The Risk Capital Market in Scotland

Annual Report 2016

Prepared for Scottish Enterprise by Young Company Finance

INTRODUCTION

The purpose of this report is to provide a detailed and comprehensive analysis of the early stage risk capital market in Scotland for the calendar year 2016.

The report is one of a series dating back to 2003. The most recent report in the series covered 2015 and was published in June last year.

The report is intended to improve the understanding of the scale and characteristics of the early stage risk capital market in Scotland.

In 2016 the number of investment deals continued to grow, up by a third on the previous year, and also saw increasing diversity in the range of types of investor and their geographical locations. Total investment fell back from 2015, but as that year included two deals which alone accounted for over 50% of the total this was not unexpected; in 2016 investment in deals below £10 million reached its highest level for 12 years. Although not on a scale of the risk capital market in London – itself conscious of a big disparity with the USA – there is a solidity and continuity in the market in Scotland which should provide a sound basis for further development in future years.

The analyses in the following Report are intended to identify the contribution made by risk capital investment to business ventures in Scotland, and to provide evidence for the development and evaluation of policies to stimulate the market.

Jonathan Harris

Young Company Finance

March 2017

TABLE OF CONTENTS

HIGHLIGHTS

INVESTMENT DEAL NUMBERS REACHED A TEN YEAR HIGH

The total invested slipped back from the 2015 high point (which included two outlier deals together totalling £264m), but was higher than any other year in the past decade.

THERE WERE FEWER MEGADEALS (OVER £10m) THAN IN RECENT YEARS

The two deals at this level in 2016 were in the first four months of the year.

THE TOP TEN DEALS ACCOUNTED FOR JUST OVER HALF OF TOTAL INVESTMENT

This is well down on the 74% share in 2015.

THERE WERE BIG INCREASES IN INVESTMENTS IN THE £1m TO £5m RANGE

This range spreads across the 'middle' and 'higher' investment bands used in the analysis, but in total saw increases of 43% by deal number and 41% by investment value over 2015. Comparing the 2016 figures with the 2012 figures at the start of the period, there has been an increase of 141% in deal numbers, and almost a doubling (93%) in investment.

BUSINESS ANGELS INVESTED TWICE AS MUCH AS IN 2015

For this report, the business angel category includes individual angels, the angel groups which are a major feature of the investment scene in Scotland, and equity crowdfunding platforms. Deal numbers were up by 44% from 2015, and investment up by 103%.

VC AND INSTITUTIONAL INVESTMENT DECLINED

Deals were down by 6%, but investment down by almost half (49%) from 2015, mainly because there were fewer 'megadeals'. Nonetheless, VC and institutional investment was at a much higher level than at the beginning of this reporting period (2012-2016).

INVESTMENTS IN THE 'OTHER' MARKET SECTOR CATEGORY GREW SUBSTANTIALLY

This category includes food & drink companies, and a number of large projects promoted this category to second place after the ICT sector, which saw strong growth in deal numbers. Investment in life sciences companies remained steady, but with little or no increase over this reporting period.

THE NUMBER OF NEW (FIRST TIME) INVESTMENTS INCREASED

But not the amounts invested.

COMPANIES IN THE EAST OF SCOTLAND INCREASED THEIR SHARE OF INVESTMENT

In terms of deal numbers, in 2016 the East region took approximately half of all investments, the same as in 2015. In investment values however, the proportion of total funding increased from 53% in 2015 to 62% in 2016.

BACKGROUND

Access to a strong supply of early stage risk equity capital is important for national and regional economies due to the catalytic role that it plays in the entrepreneurial process. UK and Scottish Government policy recognises that the market does not always enable SMEs to grow rapidly because of the imbalance between demand from entrepreneurs and the availability of funding from investors. Early stage investment is inherently risky, and different types of investor have different motivations and external influences affecting their willingness to invest. Sometimes investment patterns are affected by fashionable trends, which can make it more difficult for companies in market sectors currently out of favour to raise funds. This makes it important to track changes in the market, so that gaps in support can be identified.

Scottish Enterprise commissions research to identify the investment activity of all participants and to estimate the total flow of risk capital investment into early stage Scottish companies. This includes investigating the characteristics of the industry's key players and beneficiary companies, the scale of the annual flow of new investment, and establishing whether there is evidence of gaps in the supply of risk capital. From this analysis SE is able to quantify the impact on the market of its early stage equity investment funds to ensure that SE interventions remain 'fit for purpose' and able to optimise economic impact.

Approach

This Report covers only equity investments by independent third party investors, omitting where possible investments by 'founders, friends and family' or other non-independent investors prior to what the market usually terms a Series A round, meaning the first round in which independent investors participate.

As far as possible, the data shows the actual flows of funds rather than so-called 'headline' investments, which are the figures presented in press releases and other statements by investors and investees, and quote the total equity commitment (which is usually invested in tranches after the investee reaches agreed milestones). These headline announcements often include non-equity finance such as bank facilities and grant awards.

The report also excludes commercial loans or other forms of debt finance. Where regular independent investors such as angel groups make a relatively small early investment in a company in the form of a convertible loan, this is included in the figures in this report in the same way as equity investments. Such loans are not structured like commercial loans with a fixed repayment schedule, but are usually converted to equity at a relatively early stage rather than repaid.

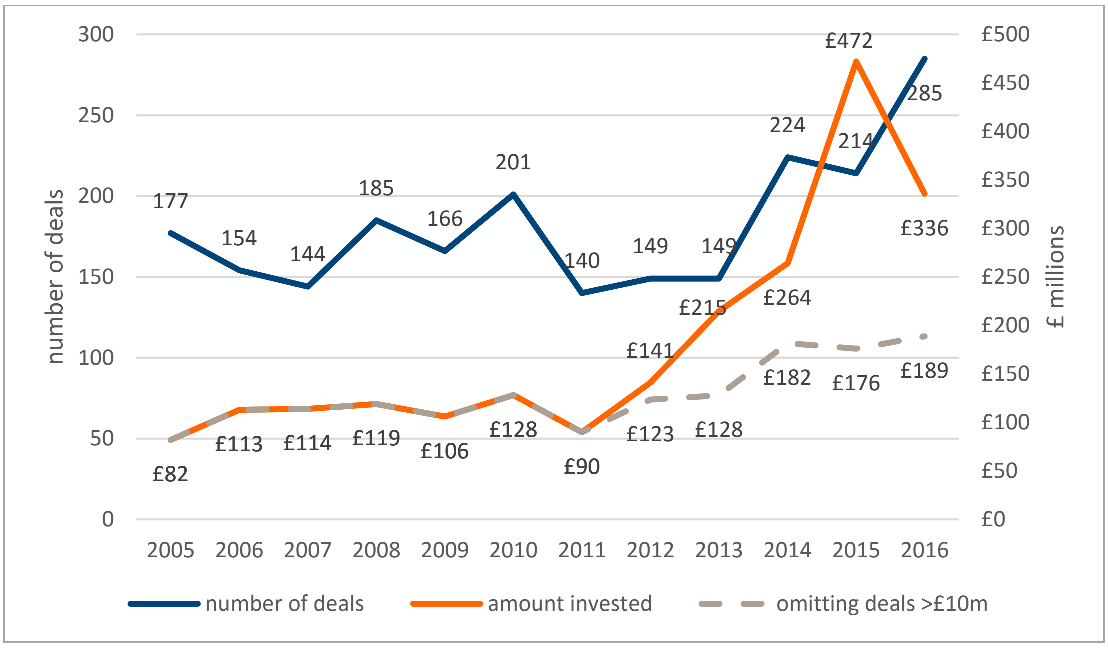
Full details of the methodology adopted are given in Appendix 1.

REPORT FINDINGS

1 KEY TRENDS

1.1 TRENDS IN INVESTMENT VALUE

Figure 1: Trends 2005-2016– numbers and £m



2016 saw the highest number of investment deals by some distance over the five years of the current reporting period (2012 to 2016), and the past three years have been at a much higher level than the previous decade.

The total amount invested has dropped back considerably from the high in 2015, but this is not unexpected as £264m of the 2015 total of £472m was invested in just two deals (FanDuel £176m and TauRx £88m). The 2016 totals include the £128m investment in Skyscanner and Brewdog's £19m Equity for Punks campaign, both in the first half of the year.

It is clear from the chart, which shows investment totals for each year both with and without the deals over £10m that we are terming 'blockbuster' or 'megadeals', that these have a very great influence on overall totals. The line showing the number of deals in this chart includes all the megadeals, and would not be much affected by their omission.

After removing the megadeals, the total investment for 2016 of £189m shown in the chart above was the highest point for over a decade. This points to a clear and sustained development of the Scottish risk capital market and one where strength need not be characterised by a few megadeals, welcome as they are.

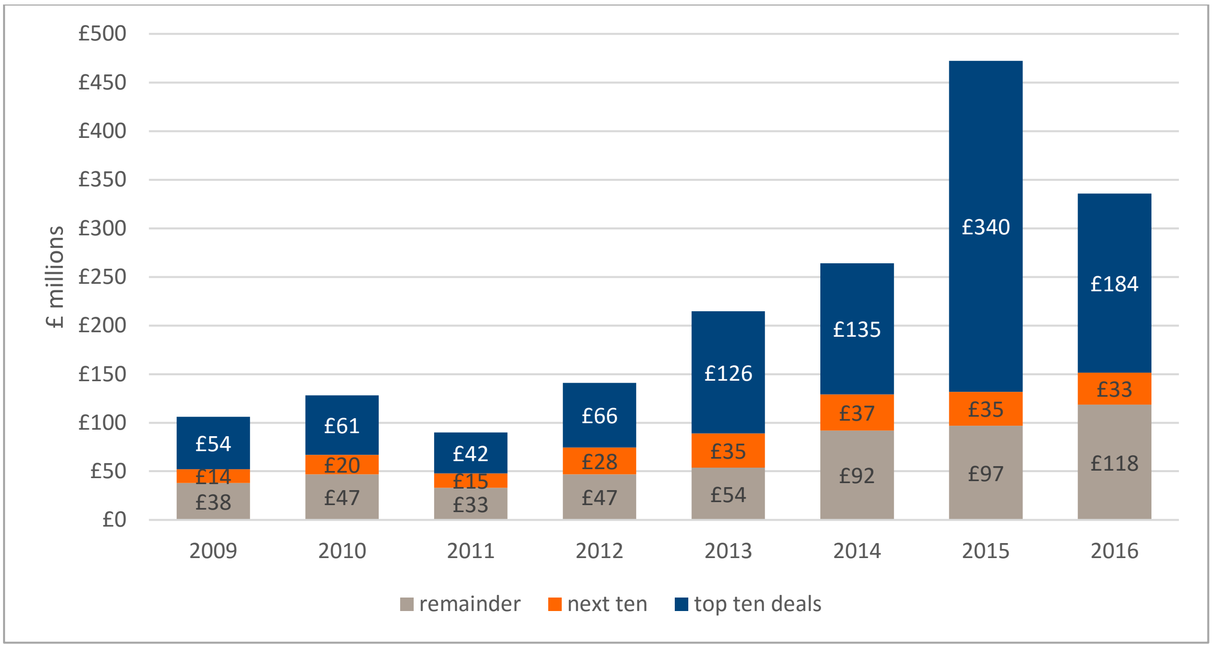
For the reporting period from 2012 to 2016 we have found 16 investment deals over £10m in value; they are listed in the table on the next page.

Table 1: Investment deals over £10m, 2012-2016

company	deal date	sector	region	investment	investors
FanDuel	Jul-15	ICT	East	£176.0	KKR, Google Capital, Time Warner Investments, Turner Sports, NFL and NBA team owners, existing investors
Skyscanner	Jan-16	ICT	East	£128.0	Artemis, Baillie Gifford, Vitruvian Partners, Khazanah Nasional Berhad, Yahoo! Japan
TauRx	Oct-15	LS	Aberdeen	£88.0	private investors in Far East
Skyscanner	Oct-13	ICT	East	£50.0	Sequoia Capital
FanDuel	Aug-14	ICT	East	£36.9	Shamrock Capital Advisors, NBC Sports Ventures, KKR, Comcast Ventures, Pentech Ventures, Bullpen Capital, SIB (SVF), Richard Koch
NuCana Biomed	Mar-14	life sciences	East	£34.4	Sofinnova Partners, Sofinnova Ventures, Morningside Ventures, Alida Capital, SIB
Geniac	Jul-15	ICT	West	£22.0	Grant Thornton
Brewdog	Apr-16	other	Aberdeen	£19.0	Equity for Punks IV
Global Energy Group	Apr-12	energy	Highlands & Islands	£17.5	Mitsui & Co. Global Investment Ltd (MGI)
Genius Foods	Feb-13	other	East	£13.9	
Scopus Engineering	Mar-13	ICT	Aberdeen	£13.0	Growth Capital Partners
Tidal Power Scotland	Sep-14	renewables	Highlands & Islands	£11.1	Atlantis Resources
Inoapps	Sep-13	ICT	Aberdeen	£10.0	Business Growth Fund
Genius Foods	Apr-14	other	East	£10.0	Verlinvest
ROVOP	Apr-15	energy	Aberdeen	£10.0	Business Growth Fund
The Three Stills Company	Nov-15	other	South	£10.0	Badenoch & Co, angels

As in last year's report, we analyse below how large investments influence the overall pattern in a number of ways. One approach is to isolate the top ten or twenty deals in each year, as follows:

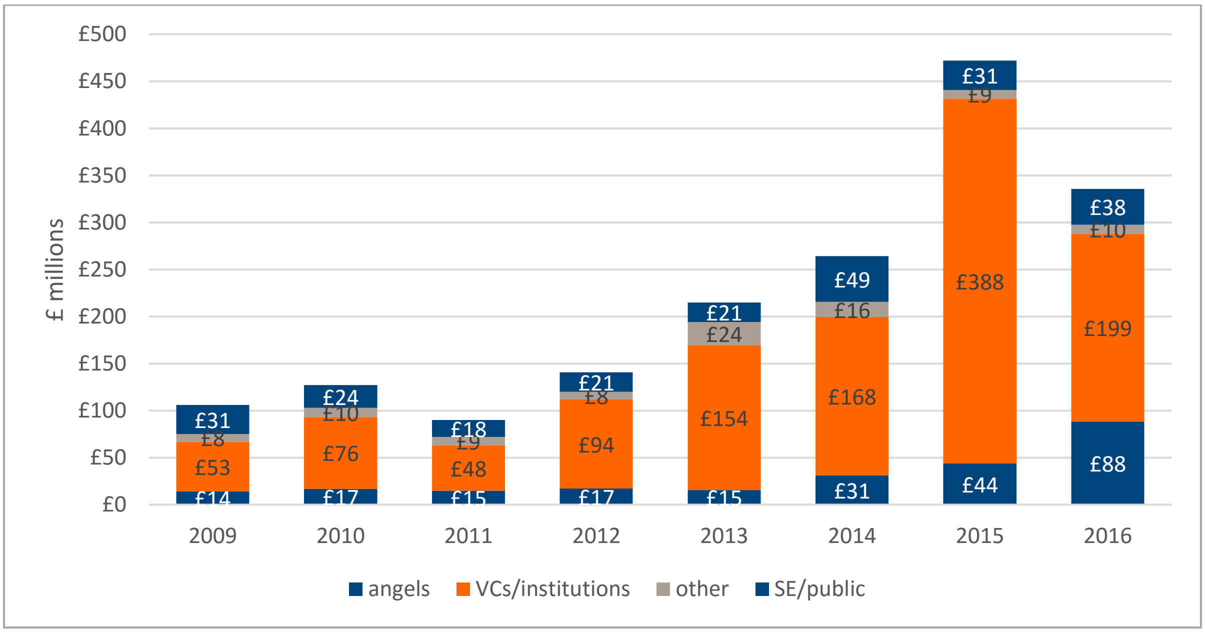
Figure 2: Top twenty deals v remainder 2009-2016 £m



The top ten deals continue to count for a large proportion of the total market. The value of the next ten deals has stayed relatively constant over the past three years, but the remainder has reached a high point for the years covered by this analysis, indicating a healthy market development not overly dependent upon megadeals.

An alternative perspective is to take the type of investors participating in the deals, and establish which category accounts for the largest increases, as follows:

Figure 3: Investment by investor type 2009-2016 £m



VC and institutional investors account for the main differences in investment levels from year to year. Individual investors (angels, angel groups, crowdfunding) grouped here under the 'angels' label saw a very substantial increase in funding levels in 2016.

The category SE/public includes the Scottish Investment Bank co-investment funds, plus a small number of other public sector investors.

The patterns of activity by different investor types are analysed further in section 3.0 below. The angel, VC, and institutional investors are listed in Appendix 3.

A further analysis, used in previous Risk Capital Market reports, is to differentiate between deals in different size bands, which we examine in the following section.

1.2 Investments by band

The bands used in all reports in this series are: **higher** (over £2 million); **middle** (£100k to £2 million); and **lower** (under £100k).

The total number of deals, and the amounts invested in these bands, are shown in the following two charts:

Figure 4: Number of deals by size band 2009-2016

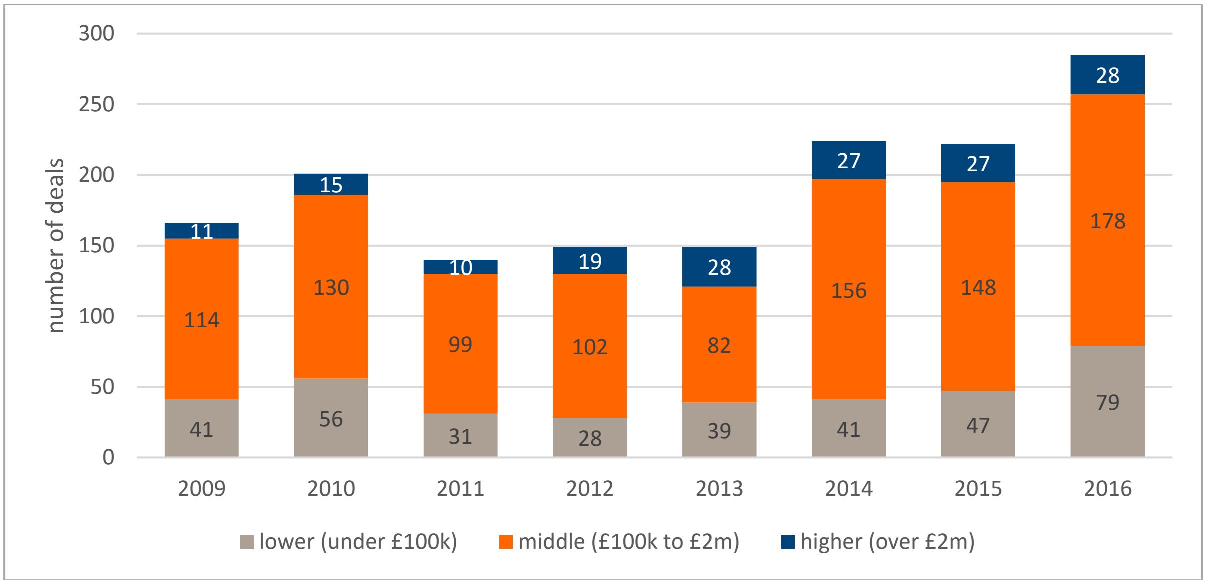
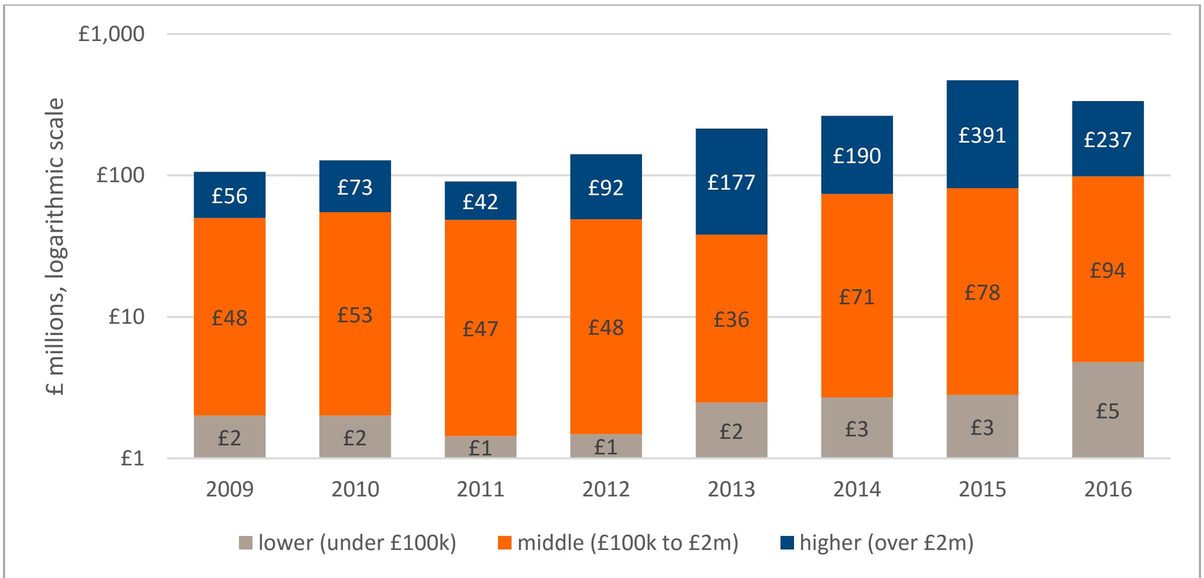


Figure 5: Investments by size band 2009-2016 £m

NB – this chart uses a logarithmic scale



The number of deals in the higher band has stayed fairly constant, although the amounts invested have varied enormously. The middle band saw large increases in 2016, both in terms of number of deals and investment totals. The lower band also saw increases in 2016, reaching (like the middle band) the highest levels for the years covered by these charts.

Lower band

Lower value deals have fluctuated in number over the ten years shown, but account for a very small share of total investment.

We have found a number of deals at this lower level missing from previous reports, and included them in the totals here. As is clear from the above charts, investments at this level do not account for a large proportion of the totals, and even a substantial increase in deal numbers would not make a significant difference to the totals.

It must be stressed that the size of an investment deal is only one aspect of the funding of a company, as many which start with relatively small rounds go on to secure substantial amounts on a cumulative basis. The data for this report covers investment tranches at the time of share issue; in other words, even though a deal may have been reported in the press as a multi-million pound investment, it is included in these figures as a series of smaller deals, meaning that the cumulative funding secured by a company is obscured. Even in the five year period covered by this report (ie excluding any earlier investments), 16 companies have secured over £5 million in four or more deals each.

Many lower band investments are made into companies securing equity funding for the first time; this aspect of the statistics is analysed further in section 1.4 below.

Middle band

There was a large increase in investment at this level – up by 20% from 2015 in both deal numbers and amounts invested - with 2016 reaching a high point for the five years in the survey.

The middle band ranges from £100k to £2 million, and can be broken down further as follows:

Figure 6: Middle band, breakdown by number of deals 2012-2016

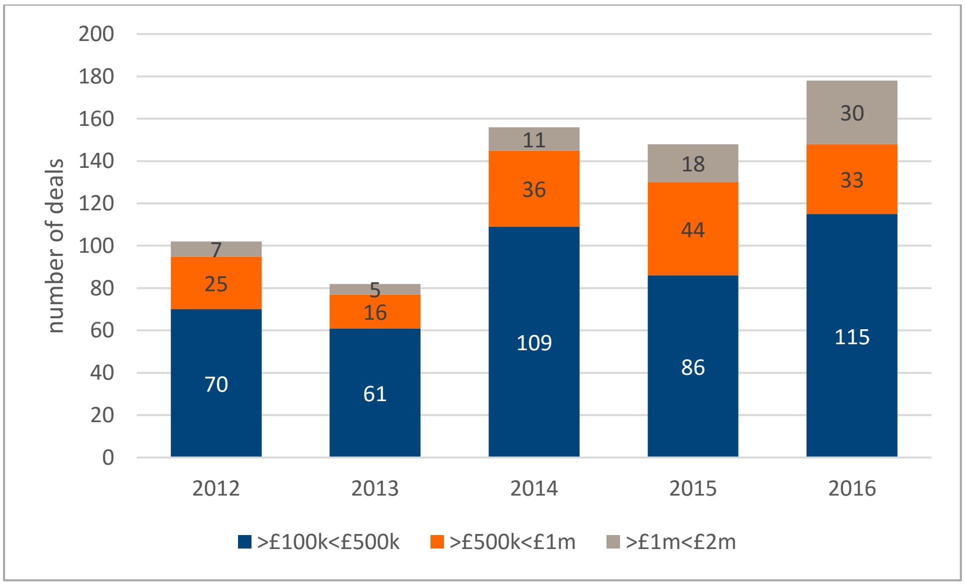
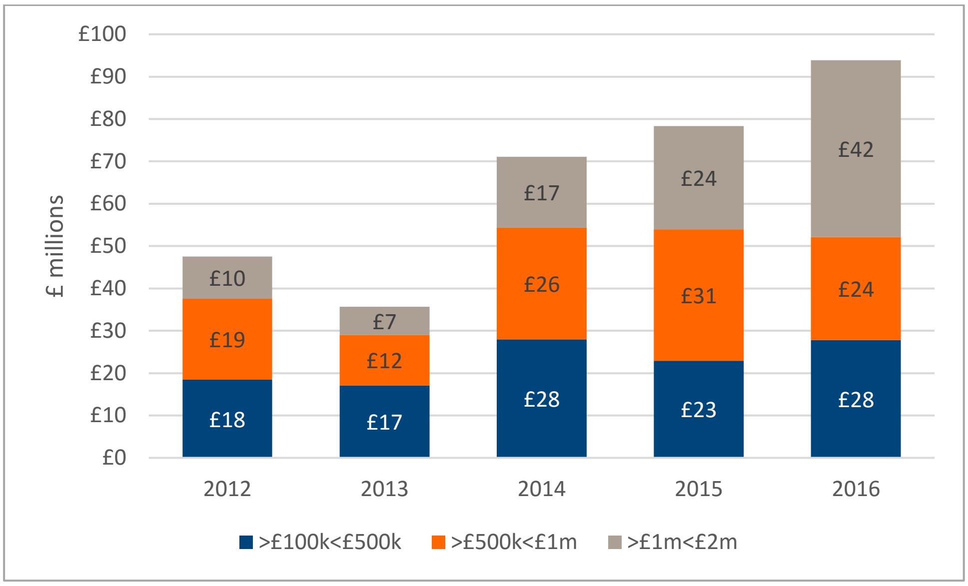
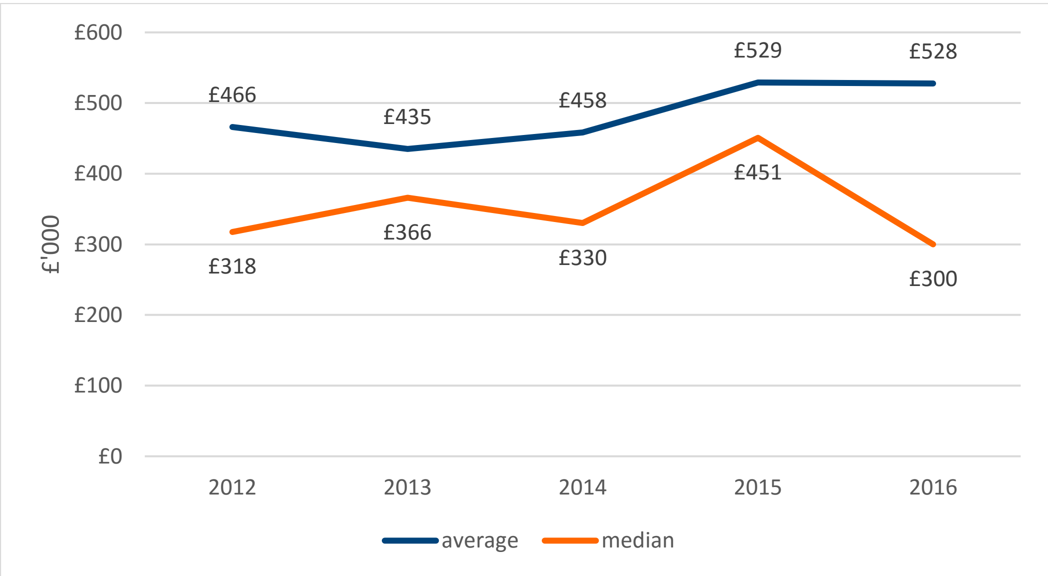


Figure 7: Middle band, breakdown by investment levels 2012-2016 £m



The lower level in this band, from £100k to £500k, was at a five year high in deal numbers in 2016, reversing the decline in 2015. The middle level, up to £1m, fluctuated over this period, but the top level, from £1m to £5m, continued the increase seen in the previous two years; indeed, investment was up by 72% from 2015 to 2016. Angels were involved in 18 of the 30 top level deals, accounting for £16m of the total funding, while VCs and corporates participated in 12 of these deals, investing £17m. The average and median values for deals in the middle band reflect the relative 'polarisation' of deal sizes, with the higher level increase in 2016 bringing up the average, while the higher number of deals at he lower level depressed the median, and shown in Figure 8 below.

Figure 8: Middle band, averages and medians by year



Part of the increase in the top level of the middle band is attributable to companies in the 'other' category, as illustrated below:

Figure 9: Middle band, number of investments by sector 2012-2016

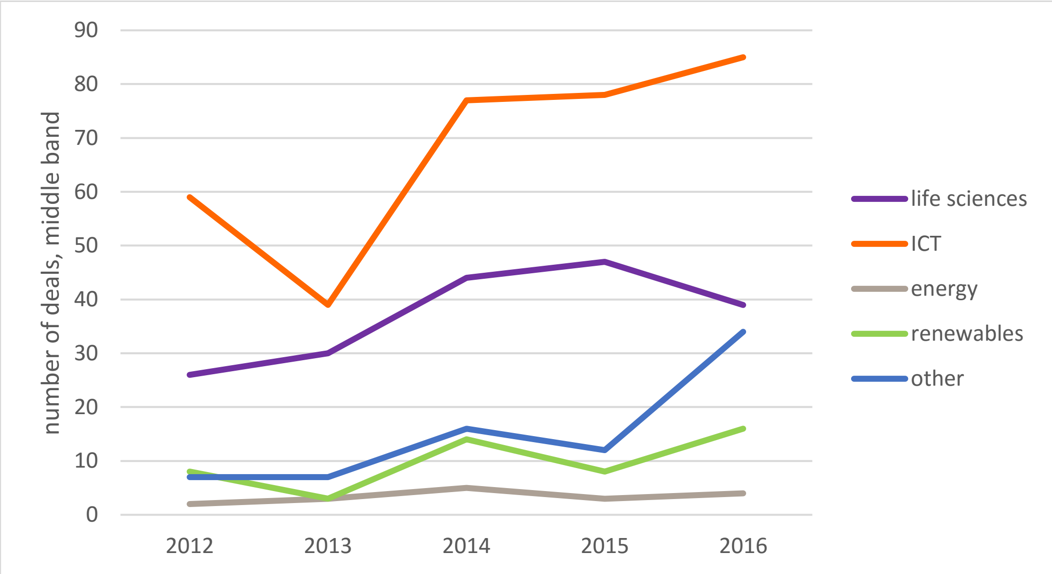
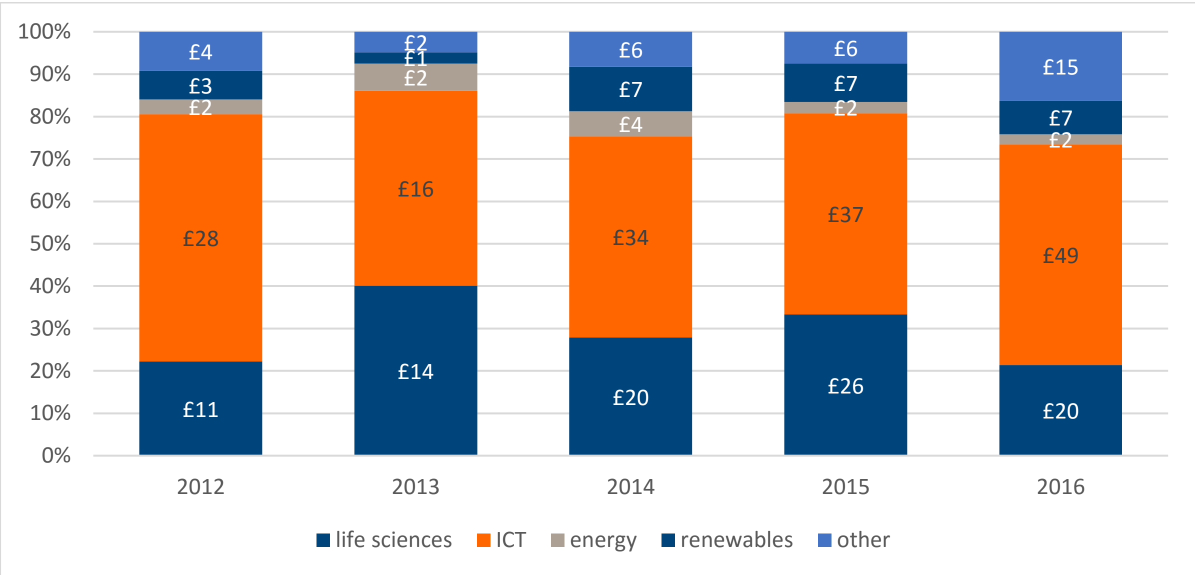


Figure 10: Middle band, investment totals by sector 2012-2016, percentage of total



ICT companies continued to be the most important sector for deals in the middle band, reaching five year highs in both deal numbers and investment. The other dominant sector, life sciences, saw a slowdown from 2015, but was still at a high level than at the beginning of the reporting period.

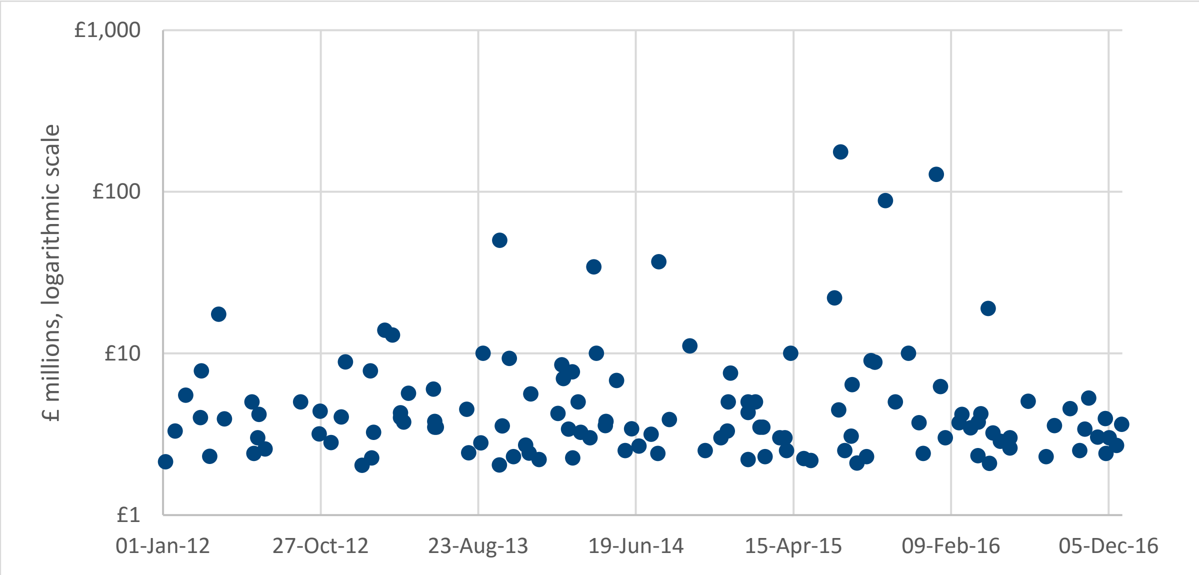
Of the 34 companies in the 'other' category, 15 were in the food and drink market, and all except three of these secured under £500k. The Business Growth Fund accounted for £3.3m of the £15m in 2016, with investments in Campion Homes and Duncan & Todd (opticians).

Higher band

The following scatter chart shows every deal over £2 million in date order, to illustrate the outliers and their distribution. Note that the chart uses a logarithmic scale for the deal values.

Figure 11: Higher band over £2m, distribution of individual deals 2012-2016

NB – this chart uses a logarithmic scale



In last year's report we commented that "it remains to be seen whether or not Scottish companies will benefit from the tailwinds of the VC activity in the USA, which tended to push company valuations up across the globe". This did not happen, and the only two megadeals in 2016, in Skyscanner and Brewdog, were in the first half of the year. The next largest investment after Brewdog in April was YFM's £5.3m investment in TravelTek, in October

Although the megadeals over £10m are absent for the moment, there has been increased activity in the £2m - £5m level, as shown in the following analysis.

Figure 12: Higher band over £2m, breakdown by number of deals 2012-2016

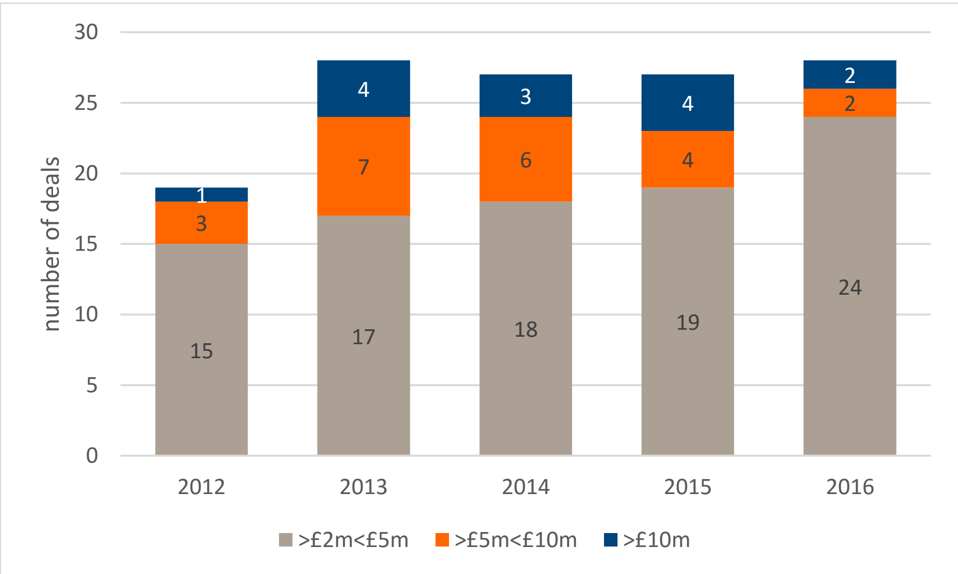
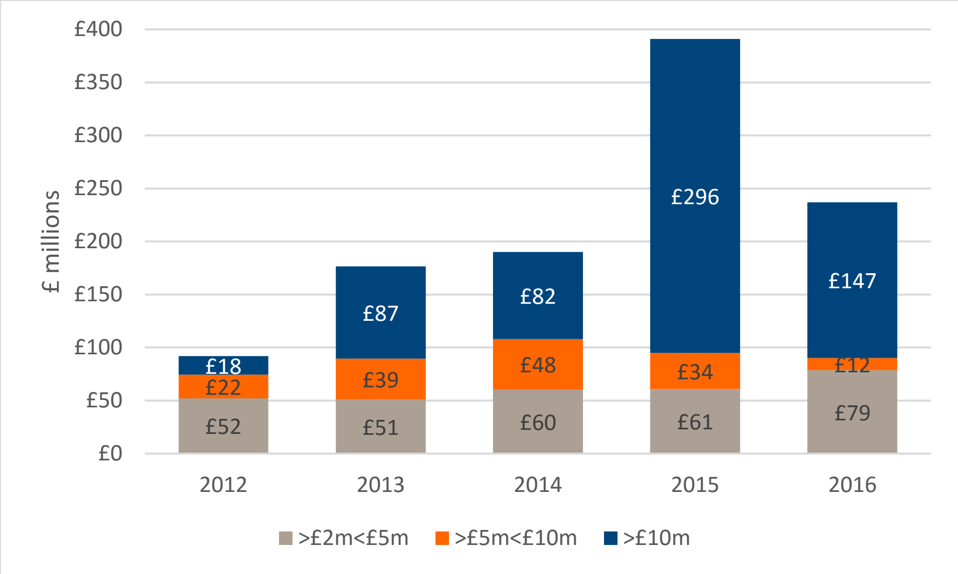


Figure 13: Higher band over £2m, breakdown by investment levels 2012-2016



Deals over £5m are relatively few in number, and have fluctuated in numbers and amounts invested. Deals between £2m and £5m however have seen large increases, with numbers up by a quarter (26%) and investment up by almost 30% from 2015 to 2016.

This parallels the increases in the next level down – from £1m to £2m, reported in the middle band above – and taking these two levels together, this range from £1m to £5m has seen a very substantial increase over the current reporting period. Deals in this range were up by 43% from 2015 to 2016, and investments up by 41%. Comparing the 2016 figures with the 2012 figures at the start of the period, there has been an increase of 141% in deal numbers, and almost a doubling (93%) in investment.

As with the middle band, investments in companies in the 'other' sector category have had a major impact, as shown below.

Figure 14: Higher band number of investments by sector 2012-2016

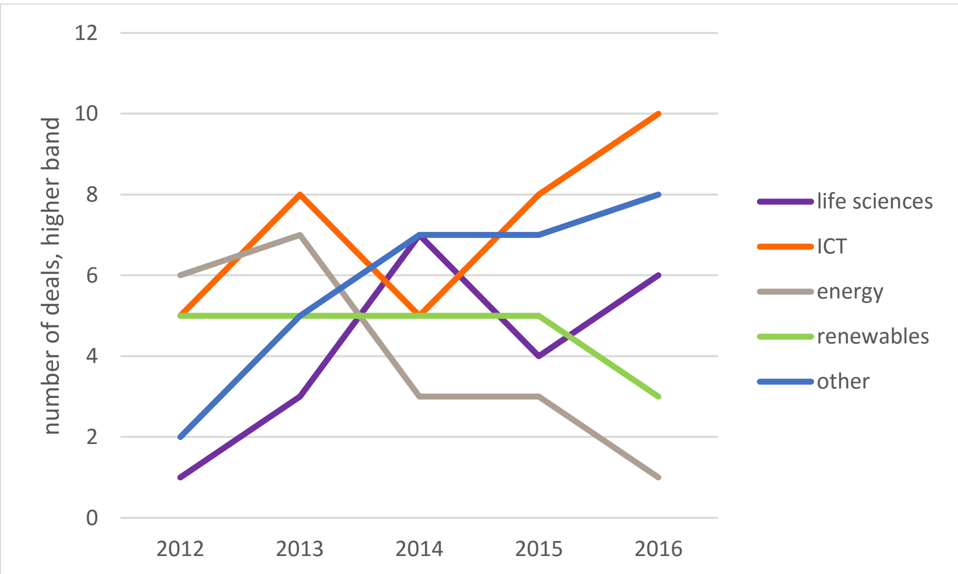
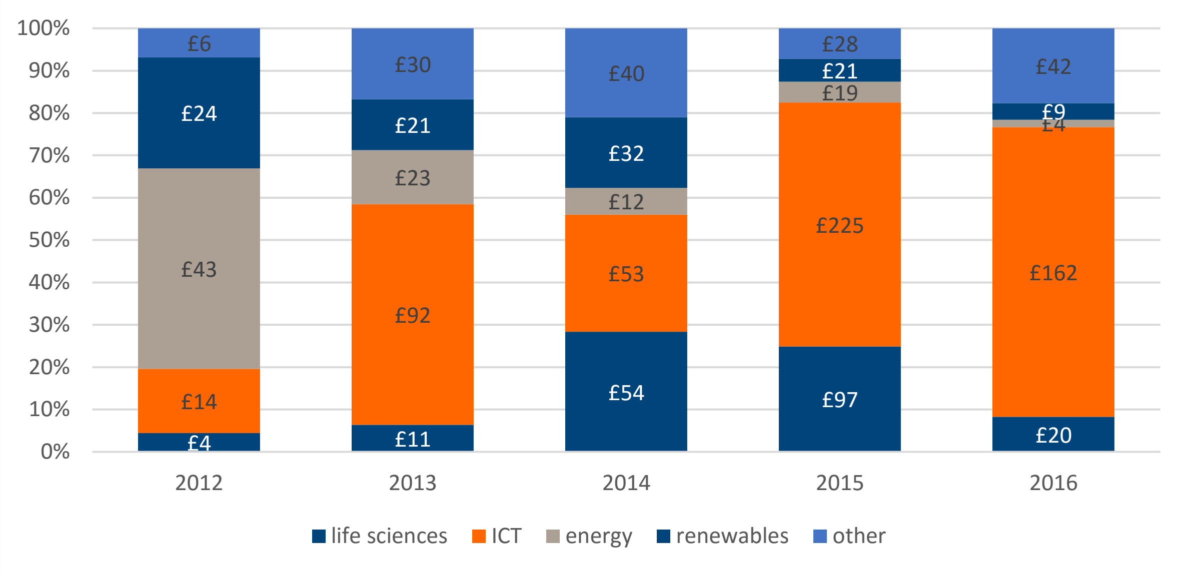


Figure 15: Higher band, value of investments by sector 2012-2016, percentage of total



ICT continues to be the major sector for higher band investments, with an increase in deal numbers (although the figures are relatively small), but a decrease in investment. Despite this increase, ICT companies account for an increased proportion of all investment.

The life sciences sector has seen a considerable falling off in higher band investments, but as 2014 and 2015 each had a megadeal (NuCana Biomed, £34m in 2014, and TauRx, £88m in 2015), the underlying level of investment has remained fairly constant.

Food & drink companies headed the list of higher band deals in the 'other' category, with Brewdog's £19m campaign accounting for almost half the total. Other companies raising large amounts in this sector in 2016 were Clydeside Distillery (£7m), Loch Duart (£3.75m), and Innis & Gunn's Crowdcube campaign (£2.4m).

1.3 Investment by sector

Figure 16: Number of deals by sector 2009-2016

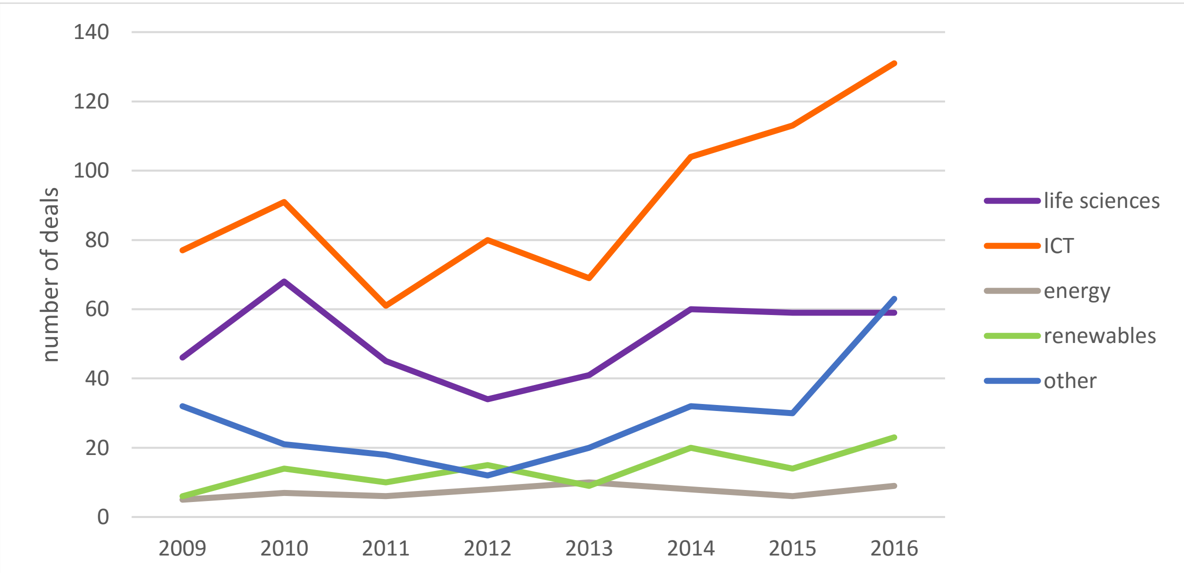
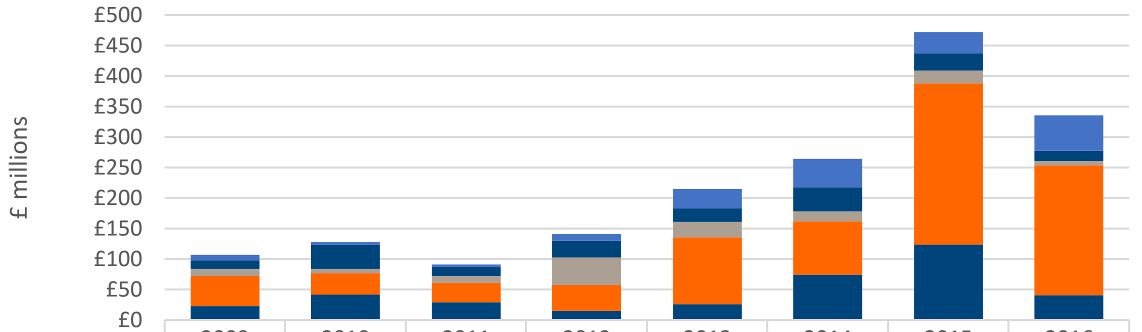


Figure 17: Investment totals by sector 2009-2016 £m



	2009	2010	2011	2012	2013	2014	2015	2016
other	£9	£5	£4	£11	£32	£46	£35	£58
renewables	£14	£39	£15	£27	£22	£39	£28	£17
energy	£12	£7	£11	£45	£25	£16	£21	£7
ICT	£49	£35	£32	£43	£110	£88	£264	£213
life sciences	£23	£42	£29	£15	£26	£74	£124	£41

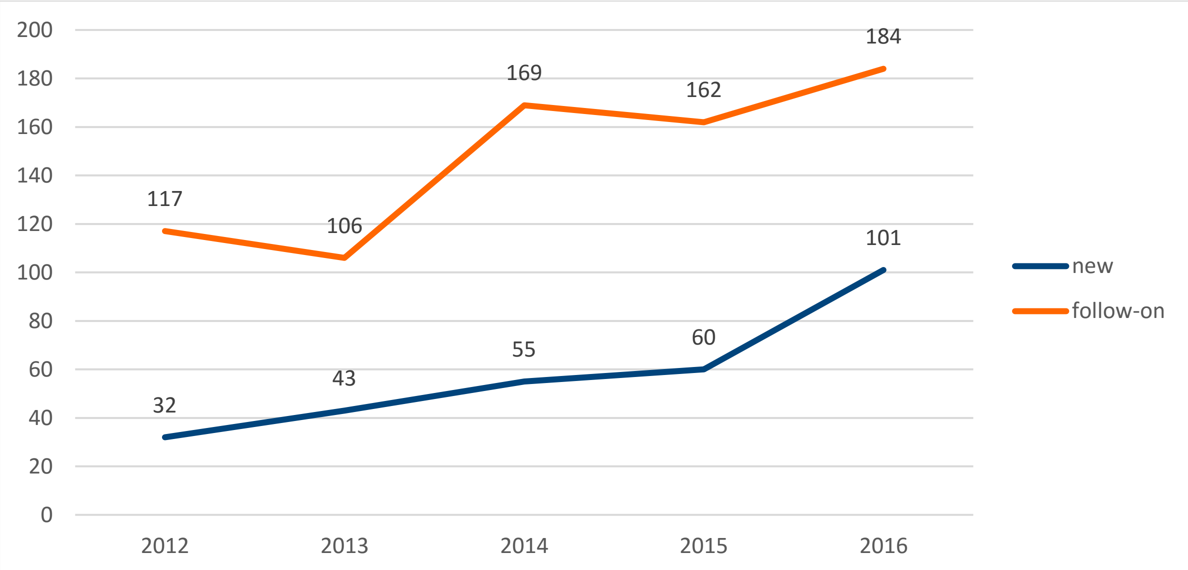
We have commented on the breakdown of investments by sector under the 'middle band' and 'higher band' analysis above, and these charts summarise the breakdown across the whole spectrum of investment bands.

Life sciences companies, while maintaining a steady level of investment deals, and (after discounting the £88m TauRx deal in 2015) a reasonable level of funding, are being edged out of second place in these tables by companies in the 'other' category.

1.4 New and Follow-on Investments

The following charts show the number of investments and amounts invested in 'new' companies, being the first time that these companies have secured independent equity investment (ie excluding investment by founders, family, and friends, the three FFFs), and follow-on investments where we are aware of previous equity investments in the company.

Figure 18: Number of new and follow-on deals 2012-2016



First time investments have increased considerably, but the increase is not so pronounced when seen as a proportion of all deals:

Figure 19: Number of new and follow-on deals 2012-2016, percentage of total deals

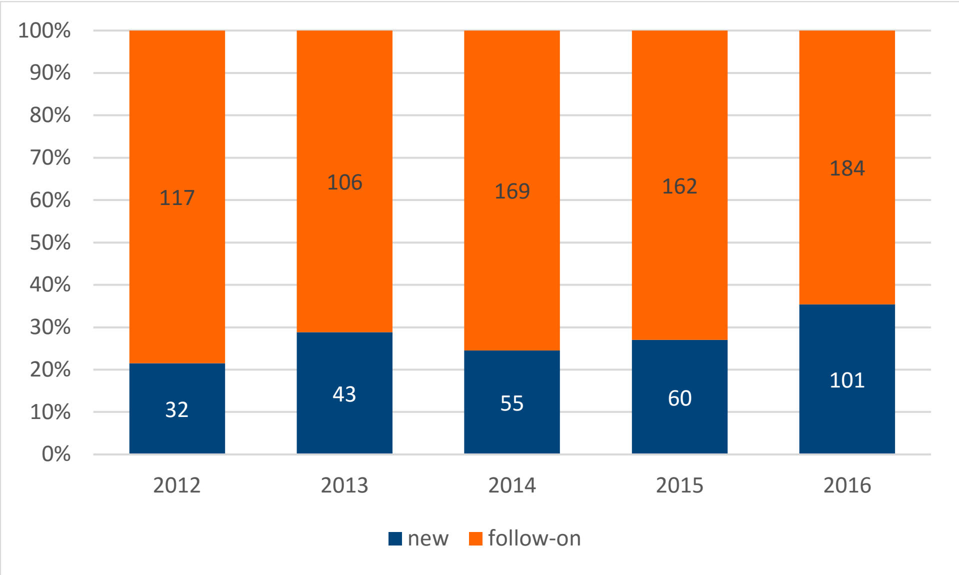
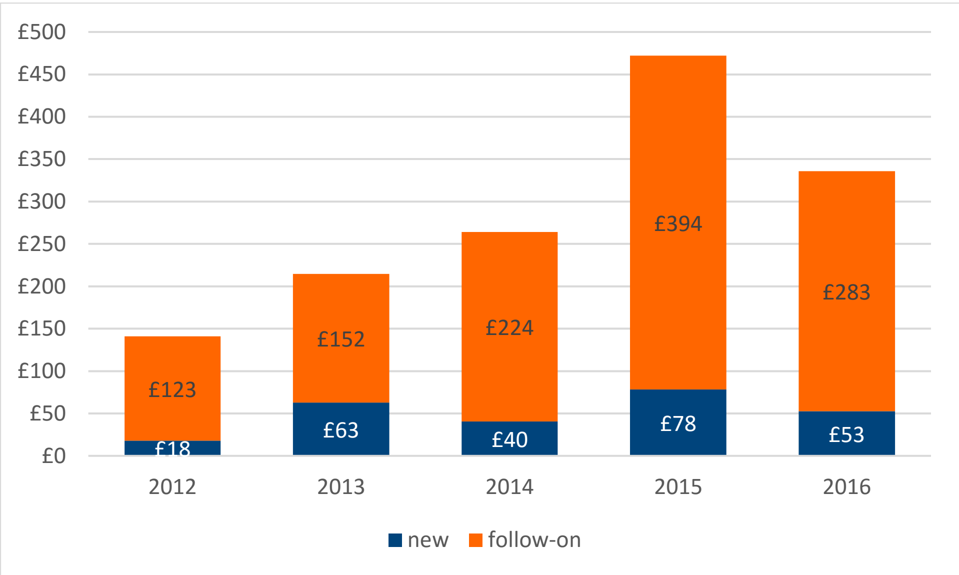


Figure 20: Investments in new and follow-on deals 2012-2015 £m



Although the number of first time deals has increased year on year over the current reporting period, the same is not true of the amounts invested.

The picture is complicated by the number of investments in well-established companies, which may not have turned to equity investment before, but are able to raise comparatively large amounts. Investments by the Business Growth Fund often come into this category. Investments in new distilleries are also affecting the first time deal figures (the Drimnin Distillery, The Three Stills, and the Clydeside Distillery are all included in the 'new' figures above).

The 101 new deals in 2016 include 15 over £1m, the largest being YFM Equity Partner's £5.3m investment in Traveltek (tech solutions for the travel industry).

1.5 Time to Investment

The following table shows the average age of companies at the time they reached their first independent equity investment (ie the time from date of incorporation to the date of deal completion), broken down by sector.

Table 2: Average years to first investment 2012-2016

	2012	2013	2014	2015	2016
life sciences	2.15	1.27	2.76	2.25	1.89
ICT	2.65	3.71	3.05	1.91	4.04
renewables	n/a	6.19	n/a	4.05	5.58
energy	6.33	0.80	5.04	3.74	3.91
other	4.83	2.33	3.22	4.41	3.53
overall	**3.11**	**2.99**	**3.24**	**2.67**	**3.67**

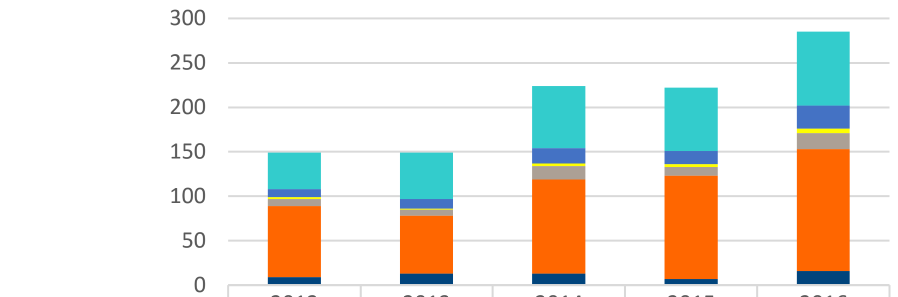
It is sometimes stated that life sciences companies need longer than most to reach investment. This may be true of companies developing drug candidates, where the need to demonstrate the potential of the product is more pronounced, but it does not appear to be true of the companies covered by this report, which represent a range of different life sciences sub-sectors.

Thirteen companies in this study took over ten years to reach their first independent equity investment, as far as we are able to tell. Of those waiting the longest, the top four, all in the ICT sector, waited over 20 years from incorporation, having traded without external equity up to that point. These companies are all included in the averages shown above.

2 COMPANIES

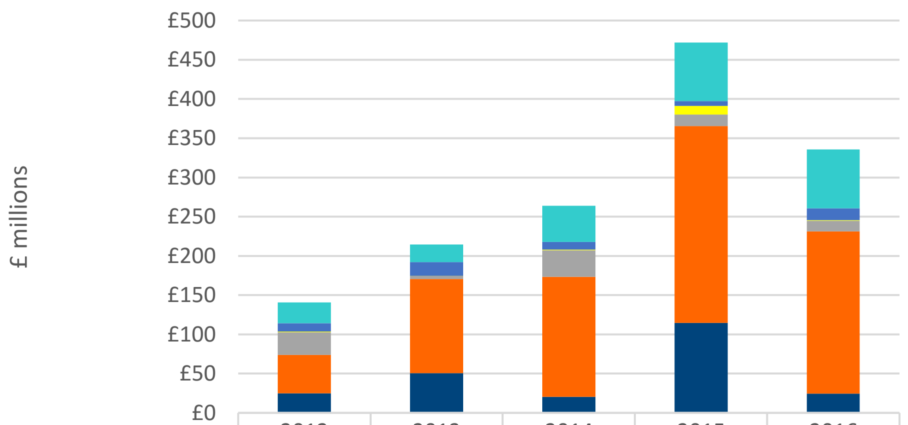
2.1 Location

Figure 21: Number of deals by region of investee 2012-2016



	2012	2013	2014	2015	2016
West	41	52	70	71	83
Tayside	9	11	17	15	26
South	2	1	3	3	5
Highlands & Islands	8	7	15	10	18
East	80	65	106	116	137
Aberdeen	9	13	13	7	16

Figure 22: Investment by region of investee 2012-2016 £m

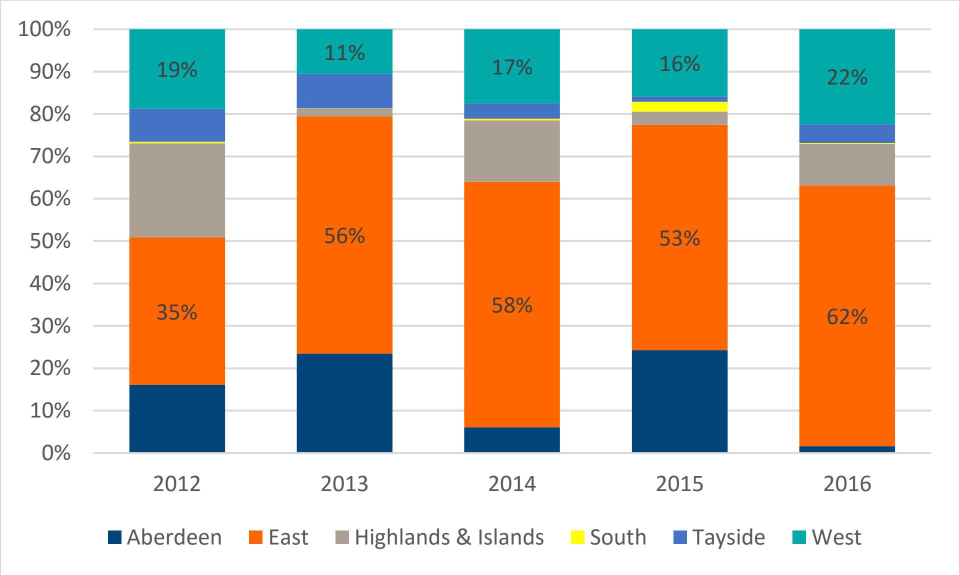


	2012	2013	2014	2015	2016
West	£26.5	£22.7	£46.1	£74.9	£75.1
Tayside	£11.0	£17.3	£9.7	£5.9	£15.1
South	£0.5	£0.2	£0.9	£10.9	£0.7
Highlands & Islands	£29.2	£3.8	£34.1	£14.7	£13.8
East	£48.9	£120.3	£153.0	£251.0	£206.6
Aberdeen	£24.9	£50.4	£20.3	£114.6	£24.5

Numbers of deals were up in all regions in 2016, although investment amounts were down in some regions, especially the East and Aberdeen, thanks to the fluctuations in higher value deal numbers. Investment in companies in the Aberdeen region were at their lowest level in the current reporting period, by a considerable margin.

As total investment values have varied substantially over this period, we also show investments per region as proportions of the total, in the following chart; we have shown the actual values for the East and West regions, where space allowed.

Figure 23: Investment by region of investee 2012-2016, percentage of all



Throughout this period, companies in the East have accounted for the largest part of all investment, reaching a peak of just under two thirds of the total in 2016. The West also finished the period on a high note, with almost a quarter of all investment made to companies in the region. The other four regions have had much lower levels of investment, although in the case of Aberdeen and the Highlands & Islands this was affected by occasional high value deals.

2.2 University spinouts

Figure 24: Number of investments in spinouts as % of all deals 2012-2016

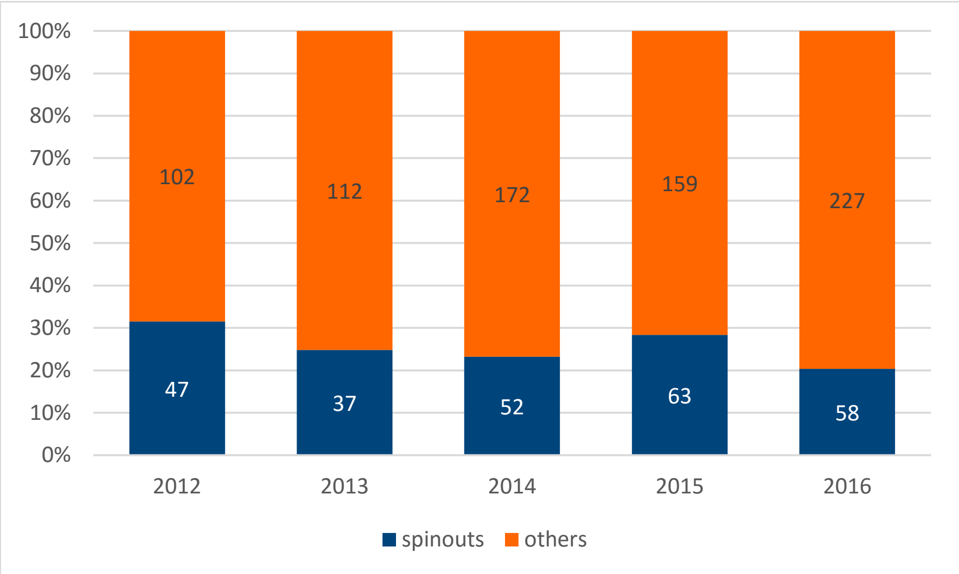


Figure 25: Value (£ millions) of all investments in spinouts, as % of total investment, 2012-2016

The companies included in the charts above are spinouts (companies established to commercialise intellectual property owned by a university) – together with some start-ups (companies started by members of staff or recent graduates which have not licensed university-owned IP, but are usually developing technology arising at the university) where we know that the company originated in a university.

Although the absolute level of investment deals in spinouts was at a reasonable level in 2016 – well up on the first two years of this reporting period – this was a low proportion of all investments. Equally, the value of these investments was at a high level (the figure for 2015 includes the £88m investment in Aberdeen spinout TauRx), the second highest for the reporting period, but only 10% of total investment.

In 2016 University of Edinburgh companies again saw the most investment deals (17), followed by Strathclyde with 15 deals. Spinouts from other universities completed far fewer investments – 5 for Heriot Watt companies, and 4 each for St Andrews and Napier.

2.3 Exits

The following table lists all the exits (trade sales, IPOs) which we were able to identify in 2016 by young Scottish companies which had secured external equity investment to develop their businesses. The FreeAgent IPO was the first for a Scottish company coming under the criteria for this report since Collagen Solutions in December 2014.

Table 3: Exits by early stage Scottish companies 2016

company	incorp	exit	how	valuation	acquirer/stock market	location
Iomet Pharma (TPP Global Development)	Apr-10	11-Jan-16	trade sale	£280m	Merck	USA
Optocap	Feb-03	11-Jan-16	trade sale	n/d	Alter Technology	Spain
PrismTech	Feb-08	18-Jan-16	trade sale	n/d	ADLINK Technology	USA
Silent Herdsman	Nov-07	15-Feb-16	trade sale	n/d	Afimilk	Israel
Meta Downhole (Advanced Downhole Petrophysics)	Nov-12	01-Apr-16	trade sale	n/d	Schlumberger	USA
Touch Bionics	Jun-02	11-Apr-16	trade sale	£27.5m	Ossur Hf	Iceland
Gold Standard Simulations	May-09	23-May-16	trade sale	n/d	Synopsis Inc	USA
Spark Energy	Apr-06	14-Jul-16	MBO	n/d	backed by four international corporates	
IntelligentPOS	Jan-13	07-Sep-16	trade sale	n/d	iZettle	Sweden
FreeAgent	Feb-07	16-Nov-16	IPO	£34.1m	AIM	
Skyscanner	May-01	09-Dec-16	trade sale	£1.4 billion	Ctrip.com International Ltd (CTRP)	China

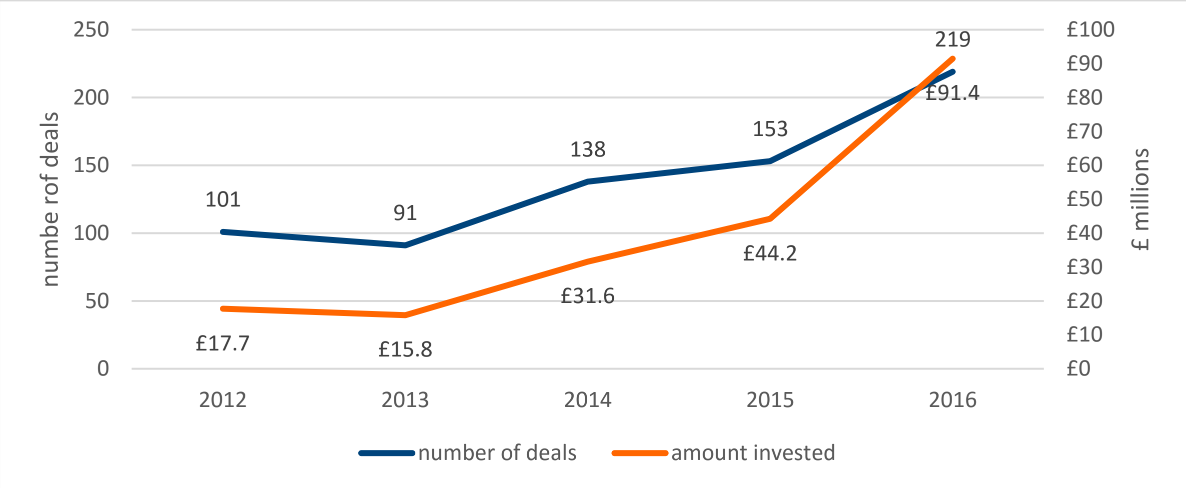
On average these companies took 8.9 years from incorporation to reach the exit – down a little on the 11.7 years for the companies which exited in 2015. Skyscanner is the oldest company in the list, and was over 15 years old at the time of the acquisition by Ctrip. Touch Bionics, Optocap, and Spark Energy were also over 10 years old at the time of exit, while the shortest time from incorporation to exit was clocked by Iomet Pharma.

3 INVESTORS

3.1 Business Angels

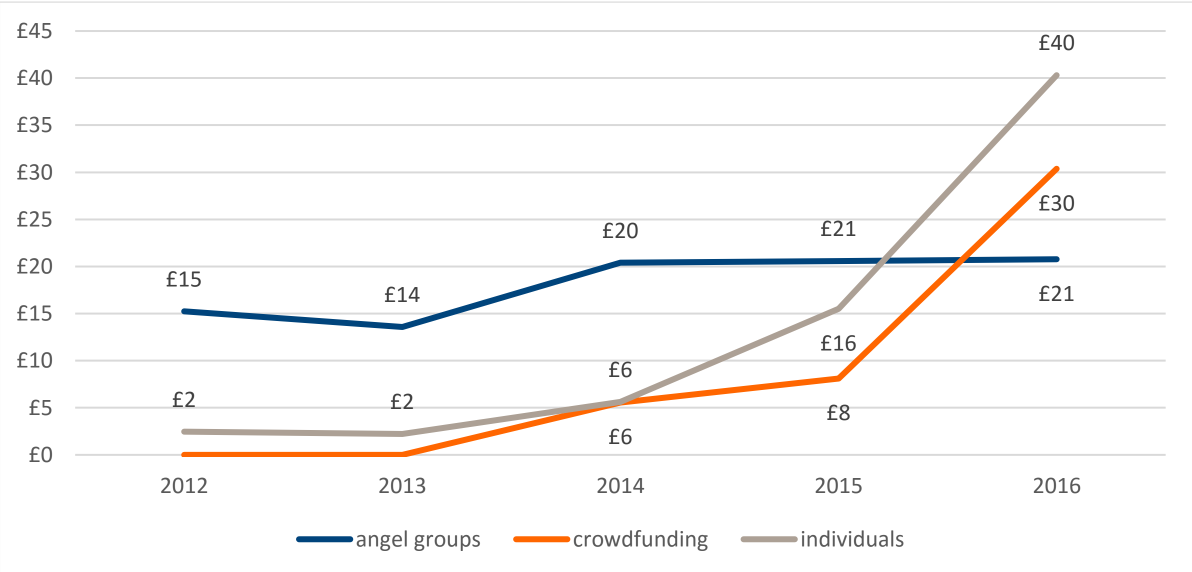
This category includes not only the angel groups such as Archangel Investors, Equity Gap, and the Discovery Investment Fund, but also individual angels, who feature in some large deals such as the funding of new distilleries, and equity crowdfunding platforms. All investor organisations (not individual angel investors) active in 2016 are listed in Appendix 3. The investment amounts shown below are not complete deal totals, but only the amounts invested by business angels; in most cases, there were co-investments, mainly from the Scottish Investment Bank, and in some cases from institutional or 'other' investors.

Figure 26: Business angel investments, 2012-2016



In 2016 there was a very substantial increase in investments by business angels, as broadly defined above, both in deal numbers and amounts invested. The following chart shows the breakdown by angel groups (including groups which are members of LINC Scotland, and others which are not such as London Business Angels, Hotspur, xenos), individual angels, and crowdfunding.

Figure 27: Business angel investment breakdown, 2012-2016, £ millions



The investment by angel groups has stayed steady, at a considerably higher level in the past three years than in the first two years of this survey. The growth in equity crowdfunding has been very rapid, from 2012-2013 when we were unable to trace any deals in this category, to the £30.4 million in 2016 (although £19m of this is the BrewDog Equity for Punks campaign). The biggest increase, in the individual angel category, includes many deals where no angel groups or obvious VC or institutional investors have participated, and we have concluded that the investments have been made by individuals; in other words, the figures shown here could be overstated if we have missed other allocations. Nonetheless, the amounts invested by individuals acting together can be considerable; over £11m of the £40m total was invested in just three companies – Morrison Glasgow Distillers (Clydeside Distillery), Vascular Flow Technologies, and Houseology.

The following charts show how business angels focused their investments in different sectors.

Figure 28: Business angel investments 2012-2016 by sector, number of deals

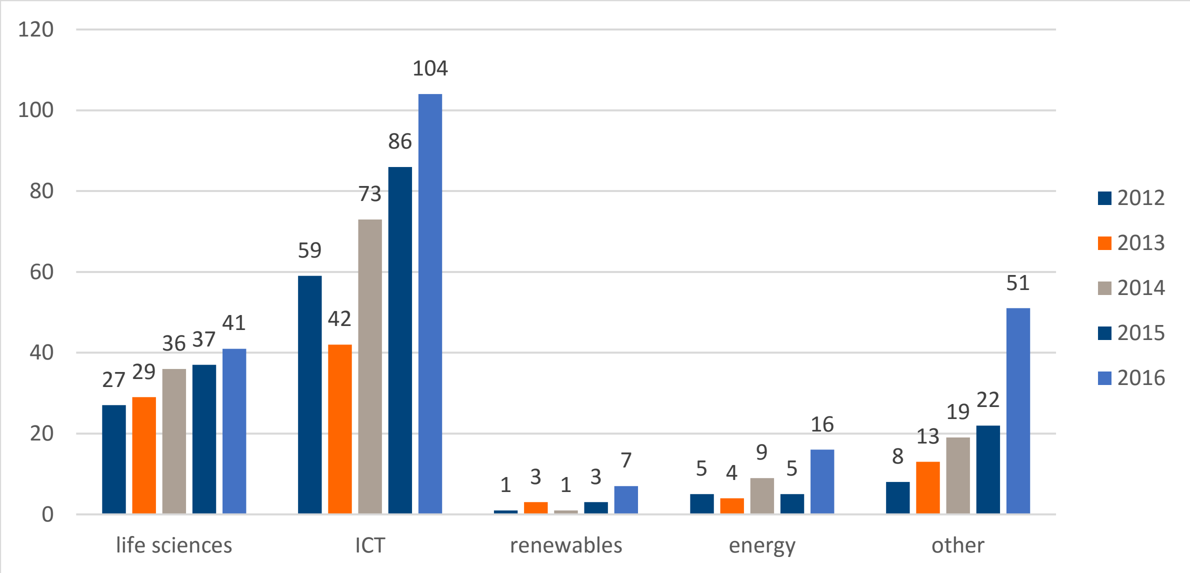
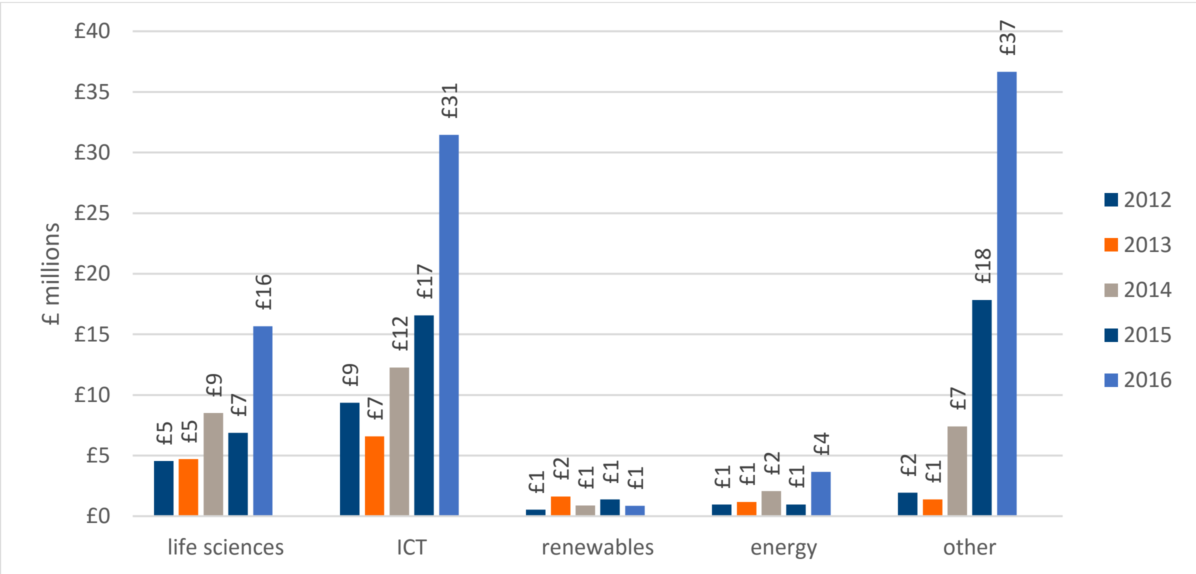


Figure 29: Business angel investments 2012-2016 by sector, £m



The focus by the main angel groups in Scotland on ICT and to a lesser on life sciences companies is well known. The main trend shown by these charts is the increase in investment in the 'other' category, mainly but by no means exclusively in food & drink businesses.

In 2016 there were 5 investments in life sciences companies which included angel investment of over £1m, the largest being the £3m investment by a family office in Vascular Flow Technologies to enable its strategic realignment. Angels invested over £1m in ten of the 104 ICT deals in 2016, the largest being the £3m+ investment in Houseology (homeware and design), which has been supported by a number of high profile individual angel investors including Bill Dobbie and Sir Terry Leahy. In the 'other' category, business angels invested over £1m in five of the deals, including those in the Clydeside Distillery (c£5m), and the crowdfunding campaigns of Brewdog (Equity for Punks IV, accounting for £19m of the £37m total in 2016) and of Innis & Gunn on Crowdcube (£2.4m).

The pattern of investment in market sectors by business angels and other individual investors is consistent with the geographical distribution of investee companies, as shown in the following charts.

Figure 30: Business angel investments 2012-2016 by investee region, number of deals

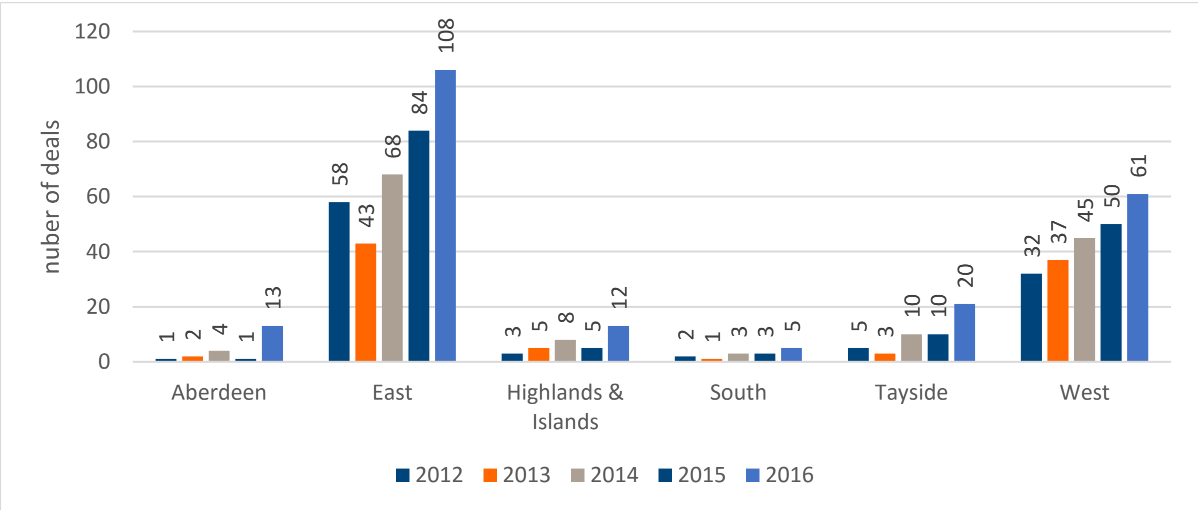
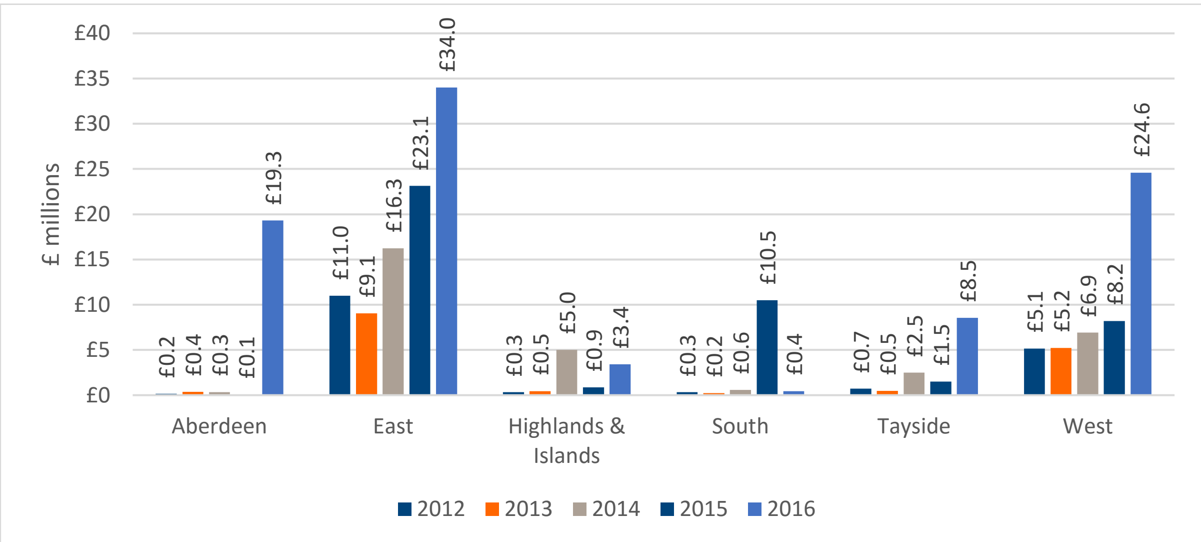


Figure 31: Business angel investments 2012-2016 by investee region, £m



The large outlier investment total in 2016 for companies based in Aberdeenshire is the £19m Brewdog Equity for Punks campaign. The amount invested in companies in the West of

Scotland in 2016 includes nine deals where angels invested over £1m, including the Houseology and Clydeside Distillery deals mentioned above.

We have not included here an analysis of angel investors by location, for a number of reasons. Firstly, the angel groups in Scotland are increasingly co-investing with each other, so any one deal could for example include groups from Edinburgh, the Borders, and the Highlands. Secondly, although the number of equity crowdfunding deals is still small, the amounts raised are often large (cf Brewdog), and include investors in some cases from across the world; to allocate these investments to a single location would be misleading. The same is true of deals involving individual high net worth angel investors, who come together from a range of locations to finance major projects. The data we hold for each investment is not sufficiently detailed to allow a breakdown of investor locations which would be of value.

3.2 Crowdfunding

The Risk Capital Market reports include only equity crowdfunding investments, not reward-cased campaigns or peer-to-peer lending. Equity crowdfunding remains at a low level in Scotland, with just six deals in 2016 compared with 13 the previous year.

The most active equity crowdfunding platforms across the UK are Crowdcube and Seedrs. In 2015 there were five successful campaigns by Sottish companies on the Crowdcube platform; in 2016 this had reduced to two. There were two successful campaigns in Seedrs in both 2015 and 2016.

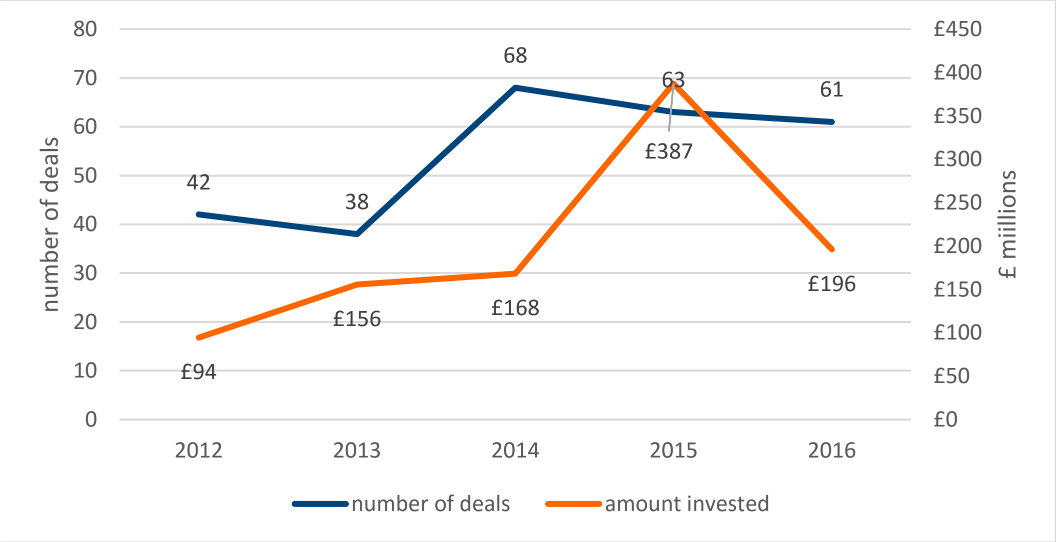
Whereas investments including crowdfunding secured £5.3m in 2015, the fewer deals in 2016 amounted to just over £12m; this is explained by two deals with TC Biopharm in which SyndicateRoom investors complemented some big contributions by corporate and VC investors. Taking out these deals, the four campaigns on Crowdcube and Seedrs in 2016 raised £3.7m, the largest being Innis & Gunn's campaign on Crowdcube (£2.4m), and Houseology's Seedrs campaign (just over £1m).

3.2 Venture Capital

In this category we include not only venture capital firms as conventionally described, but also corporate venturers, university funds, and some other institutional investors such as Nesta Impact Capital and UK Steel Enterprise. A full list of the organisations in this category known to have made investments in Scottish companies in 2016 is given in Appendix 3.

Investment in 2016 dropped back a little in deal numbers, and very substantially in investment amounts, but this is greatly affected by the £264m investment in just two deals in 2015 (Fanduel and TauRx). Even so, the levels of VC and institutional investment in 2016 continued at a considerably higher level than at the beginning of this reporting period.

Figure 32: VC and institutional investments 2012-2016



Rather than give separate charts for each aspect of VC and institutional investing, we have included all the data in the table below.

Table 4: VC and institutional investments by sector, region, and new/follow-on 2012-2016

	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016
sector										
life sciences	7	9	19	20	17	£5.3	£10.8	£53.4	£105.1	£9.7
ICT	17	15	25	28	26	£18.5	£91.9	£56.0	£232.3	£160.0
energy	7	6	7	3	2	£44.0	£20.8	£13.8	£19.3	£3.3
renewables	8	4	7	7	5	£20.3	£16.5	£17.3	£19.1	£7.9
other	3	4	10	6	11	£6.3	£15.7	£28.0	£11.6	£15.5
	42	*38*	*68*	*64*	*61*	*£94.4*	*£155.8*	*£168.3*	*£387.3*	*£196.3*
region										
Aberdeen	7	10	5	6	3	£22.1	£48.8	£13.9	£114.6	£3.5
East	18	15	34	33	30	£22.3	£79.5	£111.0	£212.1	£155.5
Highlands & Islands	3	1	7	3	3	£28.3	£2.8	£11.3	£4.0	£5.4
South	0	0	0	0	0	£0.0	£0.0	£0.0	£0.0	£0.0
Tayside	4	6	3	3	5	£6.1	£16.2	£4.8	£2.1	£4.3
West	10	6	19	19	20	£15.6	£8.5	£27.4	£54.6	£27.7
	42	*38*	*68*	*64*	*61*	*£94.4*	*£155.8*	*£168.3*	*£387.3*	*£196.3*
new / follow-on										
new	9	10	11	14	20	£10.7	£40.7	£15.6	£45.6	£23.1
follow-on	33	28	57	50	41	£83.7	£115.1	£152.8	£341.8	£173.2
	42	*38*	*68*	*64*	*61*	*£94.4*	*£155.8*	*£168.3*	*£387.3*	*£196.3*

In 2016 there were decreases in VC investment in all sectors except 'other'; ICT and to a lesser extent life sciences were affected by the timing of megadeals in these sectors, which hide the underlying upward trend. The general picture across this table reflects the comment above, that although there has been a fallback in VC and institutional investing in 2016, the level of investment remains high compared with earlier years.

The following charts illustrate the location of the investors in the VC and institutional category. We have allocated deals by the lead investor, ascribing the full value of the deal to this one investor; although as in the case of FanDuel there can be investors from several different locations co-investing, we do not usually have a breakdown of the amounts contributed by each separate investor to allow a more detailed analysis.

Figure 33: VC and institutional investors, percentage of deals by investor location 2012-2016

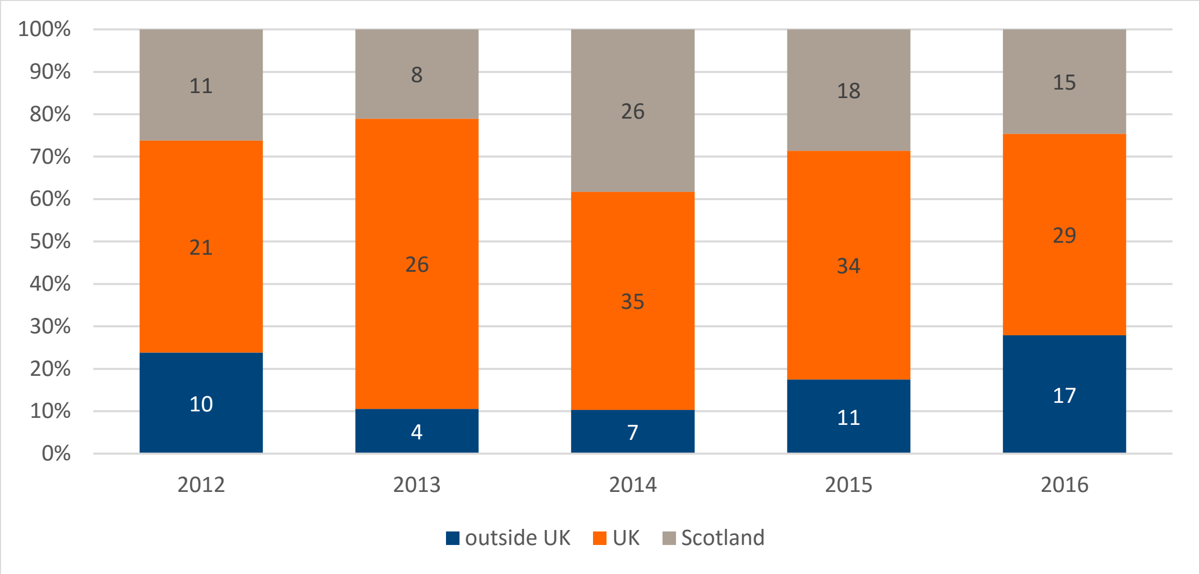
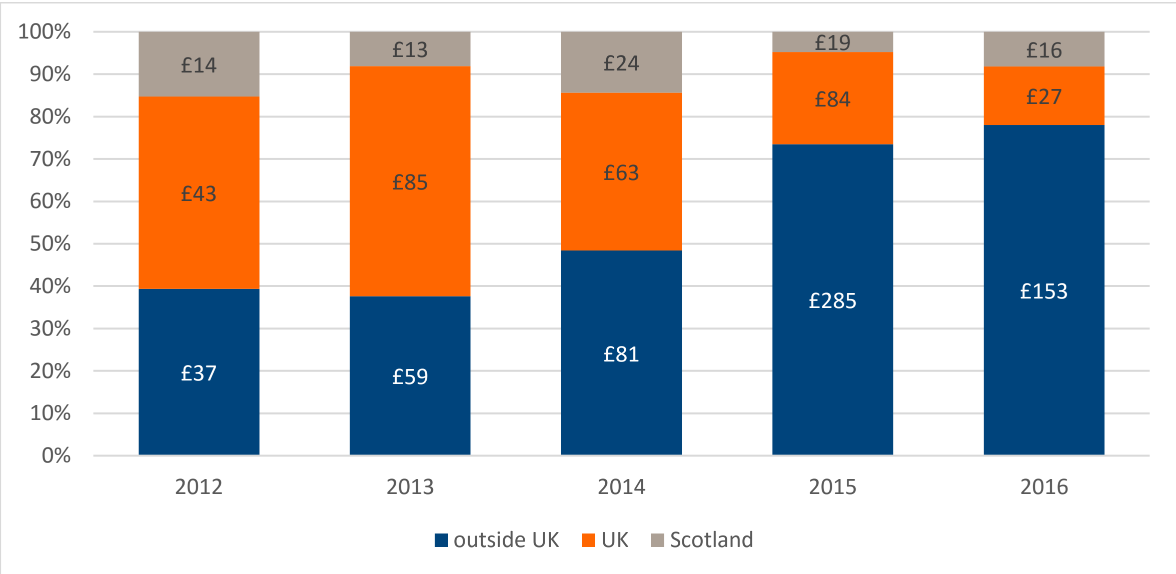


Figure 34: VC and institutional investors, percentage of investment by investor location 2012-2016



In 2016 deals by investors from outside the UK reached a high, although amounts invested decreased considerably compared with 2015, while remaining significantly above any previous year; these are the investors most likely to be participating in megadeals, so the variation from year to year is greatly affected by the number and amount of such investments.

3.3 Corporate venturing

Although still at a relatively low level, investment in young Scottish companies by corporate venturers is an important part of the mix.

One of the most striking features of corporate investment in Scotland is the geographic range of the investing organisations – from all over Europe (Iceland, Spain, Sweden, Switzerland), the USA, and China and Japan. The companies which made investments in 2016 are listed separately in Appendix 3.

Some of these investors are large global corporations, such as ABB Technology Ventures, covering a wide range of market sectors, but others, such as BP, PhageLux, and IKEA Greentech, have a very specific sector focus.

The other striking feature of this list – also true of the organisations which have made acquisitions (see section 2.3 Exits), and are also widely dispersed geographically – is that most appear just once, investing in a single company in Scotland. The message would appear to be that corporate investors or acquirers can be found, but may well not have previously taken an interest in Scottish companies.

APPENDICES

Appendix 1: Glossary of key terms

Term	Definition
angels	Private individuals who invest their own capital either alone or part of a syndicate, and who personally own the equity they purchase.
corporate venturing, corporate venture capital (CVC)	Investment by large (often global) non-financial companies, for the purpose of building innovative capacity which might give the investor competitive value.
deal	The transaction between an investor and a company, which may be standalone or part of an investment involving other investors.
equity investment	A discrete purchase of share capital in a company by one or more investors at a given time.
institutional investors	Organisations which invest on behalf of others. These include Venture Capital companies, partnerships, corporations and corporate venture firms, banks and investment trusts.
ICT	information and communications technology
IP	intellectual property
LS	life sciences
new investment	The first significant external equity investment in a company, excluding early small scale investment by founders, friends, and family. Often referred to in the industry as a Series A round.
others	The category 'others' refers to individual investors who are not part of an angel group (and are not 'founders, family, or friends'), but also includes investors whose identity it has not been possible to determine.
public	Public sector investments include those by the Scottish Investment Bank funds, Highlands and Islands Enterprise, and other public sector agencies.
SE	Scottish Enterprise
SIB	Scottish Investment Bank, a division of Scottish Enterprise that provides investment funds to support company growth in Scotland.
spinout	a company set up to exploit IP owned by a university or other research institution.
syndication	Investment by two or more groups or firms, investing under the same terms and conditions in order to increase the total deal size.
VC	Venture capital, or venture capital firm. Typically, VCs are investing funds with a specified time scale, often ten years, within which they aim to generate returns on the investments of the fund's LLP (limited liability partner) stakeholders.

Appendix 2: Methodology

Stage 1: Data collection

Companies

The current report is a continuation of an ongoing series, and is based on a list of known investment deals originating initially with deals listings from YCF, LINC Scotland, and the Scottish Investment Bank.

The database was built up by including other potential investee companies which are similar in origin or nature to those in the first list, but were not known to have secured investment. This included companies from the previous Risk Capital Market reports and previous YCF deals listings, winners of SMART awards, presenters at pitching events such as Informatics Ventures' EIE, tenants of science parks and incubators, and Scottish companies supported by Nesta, Innovate UK, and other relevant early stage support organisations.

The Companies House database was checked for all these companies, to establish the dates of any returns indicating the issue or allotment of shares, which usually represent new investment. SH01 forms were used to verify the dates and actual amount of investments.

Investors

In addition to checking the investments made by those investing organisations included in the SIB, LINC, and YCF lists, other key early stage investors were researched to establish whether or not they had made investments in Scotland in 2016. The investors known to have invested in Scottish companies in 2016 are listed in Appendix 3.

Stage 2: Analysis

The raw investment data (deal date, amounts by investor) was supplemented by company details (date of incorporation, location, sector) and further information such as the location of the investors.

For all the metrics covered in this report, formulae were created to count the number of deals and give total investment amounts, with the resulting information charted in order to have a visual representation of patterns and trends as the basis for commentary.

Appendix 3: Investors by type

The following investors all made investments in Scottish companies in 2016.

Angel Groups

Scotland

Apollo Informal Investment
Archangel Investors
Barwell plc
ChimaeraBio
Discovery Investment Fund
EOS Technology Investment
Equity Gap
ESM Investments
Gabriel Investments
Highland VC
Investing Women
Kelvin Capital
London & Scottish Investment Partners
Par Equity Syndicate
TRI Capital
West Coast Capital

outside Scotland

Aero-Den
Angel List
Hotspur Capital Partners
London Business Angels

Crowdfunding

BnkToTheFuture
Crowdcube
IndieGogo
Seedrs
Squareknot
SyndicateRoom

VCs and Institutional Investors

Scotland

DC Thomson
Epidarex
Frontier IP
Maven Capital Partners
Old College Capital
Par Equity
Scottish Enterprise
Scottish Investment Bank
SEP
Social Investment Scotland
Strathtay Ventures
Strathclyde Entrepreneurs Fund
TechCrunch Disrupt
University of Leeds
University of Strathclyde

other UK

24Haymarket
Albion Ventures
Andromeda Capital
Artemis
Baillie Gifford
Business Growth Fund
Calculus Capital
Capital for Colleagues
Catapult Growth Funds
Deepbridge Capital
DP Energy
EC1 Capital
Finance Wales
Greencoat Capital (ESB Novusmodus)
Imperial College London
Imprimatur Capital
IP Group
Lloyds Development Capital (LDC)
LocalGlobe
MediCity
Mercia Fund Management
Northstar Ventures
Potential VC
Seraphim
The Crown Estate
Vitruvian Partners
YFM Equity Partners

outside UK

Adcock Private Equity
CapAgro
Capricorn Investment Group
DP Energy
Frontline Ventures
Global Founders Capital
Khazanah Nasional Berhad
Kima Ventures
Lundbeckfond Ventures
NetSol Technologies
Palo Alto Industries
Prevail Partners
Renaissance Capital
Sofinnova Partners
Temasek

Corporate VC

ABB Technology Ventures
Bosch
BP
Castle View Ventures
DC Thomson
ESB Novusmodus
Goodmark Medical LLC
IKEA Greentech
Nipro
Palo Alto Industries
PhageLux
Sage Technologies
Schottel Hydro
Siemens Technology
Unipart
Velotek
Yahoo! Japan

AUTHOR

Jonathan Harris

Editor, Young Company Finance

Jonathan Harris is the editor of Young Company Finance (*www.ycfscotland.co.uk*), a monthly publication which tracks and reports on the progress of early stage high growth companies in Scotland, from start-up or spin-out to maturity, with special reference to how they finance their development. Since it was started by Gavin Don in 1998, YCF has given detailed reports of over 2,000 investment deals, together with news and features about investors, major grants, funding initiatives, business awards, company pitches, and analysis and comment on the sector.

Since February 2011, the operations of YCF Scotland have been licensed to LINC Scotland, the national business angel association.

Outside Scotland, YCF initiated and runs the Spinouts UK project, an online database of spinouts and start-ups from all universities across the UK (*www.spinoutsuk.co.uk*). A Quarterly Report gives details of new spinouts and start-ups, recent exits by way of trade sale or IPO, and major investments in spinout companies, together with news and analysis on the sector, and helps ensure that the database is kept up to date.

Researchers: Irina Dinoci, Robert Swift