New records reached

Angel investment
and the risk capital market
in Scotland
2019 to 2021

YOUNG COMPANY FINANCE Scotland

INTRODUCTION

2021 was a year in which many previous records in the risk capital market in Scotland were broken.

Levels of investment by business angel groups, the size of the market including all types of investor, the number of exits, the number of new investors entering the market - all saw startling growth, unexpected after the difficulties of the previous two years. It might not be surprising that 2021 was a better year than 2020, but to give a good picture of the growth of the market we have analysed the three years 2019 to 2021 rather than take 2021 by itself.

This report has been prepared by Young Company Finance, now part of national business angel association LINC Scotland. We focus on the role played by the business angel groups which are members of LINC Scotland, but put this in the context of the wider risk capital market.

In 2021, deals by LINC angel group members reached a total of £146 million, 70% more than the previous record in 2019.

Angel investment had been on an upward trend through to this record year. After COVID struck, investment levels dropped back in 2020, but only by 14% (compared with a 40% drop reported for the rest of the UK) before 2021 saw a strong comeback.

Angel investment is just one part of the risk capital market. Another part is represented by institutional investors (VCs and corporates), which historically has been extremely variable depending upon the number and size of a small handful of 'outlier' deals. In the period under review VC activity has grown substantially, in both deal numbers and amounts invested. The variability remains, with a stark contrast between 'outlier' deals and the norm, but it is safe to say that Scotland is seeing many more very large equity investment deals on a regular basis.

Besides new records in deal numbers and investment, there have also been new records in terms of investors entering the Scottish market for the first time, and exits by IPO or trade sale. We give details of these and discuss their implications.

Because the market has expanded so much through these disrupted years, we have taken the opportunity in Section 2 to discuss the evolution and success of the 'Scottish model' of angel investment, and its place in the overall risk capital market. Our analysis suggests that investment by angel groups, and by VCs and other institutional investors, are two different things, each with a specific role to play in ensuring a healthy spectrum of funding options available to young Scottish companies with high growth ambitions.

Jonathan Harris
Editor
Young Company Finance

Note on terminology

Whenever there are several investors involved in a deal, they are usually referred to as a syndicate. In this report, as far as possible we refer to the business angel organisations as 'groups' (even though some of them describe themselves as syndicates), and reserve the term 'syndicate' to those cases where several organisations – whether angel groups, VCs, or others – co-invest in the same deal, to try and avoid referring to syndicates of syndicates.

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Section 1: The Risk Capital Market 2019 – 2021

1.1 Angel Investment

Before the pandemic struck, 2019 had been a high point in the angel investment market in Scotland, with a record number of deals and a record £86 million facilitated by angel group members of LINC Scotland.

In 2020 as investors made a priority of supporting investee companies when COVID struck, the market slowed but not as much as feared – by 14% in Scotland, compared with a 40% reduction reported by UKBAA for elsewhere in the UK. It has now rebounded. In 2021, angel deals secured in total £146 million funding, almost double the £74m raised in 2020, and 70% higher than the 2019 record.

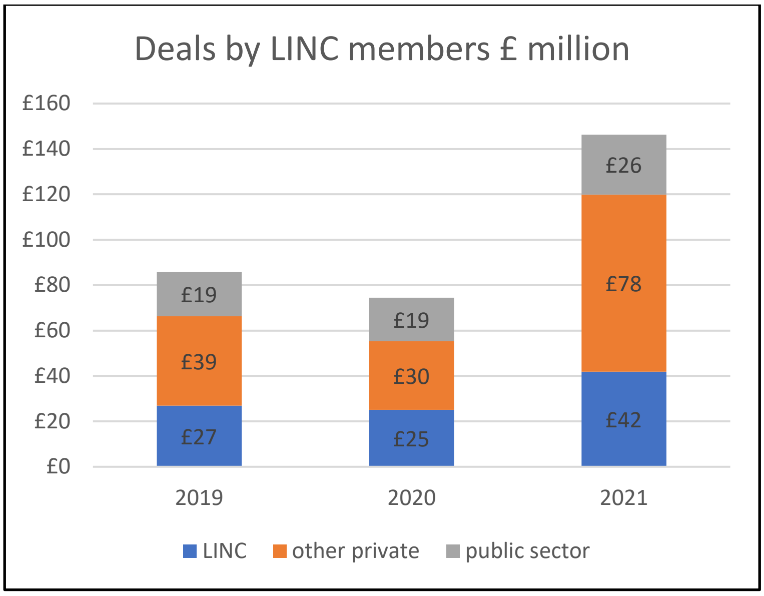
In 2021 deal numbers (89) were down from both the exceptionally high level in 2019 (102 deals) and even from the decreased level in 2020 (97 deals). It follows that there was an increase in overall deal sizes during this period. A third (34%) of all deals in 2021 were for a total of £1 million, up from 23% in 2019 and 25% in 2020. Taking median values (to mitigate the influence of the large outlier deals on averages), total deal values increased from £348k in 2019, and £422k in 2020, to £500k in 2021.

This appears to mirror a trend towards larger deal sizes reported throughout the early stage finance market globally. In the case of the LINC angel groups, it is influenced by co-investments with other private investors (usually institutional investors, but also many high net worth individuals who are not members of the group), and these vary considerably from period to period in both number and size. Taking investment by the angel groups themselves, in 2021 the median size deal was £250k, but when co-investing with others, this rose to £270k, with a median co-investment by 3rd parties of £175k – ie, often these larger deals were led by the angel groups themselves usually making the greater contribution to the total.

The total invested by the LINC groups themselves in 2021 was £42m, an increase of 67% from the previous year, and exceeding the 2019 record by 56%. Two thirds of the £78m from other private investors came from two deals, Current Health and Snappy Shopper, which were led by new VC investors with existing angel groups co-investing (see Largest deals, section 1.1.1 below).

Support from public sector investors, chiefly Scottish Enterprise, stayed constant throughout this period, at approximately 20% of the total. This is a notably lower proportion than in Wales and Northern Ireland, but likely higher than in England where there are fewer sources of public support.

Figure 1: Investment by LINC angel groups 2019-2021



Several of the LINC member groups reported their busiest year to date. Archangels reported an increase of 44% over 2020. Par Equity more than doubled its investment, deploying £25 million, and Equity Gap reached a £25 million investment milestone following its most active year to date.

Five of the groups – Archangels, Equity Gap, Kelvin Capital, London & Scottish Investment Partners, and Par Equity - made 30 investments or more in the three years from 2019 to 2021, and accounted for two thirds of all the deals completed, and over 80% of the amounts invested. The average deal sizes for these groups were greater than for those closing fewer deals, and the average contribution by the angels themselves (before adding in co-investment from other private investors and public sector agencies) was also higher:

Figure 2: Number of angel groups by number of deals, 2019 to 2021 total, £'000

deals	number of groups	number of deals	total raised	angel investment	average deal	average angel
0-10	9	35	£29,750	£5,773	£850	£165
11-20	4	56	£10,294	£4,584	£184	£82
21-30	2	49	£63,278	£16,857	£1,291	£344
>30	3	144	£192,164	£63,137	£1,334	£438

1.1.1 Largest deals

Six of the deals in which LINC angel groups participated in 2021 raised over £5 million, and illustrate the ways in which these groups are participating in substantial investment rounds:

Current Health: Par Equity invested £3m of a £31.4m round in April led by Northpond Ventures, with additional financing from LRVHealth, OSF HealthCare, Section 32, Elements Health Ventures, and existing investors. This was the final investment round before the company was acquired by Best Buy, a US consumer electronics retailer, for $400 million.

Snappy Shopper: Kelvin Capital participated in a £19.5m round led by PayPoint, together with Highland Tech, Justin King (former Sainsburys CEO), and Maven Capital Partners.

EnteroBiotix: In August the company announced the closing of an oversubscribed $21.5m Series A round, led by Mark Bamforth's Thairm Bio and new US-based investor Kineticos Ventures, alongside existing investors including Equity Gap, Gabriel, SIS Ventures, and Scottish Enterprise. The final tranche of this round, included in our 2021 figures, was £7.5 million.

Blackford Analysis: Thairm Bio also participated in a £5.4m round in Blackford, which has been supported since its spinout from Edinburgh University in 2010 by Archangels, together with Tricapital, Scottish Enterprise, and the University's investment fund Old College Capital.

Speech Graphics: Archangels, which has long supported the company, introduced new investor US-based VC Sands Capital, in a £5.3 million round with Par Equity and Scottish Enterprise.

Cyan Forensics: Par Equity led a £5.0 million Series A round with existing investors, Mercia Asset Management, Triple Point Ventures, SIS Ventures, Scottish Enterprise, and the MacLeod Family Trust.

1.2 The Wider Picture

Besides the data held by LINC Scotland about investment by member groups, we also have detailed figures from Scottish Enterprise. By combining these figures with the data on investments tracked by Young Company Finance, we can build up a more complete picture of the risk capital market as a whole in Scotland.

Firstly, we can add deals in which Scottish Enterprise invested without any participation from LINC Scotland members, then identify equity investment deals reported in YCF which had neither LINC members nor Scottish Enterprise as participants. Putting all these data sources together, we have a picture of market trends over the past three years.

As shown in the following two charts, although there has been relatively little change in the overall number of investment deals over the past three years, in 2021 the amount invested has almost doubled from the previous year.

Figure 3: Total deal numbers 2019-2021

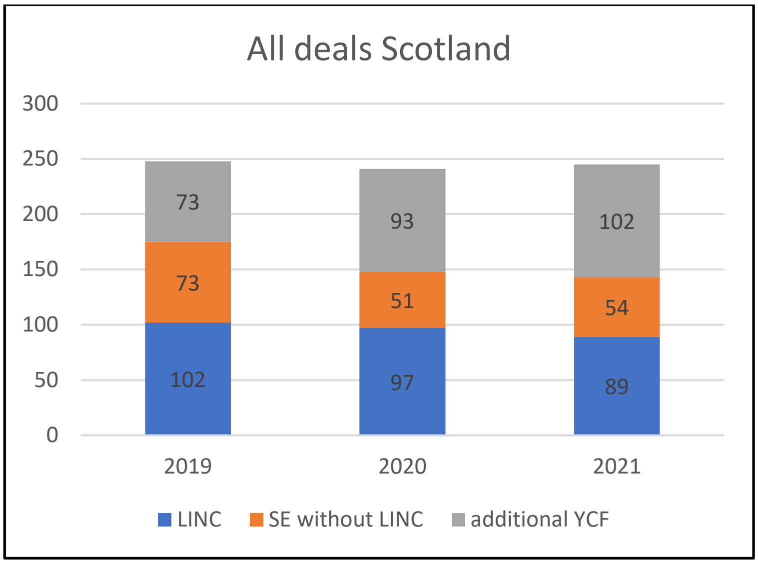
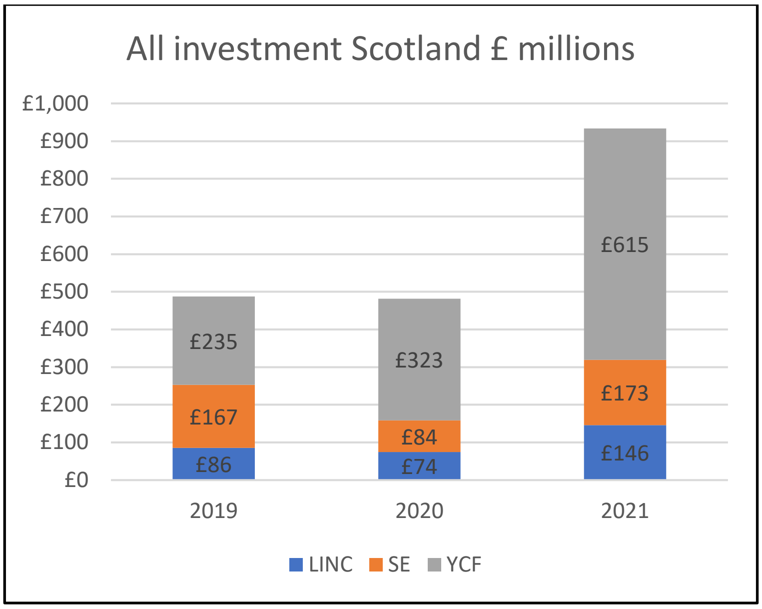


Figure 4: Total investment 2019-2021



We have included in our figures **Exscientia**, a spinout from the University of Dundee but now headquartered in Oxford; other organisations collecting data on early stage investment in the UK give England as the company's base. This makes a substantial difference to the totals illustrated in Figure 4 above; the £233m raised in two rounds in 2021 (see Largest deals, section 1.2.1 below) accounts for 38% of the £615m shown in the above chart. Without Exscientia, the total investment in 2021 was still 46% higher than in the previous year.

In a pattern which has become characteristic of the market, in 2021, almost half of the deals were over £1 million, but accounted for 95% of total investment:

Figure 5: 2021 deal numbers by deal sizes, all investors

	deals		£m	
>£10m	13	*5%*	£650	*63%*
>£5m=<£10m	21	*9%*	£141	*14%*
>£1m=<£5m	84	*34%*	£185	*18%*
>£500k=<£1m	43	*17%*	£31	*3%*
=<£500k	76	*31%*	£19	*2%*
not disclosed	9	*4%*	£0	*0%*

1.2.1 Largest deals

There were 14 deals of £10 million or more in 2021, some very much larger than this, accounting over 90% of the YCF figures shown in Figure 4 above. The two deals with LINC Scotland member participation are mentioned above (**Current Health** £31.4m, and **Snappy Shopper** £19.5m). The others are as follows.

Exscientia raised £72m in March and a further £161m in April from a consortium of specialist life sciences VCs, including SoftBank Vision Fund 2, BlackRock, Novo Holdings, Evotec, Bristol Myers Squibb, GT Healthcare Capital, prior to its IPO on NASDAQ in October.

Fintech **Paysend** secured £91m in May from a syndicate of VCs including One Peak, Infravia Growth Capital, Hermes GPE Innovation Fund, Plug and Play, together with a crowdfunding campaign on Seedrs.

Emblation completed an 'eight figure' deal in May with London-based healthcare VC Apposite Capital.

Intelligent Growth Solutions raised £42.2m in July from a group of specialist agritech investors - COFRA AG, S2G Ventures Fund, Ospraie AG Science LLC, and AgFunder.

In March Dundee University spinout **Amphista Therapeutics** raised £38.0m in an oversubscribed Series B round led by Forbion and Gilde Healthcare, with additional investors including Novartis Venture Fund and Eli Lilly.

ENOUGH (formerly 3f Bio) raised £36.0m in June in a round with investors who share the company's focus on making sustainable protein, led by Nutreco and Olympic Investments, existing investors CPT Capital and Scottish Enterprise, and new investors AXA Impact Fund, HAL Investments, and Tailored Solutions.

Brewdog's latest crowdfunding round in September, Equity for Punks Tomorrow, raised £30.2m from 73,802 investors.

Scottish Enterprise made an investment in December in **Mangata Networks Inc**, a US space telecoms business which has set up an R&D centre in Edinburgh. Mangata announced in January 2022 the completion of a $33m round with investors including Temasek in Singapore, ktsat from South Korea, Promus Ventures from its Orbital Ventures Fund, and MetaVC Partners, together with the Scottish Enterprise investment the previous month.

Renewco Power, a new company set up by energy sector entrepreneurs to develop utility scale solar, wind, and battery projects across Europe, raised £24.0m from low carbon infrastructure business SSE plc

BetDEX Labs, started by former Fanduel executives, raised £15.5m ($21m) in what was claimed to be the largest ever UK startup seed round. Investors included San Francisco based crypto-investment firm Paradigm and Bahamas-based crypto-currency exchange FTX, together with Multicoin Capital, Hack VC, Lightspeed Venture Partners, Sino Global Capital, Solana Ventures, and Everblue Management

In March, Investec invested £10.0m in **Clyde Munro Group**, which is creating a network of family dentists across Scotland.

This list illustrates the trend for early stage VCs with a very close focus on a specific sector to co-invest to raise large sums. This is particularly true of life sciences companies such as Exscientia, Amphista Therapeutics and Current Health, but also of sectors such as fintech (Paysend), agtech (Intelligent Growth Solutions), crypto currency (BetDEX), and even sustainable protein technology (ENOUGH). Renewco Power and Clyde Munro Group represent companies with clear avenues for scaling up. Brewdog is as ever an exception.

1.2.2 Individual investing and crowdfunding

For certain types of project, such as distilleries, funding can sometimes be provided by a small number of HNWIs coming together for this purpose, not as a lasting syndicate (although they may individually be members of established syndicates); the £8.4m raised by **Ardgowan Distillery**, and the £5.2m invested in **Parsley Box** before its IPO are examples.

For those individuals who do not command this level of wealth, crowdfunding has become popular. It shares a similar risk profile as investments by angel groups (investments are largely illiquid), but requires much smaller investments. Like deals by angel groups, crowdfunding deals have also increased in size. Even without the outlier £30m **Brewdog** Equity for Punks Tomorrow campaign, the 13 other campaigns in 2021 averaged £1.3m. Six campaigns raised over £1m each, with the top four showing the public's interest in sustainable and renewable technologies: **MacRebur** (£2.9m), **Orbital Marine Power** (£2.3m), **Celtic Renewables** (£2.1m), and **Nova Innovations** (£2.0m).

1.2.3 Public sector

Co-investment in LINC angel group deals by public sector organisations, almost if not exclusively co-investment from Scottish Enterprise, increased from £19m in 2019 to £26m in 2021. The previous year, 2020, was an exception; in its efforts to help companies survive the problems caused by the pandemic, Scottish Enterprise invested the same amount as the previous year, in addition to its major assistance to young companies provided by its £25m Early Stage Growth Challenge Fund, set up in response to the COVID pandemic and awarded as a mix of convertible loan and grant.

In 2021 Scottish Enterprise invested in 54 deals where con-investors were VCs or high net worth individuals, and contributed £22m of the £173m raised by these deals. A £20m co-investment with SE in Encompass Corporation was reported too late for inclusion in the figures in this report.

1.3 New Investors

There has been a remarkable increase in the number of investors active in the early stage risk capital market over the past few years. This is a global phenomenon, and particularly evident in the USA, but the effects have certainly been experienced in Scotland as well. Figure 6 below gives a simple list by year of investors who have not as far as we aware previously invested in young companies in Scotland. We have checked all these names against our Deals Monitor listing (which goes back 20 years, although many of these investors are fairly recent creations) – some of our readers may recognise names and be aware that the investor has been here before, but the overall picture tells its own story.

In 2019 we traced 33 investors who were new to the market. This increased to 51 new investors in 2020, and then doubled to 105 in 2021.

We have not attempted to analyse these investors by type, location, or whether investing alone or in a syndicate (although this exercise might provide some interesting insights). Some of the investor types are obvious – well known corporate names (Boeing, Dell, Paypal, Pernod Ricard, Toyota, Virgin, Wayra, but none of the FAMGAs despite their acquisitive tendencies[1]) - and most investors with Ventures, Capital, or Fund in the name can be assumed to be VCs. In these three years Scottish companies have attracted some big name investors for the first time; for example Andreesen Horowitz, Blackrock, and Softbank in technology companies, Eli Lilly, Novartis, and Syncona in life sciences, as well as sovereign wealth fund Temasek, and US accelerator Y-Combinator. There are also a number of angel groups from outside Scotland, including Cambridge Angels, Hotspur, and Superangel.

As we have seen in the examples of largest deals above, VCs tend to co-invest with other VCs in large deals, so our list of new investors includes many who are simply following a lead, but it is clear that all members of a syndicate would have to be convinced of an investee's potential to make the deal possible.

[1] In April 2022 a £17m investment in 'fishtec' business Rooser was announced, in which Google was an investor

Figure 6: Investors new to Scotland

As far as we are aware, the investors in the following list made their first investment in a Scottish company in the year indicated.

2019

Aqua-Spark - ARC Investment Group - Ascension Ventures - Aurient - Belmond Capital - Celgene Corporation - Dell Technologies Capital - Digital Space Ventures - EVM Capital - GT Healthcare Capital Partners - GVA Capital - James Hutton Institute - Livingbridge - Manchester Venture Partners - Marchmont Ventures - MW&L Capital Partners - Pernod Ricard UK - Perscitus LLP - Plug and Play Ventures - Qventures - S2G Ventures - Scotmid Co-op - SEGCP - SIS Ventures - SixThirty - Sky Ocean Ventures - Superangel - TechStart Ventures - Temasek - Triple Point Investment Management - United Angels - Wayra UK - Zero Waste Scotland

2020

1818 Venture Capital - 5AM Ventures - 7percent Ventures - Active Capital - Advent Life Sciences - AlleyCorp - Amity Ventures - Aurus Capital - Big Issue Invest - BioMotiv - Blenheim Chalcot - Bristol Myers Squibb - Bullpen Capital - Charles River - Courtside VC - Cowen Healthcare Investments - Credo Ventures - Data Lab - Ecosurety Exploration Fund - Everblue Management - FNZ - F-Prime Capital - Frog Capital - Galaxy Interactive - Greenwood Way Capital - Henan Lanxing Power Equipment Co - Highland Europe - ID4 Ventures - Infinion Biopharma - Leonne International - LifeArc - Lunar Ventures - Medical Incubator Japan - Mobeus Equity Partners - NCBiR Fast Track - NetEase - Next Commerce Accelerator - Novo Holdings - Open Data Institute London - Orchard Venture Capital - PayPal Ventures - Playfair Capital - Quaestus Capital Management - Sanofi Ventures - Syncona - Tenzing Private Equity - Toyota Mobility Foundation - TrueSight Ventures - Vitol - Wild Ventures - You & Mr Jones

2021

Accel Scout - ACF Investors - AgFunder - Aldridge Capital - Alpaca VC - AMP Clean Energy - Andreessen Horowitz - Apposite Capital - Arbuthnot Commercial ABL - AXA Impact Fund - B Capital Group - Beehive Equity (EG Group) - Blackfinch Ventures - Blackrock - Blue Horizon - Boeing HorizonX Global Ventures - Britbots - Cambridge Agritech - Cambridge Angels - Cambridge Capital Group - Capital for Colleagues plc - Chroma Ventures - ClearSky Logic - Cleveland Avenue LLC - COFRA AG - CPT Capital - CVC Philanthropy - Elements Health Ventures - Eli Lilly - Energy Entrepreneurs Fund (UK Govt) - European Space Agency - Firstport Catalyst Fund - FIS Ventures - Flywheel Partners - Forbion - Force Over Mass - FTX - Gilde Healthcare - Glass Wall Syndicate - Greencare Capital - GroundBreak Ventures - GUD - Hack VC - HAL Investments and Tailored Solutions - Hatch - Hermes GPE Innovation Fund - Highland Tech - Hiro Capital - Hotspur - Infravia Growth Capital - Intuitive Investment Group - Keyhaven Capital - Kineticos Ventures - Kingfisher Capital - ktsat - Leave a Nest - Lightspeed Venture Partners - Liquid2 - Literacy Capital Plc - LRVHealth - Marine Fund Scotland - Meta Venture Partners - Metaplanet Holdings - Multicoin Capital - Norfolk Green Ventures - Northcliffe Capital - Novartis Venture Fund - Nutreco - OION - One Peak - Orient Excel - OSF HealthCare - Ospraie Ag Science - Paradigm - PayPoint plc - Playground Global - Proptech 1 Ventures - ProVeg International - R42 Group - Riva Technology and Entertainment - Sands Capital - Section 32 - Seismic Opportunities Fund - Signature Ventures - Sino Global Capital - SoftBank - Solana Ventures - Solvay Ventures - Soma - Space Capital - Sustainable Ocean Alliance - Taronga Ventures - Thairm Bio - The Yield Lab Europe - Thia Ventures - Transdev - TriSpan - UK Space Agency - UKI2S - Uncommon Denominator - Virgin Money - Visor International - WWF - Y Combinator – Zillionize

1.4 CO-INVESTMENT

The patterns of co-investment also shed a light on trends in the sector.

The most frequent and most important co-investors for the LINC Scotland angel groups are Scottish Enterprise's SCF (Scottish Co-investment Fund) and SVF (Scottish Venture Fund). In 2021, these Funds provided matched funding in three quarters of the deals completed by the angel groups. The average deal totals were much greater when the SCF or SVF were co-investing – just under £2m, compared with just under £0.5m when they were not present (although these figures are greatly affected by the large outlier deals mentioned elsewhere). These funds have been a particularly welcome presence in the market, as it means that companies and their investors known that they can support follow-on rounds, without the need to find new investors every time.

Apart from these public sector funds, the angel groups often prefer to complete deals without external independent co-investors (although frequently with other HNWIs and the investee's management). When investors act alone, deals can be completed more quickly, and this is the preference where funding needed can be provided without bringing in additional parties.

Of the 89 deals completed in 2021 by these groups, 55 (62%) involved no third party investor. Some of these deals were for significant sums; 21 of the deals were for over £1 million, and larger deals included **ILC Therapeutics** (£3.5m, Eos Advisory, plus SCF and a US based business angel), **Boundary Technologies** (£3.5m, Equity Gap, SVF and independent business angel), and **ScotBio** (£3.2m, Kelvin Capital, with Investing Women, SCF, and others). Despite these large deals, the average investment for all LINC member investments with no third party co-investor was £890k, below the £1.6m average for all LINC deals in the year which include other investor types.

There were eight deals in 2021 (9% of the total) in which LINC member syndicates co-invested with each other, but without other co-investors apart from Scottish Enterprise; although three of these exceeded £1 million, the average deal size was £700k.

When co-investing with other investor types, deal sizes increased substantially. When co-investors included VC firms (in 18 deals, 20% of the total) the average was £4.8m. In many of these cases the VC was a local institutional investor such as university funds Old College Capital and Strathclyde Entrepreneurs Fund, and Scottish impact investor SIS Ventures, rather than a large global VC fund. The average value is heavily influenced by Par Equity's participation in the £31.4m raised by Current Health before its acquisition, without which the average for the remaining 17 deals reduces to £3.2m.

A similar pattern emerges when looking at investments by VCs when there were no angel syndicates involved. We have tracked 90 such deals led by VCs in 2021, of which over half (51 deals, 57%) involved no co-investor, for the same reasons as in the case of angel groups – faster deals, and better capital planning over the life of the business, including the ability to give appropriate initial funding (such a providing a longer 'runway', a major motive for making bigger deals). Familiar names appear in this category, including BGF, Maven, Mercia, Foresight, and Scottish National Investment Bank, although some of these investors also completed syndicated deals within the year. When acting alone, VCs raised on average £3.6m per deal.

In the remaining 39 deals (43% of all), where VCs coinvested with others, the average investment rose to £14.3m. In the largest deals such as Exscientia (£161m prior to its IPO), Intelligent Growth Solutions, Amphista Therapeutics and others described previously, there is typically a syndicate of VC co-investors.

1.5 EXITS

As the British Business Bank explains well in its UK Business Angel Market 2020 report, "Exits are a key process in entrepreneurial ecosystems as they drive investor returns and provide liquidity to limited partners [and angel investors], freeing up capital for future investments . . . Exits also create wealth for company founders, enabling them to found new ventures, invest in other firms or share their expertise and, as such, can create future angels to help the next generation of entrepreneurs in the region. This process is often called entrepreneurial recycling . . . Without an angel investor many will not make it to the next step so for entrepreneurial recycling to happen, angel investors can be the seed from which a local or regional equity ecosystem can grow."

The number of exits of young Scottish companies has been low in recent years – YCF tracked around ten in each of the five years prior to 2019, and as shown in the listing 2019 was hardly better, and 2020 reached a new low.

However, that all changed in 2021, with 18 exits, and the trend has continued into 2022 with no fewer than eleven exits within the first quarter of the year. This trend has no doubt had a part to play in attracting more investors to the market in Scotland (see section 1.3 New Investors above). Figure 7 overleaf shows all exits in Scotland from 2019 to date.

Not all the exits shown in the table are known to have had independent external investors, but we have indicated the main investors where possible.

LINC groups benefited from two exceptional exits in 2021:

- Par Equity exited its investment in **Current Health** in October when the company was acquired by US-listed Best Buy Inc. for $400m. Par led the company's first external investment round in 2016, and ultimately achieved an 80% internal rate of return (IRR) for the syndicate. This was reportedly the second largest digital health exit in Europe to date.
- The trade sale in December of **Spoonfed** to 365 Retail Markets, backed by Providence Equity Partners, delivered returns for 31 of Equity Gap's members, including seven of the original founder members.

As is clear from the data in the table, there is little information available on the actual amounts paid for an acquisition. A report by Beauhurst[2] analysing exits across the UK from 2011 to 2020 has data on exit values for only 19% of the 495 records included. Where figures are available, they show a value of £60m for the upper quartile, but a median for all deals of £24m (for all types of investor). It is likely that the values not disclosed publicly for the remaining 81% of exits will skew these figures lower, as there is no requirement or necessity to report smaller deals.

[2] Beauhurst and Triple Point: Exits in the UK – Acquisitions and IPOs 2011 - 2020

Figure 7: Exits 2019 to date

company	age at exit	exit date	how	value on exit	acquirer/stock market	location	investors
2019							
Jumpstart	23.7	15-Jan-19	trade sale	n/d	Visiativ Group	France	BGF
Cyberhawk Innovations	11.0	28-Mar-19	trade sale	n/d	Magnesium Capital LLP	UK	SEP, SE
Solus Scientific Solutions	9.9	15-May-19	trade sale	n/d	Perkin Elmer Inc	USA	
Ciqual	11.8	04-Jun-19	trade sale	n/d	TEOCO	USA	TomorrowVentures, Par Syndicate, SE
Synpromics	9.0	13-Aug-19	trade sale	n/d	AskBio	USA	Calculus Capital, SE, others
Cultivate Software	5.0	15-Aug-19	trade sale	n/d	Deliveroo	UK	
Delta DNA	9.1	19-Sep-19	trade sale	n/d	Utility Technologies	USA	Par Equity, Edge VCT Fund, SE, STV Ventures
ChilliConnect	2.9	03-Oct-19	trade sale	n/d	Utility Technologies	USA	TechStart Ventures, Ascension Ventures, private
Dukosi	15.9	28-Oct-19	trade sale	n/d	KCK	USA	Par Equity, IP Group, SE
DEM Solutions	16.9	07-Nov-19	trade sale	n/d	Altair	USA	Sigma Technology Venture Fund, SE
Critiqom	24.0	20-Dec-19	trade sale	n/d	Opus Trust Communications	UK	Archangel Investors
2020							
Enpro Subsea	8.8	21-Feb-20	trade sale	$33m	Hunting plc	UK	Energy Ventures (EV)
Bird.i	5.6	08-Apr-20	trade sale	n/d	Hanley Wood | Myers Researcl	USA	ADV, Frontline Ventures, Satellite Applications Catapult Services, SE, private investors
Calnex Solutions	14.5	05-Oct-20	IPO	£42.0m	AIM	UK	ThinCats
Symphonic Software	8.5	02-Nov-20	trade sale	$31m	Ping Identity	USA	Maven Capital Partners, Par Equity, SIB
Sirakoss	10.1	03-Nov-20	trade sale	$11m	OssDsign	Sweden	Epidarex Capital, SIB, Worshipful Company of Armourers & Brasiers
2021							
AMTE Power	7.9	12-Mar-21	IPO	£61.0m	AIM	UK	AEA Technology, GS Yuasa, Mitsubishi Materials
Parsley Box	4.0	13-Mar-21	IPO	£83.8m	AIM	UK	Mobeus Equity Partners, Chris van der Kuyl, Paddy Burns
Exterity	19.4	06-Apr-21	trade sale	n/d	VITEC	France	Zonal Retail Data Systems, Sigma Capital Group, TRI Capital, SE, SAIL angels
The Artisanal Spirits Co	6.6	04-Jun-21	IPO	£78.0m	AIM	UK	
designLED Products	17.6	09-Jun-21	trade sale	n/d	Faurecia	France	TRI Cap, Braveheart, Highland VC, SE, IKEA, Siemens
Voyager Life	0.6	30-Jun-21	IPO	£5.4m	Aquis Stock Exchange	UK	Seedrs
Purpose HR	7.3	12-Jul-21	trade sale	n/d	Anderson Anderson & Brown	UK	
Twig Education	12.8	15-Jul-21	trade sale	n/d	Weld North Education	USA	D C Thomson, Scottish Venture Fund
Smarter Grid Solutiuons	13.1	09-Aug-21	trade sale	n/d	Mitsubishi Electric Power Corporation	Japan	SEP, SIB (SCF), University of Strathclyde
Vegware	13.9	09-Aug-21	trade sale	n/d	Novolex	USA	Bradenham Partners
CogBooks	16.8	09-Sep-21	trade sale	n/d	Cambridge University Press & Assessment	UK	DC Thomson Ventures, Nesta Impact Investments, SIB
Roylance Pharma	7.2	15-Sep-21	trade sale	n/d	Infinity BiologiX	USA	Gabriel, Mobius Technology Ventures, SIB
Exscientia	9.2	06-Oct-21	IPO	$2.9bn	NASDAQ	USA	Softbank, BlackRock, Novo Holdings, Evotec, Bristol Myers Squibb, GT Healthcare Capital, others
Current Health	7.3	12-Oct-21	trade sale	$400m	Best Buy	USA	ADV, MMC Ventures, Par Equity,Northpond Ventures, LRVHealth, OSF Healthcare, others
Spoonfed	11.4	14-Dec-21	trade sale	n/d	365 Retail Markets	USA	Equity Gap, SIB, private investors
STATS Group	14.7	14-Dec-21	trade sale	£73.1m	SRJ Technologies	Australia	BGF
Lingo24	20.3	16-Dec-21	trade sale	n/d	Unbabel	Portugal	Paul Gregory, private investors
2022							
Quorum Cyber Security	6.5	05-Jan-22	PE acquisition	n/d	Livingbridge	UK	Maven Capital Partners, SIB
CuanTec	5.8	28-Jan-22	trade sale	n/d	Hive Energy	UK	Gabriel, U of Strathclyde, SE
TVSquared	9.9	07-Feb-22	trade sale	$160m	Innovid	USA	West Coast Capital, SIB, existing investors
TC Biopharm	8.6	10-Feb-22	IPO	$119.3m	NASDAQ	USA	NIPRO Corp, bluebird bio Inc, Investing Women, WH Partnership, SE
Just: Gluten Free Bakery	5.7	18-Feb-22	trade sale	n/d	Dr Schär UK	Austria	
Sharktower AI	2.1	21-Feb-22	trade sale	n/d	Proteus	UK	Equity Gap, SE
Criton	6.3	16-Mar-22	trade sale	n/d	Nonius	UK	Scottish Enterprise, private investor
Incremental Group	31.6	21-Mar-22	trade sale	n/d	Telefonica Tech	Spain	Dunedin
Ping Network Solutions	12.6	22-Mar-22	trade sale	n/d	Sword Group	Luxembourg	
CSN Care Group	1.2	23-Mar-22	trade sale	n/d	Clece Care Services	UK	BGF
Candidate.ID	6.5	29-Mar-22	trade sale	n/d	iCIMS	UK	Blackfinch Ventures, Jacobo Invest, Crowdcube

Elsewhere, attempts to establish a range of returns for investors are based on surveys which invite investors to make valuations of their investee companies where no actual exit has yet been achieved, for example the BVCA Performance Measurement Survey 2020[3], published in September 2021. This "revealed a strong industry return of 19.6% per annum over the last decade", but commented "These annual returns are equivalent to investors nearly doubling their money, getting a 1.9x return on capital invested over the past decade and 1.8x capital invested since 1980, including the value of unrealised investments as at 31 December 2020." Although the IRR may look good, the multiples quoted fall well short of what most VC funds would need to achieve to make a profit over a whole portfolio.

A number of investors publicised data on the multiple returns achieved from exits in 2021:

Delta DNA - Par Equity 7.7x (12.6x after the acquiring company was itself acquired)

Quorum Cyber – Maven Capital Partners 6.5x

Optoscribe – Archangels and Par Equity 2.72x - Maven investing later in the company 2.29x

Inoapps – BGF 4.5x (investment of £10m made in 2013)

[3] https://www.bvca.co.uk/Research/BVCA-Publications/Details/Performance-Measurement-Survey-2020

Section 2: Angel investing and the Scottish model

As the LINC angel groups complete another record year, it is worth describing how the 'Scottish model' has evolved, and how it fits into the wider early stage funding environment.

In 1993 LINC Scotland became the first national organisation globally to be founded to promote and encourage angel investing. LINC has been effective in bringing together the public and private sectors for optimum effect, with the result that Scottish angel groups are now amongst the most active in the UK. A recent report from Beauhurst listed the 24 most active UK angel networks from 2011 to 2021. Eight of these (one third of the total) are Scottish syndicates.

There are several different models of angel investing to be observed in different economies, not mutually exclusive and often working alongside each other:

- angel networks; these are often supported by local enterprise or similar organisations with an economic development purpose, and act primarily as introductory vehicles, enabling companies to pitch to an audience of business angels, who invest on a case by case basis, and may or may not join together in any deal, but do not do so on a regular basis;
- The 'lead investor' model, where a high profile business angel, often well-known for a particular exit (or exits) from young companies in a given market sector, leads a group of other HNWIs who wish to benefit from his/her experience. This model is frequently seen in the South East of England (especially London and Cambridge), and has many advantages. The drawbacks include the eventual limitation of a single individual's investment capacity, and the narrow sector focus which can skew the availability of capital to different sectors.
- The 'group' model, where angels make commitments to join groups with a view to participating in a number of deals shortlisted by the group, with each angel investing in his/her own name but under common terms and conditions. This has been the traditional model found in other countries with high levels of activity, notably North America.

The group model has become pre-eminent in Scotland, and the number and size of the groups has increased over time as the advantages of the approach became apparent.

2.1 Becoming an Angel Investor

There are a number of barriers to entry for high net worth individuals (HNWIs) wishing to become business angels. The most obvious is the capital required. As angel investing is one of the riskiest forms of investment (not least because investments are illiquid, with binary possible outcomes – the collapse of the investee company, or an exit by way of a trade sale or IPO), investors are normally advised not to invest more than 10% of their assets in this space. They are also advised to build a portfolio of 10~15 companies, with data indicating that in a portfolio of this size around half the investee companies will fail, others will survive but not give any returns, and only one or two will reach an exit point for their investors. If each separate investment is say £25k (a minimum amount in many deals), and the investor reserves up to four times the initial investment for follow-on rounds, this implies that a business angel should have at least £1 million freely available to devote to this asset class over a number of years.

By investing via groups such as those which are members of LINC Scotland, business angels gain a number of advantages:

- a means of seeing enough potential investees to build a meaningful portfolio;
- the pooled expertise of other investors in the syndicate (either domain specific or general business experience);

- the initial appraisal and filtering of investment opportunities by a gatekeeper;
- common legal documents;
- shared due diligence;
- the opportunity for passive investors to participate in larger deals, making possible deals that otherwise would simply not get done.

Additionally, many business angels have other motivations; they may wish to stay in touch with a market or technology sector in which they have worked, or 'give back' by way of supporting young entrepreneurs just starting out, or might simply be curious about the wealth of technologies being developed to address some of the world's most pressing problems.

2.2 Public Sector Support

'Pump priming' by the public sector is a necessary condition for a lively entrepreneurial sector to develop and flourish; even Silicon Valley benefited in its early days from US Defense Department spending, particularly on US Navy R&D. The overall benefit to an economy from this 'pump priming' derives from developing technology at home rather than importing, the creation of high value jobs, and the encouragement of innovation and entrepreneurialism more widely.

LINC Scotland has collaborated with public sector funders, in particular enterprise agency Scottish Enterprise, to build the market by facilitating the multiplier effect resulting from combining private sector resources with public sector support. A particularly successful example of this, much copied elsewhere, was the formation of the Scottish Co-investment Fund (SCF) and its later counterpart the Scottish Venture Fund (SVF), where LINC Scotland worked with Scottish Enterprise to enable deals to be led by angel groups with pre-committed matched investment from the Funds.

Angel investors throughout the UK (not just Scotland) are encouraged to invest by using the Government's Enterprise Investment Scheme (EIS) and its earlier stage equivalent Seed Enterprise Investment Scheme (SEIS), which give income tax relief when investing, and capital gain tax relief when exiting an investment. Together with programmes such as SCF, these Schemes give individuals in Scotland who have sufficient resources a strong incentive to become business angels. LINC has helped to ensure that young companies in Scotland can remain in Scotland to access investment, rather than turning to EIS based institutional funds largely based in London.

2.3 The Scottish Model

As the market developed in Scotland, a distinct approach evolved which we can call the Scottish model. It can be summarised as follows:

- Group based, rather than lead investor or network model
- Many groups, giving a diversity of approaches:
  - Local preferences
  - Sector preferences
  - Stage of investee development – spinout, pre-revenue, later
  - Size of membership
  - Willing to co-invest with other groups, or different investor types
- Able to lead larger deals, over several rounds of funding

This last is a key point, which depends upon the size of the syndicate for each deal. In the angel groups, deals are open to all members, so the numbers investing are large, often 40 – 50 people, in comparison to elsewhere in UK where it may typically be well below ten. This makes possible more small initial investments, but with significant follow on capacity, and a larger number of initial deals for each angel.

Widening the availability of capital to different sectors and companies requires a diversity of different approaches by investors, and the member groups of LINC Scotland go some way to providing this. Companies most in need of investment come into two main categories; knowledge-based businesses that cannot complete prototypes, conduct clinical trials, or otherwise get their product or service to the point of market entry without spending considerable sums or money, and those with an early presence in a market who wish to accelerate their growth and need funds for sales staff and marketing campaigns, often outside the UK.

The Scottish groups focus largely on knowledge-based businesses (often originating in universities), in sectors such as life sciences, renewables, aerospace, and advanced engineering, but some have invested in the food & drink sector, e-commerce, and other software if the investee needs early stage funding to develop.

The selection of sectors in which to invest is the most obvious way in which the groups offer a diversity of approaches, but others include:

- will invest in pre-revenue companies
- will invest with other groups, or with institutional investors
- will invest outside Scotland
- aim to help investees reach milestones for attracting later rounds from institutional investors.

This model seems to be a natural development from the network/lead investor approaches, and it is notable that the UKBAA (UK Business Angel Association) reports more angel groups forming on this model south of the border over the past few years.

LINC Scotland has been active in helping other regions of the world to grow their own angel communities, in many cases thanks to commissions from the World Bank, and the ‘Scottish model’ has become recognised as an approach well worthy of emulation.

2.4 COMPARISON WITH VCS

Although often seen as two sides of the same coin, investment by angel groups is different from investment by VCs (venture capital funds, and corporate VCs). The two are not dependent upon each other, nor are they in competition; while analysing the success of Scotland’s angel groups, we can also look at these differences and how both types of investor contribute to a healthy entrepreneurial eco-system.

From the data given in section 1.3 above, it is clear that both angel groups and VCs are happy to make most of their deals without co-investment, but are able to build larger deals by bringing others in (and thereby restricting their own individual exposure to the eventual success or failure of the investment).

The principal difference between angel groups and VCs is the attitude to risk. Angel groups invest at a much earlier stage of a company’s development, when the risks are higher, but the investment levels needed are lower. The size of a typical VC fund has been increasing substantially over the past few years [4] which leads VCs to make larger investments than angel syndicates.

[4] Although a new class of micro- and nano VC funds has emerged, which need to have a narrow focus (location, sector etc) to be able to compete with more traditional funds: *https://www.forbes.com/sites/rebeccaszkutak/2021/06/03/how-venture-capitals-new-crop-of-micro-funds-punch-above-their-weight/?sh=5b82c05f6865*

There is a belief in some quarters that more VC funding is needed in Scotland so that companies can reach bigger exits, and provide greater economic impact. The available figures for exits show that few reach very high levels; there are always exceptions, as in the examples of Exscientia ($350m) and Current Health ($400m) quoted in section 1.4, both not co-incidentally life sciences companies. The comparatively modest value of most exits (eg the £24m quoted by Beauhurst, see section 1.4, and very similar in the USA) is not through lack of ambition, lack of quality, or lack of funding, but because this is what the companies and/or their technologies are worth to purchasers. The angel groups in Scotland, and the 'Scottish model', tend to link the aggregate amounts invested in a business to the realistic subsequent value to a larger business in the sector, rather than chase the infrequent mega-exits.

VCs which make much larger investments need to see exits at much higher levels than the angel groups, and need to be even more confident that every one of the companies in which they invest has the potential to earn substantial returns; if they assume that only two or three companies out of ten will ultimately be able to do this, they need to aim for multiples of 5x to 10x for the successful companies to cover the losses from the others, and provide a profit.

A back of the envelope calculation suggests that if a VC has injected say $5m in a business over a number of rounds for a 10% share, to reach a 10x return the value at exit will need to be around $500m. That said, the investor would not necessarily be looking for a 10x return on an investment made say twelve months before an exit, so the time from investment to exit is also a major factor.

This consideration affects the nature of businesses in which VCs invest. Although there are a number of specialist early stage firms, especially in life sciences, many VCs prefer later stage companies with proven revenue streams, and a clear route for scaling up, maybe by adding new branches or new territories, or by making acquisitions. Although there is some overlap, VCs and angel groups are largely looking at different types of company as potential investees.

The limited data available indicates that in general VC returns are not good. The top quartile firms in the USA have been shown to be capable of achieving returns of up to 30% IRR, which is certainly impressive. The returns for second quartile firms however drop to 13%, and the other 50% of funds on average struggle even to return capital. It may be thought that the poor return rate is due to a few bad funds which invested poorly, but the data suggest the opposite. The best performing fund managers in the USA actually have a higher number of individual fails, and achieve profits by focusing on the 5% of their investments that provide 90% of the profits.

There are several reasons why angel groups and independent VC firms do not often co-invest. The difference in amounts of money available to invest is one – angel groups are deterred from having to take a small share in a large deal, and VCs with large funds to manage do not wish to make many small investments. Both types of investor typically like to lead their own deals, and if co-investing prefer to do so with another investor of the same type. The class of shares in a deal is also a factor, especially if angels require EIS relief and are restricted to ordinary shares, while VCs normally require preference shares to protect their own investments. Both angels and VCs can be wary of the effect co-investing with the other will have on their own processes; VCs coming to a company at a later stage than the early angel backers will value the company on its merits as they see them rather than on the money raised to date, which may lead to a lower valuation and therefore a dilution of the angels' shareholding, while VCs do not like the large shareholders register resulting from joining a deal with an angel group.

Angels investing via either the 'lead investor' or 'angel network' model have to look to VCs to provide larger amounts of cash as the investee business grows; the 'Scottish model' means that angel groups can make larger initial investments, and provide follow-on funding, enabling investee companies to focus on growing the business rather than continually looking for new investors.

The implication is that both angels and VCs should focus on companies which can have a value at exit which justifies the size of investment; these are unlikely to be the same companies for both types of investor, and the opportunities for co-investment will be correspondingly infrequent.

Although making smaller investments and expecting lower value exits than VCs, angel groups still provide major benefits in terms of economic development. They create high value jobs (albeit a smaller number than in say manufacturing or retail), giving the holders valuable and transferable business experience, and often involvement in the most advanced technological or scientific advances. As these founders and employees move on, whether to new start-ups or into established businesses, they have a leavening effect, raising levels of innovation and entrepreneurship throughout the economy.

2.5 Conclusion

We can summarise some of the points made in this report to describe the 'Scottish model' as follows:

- The success of new companies in Scotland has increasingly attracted new investors to Scotland;
- Success can largely be seen as exit success - all types of investor want to make good returns, and it is the potential for worthwhile exits that puts Scotland on the map;
- Each type of investor tends to have a place on the funding spectrum, funding deals at different sizes;
- Angel have typically been seen as early investors, providing amounts up to £250k. In Scotland these amounts are higher than rest of UK, due to the group structure;
- As a result, and with the support of inter alia Scottish Enterprise's co-investment funds, angels have typically been able to fund companies for longer and at higher amounts. This has meant companies have not been diverted to fundraising operations and finding new investors so often, and the angels maintain good ownership for successful exits;
- This leads to more finance being available in Scotland, as funds are recycled by angel groups into Scottish companies, as opposed to being returned to VC fund GPs;
- Where companies need larger sums over their lifetime there is now a wide range of early stage VC options in Scotland, with different VCs providing funds in the range £1m to £5m (eg BGF, Epidarex, Foresight, Maven, Mercia, TechStart);
- Companies can raise investment from syndicates of VCs at even larger values, in tens of £millions;
- This range of options is valuable both to the young companies seeking investment, who have a range of deal values and sectoral interests to pursue, and to their investors, who are able to cover the range of funding required from small seed capital rounds, via medium sized deals from angel groups (thanks to the group structure and co-investment by the public sector, and specialist early stage VC investors, through to large multi-VC syndicates able to complete deals in tens of £millions.

About LINC Scotland and Young Company Finance

LINC Scotland

LINC Scotland is the national association for business angels in Scotland with a membership that includes around one hundred investors operating individually, plus at least sixteen hundred others investing as part of over 20 structured angel groups or syndicates.

LINC itself is a private non-profit organisation and does not act as investment advisor to any party but rather plays an underlying 'soft infrastructure' role in supporting the development of the business angel marketplace in Scotland, as well as representing members' interests at Scottish, UK and European level.

The latter includes being founder members of Business Angels Europe and recognition in a Commission benchmarking report as a best practice model.

Our work is funded by membership and deal fees, sponsorship by a range of Corporate Partners and contractual funding from Scottish Government. This diverse base helps maintain strict standards of impartiality and confidentiality.

LINC's most visible role among SMEs is to improve access to business angel finance by facilitating preparing for and identifying best fit investors – those who can bring real added value, not just money. However, it has a range of other programmes on the 'supply side', covering awareness raising and education, identifying and supporting new business angels, encouraging the creation of new groups, international networking, and so on.

In the international arena LINC has been an invited contributor to market development initiatives in several European countries, Australasia, the Americas and the MENA region. LINC was also the first non-American angel network to be invited to contribute to the proceedings of the Angel Capital Association of America.

A full list of the LINC member syndicates is given on the website www.lincscot.co.uk

Young Company Finance (YCF)

Young Company Finance (YCF) is a subsidiary of LINC Scotland which publishes a monthly review of early stage high growth companies in Scotland, focusing particularly on the issues of how to fund growth.

YCF was founded by Gavin Don in March 1998 and acquired by Jonathan Harris in November 2000. The business was subsequently expanded to encompass special reports on specific market sectors (Life Sciences, Digital Entertainment, and Renewable Energy), a very successful annual conference, and in 2006 a new edition of YCF, a monthly publication tracking young companies in the North of England, subsequently discontinued after four years of publication.

In 2011 Jonathan Harris started Spinouts UK, a new project managed by Young Company Finance which built up a database of spinout and start-up companies from universities across the whole of the UK. In 2018 the Spinouts UK business was acquired by Beauhurst.

YCF was licensed to LINC Scotland in 2010, and acquired by LINC in 2022.

www.ycfscotland.co.uk