



Invitation to Quote

**Invitation to Quote (ITQ) on behalf of the Department for Business,
Energy & Industrial Strategy**

**Subject: CR18053 What is the relationship between public and
private investment in research and innovation?**

Sourcing Reference Number: CR18053



UK Shared Business Services Ltd (UK SBS)
www.uksbs.co.uk

Registered in England and Wales as a limited company. Company Number 6330639.
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VAT registration GB618 3673 25
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Section 1 – About UK Shared Business Services

Putting the business into shared services

UK Shared Business Services Ltd (UK SBS) brings a commercial attitude to the public sector; helping our Contracting Authorities improve efficiency, generate savings and modernise.

It is our vision to become the leading service provider for the Contracting Authorities of shared business services in the UK public sector, continuously reducing cost and improving quality of business services for Government and the public sector.

Our broad range of expert services is shared by our Contracting Authorities. This allows Contracting Authorities the freedom to focus resources on core activities; innovating and transforming their own organisations.

Core services include Procurement, Finance, Grants Admissions, Human Resources, Payroll, ISS, and Property Asset Management all underpinned by our Service Delivery and Contact Centre teams.

UK SBS is a people rather than task focused business. It's what makes us different to the traditional transactional shared services centre. What is more, being a not-for-profit organisation owned by the Department for Business, Energy & Industrial Strategy (BEIS), UK SBS' goals are aligned with the public sector and delivering best value for the UK taxpayer.

UK Shared Business Services Ltd changed its name from RCUK Shared Services Centre Ltd in March 2013.

Our Customers

Growing from a foundation of supporting the Research Councils, 2012/13 saw Business, Energy and Industrial Strategy (BEIS) transition their procurement to UK SBS and Crown Commercial Services (CCS – previously Government Procurement Service) agree a Memorandum of Understanding with UK SBS to deliver two major procurement categories (construction and research) across Government.

UK SBS currently manages £700m expenditure for its Contracting Authorities.

Our Contracting Authorities who have access to our services and Contracts are detailed [here](#).

Section 2 – About the Contracting Authority

Department for Business, Energy & Industrial Strategy (BEIS)

The Department for Business, Energy and Industrial Strategy (BEIS) was created as a result of a merger between the Department of Energy and Climate Change (DECC) and the Department for Business, Innovation and Skills (BIS), as part of the Machinery of Government (MoG) changes in July 2016.

The Department is responsible for:

- developing and delivering a comprehensive industrial strategy and leading the government's relationship with business;
- ensuring that the country has secure energy supplies that are reliable, affordable and clean;
- ensuring the UK remains at the leading edge of science, research and innovation; and
- tackling climate change.

BEIS is a ministerial department, supported by 46 agencies and public bodies.

We have around 2,500 staff working for BEIS. Our partner organisations include 9 executive agencies employing around 14,500 staff.

<http://www.beis.gov.uk>

Section 3 - Working with the Contracting Authority.

In this section you will find details of your Procurement contact point and the timescales relating to this opportunity.

Section 3 – Contact details		
3.1	Contracting Authority Name and address	Department for Business, Energy & Industrial Strategy, 1 Victoria Street, London, SW1H 0ET
3.2	Buyer name	Jack Noden
3.3	Buyer contact details	Research@uksbs.co.uk
3.4	Maximum value of the Opportunity	£100,000.00 (Excluding VAT)
3.5	Process for the submission of clarifications and Bids	All correspondence shall be submitted within the Emptoris e-sourcing tool. Guidance Notes to support the use of Emptoris is available here. Please note submission of a Bid to any email address including the Buyer <u>will</u> result in the Bid <u>not</u> being considered.

Section 3 - Timescales		
3.6	Date of Issue of Contract Advert and location of original Advert	Thursday 29 th March 2018 Contracts Finder
3.7	Latest date/time ITQ clarification questions shall be received through Emptoris messaging system	Friday 6 th April 2018 11.00 am
3.8	Latest date/time ITQ clarification answers should be sent to all Bidders by the Buyer through Emptoris	Tuesday 10 th April 2018
3.9	Latest date/time ITQ Bid shall be submitted through Emptoris	Friday 13 th April 2018 14.00pm
3.10	Date/time Bidders should be available for Interview	Tuesday 24 th April 2018 – Thursday 26 th April 2018
3.11	Anticipated notification date of successful and unsuccessful Bids	Thursday 3 rd May 2018
3.12	Anticipated Award date	Thursday 3 rd May 2018
3.13	Anticipated Contract Start date	Wednesday 9 th May 2018
3.14	Anticipated Contract End date	Wednesday 31 st October 2018
3.15	Bid Validity Period	60 Days

Section 4 – Specification

1. Background

The government's ambitious, modern Industrial Strategy sets out a long term plan to boost the productivity and earning power of people throughout the UK. It sets out how we are building a Britain fit for the future – how we will help businesses create better, higher-paying

jobs in every part of the United Kingdom with investment in the skills, industries and infrastructure of the future. The Industrial Strategy will boost productivity and earning power across the country by focusing on the five foundations of productivity: Ideas, People, Infrastructure, Business Environment and Places.

As part of the ideas foundation of the Industrial Strategy, Government have committed to reach 2.4 per cent of GDP investment in R&D by 2027 and to reach 3 per cent of GDP in the longer term, placing us in the top quartile of OECD countries. Increasing investment in R&D to 2.4% of GDP in a decade is ambitious and will require concerted effort by the government and business.

The White Paper is a significant milestone but not the end point. It sets out a clear long-term ambition and framework with a series of policies supporting it. HMG will be working with industry over the coming months to develop a roadmap for meeting this target.

To support the roadmap, it is important to further our understanding of the relationship between public investment and private investment in R&D. When we refer to R&D, unless otherwise specified we are referring to R&D as defined by the Frascati manual.¹ This relationship between public and private R&D funding is generally expressed as a 'leverage' rate, i.e. the amount of additional private R&D investment stimulated by each unit of public R&D investment.

Public funding of R&D in businesses can lead to direct leverage, i.e. private funding of R&D on the specific R&D projects receiving public support, and to indirect leverage, i.e. private funding of R&D on other projects, whether in the supported firms, or other firms. Other firms might increase their R&D funding due to a competitive emulation effect, or a collaborative venture with the supported firms. Similarly, public funding of R&D in universities and research institutes may lead to direct leverage of private investment, where firms jointly fund projects with the universities and research institutes, and also to indirect leverage, i.e. businesses funding their own R&D projects as a result – perhaps to further develop basic research done in universities. BEIS is interested in all leverage, whether direct or indirect. Except where otherwise specified, 'leverage' is used to refer to both direct and indirect leverage.

Over the years, there has been a wide range of literature attempting to estimate leverage rates by analysing the relationship between aggregate public and aggregate private R&D investment, with time series regression analysis usually being the preferred method. The latest research is a BIS commissioned study by Economic Insight entitled, '[What is the relationship between public and private investment in science, research and innovation?](#)', 2015.

¹ OECD (2015), *Frascati Manual 2015*, available at: <http://www.oecd.org/publications/frascati-manual-2015-9789264239012-en.htm>

The study used time series econometric methods with ONS R&D data to estimate the effect of public R&D expenditure on private R&D expenditure at the UK level. It concluded that a £1 increase in public expenditure in R&D led to a £1.13 to £1.60 increase in private expenditure – or a mid-point of £1.36.

This project will aim to update and improve the methodology for the UK leverage rate, and extend the scope of previous research to explore if reliable leverage estimates can be differentiated by a) business sectors, b) between public support for businesses and public support for universities and research institutes, c) between direct public support for businesses and indirect public support for businesses (i.e. tax credits); and d) between the UK and foreign countries. Resulting evidence is intended to feed into the evidence base underpinning the roadmap for reaching the 2.4% R&D target.

2. Aims and Objectives of the Project

The focus of this study will be R&D 'leverage', meaning, the amount of private sector R&D investment that arises as a result of public sector R&D investment, and which otherwise would not have occurred. In the area of research and innovation there have been a number of studies which find that public investment in R&D crowds in, or 'leverages', private investment in R&D.

The aims of this study are to:

1. Produce a clear replicable methodology for estimating:
 - o the overall UK R&D leverage rate (best estimate with an uncertainty range);
 - o leverage rates (best estimate with uncertainty ranges) for public support for business and for support for universities/research institutions;
 - o leverage rates (best estimate with uncertainty ranges) for different business sectors;
 - o leverage rates (best estimate with uncertainty ranges) for direct support to business and indirect support to business (tax credits) and
 - o Leverage rates (best estimate with uncertainty ranges) for comparator countries, such as the US, France, Germany and Japan.
2. Identify the main barriers to producing this methodology, and the strengths and weaknesses associated with the method.
3. Produce new estimates of leverage ranges for the UK as a whole and across the dimensions referred to under (1), as well as for comparator countries.
4. If for any of these areas, no robust estimates are possible, then to produce a clear and agreed explanation of why this is the case.
5. Increase understanding as to the drivers of R&D leverage.

This evidence will improve the evidence base for the Industrial Strategy 2.4% R&D target roadmap, and feed into the International Research and Innovation Strategy.

Key research questions

We expect the research to address the following key research questions:

1. *What is the best estimate and suitable uncertainty range for average leverage of private sector R&D investment resulting from public R&D investment in the UK?*

We expect the contractor to re-estimate the UK wide leverage using improved methodology. The most recent estimate using 2012 data found that "a £1 increase in

public expenditure in R&D led to a £1.13 to £1.60 increase in private expenditure – or a mid-point of £1.36”.

2. *Over what time profile would this best estimate of UK leverage materialize?*
3. *What is the best estimate and suitable uncertainty range for; leverage of private sector R&D investment resulting from the following types of public R&D investment in the UK:*
 - a. *Publically funded R&D in universities and research institutions.*
 - b. *Direct support for R&D in businesses (grants and loans)*
 - c. *Indirect support for R&D in businesses (tax credits)*
4. *Can a robust leverage rate be calculated across different sectors? What are the best estimate and suitable uncertainty range for different sectors?*
5. *Can a robust leverage comparison be made across countries? What are the best estimate and suitable uncertainty range for comparator countries such as France, Germany, the US and Japan? Why do some countries have greater leverage rates than others and what drives greater leverage rates?*
6. *If in any of these areas, robust estimates cannot be made, why not? What further data would be required in order to make robust estimates?*
7. *What are the key drivers of leverage rates?*

The contractor would be expected to use the results of their analysis and review of the literature to inform this answer.

3. Suggested Methodology

- Time series econometric methods using publically available data.
- Panel series econometric analysis using publically available data.

BEIS expect the final method to be econometrics based, and applied to answering the research questions above.

Bidders are expected to demonstrate relevant R&D and innovation policy area knowledge, and strong expertise in using econometric regression analysis. This might include but is not limited to; sector level analysis, panel dataset analysis, and knowledge of industries, sectors, and their R&D investments.

Below is an overview of the methodology used by previous research in this area. Further detail of previous research can be found in the literature review undertaken as part of the Economic Insight report (2015) and in annex A which contains a brief summary of literature.

However, we would welcome bidders' alternative and innovative suggestions for methodology providing that they also meet the project aims and objectives.

Bids should include a discussion on the types of methodology the bidder proposes to explore in order to answer the different research questions set out above. It should provide an early assessment of the benefits/weaknesses and limitations of the methodology. It should also discuss the likelihood of the methodology succeeding and what success relies upon.

National and International Leverage Methodology

Bidders will demonstrate application of national leverage methodology to research questions 1, 2, 5 and 6. This covers leverage ranges for the UK and international comparators, in addition to time profiles of these leverage ranges and key drivers of estimates.

Evidence shows public R&D investment crowds in 'leverages' private R&D investment.

The Economic Insight paper (*'What is the relationship between public and private investment in science, research and innovation'*, 2015²) is the most recent literature available on UK leverage ranges, and provides significant grounding for the methodology needed to estimate this relationship for the UK and international comparators.

Based on the Economic Insight (2015) literature review and a review of relevant papers (see Annex A), we have found that time series regression analysis is usually the preferred method for estimating the relationship between private and public investment in R&D for national leverage.

Economic Insight (2015)², Diamond (1998)³ and Lichtenberg (1987)⁴ use time series regression analysis to estimate the elasticity of private investment in R&D following a change in public investment in R&D, for both direct and indirect R&D investment. Elasticity estimates are generally expressed as; a 1% change in public investment in R&D results in b% change in private expenditure on R&D.

Elasticity estimates generally use the following specification:

$$\ln(\text{private funding})_t = a + b \cdot \ln(\text{public funding})_t + c \cdot \text{controls} + e_t$$

Assuming that the equation is properly specified, the parameter *b* measures the elasticity of private funding with respect to public funding. Final estimates should be converted to a monetary metric, for example, Economic Insight (2015) estimate that a £1 increase in

² Economic Insight (2015), 'What is the relationship between public and private investment in science, research and innovation?'

³ Diamond (1998), 'Does federal funding crowd out private funding of science?'

⁴ Lichtenburg (1987), 'The effect of government funding on private industrial research and development: a re-assessment'

public sector expenditure on R&D will increase private sector expenditure by £1.36. This conversion is described in detail in the Economic Insight (2015) paper.⁵

Diamond (1998)² and Economic Insight (2015)¹ both identify that this model is susceptible to omitted variable bias. We expect bidders to consider the wide range of variables which should be included to describe changes in private investment in R&D.

BEIS expects bidders to have a clear understanding of the weaknesses of previous estimates and explore how they may be addressed in their proposed approach. These include but are not necessarily limited to:

- **Limited data points** – The 2015 analysis used 16 data points over the period 1997-2012, this is a very small sample for producing meaningful regression analysis results.
- **Limited number of control variables** included.
- **Econometric model specification** – The previous analysis used limited control variables, such as, a wage variable and gross capital formation variable. These may not have captured the full range of variables which affect private expenditure on R&D.
- **Additionality** - Modelling should aim to ensure results only capture additional private expenditure, and exclude private R&D expenditure which would have occurred anyway.
- **R&D tax credits** – Analysis did not account for R&D tax credits - the data used ascribed R&D tax credit funding to business R&D funding, thus overestimating leverage. R&D tax credit statistics may allow adjustment of GERD funding data.

Time lag – Analysis should consider whether control variables be lagged and for how long.

Estimates for comparator countries would be expected to use a similar approach, if necessary adapting according to data availability, recognising the greater the adaptation, the lower the comparability with the UK estimate.

We would expect question 7 to be answered through a literature review following estimations for research questions 1 to 6.

Leverage ranges for sectors:

Bidders will demonstrate application of sector leverage methodology to research question 4 and potentially question 1.

This part of the research can be approached via two strands. Firstly, analysis across sectors will increase the size of the data set, providing a panel of data for analysis of the UK leverage rate. Secondly, leverage ranges for specific sectors in the UK must be estimated in addition to the national leverage range estimates.

Evidence on sector specific leverage is limited. Gorg and Strobl (2007)⁶ and Becker and Pain (2007)⁷ provide methodological grounding for sectoral panel dataset analysis. These

⁵ Economic Insight (2015), 'What is the relationship between public and private investment in science, research and innovation?' Pg. 62.

⁶ Görg and Strobl (2007), 'The effect of R&D subsidies on private R&D'

⁷ Becker and Pain (2007), 'What determines industrial R&D expenditure in the UK?'

papers both use panel data regression analysis to estimate the elasticity of private investment in R&D from changes in public investment in R&D in the manufacturing sector. Methodological grounding can also be found in Hauk (2011)⁸, this paper used a sectoral panel set dataset to estimate the elasticity of trade markets.

Question 3 on leverage ranges for direct and indirect R&D support may use a similar methodology to sector based leverage ranges. The Economic Insight (2015)⁹ paper provides methodological grounding for assessing the effect of publically funded research conducted within Higher Education Institutions (HEI) on the amount of private funding of research conducted within HEIs.

Tenders should outline which data sources they would envisage analysing and how they would use them. This could include the following datasets, however bidders may like to explore other datasets:

ONS:

- UK Gross domestic expenditure on research and development (GERD)

Estimates of research and development funded by business enterprise, higher education, government, which includes research councils and private non-profit organisations.

- UK Business enterprise research and development (BERD)

Spending and numbers employed on research and development in the UK broken down by product group (the sector relating to R&D area), sector (the sector relating to the main business area of the firm), and civil and defence businesses.

- UK R&D Tax Credit Statistics

R&D tax credit support values in different years on an accounting period basis

- Quality Adjusted Labour Input

Estimates of labour input used in production, weighting the hours worked by different types of workers by their relative contribution to economic production.

- Capital Services estimates

Indices of capital input to production at a disaggregated level, 57 industries and 13 assets, with corresponding modelled user cost of capital used to weight the indices.

OECD:

- Main Science and Technology Indicators

Collection of the main R&D measures across OECD and other countries

⁸ Hauk (2011), 'U.S. import and export elasticities: a panel data approach'

⁹ Economic Insight (2015), 'What is the relationship between public and private investment in science, research and innovation?'

Eurostat:

- Science, Technology and Innovation database

Collection of the main R&D measures across EU countries

Gateway to Research

Provides information about publications, people, organisations and outcomes relating to research projects funded by UK Research Councils.

4. Deliverables

The project is expected to proceed as follows:

- **Inception meeting** - contractors and BEIS steering group will meet to discuss how the project will proceed.
- **Reviewing the available data** - contractors will review existing datasets and choose appropriate time series or panel data for assessing the questions posed above. We would expect contractors to make use of the data sources listed above, and suggest additional data sources where appropriate.
- **Identifying the required control variables** - private expenditure on R&D is likely to depend on a number of variables including public expenditure on R&D. Contractors should assess control variables which could affect the leverage rate at a UK level, sector level, and in international comparators to ensure most effects are captured in models estimating leverage ratios.
- **Confirming the methodology** - given the results from reviewing the available evidence we would expect contractors to produce a methodology report confirming the methodology they will be using for the econometrics, the benefits/ weaknesses and limitations of said methodology.
- **Break clause** - BEIS will retain the right to cancel this project following the preliminary methodology report if it becomes clear that the research will provide no new or improved evidence on the outputs specified.
- **Regular contact with BEIS contract managers** We expect contractors to share preliminary methodology with BEIS, and to have in place regular catch-ups to discuss project progress.
- **Building the dataset** pulling together the necessary time series of dependent and independent variables.
- **Performing the econometrics** Contractors will be required to have a strong grounding in econometric analysis, and the ability to choose best method of econometric analysis for the questions posed.
- **Report writing** Data analysis will conclude with a short report, summarising approach, econometric analysis, results, and conclusions. The contractor will also need to provide fully documented software code, used for regressions analysis, and all underlying data (with complete references). All the tables and figures in the report need to be provided to BEIS in an excel sheet with data as well.
 - o Fully documented software code, used for regressions analysis, and all underlying data (with complete reference).
 - o All tables and figures in the report need to be in an excel sheet with data included
 - o All models will be compliant with BEIS QA practice, further information on BEIS QA practice can be found [here](#):

<https://www.gov.uk/government/collections/quality-assurance-tools-and-guidance-in-decc>.

BEIS will require the methodology report and final report to be made available for academic peer review, which BEIS will fund separately.

All contractors are to ensure the following are included in the costings for this project:

- An improved methodology to estimate the UK wide leverage rate and the time profile of the UK wide leverage range.
- A new methodology to estimate leverage rate across:
 - o direct and indirect support for business R&D
 - o different business sectors
 - o direct support for business versus public funding of R&D in universities and research institutions
 - o If no robust methodology is available for any of these breakdowns, then the contractor will discuss the reasons in detail.
- A new methodology to undertake comparable estimates of aggregate leverage of comparator countries, such as France, Germany, the US and Japan.
- Methodology proposal report. This will be discussed and agreed with BEIS before moving on to the econometric work.
- Updated and new leverage range estimates for the UK, sectors, and international competitors
- A final report summarising approach, econometric analysis, results, and conclusions
 - o Fully documented software code, used for regressions analysis, and all underlying data (with complete reference).
 - o All tables and figures in the report need to be in an excel sheet with data included
- Presentation of methodology and results to BEIS analysts and policy officials
- Summary poster/infographic

Publication

The final report for this research / evaluation project must be formatted according to BEIS publication guidelines, therefore within the Research paper series template and adhering to BEIS accessibility requirements for all publications on GOV.UK. The publication template will be provided by the project manager. Please ensure you note the following in terms of accessibility:

Checklist for Word accessibility

Word documents supplied to BEIS will be assessed for accessibility upon receipt.

Documents which do not meet one or more of the following checkpoints will be returned to you for re-working at your own cost.

- document reads logically when reflowed or rendered by text-to-speech software
- language is set to English (in File > Properties > Advanced)
- Structural elements of document are properly tagged (headings, titles, lists etc.)

- all images/figures have either alternative text or an appropriate caption
- tables are correctly tagged to represent the table structure
- text is left aligned, not justified
- document avoids excessive use of capitalised, underlined or italicised text
- hyperlinks are spelt out (e.g. in a footnote or endnote)

Datasets to support those to be published in the final report must be provided in an accessible format (CVS, Excel) on submission of the report.

Terms and Conditions

Bidders are to note that any requested modifications to the Contracting Authority Terms and Conditions on the grounds of statutory and legal matters only, shall be raised as a formal clarification during the permitted clarification period.

Section 5 – Evaluation model

The evaluation model below shall be used for this ITQ, which will be determined to two decimal places.

Where a question is 'for information only' it will not be scored.

The evaluation team may comprise staff from UK SBS and the Contracting Authority and any specific external stakeholders the Contracting Authority deems required. After evaluation the scores will be finalised by performing a calculation to identify (at question level) the mean average of all evaluators (Example – a question is scored by three evaluators and judged as scoring 5, 5 and 6. These scores will be added together and divided by the number of evaluators to produce the final score of 5.33 ($5+5+6=16 \div 3 = 5.33$))

Pass / fail criteria		
Questionnaire	Q No.	Question subject
Commercial	SEL1.2	Employment breaches/ Equality
Commercial	FOI1.1	Freedom of Information Exemptions
Commercial	AW1.1	Form of Bid
Commercial	AW1.3	Certificate of Bona Fide Bid
Commercial	AW3.1	Validation check
Commercial	SEL3.11	Compliance to Section 54 of the Modern Slavery Act
Commercial	SEL3.12	Cyber Essentials
Commercial	SEL3.13	General Data Protection Regulations (GDPR)
Commercial	AW4.1	Contract Terms Part 1
Commercial	AW4.2	Contract Terms Part 2
Quality	AW6.1	Compliance to the Specification
Price	AW5.1	Maximum Budget
-	-	Invitation to Quote – received on time within e-sourcing tool

Scoring criteria			
Evaluation Justification Statement In consideration of this particular requirement the Contracting Authority has decided to evaluate Potential Providers by adopting the weightings/scoring mechanism detailed within this ITQ. The Contracting Authority considers these weightings to be in line with existing best practice for a requirement of this type.			
Questionnaire	Q No.	Question subject	Maximum Marks
Price	AW5.2	Price	20%
Quality	PROJ1.1	Approach	35%
Quality	PROJ1.2	Staff to Deliver	10%

Quality	PROJ1.3	Understanding the Environment	15%
Quality	PROJ1.4	Risk Management	10%
Quality	PROJ1.5	Interview	10%

Evaluation of criteria

Non-Price elements

Each question will be judged on a score from 0 to 100, which shall be subjected to a multiplier to reflect the percentage of the evaluation criteria allocated to that question.

Where an evaluation criterion is worth 20% then the 0-100 score achieved will be multiplied by 20%.

Example if a Bidder scores 60 from the available 100 points this will equate to 12% by using the following calculation:

$$\text{Score} = \{\text{weighting percentage}\} \times \{\text{bidder's score}\} = 20\% \times 60 = 12$$

The same logic will be applied to groups of questions which equate to a single evaluation criterion.

The 0-100 score shall be based on (unless otherwise stated within the question):

0	The Question is not answered or the response is completely unacceptable.
10	Extremely poor response – they have completely missed the point of the question.
20	Very poor response and not wholly acceptable. Requires major revision to the response to make it acceptable. Only partially answers the requirement, with major deficiencies and little relevant detail proposed.
40	Poor response only partially satisfying the selection question requirements with deficiencies apparent. Some useful evidence provided but response falls well short of expectations. Low probability of being a capable supplier.
60	Response is acceptable but remains basic and could have been expanded upon. Response is sufficient but does not inspire.
80	Good response which describes their capabilities in detail which provides high levels of assurance consistent with a quality provider. The response includes a full description of techniques and measurements currently employed.
100	Response is exceptional and clearly demonstrates they are capable of meeting the requirement. No significant weaknesses noted. The response is compelling in its description of techniques and measurements currently employed, providing full assurance consistent with a quality provider.

All questions will be scored based on the above mechanism. Please be aware that the final score returned may be different as there may be multiple evaluators and their individual scores will be averaged (mean) to determine your final score.

Example

Evaluator 1 scored your bid as 60

Evaluator 2 scored your bid as 60

Evaluator 3 scored your bid as 40

Evaluator 4 scored your bid as 40

Your final score will $(60+60+40+40) \div 4 = 50$

Price elements will be judged on the following criteria.

The lowest price for a response which meets the pass criteria shall score 100.

All other bids shall be scored on a pro rata basis in relation to the lowest price. The score is then subject to a multiplier to reflect the percentage value of the price criterion.

For example - Bid 1 £100,000 scores 100.

Bid 2 £120,000 differential of £20,000 or 20% remove 20% from price scores 80

Bid 3 £150,000 differential £50,000 remove 50% from price scores 50.

Bid 4 £175,000 differential £75,000 remove 75% from price scores 25.

Bid 5 £200,000 differential £100,000 remove 100% from price scores 0.

Bid 6 £300,000 differential £200,000 remove 100% from price scores 0.

Where the scoring criterion is worth 50% then the 0-100 score achieved will be multiplied by 50.

In the example if a supplier scores 80 from the available 100 points this will equate to 40% by using the following calculation: Score/Total Points multiplied by 50 ($80/100 \times 50 = 40$)

The lowest score possible is 0 even if the price submitted is more than 100% greater than the lowest price.

Section 6 – Evaluation questionnaire

Bidders should note that the evaluation questionnaire is located within the **e-sourcing questionnaire**.

Guidance on completion of the questionnaire is available at
<http://www.uksbs.co.uk/services/procure/Pages/supplier.aspx>

PLEASE NOTE THE QUESTIONS ARE NOT NUMBERED SEQUENTIALLY

Section 7 – General Information

What makes a good bid – some simple do's 😊

DO:

- 7.1 Do comply with Procurement document instructions. Failure to do so may lead to disqualification.
- 7.2 Do provide the Bid on time, and in the required format. Remember that the date/time given for a response is the last date that it can be accepted; we are legally bound to disqualify late submissions. Unless formally requested to do so by UK SBS e.g. Emptoris system failure
- 7.3 Do ensure you have read all the training materials to utilise e-sourcing tool prior to responding to this Bid. If you send your Bid by email or post it will be rejected.
- 7.4 Do use Microsoft Word, PowerPoint Excel 97-03 or compatible formats, or PDF unless agreed in writing by the Buyer. If you use another file format without our written permission we may reject your Bid.
- 7.5 Do ensure you utilise the Emptoris messaging system to raise any clarifications to our ITQ. You should note that we will release the answer to the question to all Bidders and where we suspect the question contains confidential information we may modify the content of the question to protect the anonymity of the Bidder or their proposed solution
- 7.6 Do answer the question, it is not enough simply to cross-reference to a 'policy', web page or another part of your Bid, the evaluation team have limited time to assess bids and if they can't find the answer, they can't score it.
- 7.7 Do consider who the Contracting Authority is and what they want – a generic answer does not necessarily meet every Contracting Authority's needs.
- 7.8 Do reference your documents correctly, specifically where supporting documentation is requested e.g. referencing the question/s they apply to.
- 7.9 Do provide clear, concise and ideally generic contact details; telephone numbers, e-mails and fax details.
- 7.10 Do complete all questions in the questionnaire or we may reject your Bid.
- 7.11 Do check and recheck your Bid before dispatch.

What makes a good bid – some simple do not's Ⓜ

DO NOT

- 7.12 Do not cut and paste from a previous document and forget to change the previous details such as the previous buyer's name.
- 7.13 Do not attach 'glossy' brochures that have not been requested, they will not be read unless we have asked for them. Only send what has been requested and only send supplementary information if we have offered the opportunity so to do.
- 7.14 Do not share the Procurement documents, they are confidential and should not be shared with anyone without the Buyers written permission.
- 7.15 Do not seek to influence the procurement process by requesting meetings or contacting UK SBS or the Contracting Authority to discuss your Bid. If your Bid requires clarification the Buyer will contact you. All information secured outside of formal Buyer communications shall have no Legal standing or worth and should not be relied upon.
- 7.16 Do not contact any UK SBS staff or the Contracting Authority staff without the Buyers written permission or we may reject your Bid.
- 7.17 Do not collude to fix or adjust the price or withdraw your Bid with another Party as we will reject your Bid.
- 7.18 Do not offer UK SBS or the Contracting Authority staff any inducement or we will reject your Bid.
- 7.19 Do not seek changes to the Bid after responses have been submitted and the deadline for Bids to be submitted has passed.
- 7.20 Do not cross reference answers to external websites or other parts of your Bid, the cross references and website links will not be considered.
- 7.21 Do not exceed word counts, the additional words will not be considered.
- 7.22 Do not make your Bid conditional on acceptance of your own Terms of Contract, as your Bid will be rejected.

Some additional guidance notes

- 7.23 All enquiries with respect to access to the e-sourcing tool and problems with functionality within the tool must be submitted to Crown Commercial Service (previously Government Procurement Service), Telephone 0345 010 3503.
- 7.24 Bidders will be specifically advised where attachments are permissible to support a question response within the e-sourcing tool. Where they are not permissible any attachments submitted will not be considered as part of the evaluation process.
- 7.25 Question numbering is not sequential and all questions which require submission are included in the Section 6 Evaluation Questionnaire.
- 7.26 Any Contract offered may not guarantee any volume of work or any exclusivity of supply.
- 7.27 We do not guarantee to award any Contract as a result of this procurement
- 7.28 All documents issued or received in relation to this procurement shall be the property of the Contracting Authority. / UKSBS.
- 7.29 We can amend any part of the procurement documents at any time prior to the latest date / time Bids shall be submitted through Emptoris.
- 7.30 If you are a Consortium you must provide details of the Consortiums structure.
- 7.31 Bidders will be expected to comply with the Freedom of Information Act 2000 or your Bid will be rejected.
- 7.32 Bidders should note the Government's transparency agenda requires your Bid and any Contract entered into to be published on a designated, publicly searchable web site. By submitting a response to this ITQ Bidders are agreeing that their Bid and Contract may be made public
- 7.33 Your bid will be valid for 60 days or your Bid will be rejected.
- 7.34 Bidders may only amend the contract terms during the clarification period only, only if you can demonstrate there is a legal or statutory reason why you cannot accept them. If you request changes to the Contract terms without such grounds and the Contracting Authority fail to accept your legal or statutory reason is reasonably justified we may reject your Bid.
- 7.35 We will let you know the outcome of your Bid evaluation and where requested will provide a written debrief of the relative strengths and weaknesses of your Bid.
- 7.36 If you fail mandatory pass / fail criteria we will reject your Bid.
- 7.37 Bidders are required to use IE8, IE9, Chrome or Firefox in order to access the functionality of the Emptoris e-sourcing tool.
- 7.38 Bidders should note that if they are successful with their proposal the Contracting Authority reserves the right to ask additional compliancy checks prior to the award of any Contract. In the event of a Bidder failing to meet one of the compliancy checks

the Contracting Authority may decline to proceed with the award of the Contract to the successful Bidder.

- 7.39 All timescales are set using a 24 hour clock and are based on British Summer Time or Greenwich Mean Time, depending on which applies at the point when Date and Time Bids shall be submitted through Emptoris.
- 7.40 All Central Government Departments and their Executive Agencies and Non Departmental Public Bodies are subject to control and reporting within Government. In particular, they report to the Cabinet Office and HM Treasury for all expenditure. Further, the Cabinet Office has a cross-Government role delivering overall Government policy on public procurement - including ensuring value for money and related aspects of good procurement practice.

For these purposes, the Contracting Authority may disclose within Government any of the Bidders documentation/information (including any that the Bidder considers to be confidential and/or commercially sensitive such as specific bid information) submitted by the Bidder to the Contracting Authority during this Procurement. The information will not be disclosed outside Government. Bidders taking part in this ITQ consent to these terms as part of the competition process.

- 7.41 The Government is introducing its new Government Security Classifications (GSC) classification scheme on the 2nd April 2014 to replace the current Government Protective Marking System (GPMS). A key aspect of this is the reduction in the number of security classifications used. All Bidders are encouraged to make themselves aware of the changes and identify any potential impacts in their Bid, as the protective marking and applicable protection of any material passed to, or generated by, you during the procurement process or pursuant to any Contract awarded to you as a result of this tender process will be subject to the new GSC. The link below to the Gov.uk website provides information on the new GSC:

<https://www.gov.uk/government/publications/government-security-classifications>

The Contracting Authority reserves the right to amend any security related term or condition of the draft contract accompanying this ITQ to reflect any changes introduced by the GSC. In particular where this ITQ is accompanied by any instructions on safeguarding classified information (e.g. a Security Aspects Letter) as a result of any changes stemming from the new GSC, whether in respect of the applicable protective marking scheme, specific protective markings given, the aspects to which any protective marking applies or otherwise. This may relate to the instructions on safeguarding classified information (e.g. a Security Aspects Letter) as they apply to the procurement as they apply to the procurement process and/or any contracts awarded to you as a result of the procurement process.

USEFUL INFORMATION LINKS

- [Emptoris Training Guide](#)
- [Emptoris e-sourcing tool](#)
- [Contracts Finder](#)
- [Bribery Act introduction](#)
- [Freedom of information Act](#)

Annex A – Literature summary table

Paper	Estimated effect	Data used	Coefficient of additionality ¹⁰	Method	Weaknesses/constraint to estimate
Economics Insights (2015), 'What is the relationship between public and private investment in science, research and innovation?'	UK national leverage. Effect of public funding on private funding in the UK.	UK ONS GERD (Gross Expenditure on R&D) time series 1997-2012	0.48-0.68 (0.58 midpoint) £1.36 (pound conversion of elasticity midpoint estimate)	High point of range (Model 1) - Included one year lagged public funding, gross fixed capital and one year lagged private funding as control variables. Low point of range (Model 2) - Included one year lagged public funding, gross fixed capital and wage (mean wage for professional occupations) as control variables.	Data was limited. The leverage rate was estimated using 16 data points over the period 1997-2012, this is a very small sample for producing meaningful regression analysis results. More recent data is now available. Overly parsimonious econometric model specification, which could impact on robustness. Very few variables were tested, and limited control variables used. In the final range used for leverage, two models were used: - o Wage variable does not specifically capture researcher wages so may underestimate or overestimate the impact of wage changes on increases in private expenditure on R&D. - o Gross fixed capital formation has been used as a proxy for all of the factors that drive private sector investment. This measures private firm's investment into capital such as land and buildings.

¹⁰ (the percentage change in private expenditure arising from a 1% increase in public expenditure)

					Using this variable may not be sufficient to control for all the other factors which may affect private sector R&D investment (outside of government R&D funding). R&D tax credits. Analysis did not account for R&D tax credits - the data used ascribed R&D tax credit funding to business R&D funding, thus overestimating leverage. Additionality. The report failed to fully explain how the regression analysis ensured it captured only additional private expenditure.
Diamond (1998), 'Does federal funding crowd out private funding of science?'	US national leverage. Effect of federal funding of basic research on private finding of basic research.	US macro time series 1953-1993	1.04	Empirical time series regression model. Dependent variable is first difference in levels of private funding of public research; independent variables are federal funding and GDP.	Author notes results should be interpreted with caution. The high elasticity could result from public and private expenditure being driven by an omitted variable, such as the cost of performing research or potential returns to research. Furthermore, estimate is in relation to expenditure on basic research, which naturally has a higher elasticity compared to all research expenditure.
Lichtenberg (1987), 'The effect of government	US national leverage.	US macro time series 1956-1983	0.045 (insignificant)	Empirical time series regression model.	Results insignificant.

funding on private industrial research and development: a re-assessment'	Effect of federally funded industrial research on privately funded industrial research.			Paper estimates regressions of private R&D expenditure on US federal industrial R&D expenditure controlling for total demand (sales), and other variables.	
Guellec and van Pottelsberghe de la Potterie (2003), 'The impact of public R&D expenditure on business R&D'	Cross country macro analysis. Effect of publicly performed research on business funded research.	Macro panel data on 17 OECD countries 1981–1996	0.08 for government funding, -0.07 for government research Direct government funding of R&D performed by firms has a positive effect on business financed R&D (except if funding is targeted towards	Empirical panel data set regression model. Classifies three types of policy instrument that governments can use to support private investment in R&D: publically performed research (government or university); government funded business-performed R&D; fiscal incentives. Empirical model considers business funded R&D as a function of output, the policy instruments, time dummies and country specific fixed effects. The model also includes lagged business expenditure variable (lagged dependent variable) to	Authors identify issue of analysing additionality at the macroeconomic level, that business and government expenditure could be influenced by common factors, which would bias the estimated relationship. Identify two factors likely to be important: (1) changes in business cycles which could affect financial constraints on business and government (include GDP growth as an explanatory variable for business funded R&D), (2) changes in the cost of R&D may affect both sectors, e.g. wages and input prices (model therefore includes a wage variable estimated by Goolsbee (1998).

			defence activities). Direct funding is more effective when it is stable over time. The stimulating effect of government funding varies with respect to its generosity, it increases up to a certain threshold (about 10% of business R&D) and then decreases beyond.	account for short and long-run elasticities. Also created a model linking TFP and public sector science funding in the UK over the period 1995-2007.	
Haskel et al. (2014), 'The economic significance of the UK science base'	Micro level HE funding leverage. Effect of QR and RC funding on total external	HESA and HEBCI data from UK HEIs 2003-2012	0.28** Results suggest that if public funding was 1% higher in the first period (2003-	Related level of private funding in a HEI in 2008-12 to the level of private and public funding achieved in the period before (2003-07).	Only two time period were used, so extrapolation and not a robust estimate of long-run dynamics.

	income (including public and private)		2007), private sector funding would be 0.1% higher in the second period (2008-2012).		
Becker and Pain (2007), 'What determines industrial R&D expenditure in the UK?'	Sector specific leverage. Effect of government funded research conducted in industry on total industry R&D expenditure.	Panel of 11 UK manufacturing industries 1993-2000	0.18 Find public funding has a positive effect on short run and long run private R&D expenditure.	Panel data regression analysis. Identify five main categories of determinants of business investment in R&D: specific firm/ industry characteristics, such as sales and profitability, product market competition, public policies (direct and indirect funding), endowment and location plus spillovers from other sectors, other determinants of R&D expenditure such as support by foreign firms, macroeconomics factors such as interest and exchange rates	
Görg and Strobl (2007), 'The effect of R&D subsidies on private R&D'	Sector specific leverage. Effect of public sector grants to	Panel of Irish manufacturing firms 1999-2002	Positive for small grants, negative for large At a small or medium scale	Panel data regression analysis. Regression included explanatory variables according to the size of the R&D subsidy. Dummy	Does not take account of substitution effects across the whole economy. Public spending may attract more private funding in one area, but simultaneously take it away from others.

	manufacturing firms on the firm's investment in R&D.		grant provision does not crowd out private spending. Large grants may act to finance R&D activity which would have taken place anyway. No evidence of additionality or crowding out effects for foreign multinationals regardless of grant amount size.	variables were used to denote the size of the grant received.	
Becker (2014), 'Public R&D policies and private R&D investment: A survey of the empirical evidence'	Literature review. Effect of public R&D policies on private R&D investment.	N/A	N/A	Literature review. Literature review looking at direct investment (including firm level data).	N/A

Hauk (2011), 'U.S. import and export elasticities: a panel data approach'	N/A Estimates of sectoral trade elasticities.	Sectoral-level import and export elasticities in the U.S. between the years 1978-2001	N/A (measures import demand and export supply elasticities).	Panel data regression analysis. Proposes the use of panel data techniques as a means of generating import price indexes, and then using them to measure trade elasticities while instrumenting for the endogenous variables. In particular, it provides a dataset listing trade elasticities for a broad range of sectors.	Endogeneity (the causal effect between the amount of imports and the price of imports could go both ways); the unit prices may be imperfectly measured.
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