

# Background Quality Report: Defence Economics Industry Statistics

## Section 1: Introduction

### 1.1 Overview of the Statistical Output

The Industry section of UK Defence Statistics (UKDS) 2012 was produced as part of the transparency and accountability of the Ministry of Defence (MOD) to Parliament and the public. From 2013 these tables have been incorporated into a new Finance & Economics Bulletin called "Trade, Industry & Contracts". This bulletin is an amalgamation of 3 Sections from the old UK Defence Statistics and is aimed to be published in late August each year.

There are four distinct parts to this family of statistics. The first is an analysis of MOD expenditure in the UK broken down by industry group. These statistics use a range of financial and contracts data to estimate spend by broad Standard Industrial Classification (SIC) grouping and are presented as a time series. The second relates to payment information about Private Finance Initiative (PFI) contracts with the MOD which is presented in bands to maintain commercial confidentiality. The third section, "Focus on Key Suppliers", first appeared in UKDS 2011 and presents information on the top 10 MOD suppliers. The final tables are included for the first time in 2014 and display a) expenditure with Small and Medium-sized Enterprises (SME) as a total value and as a proportion of all MOD spending on procurement, and b) the number and value of new contracts let with SMEs by Financial Year.

From 2015 the Trade, Industry & Contracts bulletin comprises a pdf document, which focuses on commentary and data visualisations supported by separate excel tables where the data supporting the visualisations and the time series can be found.

#### History

The Industry statistics in UKDS used to form part of a larger group of statistics, designed to show the impact of MOD spending on the UK economy and regions. National and Regional Defence dependent Employment Estimates ceased to be produced from 2009 as they did not meet any MOD policy or decision making requirement and the Leontief matrix (derived from ONS input-output tables) required for the analysis was no longer produced by the ONS. Full details explaining the background for the cessation of these statistics were published on the Defence Statistics website and in the [2009 edition of UKDS](#). A new "Focus on Key Suppliers" supplement was added in 2011 to provide a fuller picture of MOD contracting by exploring the nature and scope of MOD business with its key suppliers in industry and commerce. It examines the relative importance of MOD sales to industry revenues and how this has changed over time. It then explores how the nature of MOD contracting with industry has changed over time.

From 1<sup>st</sup> April 2013 the Directorate formerly known as DASA was split into two one-star analytical business areas within the Head Office Strategy Directorate – Defence Economics and Defence Statistics. Industry Statistics are produced by Defence Economics and are referred to as such in this document. Current and historical publications are stored on the GOV.UK website and are updated regularly by the Directorate of Defence Communications. Links to current and historic publications are contained within publications and are signposted on the GOV.UK website.

Since 2011 the Department has produced estimates of the number and value of new contracts placed with SMEs. At the time there were no suitable administrative data sources available to help identify whether a supplier was an SME. Instead MOD selected a random sample of suppliers from those associated with the new contracts placed during the latest financial year, and assessed them against the EU definition of an SME.

The Government's aspiration in 2010 was that 25% of public expenditure with third parties should be placed with SMEs by 2015. Since 2015, a new aspiration of 33% has been set for 2020, with MOD contributing to this Government aspiration by committing to 25% of its expenditure to be with SMEs by the end of this Parliament.

In 2009 the Cabinet Office directed the inclusion of DUNS numbers, maintained by Dun and Bradstreet (D&B)<sup>1</sup>, in Government finance systems. During 2011/12, MOD worked collaboratively with D&B to map all MOD suppliers who had received payment during the financial year. This resulted in a database of MOD suppliers, their corresponding DUNS number and an assessment of their SME status. Although not completely comprehensive, it did provide assessments of suppliers responsible for about 98% of MOD expenditure in 2011/12. This database was the basis for estimates of MOD expenditure with SMEs, which culminated in the publication of an experimental Statistical Bulletin on MOD Contracting with SMEs in October 2013 and a follow up in May 2014. A table summarising this information appeared as Tables 1.01.05a and 1.01.05b of Finance & Economics Bulletin – Trade, Industry & Contracts 2014. Further information on SMEs has been published as Tables 5a and 5b of the 2015 and 2016 bulletins but a new D&B assessment of a company's SME status has not been provided since early 2014 and consequently coverage of SME assessed companies has reduced and has resulted in reduced amounts of identified expenditure and contracting with SMEs. Work commenced in August 2016 to provide a more complete mapping of companies to a valid SME assessment and revised figures will be published later in 2016.

### **Strengths and Weaknesses**

The strengths of these statistics include the clear commentary, including links to classifications and mappings, measures to protect confidentiality and a graphical presentation of trends over time. The use of nationally and internationally recognised classifications (SIC) also promotes comparability with other data sources.

Weaknesses are that this section of Finance & Economics Bulletin: Trade, Industry & Contracts 2016 no longer provides a full picture of the impact on the MOD's spending with industry. The industrial analysis only includes spend in the UK and does not include all spend by MOD Trading Funds. Despite rigorous quality assurance, there remain some weaknesses in the quality of the data.

A weakness of the SME table is the notable proportion of MOD suppliers which have not been assessed by D&B. It is not clear whether the suppliers which have not been assessed are more or less likely to be SMEs than those which have been assessed. Improvements in quality should be seen by the end of 2016 following a new assessment of a company's SME status.

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<sup>1</sup> D&B is a global source of business information and insight. The nine-digit D&B DUNS Number, assigned to each business location in their global database, is widely used as a tool for identifying, organising and consolidating information about businesses.

A weakness in the display of statistics in the Expenditure with UK Industry table was highlighted in 2016 when the highest spending Standard Industrial Classification category in 2014/15 was 'Technical, Financial Services & other Business Services' which generated the following headline: *The amount spent on pen pushers is nearly twice the level of expenditure on "Aircraft and Spacecraft" and approximately 350% more than on "Weapons and Ammunition". Maybe the MOD is developing "keyboard warriors"...* In future we will aim to be clearer about what is contained within this high spending category, which includes supporting infrastructure development and research and testing of new equipment.

### Future Improvements

The production of supply chain analysis and statistics would be an improvement to this family of statistics but unfortunately the data to produce this is not centrally available. From late 2016 Defence Economics will be reintroducing the analysis of UK expenditure by region and will identify jobs within the UK generated by this direct MOD expenditure. The statistics have been reintroduced as a result of a requirement to support the monitoring of initiatives set out in SDSR 2015.

### Latest Publications

1. [Finance & Economics Bulletin: Trade, Industry & Contracts 2016](#)
2. Defence Statistics Bulletins [5](#) and [5a](#) – describe the methods for estimating employment statistics which incorporates the industrial analysis.
3. SIC grouping [mapping document](#)
4. [List of current PFI projects Apr 2015](#) used in this analysis.
5. [Most recent SME Statistical Bulletin 2014](#)
6. [SME Background Quality Report](#)

## 1.2 Producer Information

These statistics are produced by the Defence Expenditure Analysis Branch within Defence Economics, which is part of the Ministry of Defence (MOD). The responsible statistician for these statistics can be contacted by emailing [DefStrat-Econ-ESES-DEA-Hd@mod.uk](mailto:DefStrat-Econ-ESES-DEA-Hd@mod.uk)

Further details about how to contact Defence Economics and Defence Statistics can be found [here](#).

## 1.3 Summary of Method and Processes used to Compile Outputs

Defence Economics are supplied with financial, accounts and contracts data from the MOD's Financial Management Information Systems (FMIS). The accounts data is compiled using international accounting standards and is audited by the National Audit Office (NAO). We use the single source of contracts data (PtP) which is used by the MOD's bill payments centre for making payments. We have carried out investigations into the data quality of contracts data and cleanse the fields most relevant to our analysis.

We also use data from the following to construct the industrial group breakdown table:

- Typhoon and Tornado PTs – Value of UK workshare.
- MOD Defence Business Services (DBS) – Civilian T&S expenditure.

- [Defence Support Group Annual Accounts](#)
- [UK Hydrographic Office](#)
- [Defence Science and Technology Laboratory \(Dstl\) Annual Accounts](#)

The process to construct Finance and Economics Bulletin: Trade, Industry & Contracts Table 8 (expenditure by industry group) is complex. Defence Statistics Bulletins [5](#) and [5a](#) describe the methods for estimating employment statistics which incorporate the industrial analysis. A review of the methodology used in 2013 has resulted in a new time series being created from 2010/11 onwards. More details can be found in [Defence Statistics Bulletin 13](#).

Each PFI consists of a number of contracts. The PFI unit within the MOD supply a list of contract numbers for each PFI which Defence Economics then run against contracts data to determine the payments on specific PFIs in the most recent Financial Year.

Data on the top 10 companies comes from MOD expenditure data processed through DBS Liverpool and through the Trading Funds own payment systems. Global turnover figures are taken from [Avention](#) (formerly OneSource), the most comprehensive provider of business and company data in the world.

SME expenditure data is taken from expenditure processed through DBS Liverpool and the identification of whether a company is an SME or not is taken from the Dun & Bradstreet database of SME companies.

#### 1. 4: Other Documentation

- [Defence Statistics Pre-Release Access lists](#)
- [Defence Statistics confidentiality policy](#)
- [Defence Statistics revisions and corrections policy](#)
- [Statement on Quality guidelines](#)
- [Disclosure Control and Rounding policy](#)
- [User Engagement Policy](#)
- [Statement of Administrative Data Sources](#)

## Section 2: Quality Dimensions

**2.1 Relevance:** The degree to which the statistical product and underlying data meet user needs for both coverage and content.

These statistics, and the extended analysis undertaken from the data that support them, are used to inform and support policy making, both directly and through think pieces/studies. Recent examples of this are the Strategic Defence and Security Review (SDSR), Security and Technology Green and White Papers and the Government Growth agenda. Internal users use these statistics as management information and when producing senior/ministerial briefings and speeches. There has been particular interest in MOD expenditure by the regions of England and countries of the UK recently, particularly in relation to Scotland to inform the Scottish Independence debate.

We receive a number of Parliamentary Questions and Freedom of Information requests regarding this data. Questions tend to ask for more detailed information on the data provided

in the Industry breakdown table, with particular historical interest in the 'Hotels, Catering & Restaurants' and 'Weapons & Ammunitions' categories.

In 2011 we added a new supplement "Focus on Key Suppliers" to provide our users with additional information about MOD contracting with industry and this has proved popular for both internal use and for external customers such as the Single Source Regulation Office and ADS.

In 2014 we have added a table detailing the level of contracting that MOD has with SMEs. The MOD's commercial teams utilise both estimates of direct spending with SMEs and estimates of new contracts placed with SMEs to monitor progress towards increasing MOD business with SMEs.

If you use this data in another way please [contact us](#).

### **Unmet User Needs**

Supply chain analysis, specifically for SME's, has been requested but unfortunately the data to produce this is not centrally available. There have been new requests for a reintroduction of regional expenditure and employment statistics and this will happen in late 2016.

**2.2 Accuracy:** The closeness between an estimated result and the (unknown) true value, and the accuracy of the raw data.

We are supplied with financial, accounts and contracts data from the MOD's Financial Management Information Systems (FMIS). The accounts data is subject to international accounting standards and is audited by the NAO.

### **Issues with Contracts Data**

We use the single source of contracts data (PtP) which is used by the MOD's bill payments centre for making payments. This is administrative data which is compiled from forms filled in by commercial staff and is therefore subject to responder error. We undertake cleansing on a select number of fields which are particularly relevant to our analysis but do not cleanse all fields due to time and resource constraints. The introduction of P2P (e-commerce) led to some contracts appearing on the system twice, sometimes with different contract values, but this problem no longer occurs. We have also been assisting commercial staff with a cleansing exercise to correctly annotate closed contracts in order to better identify the total number of extant contracts and have been assisting commercial teams to cleanse data prior to a move to a new reporting system called Contracting, Purchasing and Finance (CP&F) in 2016. More recently we have conducted a cleansing exercise on the Location of Work codes applied to each contract to improve the quality of the regional expenditure analysis that is being developed.

We are a key stakeholder in a Commercial Management Information Steering Group (CMISG) which has a specific work strand dedicated to improving the quality of the data input at source by MOD commercial officers, although this group has not met recently due to the impending introduction of CP&F.

### **Creation of Breakdown by Industry Group**

The creation of this table is complex. It has been peer reviewed but some of the mappings

used are based on judgement. A full discussion of the problems with attributing MOD expenditure to Standard Industrial Classifications (SIC) groupings is given in Defence Statistics Bulletins [5](#) and [5a](#). Further details about a new methodology adopted from 2014 can be found [here](#).

### Revisions

We follow the [Defence Statistics Revisions Policy](#). Where we have corrected errors we have alerted users by including ‘r’ markers and notes in the commentary to the table.

**2.3 Timeliness and Punctuality:** Timeliness refers to the lapse of time between publication and the period to which the data refer. Punctuality refers to the time lag between the actual and planned dates of publication.

The publication date for Finance and Economics Bulletin: Trade, Industry & Contracts is decided by the editor but will normally be in late August. Table 8 (expenditure breakdown by industry group) is published 17 months after the end of the financial year. This delay is due to the finalising of data sources and the fact that Trade, Industry & Contracts Bulletin is only published annually. Tables 7a and 7b (PFI payments), Tables and Charts 4a – 4c (Top 10 suppliers) and Tables 5a and 5b (SME analysis) are published 5 months after the end of the financial year to which they refer.

All releases of these tables have been punctual, although they were delayed in UKDS 2012 because of the late publication of the MOD Accounts data that was used in Chapter 1 of UK Defence Statistics prior to the introduction of this Statistical Bulletin.

**2.4 Accessibility and Clarity:** Accessibility is the ease with which users are able to access the data output, also reflecting the format(s) in which the output is available and the availability of supporting information. Clarity refers to the quality and sufficiency of the metadata, illustrations and accompanying advice.

Defence Economics publish this data through Finance and Economics Bulletin: Trade, Industry & Contracts, which is freely available on the GOV.UK website. The data in the 2016 Bulletin can be downloaded in several formats (e.g. Excel and PDF) with the pdf providing commentary and visualisations to support the excel tables, along with links to relevant publications and metadata.

When deciding on the formats for publication of this data we considered the quality of data (to influence the degree of rounding), commercial sensitivities, consistency over time and user accessibility. The PFI data is presented in payment bands and ordered alphabetically both for confidentiality and for ease of comparison with last years table. The industry breakdowns in Table 8 (expenditure breakdown by industry group) classify spend by industry based on the SIC, which can be mapped to the EUROSTAT NACE classification and the UN systems ISIC at a high level.

The “Focus on Key Suppliers” supplement presents data graphically and is accompanied by commentary to aid users’ understanding, while the SME tables provide a time series with access to the methodology used and background information about what constitutes an SME and an explanation of why the data is collected.

We have received no feedback relating to accessibility and clarity. If you have feedback please [contact us](#).

**2.5 Coherence and Comparability:** Coherence is the degree to which data that are derived from different sources or methods, but which refer to the same phenomenon, are similar. Comparability refers to the degree to which data can be compared over time and domain.

In order for the data on PFI projects to be coherent with that on the HM Treasury website, we ensure that the same names are used. HMT publish planned payments on PFI contracts over the life of each project. However, we present the actual payments made in a given year which can differ from what was planned. As we present data in payment bands there are rarely inconsistencies in what is published.

Table 8 (expenditure by industry group) uses accounts data so the table is consistent with the MOD Resource Accounts. We also use PtP which is the single source of contracts data, making it consistent with other contracts data released by the MOD.

We classify spend by industry based on the SIC which can be mapped to the EUROSTAT NACE classification and the UN systems ISIC at a high level.

#### **Breaks in Series**

From 2008/09 onwards, industrial groupings are based on the 2007 Standard Industrial Classification. The increase in spend during 2008/09 was not due to the change to SIC 2007 classifications but rather an increase in overall MOD expenditure on goods and services. A further break in series between 2010/11 and 2011/12 was caused by a number of process refinements. These refinements together with some reduced expenditure on goods and services have caused some quite significant changes to several industry groupings. Further information about these process refinements can be found [here](#).

In 2013 a further review took place of the methodology and resulted in a new time series being created from 2010/11 onwards and presented in Table 1.01.08b of the 2014 bulletin. Previously reported data is displayed in Table 1.01.08a of the 2014 bulletin for comparison purposes. This was not included in the 2015 bulletin following the addition of 2013/14 data. Further information about the improved methodology can be found [here](#).

**2.6 Trade-offs between Output Quality Components:** Output quality components are not mutually exclusive in the sense that there are relationships between the factors that contribute to them. There are cases where the factors contributing to improvements with respect to one component lead to deterioration with respect to another.

For Table 8 (expenditure breakdown by industry group) we cleanse the SIC field on contracts data on a monthly basis. This improves the accuracy of the data but has a negative affect on timeliness. We do, however, require a number of other data sources for the Industrial Analysis work, some of which are not available in time for the analysis to be published any earlier, the effect of SIC cleansing on timescales is therefore minimal.

**2.7 Assessment of User Needs and Perceptions:** Users are provided with products and services that meet their needs. The articulated and non-articulated needs, demands

and expectations of external and internal users should guide the department.

Users are encouraged to provide feedback on Statistical Bulletins. The further information page contained within each bulletin provides details on how to contact the responsible statistician and there is also the opportunity to do so through the feedback pages on the GOV.UK website. Users can be informed of the latest changes to statistics through the GOV.UK website and through consultation exercises where significant change is proposed.

More informally, we monitor the requests for information that we receive from within the MOD and from outside, and respond accordingly.

Our current assumptions about users and uses of these statistics are contained in [Section 2.1 - Relevance](#). If you use these statistics in another way please [contact us](#).

**2.8 Performance, Cost and Respondent Burden:** Resources must be effectively used. The desired outcome must be produced cost effectively. Respondent burden should be proportional to the needs of users and not excessive for respondents.

In producing these statistics, our main data source is administrative data. We receive a bespoke data extract for the contracts data with some Defence Economics specific fields and formats relating to SIC, Resource Accounts and Location codes. The majority of this data is used for a range of analysis and is used by other analysts within the MOD.

We undertake cleansing on a select number of fields which are particularly relevant to our analysis but do not cleanse all fields due to time and resource constraints.

All statistics are provided free of charge on the GOV.UK website.

**2.9 Confidentiality, Transparency and Security:** The privacy of data providers (e.g. administrations, enterprises and others), the confidentiality of the information they provide and its use only for statistical purposes must be absolutely guaranteed. The department must produce and disseminate statistics respecting scientific independence and in an objective, professional and transparent manner in which all users are treated equitably.

In producing these statistics, we adhere to the [Defence Statistics Confidentiality Policy](#). To protect commercial sensitivities the industrial analysis statistics are aggregated and rounded, and the PFI data is presented in bandings, or graphically.

A disclosure policy for commercial data has been agreed and a process now exists for deciding on the release of data that is consistent with the Transparency Agenda and the existing rules relating to the answering of Freedom of Information requests.

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

We maintain good links with policy colleagues to ensure that the statistics are understood and not misused. The Statistical Bulletin contains commentary explaining these statistics which is reviewed annually.