

Background Quality Report: International Defence Statistics

Section 1: Introduction

1.1 Overview of the statistical output

The International Defence bulletin presents comparative information on UK defence spending and that of other countries. The underlying data is used for a wide range of purposes both within the Department and externally to provide accountability and transparency to parliament and the public. The tables in this bulletin were published in UK Defence Statistics prior to 2014.

The International Defence statistical bulletin presents defence expenditure of NATO member states, expenditure as a percentage of their GDP and how much of their defence expenditure is spent on equipment. A comparison of two international defence spending data sources focuses on the top worldwide spenders. Defence expenditure trends for the UK, Germany, France and the USA are also displayed.

Since 2015 the International Defence 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

International comparison statistics were included in the UK Defence Statistics (UKDS) publication for 11 years in various guises. They completed Chapter 1 by setting the resource context for the rest of UKDS and helped to place UK military expenditure in a global context. International Defence has been published as a standalone bulletin since the decision to publish the various sections of UKDS as independent statistical bulletins.

In 2014 the first International Defence Finance Bulletin was published, superseding the historic UKDS Chapter 1 section on international defence.

The 2016 bulletin includes: NATO countries' expenditure (in real terms, as a percentage of GDP and equipment expenditure as a percentage of defence expenditure); top world-wide military spenders; the differences between two widely used sources of international defence spending estimates; the effect on estimates of the currency conversion methodology employed; and a section providing in depth focus on the UK and some key NATO allies (USA, France and Germany) on a set of key comparators (percentage of GDP spent on defence, defence spending per capita, spend per service person, and the number of military personnel per thousand population).

The majority of these statistics are sourced from external bodies such as NATO, the Stockholm International Peace Research Institute (SIPRI), and the International Institute for Strategic Studies (IISS). Since Defence Economics has no control over the quality of data from these sources, the associated tables in the International Defence release are not Official Statistics.

Defence Economics perform the conversion from current to constant prices and to US dollars for recent NATO spending data. They also perform the conversion of SIPRI data using Purchasing Power Parities (PPP) which enables the comparison of currency conversion

methodologies. Where necessary any transformations of data in the Focus on NATO Allies section were also carried out by Defence Economics.

Limitations of International Defence data

When undertaking international comparisons of defence it is important to consider some well documented issues relating to the comparability and granularity of the international source data. Making direct comparisons will never be straightforward because:

- Defence expenditure data are merely input measures which give them only limited usefulness as an indicator of military strength, capability or burden.
- Whilst there are standardised definitions of defence spending and accounting conventions used by international organisations, principally the UN and NATO, not all countries record and publish their defence spending in accordance with such definitions and conventions. The standards themselves are not always transparent, adding to the difficulties of comparing estimates produced by different organisations.
- Some countries' actual defence expenditure may be very different from their budgeted expenditure.
- Differences in national tax regimes and the treatment of pension contributions can lead to significant distortions in expenditure.
- Departments other than defence departments may be deemed to contribute to defence whilst some spending by defence departments can be categorised as supporting other activities.
- The choice of conversion method (e.g. Market Exchange Rates (MER) or Purchasing Power Parity (PPP) rates) used to convert to a common currency can result in significantly different rankings of global defence spending. Using MER for instance tends to undervalue the currency, and hence the scale of expenditure, for countries with lower national incomes. Attempts are often made to circumvent this problem using PPP rates. These use currency conversion rates which equalise the overall price of a bundle of goods and services in each country. However PPP rates can be highly inaccurate because of the difficulty of allowing for differences in quality and devising appropriate and relevant "weightings" of individual goods and services. Civilian based PPPs may also not be representative of defence goods and services. [Click here](#) for more information on the measurement and uses of Purchasing Power Parity (PPP) rates.

Strengths and Weaknesses

The strengths of these statistics include the clarity of presentation and the clear signposting of data limitations. The selection of key facts to focus on in the commentary and charts is also a strength, helping the reader make sense of the large amount of underlying data.

Weaknesses are that we have no control over the quality of the data and that they are a measure of inputs, not outcomes or capabilities.

Latest Publications

1. [Finance Bulletin - International Defence 2016](#)

1.2 Producer Information

These statistics are produced by the Defence Expenditure Analysis area 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.

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

The data underlying Tables 1, 2 and 3 (as listed in the supplementary excel tables), and the associated Charts, are sourced from NATO's Defence Expenditure of NATO Countries publication (published 4 July 2016). The expenditure data for Table 4 is taken from the Stockholm International Peace Research Institute (SIPRI) military expenditure database and the PPP rates used are those published by the International Monetary Fund (IMF). Table 5 figures are those for SIPRI and those published by IISS in their Military Balance 2016 publication. The remaining tables relate to close NATO allies and all spending data here has been taken from the NATO release (details above). All data sources are fully signposted in the footnotes to the tables.

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 are often used within the MOD to provide context in papers, press lines and briefings. In 2010 they were used to underpin benchmarking work for the UK Strategic Defence and Security Review (as well as for the Australian SDSR) and to inform the corresponding Spending Review settlement. They were also used to inform the 2015 UK SDSR. The production of the tables has placed the Defence Expenditure Analysis branch in a position to offer guidance on the use of these statistics to others within the Department and they have formed the basis of several international collaboration projects.

Externally to the MOD, policy think tanks such as the Royal United Services Institute (RUSI) and International Institute for Strategic Studies (IISS) have used the data for policy papers and think pieces. We occasionally receive contextual questions from academics and interested parties.

Unmet User Needs

We have received some internal requests for performance metrics measuring international defence capabilities. There is consistent interest in making international comparisons based on defence 'outputs' rather than 'input' measures, these statistics provide information solely about the latter of these.

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

There are a number of issues surrounding the accuracy of NATO, SIPRI, and IISS data which include compliance with definitions, different treatment of pension contributions and tax regimes, and conversion methods. This is explained further in the section [Limitations of International Defence data](#). In addition, as some countries do not provide returns to SIPRI or IISS, some of their figures are estimates. Defence Economics has no control over the quality, reliability and coverage of the data contained in Tables sourced from these organisations.

Revisions

We reflect any revisions made by the statistics producers using 'r' markers. We follow the [Defence Statistics revisions policy](#).

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 International Defence is determined by Defence Economics. We publish the latest available data which is determined by the publication schedules of NATO, SIPRI and IISS. Defence Economics aims to publish the Bulletin in the Autumn and the statistics refer to the previous Calendar Year.

No bulletin was published in 2013 covering 2012, because NATO did not publish their expenditure information externally. They did publish an external publication on defence expenditure in early 2014 and International Defence was published for the first time in August 2014. It included both 2012 and 2013 expenditure figures.

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 the International Defence Statistical Bulletin which is freely available on the GOV.UK website. The data can be downloaded in two formats (PDF report and Excel tables) and is accompanied by commentary to provide supporting information, along with links to relevant publications.

The level of detail in these tables is limited by the available data but we have chosen the formats to be clear and understandable.

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.

The statistics in all Tables are consistent with those published by NATO, SIPRI and IISS. Where Defence Economics has converted data into US dollars or to constant prices, this methodology has been agreed with NATO statistical experts.

NATO, SIPRI and IISS have different definitions of military expenditure which, additionally, differ from the definition of Defence Expenditure used to compile the MOD's accounts, presented in the Departmental Resources Statistical Bulletin. It is not therefore possible to easily compare spending figures from these different sources.

The current NATO definition of defence expenditure differs from national definitions so the figures quoted may diverge considerably from those presented in national budgets. Expenditure is included for countries that provide Military Assistance: expenditure is not included for countries receiving assistance.

More information relating to the revised NATO definition can be found on the [NATO website](#). More information relating to the SIPRI definition of military expenditure can be found on the [SIPRI website](#).

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.

There are no trade offs which are relevant to these statistics.

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.

These tables are produced purely using data collected by external organisations. The bulletin

published by MOD placed no additional burden on the respondents.

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](#)

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 these statistics are understood and prevent misuse. The International Defence Statistical Bulletin contains commentary explaining these statistics.