet user needs will continue to be reviewed based on feedback from users. The figures published here are more accurate than previous figures published on the topic and enable comparison of MOD expenditure with UK industry across different regions and industry groups.

3. Accuracy

As stated in Section 1.3, improvements that have been made in the new methodology have provided a much more reliable estimate of MOD expenditure with UK industry. We have been able to get a more accurate measure of how much MOD expenditure is spent in the UK and have been able to exclude overseas expenditure that was previously included.

However one key issue is that the majority of contracts still only have one SIC code associated with them. This is because when a contract is raised using a DEFFORM 57 only one SIC code can be entered. The vast majority of contracts will relate to multiple

different industries, but due to the number of contracts raised in each financial year it would be impossible to follow up with all of the project teams to get an accurate SIC breakdown. Therefore we contact the project teams who own the larger contracts, such as those with NETMA, OCCAR and AWE and distribute these more accurately across a wider range of SIC groups.

In the [previous edition of this bulletin](#) payments from electronic Procurement Cards (ePC) were attributed as a single large payment in the North East of England. In this year's bulletin we have distributed this large payment across the locations of MOD Personnel. We have further categorised electronic Procurement Cards into SIC Groups where known; and where not known we have categorised these payments into SIC groups according to the distribution of payments in HRMS and JPA.

Issues in the commercial reporting processes in the new Contracting, Purchasing and Finance online purchasing and accounting system (CP&F) have led to a greater number of missing and incomplete fields in our data. A large volume of data cleansing has had to be carried out on the dataset. We are confident that the data have been cleansed to a sufficient standard for our analysis.

Various assumptions have had to be made throughout the process when concrete information was lacking. These assumptions are listed below:

- Any contracts that had locations of British Forces Post Offices, British Crown Dependencies and UK Overseas Territories were all treated as being expenditure outside the UK throughout the analysis.
- The small number of HQ contracts that we could not find accurate LOW information for were distributed across the regions based on the regional proportions seen for the rest of the HQ contracts.
- Likewise the small number of HQ contracts which we could not categorise into SIC groups have been distributed into SIC groups based on the proportions of other HQ contracts.
- SIC code information is entered when the contract is let. It is likely that in different years of the contract's life that the SIC distribution will fluctuate as different phases of work are started and completed. We have no way to measure these changes however so we have used the same SIC distributions throughout the life of the whole contract.
- Miscellaneous contracts do not have any SIC code information associated with them. Therefore the Miscellaneous expenditure was assumed to have the same SIC distribution as the HQ contracts.
- Miscellaneous contracts also do not have LOW code information associated with them. Therefore Miscellaneous expenditure was distributed regionally using the bill paying postcode.
- NETMA location was also assumed to be wholly in the North West as the Typhoons are being constructed in Warton, Lancashire and we were unable to get hold of more precise information at this time.
- ePC payments were distributed across the location of MOD personnel, including overseas.
- ePC payments, where not explicitly known, were categorised into SIC groups according to the SIC categorisation of HRMS and JPA payments.
- Accurate location data was not available for DSG in 2013/14 and 2014/15; therefore the same locations that were used for DECA contracts were also used for DSG.
- Some contracts were country-wide. This expenditure was distributed regionally based on military strengths.
- Not all overseas HRMS expenditure can be identified, but what can be has been removed.
- Any JPA expenditure in GBP (£) was counted as being UK expenditure. Any payments in other currencies were excluded from the analysis as it was assumed that they were overseas.

- Regional turnover figures were not valid for our purposes, so GB average turnover was used for all regions instead. UK turnover figures were not available as there was not detailed enough information available on Northern Ireland. Because of this the GB turnover figures have had to be applied to Northern Ireland as well.
- The number of jobs supported is also only an estimated figure. There is no concrete way of counting the number of jobs supported by MOD expenditure with UK industry. Instead we have taken the turnover per FTE employment in each industry group and divided our regional expenditure figures by this. This gives an estimate of how many jobs MOD expenditure supports in the UK.
- For some SIC groups either turnover data or employment data was not available due to suppression. In these cases data was estimated based on other available financial years (if similar SIC groups had consistent data across financial years). If a lot of variation was seen across financial years in a similar SIC group then the average turnover per FTE employment was applied here instead. Please contact us if you need information on which SIC groups were affected by this.
- BRES data is not available at the level we required it for Northern Ireland and therefore we had to use Northern Ireland Statistics and Research Agency (NISRA) data here. NISRA did not have precise enough information on employment levels and therefore employee numbers were used for Northern Ireland instead when calculating the number of jobs supported for every 100,000 people in FTE employment.

4. Timeliness and Punctuality

Timeliness

The publication uses data from four financial years; 2013/14, 2014/15, 2015/16 and 2016/17.

Whilst the contract information is first available in April, it is not possible to a release of this publication at that time, as the data must be cleansed and quality assured first. Data from the ABS on GB turnover is also not available until December, so the bulletin cannot be published before this time as the employment figures cannot be calculated. Further analysis and quality assurance processes are then needed before the bulletin can be put together.

It is possible that publication could occur in early February in future years rather than early-March. We are currently reviewing our processes to see if this will be possible.

Punctuality

Release was preannounced for March 1 2018 and this publication date was achieved.

“The release date for this publication was pre-announced on the [MOD's Calendar of Upcoming Releases](#)² section of GOV.UK.”

5. Accessibility and Clarity

Accessibility

The statistics can be accessed on the [GOV.UK website](#) and are available to download in PDF format. They can be found in the '[Economics and Finance](#)' section. They can also be accessed by using an internet search engine.

All the tables and any data behind graphs and charts in the report are available in a [Microsoft Excel file](#).

24 hour pre-release access to the report is available to a limited distribution list within the Ministry of Defence (MoD). The full list can be found in the [Pre-Release access list](#) available on the GOV.UK website.

Sources are provided for all of the data presented in the publication to allow users to contact the relevant team if they need further information.

Clarity

Commentary is provided in the publication to clearly discuss key facts and trends in the data and to clarify any complex points. It is also used to discuss the quality of the data and any assumptions made and to provide appropriate caveats.

Users who are interested in just the key findings can read the 'Key points and trends' section at the start of the report which provides a list of the main points in the publication.

Graphics have been utilised throughout the publication to visually present key data. This is beneficial for those users who are not confident with statistics to aid their understanding and also allows users to understand the data more quickly than text alone. These graphics include bar charts to display the regional expenditure levels and the jobs that this supports and also to demonstrate the effects of inflation. There are also choropleth maps included to show regional expenditure per capita and the number of jobs supported for every 100,000 people in FTE employment in the area.

Supplementary Excel tables are published alongside the bulletin for those users who wish to access the data presented in the publication themselves.

A brief description of methodological information is included in the publication, and on the relevant excel tables, but a full methodology can be found in Section 1.3 of this Background Quality Report.

A glossary of key terms is included at the end of the publication to aid users understanding of specialist terms. If the terms are particularly vital to understanding the statistics then an explanation is included in a small glossary box on the page that the statistics are presented on.

6. Coherence and Comparability

Coherence

Figures were previously published by Defence Economics on MOD expenditure and the jobs that it supports in the [UK Defence Statistics](#) (UKDS) publication, but these were ceased in 2009. Figures presented in this bulletin are most comparable to the 'Direct Employment from MOD expenditure' figures quoted in the UKDS bulletin. There are however differences in the methodologies so the figures are not directly comparable.

The figures in the current publication should **not** be compared to the 'Total Employment' figures from the UKDS because these include indirect employment and employment from defence exports which the current figures do not.

Comparability

Annual expenditure on contracts is inherently variable. We would expect total expenditure to fluctuate year on year due to large payments occurring. It is therefore not possible to identify any trends in expenditure or supported employment when we only have four years' of data and the statistics should therefore not be used for this purpose. Once a longer time series has been collected then it will be possible to make comments on *long-term* changes that occur across several years.

By breaking expenditure and supported employment down into NUTS 1 Regions then comparisons can be made about different areas of the UK. Whilst the variation in expenditure is still present at a regional and industrial level some comments about changes over time can be made here. If overall expenditure is going down in specific regions, or industries are showing a substantial rise, then this is more likely to be a significant observation.

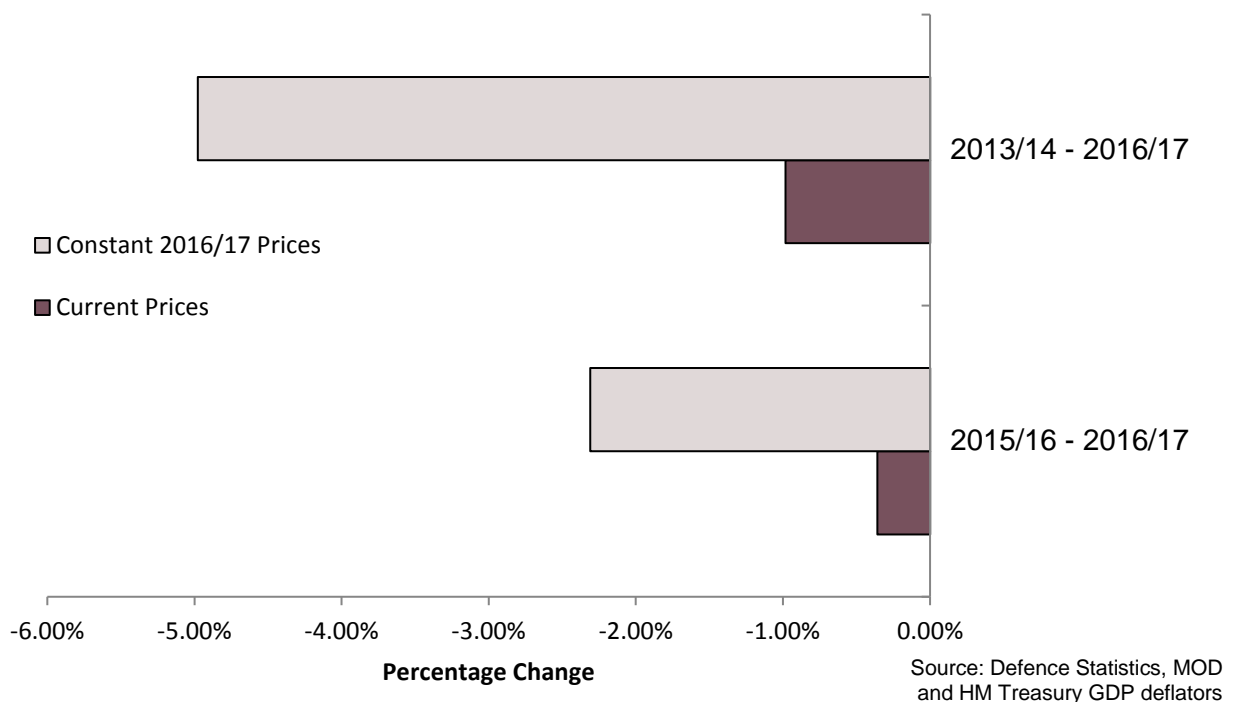
The inclusion of expenditure per capita and jobs supported per 100,000 people in FTE employment also makes the statistics more comparable across different regions. Without these measures, differences in the populations and employment levels of the regions could make it difficult to compare just expenditure levels and jobs supported.

Where comments are made about variation across years at the regional and industrial level it is important to consider inflation. In simple terms, inflation is an increase in prices due to a fall in the value of a currency. Inflation of 2 per cent would mean that something that you could purchase for £1 in 2015 would cost you £1.02 in 2016. Therefore, inflation can mask effects when comparing expenditure across different years. This is because you are comparing expenditure in one year against another where the value of the pound was different.

To account for this, expenditure can be calculated in constant prices. This accounts for inflation by adjusting expenditure in one year so that it is in another year's prices. Figure 1 shows the percentage change in both current prices and constant 2016/17 prices between 2013/14 and 2016/17 and between 2015/16 and 2016/17, showing what the real difference in expenditure is once inflation has been accounted for. Figure 1 shows that when using current prices the drop in expenditure between both 2013/14 and 2016/17, and 2015/16 and 2016/17 is underestimated. This is because inflation increasing the value of the pound can make it seem like expenditure is increasing. When the effect of inflation is removed the real increases and decreases in expenditure can be seen.

Throughout the publication, expenditure is presented in constant prices 2016/17 prices when comparing across different Financial Years. To access all of the data in both current and constant prices please see the supplementary [Excel tables](#).

Figure 1: Percentage Change in MOD expenditure with UK industry, in Current and Constant 2016/17 Prices 2013/14 - 2016/17



7. Trade-offs between Output Quality Components [Optional]

The contract information that we use to produce these statistics is first available in April, however these contracts go through a process of being checked and where necessary

cleansed to ensure accurate SIC and LOW information. This is a long process that delays the publication of the statistics but ensures that the quality and accuracy of the statistics is far higher. Due to the fact that the turnover figures are not available from the ONS until December we would be unable to publish earlier than this anyway so the quality improvements do not cause an impact.

We could produce the regional expenditure figures at a much lower level, for example by cities and towns rather than regions. This would however be a much more in-depth process that would take much longer so the decision was made to present the figures at the regional level to allow a more timely publication.

8. Assessment of User Needs and Perceptions [Optional]

The MOD has previously held regular consultation meetings with users of Defence Official Statistics, which provided a forum for user feedback on their needs and perceptions. Proposed changes were set out at the consultation meetings in order to gain feedback from both internal and external users.

The MOD invites users to provide feedback to the statistical output teams on any of their publications or reports using the contact information on the front and at the end of the publication.

9. Performance, Cost and Respondent Burden [Optional]

The methodology for this bulletin has gone through streamlining processes to reduce the burden of production. Cleansing the data and calculating the figures is a time-consuming process, however doing it all at once for this bulletin saves time overall as we regularly get adhoc requests for this sort of data. This publication uses many of the same data sources as the [Trade, Industry and Contracts](#) bulletin meaning that this saves time as this data is already collected. Turnover per FTE employment calculations are also carried out on our behalf [by the ONS](#), this saves time as they are experts on this data and can produce the figures much faster than we can.

10. Confidentiality, Transparency and Security [Optional]

In producing these statistics, we adhere to the [Defence Statistics Confidentiality Policy](#). We adhere to the principles and protocols laid out in the Code of Practice for Official Statistics and comply with the pre-release access arrangements, [The Defence Statistics Pre-Release Access lists](#) are available on the GOV.UK website.

The expenditure figures in the Excel tables have been rounded to the nearest million pounds. This is because contract information is commercially sensitive and rounding has been employed as a measure of disclosure control. Expenditure per capita have been rounded to the nearest £10; the number of jobs supported by MOD expenditure has been rounded to the nearest 1,000 with the number of jobs within particular regions and SIC Groups being rounded to the nearest 100; and the jobs supported per 100,000 FTE employment were rounded to the nearest 10, again as a measure of disclosure control.

11. References

	Reference	Website Location
1	Statistics at MOD Homepage	https://www.gov.uk/government/organisations/ministry-of-defence/about/statistics
2	MOD's Timetable of Future Releases of National and Official Statistics	https://www.gov.uk/government/statistics/announcements?utf8=%E2%9C%93&keywords=&topics%5B%5D=&organisations%5B%5D=ministry-of-defence&from_date=&to_date=&commit=Refresh+results

3	Statistical Notice	https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/591846/20170126-RD_STATISTICAL_NOTICE_TO_TABLE_9_TRADE-FINAL-O.pdf
4	ONS User Requested Data	https://www.ons.gov.uk/aboutus/whatwedo/statistics/requestingstatistics/alladhocs
5	Defence Statistics Confidentiality Policy	https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/284845/defence-statistics-confidentiality-policy-v1.pdf
6	UK Code of Practice for Official Statistics	http://www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html
7	Pre-Release List	https://www.gov.uk/government/statistics/defence-statistics-pre-release-access-list
8	Glossary of Terms and Abbreviations	https://www.gov.uk/government/publications/defence-statistics-glossary-of-terms-and-abbreviations

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12. Contact Details

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