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Research and Development Tax Credits Statistics

September 2020

Table of Contents

Section 1: Key points and summary

1.1 Key Points

- As of 30 June 2020, there have been 59,265 R&D tax credit claims for 2018-19, of which 52,160 are in the SME R&D scheme. This is based on partial data for the year and expected to increase as more returns are received.

- As of 30 June 2020, £5.3bn of R&D tax relief support has been claimed for 2018-19, corresponding to £35.3bn of R&D expenditure.

- Due to the nature of the scheme, returns for the latest financial year reported (2018-19) can still be submitted past the cut-off date for the publication. As a result, data for 2018-19 is not yet complete. To avoid misleading comparisons between years we have compared the years 2017-18 to 2016-17 in the publication when discussing change between years, and 2018-19 when discussing in-year characteristics.

- In 2017-18 the total number of claims for R&D tax credits rose to 62,095, an increase of 17% from 2016-17. The increase was primarily driven by a rise in the number of SME claims, which totalled 54,005 in 2017-18, an increase of 19% from 2016-17.

- The total amount of R&D support claimed increased to £5.1bn in 2017-18, an increase of 15% from the previous year.

- The total value of R&D expenditure against which claims were made was £36.5bn in 2017-18, an increase of 8% from the previous year.

- R&D claims are concentrated in companies with a registered office in London, the South East or the East of England (45% of all claims and 60% of the total amount claimed for 2018-19). However, the regional split is based on the registered head office location so may not be where all the R&D activity takes place.

- The ‘Manufacturing’, ‘Professional, Scientific and Technical’, and ‘Information and Communication’ sectors continued to have the greatest volume of claims, making up a total of 66% of claims and 71% of the total amount claimed for 2018-19.

- There have been 15,750 first time applicants for R&D tax credits in 2017-18, an increase of 10% from the previous year. This increase is largely driven by SME companies.

- Between 2000-01, when the R&D tax credit schemes were launched, and 2018-19, over 300,000 claims have been made and £33.3bn in tax relief claimed.

Section 2: Introduction

2.1 About these statistics

This publication provides information on the number of companies claiming Research and Development (R&D) tax credits and the cost to the Exchequer of providing that support.

The statistics are compiled using claims made for tax credits which are reported on the Corporation Tax (CT) return form CT600. The CT600 form shows the enhanced amount of R&D expenditure and the amount of any R&D payable tax credit. Companies also state under which scheme they are claiming for the Small and Medium Enterprise (SME) and large company schemes. The figures are for 2000-01 to 2018-19 and are based on returns received on or before 30 June 2020. The filing deadline for CT returns is one year from the end of the accounting period. The filing deadline for accounting periods ending in 2018-19 was 31 March 2020, and the extra 3 months allows for the processing of returns. R&D tax relief claims may be submitted up to one year after the filing deadline, therefore the 2018-19 statistics presented here will be subject to revision in next year's publication. As well as new statistics for 2018-19, this release includes revisions to 2014-15, 2015-16, 2016-17 and 2017-18 as a result of receiving additional returns. Further explanation on these changes are provided in the background notes.

The number of claims is higher than the number of companies making claims. This is because a company can make more than one claim in the same year, either because they claim under different schemes or because a company with more than one accounting period ending in a single financial year will submit a return for each accounting period ending in that year.

2.2 What are Research and Development (R&D) tax credits?

R&D tax credits are a tax relief designed to encourage greater R&D spending, leading in turn to greater investment in innovation. They work by either reducing a company's liability to corporation tax or by making a payment to the company.

This publication includes the statistics relating to three schemes for claiming relief: The Small or Medium-sized Enterprise (SME) Scheme; The large company Scheme; and Research and Development Expenditure Credits (RDEC).

A SME may claim a higher rate of relief than a large company. Also, a SME which has no tax bill to reduce may claim a cash payment instead.

R&D tax credits were introduced for SMEs in 2000 and extended to large companies from 2002. An additional "top-up" relief for vaccines research was introduced in 2003 – known as Vaccines Research Relief (VRR)[1].

[1] VRR for SMEs has been removed for expenditure incurred on or after 1 April 2012 but was still available to large companies for expenditure up to 31st March 2017.

The Research and Development Expenditure Credit (RDEC) scheme (also known as 'Above-the-Line') was introduced in April 2013 for large companies. Companies could choose the new RDEC scheme or the large company scheme in respect of expenditure incurred between April 2013 and the end of March 2016, after which time the large company scheme was no longer available. A company with no tax liability that claims the expenditure credit may now receive a cash payment. In some exceptional circumstances companies may have incurred expenditure before 1 April 2016 but make claims under the large company scheme after 1 April 2016.

Further information on the schemes is included in the Background Information section of this publication.

2.3 What do the tables contain?

Tables RD1 to RD8 are published on gov.uk.

Table RD1 shows how many R&D tax credit claims have been made under each scheme since 2000.

Tables RD2 and RD3 show the cost to the Exchequer (on an accounting period and receipts basis, respectively – see explanation in the Financial years section) of meeting the claims shown in table RD1.

Table RD4 shows how much qualifying R&D expenditure has been used to make the R&D tax credit claims shown in table RD1.

Table RD5 provides a registered office regional analysis of R&D tax credit claims for 2017-18 and 2018-19.

Table RD6 provides an industry sector analysis of R&D tax credit claims for 2017-18 and 2018-19.

Table RD7 provides a claim size analysis of R&D tax credit claims for 2017-18 and 2018-19.

Table RD8 provides an analysis of first time applicants for R&D tax credits.

Supplementary tables will be published in Spring 2021, including more detailed breakdowns of R&D tax credit claims by:

- County / unitary authority
- Region and industrial sector
- Claim size by region
- Claim size by sector

Section 3: Commentary

3.1 Number of claims

The total number of claims for R&D tax credits for 2017-18 was 62,095, an increase of 17% from 2016-17. (See table RD1). The number of SME claims rose by 19% to 54,005, while the total number of claims for the RDEC scheme increased by 7% to 8,085. So far there have been 59,265 claims for 2018-19, of which 52,160 are in the SME scheme and 7,105 in the RDEC scheme. These numbers are expected to increase as more returns are received.

Figure 1 shows the number of claims under each scheme in each financial year (data from Table RD1). The 2018-19 data has been shaded to indicate these figures are based on partial data and expected to increase as more returns are received.

Figure 1: Number of claims received for R&D tax credits by scheme, 2000-01 to 2018-19

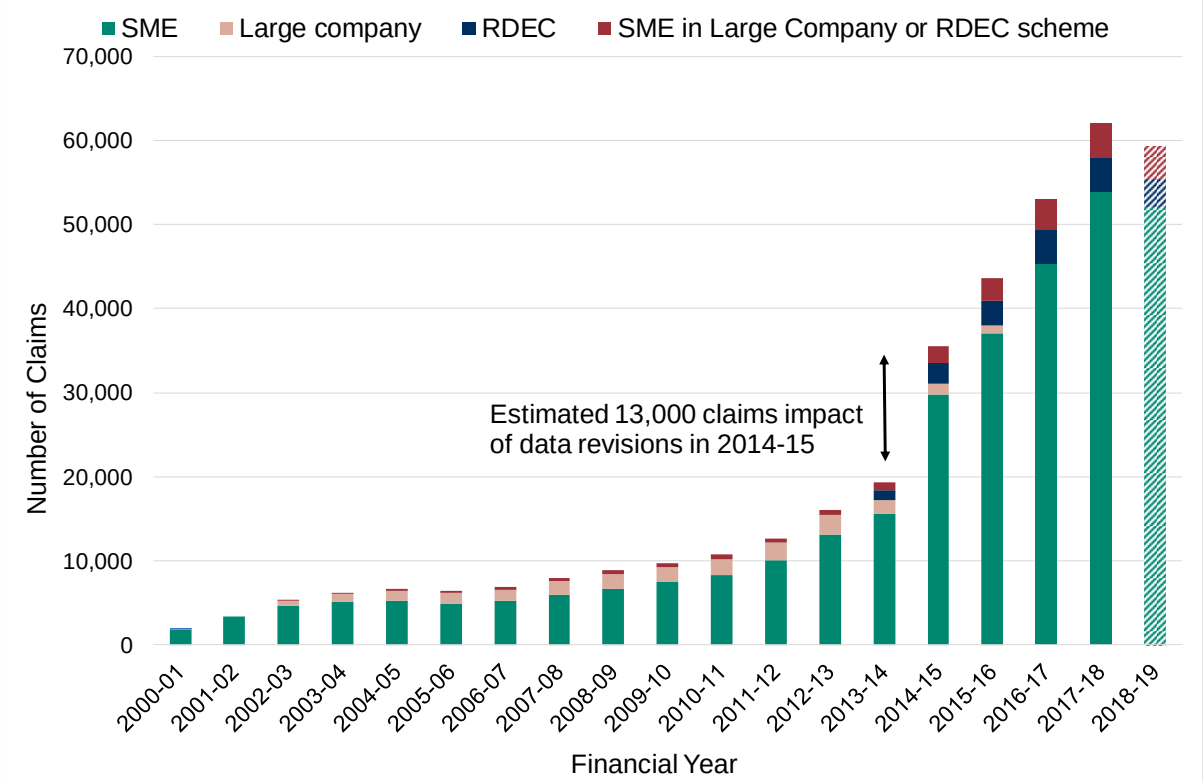


Figure 1 shows a particularly large increase in the number of claims between 2013-14 and 2014-15. However, this is mainly because of the revisions to 2014-15 as a result of additional claims being identified and incorporated into the statistics in the September 2018 publication. Years prior to 2014-15 have not been revised.

The increase in the number of SME claims in recent years is likely to reflect the effect of changes made to the SME scheme from April 2012 onwards. The removal of the requirement for a minimum R&D expenditure of £10,000 has meant that more companies are eligible to apply for the relief. In the same year the PAYE cap was removed, opening up the scheme to more users. There have also been increases in the SME enhanced expenditure rate, including a rise from 125% to 130% in 2015-16.

These changes, together with an increase in the SME payable tax credit rate from 11% in 2012-13 to 14.5% in 2014-15, have made the scheme more attractive.

RDEC has replaced the large company scheme with effect from 1 April 2016. Due to the very small number of claims still received, large company claims from 2016-17 onwards are included in RDEC totals.

3.2 Companies with more than one claim in a year

In some cases, a single tax return has more than one claim. For example, a small or medium-sized company may claim under the SME scheme and also as a subcontractor under the large company or RDEC scheme. A large company could claim under the large company scheme, and separately for vaccines research relief, on the same return.

A company with more than one accounting period ending in a single financial year will submit a return for each accounting period ending in that year. This means that the total number of returns submitted is greater than the total number of companies.

For 2017-18, a total of 59,990 companies submitted 61,940 returns with 62,095 relief claims (see table RD1). So far for 2018-19 a total of 57,355 companies have submitted 59,120 returns with 59,265 relief claims but this is expected to increase as more claims are received.

3.3 Type of relief claimed

So far for 2018-19 there have been 26,705 claims which are purely for a deduction from corporation tax (CT) liability. Payable credits are claimed by loss-making companies which have no CT liability against which to set the deduction. In some cases, a SME can first use its R&D tax credit to reduce its tax bill to zero, and then take the rest as a cash payment. In other cases, a SME with no tax bill might choose to take some or none of its R&D tax credit as cash, with the remainder being carried forward. Such cases are referred to as “combination claims”. There have been 10,335 payable credit claims and 15,120 combination claims made so far for 2018-19, giving a total of 25,455 claims which include a payable tax credit element.

The rate for payable tax credit claims increased to 14.5% of enhanced expenditure in 2014-15 and in recent years there has been growing awareness of the scheme amongst SMEs. This is likely to be one of the drivers behind the continuing strong growth in the number of payable credit claims.

3.4 Amount of relief claimed

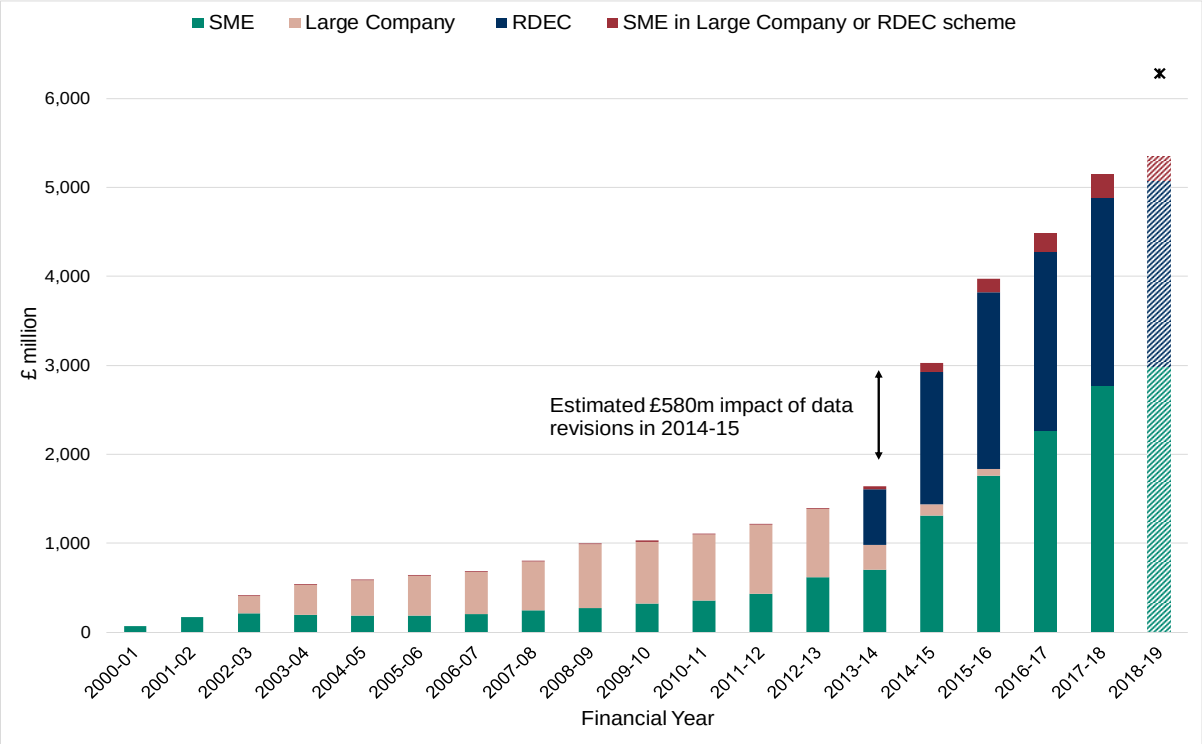
Although the volume of claims under the SME scheme is much larger than under the RDEC scheme, a similar proportion of the relief by value is claimed by large companies. This is because the amounts they claim are generally much larger than those claimed by SMEs.

The amounts of support claimed are shown in Figure 2 (data from table RD2). Just over £5.1bn of support was claimed for 2017-18, an increase of 15% from 2016-17. So far just over £5.3bn in support has been claimed for 2018-19, of which £3.0bn has been claimed through the SME scheme and £2.4bn by large companies under the RDEC scheme. £265m has been claimed by small and medium sized companies, including subcontractors, through the RDEC scheme. The total cost for 2018-19 is expected to rise as more claims are received and processed by HMRC. Based on the timings of claims received in previous years, we estimate that the final cost for 2018-19 will be £6.3bn.

The cost of support has increased substantially since 2012-13. This is in part due to additional claims being included from 2014-15 onwards, but also part of a trend of increased costs of the schemes as rates are made more generous. The increase in the rate of enhanced expenditure for SMEs from 100% to 125% in 2012-13 and then to 130% in 2015-16, and the increase in the payable credit rate from 11% in 2013-14 to 14.5% in 2014-15, have all contributed to the increase in the value of support claimed by SMEs.

The total amount of support claimed by large companies has also increased, as companies have moved from the large company scheme to the RDEC scheme which has a higher rate of support. The RDEC rate went up from 11% to 12% for expenditure incurred on or after 1 January 2018. RDEC support to large companies rose by 5% from 2016-17 to 2017-18. RDEC replaced the large company scheme with effect from 1 April 2016.

Figure 2: Total support claimed through R&D tax credits by scheme, 2000-01 to 2018-19 (£ million, accounting period end date basis)



** represents estimated value after all claims have been processed.*

Figure 2 and table RD2 show the amount of relief claimed based on the year of the company's accounting period end date (also known as accruals basis). The 2018-19 data has been shaded to indicate these figures are based on partial data and expected to increase as more returns are received.

Figure 2 shows a particularly large increase in the cost of claims from 2013-14 to 2014-15. This is mostly explained by the increase in R&D expenditure being used to claim under the RDEC scheme (refer to section 3.5), the increase in the SME payable tax credit rate from 11% to 14.5% and the revisions to 2014-15 figures from additional claims being included in those years.

Table RD3 shows the amount of relief based on the year when the money was paid out or deducted by HMRC (receipts basis).

3.5 R&D expenditure

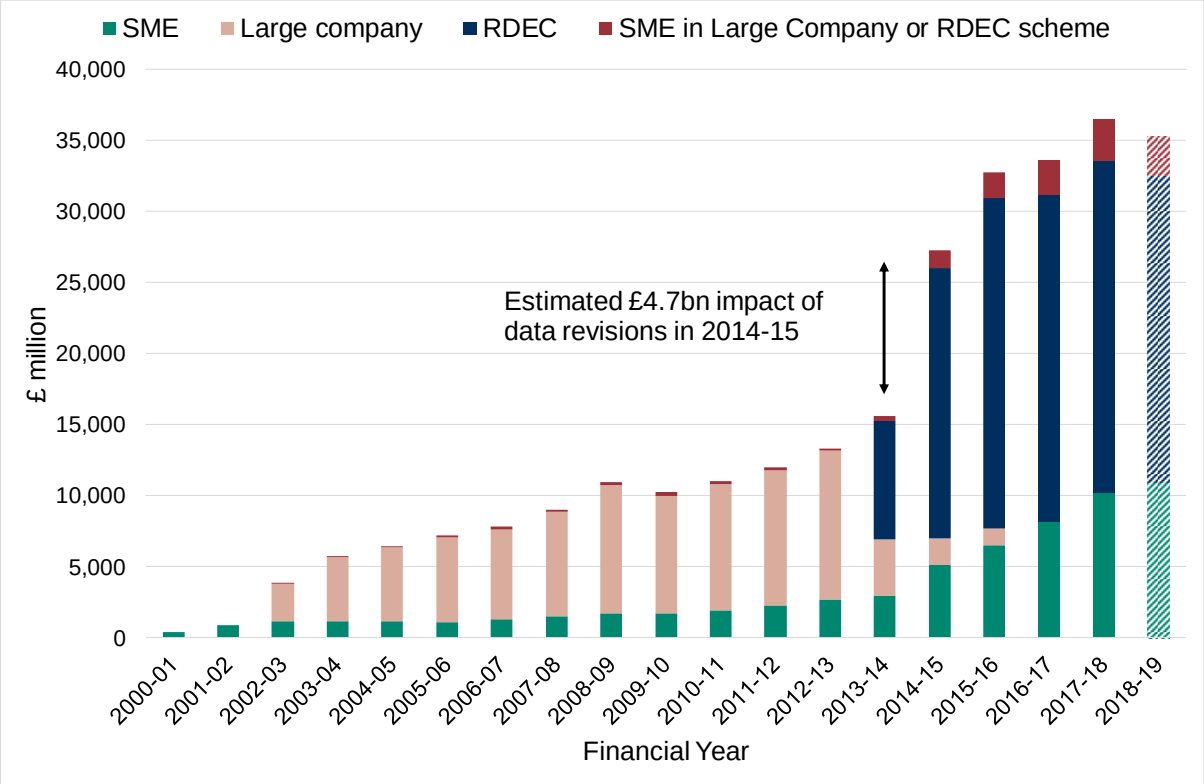
Figure 3 (data from table RD4) shows the total qualifying expenditure on R&D which has been used to claim R&D tax relief. This does not represent all expenditure on R&D in the UK, just that which qualifies for R&D tax relief and has been used to make a claim. Section 3.13 provides a comparison between the tax relief data and the Business Enterprise Research and Development (BERD) survey of R&D expenditure carried out by the Office for National Statistics (ONS).

The level of R&D expenditure used to claim R&D tax relief was £36.5bn in 2017-18, an increase of 8% from 2016-17. Most of this expenditure (72%) was by companies claiming under the RDEC scheme. SME expenditure made up only 28% of the total but showed strong growth year-on-year. So far in 2018-19, £35.3bn in expenditure has been used to claim R&D tax relief, with an increase expected as more returns are received.

R&D expenditure used to claim R&D tax relief has generally been on a rising trend. Figure 3 shows that there was a particularly sharp increase between 2013-14 and 2014-15. This can partly be explained by an increase of around £2bn in R&D expenditure by universities and similar institutions, predominantly under the RDEC scheme. It is also partly explained by the revisions to 2014-15 figures made in the September 2018 publication from additional claims being included. The 2018-19 data has been shaded to indicate that these figures are based on partial data and expected to increase as more returns are received.

Note that expenditure incurred on or after 1 August 2015 by universities and charities is no longer eligible for the RDEC scheme. There were also new rules restricting claims for consumable items which apply to expenditure incurred on or after 1 April 2015.

Figure 3: Total R&D expenditure used to claim R&D tax credits by scheme, 2000-01 to 2018-19 (£ million, accounting period end date basis)



3.6 SMEs claiming in large company or RDEC scheme

SMEs working for large companies as sub-contractors or receiving related subsidies are not able to claim under the SME scheme but may be able to claim under the RDEC scheme. The number of these claims has risen substantially in recent years.

Due to the way the data is recorded, it is not currently possible through CT returns to fully distinguish between SMEs claiming under the large company scheme and those claiming under the RDEC scheme. However, since April 2016 claims can only be made under the RDEC scheme meaning there will be very few large company scheme claims after this date. In 2017-18, SMEs received £265m in support from the RDEC scheme. So far in 2018-19, SMEs have received £265m in support from 3,790 claims in the RDEC scheme, with an increase expected as more returns are received.

3.7 Vaccines Research Relief (VRR)

Previously, loss-making SMEs could surrender enhanced VRR deductions for a cash payment, like the SME R&D tax credit. However, VRR for SMEs was reduced to 20% of qualifying expenditure from 1st April 2011 and was then removed for expenditure incurred on or after 1st April 2012. Large companies claiming VRR can only use the deduction option; they cannot claim payable credits for VRR.

The number of claims under the VRR scheme remained at about 10 a year following its introduction in 2003-04 (see table RD1) until it ceased to be available. This represented a very small cost to the Exchequer, with support claimed of less than £5m each year (not shown in Figure 2, due to its small size).

Expenditure used to claim under the VRR scheme (data from table RD4) was on average around £20m per year in the period up to 2012-13. As the number of companies in the scheme has fallen, expenditure data is not shown from 2013-14 onwards. This is in line with HMRC's policy on disclosure and taxpayer confidentiality.

Note that Vaccines Research Relief is not available on expenditure incurred on or after 1 April 2017.

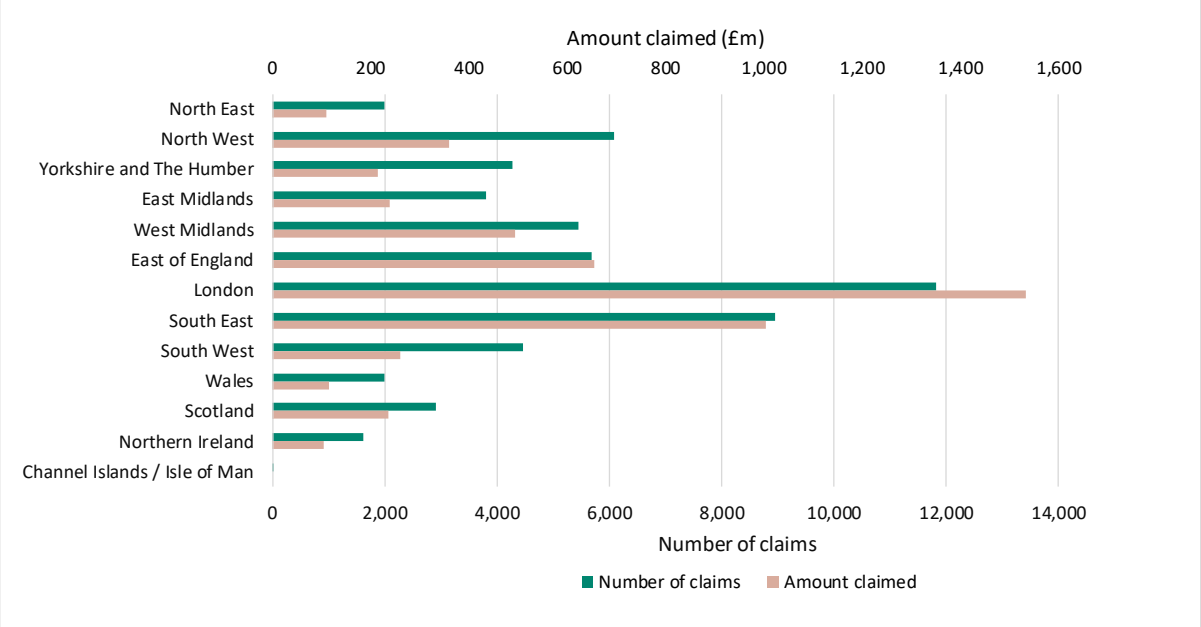
3.8 Registered office location

Table RD5 shows the distribution of R&D tax credit claims by government office region of the company's registered address. The numbers and amounts for 2018-19 are shown in Figure 4 below (data from Table RD5).

This shows a concentration of companies with registered offices in London (20% of total claims and 29% of total amount claimed), the South East (15% of total claims and 19% of total amount claimed) and the East of England (10% of total claims and 12% of total amount claimed).

Table RD5 should be interpreted with caution because the regional split is based on registered office location, which may not be where the actual R&D activity is carried out– see section on tables RD4–RD6 in the Background Information chapter.

Figure 4: Registered office regional analysis of R&D tax credit claims, 2018-19

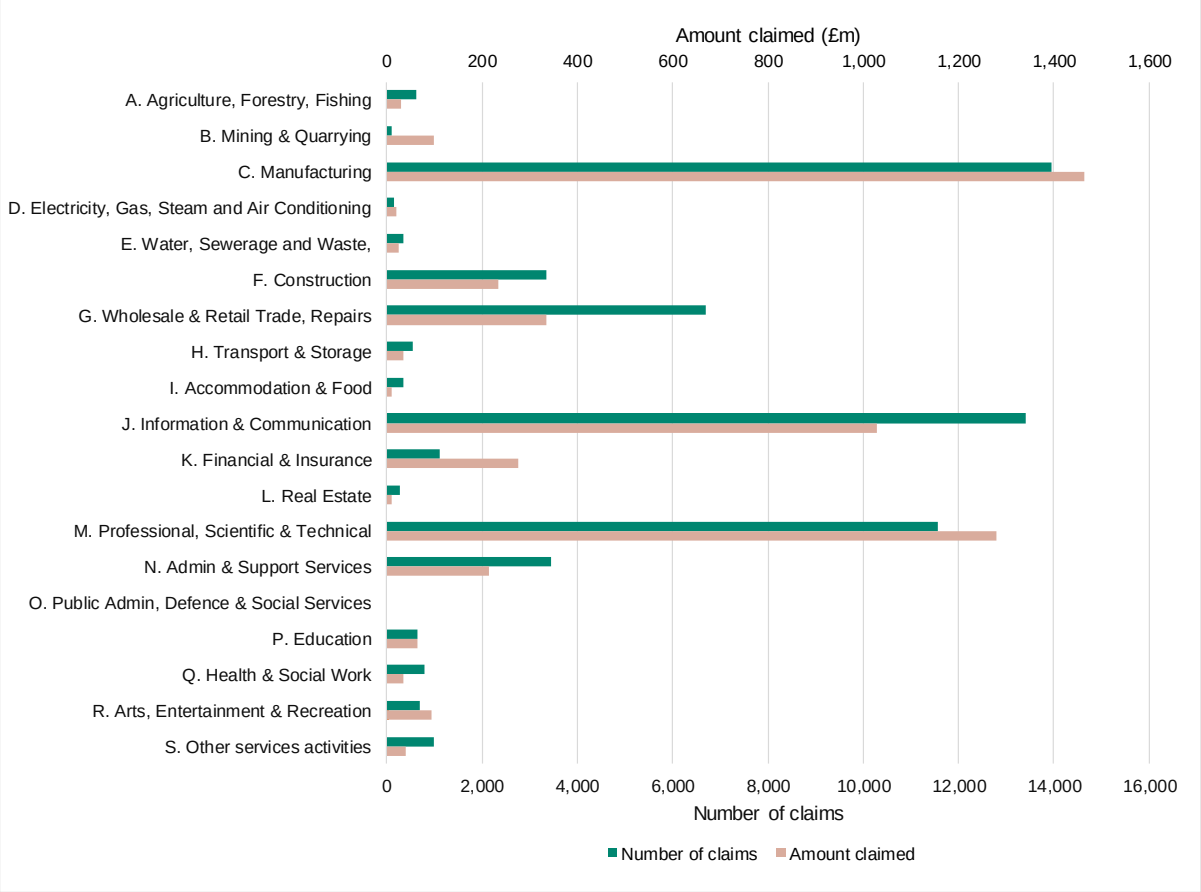


3.9 Industry sector analysis

Table RD6 and Figure 5 show the distribution of R&D tax credit claims by industry sector for 2018-19.

There is a concentration in the number of claims in the 'Manufacturing' (24%), 'Information and Communication' (23%) and 'Professional, Scientific and Technical' (20%) sectors, accounting for 28%, 19% and 24% of the total amount claimed, respectively.

Figure 5: Industry Sector analysis of R&D tax credit claims, 2018-19



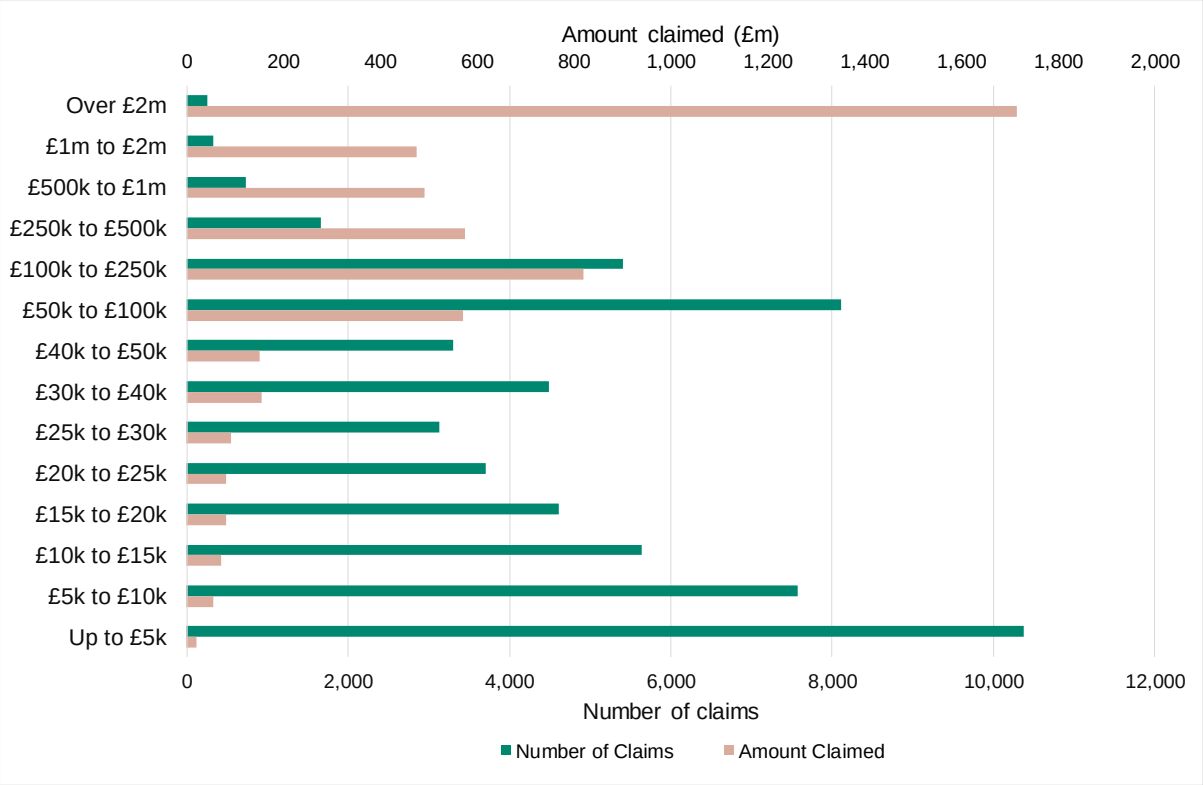
The coding of industry sectors does not always reliably describe the sector of companies' R&D activity for a variety of reasons – as described in the Tables RD4-RD6 part of the Background information section. Caution should therefore be exercised in interpreting this chart.

3.10 Cost band analysis

Table RD7 and Figure 6 show the distribution of R&D tax credit claims by cost band for 2018-19. While returns are still being received for the financial year, enough returns have been submitted to provide a useful comparison over cost bands.

There is a concentration in the number of claims in the lower bands (72% in cost bands up to £50k), which corresponds to the growth in the SME scheme seen in recent years. The largest concentration in amount claimed is in the 'Over £2m' band (32%), corresponding to R&D claims made by the largest companies.

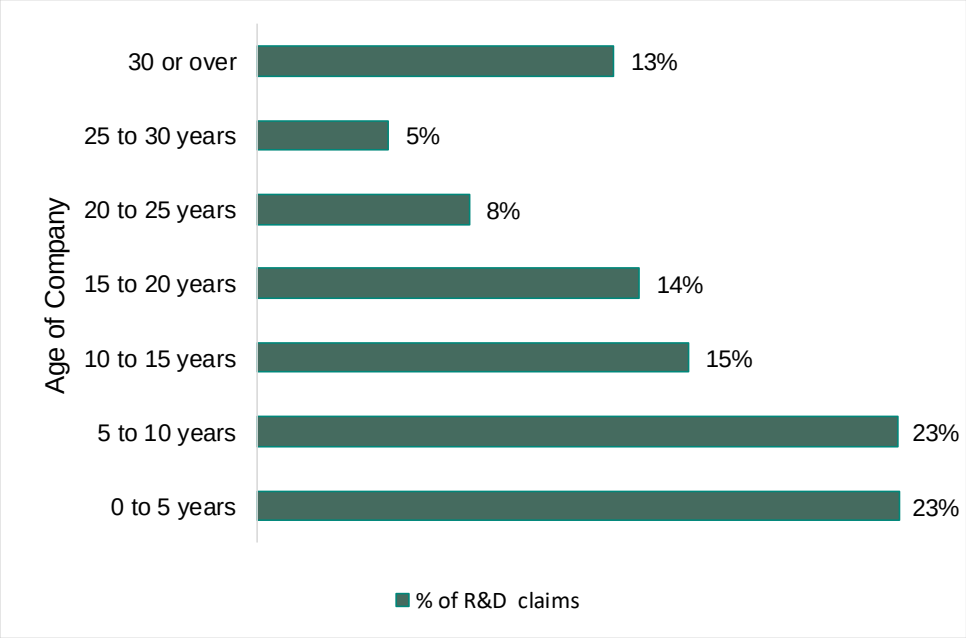
Figure 6: Cost band analysis of R&D tax credit claims, 2018-19



3.11 Age of Company

Figure 7 shows the distribution of R&D tax credit claims by age of the companies registered with Companies House for 2018-19 returns. While returns are still being received for the financial year, enough returns have been submitted to provide a useful comparison over company age. The largest number of claims came from companies between 0-5 years old (23%).

Figure 7: Age of Company analysis of R&D tax credit claims, 2018-19



3.12 First time applications

The number of first time applicants in the SME scheme has increased from 12,350 in 2016-17 to 13,935 in 2017-18, a 13% increase. The increases in enhanced expenditure rates and payable tax credit rates in recent years have made the SME scheme more generous and therefore more attractive to potential applicants, and there is also greater awareness of the scheme.

The introduction of the RDEC scheme in 2013-14 resulted in an increase in first time applicants from large companies. Since then growth has levelled off with 1,810 new applicants in 2017-18, which is similar to the number in 2015-16 and 2016-17.

The requirement for a minimum expenditure of £10,000 on R&D was removed on 1st April 2012. This will have had a small effect on the number of first time applicants claiming R&D tax relief, particularly for SMEs.

Figure 8: Number of first time applications by financial year, 2000-01 to 2017-18

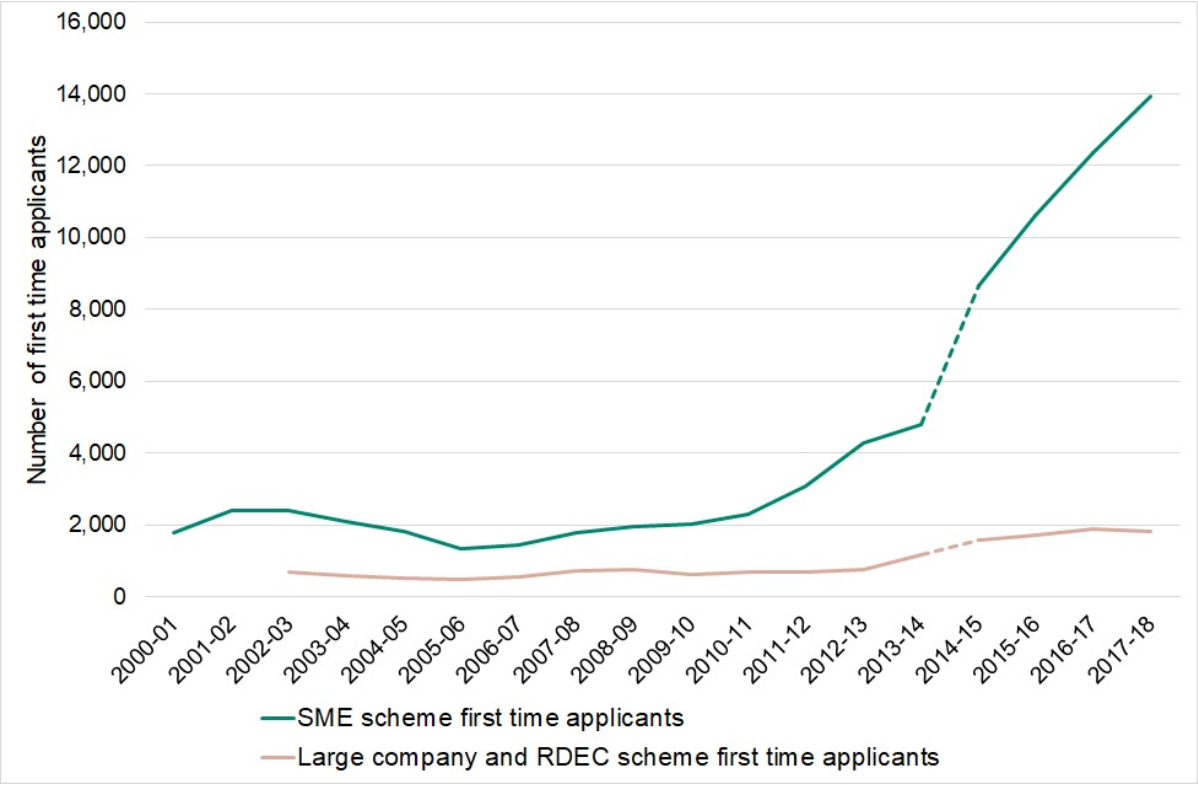


Table RD8 and figure 8 show the number of first time applicants in the SME scheme and large company and RDEC schemes for each year. The increase from 2013-14 to 2014-15 is partly explained by improved data sourcing, this is indicated by a dashed line in the chart. Partial 2018-19 data has not been included in this chart.

3.13 Business Enterprise Research and Development (BERD) survey estimates of R&D expenditure

The Office for National Statistics (ONS) conducts the annual Business Enterprise Research and Development (BERD) survey of approximately 5,500 businesses engaged in R&D (4,000 in Great Britain and 1,500 in Northern Ireland)[2].

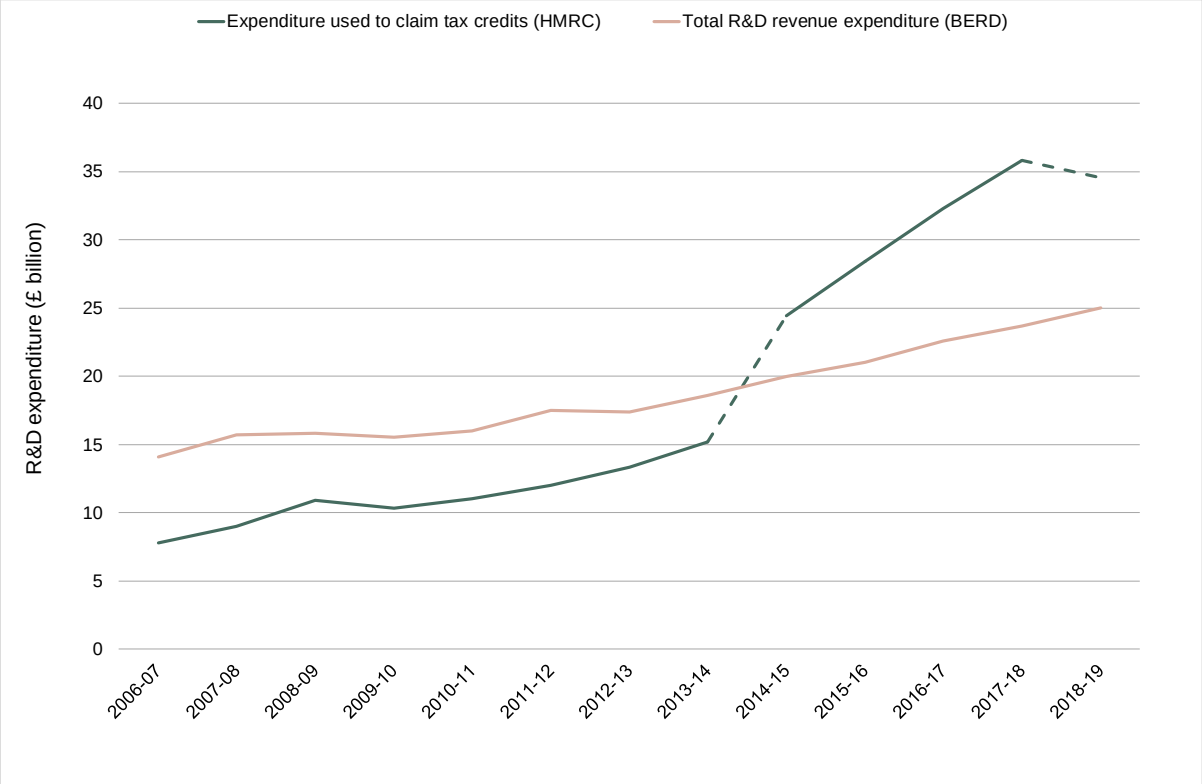
Figure 9 shows a comparison of HMRC's tax relief statistics with BERD expenditure. It is important to note that there are differences in what the HMRC and BERD statistics are measuring:

- BERD measures expenditure on carried out in the UK, whereas HMRC measures the R&D expenditure that is used to claim R&D tax credits, including overseas expenditure which may qualify for R&D tax credits.
- Expenditure by universities and similar institutions is not included in BERD and has been removed from the HMRC estimates in Figure 9 to aid comparison.
- While both the ONS and HMRC definitions of R&D expenditure are based on the criteria in the OECD Frascati manual, there are likely to be differences in

[2] See Business Enterprise Research and Development, Quality and methodology information:

the detailed definitions for expenditure included in BERD and expenditure that qualifies for R&D tax credits.

Figure 9: HMRC and BERD estimates of R&D expenditure, 2006-07 to 2018-19



The trend to 2018-19 is represented by a dashed line to indicate these figures are based on partial data and expected to increase as more returns are received. The trend from 2013-14 to 2014-15 is represented by a dashed line to indicate changes due to data revisions made in the September 2018 publication.

Note that BERD data is reported on a calendar year basis, whereas R&D tax credit claims are reported by financial year. For comparing data, the 2017 calendar year is most closely related to the 2017-18 financial year.

Table 1 shows the data used in Figure 9[3].

[3] See the dataset for Figure 1 of BERD 2018:

Table 1: UK R&D expenditure 2005 to 2018 (£ billion)

Year of Comparison	Total R&D expenditure (BERD survey)	R&D expenditure used to claim tax credits (HMRC data[4])
2005 and 2005-06	13.7	7.2
2006 and 2006-07	14.1	7.8
2007 and 2007-08	15.7	9.0
2008 and 2008-09	15.8	10.9
2009 and 2009-10	15.5	10.3
2010 and 2010-11	16	11.0
2011 and 2011-12	17.5	12.0
2012 and 2012-13	17.4	13.3
2013 and 2013-14	18.6	15.2
2014 and 2014-15	20	24.4
2015 and 2015-16	21	28.4
2016 and 2016-17	22.6	32.3
2017 and 2017-18	23.7	35.8
2018 and 2018-19	25	34.5

Figure 9 and Table 1 show that HMRC's estimate of R&D expenditure exceeds BERD in recent years and is continuing to grow at a faster rate than the BERD estimate. This can be partly explained by these factors:

- Overseas expenditure is not included in BERD but may qualify for R&D tax credits. HMRC has produced an initial estimate of £4bn-£7bn for overseas expenditure in 2017-18 which could explain around half of the difference.
- The BERD sample is drawn from a continually updated register of known R&D performers, which is updated primarily using information from other ONS business surveys such as the Annual Business Survey (ABS). The ABS excludes financial industries in SIC sector K (subsectors 64, 65.3 and 66) so coverage of this sector in the BERD sample is limited. HMRC's Table RD6 indicates that in 2017-18 sector K accounted for £2.4bn (7%) of R&D expenditure.
- Greater awareness and the increasing generosity of the schemes has led to a larger proportion of those companies carrying out R&D activity going on to make a claim.
- An increase in large companies claiming R&D tax relief following the introduction of the RDEC scheme in 2013-14 which enabled loss-making large companies to claim payable tax credits.

[4] Adjusted to remove universities and similar institutions which are not included in BERD.

Section 4: Background Information

4.1 What are Research and Development (R&D) tax credits?

R&D tax credits are a tax relief designed to encourage greater R&D spending, leading in turn to greater investment in innovation. They work by reducing a company's tax bill by an amount equal to a percentage of the company's qualifying R&D expenditure or by the payment of a credit, again linked to the company's qualifying R&D expenditure. A company can only claim R&D tax credits if it is liable for Corporation Tax.
There are two schemes for claiming relief:

- The Small or Medium-sized Enterprise (SME) Scheme;
- Research and Development Expenditure Credits (RDEC).

The RDEC scheme (also known as 'Above-the-Line') was introduced in April 2013 for large companies. Companies could choose the RDEC scheme or the old large company scheme until April 2016, after which the large company scheme was no longer available. A company with no tax liability that claims the expenditure credit may now receive a cash payment that is subject to Corporation Tax.

Under the normal EU definition, a SME is a company or organisation with fewer than 250 employees and either of the following:

- an annual turnover not exceeding €50 million;
- a balance sheet not exceeding €43 million.

This definition was used in deciding eligibility for R&D tax credits until 1 August 2008. Since then, a wider definition of SME has been used – but only in the context of R&D tax credits. This new definition, still in force, states:

A SME is a company or organisation with fewer than 500 employees and either of the following:

- an annual turnover not exceeding €100 million;
- a balance sheet not exceeding €86 million.

However, a company may not be considered a SME if it is part of a larger enterprise that would fail these tests if taken as a whole.

A SME may claim a higher rate of relief than a large company. Also, a SME which has no tax bill to reduce may claim a cash payment instead.

R&D tax credits were introduced for SMEs in 2000 and extended to large companies from 2002. An additional "top-up" relief for vaccines research was introduced in 2003 – known as Vaccines Research Relief - VRR[5].

[5] VRR for SMEs has been removed for expenditure incurred on or after 1 April 2012, but was still available to large companies for expenditure up to 31st March 2017.

Both corporation tax and R&D tax credit rates have changed over the years. For information about current and historical rates of deduction and payable credits, and who can claim them (including sub-contractors), please see the guidance.

4.2 Data sources

The main administrative data used to compile National Statistics on R&D tax credits are derived from information provided by companies on the Company Tax return (CT600), with modifications or additions made in subsequent amended returns and assessments. The data cover all CT returns received by HMRC and records are available for all SME and large company claims made in those returns.

The CT return collects information on the enhanced level of R&D expenditure and the amount of any R&D payable tax credit. Companies also specify whether they are claiming under the SME or large company scheme and declare the expenditure they are claiming under the SME sub-contractor or vaccines research relief scheme, if applicable.

The CT600 form contains a step-by-step record of the company's corporation tax calculations, starting with its income and chargeable gains, and taking into account any relevant deductions and reliefs.

Initial checks carried out on the data include:

- Correction of calculation errors in the tax return;
- Automated checks which take place when loading data into the analysis database. Inconsistencies are automatically 'repaired' if possible; otherwise the record is flagged as invalid.

Once the claims data have been extracted from the analysis database:

- Outliers are identified and their veracity checked – records are then removed or corrected appropriately;
- Any large changes in figures from one statistical release to the next are investigated.

Tables RD1 to RD4 relate to claims made in CT returns for the SME, large company and RDEC schemes, and vaccines research relief. The figures cover the period 2000-01 to 2018-19 and are based on CT returns received on or before 30 June 2020.

A company can claim under more than one scheme in any one accounting period and can have more than one accounting period ending during any one financial year. Because of this, the number of companies making claims in any one year is less than the number of claims in that year. Table RD1 provides the number of companies claiming R&D tax credits by financial year, and the number of tax returns in which they make those claims.

Postcode and industry sector data for companies claiming R&D tax credits are obtained from the Office for National Statistics' (ONS) Inter-Departmental Business Register (IDBR) and from Companies House. These data extracts are combined with CT return data to produce Tables RD5 and RD6.

Because all the necessary data for the R&D Tax Credits National Statistics are obtained from administrative data sources, there is no additional burden on companies or HMRC tax inspectors to provide information.

4.3 Methodology

The R&D tax credit tables include every case captured via a CT600 form. As no sampling is necessary, sampling error is not an issue.

Each claim is classified (e.g. as a SME payable credit, large company, SME applying in the large company or RDEC scheme, etc.) based on the information provided on the CT600 form and its associated R&D expenditure and tax cost calculated. The numbers, costs and expenditure are then aggregated to produce Tables RD1, RD2 and RD4. Table RD3 is produced by applying standard conversion factors to the figures in Table RD2.

The data source for this publication is created from a combination of CT return and CT assessment data, extracted from HMRC's IT systems for electronic filing (E-filing) and corporation tax (COTAX). In the data source each record represents one claim and contains R&D data fields from the e-filed CT return data set, the COTAX CT return data set and/or the CT assessment data set. Logic is applied to the new data source to determine the best data set to use for each claim.

In the 2018 publication a data-feed issue was identified whereby details of some CT600 R&D tax credit claims were missing from our analysis database. Where the management information indicated a claim, but was not shown in our analysis database, the data was amended to include this claim. This incorporation of new data resulted in the changes described in earlier sections for years 2014-15 onwards.

Management information is no longer used to identify the claims but it is used for quality assurance purposes and to assist with classifying claims. It has been utilised in those ways for claims in 2014-15 and onwards but earlier years continue to have missing claims. We plan to provide a revision to the historical time series in a subsequent publication.

4.4 Limitations and reliability of the estimates

Although the data are the best available at the time, claims for R&D tax credits can be made up to 2 years after the end of an accounting period (i.e. amendments can be made to returns already submitted within this time period), so some claims may be received after the statistics are released. Figures for earlier years may therefore have changed since a previous release.

The statistics are produced based on information provided to HMRC on the CT600 and related forms and they exclude a small number of claims that come in a non-standard format.

This release provides information on research and development activities for which R&D tax credits have been claimed. Not all expenditure on R&D in the UK is used to

claim the tax credit, so these statistics are not a comprehensive account of all R&D activity in the UK.

The RDEC tax credit scheme was introduced in 2013-14. Large companies claiming RDEC can usually be clearly identified in the CT600 tax return data. Small companies claiming a tax credit may have claimed under RDEC or through the SME scheme. To distinguish these, information is additionally needed that is provided in the supplementary information to the claims. It has therefore been necessary to make certain assumptions in compiling the figure for SMEs applying through the large company or RDEC scheme for 2013-14 onwards. However, this group have historically accounted for only a very small proportion of the support claimed under the large company scheme and this fact has been used in compiling the latest figures.

Tables RD5 and RD6 should be interpreted with caution. Table RD5 looks at the regional split of R&D claims. However, this is based on registered office location, which may not be where the actual R&D activity is carried out. Table RD6 provides the industry breakdown of R&D activity. However, this may not reflect the industry in which the R&D activity itself is carried out. For more info, see the note on tables RD4 to RD6 below.

All figures should therefore be considered provisional, although any revisions are more likely to affect the later years.

Sources of error in the published statistics include:

- Although most returns are submitted before the cut-off date, as explained above, there are a number of returns received after the 30th June which add to the existing data and can therefore result in revisions to previously published figures. Accordingly, the results for all years should be considered as provisional, although any such revisions are more likely to impact on the later years;
- Data capture errors: companies may make errors entering their information onto the CT600 Company Tax Return form, whether this is done on paper or electronically. The data are subsequently entered onto the COTAX system either manually or by electronic transmission. This is another point at which data may be altered due to human error or software errors. There is a risk that errors involving very large profits or tax amounts may distort the overall statistics. To mitigate this, checks are carried out and any incorrect large values which are detected are altered in the analysis database before the statistics are produced;
- A small number of companies submit claims in a non-standard format and are therefore not included in these statistics; and
- Data on company location and industry sector are not necessarily reliable indicators of the R&D being carried out - see explanation of tables RD4 to RD6 below.

4.5 Rounding and totals

The figures have been independently rounded to the nearest 10 or £10 million up to 2012-13 and to the nearest 5 or £5 million from 2013-14 onwards. This can lead to components not summing to the totals shown.

Also, for table RD1, the total claims provided for individual schemes do not sum to the total returns for all R&D schemes. This is because some sub-contractor and vaccine research relief claims are included on the same return as existing SME or large company claims.

4.6 Financial years, accounting periods and receipt of tax

Despite appearances, tables RD2 and RD3 present slightly different costs. Table RD2 shows costs falling on the Exchequer according to when the company incurred the R&D expenditure, whereas table RD3 shows estimates of the costs according to when tax would have been received, or the payment was made, by HMRC.

The financial year in table RD2 is therefore defined by the date at which the company's accounting period ends. For example, if the end date of the accounting period is 31st January 2006, the claim is said to be for financial year 2005-06 (which ended on 31st March 2006). However, in table RD3, the financial year indicates when the cost is estimated to be incurred by HMRC. So, in the same example, if the claim was paid on 27th April 2006, then that cost will fall in financial year 2006-07. The accruals-receipts conversion factors used in table RD3 are estimated based on the average timescales for returns to be received and processed for each R&D claim type.

4.7 Revisions to previously published tables

Companies' corporation tax assessments are subject to revision, and although most assessments are finalised within two years, there are cases which can take much longer. The cut-off date for receipt of returns has been set to minimize omissions and amendments. There is thus no specific point at which the R&D tax credit claims for a particular year can be considered complete or final, for example, due to late submission of a company's tax return.

In this publication there are revisions to the figures for 2014-15 onwards. A change in the methodology used to remove creative industry relief claims has meant that more R&D claims are being captured for those years. Previously if a company had claimed under a creative industry relief scheme, in any year, all claims from that company were removed from the data set. In this year's publication, only the claims in the years that creative industry reliefs are claimed are removed. Furthermore, e-filed claims are checked against their CT600 form to determine if there is an R&D element, in which case that part of the claim remains in the data set.

This revision increases the cost to the exchequer by £50m in 2014-15, £135m in 2015-16 and £45m in 2016-17.

Substantial revisions were made in the 2018 publication to correct for missing returns. At that time the data was revised back to 2014-15, which means that earlier

years may not be complete. The size of the revision was estimated to lead to an additional £550m in claims being included in 2014-15.

Revisions to the published figures are not routinely made until the following year's release. Typically, the largest revisions are to the most recent year's figures, reflecting claims received after the cut-off date.

4.8 Tables RD4 to RD8

Tables RD4 to RD6 were published for the first time in 2012 in response to user requests and on the recommendation of the United Kingdom Statistics Authority (UKSA).

Table RD4 reports the amount of R&D expenditure that gives rise to the tax relief claims, which for some users is a more relevant business measure than the tax cost.

Table RD5 analyses claims for 2017-18 and 2018-19 by the government office region (GOR) of the registered address of the companies making the claims. A company may operate at different locations throughout the UK, but its tax return will be made on behalf of the whole company and linked to its registered office address. A geographical breakdown will therefore show all the company's expenditure and tax liability as originating at the location of the registered office, which may not reflect the location of the company's actual R&D activities. Since the publication of the 2010-11 statistics, a regional breakdown of registered office addresses has been provided in Table RD5, subject to the above important caution. **Table RD5 is classified as official statistics rather than as National Statistics.**

Similarly, Table RD6 analyses claims by industry sector based on the SIC classification of the companies. The classification is based on the UK Standard Industrial Classification 2007 standard; prior to the 2014 set of statistics it was based on SIC2003[6]. Companies have been assigned to a SIC 2007 sector based on information from the ONS's Inter-Departmental Business Register (IDBR) survey where there was a unique match, or otherwise from information provided by companies to Companies House. However, there are a number of caveats to this information for example, a company may have changed its primary business since first registration; or, although its primary business is correct (e.g. telecommunications), the company's current research is in a different sector (e.g. materials science). For companies within a group, the industry sector might be recorded as that of its holding company and appear under "activities of holding companies" within the Business Services sector. **Table RD6 is classified as official statistics rather than as National Statistics.**

Table RD7 was published for the first time in 2018 in response to user request and shows the number and value of claims, split by size of claim. Further claim size bands have been added in this year's publication in response to feedback from users. **Table RD7 is classified as official statistics rather than as National Statistics.**

[6] Office for National Statistics (ONS) provides further information on SIC2007 including the correlation between SIC2003 and SIC2007.

Table RD8 was published for the first time in 2018 in response to user request and provides an analysis of first time applicants for SME and large companies. **Table RD8 is classified as official statistics rather than as National Statistics.**

4.9 Planned developments

In response to user demand we intend to continue to publish supplementary tables in Spring, including breakdowns by:

- County / unitary authority
- Region and industrial sector
- Claim size by region
- Claim size by sector

This will update the supplementary tables published in April 2020, bringing them in line with the data in this publication.

In addition, we plan to provide a longer back series of revised data in a subsequent publication.

4.10 Who might be interested?

These statistics may be of interest to anyone seeking the latest data about the uptake of R&D tax credits, their cost, and the nature of the companies claiming them.

They may also be of interest to organisations such as think-tanks, universities and other similar institutions, e.g. for comparing the relative effects of similar incentives operating in other countries. Such organisations might also be interested in an evaluation of R&D tax credits published on the HMRC web site.

4.11 User engagement

We are committed to improving the official statistics we publish. We want to encourage and promote user engagement, so we can improve our statistical outputs. We would welcome any views you have. If you have ideas for improvements, or comments on changes made this year, or any other suggestions relating to this release, please use the statistical contacts named at the end of this section and on the cover page.

4.12 Other statistics on R&D in the United Kingdom

These statistics comprise information on research and development activities for which R&D tax credits have been claimed. Not all expenditure on R&D in the UK is used to claim the tax credit, so these statistics are not a comprehensive account of all R&D activity in the UK.

The Office for National Statistics (ONS) publishes several additional National Statistics on R&D in the UK, including the *Business Enterprise Research and Development (BERD)* survey and *Gross Domestic Expenditure on Research and Development*. Additionally, the Scottish Government and the Northern Ireland Statistics and Research Agency publish National Statistics on R&D activity in Scotland and Northern Ireland, including the *Business Enterprise Research and Development, Scotland*, *Gross Expenditure on Research and Development Scotland*, and the *Research & Development Survey (Northern Ireland)*.

For access to these and other related publications on R&D activity in the UK, please visit the announcements page.

Statistics on Patent Box have been published on the same day as these statistics providing information on the numbers, value and cost to the Exchequer of Patent Box tax reliefs. The Patent Box enables companies to apply a lower rate of Corporation Tax to profits earned after 1 April 2013 from its patented inventions.

4.13 National Statistics

National Statistics are produced to high professional standards set out in the Code of Practice for Official Statistics. They undergo regular quality assurance reviews to ensure that they meet customer needs. They are produced free from any political interference.

For general enquiries about National Statistics contact the National Statistics Public Enquiry Service.

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You can also find National Statistics on the internet at:

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4.14 Contact points

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Media enquiries should be directed to the HMRC Press Office contacts listed on the front page of this release.