

May 2014/10

**Policy development**

**Report on survey**

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This report is for information

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This report analyses the results of the Higher Education – Business and Community Interaction survey for UK higher education institutions, referring to the academic year 2012-13.

# Higher Education – Business and Community Interaction survey

## 2012-13

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# Higher Education – Business and Community Interaction survey 2012-13

To	Heads of UK higher education institutions
Of interest to those responsible for	Knowledge exchange; Innovation; Enterprise and entrepreneurship; Interactions between higher education and business, public and third sectors; Contract and collaborative research; Continuing professional development; Public engagement; Strategic planning; Economic development
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## Executive summary

### Purpose

1. The Higher Education – Business and Community Interaction (HE-BCI) survey is in its 13th year and is an essential source of information on knowledge exchange (KE) in the UK. It focuses on specific interactions with external partners, such as contract and collaborative research, consultancy, continuing professional development and intellectual property, rather than attempting to assess the entire contribution of higher education institutions throughout their teaching and research activities.
2. The exchange of knowledge described here takes place between higher education institutions (HEIs) and the wider world of business and the community. All 161 publicly funded UK HEIs provided data for this report<sup>1</sup>.
3. Data reported in this survey provide valuable intelligence for higher education senior managers, KE practitioners and policymakers. The report also provides an in-depth commentary on the extent of, and trends in, KE activity in the UK. Overall, patterns are similar in each of the four constituent nations, although some data are displayed at the national level in the main report where recommended by Stakeholders Group (see paragraph 24).
4. This report builds on data published in previous HE-BCI survey reports, the most recent of which, 'Higher Education – Business and Community Interaction Survey: 2011-12' (HEFCE 2013/11), was published in May 2013 and analysed 2011-12 data<sup>2</sup>.

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<sup>1</sup> Data from the University of Buckingham and University Campus Suffolk are excluded from this report as these institutions are not publicly funded HEIs.

<sup>2</sup> All HEFCE publications are accessible at [www.hefce.ac.uk/pubs/](http://www.hefce.ac.uk/pubs/)

5. The data are collected by the Higher Education Statistics Agency. HEIs provided data for activity occurring during the academic year 2012-13. The HE-BCI survey covers a range of activities: from commercialisation of new knowledge, through delivery of professional training, consultancy and services, to activities intended to have direct social benefits. 'Business' in this context refers to private, public and third-sector partners of all sizes, with which HEIs interact in a broad range of ways<sup>3</sup>. 'Community' in this context means society as a whole outside the HEI, including all social, community and cultural organisations, individuals and the public both national and international.

## Key points

6. Data collected for the academic year 2012-13 show a continuing increase in the exchange of knowledge between UK HEIs and the public, private and third sectors. Annex A contains a summary of the full dataset for the UK and separate sub-sets for England, Scotland, Wales and Northern Ireland.

**Table 1 Main indicators (£000s cash terms)**

	2011-12	2012-13	Change	%
Collaborative research*	871,347	951,126	79,779	9.2%
Consultancy	397,800	399,738	1,938	0.5%
Contract research	1,093,343	1,166,038	72,695	6.6%
Continuing professional development and continuing education	640,894	653,305	12,411	1.9%
Facilities and equipment related services	138,751	141,514	2,763	2.0%
Intellectual property income	79,269	86,640	7,371	9.3%
Regeneration and development programmes*	179,980	172,069	-7,911	-4.4%
<b>Grand Total</b>	<b>3,401,384</b>	<b>3,570,430</b>	<b>169,046</b>	<b>5.0%</b>

\* Denotes data not disaggregated by partner

7. At a time of economic difficulty, growth in knowledge exchange income and activity provides an excellent case for continued public investment in higher education and specifically in knowledge exchange funding streams. During 2013 the UK economy showed signs of recovery and an emergence from the recession which began in 2008, although overall gross domestic product (GDP) remained below pre-recession levels (HE-BCI growth was greater than overall UK GDP growth)<sup>4</sup>.

## Investment in knowledge exchange by partner

8. Most HE-BCI data are collected by partner type, which is categorised into small and medium-sized enterprises (SMEs), large businesses, the public and third sector, and 'other' (see paragraph 29). This survey thus captures 'income' to HEIs, which is a more efficient approach than surveying expenditure by all (potential) KE partners. The main indicators where income to HEIs reflects the market value of these resources in the

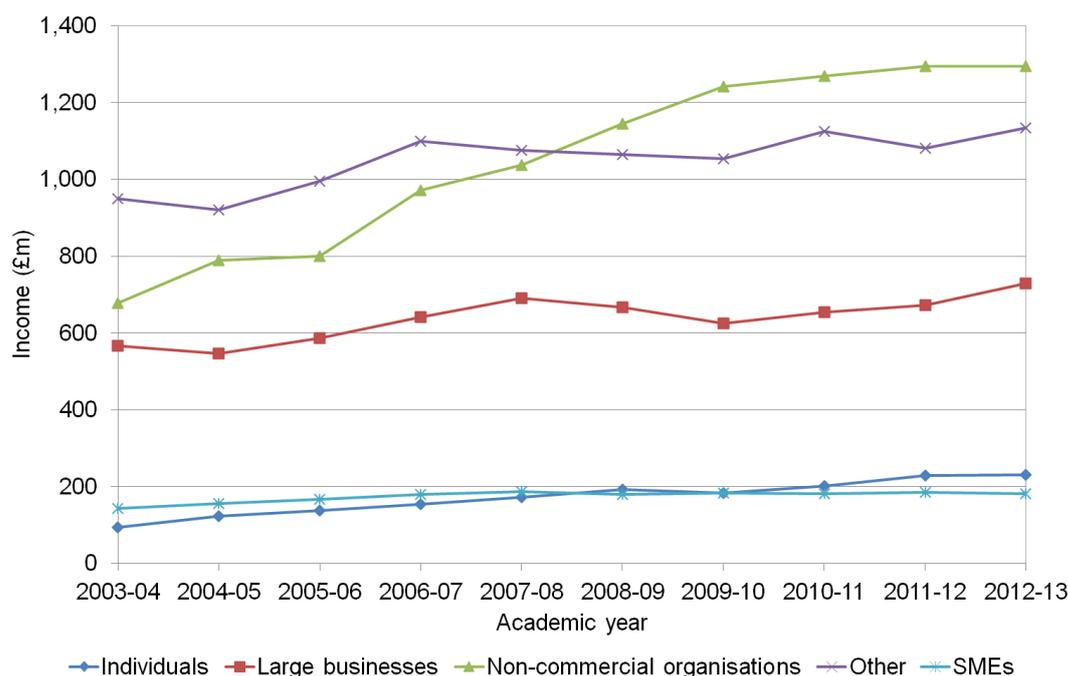
<sup>3</sup> The 'third sector' refers to voluntary and community groups, social enterprises, charities, co-operatives and mutuals.

<sup>4</sup> 'Statistical bulletin: Second estimate of GDP, Q4 2013', [www.ons.gov.uk/ons/rel/naa2/second-estimate-of-gdp/q4-2013/stb-second-estimate-of-gdp-q4-2013.html](http://www.ons.gov.uk/ons/rel/naa2/second-estimate-of-gdp/q4-2013/stb-second-estimate-of-gdp-q4-2013.html)

economy and society are: collaborative research, contract research, consultancy, equipment and facilities, continuing professional development, regeneration and intellectual property (IP).

9. Total KE investment across all activities from large businesses increased in cash (nominal) terms over the previous year by 11 per cent from £660 million to £729 million, while SMEs decreased their overall spending by 1 per cent from £183 million to £181 million<sup>5</sup>. Income to HEIs from the public and third sectors (charities and social enterprises) increased by 2 per cent from £1,272 million to £1,295 million in 2012-13 (see Figure 1).

**Figure 1 Total income by partner type 2003-13 (real terms)**



Source: HE-BCI Part B Tables 1, 2, 3 and 4c. 'Other' refers to indicators which are not collected by partner type due to consideration of burden – see paragraph 29.

### Strategy and infrastructure

10. Infrastructure indicators such as support for SMEs appear to have stabilised from recent reductions and are still, overall, at high levels.

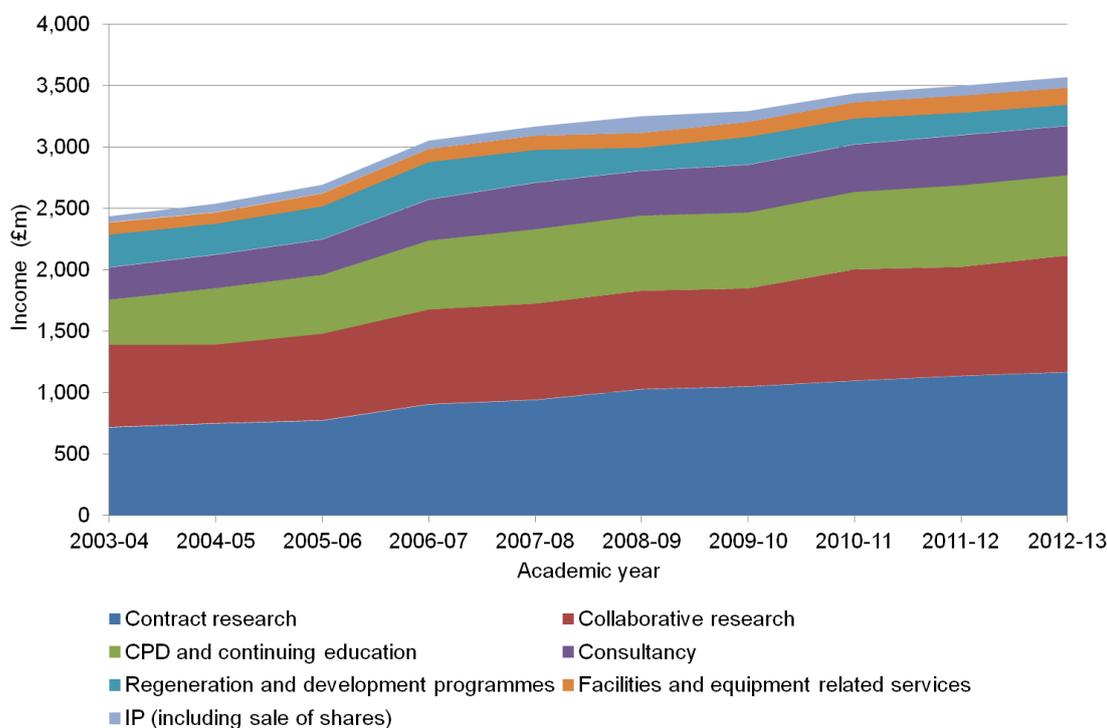
### Research-based interactions

11. Collaborative research is academic research which has public sponsorship and at least one other external partner. It is undertaken with partners such as research organisations, private business, other HEIs, Government or the third sector, and includes at least one other non-academic organisation. The fruits of the research are assumed to

<sup>5</sup> An error has been corrected from 2011-12 data – more detail is provided in paragraph 87.

be shared among all partners. Total income from collaborative research increased during 2012-13 by 9 per cent from £871 million to £951 million (see Figure 2).

**Figure 2 Selected HE-BCI income streams 2003-13 (real terms)**

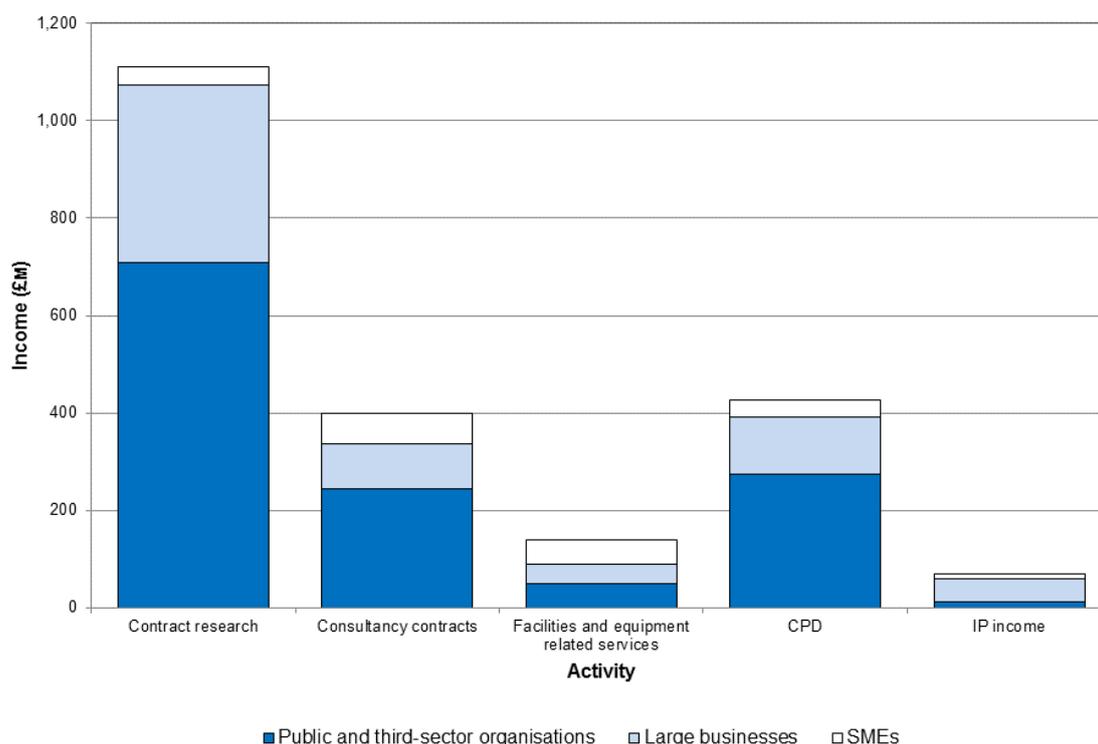


Note: 'CPD' = 'Continuing Professional Development'. Source: HE-BCI Part B Tables 1, 2, 3 and 4c

12. Contract research income (in which a specific question is being researched, primarily for the benefit of the external partner, and which is therefore likely to be more 'applied' than collaborative research) also increased by 7 per cent, from just under £1.10 billion to £1.17 billion (see Figure 3). Large businesses and SMEs increased their investment in contract research by 10 per cent and 5 per cent respectively, representing an increase in income of nearly £40 million between them. Income from non-commercial partners also increased by around 5 per cent, reaching £725 million in 2012-13.

13. Consultancy agreements deliver expert advice and intellectual input to a client to assist in analysing a particular client issue ('the innovative application of existing knowledge'). Income from consultancy remained steady with a small increase from £398 million to £400 million in 2012-13, with large businesses and SMEs showing the highest proportional increases of 8 per cent and 6 per cent respectively. Consultancy spending from the public and third-sector partners declined by 3 per cent but still accounts for the majority of activity at £236 million (whereas SMEs and large businesses spent around £64 million and £99 million respectively in 2012-13).

**Figure 3 Income by activity and partner 2012-13**



Note: 'CPD' = 'Continuing Professional Development'. Source: HE-BCI Part B Tables 1, 2 and 4c

14. Income from use of facilities and equipment (for example, prototyping equipment or digital media suites) rose slightly, by 2 per cent overall to £142 million. Large businesses accounted for the majority of the spending increase with a rise of 8 per cent, from £41 million to £44 million, and income from the public sector and third-sector partners saw growth of 4 per cent. SMEs' investment in equipment and facilities fell by 5 per cent; however, the level of £46 million is still higher than for large business, which suggests this is an important area for university engagement with SMEs.

### **Intellectual property and enterprise**

15. There has been an increase of 9 per cent in IP income, from £79 million to £87 million in 2012-13. There was a 16 per cent increase in the number of patents granted, from 826 to 955 in 2012-13. There was, however, a drop in the number of patent applications (from 2,274 in 2011-12 to 1,942 in 2012-13), suggesting that the level of patents granted will be affected in future years. However, patent data should be viewed over a longer time series because of the time lag between applications and grants.

16. There was a substantial fall in the number of new IP-based companies created by UK HEIs, from 191 in 2011-12 to 150 in 2012-13. The number of new IP-based companies surviving for three years or more fell from 998 to 975 in 2012-13.

17. New enterprises started by recent graduates grew from 2,726 to 3,502; however academic staff start-ups declined from 87 to 62.

### **Social, community and cultural activities**

18. The HE-BCI survey also collects data on public events run by HEIs. These illustrate the wide-ranging civic, community and cultural contributions that HEIs make, though they describe only a small part of that range.

19. Attendance at public events, presents a mixed picture with some activities showing increases (such as free public lectures up 35 per cent) since 2011-12 while attendance at free exhibitions fell by 24 per cent.

### **Regeneration**

20. Income from regeneration programmes fell in 2012-13, continuing the decline which followed the winding down of the Regional Development Agencies in England and general reduction in public expenditure. The overall decrease in regeneration income to UK HEIs was 4.4 per cent from £180 million to £172 million. There were, however, large increases in some regeneration funding, including the European Regional Development Fund and European Social Fund which rose from 19 per cent and 41 per cent respectively. Income from other local and regional regeneration funds also rose significantly from £17 million to £28 million, representing a 67 per cent increase. It is likely this indicator will rise again when the next tranche of European Structural and Investment Funds begins to flow from 2014-15.

### **Continuing professional development**

21. Income from continuing professional development (CPD) and continuing education (CE) activity rose from £641 million to £653 million in 2012-13. The biggest growth came from large businesses, which increased their spending by 10 per cent. SMEs decreased their spending substantially by 20 per cent, and the public and third-sector partners had a small decline in spending of 0.3 per cent in CPD. Income from individuals for CE (which may include sole traders as well as study for personal interest) rose by 2 per cent to £230 million.

### **Action required**

22. This report is for information. No action is required.

## Background and context

23. The aims of the annual Higher Education – Business and Community Interaction (HE-BCI) survey are:

- to provide data on the continuing development of interaction between higher education institutions (HEIs) and business and the wider community
- to provide reliable and relevant information to support the continued public funding of knowledge exchange (KE) activity in the UK
- to give HEIs good benchmarking and management information
- to develop a source of indicators at the level of the individual HEI, some of which can be used to inform funding bodies' allocations of continued funding
- to gain a UK-wide perspective in knowledge exchange and to highlight any significant differences across the four UK nations.

24. HE-BCI data for academic year 2012-13 were collected and validated by the Higher Education Statistics Agency (HESA) on behalf of all UK HEIs and the national funding bodies. The overall process, including this report, is overseen by the HE-BCI Stakeholders Group which includes:

- the UK higher education (HE) funding bodies
- the devolved administrations
- the Department for Business, Innovation and Skills
- the Research Councils
- the Technology Strategy Board
- the National Centre for Universities and Business
- other representative bodies such as Universities UK, GuildHE and the Confederation of British Industry.

25. The 13th HE-BCI survey is essential intelligence for all those interested in HE and the knowledge economy. Data from HE-BCI are used to develop policy and inform funding decisions for KE and related activities across the UK. Data are also valuable as management information, and support benchmarking for a range of organisations, notably HEIs and their funding partners. They also provide a basis for international comparisons. HE-BCI data are accessible at no charge to UK HEIs via the Higher Education Information Database for Institutions (HEIDI); others will be required to pay a small fee<sup>6</sup>.

26. The report highlights a number of caveats, although the overall dataset is considered informative and fit for purpose. Caution may be appropriate when viewing some data and trends in this report: any specific concerns are highlighted in the text. In each survey year, HESA allows responding HEIs to restate previous figures to correct errors or include data that were not available at the time of submission. For the most part,

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<sup>6</sup> Only summary data are included in this report; full data can be obtained from HESA ([www.hesa.ac.uk](http://www.hesa.ac.uk)).

this report uses data as submitted (rather than restated) except where there are large effects (such as to skew the data noticeably).

27. While completion of the HE-BCI survey has been a condition of grant in Scotland since 2010-11, results do not drive funding allocations as in the rest of the UK. The Scottish Funding Council is currently reviewing the Knowledge Transfer Grant and as part of that review will consider the use of HE-BCI data in its allocation. Though this will improve reporting to HE-BCI by Scottish institutions, there is still some volatility in the most recent returns.

28. Standard practice in the HE-BCI survey is to present the current and previous year's data in cash terms, but to adjust for inflation on any time series of three or more years (given fact that low inflation builds a significant wedge to real terms over time but not in a single year). The latest gross domestic product deflators are used for each survey, and the figures in real terms are updated (meaning that there may be slight differences between annual reports). This approach is common across the annual series of HE-BCI reports.

29. Most financial income data are collected by partner type:

- commercial – small and medium-sized enterprises (SMEs)<sup>7</sup>
- commercial – large businesses
- non-commercial – public and third sector.

For some indicators (collaborative research, regeneration and sale of spin-off shares) data are not available by type of partner. Such data are shown as 'other', though they will doubtless include elements of the main categories.

30. While HESA's published data on the HE-BCI survey include all HEIs who respond to the Finance Statistics Return, this publication excludes the University of Buckingham and University Campus Suffolk. This is because they are distinct from the publicly funded HEIs in the UK who are in receipt of KE funding at present. While this will have a negligible effect on overall income indicators when comparing the HESA and HEFCE reporting, it may affect proportional calculations (for example, where data have been rounded up or down).

31. In 2005-06 the timing of the survey was changed to bring it closer to the relevant academic year, and two years of financial and numeric data were collected at one time. To limit burden, only one year of qualitative data was collected; thus there are some qualitative time-series data where points are assumed<sup>8</sup>.

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<sup>7</sup> See <http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/sme-definition/> for a definition.

<sup>8</sup> See 'Higher education – business and community interaction survey: 2004-05 and 2005-06' (HEFCE 2007/17), available at [http://webarchive.nationalarchives.gov.uk/20120118171947/http://www.hefce.ac.uk/pubs/hefce/2007/07\\_17/](http://webarchive.nationalarchives.gov.uk/20120118171947/http://www.hefce.ac.uk/pubs/hefce/2007/07_17/), for further detail.

## **The survey and the wider economic context**

32. HE-BCI results need to be seen in the context of wider economic and other conditions that impact on HEIs' interactions with their partners. In the early years of the HE-BCI survey the economy was fairly stable, and during that time we highlighted that data and trends needed to be viewed in the context of changing factors in the HE environment, including the establishment of the survey itself.

33. Since the 2008 economic downturn, we have emphasised the economic and wider conditions impacting the economy and society. At the time of this report there are positive signs of economic growth for the UK: this is reflected in some indicators, notably the increase in large business income during 2012-13. However, the economic landscape continues to evolve and the factors likely to impact HEI interactions now include the following.

- a. The establishment of 39 Local Enterprise Partnerships (LEPs) within England to promote economic growth and job creation within their regions. The LEPs will work together with local authorities, HEIs and businesses to determine economic priorities and drive growth.
- b. The announcement of €6.2 billion of European Structural Funds for the period 2014-2020, including the European Regional Development Fund and the European Social Fund. The funds are intended to support local initiatives to increase economic growth and job creation. It is expected that HEIs in England will be able to apply for these funds through the LEPs while other arrangements will be in place for the Devolved Administrations.
- c. The on-going UK government policy to decrease the budget deficit through reductions in public expenditure, which adversely affects the available resources for public organisations to invest in research and knowledge exchange.
- d. The closure of the Regional Development Agencies, which invested in HE knowledge exchange and were clients of HE services. There are now differences between the nations of the UK in government policy on sub-national growth, which may affect the broader innovation ecosystem and therefore HE knowledge exchange.
- e. There have also been changes to core funding for KE – in England for example, HEFCE's Higher Education Innovation Funding, which supplies KE formula funding, has been made more selective since 2011. This may affect the infrastructure and income indicators captured in this survey and in future years.

## **Next steps**

34. The HE-BCI survey is a formal part of HESA's official Finance Statistics Return, and collection of the data may be considered part of standard administrative practice. However, as with most data returns, improvements can be made to process and content. These will be balanced against the needs to maintain the consistency and comparability of survey data and to respond to changing policy dynamics.

35. HESA reviewed HE-BCI data in 2012-13 with support from an expert group which included HEIs, KE professionals and policy makers. As a result a number of small

improvements have been suggested, along with the removal of indicators that were seen to be of limited use given the considerable administrative burden associated with HE-BCI. Changes will take effect from the academic year 2013-14 to allow HEIs sufficient time to adapt their data systems (the data will therefore be published early in 2015). Further information is available on the HESA web-site at [www.hesa.ac.uk/c13031](http://www.hesa.ac.uk/c13031).

## **Analysis**

36. Overall, the data show that knowledge exchange activity from the UK higher education sector is holding up well, with increases across most indicators and an increase in total income of five per cent from 2011-12 (£3.4 billion) to 2012-13 (£3.6 billion). Despite increases in funding from the European Union, there has been an overall reduction in regeneration funding; as highlighted in previous reports, this was expected given the deficit reduction measures taken by the Government.

37. Large businesses increased investment by 11 per cent from £660 million to £729 million in 2012-13, while investment from public and third-sector partners grew slightly, by 1.8 per cent from £1,271 million in 2011-12 to £1,294 million. SME investment declined by 1.1 per cent from £183 million to £181 million across the UK.

## **Strategy and infrastructure**

38. Indicators relating to strategy and infrastructure are collected under Part A of HE-BCI (as opposed to financial and numeric metrics, which are collected in Part B)<sup>9</sup>. These tend to be self-assessed responses in which HEIs either select from a range of options (this is how intellectual property (IP) is handled, for instance) or place themselves on a scale of development (as with incentives to engage with business and the community, which may be 'weak', 'medium' or 'strong'). The latter are known as 'benchmark questions'.

39. Data relating to strategy and infrastructure are mostly consistent with those collected in 2011-12. Each HEI is asked to select three areas which it regards as making the greatest contribution to economic growth – see Table 2.

40. 'Access to education' remains the most important single most reported contribution HEIs make to economic development, while 'Research collaboration with industry' is the next most cited. The proportion of HEIs citing 'Developing local partnerships' has increased by four per cent to 23 per cent during 2012-13; this may be linked to the general emphasis on universities' role in the local growth agenda, in, for example, the Witty Review of Universities and Local Growth. However, 'Graduate retention in the local region' has dropped by three per cent from 17 per cent to 14 per cent.

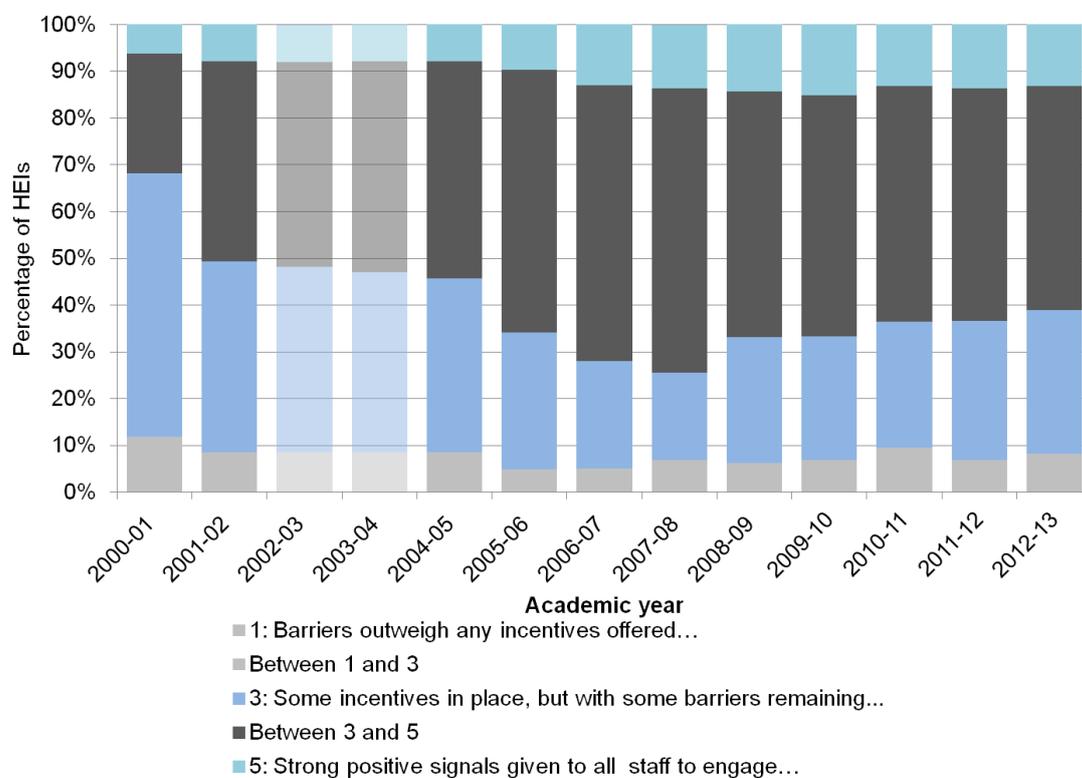
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<sup>9</sup> The full questionnaires are available at [www.hesa.ac.uk/index.php?option=com\\_collns&task=show\\_colln&Itemid=232&c=C11031&s=5&wvy=any&wvs=1&isme=1](http://www.hesa.ac.uk/index.php?option=com_collns&task=show_colln&Itemid=232&c=C11031&s=5&wvy=any&wvs=1&isme=1)

**Table 2 Main areas of economic development**

In which three areas do you see your HEI as a whole making the greatest contribution to economic development?	2012-13
Access to education	60%
Research collaboration with industry	45%
Supporting small and medium size enterprises	34%
Meeting national skills needs	33%
Technology transfer	24%
Meeting regional skills needs	24%
Developing local partnerships	23%
Attracting non-local students to the region	18%
Graduate retention in local region	14%
Support for community development	9%
Attracting inward investment to region	6%
Management development	6%
Spin-off activity	3%

**Figure 4 Incentives for staff to engage with business and the community 2000-13**



Source: HE-BCI Part A Question 8 (data for 2002-03 and 2003-04 are assumed – see paragraph 31)

41. Figure 4 shows how HEIs rate the level of incentive for staff to engage with business and the community, assessing themselves against a five-point scale where '1' represents barriers outweighing incentives and '5' suggests strong incentives in place.

42. The numbers of HEIs reporting strong staff incentives to engage with external partners have declined slightly by 2 per cent from the previous year. There has been an increase since 2010-11 in the proportion choosing option '3', that there are some incentives in place but with some barriers remaining but, overall, 62% of HEIs report more incentives than barriers.

43. A five-point benchmark assesses the extent to which business support strategy is embedded within HEIs. The data for last year show a slight improvement, with 43 per cent responding that their strategic plan is developed as a result of an inclusive process across the HEI. Another five-point scale is used to indicate the strategy for public and community engagement; 31 per cent of HEIs selected the highest category, a figure which is unchanged from 2011-12.

44. Over the last decade the HE-BCI survey has tracked increases in the numbers of staff in HEIs whose role is dedicated to assisting external partners and facilitating interactions. 2012-13 data show a slight decrease in the number of staff employed in a dedicated business and community role, from 8,128 to 8,095 full time equivalent (however, no data are available on the employment level of these staff)<sup>10</sup>.

45. Figure 5 shows little change in infrastructure indicators, with levels looking similar to 2011-12. There has been some slight increase in HEIs providing assistance to SMEs and requiring a contracting system for staff to conduct their business engagement activities.

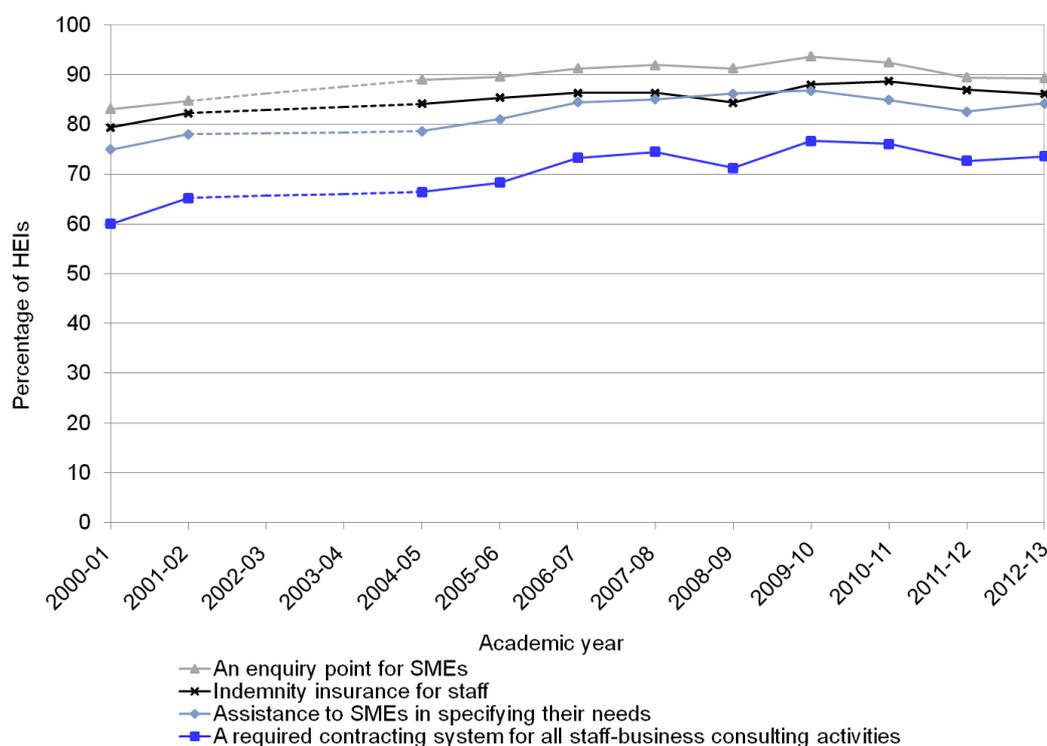
46. Not all HEIs have a sufficient 'pipeline' of technology to warrant a dedicated unit or specialist staff (such as IP lawyers) to commercialise research, although some employ private-sector intermediaries. For the last year, 6 per cent of HEIs reported that there was no dedicated support facility, while 40 per cent reported having both options available.

47. The data on how broader IP rights are managed show little change from the previous year, with a slight increase in the use of an external agency. Many HEIs manage IP rights in multiple ways, so responses sum to more than 100 per cent. The fact that 15 HEIs (two fewer than in 2011-12) consider the indicator inapplicable is not unreasonable, given that course material and publications fall under different IP processes – usually copyright – which do not require the processes of application and assessment that patents do.

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<sup>10</sup> Such staff are often embedded across the HEI in many roles, for example careers advice and guidance or research contracts.

**Figure 5 Selected infrastructure indicators 2000-13**



Source: HE-BCI Part A Question 11 (data for 2002-03 and 2003-04 are assumed – see paragraph 31)

48. The most common response (given by 64 per cent of HEIs) is that IP rights are handled by an external organisation, but 36 per cent of HEIs selected in-house or collaborative arrangements (with other HEIs), and 52 per cent noted other actions taken. In 81 per cent of HEIs, staff are rewarded for the IP they produce (if and when royalties are received); this percentage has remained unchanged from 2011-12.

### Research-based interactions

49. Research-based interactions cover a very wide spectrum of activities: from collaborative research (perhaps the most distant from the market) through to the commercialisation of ideas and the establishment of new companies (close to the market). Many organisations that operate partnerships with HEIs note that direct engagement in collaborative research is particularly valued for sparking new ideas and approaches.

50. Although income from IP is a useful measure of an HEI's strategy in commercialising its research, collaborative research may be more useful for understanding the value of long-term relationships between HEIs and their partners in business and the wider community.

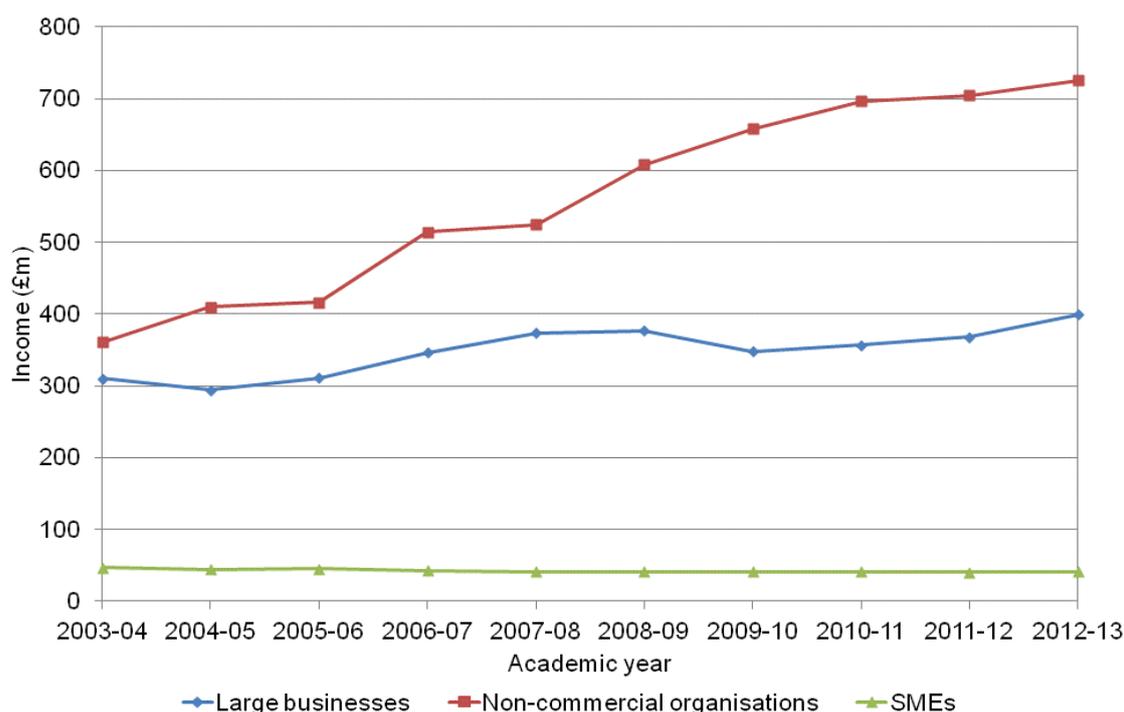
51. Collaborative research is often multidisciplinary and individual to the context of a particular project and its partners. To complement other sources of data (such as industrial research income as collected in the main HESA finance record), the HE-BCI survey examines only a subset of collaborative research. Income should be recorded

only where the activity has a defined aim and there is input from at least three parties: the HEI, a public funder and one or more external partners. To measure the most complete proxy for the value of the collaborative research, HEIs provide figures on the public contribution (in money) and both money and in-kind contributions from the external partner.

52. The total reported income for collaborative research rose by 9 per cent last year, from £871 million to £951 million. Increases were seen across all public funders. The majority of the increase came from public funding, although support in kind from external partners also increased. Cash from external partners declined.

53. Contract research is a more simple transaction, where the benefit is assumed to be primarily on the side of the external partner, rather than the mutual gains obtained by collaborative research. Total income from contract research rose nearly 7 per cent to £1.16 billion in 2012-13. Figure 6 shows spending by large business increased by 10 per cent (to £400 million) and there was a 5 per cent increase in income from SMEs (to £41 million), which are encouraging signs for economic growth. Income from public and third-sector partners (which remains the largest share by a margin) increased by 5 per cent to £725 million<sup>11</sup>.

**Figure 6 Contract research income 2003-13 (real terms)**



Source: HE-BCI Part B Table 1b

54. In this survey, HEIs' innovative application of existing knowledge on behalf of an outside party is defined as 'consultancy'; this, rather than more formal research, may be

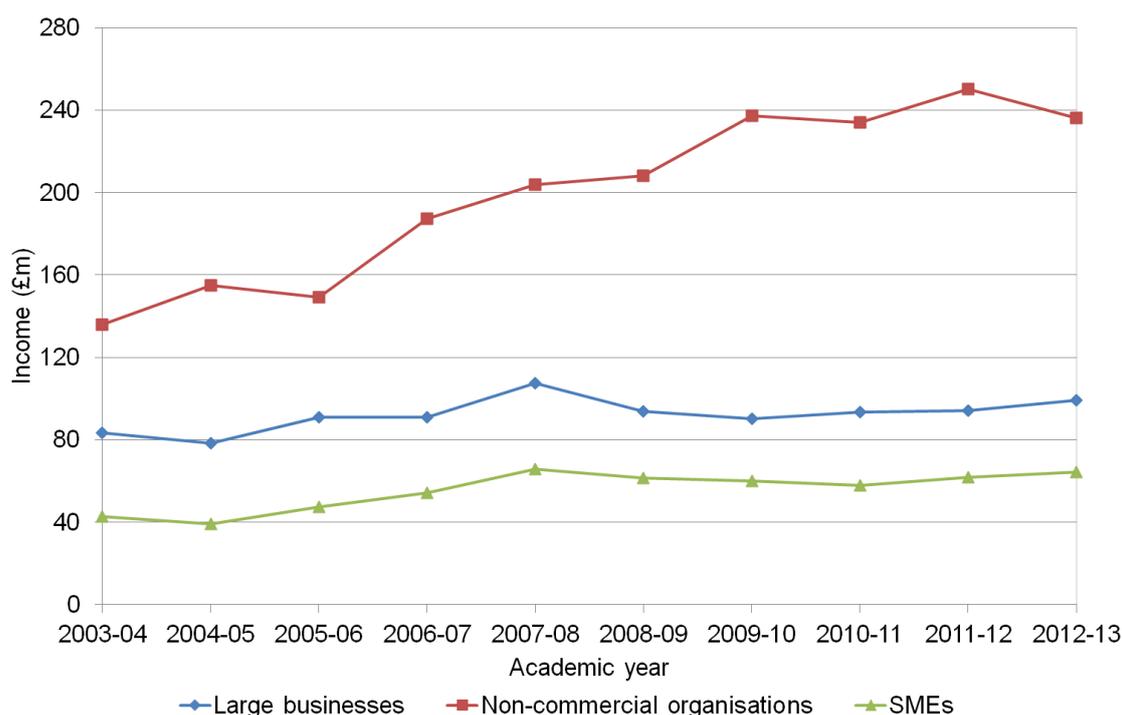
<sup>11</sup> This includes a correction made to data from 2011-12 by a Scottish HEI

the preferred method to access expert advice and less tangible knowledge. The knowledge itself may not be new, but it can often provide more immediate innovation. Indeed, this may be a useful route for the development of ‘open innovation’ practice, where IP rights are less important than the usefulness of the knowledge to a particular situation or problem.

55. Figure 7 shows slight growth in HEI income from consultancy, from £398 million in 2011-12 to £400 million in 2012-13. The largest proportional increase was from large businesses, which spent 8 per cent more on HE consultancy – from £92 million in 2011-12 to £99 million in 2012-13. Income from SMEs increased by 6 per cent to £64 million, while non-commercial partners reduced investment by 3 per cent to £236 million.

56. There were some differences between the nations, with Northern Ireland and England experiencing growth in income of 12 per cent and 2 per cent respectively, and Scotland and Wales witnessing decreases of 7 per cent and 8 per cent respectively. A significant proportion of the decline in income for Scotland has come from a reduction in public and third-sector partner income whereas in Wales the reduction is mainly in terms of other (non SME) commercial business.

**Figure 7 Consultancy income 2003-13 (real terms)**



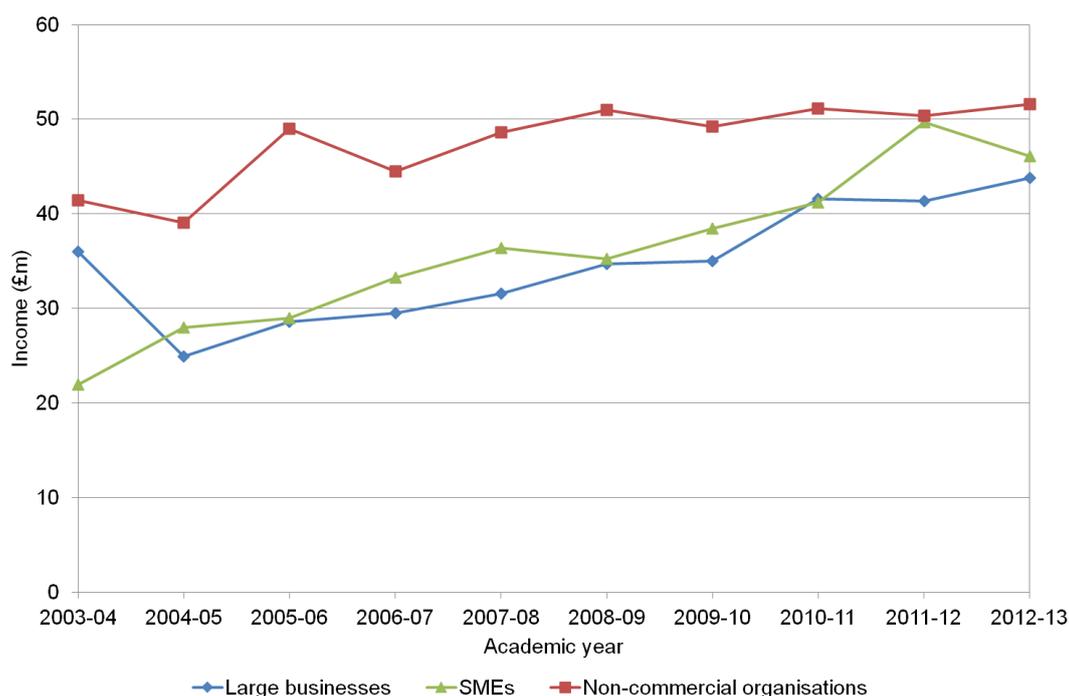
Source: HE-BCI Part B Table 2a

57. HEIs’ specialist equipment and facilities, such as 3D printing and digital media suites, support their teaching and research. There are many benefits from providing access to these resources for partners, including income and relationship building. The external partner benefits and gains access to facilities that they may not have the resources to secure in-house.

58. Overall, income from facilities and equipment saw a growth of 2 per cent, from £139 million to £142 million in 2012-13 (see Figure 8). SMEs' spending declined by 5 per cent from £49 million to £46 million. Spending by large businesses and public and third-sector partners showed much improved growth rates, of 7 per cent and 4 per cent respectively.

59. There were some slight differences between nations. England and Wales showed some modest growth in income. Scotland shows an overall increase of 11 per cent while data for Northern Ireland showed a small drop (2 per cent).

**Figure 8 Facilities and equipment 2003-13 (real terms)**



Source: HE-BCI Part B Table 2b

## Intellectual property and enterprise

60. The translation of basic research into exploitable technology can be a long process, and then further time is required for the technology to prove itself in the marketplace. Once the research is complete and the HEI has acquired formal intellectual property rights – through patents, copyright, design registration or (more rarely) trademarks – it is common either to license the innovation to an existing company or to set up a new ('spin-off') company, which will likely take more time to generate significant financial returns.

61. When a new company is set up, the HEI may choose to own it outright, retain a proportion of the stock, or float it all. The HE-BCI survey measures the income from the sale of shares in such companies. Hence, to gain a complete picture of the return from an HEI's IP rights one should always consider both the licensing and spin-off routes.

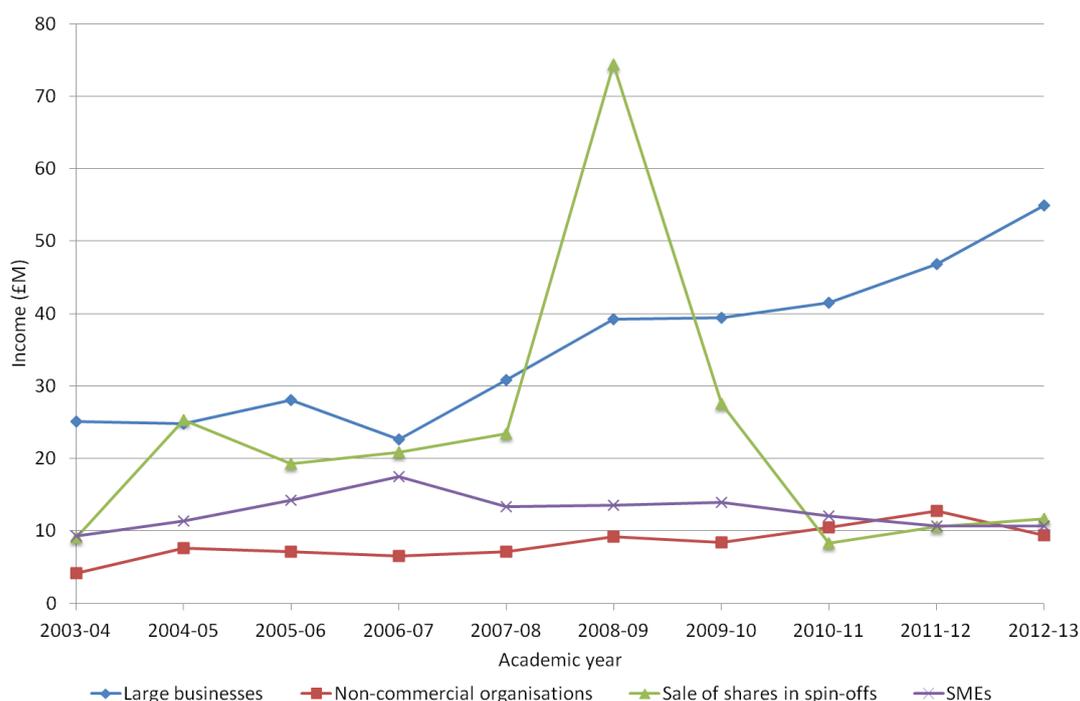
62. The timescales associated with the formal commercialisation of IP rights are especially long for fields linked to medicine or defence. In 2008-09 one English institution accounted for nearly half of all UK IP income, due to the sale of a company (in the space sector) that had been in development for around 25 years.

63. When we look at the income from licensing only (thus excluding the sale of spin-off companies) there was an increase from £69 million to £75 million in 2012-13 – a rise of 9 per cent. Data are collected separately for software and non-software licences because the former typically have shorter life-spans and lower values (though this does not mean they are less important). This is because incremental improvements to software can be made far more readily than, say, changes to the engine of a passenger jet.

64. There are noticeable differences in the income by partner and type of licence (see Figure 9). Large business spending on licences increased significantly, from £46 million to £55 million in 2012-13 (20 per cent). Public and third-sector spending decreased by 24 per cent, and income from SMEs saw modest growth of 2 per cent.

65. Income from non-software licences grew by 11 per cent, from £53 million in 2011-12 to £58 million in 2012-13, with growth coming from large business income.

**Figure 9 Income from intellectual property 2003-13 (real terms)**



Source: HE-BCI Part B Table 4c

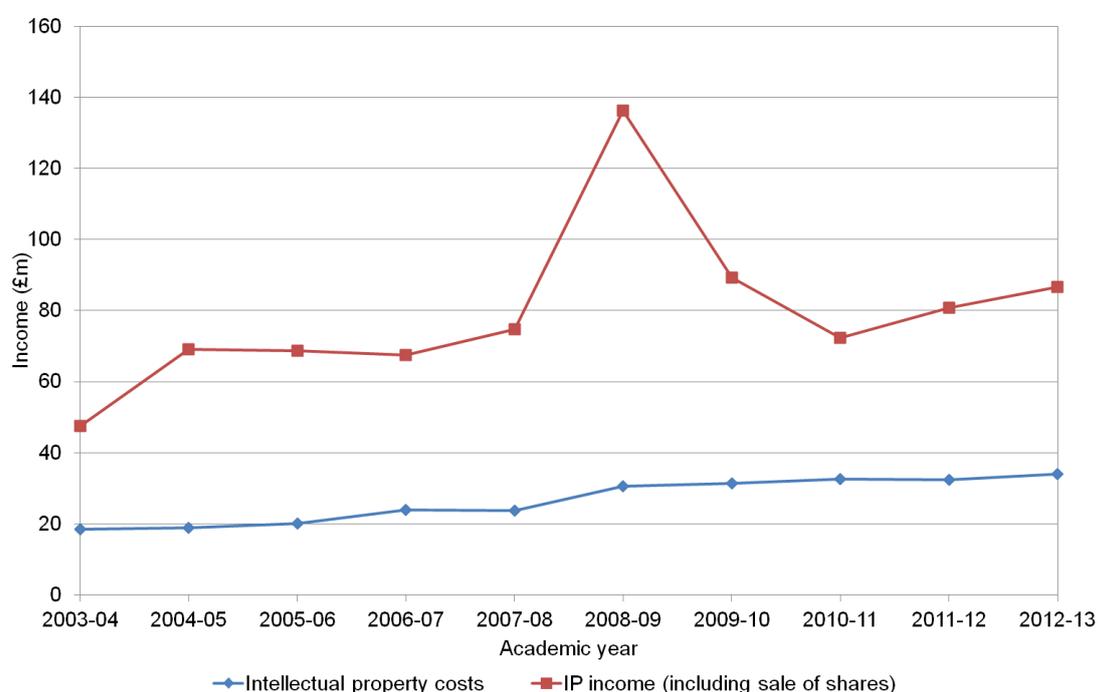
66. Software licenses and ‘Other’ are much smaller categories than non-software licences. Software licences saw an income growth of 9 per cent, from £6.1 million to £6.7 million in 2012-13, with all growth from the SME sector. Given the complex nature of IP there are activities where income is received without a licence being in place – referred to simply as ‘other’ IP income; this indicator fell by 4 per cent to £9.4 million in 2012-13. Sale of shares in spin-off companies grew by 12 per cent to £11.6 million in 2012-13, an

indicator that can fluctuate greatly year on year given the long timescales associated with spin-off formation.

67. Data for 2012-13 saw IP protection costs increase from £32 million to £34 million. These costs include formal fees for patents and associated staff costs (of, for example patent lawyers).

68. As illustrated in Figure 10, the sector as a whole receives more than twice as much income from licensing and spin-off equity as it spends on IP protection. The majority of HEIs report that income exceeds expenditure, with only 23 per cent of HEIs in 2012-13 spending more on protection (a figure unchanged from last year). The peak in 2008-09 that appears in Figures 9 and 10 was due to one HEI selling its remaining stake in a very successful company (see paragraph 62).

**Figure 10 Income and expenditure on intellectual property 2003-13 (real terms)**

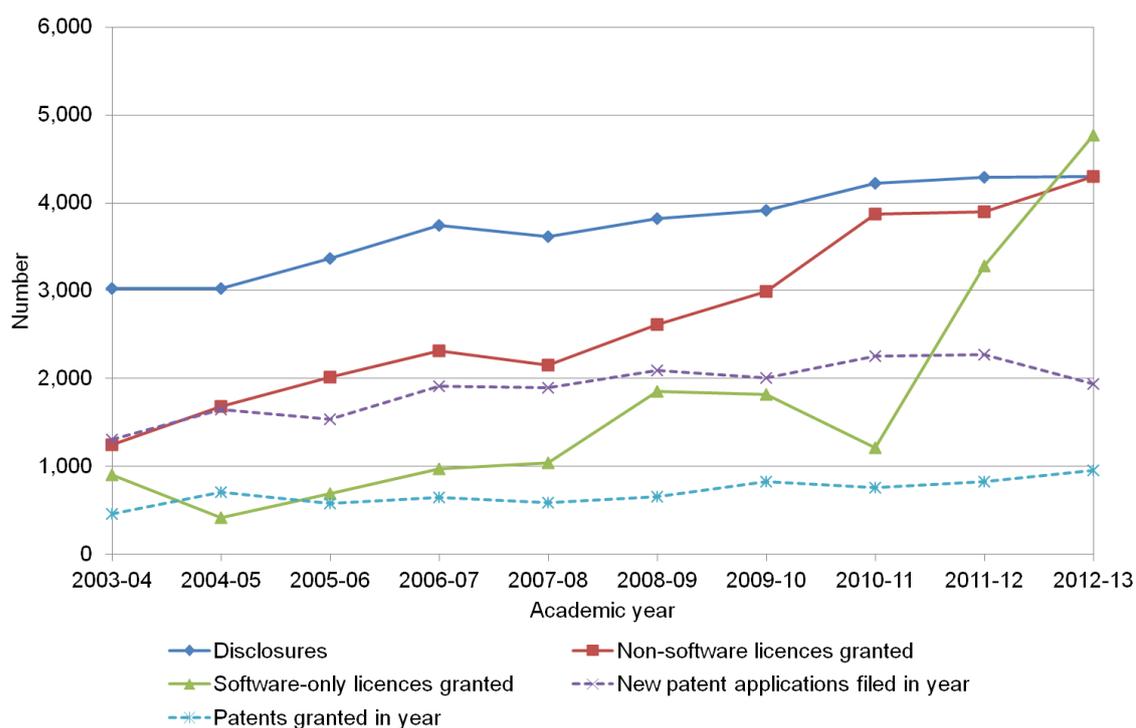


Source: HE-BCI Part B Table 4c

69. While there has been a slight drop in patent applications this year, the trend is still encouraging: since 2003-04 (Figure 11), HEIs have seen more disclosures from their staff that have translated into patent applications, and high numbers of active patents.

70. Growth in the number of non-software licences granted has risen by 10 per cent for 2012-13, while software licence numbers have also increased dramatically by 45 per cent, continuing the overall growth since 2010-11. This increase comes predominantly from further growth at a single, already high-performing, HEI, although a number of HEIs reported increased activity under this indicator.

**Figure 11 Disclosures and patent numbers 2003-13**

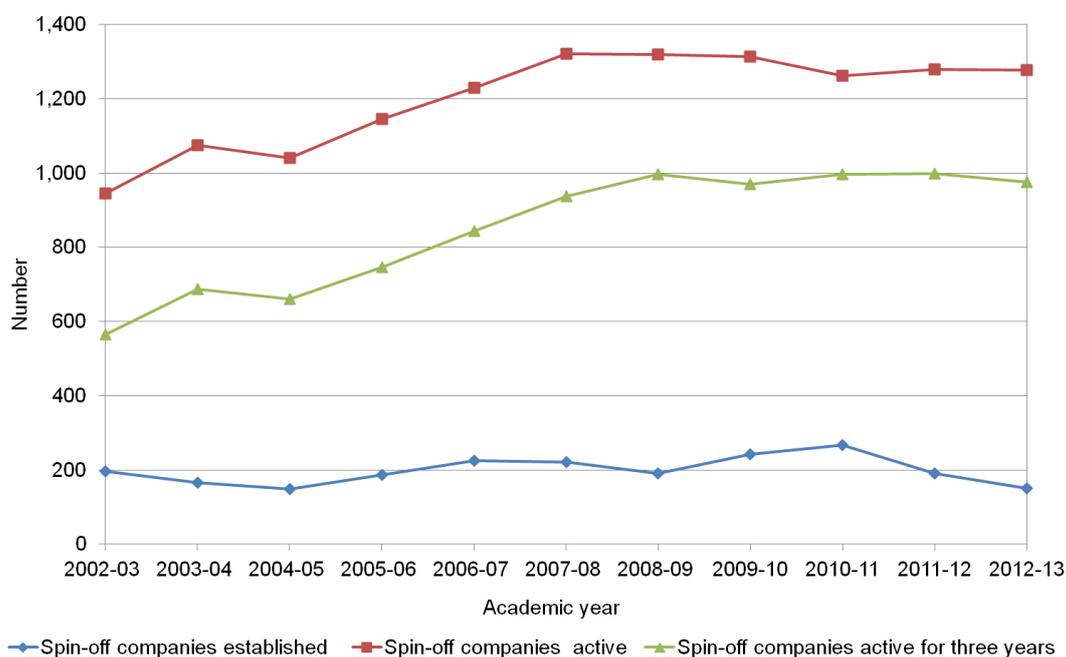


Source: HE-BCI Part B Tables 4a and 4b

71. The HE-BCI survey collects data on formal spin-off companies based on IP where the HEI maintains some ownership, and those that are sold outright. For total spin-off numbers these two data sets are summed (see Figure 12). The licensing of new inventions to an established company is usually the most efficient way of exploiting IP, but in some contexts, such as when there is a lack of suitable clients, creating a spin-off company is the best choice. Spin-offs are unlikely ever to be the main option for exploiting IP, but for some particularly promising ideas they can be the best way to maximise impact and value for the HEI and for the economy more broadly.

72. Data from 2012-13 show a notable decline in the number of new spin-off companies, from 191 in 2011-12 to 150 in 2012-13; this represents a 21 per cent drop. The number of spin-off companies surviving three or more years fell, from 998 to 975 active firms in 2012-13 (the first time on record this indicator has fallen). It may be that these indicators are slower to recover from the economic downturn given the generally longer timescales involved, and will recover by next year (2013-14). If they do not then more work will be needed to understand the change in trend.

**Figure 12 Spin-off companies formed 2003-13**



Source: HE-BCI Part B Table 4d

73. Start-up companies are businesses set up by HEI staff. They are distinct from spin-off companies as they are not specifically based on IP emerging from a HEI, and may not even be directly related to the academic's area of expertise (although most certainly are). The number of start-up companies set up by HEI staff fell by 29 per cent in 2012-13 from 87 to 62 although the number increased in Scotland. However, those surviving three or more years increased by 13 per cent, from 263 in 2011-12 to 298 in 2012-13 across the UK.

74. Data on company formation are likely to be incomplete, so must be treated with caution. HEIs are still developing systems to record such data, which are not collected by their central systems because these businesses are external. Estimates of the turnover of formal spin-offs and their staffing rose in 2012-13, by 29 per cent and 22 per cent respectively.

75. Graduate start-ups are defined as companies formed within two years of graduation, which may or may not be IP-based and include various types of enterprise including commercial and social enterprises. The number of start-ups increased by 28 per cent, from 2,726 in 2011-12 to 3,502 in 2012-13, and the number surviving three or more years rose by 16 per cent.

76. Reported staff levels and turnover for graduate start-ups increased last year by 14 per cent and 9 per cent respectively. Data on graduate start-ups are difficult for HEIs to track effectively because the data are only available when volunteered.

77. Recent years have also seen a greater interest, especially among graduates, in social enterprises (organisations that apply commercial strategies to maximize

improvements in human and environmental well-being, rather than maximising profits for external shareholders). From next year (2013-14) HE-BCI will collect specific data on social enterprises, although it is likely that many have been counted previously (thus we may see an apparent drop in the number of start-ups from both students and staff when the new category is introduced as such companies should not be double-counted).

### **Social, community and cultural activities**

78. The HE-BCI survey looks at the commitment made by HEIs to public and community engagement by counting attendees at public events, such as dance, drama, other performances, film and public lectures. Attendance levels are an imperfect proxy for the range of activity that engages the public. Data for 2012-13 show substantial changes since the previous year<sup>12</sup>.

79. The number of attendees at free public lectures increased by 35 per cent, and for free performance arts events the increase was 9 per cent. There was a substantial increase of 76 per cent in the number of attendees at 'other' free events, which reflects the growing use of virtual media in education, such as TV and radio broadcasts, YouTube and iTunes, as well as virtual learning environments.

80. To illustrate the scale of HEI commitment to social, community and cultural activities: if we assume a consultancy rate for academics of £500 per day, the value of the total academic time devoted to public events is just over £53 million. The apparent increase in attendees in this survey, while staff time invested has dropped, is interesting. Further data are needed to understand whether this will become a trend.

### **Regeneration**

81. Regeneration activity covers a wide range of interactions, from urban renewal to community development. HEIs are involved in a range of regeneration initiatives, including large-scale European structural regeneration projects, as well as targeted support to recently redundant individuals or providing employability advice and training to graduates.

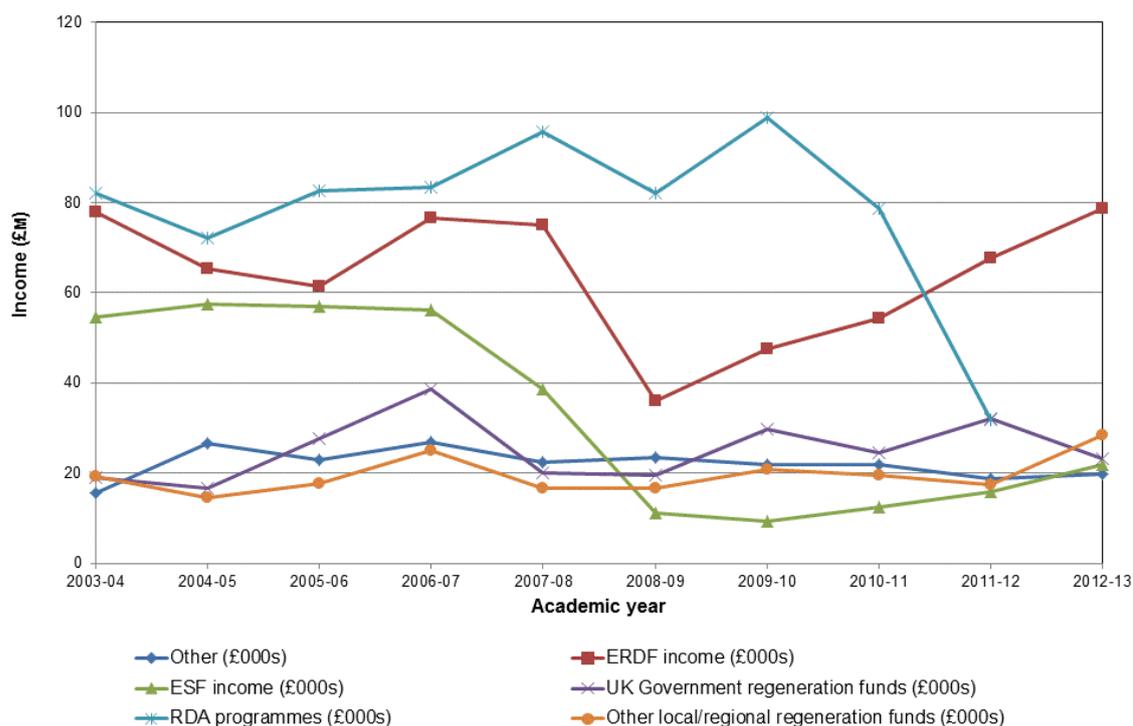
82. Total income from regeneration activity dropped by 4 per cent, from £180 million to £172 million in 2012-13. There has been a drop in Regional Development Agency income, from £31 million to zero in 2012-13, which follows the wind down of the Regional Development Agencies in England.

83. A significant counter to this drop is the year-on-year growth of European Regional Development Fund and European Social Fund, with HEIs reporting an increase in these income streams of 18 per cent and 41 per cent respectively in 2012-13 (Figure 13).

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<sup>12</sup> Note that these data are very difficult to collect consistently across the sector, because they encompass a broad range of activities and are not directly used in funding.

**Figure 13 Regeneration income 2003-13 (real terms)**



Note: 'ERDF' = 'European Regional Development Fund'; 'ESF' = 'European Social Fund'; 'RDA' = 'Regional Development Agency'

Source: HE-BCI Part B Table 3

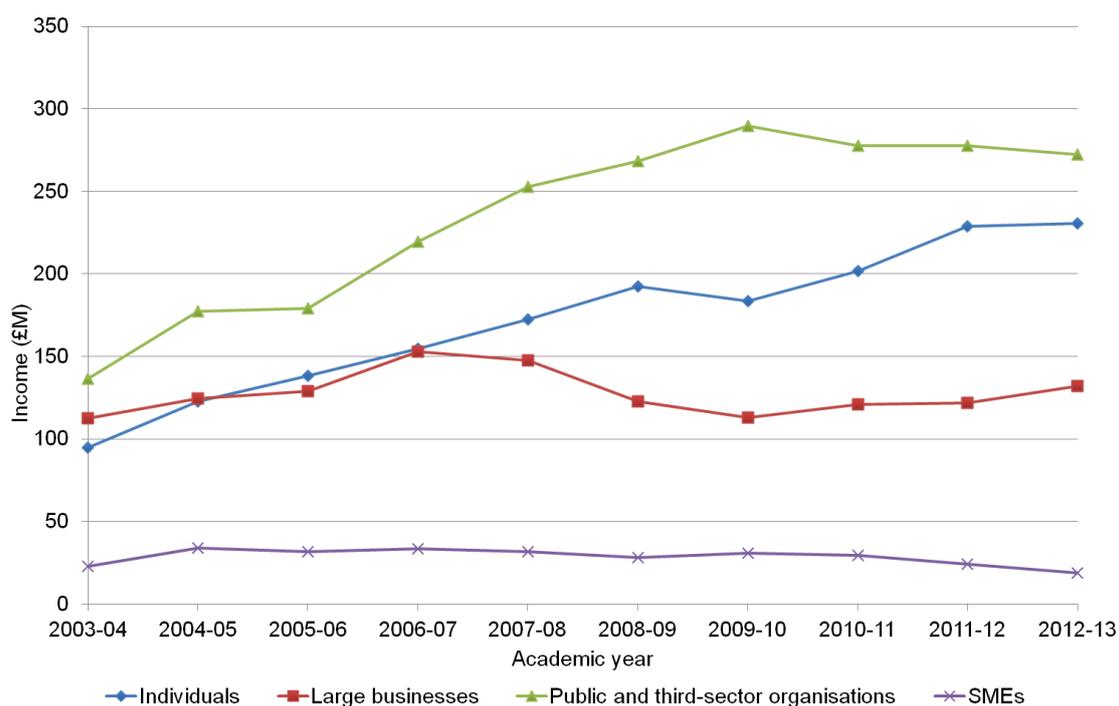
## Continuing professional development

84. Continuing professional development (CPD) is an important engagement activity for HEIs. Some CPD courses are relatively formal, enabling students to retain a licence to practise or gain membership of a professional, statutory or regulatory body; other CPD is more task-focused, for instance selecting particular modules from an MBA course to tackle a specific business problem. CPD provision may or may not contribute to course credits, and may lead towards a named award and a qualification.

85. It is, however, very difficult for HEIs to collect complete, accurate data on the potential impact of CPD, given that any module may contain a range of learners including students who are or are not aiming for course credit.

86. CPD is paid for by a variety of sources including employers and the students themselves. (Individuals may sign-up for education courses and be reimbursed later by their employer – a fact that may not be apparent to the HEI – while sole traders may not see the distinction between employer and self-funding as relevant.) Since disaggregating these data would be overly burdensome, data are also returned for individuals in continuing education. It is, however, assumed that much of this education is of benefit to the wider economy.

**Figure 14 CPD and continuing education income 2003-13 (real terms)**



Source: HE-BCI Part B Table 2c

87. Recorded income from CPD rose from £641 million to £653 million in 2012-13. (However, the 2011-12 figure has been adjusted due to a substantial over-statement of income (specifically from SMEs) by one HEI in England, meaning that comparisons with the published 2011-12 figures will suggest a drop.) This overall 2 per cent growth in 2012-13 hides significant differences in spending between types of partner, with income from large businesses growing by 10 per cent and income from SMEs seeing a large drop, of 20 per cent, from £24 million in 2011-12 to £19 million in 2012-13 (see Figure 14). Six HEIs reported drops of around £500,000 or more, suggesting that there has been a substantial decline in demand for CPD from SMEs even accounting for the error noted above.

88. Overall demand for part-time study at undergraduate and postgraduate level has declined significantly since 2010-11, which may be due to rising fees and challenging economic conditions for individuals. A recent HEFCE report, 'Higher education in England 2014: Analysis of latest shifts and trends' (HEFCE 2014/08), provides further analysis of the decline in overall part-time numbers.

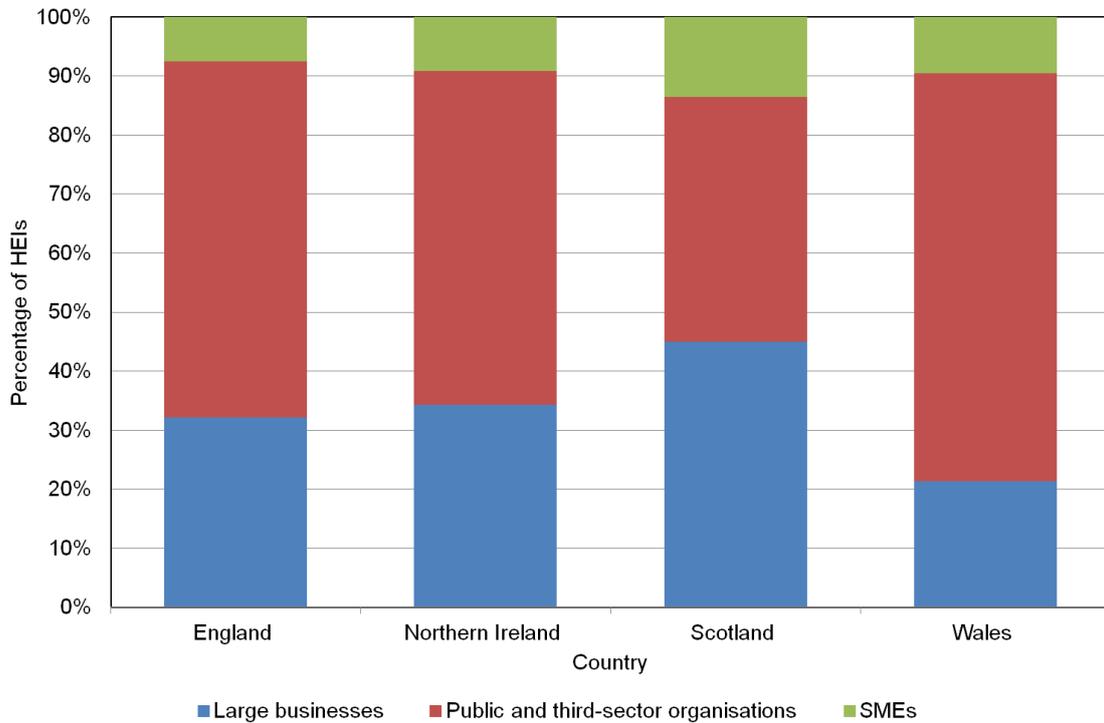
89. Total 'learner days' of CPD and continuing education (which, it should be noted, are difficult to calculate accurately) were 3.7 million in 2012-13, representing a 9 per cent drop from the previous year.

### Comparisons between UK nations

90. Overall income from activities and partners is broadly comparable between the four UK nations, as shown in Figures 15 and 16. Data for selected indicators are displayed as

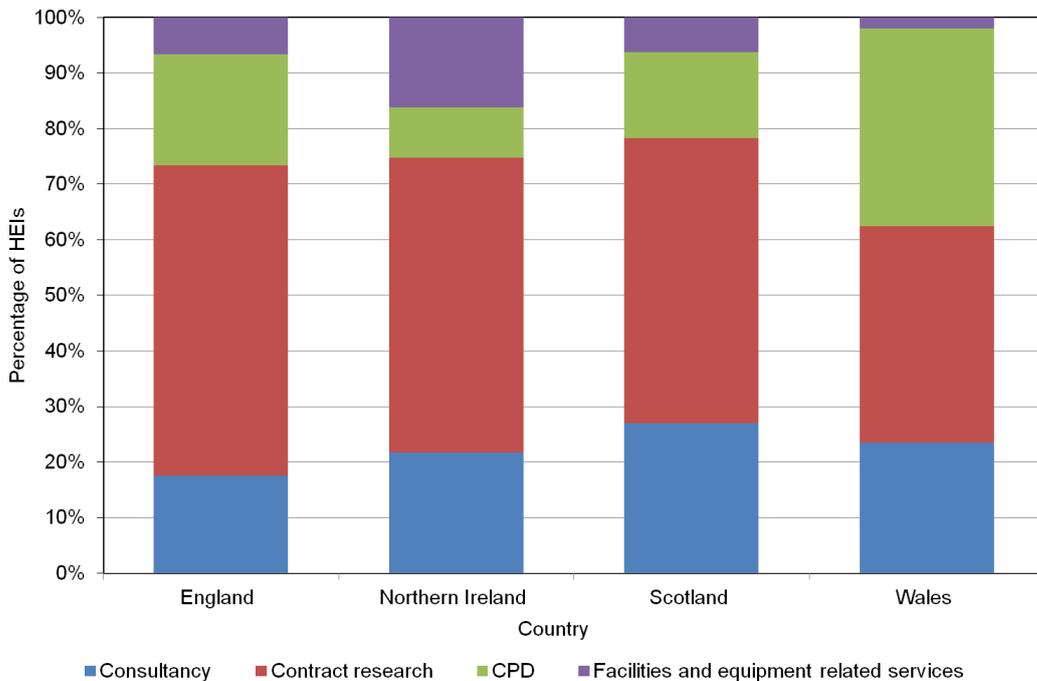
proportions of income for the HEIs in those nations, so as not to reflect of relative economic size.

**Figure 15 Income across UK nations**



Source: HE-BCI Part B Tables 1 and 2

**Figure 16 Income from contract research, consultancy, facilities and equipment and CPD by partner across UK nations**



Source: HE-BCI Part B Tables 1 and 2

91. Figure 15 shows relative proportions of income by partner. The income from selected activities is roughly similar, although Scotland shows a higher proportion of income from large business than the other nations.

92. Figure 16 the results are again broadly similar, although it can be seen that HEIs in Wales provide relatively more CPD and less income from facilities, while the reverse is seen for Northern Ireland.

## **Annex A**

### **Summary data by UK, England, Scotland, Wales and Northern Ireland**

This annex is available as a separate Excel file alongside this publication at [www.hefce.ac.uk/pubs/year/2014/201409/](http://www.hefce.ac.uk/pubs/year/2014/201409/).

## List of abbreviations

<b>CPD</b>	Continuing professional development
<b>ERDF</b>	European Regional Development Fund
<b>ESF</b>	European Social Fund
<b>GDP</b>	Gross domestic product
<b>HE</b>	Higher education
<b>HE-BCI</b>	Higher Education – Business and Community Interaction survey
<b>HEFCE</b>	Higher Education Funding Council for England
<b>HEI</b>	Higher education institution
<b>HEIDI</b>	Higher Education Information Database for Institutions
<b>HESA</b>	Higher Education Statistics Agency
<b>IP</b>	Intellectual property
<b>KE</b>	Knowledge exchange
<b>LEP</b>	Local Enterprise Partnership
<b>RDA</b>	Regional Development Agency
<b>SME</b>	Small or medium-sized enterprise