

The Future of Early Stage and Growth Finance in Northern Ireland

Technical Report

23 March 2015



SQW

PART I: EVIDENCE FROM NORTHERN IRELAND

1. Introduction to the Northern Ireland research

This Section provides an introduction to Part 1 of the Technical Report focused on characterising the early stage and growth finance market in Northern Ireland.

- 1.1 This Part of the Technical Report sets out the detailed evidence collected through the primary and secondary research focused on the early stage and growth finance market in Northern Ireland.
- 1.2 It contains five sections:
- **Section 2: Quantifying historic supply** – this section provides a review of relevant market data (from both publicly available and commercial sources) in order to characterise the scale and nature of the market in Northern Ireland over the past decade, and the scale of public intervention.
 - **Section 3: Estimating future demand** – this section sets out the findings of an online survey of entrepreneurs across Northern Ireland involved with growth oriented businesses, providing data on the potential scale of demand in Northern Ireland for early stage and growth finance.
 - **Section 4: Messages from the consultations** – this section provides a summary of the findings from the primary research completed in this study with stakeholders across Northern Ireland. The focus of the research was to understand the perspectives on the key contextual factors influencing the growth finance market in Northern Ireland, supply and demand-side issues in the early stage and growth finance market, and perspectives on future ambition and interventions.
 - **Section 5: Literature review** – this section provides a review relevant public policy reports and research on the early stage and growth finance landscape in Northern Ireland, focuses on both the supply- and demand-sides.
 - **Section 6: Potential to secure additional finance** – drawing on the evidence collated in the study and knowledge of the study team, this section sets out an overview of the potential for Northern Ireland to secure additional finance for venture capital from EU and other sources.

2. Quantifying historic supply

This Section provides evidence on the historic supply of early stage and growth finance in Northern Ireland. It also provides data on other UK regions for benchmarking purposes.

Data challenges and responses

- 2.1 There is no official data source for early stage and growth finance in Northern Ireland, or data-sets that provide a comprehensive picture of the market in terms of historic supply. This section therefore utilises a range of data sources to provide as rich a story on the levels of historic supply as is possible.
- 2.2 There are three main sources/groups of evidence:
- data on the scale of the equity market from a range of sources:
 - from the British Venture Capital Association (BVCA) on investment activity – this does not give a comprehensive picture of investment activity in Northern Ireland as not all local providers are BVCA members and investment activity from non-UK funds is also excluded
 - from Dow Jones VentureSource that provides data on venture capital investment, including data on the investors
 - data from recently published research on finance by the British Business Bank
 - data from Invest NI on the performance of elements of its access to finance strategy
 - other market data from various surveys and sources, including on alternative finance.

The scale of the equity finance market

BVCA data

- 2.3 The table below present the latest data from the BVCA on investment activity in Northern Ireland over the 2005-13 period. Consistent with the focus of this research study, the data presented are for the 'Venture Capital' stage of investment only, covering seed, start-up, early stage, and later stage venture capital.

Table 2-1: Number of VC investments, value of VC investments, and average VC investment in Northern Ireland, 2005-2013

	2005	2006	2007	2008	2009	2010	2011	2012	2013
Number of investments	13	16	9	18	5	14	10	24	13
Value of investments (£m)	3	4	4	7	1	5	20	2	3
Average investment (£m)	0.23	0.25	0.44	0.39	0.20	0.36	2.00	0.08	0.23

Source: BVCA

- 2.4 As indicated in the data, over the period, the number of investments recorded was generally around 10-15, with one outlier in 2012 when 24 investment were recorded, although these were generally small, bringing down the average investment level. Over 2005-2013, the maximum annual scale of venture capital investment in Northern Ireland was £20m (in 2011), with an average of £5.4m.
- 2.5 The proportion of UK data accounted for by Northern Ireland over this period in terms of the number and value of venture capital investment is set out in Table 2-2.

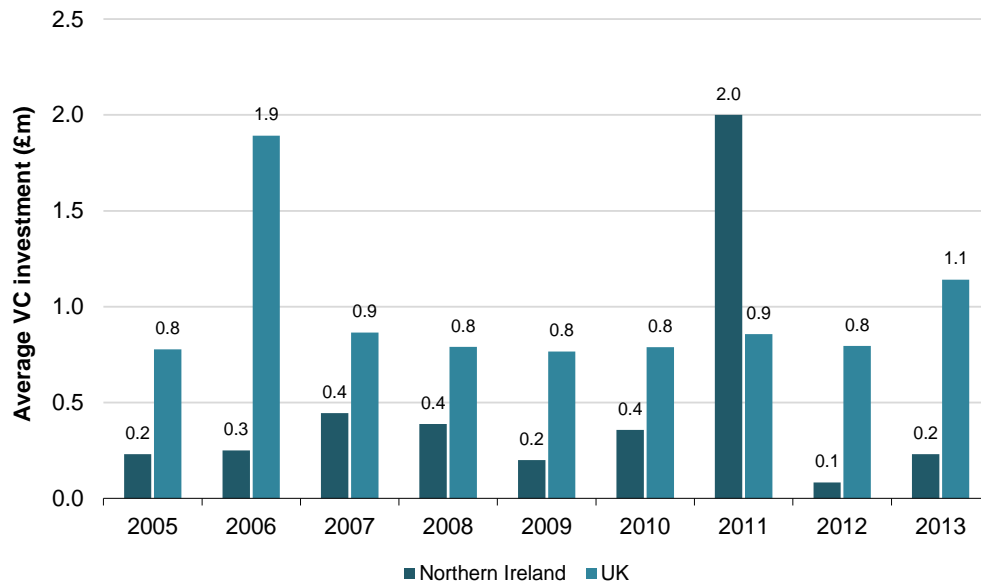
Table 2-2: VC investments (number and value) in Northern Ireland as a proportion of the UK, 2005-13

	2005	2006	2007	2008	2009	2010	2011	2012	2013
Number of investments	2.6%	3.2%	1.8%	4.0%	1.3%	3.5%	2.5%	5.6%	3.7%
Value of investments (£m)	0.8%	0.4%	0.9%	1.9%	0.3%	1.6%	5.8%	0.6%	0.8%

Source: BVCA

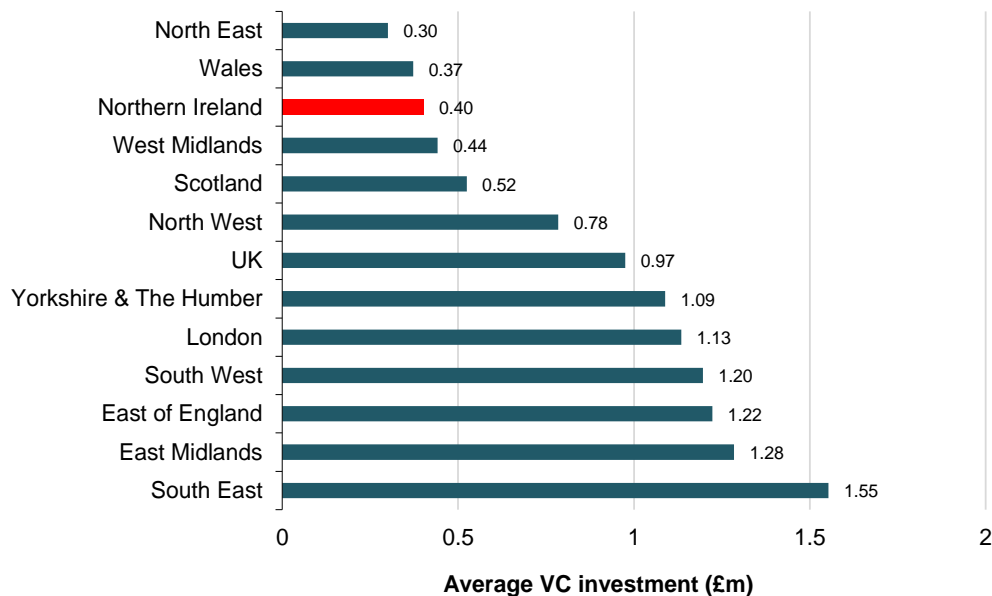
- 2.6 The proportion of the *number* of UK investments accounted for by Northern Ireland – at generally around 3-5% over this period – was consistently higher (with the exception of 2011) than the proportion of the *value* of investment accounted for by Northern Ireland, generally around 1-2%.
- 2.7 This is because the average value of venture capital investments in Northern Ireland has consistently been below that witnessed in most other parts of the UK as indicated in the Figures below setting out: the average value of investment annually in Northern Ireland and the UK (Figure 2-1), and the average across the period in the UK's regions (Figure 2-2). Only North East England and Wales had a lower average venture capital investment over this period than Northern Ireland.

Figure 2-1: Average VC investment in Northern Ireland and the UK, 2005-13



Source: BVCA

Figure 2-2: Average VC investment over 2005-13 across the UK's region



Source: BVCA

2.8 That the average venture capital investment in Northern Ireland is lower than other UK regions matters absolutely for the venture capital market itself. It is also important for the wider economy because venture capital forms a larger part of the total equity finance market in Northern Ireland than elsewhere in the UK. As shown in Table 2-3, with the exception of 2010 (where there was one very large management buy-out/buy-in), venture capital accounted for a higher proportion of the equity finance market than across the UK, and well above those regions such as Wales and North East England where the average venture capital investment is similar.

Table 2-3: VC as a proportion of all private equity and venture capital investment in the UKL's regions, 2005-2013

	2005	2006	2007	2008	2009	2010	2011	2012	2013
London	14%	8%	5%	5%	5%	3%	5%	6%	6%
South East	4%	6%	2%	5%	27%	5%	6%	4%	4%
South West	6%	17%	14%	6%	12%	5%	6%	22%	1%
East of England	14%	15%	8%	4%	9%	42%	15%	5%	23%
West Midlands	1%	7%	1%	3%	12%	4%	4%	5%	15%
East Midlands	2%	26%	2%	2%	2%	4%	13%	4%	2%
Yorkshire/Humber	5%	9%	2%	1%	3%	1%	2%	11%	1%
North West	5%	9%	4%	7%	3%	2%	2%	2%	39%
North East	2%	4%	4%	15%	3%	2%	16%	4%	7%
Scotland	13%	11%	4%	2%	1%	10%	3%	14%	6%
Wales	1%	26%	5%	2%	8%	21%	14%	10%	16%
Northern Ireland	25%	31%	15%	78%	100%	3%	95%	22%	50%
UK	6%	9%	4%	4%	10%	4%	5%	6%	10%

Source: BVCA

Dow Jones data

- 2.9 VentureSource provides data on investment activity and investors across all global regions and sectors. Data covers the full range of finance stages from angel and seed through to private equity and mergers and acquisitions. Consistent with the focus of this research the data presented below focus on the early stage and growth finance only.¹ It is worth noting that there is very limited data in VentureSource regarding angel investment – additional data on angel investment is set out below, and it should be assumed that the data presented below excludes angel investment.
- 2.10 Over the 2005-2013 period (to be consistent with the BVCA data set out above), VentureSource identifies 84 investments into firms in Northern Ireland, summarised by year in Table 2-4 below. The value of these investments by year (including some estimates where data were missing or withheld²) are also set out in the table.

Table 2-4: Investment into NI firms, 2005-13

	2005	2006	2007	2008	2009	2010	2011	2012	2013
Number of investments	19	9	13	10	10	8	3	4	8
Value of investments	3.0	4.3	5.9	4.0	4.9	3.2	1.4	6.9	3.9

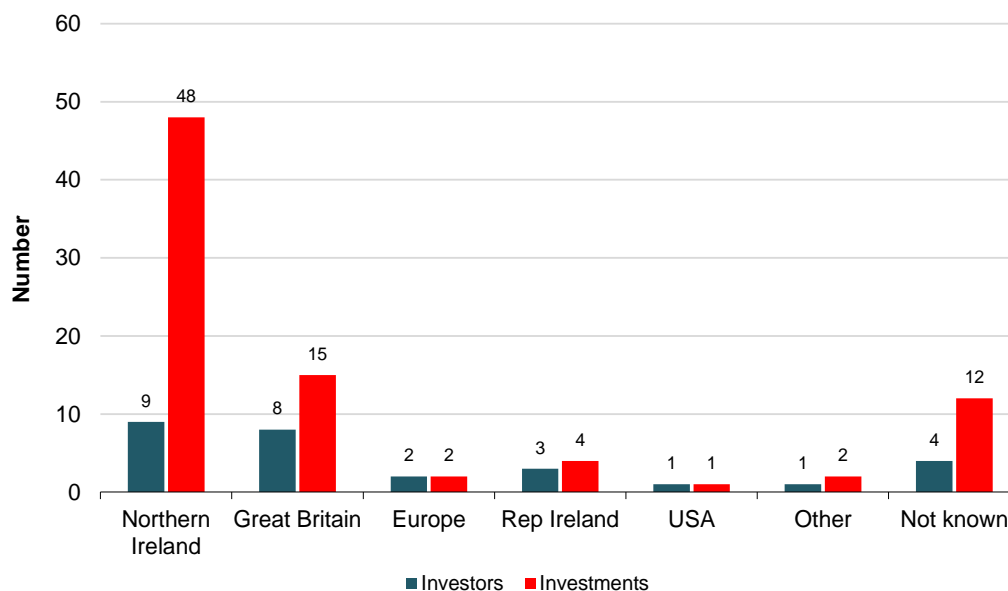
Source: Dow Jones VentureSource

¹ Specifically the data cover Seed, First, Second Other Early Stage, Angel Group, and Rounds 3/4/5 where the investment was under £2m

² Seed round average of £250k and First Round of £1m

2.11 VentureSource also provides data on investors; the data indicate that some 28 separate investors made investments into Northern Ireland over the 2005-13 period. The location (where known) of the investors, and the number of investment these locations account for are set out in Figure 2-3. The investors are set out in Table 2-5.

Figure 2-3: Location of investors into firms in Northern Ireland, and number of investments made



Source: Dow Jones VentureSource and SQW

Table 2-5: Investors of early stage and growth finance into Northern Ireland firms, 2005-13

<ul style="list-style-type: none"> • Crescent Capital NI Ltd. • Clarendon Fund Managers Ltd. • Invest Northern Ireland • Enterprise Equity (NI) Ltd. • QUBIS Ltd. • E-Synergy Ltd. • NorthStar Ventures Ltd. • University Challenge Fund • TVC Holding plc • Scottish Equity Partners LLP • Low Carbon Accelerator • University of Ulster • Siemens Technology Accelerator GmbH 	<ul style="list-style-type: none"> • Finance South East • Atlantic Bridge Ventures • LMA International • Thule Investments • Delta Partners Ltd. • Ulster Bank • Javelin Ventures • YFM Private Equity Ltd. • Royal Bank of Scotland Group PLC • London Business Angels Ltd. • 3i Group PLC • Lough Shore Ltd.
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Source: Dow Jones VentureSource

2.12 To provide context, it is worth noting that the equivalent data for the Republic of Ireland (over 2005-13, using the same investment rounds), indicate 136 separate investors, compared to the 28 in Northern Ireland. Given the scale of the market in Northern Ireland it is not unexpected that a broader range of investors will be active. However two points are noted:

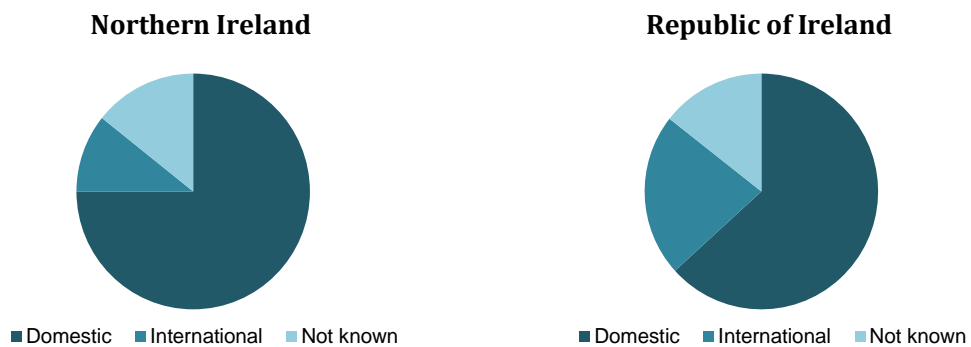
- 36 separate investors from the Republic of Ireland invested into firms in the Republic in this period, yet only three of these are recorded as investing into Northern Ireland. Whilst not all investors may be able to invest cross-border (for

example, where they receive support from the public sector in the Republic, or direct investment by public agencies) the data suggest there is scope to enhance the scale of investments into the North from investors based in the Republic. This data is consistent with earlier research identifying the very low level of investment into Northern Ireland by Republic of Ireland based investors.³

- Approaching 50 (48) separate investors based in the USA and Europe invested into firms in the Republic in this period, yet only three of these are recorded as investing into Northern Ireland. The scale of the market is of relevance here, and we would expect more investors into the Republic from international locations, but the difference is very significant – in headline terms, more than ten times as many investors from the USA and Europe have invested early stage finance into firms in the Republic of Ireland than Northern Ireland over the past decade. Again this suggests there is scope to enhance linkages to encourage greater investment from international investors.

2.13 This later point is emphasised in Figure 2-4 that compares the proportion of investment recorded in VentureSource from domestic investors (for Northern Ireland this covers Northern Ireland and Great Britain) and international investors. As indicated, domestic investments accounted for around three-quarters of investment into Northern Ireland (73%), compared to around two-thirds (63%) in the Republic of Ireland.

Figure 2-4: Proportion of investments from domestic and international investors



Source: Dow Jones VentureSource and SQW

2.14 These data are perhaps not surprising, but they do provide evidence to underpin the wider findings of the research (see the consultations and evidence from the business survey in later sections) of the need to enhance external linkages and attract more external investment to Northern Ireland, both from the Republic of Ireland and internationally.

Small Business Finance Markets Report

2.15 The British Business Bank produced the Small Business Finance Markets Report 2014 that includes data from the finance research provider Beauhurst on the equity market across the UK, with annual data for the 2011-20213 period. The data covers seed capital, venture

³ InterTrade Ireland’s 2013 review of access to finance for growth for SMEs on the island of Ireland reported that IVCA data for 2012, where detail on investments was disclosed showed that no investments were made by venture capital funds with a presence in Ireland in Northern Irish companies; consultations indicated that there was at least one investment in Northern Ireland, which would have been included in private/undisclosed transactions).

capital and growth capital, although data disaggregated by these phases is not provided at a regional level. A single 'equity finance' value provided for Northern Ireland and other regions. The data for Northern Ireland, and the UK is set out in Table 2-6 below.

Table 2-6: Equity Investment in Northern Ireland and the UK

	2012	2013
Northern Ireland	7.6	5.2
UK	1,315.9	1,620.3
Northern Ireland as % UK	0.6%	0.3%

Source: Beauhurst Note: data is also provided for 2011, at £0.7m

- 2.16 As noted above, this data includes growth finance (equivalent to growth/expansion data in BVCA, not included in the data presented above). As such, the data set out in Table 2-6 cannot be compared directly to the BVCA and Dow Jones data. However, as we have seen from the BVCA data, Northern Ireland's venture capital market accounts for a higher proportion of the total equity finance market than across the UK as a whole.
- 2.17 The Beauhurst indicates that in 2012 and 2013 seed and venture capital accounted for on average 37% of the total private equity market: if this is adjusted to 50%⁴, this provides an indicative venture capital finance investment of £3.8m in 2012 and £2.6m in 2013.

Invest NI data

- 2.18 The latest edition of the Northern Knowledge Economy Index provides additional information on the number and scale of investment in 2012 that were used to augment the BVCA data set out above. These data were provided given that Crescent Capital and Kernel Capital (fund managers of the two Development Funds) and E-Synergy (managers of the NISPO funds) are not members of the BVCA and therefore do not report their data. As indicated in Table 2-7 the Invest NI data from these funds increases the total value of investment by £2m.

Table 2-7: BVCA and additional Invest NI data

	Number of investments in 2012	Value of investments in 2012
BVCA only	24	2
BVCA plus Invest NI	38	4

Source: Knowledge Economy Index Report 2014 and BVCA

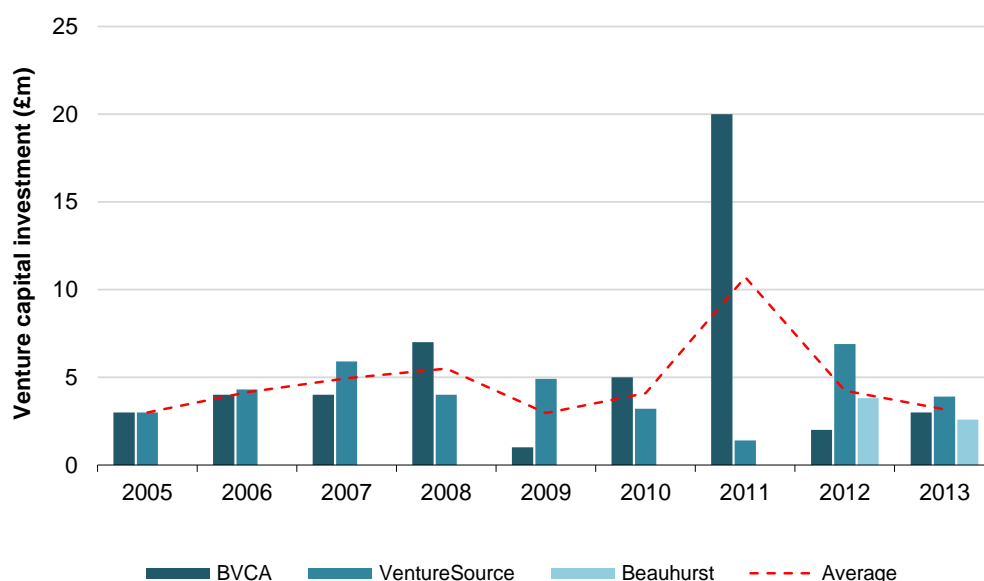
Reconciling the data-sets

- 2.19 As noted above, there is no comprehensive source of data on equity finance, and it is evident that the BVCA, VentureSource and Beauhurst data vary at an annual basis, as illustrated in Figure 2-5.
- 2.20 This will reflect both the definitions used in the separate datasets (where again there is no consistent definition of what constitutes early stage and growth equity), and the different investments captured in different data-sets, for example, small investments not found in

⁴ The 2013 value from BVCA

VentureSource but reported to BVCA by member firms, and investments found in VentureSource from venture capital firms that are not BVCA members. For example, the BVCA data suggest that there were a large number of small investments in 2012 which are not recorded in VentureSource. The data may also underestimate the volume and value of investments made by firms fund managers responsible for Invest NI Access to Finance Strategy funds, particularly where these are at the lower-end of the scale and/or second round investments.

Figure 2-5: Average value of venture capital investment identified in BVCA, VentureSource and Beauhurst



Source: BVCA, VentureSource, and SQW

2.21 This said, although in each single year there are variations between the three data-sets (as may be expected given the small sample and issues of reporting, definitions and coverage), over the 2005-2013 period the average annual values are not markedly different. As set out in Table 2-8, the data-sets suggest between 9-14 (with a median of 11) venture capital investments per year, and an average scale of investment of around £4.2-5.4m, with a median of £4.2m including all three sources, and £4.8m using BVCA and VentureSource (where the data are available over the full 2005-13 period) only.

Table 2-8: Average number of investments and value of investment from BVCA and VentureSource, 2005-13

	Average number of investments p.a	Average value of investments p.a.
BVCA	14	5.4
VentureSource	9	4.2
Beauhurst (2012/13 only)	-	3.2
Median	11	4.2

Source: BVCA, VentureSource, and SQW

2.22 As such, taken together, the data suggest that the average value of formal early stage venture capital investment into Northern Ireland over the past decade has been around £4-5m,;

there has not been a marked increase, but nor has the market been hit substantially by the global economic downturn and its aftermath.

Public interventions, including angel investment

- 2.23 Invest NI has supported a range of equity and early stage loan finance interventions over the past decade. The funds under management, and the scale of the funds over the 2005-2015 period is set out in Table 2-9 below. Note that the figures represent fund sizes in millions (£), and are adjusted for the length of time during a year when the fund was in its active investment period; they do not represent the take-up/supply of finance to firms.

Table 2-9: Invest NI access to finance interventions (data as at December 2014)

	VGF	Nitech	CC II	NIS -PO	Co-Fund	GLF	SBLF	Dev Funds	Tech-start	Total
2005	10	3	22.5							37.5
2006	10	3	22.5							37.5
2007	10	3	22.5							37.5
2008		3	22.5							25.5
2009			22.5	9						31.5
2010			12	12						24
2011				12	9					21
2012				12	16	25				53
2013				17	16	50	7	30		120
2014				4	28	50	9	60	14	165
2015					28	50	9	60	29	176

Source: Invest NI and desk research

- 2.24 The progress of the Invest NI access to finance interventions covered by the Fund of Funds over the past four years since 2011, drawing on evidence from Invest NI and desk research, is set out in Table 2-10. The Fund of Funds is a continuum of risk capital investment funds totalling £160m, underpinned by a mix of investment through Invest NI, the European Regional Development Fund and private sector investors.

Table 2-10: Invest NI access to finance interventions (data as at December 2014)

Intervention	Data on the scale of investments made
Co-Investment Fund (£16m, equity)	39 investments Investments made into 24 firms Total investment of £16.2m (£6.6m public, £9.6m private) Total = 39 investments
Development Funds (£60m, equity)	<i>Kernel</i> - 1 deal completed by December 2013 (Source: Fund of Funds Evaluation). Desk-research suggests one additional deal (Displaynote, October 2014). Total of 2 deals <i>Crescent</i> - 1 deal completed by December 2013 (Source: Fund of Funds Evaluation). Desk-research suggests one additional deal (Analytics Engines). Total of 2 deals Total = 4 investments

Intervention	Data on the scale of investments made
Growth Loan Fund (£50m, debt/mezzanine)	103 loans Total = 103 loans
Small Business Loan Fund (£5m, debt)	120 investments to date Total = 120 loans
NISPO (£9m equity)	Invest Growth Fund: 35 investment University Funds: 10 investments Total = 45 investments

Source: Invest NI and desk research Note: the NISPO data excludes Proof of Concept Grants

- 2.25 The data above indicate that since the launch of the Invest NI Access to Finance Strategy, and its suite of funds in 2011, around 310 equity or loan investments have been made to firms and new businesses in Northern Ireland, on average around 75-80 per year, with a large number of loans provided through the Small Business Loan Fund and Growth Loan Fund. Equity only investments number 88, principally (in terms of number of deals) via the Co-Fund and NISPO, at a rate of around 20 per year (over 2011-14).
- 2.26 Two further interventions are worth noting: the recently established techstart NI (the successor to NISPO under the original Fund of Funds), and the investments facilitated by the Northern Ireland business angel network, Halo (that receives funding from Invest NI). Data regarding these interventions/initiatives are set out below.

Table 2-11: Tech Start NI and angel investment

Intervention	Data on the scale of investments made
Tech Start NI (£16m, equity)	Four equity investments to date Total = 4 investments
Business Angels activity (Halo)	55 investment since 2009 & total investment of over £8m Source (Consultation with Halo) Total = 55 investments

Source: Desk research and consultations Note: the techStart NI data excludes Proof of Concept Grants

Other market data

Venture Capital Trusts

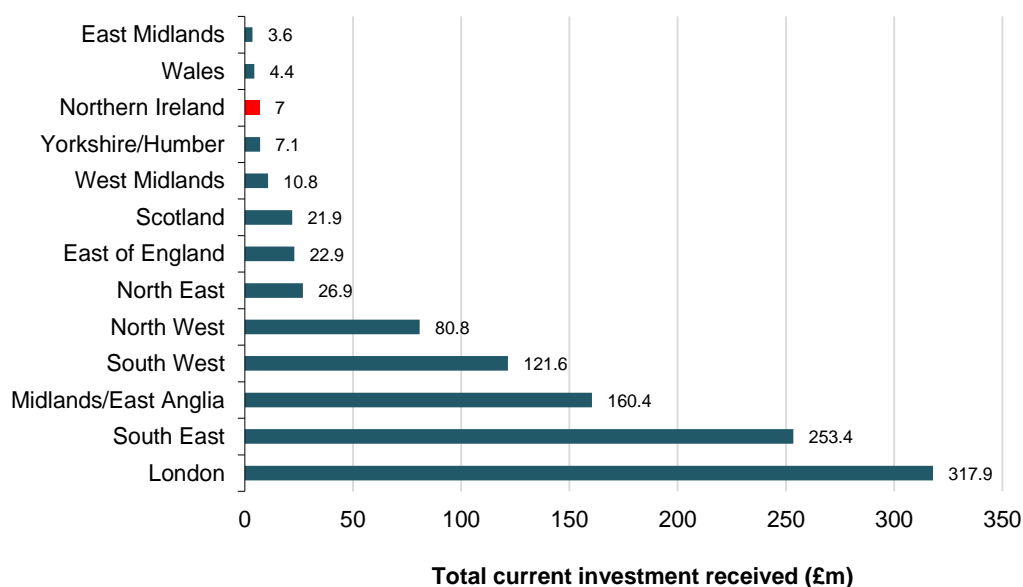
- 2.27 Venture Capital Trusts (VCTs) are designed to encourage individuals to invest indirectly in a range of unquoted smaller, higher risk trading companies, by investing through VCTs. VCTs are managed by fund managers who are usually members of larger investment groups. Investors subscribe for shares in a VCT, which then onward invests in qualifying trading companies, providing them with funds to help them develop and grow fund managers to provide capital to SMEs with growth potential.⁵
- 2.28 Data from the Association of Investment Companies indicates that the scale of investment in VCTs over 1997-2013 in Northern Ireland is the third lowest across all of the UK's regions,

⁵

www.gov.uk/government/uploads/system/uploads/attachment_data/file/358265/140825_NS_VCT_Intro_Note_FINAL.pdf

with around £7m investment recorded (principally in the ICT sector), and accounted for 1% of all investment in VCTs across the UK.

Figure 2-6: VCT total current investment received by sector and region (1997-2013)



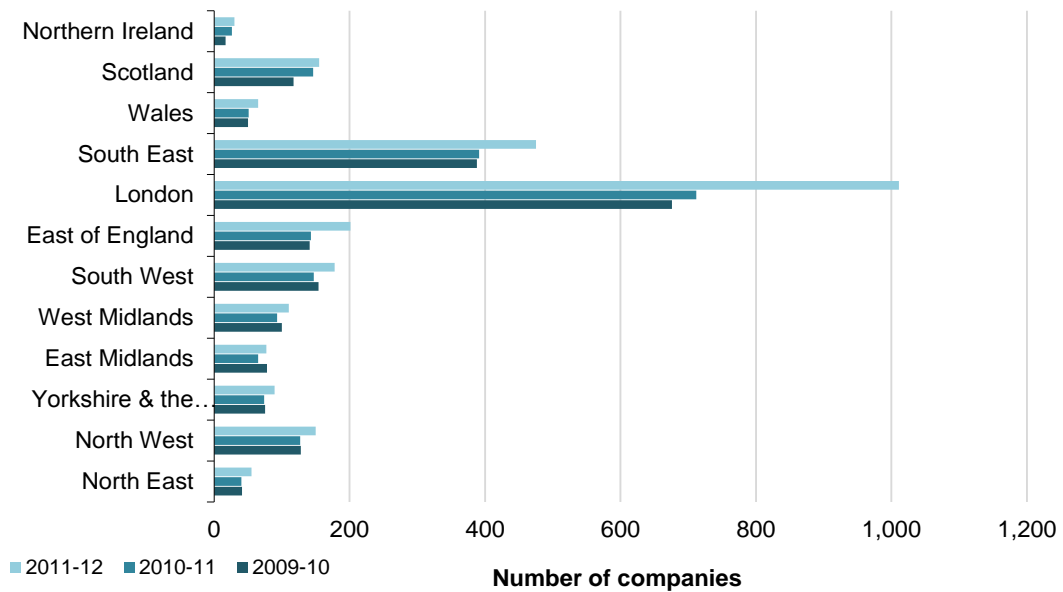
Source: Association of Investment Companies, Going for growth VCT investment 1997 to 2013

Enterprise Investment Scheme and Seed Enterprise Investment Scheme

- 2.29 The Enterprise Investment Scheme (EIS) is designed to help smaller, higher-risk trading companies to raise finance by offering a range of tax reliefs to investors who purchase new shares in those companies.⁶ The UK government publishes statistics on the number of companies raising finance using EIS and the amount of funds by region (Figure 2-7 and Figure 2-8).

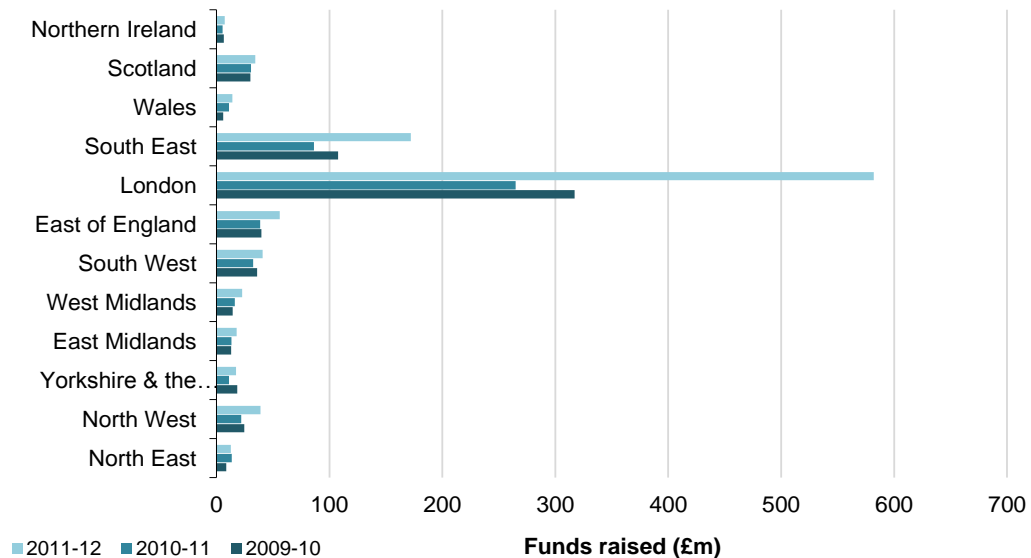
⁶ <https://www.gov.uk/government/publications/the-enterprise-investment-scheme-introduction/enterprise-investment-scheme>

Figure 2-7: Number of companies raising finance through EIS, 2009-10 to 2011-12



Source: HMRC

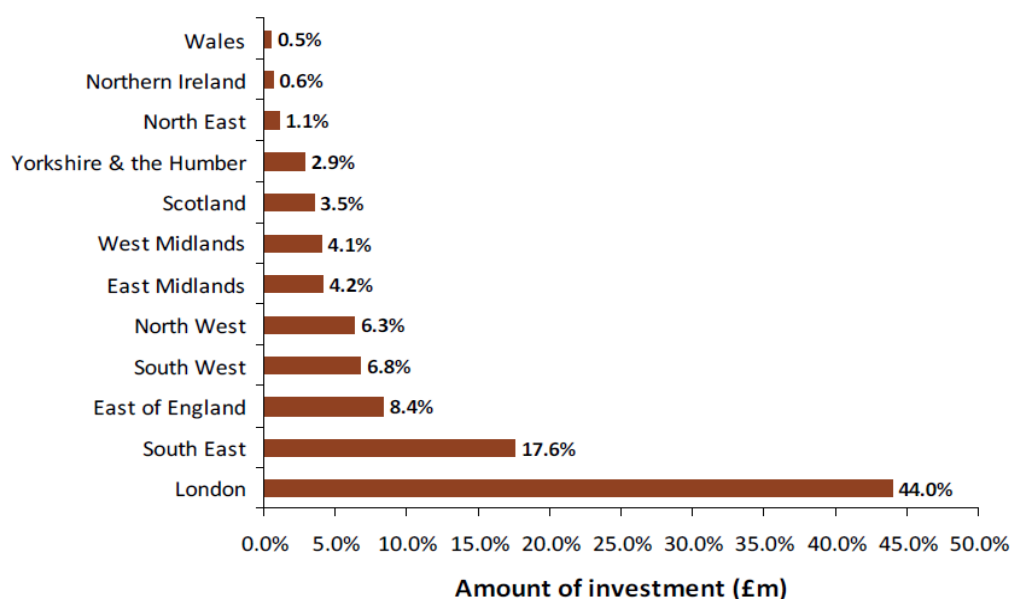
Figure 2-8: Funds raised of companies raising finance through EIS, 2009-10 to 2011-12



Source: HMRC

2.30 Launched in 2012-13, the Seed Enterprise Investment Scheme complements the Enterprise Investment Scheme (EIS) and is designed to help small, early-stage companies raise equity finance by offering tax reliefs to individual investors who purchase new shares in those companies. Data in the regional distribution of SEIS investment in 2012-13 (in December 2014) indicates that Northern Ireland accounted for 0.6% of the total across the UK.

Figure 2-9: Geographical distribution of amount of SEIS investment (2012-13).



Source: www.gov.uk/government/uploads/system/uploads/attachment_data/file/390876/Commentary_EIS_SEIS_Dec_14_V3.pdf

Benchmarking public interventions

- 2.31 As noted above, the Invest NI Fund of Funds intervention provides £160m of investment for early stage and growth finance, covering equity, loan and mezzanine finance. Data on equivalent regional programmes across the UK are set out in Table 2-12.

Table 2-12: Scale of early stage and growth finance interventions across the regions of the UK

Region	Value (£m)	Per private enterprise (£)
Wales	223.5	2,489
West Midlands	205	1,158
Scotland	185	1,182
Northern Ireland	160	2,409
North West	155	718
North East	118	2,001
Yorkshire & Humber	90	579
London	45.5	114
East	27.65	123
West Midlands	26	147
South East	24.8	71
East Midlands	15	100

Source: SQW research Note; data covers scale of potential supply of public sector-backed interventions only, not level of wider private sector investment The data are for regional schemes and do not include national schemes

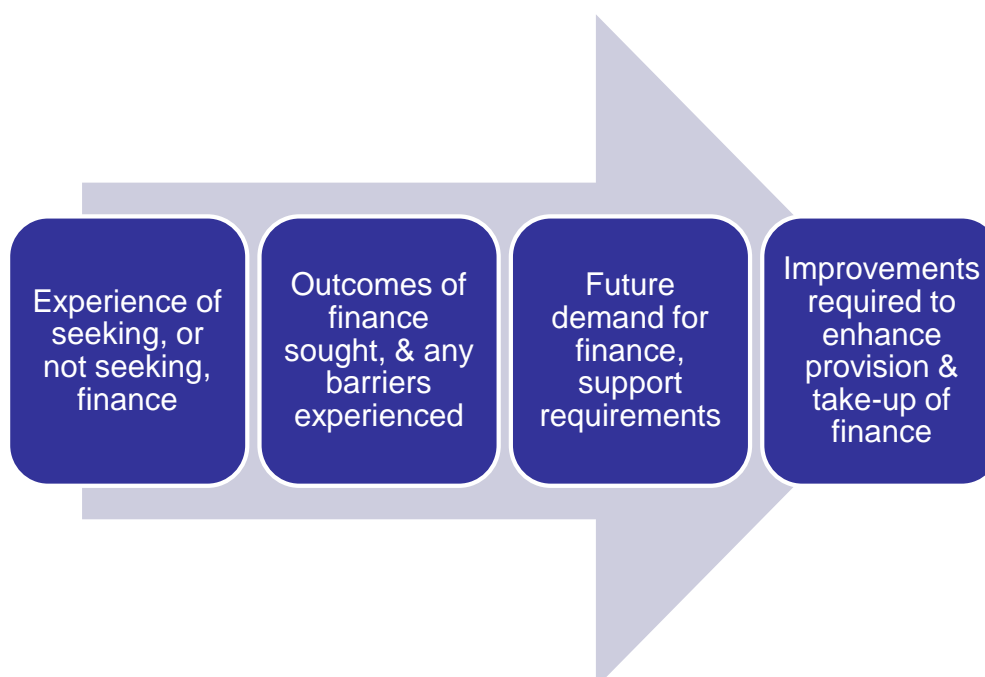
3. Estimating future demand

This Section presents evidence on the demand for early stage and growth finance in Northern Ireland drawing on a survey of entrepreneurs and growth-oriented firms

Survey approach and focus

- 3.1 Evidencing demand for early stage and growth finance is challenging, for a number of reasons: because large-scale surveys are either irregular or partial, and do not have the scale to accurately measure the true extent of demand for this type of finance which is typically associated with a very small proportion of the business population; because demand for early stage and growth finance also comes from entrepreneurs that are not currently trading, as well as established firms; because of the issue of ‘discouraged’ entrepreneur/firms that do need finance, but do not apply owing to the belief they would be turned down.
- 3.2 To provide primary evidence on demand for this work, a bespoke online survey was designed and distributed to entrepreneurs and relevant growth-oriented businesses across Northern Ireland. The survey was distributed through a number of routes including databases of contacts from NISP Connect, HALO, and Invest NI, and Northern Ireland companies involved with InterTrade Ireland’s Seedcorn Investor Ready Competition. The survey was also advertised on the NI Business Info website. The survey covered four main areas (Figure 3-1).

Figure 3-1: Coverage of the business survey



Source: SQW

- 3.3 The online survey secured 72 responses from firms/entrepreneurs across Northern Ireland. The findings of the survey related to the four main areas are set out below, following an initial characterisation of the respondents to frame the findings.

Respondent characteristics

- 3.4 The businesses/business ideas of survey respondents covered a wide range of market sectors. However, respondents with businesses/business ideas in the ICT, and health and life sectors were most prominent. Market sectors in the 'Other' category included aerospace, financial and professional services, and agri-tech.

Table 3-1: Market sector of survey respondents (n=72)

Market sector	Number of respondents
ICT	33
Health and life sciences	13
Advanced manufacturing and advanced materials	7
Sustainable energy	5
Other	14

Source: Online survey

- 3.5 A majority of survey respondents were trading, and these were generally new firms (trading for no more than three years). However, a notable minority were in the pre-start phase.

Table 3-2: Trading status of survey respondents (n=72)

Years trading	Number of respondents
Not yet trading i.e. pre-start	13
Less than one year	10
1 year	8
2 years	10
3 years	11
4 years	3
5 years or more	17

Source: Online survey

- 3.6 The vast majority of respondents had businesses with no or 1-9 employees, either in Northern Ireland or outside Northern Ireland.

Table 3-3: Number of employees in respondent businesses (n=72)

	Employees in NI	Employees outside NI
0 employees	14	50
1-9 employees	48	19
10-49 employees	9	1
50-250 employees	0	0
Over 250 employees	1	1

Source: Online survey

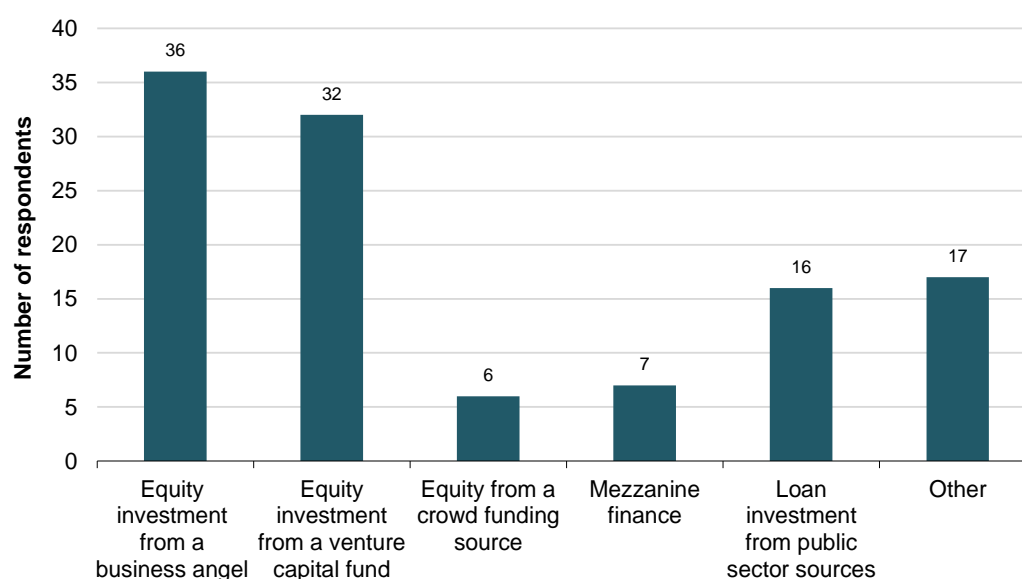
3.7 Taking a mid-point in the ranges, and excluding one outlier that reported that reported over 250 employees both inside and outside Northern Ireland, the average size of business across survey respondents was around 7 employees in Northern Ireland.

Experience of seeking, or not, finance

3.8 Survey respondents were asked whether they had tried to obtain early stage and growth finance for their business in the past three years (i.e. in the three years prior to the time of the survey in late 2014). Of the 72 respondents, 55 stated they had tried to obtain early stage and growth finance, of which around a third (19) had tried one, and around two-thirds (36) more than once. Seventeen respondents stated they had not had tried to obtain early stage and growth finance for their business in the past three years.

3.9 Of the 55 respondents that had tried to obtain early stage and growth finance for their business in the past three years, the sources of finance sought are set out in Figure 3-2 below. Equity investment from business angels and/or venture capital were the most common sources of finance sought, although there is evidence of respondents seeking support from crowdfunding, and more commonly loans from the public sector. The most common source of 'other' finance cited by respondents was grants from the public sector, including from the Proof of Concept programme.

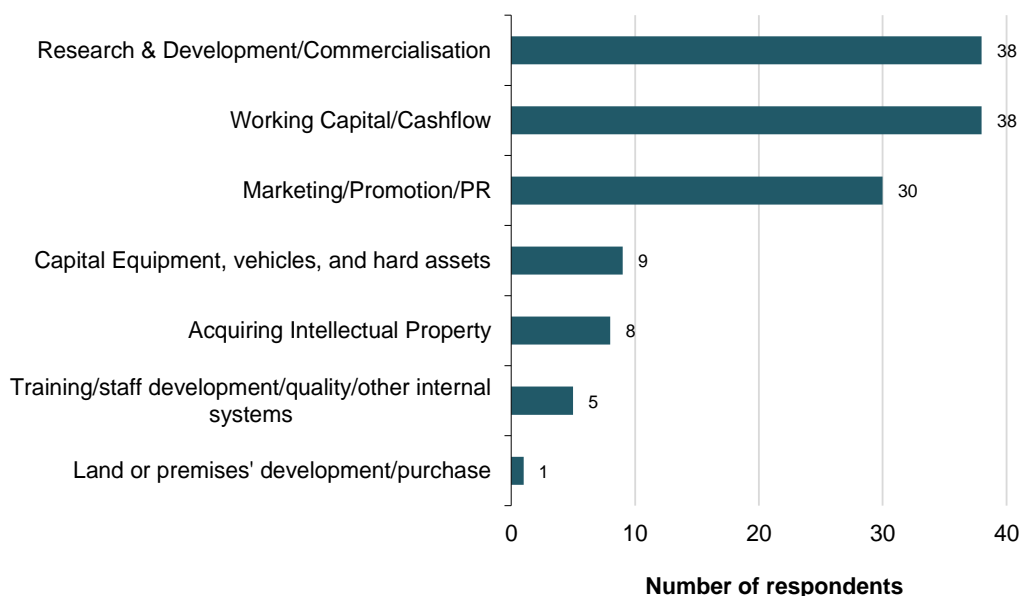
Figure 3-2: Sources of finance sought by respondents in the last three years (n=55)



Source: Online survey

3.10 Of the 55 respondents that had tried to obtain early stage and growth finance, 46 stated that this was at the start-up stage, and 16 at the expansion stage, with seven respondents seeking finance for both the start-up and expansion stage in the past three years. More specifically, the purpose of finance sought is set out in Table 3-3, with finance for R&D/commercialisation, working capital and marketing/promotion the most prominent.

Figure 3-3: Purpose of seeking early stage and growth finance (n=55)



Source: Online survey

- 3.11 As noted above, one of the challenges in estimating the level of demand for early stage and growth finance (as with other forms of finance) is the presence of those who are discouraged from seeking finance. As such, respondents that stated they had not tried to obtain early stage and growth finance in the past three years were asked whether they *needed* finance in this period i.e. they needed it, but did not apply. Of the 17 respondents that did not seek finance, eight said they did need finance in this prior, and eight that they did not (one did not know). Although the absolute numbers are small, and so should not be taken too far, in proportional terms this indicates around one in ten of the survey sample needed, but did not seek to obtain, early stage and growth finance this last three years.
- 3.12 When asked why they did not seek finance, the assumption of rejection was not cited by any of the eight that needed but did not apply for finance. The most common reasons were owing to concern over the time inputs required to seek finance (six of the eight) and lack of information on what finance was available, or where to look for it (four of the eight in each case).

Outcomes of seeking finance

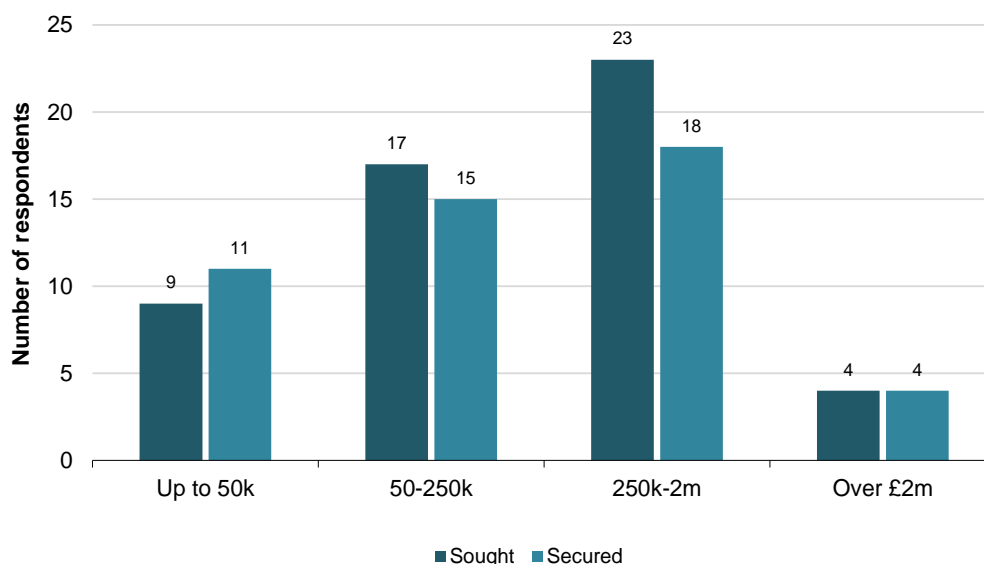
- 3.13 The outcomes of the effort by respondents to obtain finance is set out in the table below, covering first, the outcome in headline terms by type of finance and whether any difficulties were experienced (Table 3-4), and then comparing what was sought and secured by beneficiaries at different levels of finance (Figure 3-4).

Table 3-4: Outcome of finance sought

	Equity - business angel (n=34)	Equity - venture capital fund (n=32)	Equity - crowd funding (n=5)	Mezzanine finance (n=4)	Loan - public sector (n=15)	Other (n=14)
Had no difficulties in obtaining finance	10	5	1	1	1	6
Obtained all the finance required but with some problems	11	12	1	1	4	4
Obtained some but not all of the finance required	4	5	1	0	4	1
Was unable to obtain any finance	9	10	2	2	6	3

Source: Online survey

Figure 3-4: Level of finance sought and secured over the past three years



Source: Online survey

- 3.14 Three points are worth noting from this data. First, whilst most respondents were able to secure the finance sought, between a quarter and a third of respondents across finance types were not able to obtain finance, and others secured some, but not all of the finance they sought. We do not know the quality of the investment propositions, and there may be valid reasons why the finance was not provided, in full or part (just because firms/entrepreneurs want finance, does not need they should necessarily get it), but the data do suggest some unmet demand for finance
- 3.15 Second, a further group of respondents secured the finance they sought, but experienced some difficulties in doing so: when probed further on the nature of these difficulties the most common were unacceptable terms/conditions of offer of finance, no/insufficient security or collateral to secure the finance, and doubts from the finance provided on the products/services and proposed markets. Two other themes emerged when respondents

stated there were other difficulties experienced: the quality and scope of the angel network, and the broader sophistication of the investor landscape. Examples of responses (anonymised) from respondents regarding these issue are set out below.

Reasons for experiencing difficulties in obtaining finance

“There are a lot of biz angels who meet you 3 or 4 times but then pull out last minute. Usual excuse is financial difficulties or terms not good enough. Getting biz angel investment in NI is extremely difficult”

“Lack of angel investors to join in the round to make it worthwhile”

“Pool of private angels (HALO) too small”

“Lack of any N.I. seed round investors who understood technology; total lack of investors who had any understanding of cutting / bleed edge markets or products.”

“Don’t really know - but suspect what we do is sometimes too far ahead of the curve to be funded to level we believe it should be - so its more about risk management I suspect”

“Selling a complex product that was not properly understood by the Angels”

- 3.16 Third, the balance between the value of finance sought and finance secured was broadly consistent across the different levels of finance, although securing less than sought was most common in the £250k to £2m range where there are historically recognised market failures across the UK (and more widely).

Future demand for finance and support requirements

- 3.17 Looking forward – providing direct primary evidence on demand for early stage and growth finance in Northern Ireland – three quarters (55) of respondents stated that they would be seeking early stage and growth finance during the next three years (of which 37 said ‘definitely’, and 18 ‘likely’). Twelve stated it was not likely they would seek early stage and growth finance during the next three years, and five did not know.
- 3.18 The number of respondents that identified they would seek each type of finance, and the aggregate value of the finance sought across these respondents is set out in Table 3-5.

Table 3-5: Type and scale of financed sought in the next three years

	Number of respondents	Value of total finance sought (£k)	Average value (£k)
Equity investment from business angel	27	8,655	321
Equity investment from venture capital fund	32	57,340	1,792
Equity from crowd funding	7	795	114
Mezzanine finance	3	770	257
Loan investment from public sector sources	11	1,960	178
Other	4	2,490	623

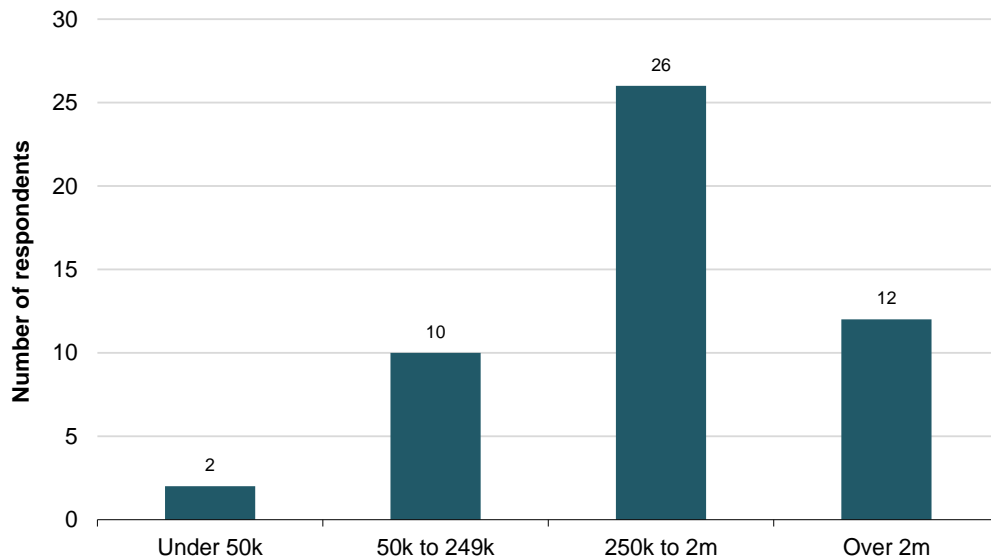
Source: Online survey

- 3.19 The most common source of finance expected to be sought was equity finance from angel investment and/or formal venture capital. The total value of finance expected to be sought

(representing potential demand) across the survey respondents is around £72m, indicatively demand of around £24m per annum over the next three years.

3.20 The range of total finance expected to be sought by each respondent (including from multiple sources), is set out in Figure 3-5; notably, 26 respondents indicated they will be seeking between £250k to £2m of early stage and growth finance over the next three years.

Figure 3-5: Scale of finance sought by respondents in the next three years



Source: Online survey

3.21 This data suggest a significant level of demand from the survey cohort. However, two caveats are important: first, the data represent the scale of finance that respondents stated they expect to be seeking, whether they will in practice seek to obtain this finance cannot be known; and second, not all of this demand will represent a viable proposition to the market in terms of scale or quality, the data represent potential demand that respondents stated is required, not the scale of finance that is necessarily genuinely needed.

3.22 Further, whilst the £72m from the survey cohort represents a significant potential demand for the supply-side in Northern Ireland to consider, investors from elsewhere will also be competing potentially for securing deals. As indicated in Table 3-6 of the 55 respondents that stated they will be seeking finance in the next three years a majority (36) stated they will be looking both in Northern Ireland and outside Northern Ireland, with these respondents representing £46m of the £72m total finance sought from the survey cohort.

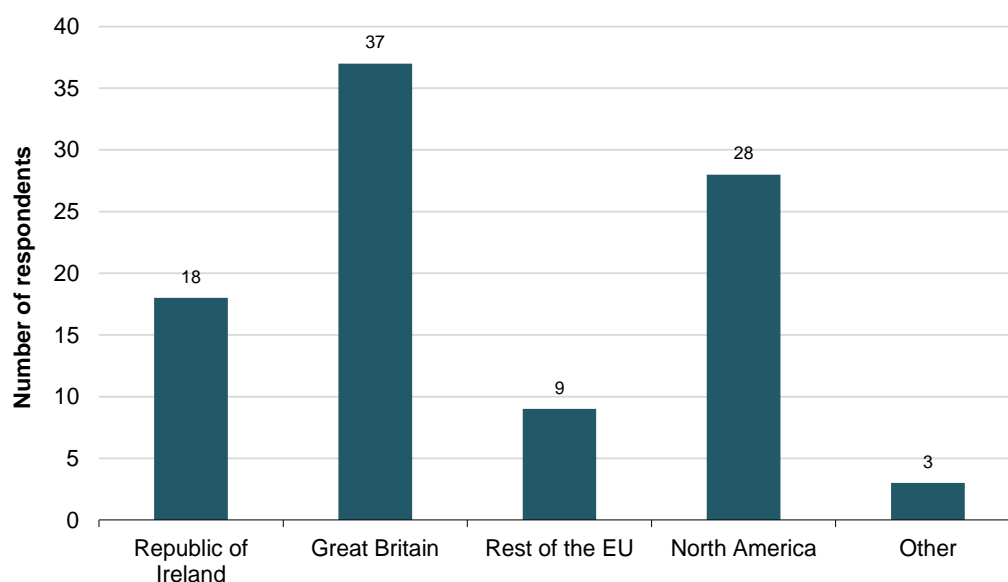
Table 3-6: Location where respondents will be seeking finance and volume of finance sought

	Number of respondents	Value of finance sought (£k)
Northern Ireland only	9	4,000
Outside Northern Ireland only	10	22,050
Both	36	45,960

Source: Online survey

- 3.23 On the one hand, this data emphasises the issues with the scale of the supply-side in Northern Ireland highlighted elsewhere in the wider research. Whilst the nature of early stage and growth finance means that it crosses borders to some extent, it is notable that most of the respondents seeking finance consider that they have to look elsewhere; under one in five of the survey respondents seeking finance stated this would be focused on the home market (i.e. Northern Ireland only).
- 3.24 However on the other hand, and more positively, it also indicates that on the demand side, firms and entrepreneurs in Northern Ireland are open to, seeking to engage with, the broader investment community in order to secure finance as a way to address the issues of scale on the supply-side. Indeed, as indicated below, whilst Great Britain (largely we suspect including London) is the most common location where respondents will seek finance, many also identified North America (see Table 3-6).

Figure 3-6: Non-NI locations where respondents will seek finance



Source: Online survey

- 3.25 Respondents were also asked if they were to apply for early stage and growth finance whether they would need help with a range of issues in order to identify where there may be a case for new or enhanced support to those seeking finance. As indicated in Table 3-7, the most common area where respondents indicated that they would need support was to develop a better understanding of different types of finance available to them, cited by 35 of the 55 seeking finance. However, other areas where help may be required was identified by consistently around 20 of the 55 respondents seeking finance in the next three years, indicating potentially high levels of demand for further support around investment readiness and broader enterprise skills development. Where respondents cited 'other' help, the issue of matching/introductions to investors was cited on a number of occasions.

Table 3-7: Areas of support needed

Support area	Number of respondents
Better understanding of different types of finance available	35
Better understanding on what growth funders look for in business plans/applications	22
Improving your wider personal investment-readiness skills	23
Wider help with developing the resilience of the business	22
Follow-on support after successful/unsuccessful finance applications	24
Better understanding of the downside of taking new external finance, as well as the benefits	21
Better understanding of the time associated with accessing external finance	20
Other	9

Source: Online survey

Improvements to the early stage and growth finance landscape

- 3.26 In the final part of the survey, respondents were asked to comment how the provision and take-up of early stage and growth finance in Northern Ireland could be improved. A wide range of responses were provided from across the survey: three key themes emerged.
- 3.27 First, linked to the findings above related to information on what is available, a number of respondents cited the need for **a more coherent, and less fragmented, provision of information on what finance is available to firms/entrepreneurs**. We are aware that work is currently underway between the Science Park and Queens University to develop a ‘map’ of finance sources that can be used by firms/entrepreneurs. Examples of feedback provided by respondents related to this issue is set out in the box below.

Better and more accessible information

“A central point of access where I can find in one place, what funding options there are for early stage and growth business. I have to go looking for what is available, it’s knowing where to look is the issue - a dedicated website would be the answer.”

“It takes a while to get your head around the different types of funding available and the implications of that fund. It’s also quite separate in its structure. It would be helpful to have a guide to funding that explains the various organisations and sources and how to access them.”

“Better line of sight of which companies and what products are available - a single portal for all of this’

“A simplified menu of options in the market available to NI companies”

- 3.28 Second, the **need to develop the scale and breadth of the investment community, including the need for a more competitive market** in Northern Ireland. This issue is not new, and is well recognised by stakeholders consulted and the literature reviewed, as reported on elsewhere in the report. Examples of feedback provided by respondents related to this issue is set out in the box below.

Developing the scale and breadth of the investment community

“The real issue in Northern Ireland is the lack of angel investors and real VCs. The financial grants that are available are brilliant, but when it comes time to seek private investment things get difficult. Most investors in NI are only willing to put in £10-20k, meaning if you want to raise a meaningful round you need to secure 10-20 investors which is next to impossible.”

“A larger pool of experienced angel investors that know the sector you are looking them to invest in and can bring more to the company than just money.”

“There seems to be a lack of funds in general i.e. not many alternatives”

“More competition i.e. more funds; more experienced, supportive and ambitious fund managers and advisors”

- 3.29 Third, linked to the above and the previous evidence on difficulties in securing funding in the past (see 3.15 above), is the issue of the **‘sophistication’ and perceived behaviours and approaches of the investment community** in Northern Ireland. This was reported to apply particularly to technology-rich industries and sectors where specialist knowledge is required. Given the scale of Northern Ireland’s market this is perhaps not surprising – with a focus historically on generalist rather than specialist funds - but does have implications for where entrepreneurs/firms are seeking finance and their ability to raise this finance locally; this said, it was noted by wider stakeholders engaged in the research that an increasing proportion of investment managers in Northern Ireland now come with technology industry experience. Examples of feedback provided by survey respondents related to this issue is set out in the box below.

Sophistication and perceived behaviours of the investor community

“Funding bodies need to have more confidence in the applicants as we are still very young in understanding the start-up dynamic in Northern Ireland, and companies need more time to grow and scale. However, I’ve experience a short sightedness from funders and they all appear to have a background in accountancy yet have never experienced what it was like to run their own business, so I feel that some expectations of fund managers are unrealistic and not in tune with the difficulties and challenges that face start-ups and those start-ups seeking investment to help move on from early traction into a seed investment round.”

“For technology focused companies working in high-growth markets there needs to be access to respected individuals who can add their knowledge and backing to a products or company. The current pool of funds in Northern Ireland are incredibly limited and unable to understand or comprehend the fast moving high growth technology products such as cloud, IoT, etc. resulting in poor or organic growth after any seed round.”

“There is too much “short-term” thinking, with investors more interested in making a x10 return in a few years and exiting as quickly as they can. This is especially problematic in our sector, namely pharma, when clinical trials and product stability can take years. Why invest in a pharmaceutical product with its associated protracted regulatory approval processes, etc., when you can invest in a piece in iphone software! There needs to be a bigger pool of people who have the ability to

invest in the long-term and an interest in doing so.”

“Somehow the angel community need to gain a better understanding of new technologies and markets so that their natural 'safe zone' of investment doesn't reside only in older native industries, e.g. property, retail and manufacture.”

- 3.30 Fourth, and again picked up in the consultation evidence (see Section 5), the need for Northern Ireland to be more open and connected to attract investment and investors from elsewhere, including the potential to support firms to access finance from other locations. Examples of feedback provided by respondents related to this issue is set out in the box below.

Sophistication and perceived behaviours of the investor community

“My advice is for HALO to have a serious presence in London and possibly USA - where there are more angels (of better quality) - no need to look for an NI connection either - just facilitate entrepreneurs to get in front of proper business angels as soon as possible (wherever they are ... If I was trying to raise money again (I've only done it once) I would focus on London straight away”.

“Sustainable high tech, high potential indigenous start-ups require more capital and different types and levels of funding than currently available locally, but a larger local VC fund is unlikely to have the breadth of investment opportunities to make it viable. We need local resources (who?) to build relationships with global VCs and act as opportunity scouts, providing the indigenous talent with access to the type of VC funding needed to make their company a success while still being based here.”

“Need more connections to angels/VCs outside the province. Being a small place, the range of specialist knowledge of angels/VCs covers some areas of business, but doesn't include others. NI businesses shouldn't be limited by the question of luck - does a NI-based angel happen to have interest/knowledge in your particular area. Should be able to cast net wider.”

“I think supports to help NI companies secure funding from London would be the best help to start-up companies”.

Quantifying the demand picture

- 3.31 The survey provides encouraging evidence on the level of demand for early stage and growth finance in Northern Ireland. In the context of the BVCA and other data presented in Section 3 on the scale of the market historically in Northern Ireland, the potential demand of around £70m over the next three years, largely for equity finance, is significant. Whilst finance will also be sought from investors outside Northern Ireland, notably in the rest of the UK, the Republic of Ireland and North America, indicatively the data suggests potential demand of around £20m per annum over the next three years, from the survey cohort alone.
- 3.32 It is not possible to gross this data up to estimate aggregate demand across Northern Ireland with any certainty. There is no population of entrepreneur/firms that may be seeking finance, and the early stage nature of the investment covered means that new entrepreneurs/firms seeking finance will continually emerge that may be seeking finance.

However, to provide an indication of the potential scale of demand two perspective are possible:

- Perspective 1: based on the SME population and rates of firms seeking finance
- Perspective 2: based on evidence from the Knowledge Economy Index for Northern Ireland on the number of knowledge-economy business start-ups.

Perspective 1: SME population

- 3.33 Previous evidence indicates that around 1% of SMEs in Northern Ireland seek equity finance⁷ (this is consistent with more recent data from the British Business Bank for the UK as a whole⁸). This can be used to estimate the aggregate value of demand, using our survey as of growth-oriented firms/entrepreneurs to provide an average value of finance sought.
- 3.34 The survey indicates that where entrepreneur/firms are expecting to seek finance in the next three years, the average value of finance to be sought is c. £1.4m. This needs to be adjusted to take into account of the likely proportion of this demand that is ‘investable’, and that some of these respondents may not in fact ‘follow through’ in seeking this finance. Whilst there is a high levels of uncertainty here, based on the survey and wider evidence we have assumed that half of the identified potential demand is both sought and is investable as an upper-case estimate⁹, with a lower-case estimate of 25%. This provides a per firm three-year demand and one-year demand, which is then applied to the number of firms expected to seek equity finance based on 1% of relevant sectors for the upper-case and lower-case estimates respectively.¹⁰

Table 3-8: Quantifying the demand for finance – Perspective 1

	Upper-case	Lower case
Number of firms (0-49 employees) in relevant sectors	8,235	
Number expected to seek finance (at 1% of total)	82	
Average value sought - three years (£k)	734	367
Average value sought - one year (£k)	245	122
Aggregate value sought - three years (£k)	60,474	30,237
Aggregate value sought - one year (£k)	20,158	10,079

Source: Online survey and BRES

- 3.35 The data suggests potential demand for early stage and growth finance (largely equity based) in Northern Ireland of approximately £20.2m per annum under the upper-case, and £10.1m per annum under the lower case.

⁷ EAG (2013) Review of Access to Finance for Northern Ireland Businesses, Economic Advisory Group, March

⁸ See <http://british-business-bank.co.uk/wp-content/uploads/2014/12/Final-BMG-SME-Journey-Research-Report.pdf>

⁹ The survey indicate that around two-thirds of respondents were successful in securing finance sought in the past three years, however, not all of those that have stated they will apply may do so. A 50% value is consistent with evidence from Eurostat that around half of equity finance sought was secured from a survey in 2010. See [here](#) for details

¹⁰ The sectors covered are, J: Information and communication, K : Financial and insurance activities, M: Professional, scientific and technical activities, R: Arts, entertainment and recreation

Perspective 2: Knowledge Economy Index

- 3.36 The latest edition of the Knowledge Economy Index for Northern Ireland¹¹ reported that in 2012 there were 295 knowledge economy start-ups¹². Not all of these firms will necessarily seek equity or other forms of finance, however, the proportion seeking equity finance will be far higher than the wider business population. Recent research on a similar group of young and established technology-based firms in the UK found that around a quarter (23%) sought equity finance (either venture capital or business angel finance).¹³ The finance sources covered by the survey (on which the average per firm finance metric is based) also included crowd funding, mezzanine finance and public-backed loans. As such, the 23% has been adjusted to 30%.
- 3.37 This data suggest that 30% of the estimated 295 knowledge economy start-ups each year will be seeking early stage and growth finance. The table below provides an indicative estimate of the total potential demand for early stage and growth finance from this cohort in the next three years using the same assumption on the average value of demand from our survey described above.¹⁴

Table 3-9: Quantifying the demand for finance – Perspective 1

	Upper-case	Lower case
Number of knowledge economy start-ups	295	
Number expected to seek finance (at 30% of total)	88.5	
Average value sought - three years (£k)	734	367
Average value sought - one year (£k)	245	122
Aggregate value sought - three years (£k)	64,990	32,495
Aggregate value sought - one year (£k)	21,663	10,832

Source: Online survey and BRES

- 3.38 The data suggest potential demand for early stage and growth finance (largely equity based) in Northern Ireland of approximately £21.5m per annum under the upper-case, and £10.8m per annum under the lower case.

Summary

- 3.39 These data should not be taken too far – they rely on estimates of both the population of firms seeking early stage and growth finance (which is fluid, and using data which is now in places quite dated), and self-reported data from a survey on reported future intention. However, these caveats accepted, the data suggest that the scale of potential annual demand for early stage and growth finance in Northern Ireland in the next few years may be between around £50m to £65m, although it is important to note that those seeking finance will be looking outside of Northern Ireland as well.

¹¹ Knowledge Economy Index Report 2014, NISP Connect

¹² The report contains a list of the relevant sectors identified as knowledge economy

¹³ David North, Robert Baldock & Farid Ullah (2013) Funding the growth of UK technology-based small firms since the financial crash: are there breakages in the finance escalator?, *Venture Capital: An International Journal of Entrepreneurial Finance*, 15:3, 237-260

¹⁴ It is worth noting that this perspective may underestimate the scale of demand given that it focuses on firms in their first year in order to focus on new-starts only.

4. Messages from stakeholder research

This Section contains sets out the key messages from primary research with stakeholders across the early stage and growth finance market including bilateral discussions and workshops.

4.1 In this section we present the key messages from our stakeholder research across Northern Ireland, the UK, and the Republic of Ireland. The stakeholder engagement involved two strands of work.

- A series of bilateral consultations with representatives from the Northern Ireland finance industry, advisors, other Northern Ireland stakeholders, experienced entrepreneurs as well as UK stakeholders. The purpose of the consultations was to elicit views on: key contextual factors influencing the growth finance market in Northern Ireland; supply and demand-side issues pertinent in Northern Ireland; the role of public intervention; and perspectives on future ambition and interventions.
- Two workshops: one with economic development practitioners, and the other with finance experts. The purpose of the workshops was to test emerging study findings; and to look forward – regarding the level of ambition, and actions required, to develop the early stage and growth finance market in Northern Ireland in the future.

4.2 A full list of consultees can be found in Annex A. The paragraphs below provide a synthesis of the key findings from the stakeholder research. It is worth pointing out that whilst these findings are not ‘statistically robust’ they do reflect the views and perspectives of around 40 key players in the early stage and growth finance market in Northern Ireland and more widely.

Context

4.3 Five key themes emerged from the stakeholder research relating to the socio-economic background and context in Northern Ireland, with relevance to the early stage and growth finance market:

- First, there is a constrained bank debt finance market in Northern Ireland which is more pronounced compared to the rest of the UK. The underpinning reasons for this identified by consultees included: banks in Northern Ireland still being risk averse (especially to firm’s forecast income stream); low take-up of UK wide schemes in Northern Ireland e.g. Enterprise Finance Guarantee (EFG); retrenchment of Republic of Ireland banks from Northern Ireland; the majority of the market in Northern Ireland being taken by banks not operating in the rest of the UK; and the banking sector not acting coherently and with little co-operation. A related point is that the property market issues continue to hit SMEs in Northern Ireland, with many firms unable to access debt finance as they are already burdened with high levels of debt on property.

- Second, there remains a culturally and entrenched aversion to equity amongst the business base – with the dilution of ownership through equity to third parties regarded as not an attractive proposition even where this could help to grow the business. This is particularly true for family owned businesses, which are more important to Northern Ireland’s economy than elsewhere across the UK. This issue means that there is a greater reliance on bank and grant funding in Northern Ireland than elsewhere. The equity aversion issue was also regarded as being influenced by Northern Ireland having a young/small equity market, with few examples of success that can help to educate firms on the potential and benefits of equity investment.
- Third, Northern Ireland is considered spatially peripheral from the main networks of growth finance (e.g. London), this is despite technology reducing the importance of distance - proximity is still thought to matter and it is hard for Northern Ireland firms to break into London and wider UK market to access growth finance (and wider business support).
- Fourth, there is a perceived lack of entrepreneurship development exists, with lack of entrepreneurial role models; need for enhancing the culture of entrepreneurship through universities (albeit, the pipeline has improved from a low base); greater need for education, awareness and upskilling of entrepreneurs (and their advisors) on finance and wider business development topics (e.g. management, leadership, marketing).
- Fifth, and more positively, it was recognised by consultees that there is an integrated tech community in Northern Ireland benefiting from good communication and connections, which are helped by its small size i.e. everyone knows everyone. There is also a level of engagement with the US which is perceived to be greater compared to the rest of the UK, due to connections from the Northern Irish (and wider Irish) diaspora.

Supply

- 4.4 Positively, the stakeholder research identified a consistent recognition that there have been improvements in the supply of seed, early stage and growth finance in recent years. It was noted by consultees that the Invest NI-backed funds have been central to this. This finding was reinforced by the workshop feedback which suggested that the volume of venture capital increased in recent years, including through Invest Northern Ireland intervention via ‘Fund of Funds’, where market failures were evident.
- 4.5 Despite this improvement, there is general consensus that there is a lack of private venture capital at early stage and Series A funding (this is similar to the UK, but accentuated by the small market in Northern Ireland). Themes emerging from the stakeholder feedback included:
- There is limited Series A level operational knowledge in Northern Ireland and limited fund connectivity between Northern Ireland seed funds and UK series A funds (connections are slightly better with the Republic of Ireland)

- There is a gap between seed and series A funding where some portfolio companies are needing to stretch funds before being ready to get Series A
- Although there are two Series A funds in Northern Ireland (Kernel and Crescent), there is a need for businesses to be invested in by Series A funds which are international and more outward looking
- The required funding in the short to medium term to meet the needs of Series A and further growth funding investment will be considerable in Northern Ireland - to tackle this supply deficit, the public sector needs to support VCs and encourage more private funding leverage (through pension funds, family offices, institutional investors, more foreign investors, and favourable tax measures to assist in encouraging unlocking the corporate and pension funding pots). It is noted for example that the New York State Pension Fund has invested heavily in two rounds of the Crescent Fund, and the Bank of Ireland invested in Kernel Capital, demonstrating how Northern Ireland funds can access successfully international investment.

4.6 Some consultees also noted that there was a funding shortage at sub-£50k level (although this is now being addressed by the Small Business Loan Fund) It was recognised that at this level there is little or no private finance for new and established micro businesses which are seeking to grow – these businesses tend not to have a demonstrable track record of growth but do require relatively small amounts of funding, and that the sub-£50k scale does not represent a cost effective strategy for most private sector investors. In addition, the lack of pipeline of investments at early stage stifles demand further-up, contributing to insufficient flow to interest the market, resulting in lack of supply at the £1-2m range. It is also noted that the UK-wide Start-Up Loans programme that provides loans of up to £25k to new firms or those established for under a year was rolled-out to Northern Ireland in 2014.

4.7 Four other themes emerged from the stakeholder research regarding the supply-side:

- First, there remained a perception of relatively low levels of angel investment in Northern Ireland, although it was expected that Halo syndicates may lever-up average deal size over time (currently £150k vs. UK av. £500k). The research identified a consistent view of the need to develop more angel networks and linkages, key to which will be syndication, Co-Fund, and Angel List type approaches driven by sector interest not location. Linked to this, a number of stakeholders noted that despite its small size, there is limited knowledge of ‘where the money is’ in Northern Ireland that could be better utilised to scale-up angel investing, notably where high net worth individuals invest, who advises them, and the potential to unlock finance in family offices. More could be done in order to ensure local resources/assets are maximised.
- Second, supply-side sectoral gaps were identified in engineering, telecoms, agriculture and energy. Plus, more intensive R&D firms are reported to need more than £0.5m equity to meet their growth ambitions (e.g. in sectors like energy and advanced engineering). Whilst there was a recognised risk of funding specialisation ‘too soon’, a more sector-oriented approach to supply, potentially linking to non-Northern Ireland focused funds rather than local supply, was identified as being necessary over the medium-term.

- Third, and linked to the previous point, the research identified a general lack of links to, and ability for those seeking finance to access, UK wide funds - more connectivity with UK funds was consistently reported as being required given the scale of the Northern Ireland 'pool'. In addressing this issue, there is an acknowledgment that Northern Ireland needs to shout about its' "world class opportunities" and strengths; taking the responsibility to change perceptions, with the need to have a more direct approach in engaging with UK (and wider) funds and agencies.
- Fourth, whilst the level of competition between existing funds was regarded as improving, as the scale of supply has increased (particularly given the two Development Funds and between techstart NI and the Co-Fund), there remained a view amongst stakeholders that more competition was needed in the market, particularly at the earlier stage.

4.8 It is also worth noting that crowd funding was identified as an alternative source of finance which needs to be encouraged and developed more in Northern Ireland.

Demand

4.9 Consistent with the generally improving supply-side picture, the stakeholder research indicated that the pipeline of demand for early stage and growth finance is increasing – from seed finance through to Series A. Whilst the exact scale of demand is considered uncertain, it is expected to increase both given the improving macro-economic outlook, and developments in the local market. However, despite this improving picture a number of challenges remain, as identified by stakeholders consulted:

- There exists information failures i.e. where firms and their advisors look for finance. To address this, education and raising awareness of funds/role of equity finance in growth is important. Further, there is a perceived immaturity associated with the Northern Ireland market - there is a preference for returns 'now' and a lack of understanding of value of investment in Intellectual Property (IP) with a 10-15 year lifespan. The upskilling/education of entrepreneurs and network of advisors in Northern Ireland is vital to address local culture and established thinking/practice.
- Despite progress being made, the consistent feedback from the workshops was that a range of co-ordination failures persist between the supply- and demand-side which provides a continued rationale for government intervention in Northern Ireland's early stage and growth finance 'space' (example of co-ordination failures include, academics seeking to commercialise their research and the investment community in the life sciences sector).
- The lack of investment readiness and entrepreneurship culture was highlighted. The quality of the "advisor network" for smaller firms operating at early stage and lower end of venture capital market was also regarded as "weaker" compared to rest of the UK. Interestingly, the workshop responses highlighted the nature of the business base in Northern Ireland – with a strong presence of 'back office' functions – this was identified as a barrier to entrepreneurship and growth-start activity, and driving demand for finance for new and early stage firms (this was linked to our comparator research for this study, particularly the Republic of Ireland).

- More university spin-outs/commercialisation is required, although it is recognised that this issue is by no means unique to Northern Ireland. There is limited feedback that HEIs in Northern Ireland have traditionally taken large equity stakes in their spin-outs, reducing incentive for the private sector. The question has been raised: is HEI investment at early-stage crowding-out market interest?
- Although the quality of demand has improved, this needs to be addressed further. Examples of specific areas that were identified by consultees included: lack of management and leadership training, advisors not being informed enough on finance schemes and not networked effectively, lacking quality in some IRPs for pre-seed/seed support (more than just mentoring); lack of public procurement links for early stage business development.

4.10 To stimulate the demand-side, consultees also suggested for example: support with developing quality of applications in less time, providing exposure to venture capitalists outside of Northern Ireland, sending Northern Ireland entrepreneurs to UK accelerators/incubators, developing local accelerators; and more widely supporting syndication and bridging between funds (e.g. with UK funds). The view from the workshops suggested a positive view of increasing demand for finance, but recognition that:

- quality of demand needs to further improve i.e. not all demand for finance justifies finance (e.g. in some sectors, especially digital, the quality of the propositions coming through needs to improve to match the increased sources of finance now available)
- developing the broader ‘innovation ecosystem’ in Northern Ireland to develop the quality of investment propositions was needed.

4.11 The workshop feedback repeatedly emphasised the importance of recognising *and* developing the wider ‘innovation ecosystem’. This wider ecosystem encompasses academic knowledge and skills, business knowledge and expertise (both in firms and within the business support system), the general level of appropriate education and skills, and wider infrastructure, as well as finance itself. Workshop participants also commented on the small size of Northern Ireland’s market, and referred to this as a constraint:

- but in the context of a globalised economy with venture capital funds increasingly looking to invest outside their ‘home’ state, it was suggested that this may reduce in the long term. In the short term however, the potential of spin-outs from Universities in Northern Ireland to locate elsewhere, such as Cambridge or London, to improve their access to finance was identified, as a competitive reality and an ongoing risk
- to developing early stage and growth finance locally – this also had implications for the extent to which sector-specific funds and expertise in the advisor and investment community regarding these sectors could be built and sustained convincingly locally.

4.12 The workshop feedback also suggested that there is a possibility to better publicise recent exits to try to harness and celebrate the positive effects of major exits.

Future perspectives

- 4.13 Looking forward, there was agreement among stakeholders that Northern Ireland should be ambitious in developing its early stage and growth finance market. Given its scale there was a perception that new models and approaches can be tested and piloted quickly, but also that there needs to be a focus on making hard decisions on which interventions to support – the ability to make tough decisions and invest resources will determine viable level of ambition.
- 4.14 So, what practically needs to happen to deliver on the intent to be ambitious in developing the Northern Ireland early stage and growth finance market? Stakeholders provided a range of responses which are summarised in the table below grouped around the themes of scale/breadths and competition, external connectivity and linkages, education and skills, sector development and the wider ecosystem. Note that the table sets out the responses provided by the stakeholders consulted at the time of the research; they are not the formal recommendations of this study (although we have drawn on them in thinking through the formal recommendations alongside the wider evidence base), and they have been presented as provided by stakeholders.

Table 4-1: Suggestions to deliver on the intent to be ambitious in developing the NI early stage and growth finance market

Theme	Response
Scale, breadth and competition	<ul style="list-style-type: none"> • Establish a pre revenue seed, early stage, growth fund with expertise of engineering and more intensive R&D investment development • Public funding needs to underpin the development of private VC activity and various supporting tax measures to assist in encouraging/unlocking the corporate and pension funding pots in order to encourage institutional investors to invest in Northern Ireland funds • Hold regular pitch events to help connect companies to international venture capital (20-25 VC firms), creating a sustainable community. • Activity to identify and assist existing businesses which are not getting cash-flow finance from banks which could grow with risk equity • Gather and provide data on bank lending in Northern Ireland in order to improve the evidence base to inform demand requirements for equity finance
Linkages / connectivity outside of NI	<ul style="list-style-type: none"> • Closer co-operation with UK-wide schemes such as Business Growth Fund (BGF) and Enterprise Capital Fund (ECF). • Closer co-operation with the British Business Bank, European Investment Bank (EIB) and European Investment Fund (EIF) • Improve access to EFG; do more to get banks to lend to growth firms; increase the supply of Growth Loan Fund with a second fund of £50m • Work more collaboratively across the UK regions e.g. a cross-border fund/range of funds, a Northern Ireland incubator/accelerator based in London or Manchester • Activity to bring in foreign investment and skills into the venture capital market, and access to international funders from different sectors • Work to catalyse university entrepreneurial culture and commercialisation to drive up the number of viable spin-outs • Support to firms on how to access finance outside Northern Ireland
Education and skills	<ul style="list-style-type: none"> • Develop the local skills base to generate more high skilled jobs for local people in the growing portfolio companies - educational/skills matching • Raise the quality of professional advisors through focused support and capacity-development interventions • Funding for additional entrepreneurial courses in Northern Ireland universities
Sector development	<ul style="list-style-type: none"> • Generate a greater understanding of the finance and wider support needs of the technology sector • Provide technology companies with focused support including promoting links to international expertise and facilitating firms to have a presence in international tech hot-spots • Target sectors with good development potential: technology, agri-tech, manufacturing, engineering sector, biotech, media, and renewables
Wider ecosystem	<ul style="list-style-type: none"> • Develop a comprehensive policy to drive up entrepreneurial culture in Northern Ireland, allied to a sufficiently funded finance ladder which makes appropriate provision for accelerator and support services to establish a venture capital ecosystem • Plan and develop a more entrepreneurial economy • Partnership working with investors to create an ecosystem that allows for an increase in Series A investment.

Source: SQW consultations

4.15 In addition, during the two workshops, the levels of ambition, actions required to develop the market, and key risks were tested. Key points arising in the discussion were as follows:

- The NISP Connect target of £90m venture capital investment by 2030 was considered helpful from aspiration and bar-setting perspectives, but it should not be set as a hard target. The overall ‘direction of travel’ and need for policy stability and predictability were regarded consistently as vital, rather than setting a specific quantitative target, which whilst potentially helpful in concentrating the mind is very hard to predict with accuracy. It was also noted that a focus on outcomes is key: the amount of finance is less important than the economic benefits that it generates
- In relation of the role of the public sector, the major point was the need to fill the ‘policy vacuum’. It was recognised that Invest Northern Ireland was delivering programmes well, but this could benefit from a clear headline view of how start-up financing interfaced with and was reinforced by those complementary strategies and actions to build the wider eco-system for business growth.
- The key risk identified by the discussion was political/policy instability and inconsistency which will limit private sector interest and involvement in Northern Ireland. A failure to address perceived ‘equity aversion’ and ‘grant dependence’ cultures in the Northern Ireland business base was also identified as a potential risk to developing the early stage and growth finance market.

4.16 Taking the overall feedback from the consultations and workshops, the key supply and demand-side perspectives on future direction are summarised in the box below.

Summary of future perspectives

- Northern Ireland should be ambitious in developing its early stage and growth finance market, increasing the supply of venture capital at early stage (including sub 50k) and Series A and developing the pipeline of investments at early stage so that it does not stifle demand further-up
- Develop the angel investment community, supporting syndication and identify and bring high net worth individuals more fully into the angel/investment community
- Provide further support to and develop the technology sector to make it globally competitive, and support for universities and others to help commercialisation activities including spin-outs
- Improve links and enhance connectivity with wider UK funds, as well as other funds from Europe, US and other global regions, as well as creating links to accelerators/incubators in the UK
- Continue to address information and co-ordination failures between the supply and demand side by upskilling entrepreneurs, raising the quality of the advisor network, and improving investment readiness among firms
- Develop the wider innovation-venture capital ecosystem and policy framework to provide clarity and consistency.

5. Literature Review

This Section provides a review of policy documents on the supply and demand side issues in Northern Ireland's early stage and growth finance market.

Introduction

- 5.1 The literature review examined public policy reports relevant to the early stage and growth finance market in Northern Ireland. Consistent with the remit of the study, the focus of the review was on evidence related to non-bank finance to assist innovative and potentially high growth companies, notably in the sub £2m funding gap, which complied with EU State aid regulations until January 2014. However, where appropriate, consideration was given to the supply of bank finance in assessing the extent of the gap for seed/early-stage risk finance in Northern Ireland.
- 5.2 The review covered a wide cross section of reports examining the business access to finance policy, programmes and environment in Northern Ireland, published between 2010 and 2014. A full list of the reports reviewed can be found at the end of the Section. This Section is structured as follows:
- a contextual outline of Northern Ireland's growth finance market as identified in the literature
 - a discussion of the evidence of demand and supply-side market failures
 - an examination of the evidence on public policy interventions to address these failures
 - evidence of continuing gaps in growth finance as identified in the literature
 - a review of the long run evidence of policy lessons learned.
- 5.3 It is worth noting that this summary of the literature reviewed is just that. The Section sets out the key findings and messages from the historic literature and evidence reviewed in order to provide context for the wider study on the future of early stage and growth finance in Northern Ireland. In some cases the findings of the report may not reflect the current position in Northern Ireland, and where relevant this has been noted/more recent information has been provided to contextualise the findings.

Context to Northern Ireland's growth finance market development

- 5.4 The literature identifies a number of challenges for Northern Ireland in developing its early stage and growth finance market. The key issues identified in the literature are outlined below.

(i) The small-scale and under developed Northern Ireland private sector market

- 5.5 Northern Ireland has a greater reliance on the public sector than other regions across the UK for example, the CBI (2012) reported that the public sector accounted for 71% of GDP in Northern Ireland, higher than for any other UK region. Overall economic growth has also been weaker in Northern Ireland than elsewhere across the UK, with GVA growth comparable to Wales and the North East (CBI, 2012).
- 5.6 The literature also highlights sectoral weaknesses, with an overreliance on the construction sector, and underrepresentation of R&D and other knowledge-based industries. Invest NI (2012) reported NESTA data demonstrating Northern Ireland has low proportions of high growth firms (3% in 2002-5, 2.5% in 2005-08), slightly below Wales and the North East.
- 5.7 Further, the literature identifies that the private sector economy in Northern Ireland lacks dynamism; Invest NI (2012) found static new firm formation rates in the last decade, similar to Scotland and less than half of London, but with low death rates and little churn in a market characterised by long established family firms with conservative growth aims. To a significant extent, the present position is heavily influenced by Northern Ireland's recent economic and social history.
- 5.8 NISP (2013) stated the need to create an entrepreneurial knowledge economy with a pipeline of new companies to meet a conceptual (and in the view of the reviewers ambitious) five year global high growth company development cycle. This requires fundamental education change (i.e. greater take-up of STEM subjects) allied to more intensive investment readiness programmes (IRPs), incubator and seed funding. This contextual point is important – as demand matters. Where finance markets are not operating this may simply be because there are not enough businesses that are attractive to, or deserve, venture capital investment.
- 5.9 NISP (2013) also described an interrelated shortfall in culture, talent and risk finance, suggesting the need to stimulate more potential high growth business start-ups allied to the attraction of equity finance – referencing the 'Rainforest' (Hwang and Horowitz, 2012) blueprint innovation ecosystem.

(ii) The role and structure of the Northern Ireland Banking System

- 5.10 InterTrade Ireland (2013) found that as of December 2012, total bank finance to SMEs in Ireland was £20.9bn and estimated at £4.7bn in Northern Ireland, and that the lack of accurate ongoing Northern Ireland bank data was unhelpful to finance policy (although it is recognised that this situation has now improved, with Northern Ireland bank lending data now provided by BBA on a quarterly basis). The Economic Advisory Group (EAG, 2013) found that Northern Ireland SMEs were more heavily dependent on bank finance, notably for overdrafts for working capital, than their UK and EU counterparts (InterTrade Ireland, 2013). The level of demand for bank finance has been depressed since the global financial crisis (e.g. 8% in 2012) but has risen in recent times (rising to 15% in Q3, 2014¹⁵), and is broadly in line with the UK and Republic of Ireland, as is the loan application success rate of

¹⁵ The highest demand recorded for SMEs in Northern Ireland since British Bankers Association quarterly data records began in 2010

66%. These data are now somewhat out of date, but they do indicate the debt finance challenges faced by firms in Northern Ireland in recent years.

- 5.11 Further, the literature identifies challenges for Northern Irish firms in accessing UK government bank finance schemes, such as the Enterprise Finance Guarantee (EFG) and Funding for Lending Scheme (FLS). For example, with regard to the EFG, EAG (2013) cite the lack of critical mass of lending activity by Northern Ireland banks operating the scheme, the limited number of large SMEs in eligible sectors, low levels of SME awareness (*although it is the banks that decide on its use*) and the costs associated with EFG as the main causes for the lowest take-up amongst the UK's regions (and devolved powers).¹⁶
- 5.12 Further, with the large scale of property debt overhang in Northern Ireland, allied to the withdrawal of mainstream bank lending to more established businesses with trading records of at least two years (SQW, 2013), UK banks are unlikely to provide risk finance due to a combination of information asymmetries, loan restructuring, and credit rationing (Cowling et al., 2012).

(iii) The fledgling and small scale nature of risk capital in Northern Ireland

- 5.13 The Invest NI (2011) report presenting the way forward for Northern Ireland's investment ecosystem notes the fledgling nature of the Northern Ireland venture capital market, which it states barely existed prior to 1995. By 2011, the report found that market failures in the supply of venture capital in Northern Ireland persisted, notably in seed/early stage investment which it viewed as essential to setting up the later stage pipeline of companies. Clearly, this report is now some four years old, however, the development of a functioning early stage and growth finance market is a long-term game.
- 5.14 Indeed, more recent evidence (InterTrade Ireland, 2013) found demand for equity in Northern Ireland was low (and mainly limited to technology sectors), compared to the market in the Republic of Ireland. The report stated that a key difference was the historic scale of public funding: it reported that between 1994 and 2012, the Republic of Ireland government had funded 41 seed/VC funds with €348m, raising around €1.2bn in business investment. By contrast, it noted that in Northern Ireland there had historically been insufficient funding and focus at seed/early-stage (although it is worth noting that subsequently the Invest Proof of Concept (PoC) and Invest Growth Funds were increased a further by £2m each, and in 2014 Invest NI launched techStart NI with some £16m in equity investment).
- 5.15 One of the oldest seed/early-stage public hybrid VC funds established in Northern Ireland was the Viridian Growth Fund (VGF), established in 2001. The £10m VGF introduced a mix of low cost loans and small-scale equity funding ranging initially from £50k to £300k, at a time when the Northern Ireland seed market was highly dependent on grant funding. Along with the Invest Northern Ireland Crescent I fund (evaluated in 2009/10), it was one of the first public VC schemes to complete and receive a full evaluation (DETI 2014a), providing important lessons for future funds.

¹⁶ The implication here is that whilst foreign commercial banks operating in Northern Ireland are eligible to use these schemes, they do not have the connections or critical mass of use across the rest of the UK to make their operation viable or cost effective.

- 5.16 Additionally, Northern Ireland has a small but growing angel investment community which has a disproportionately high input to risk equity due to lack of alternative venture capital funds. Invest NI (2011) found that Halo, Northern Ireland’s angel network, was relatively recent and growing from a low base, requiring assistance in a very tough seed/early stage investment market to better equip investors.
- 5.17 More recently, DETI (2014) benchmarked Halo to the angel situation Scotland, noting the growth of angel syndicates from two to 22 since the establishment of the Scottish Co-Investment Fund (SCIF) in 2003. This research also noted that the scale of equity funding is greater than Northern Ireland, with a focus in Scotland on equity, through four funds: Scottish Seed Fund (£20k-£100k, more recently revised up to £250k by the Scottish Investment Bank¹⁷); SCIF (£100k to £1m, operating on a £ for £ pari passu basis with a deal ceiling of £2m); Scottish Venture Fund (£500k to £2m, addressing the £2-10m equity gap with pari passu funding, noting that the private sector addresses this equity gap in Scotland), and Scottish Portfolio Fund (Scottish Investment Bank portfolio company investment). Note that the DETI (2014) benchmarking did not account for the Scottish Investment Bank’s Loan Fund which offers mezzanine finance (i.e. loans with equity clauses) of between £250k and £5m.
- 5.18 However, this DETI report also noted that the size of the local venture capital market in Northern Ireland (estimated at £75-100m) is largely unattractive to external investors.

Summary - Context to Northern Ireland’s Growth Finance Market Development:

- By UK standards, Northern Ireland has a small private sector, with an overreliance on public investment and employment compared to the UK average.
- The lack of UK high street banks and limited market scale in Northern Ireland may have hindered the take-up of UK government bank finance schemes (e.g. EFG and FLS).
- Northern Ireland has a developing equity finance market, developing largely since 1995 which remains modest scale, has historically been underfunded, and has not been attractive to external investors; it also has a modest but growing business angel market.

Evidence of supply-side market failure

- 5.19 There was widespread and consistent reporting in the literature on the supply-side failures of the capital markets in Northern Ireland. Invest NI’s Access to Finance Strategy cited market failure in micro financing, debt finance, venture capital, technology transfer and business angels, aggregating to a shortfall of £75m in 2008, subsequently exacerbated by the Global Financial Crisis (GFC) on banks and risk finance. Overall the historic literature suggests that Northern Ireland’s growth finance has been marked by the ineffectiveness of

¹⁷ Scottish Investment Bank website: <http://www.scottish-enterprise.com/about-us/what-we-do/sib>

the banks (i.e. withdrawal from start-up and riskier, less secured lending) on the one hand and limited scale of seed and early-stage equity investment on the other.

5.20 DETI's (2014) assessment of financial instruments characterised the supply-side market failures more specifically in terms of:

- **Tightened bank lending in the post 2008 GFC period**, with the EAG (2013) reporting that banks had sectoral preferences and were only lending 70% of capital requirements instead of 100% pre GFC. The CBI (2012) reporting lenders prized cash flow over assets, along with larger more established businesses.
- **Institutional failures on the parts of the banks**, with three of the four main banks owned outside of the UK, restricting their use of UK government funding schemes such as Enterprise Finance Guarantee (EFG) and Funding for Lending (InterTrade Ireland, 2013).
- **Very low VC investment** (e.g. 1% of BVCA 2012 investment, compared to 7% in Scotland, 3% in Wales), with little evidence of private VCs investing below £2m. The failure of pipeline seed and early-stage VC led the EAG (2013) review to conclude that there is insufficient critical mass of businesses for any likely take-up of the UK Business Growth Fund for later stage development finance.
- **Increasing business angel investment in the sub £2m market**, but this is a small and fledgling market, representing 6% of UK angel investment in 2012 (Deloitte, UKBAA, 2013)¹⁸, with only one angel network operating (Halo). Whilst 6% may be viewed as a reasonable share of the UK angel investment market when compared to Northern Ireland's share of UK businesses (2.2%) and GVA (2.1%) respectively¹⁹, it should be considered that the more successful and innovative UK regions exhibit significant over representation of angel and associated equity investments, gaining critical advantages from the scale, concentration and critical mass of their activity²⁰.
- **The size of the NI VC market at £75-100m is unattractive to inward investment**, with VCs outside of Northern Ireland only likely to be attracted by a more significant local VC catalyst, for example, there were no IVCA member investments in Northern Ireland in 2012. We note that this does raise a key issue on how well Northern Ireland VCs are connected to global VCs, and their credibility with this wider network.

5.21 Examining the equity finance gap in more detail, the Invest NI (2011) Northern Ireland finance ecosystem report, supported the earlier Northern Ireland VC market failure report (2001), establishing the VC finance gap in 1995 at £14m, and suggesting it had continued to rise to £20m in 2005, and on to £40m in 2011. It found that Northern Ireland's seed/early stage investment market peaked in 2000-01, at £14m, only started recovery in 2006 after

¹⁸ The 2013 UK Business Angels Association (UKBAA) Deloitte report 'Taking the pulse of the angel market' states that Northern Ireland attracted 6% of UK angel investment in 2012/13 compared to London and the South East which attracted 54%, the South West (13%) and the Midlands (11%).

¹⁹ Library of the House of Commons Business Statistics, 28/11/2014, SN/EP/6152

²⁰ These latter points underpinning the concerns that Northern Ireland has a small angel investment market (see Urbis regeneration report, 2014), see also BVCA regional equity investment data for 2013, Mason and Pierrakis (2013) etc.

'Dotcom', and by 2010 was at £5m (35% of 2000-01). A key argument here is that the seed/early-stage funding sets up the later stage pipeline (Cummings, 2011).

5.22 The CBI (2012) report found equity gaps at: (i) early-stage seed funding only available through two universities and one private provider e-Synergy, compared with in the Republic of Ireland where 38% of equity funding was seed in 2011; (ii) the lack of follow-on capital available; (iii) lack of expansion capital at above £1m, noting previous successes (Andor, Lagan Technologies, and Balcas) a few years ago when several funds were available.

5.23 Three other points are worth noting in terms of supply-side issues:

- Magee's (2014) early-stage review of the Small Business Loan Fund (NISBLF) found that it is addressing a perceived gap in unsecured loans between £1k to £50k, following the findings of the ASM Horwath Review in 2011.
- A general omission from the literature reviewed is data on alternative finance provided for example, through Crowd Equity given this is recent phenomenon, first established in the UK in 2011 with Crowdcube and Seedrs. These funders operate mainly at the seed investment level sub £100k, but are expanding beyond this. The current value of the UK market is £28m (Nesta, 2013), with Crowdcube having over 50,000 investors raising over £16m for 82 businesses and Seedrs completing 75 company investments with ten raising over £100k. UK crowd equity investing is forecast to increase considerably. As yet, there is little evidence of crowd equity investments in Northern Ireland, but the Halo business angel network announced a partnership with Crowdcube (2013) and also promotes the use of Seedrs (2014) in combination with their own investors.
- Finally, it is important to remember that venture capital can (and does) flow across regional boundaries. The scale of indigenous venture capital does not indicate all supply.

Summary – Supply-side Failures

- Northern Ireland's market failure extended through micro financing, debt finance, VC, technology transfer and business angels, aggregated to a shortfall of £75m in 2008 and has been exacerbated since the GFC through the withdrawal of bank lending and VCs to more established businesses.
- The estimated VC finance gap in Northern Ireland of £14m in 1995 rose to £20m in 2005, and on to £40m by 2011, with seed VC particularly low.
- There is evidence of business angel growth, but there is only one network (Halo) in Northern Ireland
- Northern Ireland has the lowest take-up of EFG in the UK's regions.

Evidence of demand-side market failure

5.24 Demand-side market failure is less clearly evidenced in the reports reviewed, due to a lack of accurate and up to date SME survey data for Northern Ireland, particularly in relation to the

demand for equity finance. InterTrade Ireland (2013) highlighted the lack of Northern Ireland bank data currently provided to policymakers, whilst the UK SME Finance Monitor, along with other UK small business surveys (e.g. Federation of Small Business and Small Business Survey) are inadequate in measure of the demand for equity finance, because they are too small in scale and do not focus on young innovative high growth business financing requirements.

- 5.25 Therefore, the majority of recent reports (i.e. CBI, 2012; EAG, InterTrade Ireland, 2013) refer to; (i) the generally depressed demand for SME finance in the post GFC period and (ii) the lack of knowledge and aversion to equity finance. The latter point is considered particularly important in Northern Ireland, given the generally conservative mindset when it comes to shareholding structures and shareholding release, thereby hindering the potentially more widespread use of equity finance, notably in substituting for declining grant (SFA) and bank debt finance options. This leads to a priority focus of reporting on the need for quality IRPs, particularly for when the economy picks up and demand for finance increases (InterTrade Ireland, 2013). This is important as IRPs are often a critical part of 'success' – this issue will be probed for in the research, particularly the comparator reviews.²¹
- 5.26 InterTrade Ireland (2013) found high levels of financial illiteracy amongst Northern Ireland SMEs with dependence on short term overdrafts and trade credit being greater than for their European counterparts. The report concluded that established SMEs need tailored support to help with restructuring balance sheets, whilst in general SMEs need to be more aware of the benefits of investment in growth and improvements. They found poor knowledge of public and non-bank finance amongst SMEs and their advisors, particularly for equity finance and that a significant SME capability gap exists (e.g. financial and sales management) relating to accessing seed and follow-on finance. These findings are supported in recent evidence from evaluation of the UK Enterprise Capital Fund (BIS, 2014). The CBI report (2012) also indicated potentially higher rates of discouraged borrowers in Northern Ireland when stating that Northern Ireland's SMEs are less likely to apply for finance than their UK counterparts, which is explained in part by the property debt overhang that these businesses carry and also the high level of equity aversion, notably by established family businesses and need for improved quality in applications.
- 5.27 The EAG (2013) review of access to finance found that Northern Ireland business growth may be restricted because their owner-managers do not fully understand the potential benefits of raising finance or likelihood of success and are discouraged. They also lack knowledge of funding sources available, or lack the skills to present themselves as investable opportunities to investors. The report suggests that this is manifested in a widespread perception amongst businesses that the market is failing, despite the efforts of banks to advertise their willingness to lend.
- 5.28 Examining the delivery of IRPs, Invest NI's (2011) finance ecosystem report was critical of the then operational 'Propel' and 'E-Synergy' IRP interventions, suggesting that they were

²¹ For a critical review of investment ready programmes see: MASON, C and Kwok, J. (2010) 'Investment readiness programmes and access to finance: a critical review of design issues', *Local Economy*, 25 (4) 269-292.

not providing a sufficiently realistic grounding in investment readiness, with an associated lack of appropriate intensive incubation and mentoring from trainers and mentors with cotemporary global tech start-up business skills. Magee's (2014) early review of the Small Business Loan Fund also examined programme promotion, finding that the scheme received extensive marketing to Invest NI, Local Enterprise Agencies (LEAs), local authorities, accountants, banks and small business trade associations/chambers, but low rates of conversions to formal applications and approvals, particularly for start-ups. A potentially important finding was that the more engaged LEAs with more developed business support plans were more likely to be the locations with higher scheme take-up.

Summary – Demand-side Failures

- Whilst SME demand for all types of finance has generally been depressed since the GFC, there is a lack of clear up to date demand-side evidence from NI businesses in relation to both debt and equity finance requirements.
- There is lack of knowledge of the availability and suitability of financing options and aversion to equity finance. This suggests a requirement for improved, more widely available investment readiness programmes.

Public sector approaches and interventions

5.29 DETI's (2014) assessment of financial instruments in NI sets out the policy framework, noting that the Northern Ireland Investment Strategy recognises the need for rebalancing an economy overly reliant on bank finance and lacking venture capital. Northern Ireland's ERDF Investment for Jobs and Growth Programme 2014-20 includes Priority 1 assistance for R&D and technology innovation, whilst Priority 2, can provide €145m, plus €96m matched funding for financial engineering instruments to support creative industries, tourism, marketing and local economic development.

Other Potentially relevant EU interventions

5.30 DETI's (2014) assessment of financial instruments in Northern Ireland sets out the limitations of EU financial interventions, finding that whilst they fit with ERDF Priority 2 SME growth objectives, they do not work or are not applied for. Examples include: COSME and Horizon 2020 loan guarantee schemes, where there is insufficient demand and scale for this expansion loan scheme; and COSME and Horizon 2020 growth equity, where there is little demand and insufficient size and scale (£100m+ fund required) and subordination to the EU, also requiring cross-border funds with an average deal size of €7-8m. Further commentary on the potential for Northern Ireland to access other EU funds is set out in Section 6 of this Technical Report.

Current UK government intervention

5.31 DETI (2014) also assessed the current range of UK government instruments offered through the British Business Bank, concluding that they all have limitations for adoption in Northern Ireland:

- Enterprise Finance Guarantee (EFG) does not work effectively as Northern Ireland's lenders are typically too small to operate effectively within the percentage of the lending cap and the scheme benefits larger SMEs and sectors not prevalent in Northern Ireland
- Enterprise Capital Funds (ECFs), the UK government's hybrid VCs suffer from insufficient presence and knowledge by VCs and businesses in Northern Ireland
- The Business Finance Partnership (BFP) promotes VC finance, but is disconnected with Northern Ireland and follows the main UK VC markets
- The recent Angel Co-investment Fund (ACF) has been initially based in England, but will be rolling out to Northern Ireland later in 2014. (Note that the first investment into Northern Ireland through the ACF was announced in November 2014)²²
- The UK Innovation Investment Fund (UKKIIF) invests globally in early-stage at beyond the £2m EU State aid cap in key sectors (energy/low carbon/recycling, digital, advanced manufacturing, life sciences) through hybrid VCs based in the UK and Europe, but has no specific connection or presence in Northern Ireland
- Aspire is a hybrid VC for women-led businesses which has made few investments (4 at the time of the early assessment, BIS 2010) and has no Northern Ireland presence
- HMRC's Venture Capital Trusts (VCTs), Enterprise Investment Scheme (EIS) and more recent addition of the Seed EIS offer tax exemption schemes seen as complementary to Northern Ireland's small HNW and angel community, but there is no clear presence of VCT operations in Northern Ireland.²³

5.32 Overall, there is a problem of UK hybrid VC and VCT activity following the VC and pipeline of investible business market concentration to London and the South East and East of England (Mason and Pierrakis, 2013).

Northern Ireland interventions

5.33 Looking back over the past decade there have been a series of interventions in Northern Ireland which have sought to provide a finance escalator, sufficient to meet a pipeline of potential high growth businesses. These included the interventions set-out below.

- Invest NI's (2011) proposals for a new business loan fund recognise the role of the Enterprise NI loan fund offering up to £25k, which met a high demand for start-ups with circa 250 loans at an average of £6k. At the time the fund was near commitment and seeking stretch funding. There was also the proposal of a new Belfast 'One City Peace Fund' offering loans up to £25k and Invest NI's 'Go For It' start-up grants in Neighbourhood Renewal Areas for NEETs (assisting 100 NEETs and 500 individuals in NRAs) and the Prince's Trust, which assisted 235 start-ups in 2010.

²² In Sophia, see <http://www.angelcofund.co.uk/portfolio/sophia> for further details

²³ It is recognised that since publication of the DETI (2014) report, there has been ongoing engagement with the British Business Bank to improve the effectiveness of its funding programmes in Northern Ireland, including a number of more recent interventions such as the Investment Programme, and Wholesale Guarantees (ENABLE).

- The Invest NI (2011) proposal envisaged a need for a larger scale generalist micro-loan fund offering unsecured five year term loans up to £50k, as a lender of last resort at rates of 8-12% (in-line with expected high default rates). The scheme would offer up to £15k for start-ups, with potential follow-on funding and mentoring support and would have requirements to assist at least 5% NEETs and NRAs, with overall targets of 132 loans per annum generating 226 new jobs and discounted GVA over 10 years of £10m. The scheme would require 100% public funding and is unlikely to be self-sustaining.
- The 10 year LP Viridian Growth Fund (VGF), that has completed its operating cycle and been evaluated formally (2014a). It was funded equally between DETI, EIF and private investors, offering £50k to £300k in seed funding, mainly in loans, but with 25% in equity investments, assisting pre or early revenue manufacturing and tradable services.
 - VGF operated as a catalyst fund, encouraging private funding leverage and follow-on funding. The evaluation found that the fund made 75 investments in 20 portfolio companies totalling £9.2m between 2001-11, ranging from £50k to £1.15m, leveraging an additional £54.5m in funding, including 87% from private sources; net additional funding ranged from £40.8m to £44.1m (£35.7m-£37.7m private funding). Eight (35%) companies failed and two had exited in some part. The remaining companies are currently 22% lower than net cost.
 - The evaluation considered that the fund manager undertook adequate due diligence, enabled funding leverage and provided considerable mentoring input. VGF was perceived as complementary to the funding pipeline, not duplicating the NITECH Growth Fund and feeding into the later stage Crescent Capital and Enterprise Equity funding.
- The NI Spin-Out funds (NISPO) programme was established in April 2009, with the Invest NI objectives to: (i) develop a pipeline for Northern Ireland technology and university spin-outs; (ii) develop a pipeline for VC and investor ready firms; (iii) lever at least 30% private VC. The contractor, E-Synergy, established an escalator concept, including:
 - **Invest Growth Fund (IGF, £5m, subsequently increased by £2m in 2013)** seed/early-stage investment in non-university firms with a scalable business model and strong IP base, where IGF is usually the first institutional investor; the fund has a target of 25 investments of up to £250,000 over the five years to March 2014, with a five year exit period
 - Two £1m **University Innovation Funds** (Queens University Belfast (QUB), University of Ulster (UoU) investing £50,000-£200,000 in post-proof of concept university spin outs through equity and loans; the Fund, fully financed by Invest NI, aims to invest in five companies at each institution up to 2014/15

- **Proof of Concept Fund (£3m, , subsequently increased by £2m in 2013)** for non-University businesses, providing mini-grants up to £10,000 and full grants up to £40,000 to develop concept, technology platform or business model; eligible activities include market research, feasibility studies and prototyping
- **Investment Readiness Programme** providing intensive workshops to raise awareness of the investment process, company assessment of business angel/VC finance appropriateness, understanding of investors value of businesses and investment pitch support
- **Intellectual Property Exploitation Unit** working with selected companies to identify and develop their IP assets and match them with opportunities.

5.34 Several studies indicate that historically there has been insufficient focus of seed/early-stage funds on these stages. The Invest NI (2011) NI finance ecosystem report defined these investments as 67% plus for pre-revenue companies, and used the example of NISPO's Invest Growth Fund (IGF, 2009) portfolio at the time of eight companies, finding that most were post-revenue and not true seed/early-stage investments.²⁴ It was also noted that the two University Innovations Funds (UIFs), at QUB and UoU, had yet to make an investment at that point (although by December 2014, 10 investment had been made as reported in Section 2). Whilst the review of NISP (2013a) suggested that universities spin-outs are infrequent and take time, the Invest NI (2011) report contended that the spin-out possibilities have, to that point in time, been deemed too early and too risky.

5.35 The compartmentalisation of stage investments into Invest NI definitions of seed (at £50k-250k), early-stage (at £250-450k) and development (at £450k to £2m), has also been criticised as unrealistic (Invest NI, 2011), as stage funding requirements can vary considerably, for example with some early-stage investment requiring more than £2m (BIS, UKIIF report, 2012).

5.36 Overall, DETI (2014) concludes that there is a need for more co-ordinated and integrated approach for SME support and investor readiness.

Summary – Public Sector Approaches

- Northern Ireland's Investment Strategy recognises the need for rebalancing an economy overly reliant on bank finance and lacking venture capital.
- UK-wide schemes, including those operated by the British Business Bank, but have historically been underutilised in Northern Ireland owing to co-ordination issues and the scale of the Northern Ireland market, notably in relation to bank finance (e.g. EFG) and hybrid equity schemes (e.g. ECF).
- Northern Ireland has operated a range of financial support measures, most recently focusing on NISPO's IRP, IP, PoC, two University Innovation

²⁴ Note that Invest NI have reported to the researchers that subsequent investments made by IGF (35), QUBIF and UIF (5 each) were virtually all pre-revenue.

Funds and Invest Growth Fund. Seed/early-stage hybrid VC funds such as Viridian and Crescent have also operated. Overall the historic literature indicates insufficient seed/early-stage funding in the market, although this has increased in recent years, particularly through Invest NI schemes.

Evidence on gaps in the public sector provision

- 5.37 InterTrade Ireland (2013) pointed out that direct government funding represented less than 1% of SME finance in Northern Ireland, and that more could be done to lever JEREMIE, European Investment Bank funds, and also UK government schemes now operated by the British Business Bank e.g. EFG, FLS, and other schemes such as the Business Growth Fund (BGF). However, problems still remain over the small-scale of the Northern Ireland market, which is seen as a barrier to obtaining European and UK schemes (Invest NI, 2010, DETI, 2014).
- 5.38 Several studies (Invest NI, 2010, 2011; NISP 2013, 2013a; EAG, 2013) indicate that the key to unlocking further funding is a greater focus on pre-start and start-up assistance in order to grow a pipeline of seed and early-stage investible potential high growth businesses. Once this is in place, it will also be more likely that government funding will be able to attract private investment.
- 5.39 The DETI (2014) assessment of NI's financial instruments detailed the planned five new funds for 2014-20 (with a planned £130m investment), and calculated a funding gap to be met by EU funds (only) of £62m for seed/early-stage venture capital between 2014-20, although it is also noted that this gap will be funded partly through recycling of returns from existing funds and that there is the potential to use Financial Transactions Capital to do so. This established fund of funds consists of:
- £13m Seed fund, offering £50k to 250k over 10 years with a minimum of 30% private funding (techStart NI)
 - £7.2m Co-investment Fund, offering £250k to £450k over 6 years, with 45% public funding (Northern Ireland Co-Investment Fund)
 - £60m Development Fund, with 2 funds offering £450k to £2m, over 10 years with 50% public funding (the Kernel and Crescent Development Funds)
 - £50m 10 year Loan Fund, offering £50k to £500k, with 50% public funding (Growth Loan Fund)
- 5.40 It is recognised (DETI, 2014; Invest NI, 2010) that the total of Selective Financial Assistance (SFA) funding will decrease, leading to potential substitution effects, with companies that had previously sought SFA monies in the £50k to £100k range (79% of SFA assisted SMEs) seeking loans or possibly equity finance, a view supported by Invest NI's (2011a) proposal for a new loan fund.
- 5.41 Interestingly, although equity was a possible form of intervention under SFA, its take-up has been very modest, essentially because grant finance has been preferred by firms (as would be expected). InterTrade Ireland (2013) also acknowledged that the Northern Ireland

Growth Loan Fund offering mezzanine finance is a measure which may encourage some businesses that are equity averse to obtain finance.

- 5.42 Additionally, there is an acknowledged need to focus funds and associated business support into the pre-start and start-up stages of business development, in order to develop a knowledge-based economy and pipeline of investible innovative, potential high growth businesses.
- 5.43 The EAG (2013) study also supports earlier NISPO recommendations (Invest NI, 2013; 2013a), suggesting increased funding should go into 'proof of concept' and early seed funds, whilst also ensuring there are sufficient funds for the follow on stages of commercialisation and growth. In this respect there is also the need for the proposed Development Fund (£15-30m to invest up to £1.5m in four companies per annum) to replace the Crescent fund (£22.5m) which only has follow-on funding remaining (Invest NI, 2013).
- 5.44 A final theme found in the literature relates to the need for more investment into raising the standard of new business management:
- The Invest NI (2012) NISPO interim evaluation found that stakeholders reported an overall lack of leadership and management skills and capacity within the Northern Ireland technology sector, particularly insufficient people with the right mix of corporate and entrepreneurial skills
 - The Invest NI (2012) interim evaluation of NISPO specifically calls for developing improved management and leadership skills assistance for potential high growth businesses, notably through mentoring, building on the more successful elements of 'Propel'
 - Invest NI (2011) report advocated a more intensive mentoring and incubation incubator approach. Overall, both studies highlight the need for a better co-ordinated and integrated approach to providing an improved pipeline flow of investible businesses.

Review Keynotes – Continuing Gaps in Public Sector Provision

- Direct government funding represents less than 1% of SME finance in NI, and more could be done to lever EU and UK funding.
- The planned £130m investment in five funds for 2014-20 (£13m Seed Fund, £7.2m Co-investment Fund, two £30m Development Funds, £50m loan fund) will still leave a gap of £62m for seed/early-stage VC funding.
- There is a need to raise the standard of business management and for the improved funding and delivery of IRP.

Long-run evidence on best practice and lessons learned

- 5.45 Despite there being limited long-run evidence on the performance and lessons learned from schemes due to the fledgling nature of the Northern Ireland's growth finance market and

public hybrid venture capital activity, the paragraphs below present some of the key points identified in the literature on best practice and lessons learned.

5.46 The DETI (2014) assessment of Northern Ireland's financial instruments presented the most extensive set of lessons learned and recommendations for future best practice in developing the Northern Ireland finance ecosystem. This highlighted the following factors:

- Lack of investment readiness, improving pre-start and start-up quality (Invest NI, 2011; INO, 2013) and a more general need to improve SME financial management literacy (InterTrade Ireland, 2013)
- Planning funds to meet need and deal size - previous funds have, generally, been too small, with the CBI (2012) also recommending a more cohesive funding continuum, rather than phased funding
- Locally based fund managers, networked in and outside of Northern Ireland to syndicate inward investment, with fund managers of sufficient quality (Invest NI, 2011 and 2012), experience in the new tech markets, and providing sufficient board management input
- Incentivising fund managers to make quality investments, as well as achieving deal numbers, with the CBI (2012) report advocating fund manager competition and consideration of wider economic benefits from schemes (although we note that making investments to generate wider economic benefits could potentially compromise achieving maximize financial returns)
- Strengthening deals with HALO, developing the fledgling Northern Ireland angel market; and the need to get more flow of follow-on funding through fund integration and syndication (Invest NI, 2011 and 2012)
- Difficulties in establishing a new Crescent Capital Fund (2011) due to insufficient private funding raised, suggesting the need for greater public funding and consideration of improved private investor return and less fund restrictions (i.e. ability to invest outside Northern Ireland, as in the case of UK Innovation Investment Fund (UKIIF) or Notion ECF, BIS 2012, 2014). It should be noted that recent studies indicate that the EIF favours match funding parri passu approaches (BIS, 2014).

5.47 Other lessons and recommendations from the literature reviewed included the following:

- With regard to the broad oversight of Northern Ireland's SME finance, InterTrade Ireland (2013) recommended a single public body to oversee a repository of information on bank, public debt and equity funding schemes across the Republic of Ireland and Northern Ireland (currently 50 plus funders and 170 plus schemes).
- The CBI report (2012) also recommended a pooling of resources between the Republic of Ireland and UK Treasury to improve finance information for policymakers on the island of Ireland, notably on bank lending in Northern Ireland, to meet a need for greater knowledge of SME finance demand in Northern Ireland. It is noted that the British Bankers Association (BBA) now produces a quarterly report

on SME cash holdings and lending in the UK and separately for Northern Ireland enabling trend analysis for the period from 2010 currently to Q3 2014²⁵.

- The CBI (2012) and InterTrade Ireland (2013) both highlighted a need for improved information for SMEs on finance options and availability. They suggested the adoption of standard credit applications and bank mediation services, with faster turnaround of applications and explanations, including the introduction of a national access to finance helpline and voucher scheme to fund financial management training. The Invest NI (2012) NISPO interim evaluation also underlined the need to improve the promotion of funding and associated assistance schemes.
- The CBI (2012) report on 'getting growth finance going' in Northern Ireland advocates a number of generic measures in relation to the UK's public finance instrument offer, which it considers relevant to Northern Ireland:
 - A move towards evergreen funds to prevent the stop-start nature of funding
 - Introducing standardised due diligence and application procedures to assist more rapid and less costly processes, as exemplified by the Passion ECF seed fund in London (SQW, 2013).
 - All public funded equity deals allowing founder buy-back options and avoid forced trade sales
 - Recognising the importance of new UK Seed Enterprise Investment Scheme (SEIS) and improved Enterprise Investment Scheme (EIS) and Venture Capital Trust (VCT) activity, with recommendations for making equity finance tax deductible and increasing the CGT lifetime limit to £10m to encourage serial entrepreneurship.

5.48 We note that there is often an issue of the management skills of VCs who manage public sector funds²⁶, particularly in getting quality managers to manage public funds. Further lessons pointed out in the literature included:

- Based on the UK's experience of JEREMIEs in three UK regions, DETI (2014) noted the size and scale of funding that they enable; Yorkshire and Humberside (£90m), the North East (£125m) and North West (£155m). Under these schemes fund of funds managers manage suites of loan, mezzanine, and pure equity funds. The positives highlighted were:
 - substantial EIB match funding; flexibility over time with reserve pot funds to meet changing needs and follow-on funding; and an integrated funding escalator approach.

²⁵ British Bankers Association (BBA) Q3 report for Northern Ireland – shows that year on year SME borrowing increased 15% in NI compared to 13% in rest of UK and at the highest point since quarterly records started in 2010: <https://www.bba.org.uk/news/statistics/northern-ireland-banking/banking-activity-in-northern-ireland-q3-2014/#.VO4K87RyaUk>

²⁶ For example see Public venture capital and economic development: the Scottish experience Hood, N (2000), Venture Capital, 2 (4) 313-341

- In the North East, stronger fund manager performance was incentivised with surplus pot drawdown.
- Negatives included: time delays getting EIB senior debt in place; EU State aid limits of £2m; and the costs of the extra tier of fund of funds management (also observed for UKIIF, BIS 2012)
- A recurring theme is the need to develop a more effective pipeline of businesses through more significant seed and early-stage VC investment in NI. InterTrade Ireland (2013) considered a potential role for whole-of-Ireland funds, which would have the size and scale of seed and early-stage follow-on funding to succeed and advocates rolling out the proposed Co-investment Fund with business angels across the whole island (whilst acknowledging potential Republic of Ireland tax alignments with the UK S/EIS tax relief programme). It is noted that the Invest Northern Ireland Co-Fund does look beyond local angels, including from the Republic of Ireland and Scotland, and further development of this kind is commended.
 - The CBI was also enthusiastic about developing whole-of-Ireland funds, but suggested that the Scottish Co-investment Fund (SCIF) was a better model, with a size (£72m) to achieve private sector leverage amongst a mature angel community and also with VCs. This suggests a need for the NI Co-Fund to look beyond local angels for co-investment

5.49 These reports advocate a need for a comprehensive venture capital strategy in Northern Ireland alongside a seed investment strategy (EAG, 2013) and that this strategy needs to take into account the required wrap-around services to ensure success. The strategy required clear KPIs and focus to develop an effective finance escalator (Invest NI, 2012), including a more effective staged approach to developing university spin-outs. The Invest NI (2011) report puts particular emphasis on driving up the quality of IRP and advocates a far more intensive incubator and mentoring style approach, with contemporary minded tech start-up advisors and mentors (more akin to the Seedcamp type accelerator found in London, SQW, 2013). The CBI (2012) also suggests quality assuring training and advice initiatives with kite marks.

Summary – What Works and Lessons Learned

- Effective investor readiness programmes are required in order to provide a pipeline of investible businesses.
- A critical mass of funding is required for effective seed/early-stage venture capital intervention, supporting the business angel market.
- Levering-in and harnessing the potential of EU and UK government (and wider schemes) is important, including through developing further relationships with key agencies such as the British Business Bank
- Raising the quality of quality of fund management, advisors and investment readiness trainers is important, alongside introducing competition and benchmarking processes to raise performance standards, as well as improved access to and collation of data/information.

Conclusions – the way forward

- 5.50 It is clear from the DETI (2014) assessment of NI's financial instruments and EAG (2013) review of access to finance for Northern Ireland businesses that the focus of future policy will be on achieving an SME financing strategy for innovation and potential high growth firms. The strategy will also need to meet the regional development demands in the cities of Belfast and Derry~Londonderry (Department for Regional Development 2035 strategy (DRD), 2013) as the key hubs for the economic development aspiration to generate wealth and value added export driven employment. Such a strategy is likely to need significant funding, with a particularly strong requirement for increased funding for high quality IRP into incubation, accelerator and mentoring activity (Invest NI, 2011) to provide a suitable pipeline of investible businesses and a considerably higher level of seed/early-stage equity investment to meet the potential funding gap of £62m (relevant to EU funding, although there are other sources that may help to fill this gap as well as EU funding) between 2014-20 (DETI, 2014).
- 5.51 The consensus running through the reviewed historic reports is the need for a greater level and concentration of equity funding into the seed/early-stage venture capital investments, drawing on Northern Ireland government, EU, UK government and whole of Ireland opportunities for matching funding and syndication (although it is noted that new funds have been put in place in recent years, including techstart NI). This alongside further support to the fledgling emerging Northern Ireland business angel market and a greater awareness of the opportunities of emerging non-bank private sector activities such as crowd equity.
- 5.52 It is also important that the opportunity from the recent changes in EU rules on State Aid with reference to finance are maximized in Northern Ireland²⁷, and that that there is sufficient provision for follow-on funding needs; indeed, this latter factor has dominated recent British Business Bank equity scheme development, including new Enterprise Capital Funds and the Angel Co-investment Fund (British Business Bank forthcoming 2015 equity scheme reports on the Angel Co-investment fund and Enterprise Capital Funds).
- 5.53 However, two final points are important:
- First, there is limited discussion in the public literature on venture capital management skills, or the impact of venture capital, with the emphasis largely on the investment activity (how many deals, how much invested), rather than the economic outcomes and value for money of public investment (although it is noted that Invest NI schemes are subject to formal appraisal and business cases that test economic impact ad value for money). Although this study is not a formal appraisal or value for money assessment, on-going evaluation and assessment is needed to test whether public sector-based venture capital (and other early stage and growth finance) 'works', and whether the firms it supports are able to utilise and leverage this investment effectively.

²⁷ The changes in the rules mean that equity, mezzanine or loan guarantee schemes for SMEs are capped at a higher ceiling than previously. There is an initial first funding ceiling which has risen from £2m to £5m which any individual SME that qualifies can receive from a fund (or funds in total in first funding round where public money is used). There is also a total funding amount which is around £12m, which is the total of public funding that any one SME can receive.

- Second, the research needs to keep in mind contextually later-stage finance – as early stage finance provision can only work where if larger follow on funding is available; a ‘silo’ approach to early stage venture capital funding has traditionally been a key weakness of public policy generally. Again whilst the focus of the work is on early stage and growth finance, this later stage context needs to be borne in mind when thinking through policy and intervention options; indeed this has been raised in consultations as a key issue for Northern Ireland to consider going forward. The risk here is of mission creep with existing funds moving with portfolio companies into later stages meaning there is not sufficient funding at the earlier stages. As such, there needs to be a rolling process of fund creation to ensure early-stage investment is available whilst also enabling fund-size scaling up for current VCs to track investments through following-on at later stages, or through good linkages/sign-posting to other VCs and planning exit or syndication development strategies around working with other VC funds/corporates.

Summary – Conclusions

- The consistent message from the review of the needs for a greater concentration of equity funding into the seed/early-stage venture capital investments in Northern Ireland, alongside supporting business angels and non-bank finance
- Thinking for the future needs to (i) be based on an assessment of the economic outcomes and value for money of public investment and (ii) developed in light of the later-stage finance market, a siloed approach to early stage equity funding has traditionally been a key weakness of public policy generally.

Key References

CBI (2012) Getting growth finance going: Creating a platform for economic success in Northern Ireland, Report by the Confederation of British Industry, June

The report examined growth finance ranging from bank debt finance through seed and VC. It recognises an urgent need to address the health of NI’s growth funding in order to achieve the current Assembly’s aim of 25,000 new jobs. The report highlights the need for a coherent funding continuum with considerably larger amounts of public funding (£100m in the next 3 years), notably into equity at seed, follow-on and expansion stages

DETI (2014a) Viridian Growth Fund Evaluation, Report by Cogent to Northern Ireland Department for Enterprise Trade and Investment, April

A full econometric evaluation of the Viridian Growth Fund (VGF) using monitoring materials and key informant information, but not including assisted company interviews. The overall finding was that VGF contributed considerably to net GVA and wider benefits to the NI economy, but showed little or no operating surplus.

DETI (2014) Ex Ante Assessment of Financial Instruments, Report by McClure Watters to Northern Ireland Department for Enterprise Trade and Investment, February

The Report sets out lessons learned from past NI financial policy programmes and seeks to establish the value added of the instruments that are currently being considered. This report sets out the case for ERDF monies for the funds required to fill the finance gaps in NI, calculated at £62m for 2014-20

EAG (2013) Review of Access to Finance for Northern Ireland Businesses, Economic Advisory Group, March

The review considers the availability of finance to NI SMEs to establish what support is currently available, the level of uptake and the potential reasons for any deficiencies in the market. It draws largely on a 2012 study of 1000 SMEs' demand for finance and is largely dominated by access to bank debt finance issues. The main recommendation on VC is based on Invest NI/NISP reporting recommending more seed finance.

Invest NI (2010) Economic Appraisal: of New Venture Capital Initiatives for Northern Ireland, Report by FGS McClure Watters to Invest Northern Ireland, May

Appraisal of new proposed initiatives to meet the early-stage equity gap for tech-based SMEs, after initial seed funding already provided through NISPO, through the proposed (i) co-investment fund investing £125k-£450k totalling c. £8.16m across two three year tranches (including c. £850k in management fees) and (ii) a £30m development fund investing £450k-£1.3m, with up to 50% public sector input (£15m), for five years with a fund life of 10 years.

Invest NI (2012) Interim evaluation of the Northern Ireland Spin Out Funds, Report by Urbis Regeneration for Invest Northern Ireland

An interim evaluation of NISPO based on key stakeholder and business user survey evidence across the suite of programme schemes. Key findings support a funding escalator principle but find problems in securing a pipeline of investible businesses for the IGF and UIF hybrid VC funds. Therefore a key will be improved IRP and incubator assistance, alongside raising awareness of schemes, a general improvement in programme continuity, including staffing, clear KPIs and a need for a successor to NISPO funds from 2014.

Invest NI (2011a) Proposal to Develop a SME, Micro Business Loan and Social Economy Enterprise Loan Fund in Northern Ireland, December

A Green Book style analysis of Invest NI's proposal for an enterprise loan fund addressing SMEs and SEEs. Analysis is based on a number of EU and NI strategic documents running towards the end of their cycle. The report considers that the evidence post GFC supports the need for a loan fund, which fits NI's strategic aims to increase employment, raise innovation, strengthen GVA in key productive sectors and exports and assist Social Enterprises.

InterTrade Ireland (2013) Access to finance for growth for SMEs on the Island of Ireland, December

Broadly similar to the EAG study, but considered unique in assessing the whole-of-Ireland, with more emphasis on VC and non-bank lending. The banking supply-side data for NI is estimated using Republic of Ireland equivalent data (which is complete through required BoI reporting) indicating £4.7bn in total bank funding in NI.

NISP (2013) Transforming Northern Ireland into one of the most entrepreneurial knowledge economies in Europe by 2030, NISP: summary of the findings and recommendations from NISP CONNECT's 2012 stakeholder analysis workshops: the Tiger Teams, March

The paper supplements the more general stakeholder analysis (NISP, February 2013) with a specific risk capital focus. The paper sets out the trajectory analysis (Oxford Economics, 2012) for exits by 2030 (M&A/ trade sales, IPOs) and required risk capital to meet the overall target of 10% of the NI workforce generating £5bn GVA.

NISP (2013a) Transforming Northern Ireland into one of the most entrepreneurial knowledge economies in Europe by 2030. What must be done now? NISP CONNECT Tiger Team workshops, February

A summary of findings from NISP Connect's stakeholder workshops in 2012. The study explores NI's potential to transform into a leading European knowledge economy by 2030. This would deliver an additional £5bn per annum in GVA from an additional 40,000 high value jobs in direct employment, as well as a further 22,500 jobs in indirect employment. The 3 main blocks perceived as holding NI back are culture, talent and risk capital. Solutions are co-dependent and action is required to address all three. The most urgent policy change is a complete revision of scale and model of risk capital intervention to take effect in 2014.

Magee S (2014) Small Business Loan Fund Early Stage Review, March

An early assessment of the NI Small Business Loan Fund (NISBLF), launched February 2013 and reviewed February 2014. The review aims to advise on scheme adjustments and funding top-up, with further interim evaluation after year 3. Key findings: Scheme lending is in-line with expectations, but larger loan size and lower volume; regional variation in take-up which may relate positively to LEA business development plans; poor quality of applications, notably for start-ups. No uplift in fund size recommended, but revised down annual investment number.

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- Urbis Regeneration (2014) Interim evaluation of Northern Ireland Fund of Funds, final Report to Invest Northern Ireland, June

6. Potential to secure additional finance

This section sets out an overview of the potential for Northern Ireland to secure additional finance for venture capital from EU and other sources.

- 6.1 As set out in the Sections above, an important findings from this study is that Northern Ireland remains somewhat isolated from external sources of funding for venture capital, be this from European or UK-wide sources.
- 6.2 Although the picture is improving, historically there has been an under-utilisation of UK government schemes in Northern Ireland, with the Angel Co-Fund for example only recently coming on stream. Further, there has been limited use of EU funding; this has been explained mainly by the small-scale size of the Northern Ireland market and technical reasons around the operations of financial instruments (with a decision taken not to seek to implement a JEREMIE programme as developed in a number of other regions of the UK facing similar challenges in terms of venture capital).
- 6.3 The 2014 Ex Ante Assessment of Financial Instruments by McClure Watters for DETI set out the case for exploring ERDF funding to plug current gaps in financing instruments. Key messages from this work included:
- The size of the VC market in Northern Ireland (£75-100m) is largely unattractive to external investors, and there remains a funding gap of £62m for seed/early stage VC (2014-20) even with the current Invest NI interventions in place
 - There is a need for more co-ordinated and integrated approach for SME support and investor readiness.
 - The 2014-2020 EU interventions do align strategically with the Northern Ireland agenda, but either do not work or are not applied, for example, for the COSME and Horizon 2020 loan guarantee schemes there is likely to be insufficient demand and scale in Northern Ireland, and for COSME and Horizon 2020 growth equity again there is likely to be insufficient demand and insufficient size and scale in Northern Ireland (with a £100m+ fund required) and subordination to EU to make the schemes viable.
- 6.4 Overall, the report was not positive regarding the potential use of standard EU financing instruments in Northern Ireland; whilst this study is not a formal update of this ex-ante assessment, this view does seem appropriate. As such, this suggests that a more creative approach is required to leveraging out EU funding. This could include working closely with other regions to develop proposals for cross-regional collaborative schemes and if this is not directly workable with EU public funded instruments, it could be driven by private led venture capital interests and/or collaboration with the British Business Bank.
- 6.5 Further, is worth noting that the British Business Bank has recently announced an additional £400m for the development of Super ECFs, which will likely be used to address the Series A deficit through ability to primary invest up to £5m in portfolio companies (and up to £12m in total into individual companies). Northern Ireland needs to negotiate with the British

Business Bank to ensure that a share of these funds is secured for investment into Northern Ireland, perhaps through a national or multi regional ‘Super ECF Fund’ that covers the northern regions of England, Wales and Northern Ireland – such a fund would also potentially interest the European Investment Fund, who are looking to top up and enlarge state funds, as well as separate private funds.

6.6 As such, there appear to be two potential opportunities for leveraging out additional European funds that should be considered by partners in Northern Ireland in responding to the strategic recommendation and action (Strategic Recommendation 2, and Action 3 respectively) set out in the accompanying Synthesis Report:

- Option 1: seek to develop a British Business Bank ‘Super ECF’ which attracts top-up funding from EIF, potentially working with other UK-regions – this is hard to achieve as EIF and the ECF’s technically do not take a match-in approach (EIF wants pari passu, ECF gives upside benefit to private investors); however, this issue was overcome for the Notion Capital Fund because the fund went pan-European – this is a viable option by retaining a clause requiring that it invests at least the proportion of Northern Ireland government or private investor funding plus EIF matching contribution into Northern Ireland (this is effectively how UKIIF and Notion work). Importantly for Northern Ireland, the size and scale of an ECF would be attractive to institutional investors.
- Option 2 – scale up Northern Ireland’s existing private led funds (or any future funds) through an extension or top-up bids for finance from the EIF, including the potential for co-investment facilities.

6.7 Further, if EU funds under Horizon 2020 were revisited at some point in the future, there is potentially an opportunity to tap into InnovFin finance for innovators for MSBs and SMEs through finance guarantees for loan access improvement (E25k up to E7.5m) and related investment readiness programme sponsorship.

PART II: EVIDENCE FROM COMPARATORS

7. Introduction to the comparators research

This Section contains the write-ups of the comparator reviews completed in Estonia, Finland, New Zealand, North East England, Nova Scotia and the Republic of Ireland

- 7.1 This Part of the Technical report contains the write-ups of reviews of the development of the early stage and growth finance market in six countries and regions that provide a relevant comparison to Northern Ireland.
- 7.2 The purpose of the review of comparators was to provide evidence on other regions and/or small economies which have successfully developed their early stage and growth finance market from a relatively low base, in order to provide 'best practice' examples and lessons for Northern Ireland. This includes both the successful lessons – where things worked well – and the challenging/less successful points – where they did not – in order to inform future intervention and policy in Northern Ireland.
- 7.3 Reviews were completed of six locations:
- Estonia
 - Finland
 - New Zealand
 - North East England
 - Nova Scotia
 - Republic of Ireland
- 7.4 The choice of locations, selected from an initial 'long list' ²⁸, was based on small size, peripheral location, and evidence of government intervention to stimulate the market. The comparators include both countries and regions/provinces.
- 7.5 The comparator reviews were based on a combination of desk research (e.g. reports of organisations, synthesis of investment statistics, policy documents, etc.) and phone-based interviews with experts in the entrepreneurial ecosystem. This was intended to cover the nature of the early stage and growth finance market, strategic and policy context, and interventions and initiatives.

²⁸ The locations included on the long-list but not taken forward were: Hungary, Austin, Texas, Israel, and Singapore

8. Estonia

Summary messages

- The catalyst to Estonia's take-off as a leading tech start-up market has been the role model impact of the *Skype Four*, and their subsequent contribution to establishing the private VC/PE market through the establishment of their own VC fund (Ambient Sound Investments)
- The approach of Government is light touch, with a relatively simple tax system, encouraging inward investment. Establishing a state development fund (EDF) led to a more coordinated innovation financing approach.
- Estonian tech businesses attract considerable international investment. The *Estonian Mafia* model encourages internationalisation, with entrepreneurs pre-seeded and prepared to relocate to obtain accelerator and VC funding.

Characterisation of the early stage growth finance market

Estonia is a small country, with a current population of 1.3m, and a risk finance market that is less mature. Estonia only gained independence from the Soviet Union in 1991 and exhibits a transition economy within which most private companies have been established in the last two decades with business plans based on expectations of low cost labour and resources and reliance on labour intensive low technology, local markets and low added value activities. However, Estonia's low flat rate taxation, reduced to 21% in 2008, and general openness and 'ease of doing business'²⁹ has attracted foreign investment, making it the stellar performer of the former Soviet Republics and being dubbed as a *Baltic Tiger*.

The period of economic growth before the Global Financial Crisis (GFC) was marked by high wage inflation. The need for inflationary control alongside the collapse of the real estate economy held back joining the Euro until 2011. Subsequently, Estonia has again experienced strong GDP growth (8% in 2011, 3.2% in 2012), but this fell to 0.7% in 2013, reflecting the country's trading ties to Finland, Sweden and Russia, which all performed less well than expected³⁰. Whilst Estonia is attracting some foreign investment, foreign venture capitalists (VCs) are deterred by the lack of Limited Partnership (LP) legal structuring, whilst the high cost burden of employers' national insurance tax (33% of gross salaries), typical of neighbouring Nordic companies, is perceived as a major barrier to recruiting high skilled, high wage employees into Estonia.

Three integral factors in the development of Estonia's start-up culture are³¹: (i) **adversity leading to business** start-up, with older generation entrepreneurs learning how to be inventive and either make things themselves or repair during the harsh years under Soviet

²⁹ Estonia was 21st on the World Bank [Ease of Doing Business Index](#) 2013 and 12th of 162 countries in the [Index of Economic Freedom](#) 2008, the best of any former Soviet republic..

³⁰ KredEx Annual Report 2013 p.12

³¹ <http://www.rbs-businesssense.co.uk/interviews/Estonia-start-ups.html>

rule; (ii) **learning from others' success stories**, notably Skype has led to Tallinn becoming a base for learning new skills and inspiring new ideas; (iii) **thinking big from the beginning**, with Estonian start-ups actively looking abroad because the home market is too small and there are wealthy neighbouring markets in the Nordic countries and Russia providing an opportunity for investment and exports³².

Estonia's SMEs form the backbone of the economy accounting for 79% of total employment and contributing 76% of the value added activity. Commercial banks and leasing companies increased loans to SMEs in the pre-crisis period and post GFC bank lending to SMEs was estimated to account for 35% of the total domestic lending to the private sector in 2010. Credit constraints remain, particularly for start-up companies, companies in need of very small amounts of capital, and innovative and high growth companies with difficulties drawing necessary funding from the capital markets to make productivity-enhancing investments. Increased risk aversion due to the GFC has reduced bank lending to SMEs and in response public loans and credit guarantee schemes for start-up firms and exporters have been further extended since 2009 through Estonia's Credit and Export Guarantee Fund, KredEx, established since 2001³³.

Estonia's equity risk finance market is small, and it is estimated that there is an equity gap between the upper limit of angel syndicate funding at €250k and the lower limit of the private VC investment at €2.5m³⁴. The total amount of all VC and private equity (PE) investment in 2013 was just €10.9m, down from €16.6m in 2012³⁵. However, the establishment of the Estonian Business Angel Association (EstBAN) in 2013 led to a sharp increase in business angel investment which amounted to €4.6m in 2013³⁶. Whilst the development of VC finance in Estonia can be traced back to the mid 1990s, with the first interest shown by private VCs in the Baltic States after independence (1991), it was not until the '*Skype Four*' in the mid 2000s that there was concerted interest from the private sector and government³⁷. Four original Estonian software programmers responsible for Skype's development received a large share of the \$2.6bn sale to Ebay in September 2005 and set up their own VC fund Ambient Sound Investments (circa €100m in assets). At this time there was only one other substantial private VC (MVTP, a media tech fund with €20m in assets) operating in Estonia. The Estonian government, now recognised an opportunity to establish the Estonian Development Fund (EDF) in 2008 with a public managed co-investment fund (similar to the Finnish Sitra), which eventually became the separately managed EDF 'SmartCap' fund³⁸. The original state endowment of €37m was not realised after the sale of the state Telecom company³⁹ and the fund managed with €8m in assets until 2012, when the government provided a further €12m.

³² http://kasvustrategie.mkm.ee/index_eng.html

³³ <http://www.oecd.org/cfe/leed/37963347.pdf>

³⁴ Facilitating Business Angel Investments in Estonia, THETA report, 2013

³⁵ Estonian Venture Capital Association 2013 Review

³⁶ <http://www.estban.ee/about/2013-review>

³⁷ Referenced by Heidi Kakko interview 08/10/2014.

³⁸ The fund complies with EU state aid, but is funded by government endowment (originally from a state Telecom company) <http://arcticstartup.com/2013/04/19/complete-baltic-investment-vc-market-overview>

³⁹ Eesti Telecom shares failed to raise the expected level of return and the state endowment to EDF was reduced

Until recent times, a major disincentive for VC investments in Estonian market has been the lack of a sufficient pool of seed businesses⁴⁰. However, the role models provided by the Skype founders allied to strong digital technology public services and electronics sectors (including Ericsson) and reciprocal work between Tallinn Tech University (e.g. Tehnopol incubator) and leading Universities in California (Stanford and Berkeley) has contributed to a flourishing tech start up boom⁴¹ and Tallinn being described as one of Europe's hottest start-up capitals⁴² and Estonia as the next Silicon Valley⁴³.

The early stage growth finance market in numbers⁴⁴

In context, the total private equity investment (encompassing early stage VC and later stage PE funding, including management buy-outs) in the EU in 2012 totalled €36.5bn in nearly 5,000 European businesses, of which €3.2bn were VC investments in 2,900 companies. While the number of venture-backed companies remained stable, aggregate funding was modestly down compared with the previous year and markedly down compared with the height of the financial boom (2008: €6.3bn).

Focusing on Estonia, provision of VC has grown considerably, if not consistently, in recent years, as shown in the Figure below. Total VC investment in 2012 was €8.7m.

Total VC investment in Estonia: €000s

	2007	2008	2009	2010	2011	2012
Estonia	1,922	3,744	2,743	5,814	1,329	8,656

Source: http://ec.europa.eu/enterprise/policies/finance/data/enterprise-finance-index/access-to-finance-indicators/venture-capital/index_en.htm

The €8.7m of investment in Estonia in 2012 was the fourth highest in the EU, as a proportion of member states' GDP (Figure 2 red bar), behind only Hungary, Ireland and Sweden. At 0.051% of GDP, this was also considerably higher than Estonia's Baltic state neighbours. Specifically relating to very early stage seed and start-up VC, Estonia has a similar rate of investment, second only to Hungary (0.056%), and considerably higher than Ireland (0.039%) in third place. In terms of the number of funded SMEs, scaled up as a proportion of GDP, Estonia rates fourth, behind Sweden, Lithuania and Finland, with a rate of 0.0006.

⁴⁰<http://www.teaduspark.ee/UserFiles/Materialid/Uuringud/Research%20Report%20on%20Early%20Stage%20Financial%20Supply.pdf>

⁴¹ References by Andrus Viirg interview 06/10/2014

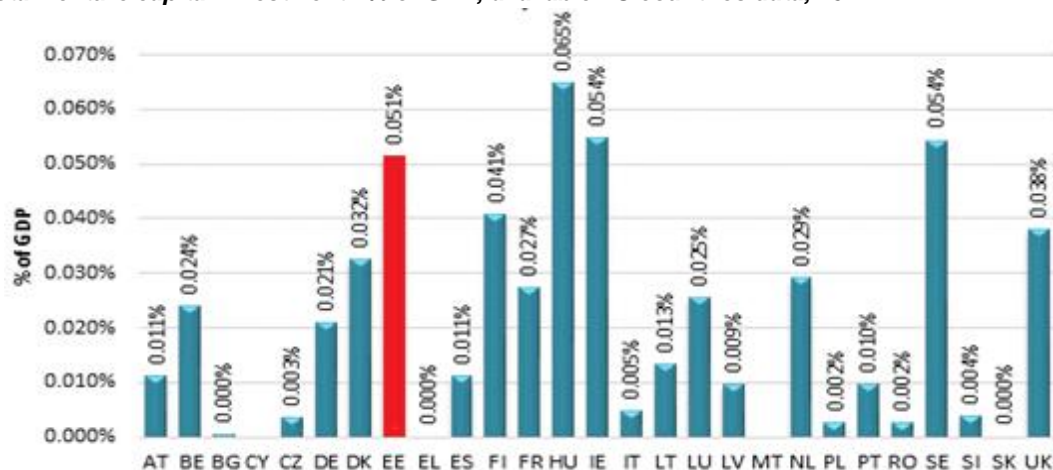
⁴² <http://www.wired.co.uk/magazine/archive/2011/09/european-startups/tallinn>

⁴³ <http://www.bbc.co.uk/news/technology-26275753>

⁴⁴ http://ec.europa.eu/enterprise/policies/finance/data/enterprise-finance-index/access-to-finance-indicators/venture-capital/index_en.htm

Comparison of Estonia's provision of venture capital to other EU member states

Total venture capital investment - % of GDP; available EU countries data; 2012



The latest Estonian Venture Capital Association (EstVCA) 2013 data⁴⁵ suggest that, VC and PE investments have fallen by over a third (-34%) to €10.9m⁴⁶. This has been counterbalanced to some extent by the rapid rise in business angel investments, with the first year of the Estonian Business Angel Network (EstBAN) generating €4.6m in seed and early stage investments. EstBAN members invested in 66 companies in 2013, the highest rate by GDP across the EU with deals ranging from €25k to syndicates of €800k. What is notable about both the activities of EstBAN and EstVCA is that their members are investing internationally and there is a high level of collaboration with foreign investors, notably from neighbouring Baltic States, Russia (St Petersburg) and Finland, but also the UK, USA and Far East. In 2013 43% of EstBAN members' investment went outside Estonia⁴⁷, whilst only two-fifths of EstVCA investment went into Estonia and of the accumulated members €186m investments only 49% are in Estonian HQ companies. This can be explained by the Estonian investors willingness to syndicate, particularly with near neighbouring countries and also by Estonia's new company diaspora phenomenon, where new businesses are relocating their HQs in the US and UK in order to obtain accelerator and follow-on foreign investment.

Strategic and policy context

*"Estonia's government wants to ensure that variety of financial instruments is available to companies in order to overcome the weaknesses of current macro-economic situation"*⁴⁸.

Estonia's enterprise and finance policies have been described as ad hoc and lacking integration and cohesion, until more recent years⁴⁹. In this period the main catalyst of change has been the establishment of the Estonian Development Fund (EDF), established under a parliamentary Act in 2006 as the government body responsible for investing in innovative businesses and developing the start-up ecosystem⁵⁰. The National Reform Programme Estonia 2020, calls for support for Estonian companies in accessing global VC

⁴⁵ Estonian Venture Capital Association 2013 Review

⁴⁶ Includes overseas investments, some into relocated Estonian businesses.

⁴⁷ Estonian Business Angel Network presentation 18/06/2014

⁴⁸ <http://www.financeestonia.eu/news/foreign-trade-minister-anne-sulling-says-government-is-helping-to-finance-startups/>

⁴⁹ References by Andrus Viirg interview 06/10/2014

⁵⁰ <http://www.arengufond.ee/arengufondist/tutvustus/?lang=en&lang=en>

markets as a tool for increasing the volume of Estonian R&D in the private sectors and raising the number and quality of innovation outputs.

Estonian Development Fund's Investment Scheme Strategy (2009)⁵¹

Zernike Group's (2004)⁵² preparatory study for the Estonian government of access to finance found a justified requirement for public intervention at the pre-seed idea generation, business planning and prototyping stage where the risks for private or corporate investors are too great. It also identified market failure in Estonia in start-up product development and early growth stages of initial market penetration. Therefore, EDF's Investment Fund focused on investing in companies in start-up and early stage phases.

Problems in the demand side of early stage private equity were revealed by a series of interviews undertaken by EDF in 2007 with companies, business consultants and financial institutions. These demonstrated that the vast majority of Estonian businesses had insufficient knowledge of VC to consider it as a financing option. There was recognition that in addition to capital provision to meet the equity finance gap, there was also a requirement to raise entrepreneurial awareness of private equity and VC to boost demand.

Entrepreneurship Growth Strategy (2013)⁵³

Estonia is widely believed to have a business-friendly environment, but with room for improvement⁵⁴. Estonia has a relatively stable democracy (two changes of government since 2007) and a transparent, corporate approach to doing business that has attracted inward investing companies⁵⁵. The Estonian tax system is quite straight forward, with comparatively low income tax (21% flat rate⁵⁶) and is perceived as beneficial for entrepreneurs, but there is no tax incentive for angel investments and employers' national insurance payments are at similar high rates to other Nordic countries (33%). These matters are under current government review. There is also an established, well-functioning entrepreneurship support structure. A key objective of Estonia's growth strategy is to raise its international reputation and to attract further foreign investment.

However, Estonia's predominately SME economy is characterised by several strategic weaknesses which impede productivity and growth. Too many established businesses lack ambition, both in terms of product development and aspiration towards foreign markets, with room for improvement in the quality of management and efficiency. Other key bottlenecks are the lack of effective co-ordination in export activity, which is essential for Estonia's economic growth and, despite recent improvements (notably at Tallinn Tech University) the need for improved linkages between businesses and research institutions.

The Strategy is built on the following three principles:

⁵¹ <http://arengufond.ee/wp-content/uploads/2013/04/EDF-Investment-Scheme-Strategy-ver-1-APPROVED-BY-EC1.pdf>

⁵² Access of Enterprises to Venture Financing in Estonia: Feasibility Study of Government Support Scheme, Zernike Group, 2004

⁵³ <http://kasvustrateegia.mkm.ee/pdf/Estonian%20Entrepreneurship%20Growth%20Strategy%202014-2020.pdf>

⁵⁴ Estonia was 21st on the World Bank [Ease of Doing Business Index](#) 2013 and 12th of 162 countries in the [Index of Economic Freedom](#) 2008

⁵⁵ Interviewees referred to Ericsson, and also to other neighbouring Nordic and Eastern European based companies.

⁵⁶ Corporate income tax is only chargeable on profit taking dividends.

- Strategic customer management – strengthening the state's role in improving enterprises' strategic planning capacity.
- Enterprise development – prioritising thorough analysis, planning and implementation of activities at the core of business support policy.
- Less direct grants and more financial instruments – transitioning to a market based support system, using financial instruments and VC solutions and by making services partly chargeable.

Figure 8-1: The relationship between the Entrepreneurship Growth Strategy and EU initiatives



Source: <http://kasvustrateegia.mkm.ee/pdf/Estonian%20Entrepreneurship%20Growth%20Strategy%202014-2020.pdf>

Figure 3 above demonstrates how this strategy fits into wider EU policy on entrepreneurship. The strategy highlights meeting several key challenges:

- **Increasing the availability of capital for starting a business**, by improving the availability of early stage financing, broadening the selection of financial instruments and fostering the activities of business angels;
- **Improving recognition and support to develop business opportunities** on the basis of technology and market trends, developing business ideas and prototypes and testing of business concepts, putting global potential ideas into practice, and focusing on developing start-up businesses into viable enterprises, and improving the survival rate of young enterprises.

Interventions and initiatives

The European Investment Fund (EIF) states that the Baltic Sea Region is of key importance to the fund: in 2011, it committed €700m to this region, 63% in guarantees and 37% in equity. It is notable that the first EU JEREMIE holding fund agreement in the Baltic States was in Latvia in 2008 and that no such arrangements have taken place in Estonia.

In total, the EIF has undertaken equity investments in 17 funds that at least partially operate in Estonia. A number of these comprise the **Baltic Innovation Fund (BIF)**, a €100m Fund-of-Funds initiative launched by the EIF (€40m) with the three Baltic States (each contributing €20m) in 2012 to boost equity investments into Baltic SMEs with high growth potential. **KredEx** is the Estonian government agency overseeing their BIF commitment. BIF will invest €100m into PE/VC funds focusing on the Baltic States over four years from January 2013, through a ‘fund of funds’ process to attract additional private finance and implement the best market standards for equity investing in businesses.

KredEx is the state financing institution assisting Estonian enterprises to grow more rapidly and expand more securely into foreign markets, offering loans, VC, credit insurance and

guarantees. In 2013, preparations began to introduce an Early Phase fund of funds⁵⁷, with €60m of government funding backed by at least a further €20m of private investment into three sub-funds addressing start-up and early-phase enterprise investments at the pre BIF stage. The early-stage fund of funds are due to close and start operations late in 2014.

There have been delays in closing the BIF and KredEx funds and these have not been helped by government hold-ups in addressing the legal changes required in Estonia to allow Limited Partnership (LP) VC status. It is believed that this will encourage more foreign early stage VC investment and there is also considerable demand for the stretch funding that the KredEx angel co-fund will provide to the country's growing band of 150-200 angel investors⁵⁸. There is strong support from EstBAN for a light touch, rapid access, matching co-fund model, similar to the Scottish, Dutch and Portuguese Co-Investment Fund in addressing the seed and early stage equity gap.

The **Estonian Development Fund (EDF)**, established in 2006, is the state-financed VC fund investing into innovative Estonian companies with a sustainable unique competitive edge and rapid expansion plans. Originally promised an endowment of €37m, due to a shortfall in state Telecom shares only €8m was provided by the state until a further €12m in 2012. EDF is also actively engaged in developing Estonia's VC market through socio-economic and technological foresight research work. EDF acts as a pari-passu co-investor with the private sector, requiring at least 50% private investment and (unlike in Finland) whilst the aim is to let the private sector VC's lead, due to the lack of experience of Estonian private VC co-investors, it has frequently taken an active role on the boards of portfolio companies to facilitate their development – at least until VC partners are able to take a more active role.

The EDF's VC investment arm is **SmartCap**, focusing on early-stage go to market stage innovative Estonian start-ups with high growth potential and international scalability; *"highly motivated entrepreneurs that have a plan to disrupt their industry"*. SmartCap manages the largest portfolio (21) of Estonian based and originated start-ups, across the technology, biotech, and energy sectors. **SeedBooster** is EDF's virtual business incubator assisting potential high growth international business projects and getting them ready for VC financing. Pre-seed assistance is an essential key to Estonia's globally investible start-ups.

Public agencies and funds in Estonia

Network	Details	Evidence of 'success'
Estonian Development Fund (EDF)	<ul style="list-style-type: none"> Established in 2006 as the government's direct investment agency to address the VC/PE funding gap. SmartCap (€12m⁵⁹) provides early stage VC, with SeedBooster virtual incubator aiding VC readiness. 	<ul style="list-style-type: none"> Currently 21 portfolio companies. The most successful exit in the 6 years since the funds started investing in 2008 has been GrabCAD which received investments from Seedcamp and TechStars and sold for >\$100m⁶⁰.
Baltic Innovation Fund (BIF)	<ul style="list-style-type: none"> €100m Fund of Funds initiative across the 3 Baltic States, launched by EIF with €40m in 	<ul style="list-style-type: none"> Three underlying funds have closed, more than meeting 50% private matching requirements:

⁵⁷ http://www.kredex.ee/public/aastaraamat2013/en/KredEx_annual_report_2013.pdf

⁵⁸ Heidi Kakko interview 08/10/14

⁵⁹ SmartCap received €12m in state funding in 2012 - Heidi Kakko interview 08/10/14

⁶⁰ <http://www.eversheds.com/global/en/what/publications/shownews.page?News=en/estonia/en/GrabCAD>

Network	Details	Evidence of 'success'
	2012 with €20m investment from each government	<ul style="list-style-type: none"> • Private Equity Fund (BIF €20m + €80m PE); • Mezzanine Fund (BIF €15m + €55m PE); • Livonia Partners fund I Fund (BIF €20m + €65m PE); • Inventure Fund II reached second close at €65m.
KredEx	<ul style="list-style-type: none"> • Established in 2001 as the state credit and loan guarantee agency, assisting exports. KredEx (€60m state + €20m PE) Early Phase Fund of Funds is due to start operating in late 2014. 	<ul style="list-style-type: none"> • Three planned funds addressing seed, early and growth VC funding: • Risk Capital seed fund (€15m+PE); • angel co-investment fund (€15m+angel funds) • Growth fund (€30+PE).
Tehnopol Science Park	<ul style="list-style-type: none"> • Specialist technology science park and home to Tallinn Tech University and IT College, developed to 50,000 m² office/lab space, since 1998. 	<ul style="list-style-type: none"> • Home to 180 technology based businesses • Incubator with 20+ businesses • Access to 5 specialist R&D centres
Startup Wiseguys	<ul style="list-style-type: none"> • EDF backed private accelerator offering first B2B accelerator in Europe building linkages to large international target markets. It is part of the CEED 5 accelerator network established in Eastern Europe in 2011. 	<ul style="list-style-type: none"> • The scheme offers initial grant (up to €30k) and equity (€10k for 8% share) funding. • The most promising performers can obtain follow-on funding of up to €250k.
GameFounders	<ul style="list-style-type: none"> • Europe's first gaming accelerator, privately established 2012 	<ul style="list-style-type: none"> • Offers access to 120+ international expert mentors • Seed capital up to €15k for 9% share, 3 months free office space and international pitching.

Tallinn Tehnopol Science Park⁶¹, formed originally by the Tallinn Tech University Innovation Centre in 1998 is a science and business environment for knowledge based companies. There are currently over 180 companies on the site, along with Tallinn Tech University and IT College. Tehnopol provides infrastructure and international cooperation opportunities for companies, including a Startup Incubator with 20 plus start-ups. It aims to be the centre of Estonia's tech companies, accelerating starts-ups and growth, by bringing together science and entrepreneurship. There are 14,000 students, 3,000 researchers, five science R&D centres and specialist laboratories in biotechnology and mechatronics in close proximity to the 50,000m² of office, laboratory and leisure space. **Tallinn Tech University** has worked closely with Enterprise Estonia's Silicon Valley office to nurture pre-seeding stage exchange trips with leading Californian universities and accelerators, providing potential entrepreneurs with insight into international accelerators and VC requirements⁶².

Startup Wise Guys 'BusinessTech' accelerator programme, backed by EDF and business angel funding, is the first business to business (B2B) focused accelerator in Europe, offering:

⁶¹ <http://www.tehnopol.ee/en/About/Team/Supervisory-Board>

⁶² Andrus Viirg interview 06/10/2014

a 3+1 month program; seed investment; high valued mentors and a well-established business network. It links enterprises and start-ups by helping to build sustainable connections to large target markets and launch pilots with international companies. Key specialties are in payments, banking and security, reflecting expertise in the Estonian business landscape. The goals are to ensure promising start-ups deliver on their potential and make the connections to go further. **SmartCap will invest €1m in Startup Wise Guys** alumni companies with a local presence. Each team accepted to the accelerator receives initial seed financing in the form of a grant of up to €30k. The most promising companies, with proven market viability and strong project teams, receive follow-up funding of €30k-250k after the programme. The selected start-ups also receive up to €10k investment, based on the number of founders, in return for 8% equity stake in the start-up.

GameFounders, privately established in 2012⁶³ and partnered with San Francisco incubator I/O Ventures, is Europe's first gaming accelerator with a network of angels and VCs focused on gaming start-ups. Start-ups are offered opportunities to practice and present to international VCs, corporate and angel investors through 'Demo Days' held in Tallinn, Helsinki, London and San Francisco. Start-ups also get funding upon acceptance to the accelerator, covering accommodation and other living expenses for the team while living in Estonia. It offers: 120+ gaming gurus, CEOs and developers as mentors; seed capital up to €15k (€5k per founder present in Estonia) for a 9% share in the recipient company; game-targeted partnership deals; game incubator with 3-months of free office space in Tallinn; access to global networks of gaming contacts; access to gaming investment VCs and angels.

Networks and associations in Estonia

Network	Details
Estonian Venture Capital Association (EstVCA)	<ul style="list-style-type: none"> • EstVCA, founded in 2009, currently has 38 VC/PE member organisations. • It aims to promote the national VC/PE industry raising it from the current €186m accumulated investment into 72 portfolio companies to €1bn by 2020. • The industry is small and embryonic and members include international investors, with half of investments made overseas.
Estonian Business Angel Network (EstBAN)	<ul style="list-style-type: none"> • EstBAN, founded in 2012, currently with 71 members, including international investors from USA, UK and other parts of Europe. • In 2013 members invested €4.6m, 85% in syndication and 43% outside of Estonia. • EstBAN has an open approach, uses an international angel crowd platform and works closely with neighbouring national BANS.

The **Estonian Venture Capital Association (EstVCA)**⁶⁴, founded in 2009, currently has 38 VC and PE members (including 21 associates) and a further 10 partnership organisations (including EIF and the Department for Economic Affairs). EstVCA's main goal is to develop the Estonian PE and VC industry to a €1bn industry by 2020 and to promote the culture of innovative, high growth entrepreneurship in Estonia. By the end of 2013 €186m had been invested by members into 72 active portfolio companies, aggregating 7,379 employees and €722m in sales turnover, including 11 exits. Most of the companies in the association's

⁶³ <http://techcrunch.com/2012/06/21/gamefounders-launch/>

⁶⁴ Estonian Venture Capital Association Review 2013

portfolio are early stage companies (17% seed, 26% start-up, 4% early growth, 24% growth, 29% expansion and buyout) with half of the companies headquartered in Estonia. Key investment sectors are business services (25%), IT, computing and electronics (29%) and bio/life sciences (19%). International investments have largely been into neighbouring Baltic States (31%), but also include UK (4%) and US (7%) investments following Estonian businesses that have relocated to those countries.

The **Estonian Business Angels Network (EstBAN)**, founded in 2012, is an umbrella group for business angels, syndicates and angel capital groups seeking investment opportunities in Estonia and its neighbouring regions. It aims to grow the quantity and quality of local seed stage investments. It is a member of EstVCA and the European Business Angel Network (EBAN). EDF provided catalyst funding to assist with administration and the 50 plus promotional events to generate interest and market knowledge, with a target of generating €1m in year one deals. The first year review⁶⁵ found 83 investments in 66 companies, representing over €4.6m, with over half of investments in pre-seed and early stage companies. 85% of investments were in syndication and 43% were outside of Estonia, into Estonian businesses that have relocated internationally, or through international investor links, including close ties with Finland (FiBAN) and St Petersburg (SoBA). EstBAN is currently working with Latvian new national BAN. By June 2014 EstBAN membership had grown from 25 to 71 and include international investors from USA, UK and other parts of Europe⁶⁶. A key to EstBAN's success is its open operation, avoiding gatekeeper blockages, with members publicised on their website and deal pitches publicised internationally through their angel crowd platform (similar to 'AngelList').

Lessons and implications for Northern Ireland

Whilst Estonia's seed, early and growth stage risk funding markets are still in their embryonic stages and may be viewed as less developed than those in Northern Ireland and therefore relatively untested, the recent developments in Estonia's tech start-up sector which have made Tallinn one of Europe's hottest start-up capitals in recent years, suggest that there are some key transferrable lessons and implications to take on board.

Four points are made:

- The important catalytic impact of the '*Skype Four*' in 2005 cannot be overestimated. Their success has helped establish the nation's private VC market and provided a highly visible role model which has inspired a succeeding generation of aspiring tech entrepreneurs. "*Estonians are single minded with a strong will to succeed.*⁶⁷"
- Government has undertaken a relatively light touch role in the development of innovation and business finance. Until the late 2000s activities were described as *ad hoc* and lacking policy co-ordination. The government establishment of EDF led to a structured *pari passu* co-funding approach to early stage equity financing, nurturing private VC with hand-holding which has yielded some success; generating successful

⁶⁵ <http://estban.ee/images/estban-the-first-year-in-retrospect.png>; <http://estban.ee/about>

⁶⁶ Estonian Business Angel Network presentation 18/06/2014

⁶⁷ Heidi Kakko interview 08/10/14

exits (e.g. GrabCAD) and developing a broader based ecosystem through the establishment of EstVCA and EstBAN⁶⁸.

- A key to Estonia's recent success is the high level of foreign investment in its companies. The recognition that innovative companies need international scalability in order to attract investment and fulfil their growth potential has led to the so called '*Estonian Mafia*' model⁶⁹. This developed in the late 2000s by locating a government office in Silicon Valley promoting innovation exchange between Berkeley and Stanford Universities and Tallinn Tech University, allowing pre seed entrepreneurs the opportunity to learn what the US accelerators required. In time this led to Estonian entrepreneurs enrolling in US and UK accelerator programmes and reciprocal US and UK VC investments into Estonian businesses.
- Estonia still has a long way to travel to develop an effective risk finance ladder for innovative potential high growth businesses. The ability to promote an open, relatively stable, clearly governed economy with a relatively simple tax system has encouraged inward investment and it is perceived as a strategic gateway to Russia and North Eastern Europe. This openness is exemplified by the new EstBAN which operates an open crowd angel funding approach that has delivered considerable levels of international investment into Estonian start-ups. More can still be done, with a need to address tax issues such as the high rates of national insurance which deter recruitment of key staff into the country, the lack of angel investment tax relief, and the need for VC LP legal status. However, the promise of considerably more funding from EIF and the Baltic governments through the new Baltic Innovation Fund of Funds and Estonia's new seed and early stage KredEx funds of funds, including an angel co-fund suggest that Estonia is moving towards a far more co-ordinated finance ladder⁷⁰.

⁶⁸ Both organisations were set-up by ex EDF staff

⁶⁹ Estonian Business Angel Network presentation 18/06/2014

⁷⁰ EstVCA 2013 Review pg.4

9. Finland

Summary messages

- Although Finland's VC industry is relatively young, established largely since the late 1980s, the country has since that time invested heavily in an innovation policy offering SME support and risk finance for seed, early and growth ventures.
- In 2013 Finland was the *hottest start-up hub in Europe* with €135m investment, into 176 Finnish companies, representing the highest proportion of national GDP (0.067%) in Europe.
- A focus of public investment post GFC into developing entrepreneurship seed and early stage investment has seen the rapid rise of the gaming sector (from €250m to €900m between 2012-13) and attracted considerable foreign VC investment (€44m in 2013).

Characterisation of the early stage growth finance market

Finland is a relatively small European country, with 5.4m population, yet it appears to perform well above its size, when it comes to innovation and the supply of venture capital. Finland's venture capital and private equity (VC/PE) industry^{71 72} is relatively young. Whilst the first companies can be traced back to the late 1960's, these were small, ordinary limited companies, mostly supported by banks and big corporations. From the outset in 1967, the government assisted through the Bank of Finland's 60% share in the first Finnish VC/PE company 'Sponsor'. Sponsor was established as a vehicle to renew the Finnish financial system, rather than act as a profit-oriented VC/PE company. Investment strategy was left to the fund managers, with government as a passive supporter, which remains a key characteristic of Finnish VC policy. Only in 1988 was the first US-style Limited Partnership (LP) VC fund established by SKOP, a leading commercial bank. Subsequently government funds have operated either as direct funders on a co-investment basis with more than 50% coming from private investors who take the lead in working with portfolio companies, or through fund of funds with underlying private LP funds (typically of 10-15 years duration) providing more than 50% of investment and with the government managed direct or umbrella funds operating on a revolving evergreen basis⁷³.

In recent years, the VC industry has shifted its focus from entrepreneurial ventures to mature companies and management buyouts, leaving a gap in the provision of funding and support for early stage ventures by private VC firms^{74 75 76}. Key informants refer to the widespread failure of the private VC market to achieve sustained success due to the 'Dotcom'

⁷¹ <http://www.etla.fi/wp-content/uploads/2012/09/dp1003.pdf>

⁷² http://www.unece.org/fileadmin/DAM/ceci/ppt_presentations/2008/fid/Pertti%20Valtonen.pdf

⁷³ <http://www.etla.fi/wp-content/uploads/2012/09/dp1003.pdf>

⁷⁴ <http://www.sitra.fi/julkaisut/raportti70.pdf>

⁷⁵ <https://helda.helsinki.fi/bitstream/handle/10227/297/191-978-952-232-016-2.pdf?sequence=1>

⁷⁶ http://www.tem.fi/files/38395/TEMjul_1_2014_web_09012014.pdf

market failure followed by the global financial crisis (GFC) in the early and late 2000s. “This has led to a cautious and risk averse surviving group of private VCs investing in more established firms in later stage markets.”⁷⁷

Informal investors are therefore seen to have a crucial role in filling the equity gap that arises. There are now three business angel networks in Finland, with an estimated 500 business angels, investing €50m annually and with the recent 2012-13 shakeout of 10,000 staff from Nokia there is currently a large pool of new spin-out ventures and entrepreneurial seed funding⁷⁸⁷⁹. Venture capital investments specifically in seed and start-up/early stage businesses, have recently recovered from the GFC slump (€79m in 2012⁸⁰), returning to pre GFC boom rates at €135m in 2013, and with considerable foreign investment (33%).

This recent rise in VC investments has been spurred by the take-off of the gaming industry, which rose from €250m to €900m between 2012-13 and by 2,200 employees, driven by two major growth companies; Rovio (‘Angry Birds’) grew to an 800 employee company and Supercell sold a 51% stake for €1.5bn after 3 years as a 50 employee company.

The early stage growth finance market in numbers⁸¹

Finland was “the hottest start-up hub in Europe” in 2013, when VC investment is measured as a proportion of GDP, with 0.067% investment representing €135m into 176 Finnish companies, signalling a return to pre GFC boom period rates. The first half of 2014 has seen increasing rates of investment, whilst there are trends for overall smaller levels of investment allied to increasing seed and earlier stage investment and syndication. Another key factor is sustained high level of foreign VC investment (€44m in 2013 and €20m in the first half of 2014)⁸².

Contextualising Finland’s VC investment with the rest of the EU, total private equity investment (i.e. early stage VC and later PE deals e.g. MBO/MBIs) in the EU in 2012 totalled €36.5bn in nearly 5,000 European businesses, of which €3.2bn (8.8%) were VC investments in 2,900 companies⁸³. While the number of venture-backed companies remained stable, aggregate funding was modestly down compared with the previous year and half of the height of the financial boom (€6.3bn in 2008).

Looking at Finland specifically, VC also declined considerably from the onset of the recession; €79m in 2012, representing just three fifths of the 2007 boom level of €132m.

Total VC investment in Finland: €000s

	2007	2008	2009	2010	2011	2012
Finland	132,173	120,015	90,910	98,986	85,691	79,064

Source: http://ec.europa.eu/enterprise/policies/finance/data/enterprise-finance-index/access-to-finance-indicators/venture-capital/index_en.htm

⁷⁷ Marika Enehjelm, MD of Finnish Venture Capital Association (30/09/14)

⁷⁸ Petri Rouvinen, ETLA Research Institute of the Finnish Economy (29/09/14)

⁷⁹ Nordic Growth Entrepreneurship Review 2012, December (pp47-53)

⁸⁰ <https://www.fiban.org/about>

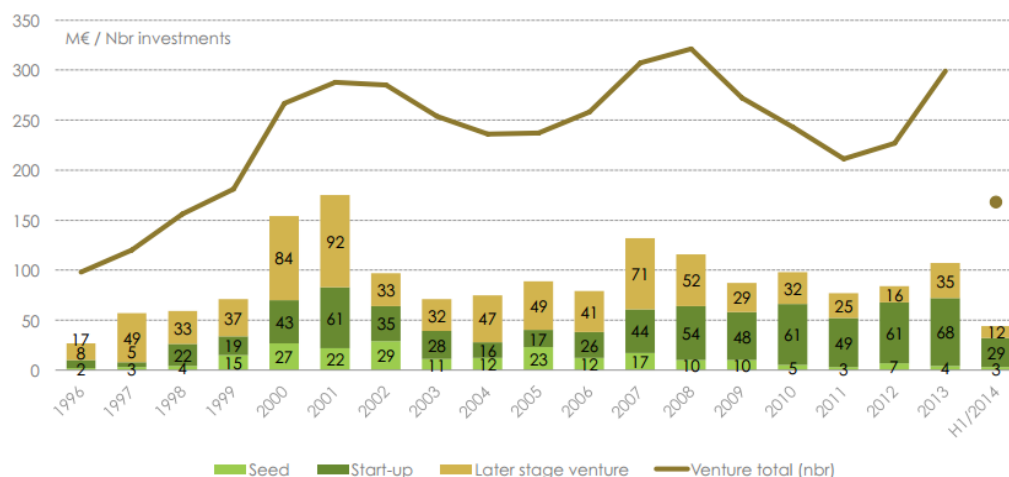
⁸¹ http://ec.europa.eu/enterprise/policies/finance/data/enterprise-finance-index/access-to-finance-indicators/venture-capital/index_en.htm

⁸² http://fvca.fi/en/knowledge_centre/statistics

⁸³ http://ec.europa.eu/enterprise/policies/finance/data/enterprise-finance-index/access-to-finance-indicators/venture-capital/index_en.htm

The Figure below presents a similar pattern, with a particularly large fall in seed and later stage venture investments, with start-up investments growing more consistently since the mid-2000s. These figures do not capture the roles of business angels and public grant and loan agencies such as Finnvera and Tekes in assisting pre seed and seed ventures, but clearly demonstrate their importance during and since the GFC, when there has been little private seed VC investment activity.

Annual stage distribution of venture investments made by Finnish private equity firms in 1996-2014



Source: http://www.fvca.fi/files/864/14H1_VC-PE_Industry_in_Finland.pdf

The Figure below demonstrates the increasing role of foreign investments into the Finnish VC market since 2013, spurred by the success of the gaming industry and policies to attract in foreign investment, including public VC co-funding and syndication.

Investment amounts made in Finnish portfolio companies by origin of investor in 2007-2014

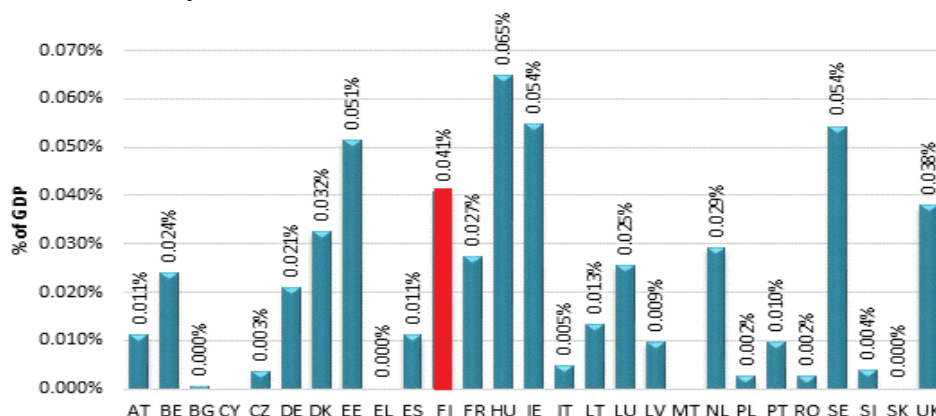


Source: http://www.fvca.fi/files/864/14H1_VC-PE_Industry_in_Finland.pdf

Finally, the Figure below demonstrates that even during the GFC slump in the VC market, Finland's total VC investment as a proportion of GDP at 0.041% was one of the highest in the EU in 2012; fifth highest after Hungary, Ireland, Sweden and Estonia. Finland's position for seed and start-up investments at 0.034% of GDP is fourth, behind Hungary, Estonia and Ireland.

Comparison of Finland's provision of venture capital to other EU member states

Total venture capital investment - % of GDP; available EU countries data; 2012



Source: http://ec.europa.eu/enterprise/policies/finance/data/enterprise-finance-index/access-to-finance-indicators/venture-capital/index_en.htm

In relation to the number of SMEs funded, as a proportion of GDP, Finland has the third highest number for its GDP in the EU, behind Sweden and Lithuania. High growth firms are important to Finland, whilst just 4.8% are high growth, 50% of jobs are created by them.

Strategic and policy context

Finland's seed, early and growth stage markets have been characterised by widespread government intervention, underpinned by a strong innovation policy. Growth entrepreneurship has had a priority policy status in Finland throughout the past 15-20 years. The Ministry of Employment and Economy (MEE), established 2008, sets the National Innovation Strategy, and has sought clearer defining roles and offerings of key public agencies, following key policy research recommendations⁸⁴.

Key milestones in the evolution of Finnish VC policy have included⁸⁵:

- Direct policy began in 1986, after a fact-finding mission to Silicon Valley, and the first direct VC investments by the government through Sitra (the Finnish Foundation of Technology and Innovations)
- In 1990 the Finnish Venturing Association was established, and the Start Fund of Kera was established (Regional Development Fund)
- 1993 government guidelines for VC policy included the broadening of investment rules of pension funds and subsidising management fees of VCs.

In 2004 an early stage finance gap of between €0.5m and €3m was recognised. Government programmes covered the smaller requirements, whilst existing VC covered later stage finance, at lower risk, with little support in between. A major criticism of the Finnish government's approach by Luukkonen (2006) and Murray et al. (2009)⁸⁶ has been the focus

⁸⁴ Veugelers et al., 28.10.2009. Evaluation of the Finnish National Innovation System

⁸⁵ http://www.unece.org/fileadmin/DAM/ceci/ppt_presentations/2008/fid/Peritti%20Valtonen.pdf

⁸⁶ Evaluation of the Finnish National Innovation System (2009)

http://www.tem.fi/files/24929/InnoEvalFi_FULLL_Report_28_Oct_2009.pdf

on closing the finance gap, rather than establishing a sustainable early stage VC ecosystem. Policy measures have tended to be permanent, rather than temporary and flexible (e.g. government managed evergreen, rather than time limited 10-15 year funds), without attention to nonmonetary value-adding functions of VC, with private co-investor VCs expected to take the lead. Only recently has there been greater focus on the value of the latter (e.g. hands-on fund manager skills) for the growth of high-tech start-ups.

Finland's Regional Development Strategy 2020⁸⁷, recognised that there were too few high growth⁸⁸ enterprises in Finland, with a lower proportion (6%) than in other Nordic countries (15%), or the average across Europe (11%). The small number of growth enterprises may be due to the lack of VC for those with a strong growth aim, along with the small proportion that are growth-oriented. The latter poses challenges to economic development and future employment. Finland's development was felt to be limited by⁸⁹: lack of entrepreneurship; a very limited pool of internationally operating, professional start-up and early growth VCs; a poor local exit market for M&As and IPOs.

To address the limited supply of capital, the Finnish Government:

- Opened the VC-market for foreign fund-investors (taxation measures)
- Incentivized the corporate venture investments (taxation measures)
- Permitted pension funds to invest more in stocks, in non-listed companies and in VC-markets (although pension funds persistently prefer later stage investment to more risky VC).
- Increased the supply of seed-capital via a new state-owned seed fund.

To improve the demand side entrepreneurial competence gap the government:

- Supported the competence building of start-ups through an investment readiness programme
- Introduced tax incentives for business angels' investments.
- Additionally, the Universities privatisation Act in 2009 led to merger of 3 universities into Aalto University in 2010 and helped to establish a strong start-up culture through Aalto Entrepreneurial Society and Aalto Centre for Entrepreneurship⁹⁰, as well as encouraging other universities in this field.

The Nordic Growth Entrepreneurship Review (2012) suggested that changes were underway, but underlined that although Finland has excellent pre-conditions for rapid growth companies, its 'gazelle' performance was only middling in Nordic terms: 92 gazelles with average employment of 83 representing 0.56% of young firms (2006-09), but with a high percentage that have grown to over 501 employees (48%, compared to around 25% in

⁸⁷ http://www.tem.fi/files/27807/TEM_53_2010_netti.pdf

⁸⁸ The OECD (2008) standard definition is referred to here: 'all enterprises with average annualized growth in employees (or in turnover) greater than 20% a year, over a three year period, and with ten or more employees at the beginning of the observation period'

⁸⁹ http://www.unece.org/fileadmin/DAM/ceci/ppt_presentations/2008/fid/Perti%20Valtonen.pdf

⁹⁰ Petri Rouvinen, ETLA Research Institute of the Finnish Economy (29/09/14)

Sweden). The report highlighted the recent focus of policy on seed and start-up support and finance and the need for further work to develop an entrepreneurial culture.

Recent programme reviews of Finnvera (2012)⁹¹ and Finnish Industry Investment (2014)⁹² have found that the current overall policy is complex, with a fragmented multi-dimensional structure which requires greater coordination and focus under MEE.

Both FII, the state investment company, and Finnvera, the government's regional SME financing programme, were found to be risk averse and underutilised.

The FII report (2014) found that Finland has a relatively well developed later stage private equity market, but lacks a well-functioning VC ecosystem, leading to a current funding gap of €1m-5m. The review underlined the need for: greater focus on growth and export oriented firms; more flexible temporary policy interventions of 10-15 years to target bottlenecks; more hands-on approach to fund management, driving up fundraising and quality and focus of investments, with more international focus; FII should focus on building a well-functioning later stage VC system; the need for a holistic approach by MEE and FII to provide balanced portfolio of programmes to meet bottlenecks, with addressing the liquidity needs in the later stage VC market (the 'series A' and 'B' gap) the key current target. In summary, the current key policy recommendations are:

- Improve the Finish VC ecosystem through a more direct, hands-on approach.
- Increase liquidity in later-stage VC by re-focusing FII's direct investments to more focused initiatives, industry policy investments and leveraging in foreign investment.
- Renew FII to work with the Finnish VC Association (FVCA) and focus on more flexible temporary interventions.
- Focus governance on strategic guidance and remove all obstacles for an efficient ecosystem, with MEE taking a more direct and holistic approach.

Interventions and initiatives

The Finnish government has actively engaged in an innovation policy, from the establishment of Sitra (the Finnish Innovation Fund) in 1967, with a keen focus since the late 1980s in the establishment of a seed and early stage equity ecosystem. The main forms of the government's extensive intervention programmes are presented in the tables below. These feature Finnish Industry Investment (FII), which has been responsible since 1995 for public funding into later stage VC and growth PE funds, either directly in partnership investments into companies, or through fund of funds. A general principle of Finnish government equity funding is a requirement for at least 50% private investment and that the private investors will lead in nurturing the portfolio business. Finnvera was established in 2003 with a focus on regional SME funding assistance, matching national public funding with regional authority funding and local banks. Finnvera was particularly effective in providing loan guarantee funding to SMEs, leveraging bank finance during the GFC. However, the operations of the regional funds have proved problematic and ineffective and the signs are

⁹¹ http://www.tem.fi/files/33486/TEMjul_28_2012_web.pdf

⁹² http://www.tem.fi/files/38395/TEMjul_1_2014_web_09012014.pdf

that these will be wound down. From 2005 the Seed Fund Vera operated, complementing the later stage VC funding of FII, but from 2014, Tekes, the public R&D grant funding organisation will be operating a €20m per annum seed fund, with Finnvera focusing on an export credit agency role, facilitating government policy for greater export activity. The government backed innovatory Vigo accelerator programme of 10 accelerators, specialising in globalising high tech intensive R&D sectors (e.g. advanced manufacturing, cleantech and life sciences as well as digitech) were established in 2009. They operate through the private company Profect Ltd, which has proven global business expertise and financing networks and aims to bridge the gap between early stage tech funding and international VC. There are over 50 portfolio companies in the programme.

Additionally, the European Investment Fund (EIF) has since 1994 undertaken equity investments into 58 funds operating, at least in part, in Finland, of which nine were entirely within Finland. These have included ICT, life sciences, cleantech sector specialists, as well as more generalist funds.

Public agencies and funds in Finland

Network	Details	Evidence of 'success'
Finnvera (includes Veraventure Ltd regional VC fund)	<ul style="list-style-type: none"> The state financing company since 2003, providing loans, guarantees, VC investments including Seed Fund Vera (2005) and Regional Fund of Funds. Its role now focuses on being the official Export Credit Agency of Finland. 	<ul style="list-style-type: none"> Loan guarantees have helped SMEs obtain bank finance during the GFC. Provided gap funding in €100-€500k range. 2008 launched InvestorExtra for private investors to review and angel invest into portfolio
Tekes	<ul style="list-style-type: none"> The public funding organisation for R&D and innovation. Targets growth and internationalising SMEs. 2013 invested €349m, including €133m on 680 start-up grants and loans. 2015 announced new grants (€500k limit) and loans (€750k), alongside investments from the new Tekes VC Ltd (€20m pa catalyst fund). 	<ul style="list-style-type: none"> Track record of R&D grants to pre seed/seed innovative businesses. Evidence that funding is attracting European tech VCs into Finland: <i>"One of the reasons that we've been excited about Finland – we've done multiple investments there – is not only is there a lot of talent there, the Finnish government is incredibly supportive financially"</i> (London Venture Partners seed VC)
Finnish Industry Investment Ltd (FII)	<ul style="list-style-type: none"> State owned investment company, established 1995. Linked to innovation policy, providing VC/PE finance. By 2013 €900m in assets under management, €1bn+ invested since 1995 with <50% public funds in Finnish industry, 515 portfolio companies, consolidated profit -€7.6m and 30 staff. 	<ul style="list-style-type: none"> FII has a track record of leveraging more than 50% private funding through direct investment or fund of funds. Growth I, a first cycle fund of funds, recently completed investments into 11 Finnish VC and growth funds and will be succeeded by a similar €130m Growth II fund with a focus on VC and series A.
Sitra (Finnish Innovation Fund)	<ul style="list-style-type: none"> Founded in 1967 investing directly and under finds of funds, it still reports to government although now independent. Focus is on intensive R&D (i.e. life science) 	<ul style="list-style-type: none"> Sitra is evergreen, successfully financed from its own endowment capital and return on investments.

Network	Details	Evidence of 'success'
Vigo Accelerators	<ul style="list-style-type: none"> Launched 2009 - 10 private led global business accelerators steered by Tekes and Finnvera. Operate as co-entrepreneurs, offering proven business expertise, funding, and extensive networks, accelerating start-ups to grow faster, smarter, and globally. 	<ul style="list-style-type: none"> Bridges gap between early stage tech firms and international VC, with 50+ portfolio in cleantech, digitech, life sciences, advanced manufacturing and 5 exits. Partnered by VC/PE companies with Nordic-wide coverage (e.g. Conor Venture Partners, Eqvitec, Inventure).

Finland has a well-established network of government sponsored innovation and global support agencies. This includes VTT, the largest multi tech applied research organisation tackling high end tech solutions in Northern Europe. The Foundation for Finnish Inventors advises and funds early stage innovation and since 2009 has been instrumental in the generation of pre commercialisation activity in universities. Finpro provides a global network of trade centres to help companies access comprehensive globalisation services and with FinNodes to achieve greater linkages with global innovation centres.

The Finnish Venture Capital Association (FVCA) has been established since 1990 and currently has 47 member organisations operating in the national VC/PE markets. The aim is to promote and develop the sector. The Finnish Business Angel network (FiBAN), founded in 2011, is one of the largest in Europe with over 400 members and has network partners in the Baltic states, Russia and the USA.

Networks and associations in Finland

Network	Details
Finnish Venture Capital Association (FVCA)	<ul style="list-style-type: none"> Established in 1990, includes 47 member organisations operating in the Finnish PE/VC markets and 49 associates linked to FVCAs aim to promote and develop the market. It is a member of the European Private Equity and Venture Capital Association (EVCA).
Finnish Business Angel Network (FiBAN)	<ul style="list-style-type: none"> Largest of three angel networks in Finland, founded in 2011. One of the largest, most active BANs in Europe with 400+ approved members and 100+ events held in 2013. FiBAN is a member of the European Business Angels Network (EBAN), and also has network partners in Tallinn (Estonia), St. Petersburg (Russia), Seattle and San Francisco (USA).
VTT (Technical Research Centre)	<ul style="list-style-type: none"> Largest multi-tech applied research organisation in Northern Europe. VTT provides high-end technology solutions and innovation services.
Foundation of Finnish Inventors ⁹³	<ul style="list-style-type: none"> Provides advice, evaluations and funding for the development and exploitation of invention. Since 2009 it has had an explicit role in the pre-incubation phase of the commercialization of university inventions.
Finpro (Global Solutions)	<ul style="list-style-type: none"> Government funded association with 50 overseas trade centres, to help companies access high quality, comprehensive internationalization services around the world. It actively works with Tekes and 'FinNodes' global Innovation Centre programme⁹⁴.

⁹³ <http://www.keksintosaaio.fi/#historia/cgu6>

⁹⁴ <http://www.finpro.fi/etusivu>

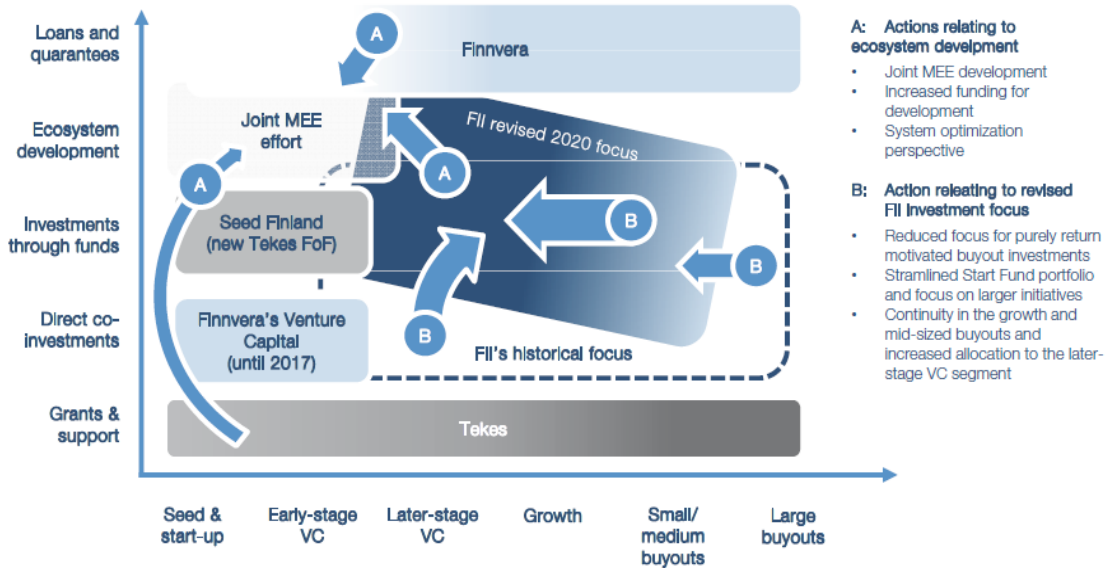
Planned future developments

Recent planned changes to the roles of Tekes, FII and Finnvera, suggest that the Finnish government is trying to create a more coordinated attempt to stimulate the seed, early and later stage VC markets, with increasing focus on series A investment and engaging with foreign VCs through the development of global facing high growth oriented entrepreneurial ventures.

Tekes recently announced new funds for 2015 which, under new EU rules, will assist young innovative export oriented companies established up to five years with up to €500k in grant and €750k in loans, alongside investments from the new Tekes VC Ltd (€20m per annum) catalyst fund for VCs investing in Finnish seed and early stage growth companies to 'series A' early revenue stages operation later in 2014.

FII operates at the upper end of VC and growth funding. As well co-investing with private VCs directly into companies, it has two fund-of-funds; Growth I, which completed investments in December 2013, having invested in 11 Finnish VC and growth funds, and Growth II which will operate from 2014 to 2018 and which has €130m to invest, with a focus on more series A investment. The Figure below shows the new orientation of these programmes.

Illustration of public sector's future role in private equity market development, as suggested by the 2013 evaluation of Finnish Industry Investment Ltd.'s activities



Source: http://www.tem.fi/files/38395/TEMjul_1_2014_web_09012014.pdf

Lessons and implications for Northern Ireland

Since the late 1980s the Finnish Government has invested heavily in an innovation policy allied to the provision of seed, early and growth stage venture funding. Over time this innovation system has been criticised for becoming overly complex, unwieldy, entrenched in fixed evergreen funds, uncompetitive and lacking flexibility, with the government criticised for not taking a sufficiently active role in directing investment activity.

In recent years, during the GFC there was a focus on increasing seed funding and bridging the gap to later stage private VC, with awareness that although Finland has arguably the best preconditions for entrepreneurial growth amongst the Nordic countries, it converts relatively few business start-ups into high growth ventures. More recently there has been growing awareness that there is a shortage of early stage private VCs to meet a growing 'series A' requirement in order to convert more start-ups into global high growth businesses. This has been allied to a recognition that more needs to be done to attract global VC investment into Finnish companies.

Key Lessons and Implication for Northern Ireland

The policy review literature alongside the key informant interviews suggest that the lessons learned do not neatly fall into positive and negative categories and in some cases the long lead times to exits and fund realisation suggest that the jury is still out.

This said, the following points, from which there are potential lessons and useful learning for Northern Ireland:

- Finland is a small country and the nation's innovation policy seeks to assist globally facing new businesses – '*born global businesses*'. To this end it has established a global network of technology and financing centres, with strong links in North America and Asia.
- As in the case of Northern Ireland, Finland has suffered from a lack of entrepreneurial culture, with traditional leanings towards public sector and professional work. The creation of Aalto University as an explicitly innovation-focused institution, and entrepreneurial cultural catalyst centre is described as *transformative*,
- Finland's state seed and VC funds operate either as direct funders of industry or as fund of funds, requiring at least 50% private VC and with private VCs taking the lead in investment strategies. State managed funds are evergreen (offering up-side advantages to private VCs) arguably leading to mission creep, dependency culture, and lack of attention to the VC role in managing portfolio companies, rather than establishing a competitive, sustainable VC system. The suggestion is that Finnish public VC should adopt a more flexible LP fund approach with 10-15 year lifespans, with more attention on quality of fund management and emphasis on leveraging in foreign VC/PE investment. Catalyst funds, investing on a fund of funds basis, or in syndication with foreign VCs, such as the new Tekes VC fund, point the way to current European market leading approaches (e.g. UK ECF Catalyst fund). 'Slush' is Europe's largest annual new tech conference event⁹⁵ attracting 118 VCs in 2013, generating over \$200m of investments so far.
- A common criticism of Finland's VC funds is that, despite considerable government investment, they remain too small in scale (e.g. Finnvera's regional funds). One way this is being addressed is via catalysing international VC funds, operating on a far larger scale. Finland's developing global market approach also allows public backed

⁹⁵ <http://www.slush.org/>

VCS to invest outside of the country, where this can be seen to be widening and strengthening portfolios and encouraging further foreign investment, again in-step with current best practice UK policy for ECF and UKIIF.

- Finland has a long tradition of accelerators, with the most recent Vigo scheme focusing on nurturing born global potential high growth businesses through a co-entrepreneurship model, involving hands-on successful role model mentoring to establish and grow these new businesses. This has been a heavily invested scheme with few successful exits as yet.
- Finland has been a relatively high tax country (corporation tax recently came down to 20% from 24.5%) and recent governments have been concerned with introducing tax incentives to encourage investment. However, the introduction of a business angel investment style tax relief scheme has proved unsuccessful due to excessive red tape, rather than it being a bad idea.

10. New Zealand

Summary messages

- New Zealand's early stage finance market has been in development for around a decade, however there is a consistent recognition that it has yet to reach maturity and a sustainable footing without on-going public support. VC investment accounts for 0.01% of GDP in New Zealand in 2012, compared to, for example, 0.31% in Israel and 0.17% in the USA.
- The New Zealand Venture Investment Fund (NZVIF) has played a central role in the development of the sector in New Zealand, through a Venture Capital Fund and Seed Co-investment Fund, the latter modelled on the Scottish equivalent.
- New Zealand has been successful in developing its business angel market: the scale of investment and number of deals by angels in New Zealand has increased substantially over the past decade, key drivers have been the Co-Investment Fund, a pre-existing entrepreneurial ecosystem, and the work of a dedicated business angel association. The 'organic' growth of groups/syndicates of angels across New Zealand is also important.
- As a small and peripheral economy New Zealand continues to suffer from challenges in accessing capital, with the scale of the economy consistently seen as 'holding it back' – concerted efforts to attract more institutional investment, and investment from overseas are starting to pay off.

Characterisation of the early stage growth finance market

New Zealand's market for seed, start-up and early expansion capital is young, emerging largely over the past decade since the early 2000s. Prior to the early 2000s there was "*a virtual absence of dedicated venture capital funds operating in New Zealand ... investment activity had been focused in later stage investments, management buy-outs, restructurings and so forth, with occasional investments in the venture capital space.*"⁹⁶

This 'absence' of a venture capital market was despite a number of previous efforts by the government to promote venture capital through public/private funds. These interventions, included the Development Finance Corporation (that first became technically insolvent and was then placed under statutory management before being wound up in 1991) and later the Greenstone Fund, a joint government/private sector equity development fund of \$25 million which operated from 1993 until 2007. While the Greenstone Fund initially undertook minority shareholdings in small but relatively mature New Zealand firms, the eventual investment strategy of the Fund changed to investments in later-stage private equity stage

⁹⁶ Venture Capital and its Development in New Zealand, Josh Lerner & Stuart Shepherd, 2009

(i.e. management control and large shareholdings).⁹⁷ These interventions were not successful in catalysing an early stage venture capital market in New Zealand.⁹⁸

Indeed, by the early 2000s, whilst the market has developed organically to some extent, there were few formal angel groups or professional venture capitalists, and the number of investors with required skills to be involved and invest in emerging high growth companies was limited. Research undertaken for the New Zealand Government in 2000 reported that the market was maturing, but deal flow was modest with estimates of 25 deals in New Zealand in 1999, this in the context that (writing in 2000), *“the number of players in the venture capital market has increased significantly over the past three years. The amount of capital available for investing has also increased substantially as institutions and major companies have become more active in the venture capital market.”*⁹⁹

In response, the New Zealand Government established the New Zealand Venture Investment Fund (NZVIF) in February 2001 to accelerate the development of the venture capital market in New Zealand to the point where there is a self-sustaining market no longer requiring government support. This in the context of a recognition that *“the seed end of the New Zealand venture capital market was underdeveloped compared to the rest of the venture capital market and relative to venture capital markets overseas. Essentially, there were perceived shortfalls in both the supply of capital and people with the skills and capabilities at the seed stage of business formation.”*

It is worth noting that consultations indicate that in establishing NZVIF, policy makers looked closely at, drew heavily on, and engaged with, ‘successful’ international locations including Israel the USA, including Silicon Valley, and Australia. Learning from elsewhere o ‘what works’ was an important part of the development of a model for NZVIF and the wider venture capital and early stage finance market in New Zealand.

Three other (linked) points are important contextually in understanding New Zealand’s development of its early stage and growth finance market

- the **scale** of the economy is small – with a population of 4.3m the volume of investable businesses to create and sustain a market is a challenge – as recognised by a stakeholder consulted for this work *‘scale is the key issue for New Zealand ... there are mainly small transactions so it’s hard to attract investors.’*
- **location and peripherality** matter – allied to the size of the home market, New Zealand is also spatially far away from larger markets which matters particularly at an early stage with only limited potential to leverage finance from overseas – as such, in recent years, New Zealand (and particularly NZVIF as the Government’s lead equity investment agency addressing the capital market gap) has placed considerable emphasis on developing international linkages between New Zealand venture capital and angel investors and offshore counterparts in the United States and Asia

⁹⁷ Evaluation of the Venture Investment Fund, November 2009

⁹⁸ *ibid*

⁹⁹ New Zealand’s Venture Capital Market, Infometrics Ltd, 2000

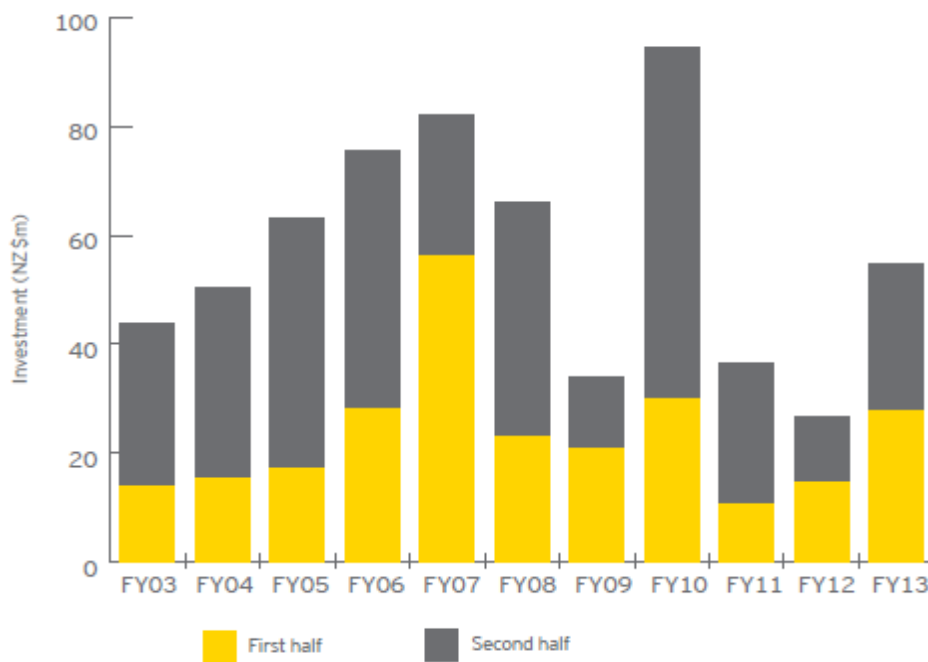
- these factors, and other including a lack of investment in business R&D, have given rise to a recognised **challenge in New Zealand in supporting and retaining high-growth and knowledge-oriented firms** – a range of measures, including R&D grants, technology vouchers and tax cuts, have been introduced to raising business levels of R&D in order to promote innovation and stimulate high growth firms. The investment in the finance market needs to be seen along these wider policy developments.

The early stage growth finance market in numbers

The scale of investment by Zealand domiciled funds in the country over the 2003-2013 period is set out below. The total investment in 2013 was approaching NZ\$55m, with 66 separate deals. This represented a marked increase compared to 2012 in terms of both volume and total value, with a slight increase in average deal size.

It is evident that the sector in New Zealand is still recovering from the effects of the global recession with low levels of investment in 2011 and 2012, although 2013 showed some signs of recovery. New Zealand is by no means unique, and most developed economies have witnessed lower levels of venture capital investment in recent years compared to the peak in the late 2000s (see the Appendix).

Venture and early stage investment in New Zealand



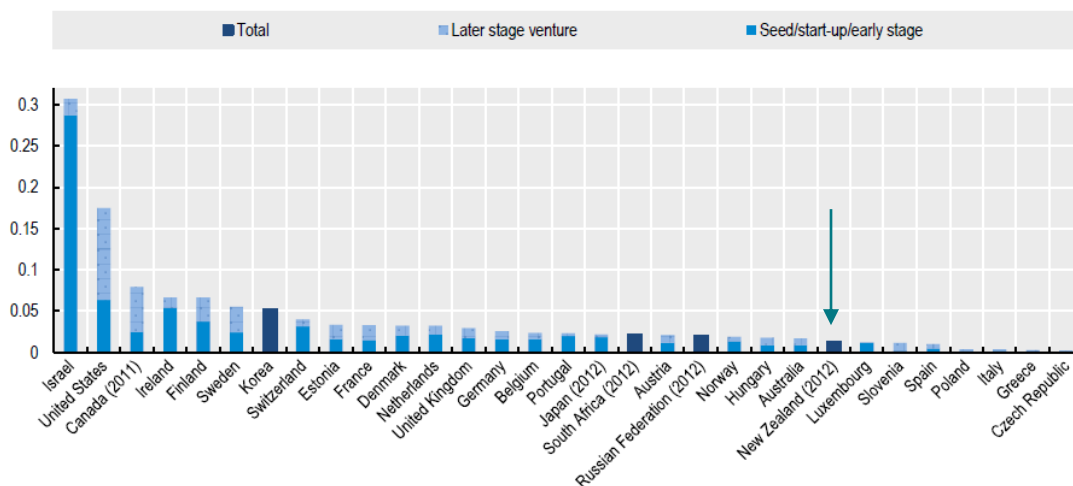
Source: New Zealand Private Equity and Venture Capital Monitor 2013 full year review

Further, it is important to recognise that despite the apparent ‘success’ of New Zealand in developing its market from a low base this last decade, in absolute terms it remains very small: at around US\$20m in 2012, the scale of the venture capital market in New Zealand was around 0.1% of that in the USA, 3% of the UK, and 9% of the Australian market. This is not surprising, both given the scale of the economies and the maturity of the venture capital markets, but the scale of the market in New Zealand remains well below more proximate

countries spatially such as the Republic of Ireland (\$145m) and Finland (\$170m) (see Appendix).

Relatively, as shown below, the latest data from OECD also indicates that venture capital investments in New Zealand as a proportion of GDP remains quite low compared to other developed economies: GDP was 0.01% of GDP in New Zealand in 2012, compared to, for example, 0.31% in Israel and 0.17% in the USA.

Venture capital investments as a percentage of GDP



Source: OECD Entrepreneurship at a Glance 2014

So in relative, as well as absolute terms the market in New Zealand is still developing. This was recognised back in 2009 by Lerner/Shepard who described the growth in New Zealand’s venture capital industry as “*encouraging but modest*”¹⁰⁰ Some five years on, this conclusion holds true. A recent report by NZVIF sets out the steps required to develop a ‘functioning’ venture capital and angel market: from developing the infrastructure, through to achieve scale and capability.

¹⁰⁰ Venture Capital and its Development in New Zealand, Josh Lerner & Stuart Shepherd, 2009

Progress of New Zealand in developing a functioning VC and angle market (2014)

	VC	Angel
Stage 1 <i>Develop infrastructure industry</i>	Achieved	Achieved
Stage 2 <i>New VC managers and angel networks establishing themselves in the market</i>	Partially achieved, a number of existing and prospective VC managers exited the market during GFC.	Partially Achieved. 12+ active Angel networks/funds operating. Some Angel networks and funds have ceased or significantly reduced their investment activities though.
Stage 3 <i>Building investment track record</i>	2-3 VC fund managers who have been successful in raising a second fund, based on investment performance	Just starting to happen, SCIF portfolio average investment is 3 years
Stage 4 <i>Achieve scale and capability</i>	Still rebuilding post GFC. VC market is small c.f. with OECD comparators. Institutional investor engagement very low.	Investment activity healthy, core of active Angels still quite small and financial sustainability remains as issue for most.

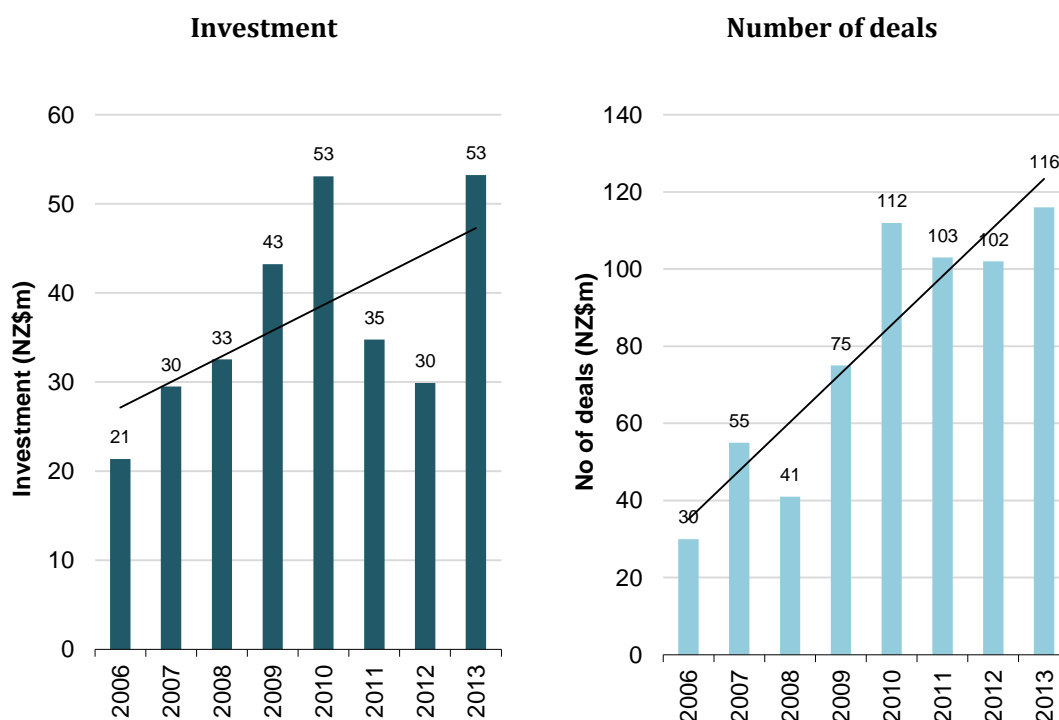
Source: NZVIF Briefing for Incoming Minister (available at www.nzvif.com/documents/publications/NZVIF-BIM-Oct14.pdf)

However, New Zealand does appear to have been particularly successful in developing its business angel market. As shown below the scale of investment and number of deals by angels in New Zealand has increased substantially over the past decade, with 116 angel deals in 2013 compared to 30 in 2003. A number of factors appear to be in play here:

- the development and implementation of a Co-Investment Fund in 2005 modelled on the Scottish equivalent led by NZVIF
- a pre-existing entrepreneurial ecosystem already in place such as a network of incubators and the associated support for the VC market¹⁰¹
- the work of a dedicated business angel association, established in 2008, and where the contribution of a small group of angel ‘champions’ has been important in driving forward the angel community more widely
- the organic developed of groups and syndicates across the country – this process is being encouraged through policy elsewhere, but appears to have been a natural development in New Zealand which has helped to scale up the angel market.

¹⁰¹ Financing High-Growth Firms, The Role of Angel Investors, OECD, 2011

The business angel market in New Zealand – investment and deals



Source: Young Company Finance Index, April 2014

Notably, a report by Bill Payne, an experienced US angel entrepreneur and angel investor, cites the role of government-funded incubators in fostering the formation and growth of angel groups, and notes that the scale of angel investment network in New Zealand in 2009 (and there has been growth since then as shown above) was equivalent to that in Boston (USA), 'arguably the leading area of angel investment in the US outside of California.'¹⁰²

However, despite the overall progress of the market in New Zealand, challenges remain. A key challenge identified in the literature and consultation is the **low level of institutional participation in the New Zealand venture capital market**, with the vast majority of the institutional investors (excluding the public sector) having no or small allocations in venture capital (and private equity) – as a consequence, family offices, trusts and high net worth investors are the primary source of capital in this asset class, research indicated that these groups provided 48% of total capital invested in New Zealand compared to 22% in Australia¹⁰³. The findings of research undertaken on behalf of NZVIF to identify the factors behind this are summarised in the box below.

Findings of research into the perspective of institutional investors in New Zealand¹⁰⁴

A common view from the majority of interviewees that venture capital in NZ is not regarded as an 'institutional' investment class and is the domain of individual investors and government. The main reason for this view is the lack of observable performance to date by both venture capital-backed companies and local venture capital fund managers.

Those institutions that have an allocation to venture capital can be characterised as having

¹⁰² An American Angel's Perspective on the Entrepreneurial Landscape in New Zealand, Bill Payne, 2010

¹⁰³ Referenced in NZVIF Discussion Paper Institutional Investment in Venture Capital and Private Equity in New Zealand

¹⁰⁴ *ibid*

a 'triple bottom line' perspective. Investing into venture capital is part of a wider decision to encourage entrepreneurial endeavour, support high growth companies, job creation and other economic development objectives.

Policy-makers need to consider the role that institutional investor support should play in building a sustainable long term venture capital industry, and whether existing programmes and incentives are sufficiently attractive.

Further, recent qualitative academic research with technology-based firms and industry stakeholders focused on the role of finance in firm growth and development highlighted the challenges still faced by firms seeking to access finance in New Zealand. A summary of key findings of the work are set out in the box below.

Findings of research into the role of finance in the development of technology-based SMEs in New Zealand¹⁰⁵

A number of on-going issues in NZ related to access finance for growing firms were identified consistently including: a narrow base of business angels and venture capital funding, a lack of maturity and hence learning and experience, fatigue arising from the smallness of the equity markets, and angel investors and founders that were being increasingly 'screwed down by venture capitalists in terms of valuations.

The role of government grants was seen to be positive, both in start-up and speeding up development phases, but this was not sufficient to overcome deficiencies in the funding environment in NZ, indicating the lack of a funding escalator process. As a result, a number of respondents were seeking larger sources of funding overseas, particularly in the US.

There was evidence of a finance gap in the external equity market: investment under \$1m could be sought from networks of business angels (even though such sources were limited), but investment of \$1m - \$5m were likely to fall between informal and formal venture markets.

This said, consultations indicate that despite on-going challenges, in recent years there has been a number of 'good news' stories (firms with significant growth and/or exits including IPOs) which have been important in building investor confidence in New Zealand as a location for early stage and growth finance, particularly in the ICT and technology sector with 'demonstration effects' from firms such as Halo IPT (a University of Auckland spin-off company focused on wireless electricity transmission technology which was purchased by a large US company, Qualcomm), and GreenButton (that provides cloud solutions for compute-intensive applications and was purchased by Microsoft).

Strategic and policy context

As noted above, the agenda underpinning the first substantive attempt by the Government to influence the venture capital market was the recognition of failures in both the scale and quality of the market at the time in the early 2000s. In this context, the policy focus for the NZVIF was to accelerate the development of the venture capital market in New Zealand, to the point where it was self-sustaining. Underpinning this, were the following objectives;

¹⁰⁵ David, Deakins and David, North (2013) The role of finance in the development of technology-based SMEs: evidence from New Zealand. *Journal of Entrepreneurship, Business and Economics*, 1 (1/2). pp. 82-100

- increased level of early-stage (i.e. seed, start-up and early expansion) investment activity in the New Zealand market;
- a larger pool of people in New Zealand's venture capital market with skills and expertise in early-stage investment;
- increased commercialisation of innovations from the CRIs, Universities and the private sector; and
- more New Zealand businesses on paths to global success by increasing their access to international experts, networks and market knowledge.¹⁰⁶

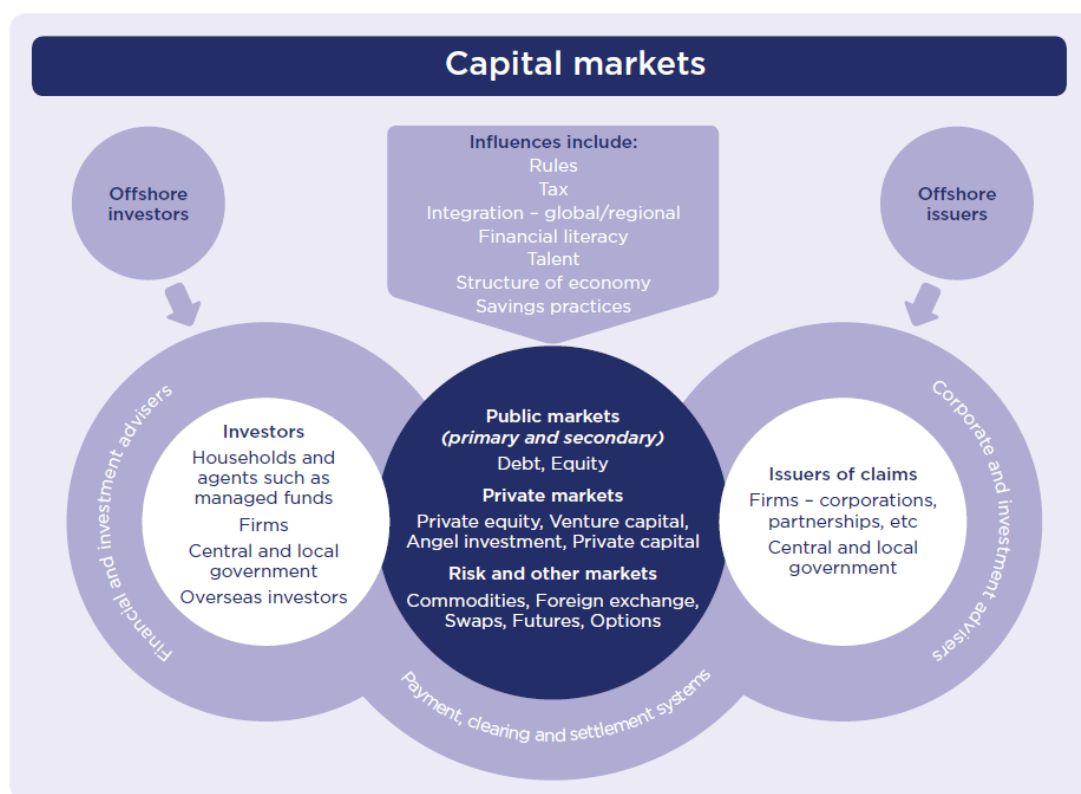
Subsequently, in 2007/08 the New Zealand Government introduced legislation providing new tax rules for limited partnerships, intended to make it easier for New Zealand firms to have access to investment capital. That was achieved through the introduction of a new limited partnership vehicle that allows partners to participate in a partnership while limiting their liability in particular circumstances.

Recognising the importance of developing the venture capital – and wider – capital markets in New Zealand in the context of the global financial crisis, the New Zealand Government established a Capital Market Development Taskforce to review the key constraints and opportunities for the development of NZ's financial system. The central role of venture capital and angel investment in this review is illustrated in the depiction below used by the Taskforce in undertaking its work.

Key findings of the taskforce included that the angel market is 'working relatively well', and the model for developing the venture capital market is regarded as 'best practice', and consistent with the findings above, the lack of institutional involvement in the venture capital market means that opportunities are not fully realised. The Taskforce recommended:

'Government should continue to support the venture capital market through the NZVIF model. This will require new capital commitments to be made by government, alongside the private sector. NZVIF should also look for innovative ways to attract further private sector investment, especial institutional funding.'

¹⁰⁶ Evaluation of the Venture Investment Fund, November 2009



Source: Report of the Capital Market Development Taskforce, December 2009

Following this policy review, and drawing on its recommendations, the *Government's Business Growth Agenda* that sets out a programme of work that will support New Zealand businesses to grow, in order to create jobs and improve New Zealanders' standard of living and aims to 'create a more productive and competitive economy'.¹⁰⁷ The Business Growth Agenda focuses on six key 'ingredients' businesses need to grow: Export markets, innovation, infrastructure, skilled and safe workplaces, natural resources, and capital. Each of these has its own programme of work, with the Capital Markets including a specific focus on 'Supporting early-stage and growth capital markets' theme.

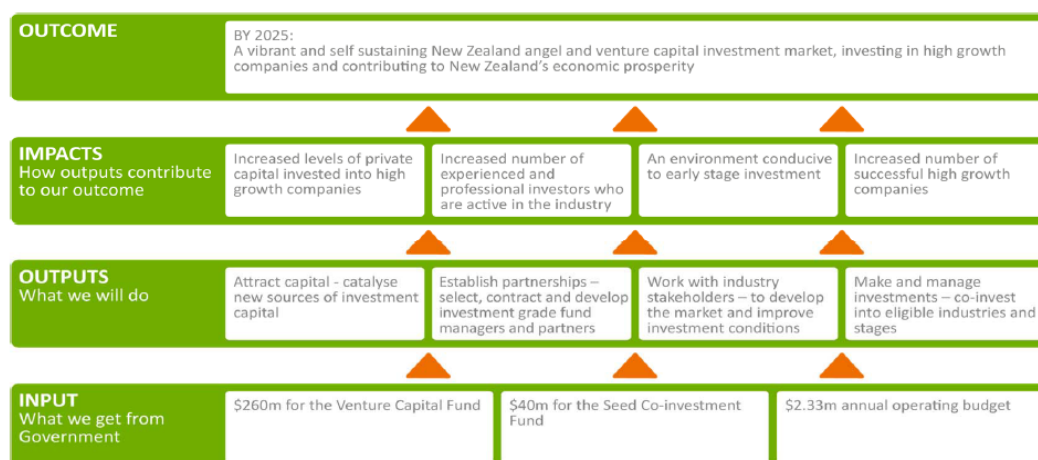
This theme confirms the Government's commitment to NVIF, including through a new \$60 million underwrite for the Venture Investment Fund and approval for NZVIF to negotiate with the Taiwan Government's National Development Fund on setting up a fund-of-funds that will allocate capital to private sector venture capital funds investing in New Zealand and Taiwanese companies. This latter deal has now been approved, with the GRC SinoGreen Fund III closing at US\$75m in August 2014, with NZVIF committing US\$20 million.

This new fund is regarded as integral to meeting the demand for investment of around \$200 million per annum estimated by NZVIF to be evident by 2025. NZVIF has also set a target that by 2025, at least 90% of the angel and venture capital funding in the New Zealand market will come from private investors and other sources, with the balance of investment

¹⁰⁷ See <http://www.mbie.govt.nz/what-we-do/business-growth-agenda>

coming from NZVIF. The estimate is that the current level is 81%. These targets are part of the overall strategic framework established by NZVIF to 2025, set out in the box below.

NZVIF Strategic Framework



Source: NZVIF Statement of Intent 2014-2019

Interventions and initiatives

The two main interventions in the early stage and growth finance space in New Zealand – the NZVIF Venture Capital Fund and Seed Co-investment Fund are summarised below.

Public agencies and funds in New Zealand

Agency/Fund	Details	Evidence of 'success'
Venture Capital Fund	<ul style="list-style-type: none"> NZVIF is a NZ\$160m 'fund of funds' investing in New Zealand's venture capital market focused on investing into high-growth potential companies. The fund operates through eight private sector fund managers (six original funds, and two funds subsequently added included a US-based fund led by Pater Thiel, the founder of PayPal) . The venture capital fund managers we invest in make decisions about which companies to invest in. Investments are likely to be focused on technology companies with potential for high growth. NVIF acts as a 'passive' investor 	<ul style="list-style-type: none"> By September 2014 the Fund had committed NZ\$156 m through eight Venture Capital Funds Since the programme started to invest in 2002, 66 companies have been funded, with a total investment (including from the private sector) of NZ\$411 m (including investments, management fees and fund costs)
Seed Co-investment Fund	<ul style="list-style-type: none"> The key objectives of the Fund are to enhance the development of angel investors and angel networks, stimulate investment into innovative start-up companies, and to increase capacity in the market for matching experienced angel 	<ul style="list-style-type: none"> By September 2014 the Fund had allocated capital to the tune of NZ\$40m, with 14 co-investment partners Since the programme started to invest in 2006, 116 companies have been funded, with total

Agency/Fund	Details	Evidence of 'success'
	<p>investors with new, innovative start-up companies. These objectives reflect the 'supply-side development' emphasis of the fund</p> <ul style="list-style-type: none"> <li data-bbox="552 398 938 645">• The Fund commenced in July 2005 and provides \$40 million of matched seed funding to support the further development of early-stage investment markets. It operates as a co-investment fund alongside selected Seed Co-investment Partners. <li data-bbox="552 656 919 878">• 50/50 matching private investment is required for the Fund to invest. The Fund acts as a direct investor on the same terms as the co-investment partner. Investments must be made in NZ businesses. 	<p>investment (including from the private sector) of NZ\$176 m</p>

Consultations undertaken for this comparator review indicated that the performance of the Venture Capital Fund is regarded generally as 'mixed': whilst the scale of investment has played an important role in supporting the emergence of the venture capital sector – moving towards its overall objective to accelerate the development of the venture capital market in New Zealand to the point where there is a self-sustaining local venture capital market no longer requiring government support – the performance of the funds has been varied. It was noted that of the original funds supported by the Venture Capital Fund, few have successfully closed a second funding round, (one Pioneer Capital has successfully done so), and there has been a 'mission drift' into later stage/private equity investments in order to generate returns. There is no formal evaluation evidence on the Venture Capital Fund other than a study from November 2009 at which point the Fund was still in its early days.

A recent report by NZVIF itself¹⁰⁸ reported that:

- capital returns from the Venture Capital Fund have been steady, albeit not spectacular, although a number of exits are expected in the next 12–18 months
- the fund has followed the expected “J-curve” profile, with the value of NZVIF investment lower than capital invested, but since 2012 there has been a steady increase in the value of the underlying portfolio which has corresponded with strong revenue growth across the portfolio (20% p.a. over past three years) and increased levels of capital raising. By June 2014, the return was \$0.93 cents for every \$1 invested.

Similarly, there appears to be no published formal evaluation evidence on the Seed Co-investment Fund, other than a submission to the Minister of Economic Development by the

¹⁰⁸ NZVIF Briefing for Incoming Minister (available at www.nzvif.com/documents/publications/NZVIF-BIM-Oct14.pdf)

Angel Association of New Zealand in January 2013. Though stating clearly that they were ‘an informed, if not necessarily objective observer’, key points included:

- the angel community in New Zealand is more viable, more professional and has more participants as a result of the Seed Co-investment Fund
- the Fund supports syndication and national collaboration both of which improve the prospects of accessing relevant skills, networks and increased capital being raised and further rounds of capital being brought to the venture

A summary of views on what is working well and less well from the Angel Association is set out in the Appendix.

Turning to networks and associations, three are most prominent: NZVIF, NZVCA and Angel Association of New Zealand: these are summarised in the Table below. In terms of the private sector market, NZVIF report that there are eight formal venture capital fund managers operating in New Zealand (BioPacific Management, Endeavour i-Cap, iGlobe Treasury Management, Movac, No 8 Ventures Management, Pioneer Capital Management, TMT Management, Valar Ventures), and 16 formal angel investment funds.¹⁰⁹

Networks and associations in New Zealand

Network	Details
NZVIF	<ul style="list-style-type: none"> • NZVIF is a ‘Crown Entity Company’ responsible for accelerating the development of the New Zealand venture capital market. It achieves this by jointly investing with private participants into both venture capital funds and directly into seed or startup businesses. • NZVIF manages two funds, the \$160 million Venture Investment Fund and the \$40 million Seed Co-Investment Fund • In 2013, the NZ Government commit to a further \$60 million underwrite of the venture capital programme. This provided NZVIF the capacity to make investment commitments up to \$300 million. NZVIF has made investment commitments of over \$200 million to date into nine venture capital funds and 14 angel group partnerships.
NZVCA	<ul style="list-style-type: none"> • Established in 2002, NZVCA’s mission is to ‘develop a world-best private equity (“PE”) and venture capital (“VC”) environment for the benefit of investors and entrepreneurs in New Zealand.’ • Its activities cover the whole spectrum of investment in New Zealand private capital including Angel investment, seed and early-stage venture capital through to development capital and private equity (including management buy-outs and buy-ins).
Angels Association of New Zealand	<ul style="list-style-type: none"> • Angel Association was established in 2008 to ‘bring together the business angel networks and early stage funds to work towards an agreed national vision and to deliver the activities required to achieve this.’ • The Association currently has 11 groups/syndicates as members across New Zealand

¹⁰⁹ NZIF Annual Report 2013

Lessons and implications for Northern Ireland

Drawing on the messages set out above, and the wider feedback from the evidence reviewed and consultations undertaken, the key lessons from the New Zealand, and related implications for Northern Ireland, are as follows:

- The development of a mature and sustainable market takes time – New Zealand’s market has been in development for around a decade, however there is a consistent recognition that it has yet to reach maturity and a sustainable footing without ongoing public support. As noted by the NZVIF *“Until the New Zealand venture capital market has experienced at least three successive investment cycles, and good returns during that time, investment support will come mainly from individual investors, family offices and government programmes.”*¹¹⁰ and the current NZVIF Statement of Intent states that *‘It will take 20-25 years to achieve the outcome of building a vibrant and self-sustaining angel and venture capital investment market.’*¹¹¹ This is consistent broadly with feedback from consultations undertaken for this comparator review, although for some it is likely to take even longer, as one consultee noted:

“It’s a 50-year time horizon really, at least 30, firms and investors have to re-cycle a couple of times ... we have only had 10-15 years to date”

- The New Zealand experience highlights the challenges in attracting institutional investment in the venture capital market, a consistent challenge raised has been the inability of New Zealand to date to address this issue fully: *‘securing and maintaining a flow of investment from domestic and international institutional investors is seen to be essential to the sustainability of the venture capital industry’*.¹¹² Whilst the context here matters, with New Zealand’s scale and the volume of potential institutional investors in play, the comparator review does highlight that there has been a consistent focus on seeking to address this apparent issue with a clear focus on the potential scale of investment that may emerge if ‘unlocked’ successfully; given the challenges experienced by Northern Ireland in attracting private investment into its market, the role of institutional investors (and how these could be further leveraged) for Northern Ireland could be a focus going forward
- A barrier to the further development of the venture capital industry in New Zealand to date, or at least what has been holding it back, is the need to demonstrate a track record and adequate returns on investment in order to retain current investors and attract new investors – the experience of funds seeking to find new investors has demonstrated the challenges faced in a market where evidence of commercial success is limited; for Northern Ireland this does suggest that evidencing and articulating fully the impacts of venture capital is important in attracting additional finance and market interest
- New Zealand has appeared to benefit from the development of, and on-going support for, a dedicated venture capital ‘agency’ in the form of NZVIF – whilst many

¹¹⁰ NZVIF Discussion Paper Institutional Investment in Venture Capital and Private Equity in New Zealand, <http://www.nzvif.co.nz/documents/publications/DiscussionPaper-Fidato-Sept12.pdf>

¹¹¹ NZVIF Statement of Intent 2011-2016

¹¹² Evaluation of the Venture Investment Fund, 2009

of its investment have yet to be realised (with a 10-year investment horizon expected), both its direct investment and wider role in policy advocacy and market development have been important in maintaining momentum and a policy focus on the early stage and venture capital market. Importantly there has also been consistency in the core policy aim – to build investor capability and scale. Clarity on the policy objective, and consistency in delivering against it, in the development of the VC Fund and subsequently the COIF has been important.

- New Zealand’s performance in terms of developing its business angel base appears to have been very successful, including as a result of a co-investment fund model with a clear and focused ‘supply side development’ intent. The high number of business angel networks (with a reported 16 formal angel investment funds) in New Zealand) is also notable, with these locally focused networks developing largely ‘organically’ over the past decade. However, a focus on instilling discipline and providing the systems and structures that helped angles to develop (through protocols, advice notes, resources) has also been important. There may be a lesson for Northern Ireland in how to best promote the development of angel groups/syndicates that might be worth further interrogation, including the role of local groups/syndicates.
- New Zealand has adopted a consistently ‘external facing’ approach, in the design and development of its early stage and growth finance market and institutions. This includes establishing a joint fund with Taiwan that will invest in companies in both jurisdictions to help overcome the barriers of scale and breadth in the market that has traditionally held it back. New Zealand has also successfully imported expertise and knowledge, from Israel and the USA, to help develop its home market both in terms of venture capital and angel investment, as one consultee noted it is important to *‘learn from the best’*.

One final point is important. New Zealand’s data in the early stage and growth finance market is strong, meaning that the scale, nature, strengths and weaknesses of the market is well characterised and understood. This includes regular public reports from NZVIF on fund performance and investment and the quarterly Young Company Finance Monitor that provides data on the local market and is a source of deal information, industry news, and features on specific deals or people. This is a practical lesson for Northern Ireland.

11. North East England

Summary messages

- The North East has demonstrated some success its early stage and growth finance market: the approach to a JEREMIE fund and sustained investment over the past decade led to an increase in the scale of deals and investment in the region. Policy focus, and dedicated resource and capacity to research/design/deliver interventions, have been important
- The development of the market has been significantly led by public-backed investment through JEREMIE (with a £125m fund of funds from 2010), rather than private-sector led investment. However, over the long-term supply-side policies involving an increase in publicly supported venture capital funds will be ineffective without complementary effort to promote entrepreneurial activity in order to stimulate the demand side
- In designing its JEREMIE Fund, 10% of the finance was held back to allocate on the basis of need and fund manager performance – this was found in an evaluation to be an innovative and useful approach, enabling the investment strategy to be adjusted to market need or opportunity
- The North East has experienced challenges in attracting national funds; current policy thinking in the region includes a focus on how to re-dress the balance and the procedures and processes that will ensure the region is better able to capture a greater share of national funds going forward.

Characterisation of the early stage growth finance market

Like other regions across the UK, including Northern Ireland, the North East of England has traditionally been unable to address the long-standing concentration of venture capital and private sector-led growth finance in London and the South East. The area's distinctive economic geography, scale and heritage has also resulted in a tendency to depend on public sources of capital and investment to a greater degree than in other English regions. This has resulted in increased reliance over the past two decades on public sector venture capital.

Underpinning this is the long-term economic challenge experienced by the region. Although with strengths including a high export intensity and performance (especially in manufacturing), strong innovation assets/research institutions, and in Newcastle a major location for knowledge-based and high-tech business activity, over the long-term the North East has struggled economically. It has moved substantively away from its earlier dependence on coal, steel and heavy engineering towards a broader base, more typical of other modern economies in its emphasis on services, and in which modern manufacturing also features strongly, but this restructuring process is as yet incomplete, because of scale and culture as well as industrial legacy. Under-performance relative to the UK in terms of GVA per head and productivity persist, linked to low skills, underemployment and the

nature and type of work mainly on offer (lower value added, service functions), low enterprise rates and a low innovation intensity. Further, evidence collected as part of a major review of access to finance in the region¹¹³ found that whilst in terms of business start-up activity the North East performs well, in terms of five year business survival rates it performs less well – the key economic development challenge is therefore one of supporting start-up and early stage companies to grow.

The development of the early stage and growth finance market in the North East is generally regarded as gathering pace in the early 2000s, as a core focus of the (then) Regional Development Agency ONE in its first and subsequent Regional Economic Strategies. Prior to this, the scale of market activity was small, and the venture capital market grew faster elsewhere across the UK than in the North East owing to issues of:

- spatial peripherality as reported in later research for the Northern Way broadly speaking, “*venture capitalists invest where venture capitalists are ... The UK market has concentrated private funds and fund management expertise in London and the South East*”¹¹⁴
- the scale of the market opportunity in the region limiting private investment
- the knowledge of, and willingness to engage with, equity finance amongst the region’s businesses, indeed the first RES stated that the ‘*role of equity in developing a business is not always valued by local companies*’.¹¹⁵

The key driver in the development of regional funds was a recognition of a gap in terms of market failure in the availability of funding for SMEs in the region, which in turn was holding back and constraining the economic potential of the region. In response, the period since the early 2000’s has seen a range of interventions, of three main types:

- micro finance – loan funds targeted at small businesses typically seeking small scale funding
- mezzanine finance – a combination of debt/equity or convertible loan finance, targeted at early stage businesses and businesses seeking development/growth capital
- equity finance – development/growth capital effectively taking a stake in a business with significant growth prospects.

As discussed in greater detail below, since the early 2000s funds have invested over £160m in the North East. Research on access to finance in the region found that ‘*In the absence of the regional funds ... there is no evidence to suggest that the private sector would have stepped in and filled any void.*’¹¹⁶

However despite this significant investment, challenges remain. Research undertaken in 2013 identified a suggested gap in available support for SMEs/entrepreneurs to understand

¹¹³ North East Access to Finance, Fund Evaluation Research June 2013

¹¹⁴ The Northern Way Private Investment Commission Preparing the ground, July 2009

¹¹⁵ Unlocking our Potential, North East Regional Economic Strategy, 1999

¹¹⁶ North East Access to Finance, Fund Evaluation Research June 2013

the precise requirements of credit providers and Business Angels when considering potential investment opportunities. Other stated challenges identified by business angels in the region included insufficient high-quality investment opportunities, dissatisfaction with the way that the angel market (i.e. networks, groups and individuals) interacts with intermediaries in the region (e.g. Venture Capital funds, accountants, banks, lawyers), and a financial environment that is highly complex and fragmented.¹¹⁷

Issues around the skills and capacity of those seeking finance, and the related issue of the level of high-quality investment opportunities available to investors chime with the findings of a 'think piece' on access to finance informing a major review of economic development policy in the North East. Whilst recognising the need to enhance the scale of supply of seed and early-stage finance, and support for improving investor readiness (in part to address the regional disparities in private finance noted above), the think-piece emphasised that supply-side policies involving an increase in publicly supported venture capital funds will be ineffective if not delivered alongside complementary significant effort to promote entrepreneurial activity in order to stimulate demand. Crucially, as stated in the think-piece:

*"The North East, like other regions, simply lacks the absorptive capacity to productively invest significant additional finance. There are not sufficient entrepreneurial businesses with the potential to grow ... New funding sources are appropriate in only a small number of situations, notably co-investment schemes alongside business angel groups and larger funds (>£1m) so as to widen the supply pyramid."*¹¹⁸

The think-piece recommended that the public sector in the North East should focus its efforts on enabling the private sector to invest more effectively, particular by expanding business angel investment activity in the region through angel syndicates. This is key as the investment process is constrained by distance which affects particularly 'peripheral' regions (that is, from London where the UK's investment market is concentrated), and the importance of local presence to identifying new businesses that are seeking finance and also the active hands on involvement of early stage investors, which is also facilitated by proximity: that is, "regions need to have their own indigenous sources of start-up and early stage finance which will typically be supplied by business angels and seed funds".¹¹⁹

The early stage growth finance market in numbers

Against the narrative context set out above, data from BVCA on the scale of the venture capital market in the North East are set out below covering, the number and scale of VC investment, the proportion of the UK accounted for by the North East, and the average scale of deals over this period in the VC space. Three points are worth noting:

- the scale and number of investments in the region was consistent generally over the 2005-2010 period, with an acceleration in deals and investment witnessed in 2011 and 2012 reflecting in part the early investments from the JEREMIE Funds – an evaluation estimated that JEREMIE investments and the extra funding they leveraged represented up to 20% of equity investment the 2010-12 period

¹¹⁷ SME ACCESS TO FINANCE: An exploration into the demand and supply constraints around SME access to finance Newcastle Business School, Northumbria University, Spring 2012

¹¹⁸ Access to Finance: A 'thought piece' for the North East LEP Independent Economic Review, Professor Colin Mason

¹¹⁹ *ibid*

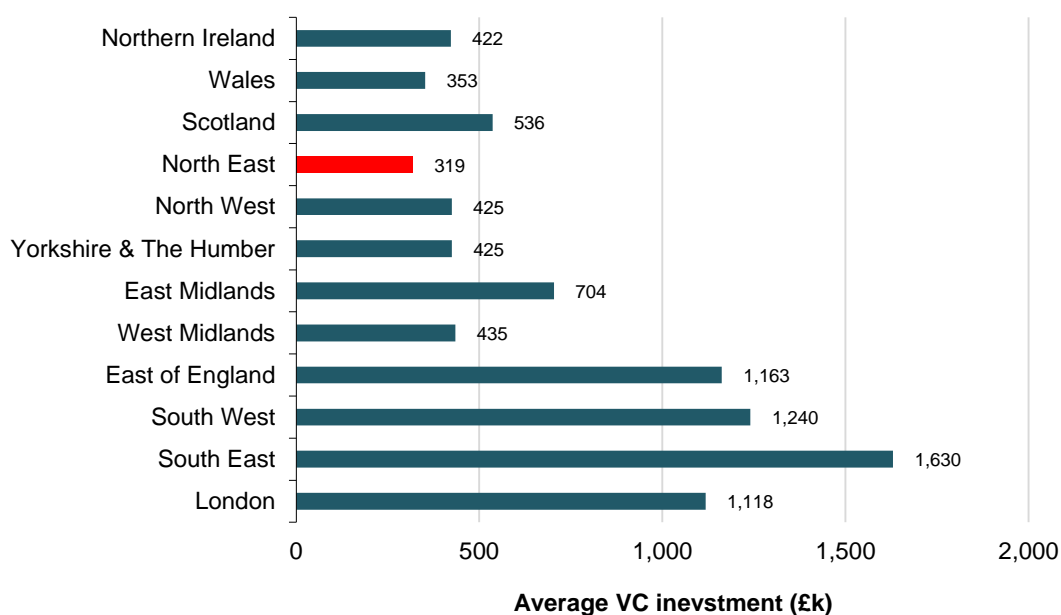
- consistent with this, the proportion of the UK total accounted for by the North East increased substantially in 2011/12 to around 5% of investment and 10-20% of the number of deals; this set against the region accounting for 2.6% of the UKs SMEs over these years; prior to this period the region generally accounted for a lower proportion of the scale of investment than its SME base may suggest
- the average size of VC deals in the region has been consistently well below the national average, generally under half of the total; whilst the national data are impacted by the market in the South of England, as set out in Figure 1 below, the average scale of investment over the 2005-12 period in the North East was the lowest of *all* regions across the UK.

Data on venture capital investment in the North East (BVCA)

	2005	2006	2007	2008	2009	2010	2011	2012
VC investment – number of investments	16	10	19	22	21	16	42	80
VC investment – scale of investment (£m)	2	7	7	10	6	6	18	16
VC as % UK - number	3.3%	2.0%	3.8%	4.8%	5.4%	4.0%	10.4%	18.6%
VC as % UK - scale	0.5%	0.7%	1.6%	2.8%	2.0%	1.9%	5.2%	4.7%
Av VC deal – NE (£k)	125	700	368	455	286	375	429	200
Av VC deal – UK (£k)	778	1,892	865	791	765	788	857	796

Source: BVCA

Average VC investment 2005-2012 across the regions of the UK

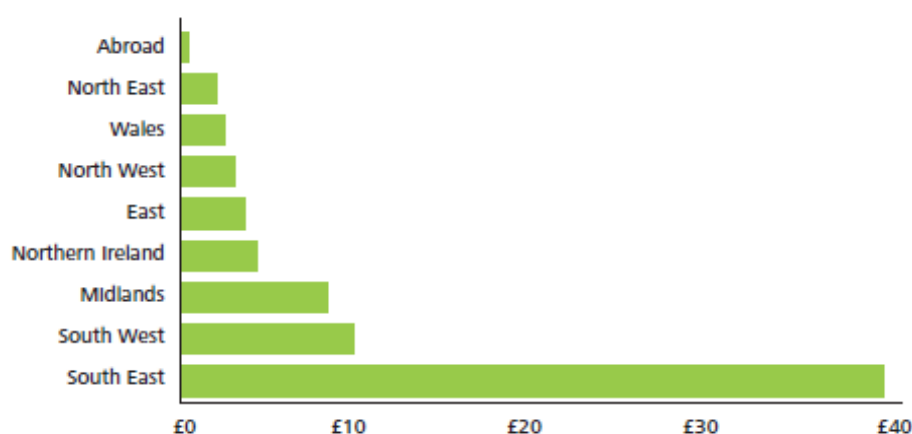


Source: BVCA Note: the data for Yorkshire and the Humber and East Midlands exclude data from 2006 which contained a significant outlier value for scale of investment

Consistent with this, recent research from the British Business Bank found that the North East accounted for just 2% of all private equity investment in 2013, compared to 42% in London and 14% in the South East ¹²⁰

This pattern also appears to hold true for business angel investments (that is not captured in the BVCA data). The most recent review of the business angel market across the UK (excluding Scotland) published by the UK Business Angel Association found that the North East accounted for the lowest proportion of angel investment of the regions covered (and well below the level in Northern Ireland).

Scale of business angel investment across the UK



Source: Taking the pulse of the angel market – Deloitte on behalf of the UKBAA

Strategic and policy context

In the context of UK-level policy and intervention in seed, early and growth stage markets, the North East has witnessed significant additional ‘regional’, and in more recent times ‘sub-regional’ activity. Indeed, given the scale of its activity, the North East has as much, if not more, experience in policy focused on this market than other UK regions.

As noted above, access to finance issues were highlighted perhaps for the first time at a regional level in ONE’s first RES, with this focus subsequently contained in its successors. More recently, policymakers and stakeholders in the North East have faced a high degree of uncertainty regarding the future of access to finance interventions, particularly those underpinned by the European Structural and Investment Funds, alongside the institutional and policy changes that have emerged with the closure of ONE the regional development agency and the emergence of Local Enterprise Partnerships. Notably, there has been some uncertainty over the degree to which coordination will be localised, together with the extent to which the new ‘sub-regions’ of the North East will be empowered to devise locally-distinct programmes. Discussions are currently underway to design the next round of JEREMIE finance in the region, and Tees Valley LEP and North East LEP have both articulated their firm commitment to targeted access to finance interventions, both in their published strategies and in consultation.

¹²⁰ Small Business Finance Markets 2014, British Business Bank

The North East LEP's Independent Economic Review outlines a possible new structure for this¹²¹:

Given the range of business demand for access to finance, the North East needs to develop three particular areas to support economic growth in the LEP area:

(a) Regional Business Bank, to explore the potential for the establishment of a regional business bank to meet the needs of companies and/or for the proposed British Business Bank to be located in the North East.

(b) North East Access to Finance, to provide a range of new funds building on the experience to date and understanding of demand, including finance for social enterprises (with a proposed submission to Big Society Capital).

(c) Investor Readiness Programme, to work with smaller, fast growing businesses which will require significant investment finance in future years.

The NELEP will establish a North East Finance and Investment Board to work with regional and national agencies to oversee access to capital.

Interestingly, in designing the next fund, an open survey of firms across the region has been undertaken to provide primary data from businesses on which types of businesses should be targeted, what sizes, sectors and locations of business and what types of funding are required most.

- 11.1 In the emerging LEP strategy, there is a clear expectation that legacy monies bound to the region's formally designated 'assisted areas' will be available for redeployment by a locally situated fund manager. Referencing established work such as the Rowlands Review¹²², including contributory work from the former Northern Way Private Investment Commission, particular emphasis is placed on the maintenance of a local fund management and associated services sector in order to optimise the provision of finance to business. In addition, a key feature of the ambition is the need to support the wider development of supply and demand in the regional access to finance market; this is evident not only in the evidence base submitted to the North East Independent Economic Review¹²³, but also in Newcastle Business School's study of SME finance sponsored by NEA2F¹²⁴.

Interventions and initiatives

The key finance interventions in the region over the 2003-2012 period are set out below. All of these interventions used European Regional Development Fund (ERDF) and/or RDA 'Single Programme' monies to match/attract other private funding.

¹²¹ North East Independent Economic Review. 2013. www.nelep.co.uk/media/2935/nelep-independent-economic-review-report.pdf

¹²² BERR. 2009. 'The Provision of Growth Capital to UK Small and Medium Sized Enterprises'. <http://www.berr.gov.uk/files/file53698.pdf>

¹²³ Mason. 2013. 'Access to Finance – A Thought Piece for the North East LEP Independent Economic Review'. Colin Mason, Professor of Entrepreneurship, Adam Smith Business School, University of Glasgow. March 2013. www.nelep.co.uk/media/2705/Colin-Mason-Access-to-Finance.pdf

¹²⁴ Newcastle Business School. 2012. 'SME Access to Finance: An Exploration into the Demand and Supply Constraints around SME Access to Finance'. Independent Study Commissioned by NEA2F. <http://northeastaccess2finance.files.wordpress.com/2012/07/nbs-a2f-research-final-may-2012.pdf>

Finance interventions in the North East between 2003 and 2010

Fund	Description
North East Investment Fund 3	£18 million generalist mezzanine fund established in 2003 with financial support from ERDF and a private sector bank.
Proof of Concept	£13m fund providing early stage mezzanine funding established in 2003 and extended in 2009 as a transitional fund until FFBNE began investing. Funded by Single Programme, ERDF and legacy money.
Co investment Fund	£30m co-investment fund providing loans and equity funding for technology biased existing businesses. Established in 2004 with funding from ERDF and various private sources and extended in 2009 as a transitional fund until FFBNE began investing. Funded by single programme and legacy money.
North East Investment Fund 3b	£12 million generalist mezzanine investment fund that extended the NEIF3 to allow investments from 2006 until the end of 2008.
NEL Growth Fund	£5 million Seed Capital Fund established in 2006 with ERDF, Single Programme and a number of private investors.
Micro Loan Fund Phase 2	£3.3m debt fund targeted at supplying micro finance to SMEs and CDFIs. Established in 2008 with funding provided by Single Programme and extended in 2009 as a transitional fund until FFBNE began investing.
Three Pillars Fund	£2.7 million pilot mezzanine early stage fund established in 2007 using Single Programme. The fund was extended in 2009 as a transitional fund until FFBNE began investing.
Design and Creative Industries Fund	£3 million pilot mezzanine early stage fund specialising in seed/growth capital, equity investments in innovative business in creative sectors. Established in 2007 using Single Programme and extended in 2009 as a transitional fund until FFBNE began investing.
Evolve Mezzanine Fund (NEIF 3c)	£2.3 million pilot quasi equity fund established in 2009 as a transitional fund for FFBNE funded by Single Programme.
North East Creative Content Fund	£2.4 million co-investment fund providing equity, loan and mezzanine funding for creative businesses. Established in 2009 with funding from ERDF and various private sources.
Transitional Loan Fund	Loan fund established in 2009 following Government announcements as a result of the economic down turn. £8.9m fund funded by Single Programme for businesses which had failed to secure funding from other sources.

Source: North East Access to Finance, Fund Evaluation Research June 2013

Following these interventions, the region put in place a £125m JEREMIE Fund involving seven different funds/programmes, as summarised below.

North East JEREMIE Fund

Fund	Market Focus	Finance Type	Finance Levels
Micro Loan Fund £5.5m fund, managed by Entrust (with an additional £1m announced in late-2014)	A high volume, small loan fund, available for investment in all eligible sectors and for both early and late stage investments	Loan finance	Unsecured loans of between £1,000 and £25,000
Proof of Concept Fund £15m fund, managed	A high volume, high risk fund for investment in early stage technology	Primarily convertible loans and equity	Investments generally between £20k and £100k but with the ability to follow-on

Fund	Market Focus	Finance Type	Finance Levels
by Northstar Ventures	companies		above this level.
Technology Fund £25m fund, managed by IP Group	A fund for investment in early and late stage technology companies	Primarily equity and quasi-equity investments	Investments between £50k and £1.25m. Anything over £750k must have pari passu co-investment by a private investor for at least 15% of the Fund's aggregate investment.
Accelerator Fund £25m fund, fund managed by Northstar Ventures	A fund for early stage investments across all eligible sectors	Primarily equity and quasi-equity investments	Investments between £50k and £750k.
Angel Fund £7.5m fund, managed by Rivers Capital Partners	A fund for early stage co-investment with angel investors, across all eligible sectors	Primarily equity and convertible loan investments	Investments generally between £50k-£150k but scope to go above this level. 70% of value to be matched by co-investors on pari passu basis.
Growth Fund £20m fund, fund managed by NEL Fund Managers	A higher volume, lower value fund for later stage investments across all eligible sectors	Primarily equity and quasi-equity investments	Investments between £50k-£400k. Average investment expected to be £154k per SME.
Growth Plus Fund £20m fund, managed by FW Capital	A lower volume, higher value fund for later stage investments across all eligible sectors	Primarily equity and quasi-equity investments	Investments between £350k-£1.25m. Expected to invest an average of £570k per SME, expecting to syndicate total investments of around £1-2m.

Source: Mid-Term Review of the English JEREMIE Funds

The latest data indicate that the Funds have investment in 674 companies, to a total of £111.3m invested from the funds and £133.3m private sector secured, with over 1,900 new jobs created, and over 2,500 jobs safeguarded.¹²⁵

An interim evaluation of the JEREMIE Fund in the North East¹²⁶ was generally positive regarding the design and delivery of the intervention. Key messages from the evaluation with potential relevance for Northern Ireland (which chose to adopt a fund of funds model, albeit outside of the formal JEREMIE model) include:

- the development process for the North East fund was seen to be 'particularly rigorous' in terms of clarity about how the sub-fund structure responded to a combination of economic development and market need, the options for the operation of the fund and testing of risks.
- the approach was designed with an aim to create a market for SME finance in the North East, allowing competition between providers in order that SMEs could get the best deal, and seeking to ensure fund managers had as much scope as possible to provide the best finance package for SMEs (e.g. no sector limitations put in place,

¹²⁵ <http://www.northeastfinance.org/about-us/key-performance-indicators.aspx>

¹²⁶ Mid-Term Review of the English JEREMIE Funds, November 2013

flexibility around types of finance used) – this was important given that the private sector finance community was small (particularly relative to the other Northern JEREMIE programmes in England in the North West and Yorkshire/Humber)

- linked to the above, in allocating its resource across the funds, some £12.5m (10% of the total) was held-back with the intention of allocating this to the sub-funds on the basis of need and fund manager performance, and in so doing incentivise performance through competitive forces between fund managers (with the strongest performers having opportunities to draw down additional capital from the unallocated sums, and the least strong performers at risk of having capital taken away and redeployed elsewhere); the Fund has also been able to use part of its unallocated pot to match with additional ERDF/RGF funding for investment activity for an extended period, helping to avoid a hiatus following the completion of the original investment period
- the Fund of Funds involved seven distinct funds, the evaluation found that overall “the number and mix of funds has worked well ... given the objectives it sought to achieve” although the most significant downside has been that the larger number of sub-funds has led to higher operational costs than would have been the case with a more consolidated approach.

Key findings related to the range of interventions over the past decade before and including JEREMIE was as follows:

- there was a clear direction of travel, with the funds becoming more commercial over time, and with an increasing focus on financial performance
- there are a number of structural market failures that manifest in a debt funding gap affecting businesses that lack collateral or track record, and in the equity gap affecting SMEs seeking up to £3 million of equity finance – indeed, the scale and nature of the funding gap identified previously is unlikely to have reduced and may in fact have increased over time
- there is a consensus across the region that funds of any form must have local presence and delivery
- the quality of evaluation evidence is variable. In future, there should be a coordinated approach to evaluation, using an agreed set of performance measures, better able to capture the quantifiable benefits derived from PBFs
- whatever the detailed nature of an intervention, to be successful at a regional level there must be local delivery and clearly articulated objectives so that fund managers’ objectives and remuneration can be aligned with these.

The key institutions in the North East are set out in the box below.

Networks and associations in North East England

Network	Details
North East Finance	<ul style="list-style-type: none"> • North East Finance is the Holding Fund manager for the Finance for Business North East programme. Its role includes: securing the funding from the ERDF, European investment Bank and UK Government, the

Network	Details
	<p>procurement of fund managers, managing the programme and ensuring that it achieves its objectives, liaison with key stakeholders, promoting the availability of funding, performance management of fund managers, monitoring and reporting of performance</p> <ul style="list-style-type: none"> • North East Finance does not consider investment applications or make individual investment decisions. This is the role of the individual fund manager
North East Access to Finance Limited	<ul style="list-style-type: none"> • Overview body established to co-ordinate and manage the re-deployment of legacies from the region's investment funds for the benefit of SMEs. • Activity includes signposting for businesses to direct them to sources of finance and support relevant to their needs, and policy development to develop new sources of public investment funding post the current JEREMIE Fund

Lessons and implications for Northern Ireland

The data shows that the North East has demonstrated some success its early stage and growth finance market. Its approach to the JEREMIE fund and sustained investment over the past decade has led to an increase in the scale of deals and investment in the region. Policy focus, and dedicated resource and capacity to research, design and deliver interventions, have been important. However, whilst an uplift in the VC market in the North East has been witnessed, this is in large part owing to the significant public-backed investment through JEREMIE (with a £125m fund of funds coming on stream in 2010), not private-sector growth. Arguably, the first few years of the 2010s represent a discontinuity in the growth in the market in the North East supported by the scale of public investment that came on stream at this time, rather than the result of a longer-term evolution.

In this context, the following points are made:

- in designing its JEREMIE Fund North East Finance held-back a not insignificant pot of finance (£12.5m from the total of £125m i.e. 10%) with the intention of allocating this to the sub-funds on the basis of need and fund manager performance – this was found in an evaluation to be *‘a useful approach which enables the investment strategy to be relatively easily adjusted to market need or opportunity’*. This approach could be considered by Northern Ireland in future ‘fund of fund’ models to provide flexibility
- more broadly, the evidence from the North East is that whilst supply-side policies involving an increase in publicly supported venture capital funds can in the short term lead to increases in the take-up of investment, in the long-term they will be ineffective without significant complementary effort to promote entrepreneurial activity in order to stimulate the demand side – this finding is ‘not new’, but it is important, with the need for policy makers in Northern Ireland to avoid a focus on the scale and nature of supply-side interventions only
- the North East has experienced a similar (albeit perhaps not quite as marked) challenge to Northern Ireland in attracting national funds into the region (Appendix for details), current policy thinking in the region includes a focus on how to re-dress the balance and the procedures and processes that will ensure the region is better able to capture a greater share of national funds going forward. These processes are

still on-going, but putting resource and focus on how to leverage finance from UK programmes (for example British Business Bank initiatives) is an important learning lesson for Northern Ireland.

- both the evidence from the formal evaluations/reviews undertaken and the consultations for this comparator review indicate that *'governance matters'* and that the success (in terms of progress in delivery) experienced in the North East is down in part to a well-established and consistent governance model – this issues is also a major focus of planning for the next round of fund support.
- the importance of 'boots on the ground' in developing the market – again a consistent findings of the research into the region and consultations for this work is the need to establish as far as practical local offices for investors, but that these also need to be 'local not just regional given the different socio-economic and business contexts across places – the parallels between the North East and Northern Ireland are important here with Newcastle and Belfast playing similar roles, but limited investment activity elsewhere; going forward the North East is considering how to promote investment activity away from the centre (in Tees Valley, Northumberland etc.), Northern Ireland faces a similar issue with Belfast and other places
- a review of the range of interventions in the region focused on access to finance found that the quality of evaluation evidence is variable, and there should be a coordinated approach to evaluation, using an agreed set of performance measures, better able to capture the quantifiable benefits derived from PBFs – this issue is similar to the findings of the recent evaluation of the Fund of Funds in Northern Ireland that reported that 'at present there are no Key Performance Indicators for the Fund of Funds as outputs and gross/net impacts are measured at the individual Fund level' and recommended the development of aggregated KPIs at Fund of Funds level to feed in to the Corporate Plan cycle.¹²⁷
- the North East appears to have benefited from well-established and consistent agencies taking a lead on developing the market – North East Access to Finance as the 'policy' lead, and the related North East Finance as the 'delivery' lead, acting as the Holding Fund manager for the JEREMIE programme. This 'division of labour' appears to have worked well, with an evaluation of NEA2F specifically concluding that the *'position reached in the North East on managing existing funds and positioning for the future is recognised at the national level as distinctive, probably unique'*.¹²⁸ and the recent detailed research on the region found that *'the consensus is that the North East now has a credible fund management infrastructure'*.¹²⁹

One final point is made. Whilst there is a general view, and some evidence to support it, that the North East has been 'successful' in developing its seed, early stage and venture capital market, the sustainability of this market without on-going public support in the form of major investment remains open to question. There appears to be limited evidence that the interventions over the past decade have created a functioning private sector-led investment

¹²⁷ Interim evaluation of Invest NI Fund of Funds: final report May 2014

¹²⁸ Evaluation of NEA2F, SQW on behalf of NEA2F, May 2013

¹²⁹ North East Access to Finance, Fund Evaluation Research June 2013

community that would be able to sustain its investments without public money – indeed, the recommendation is that the next ‘Fund of Funds’ should be £200m (£75m larger than its precursor), and again funded largely through public money, and research into access to finance in the region reported that it is unlikely that the private sector would have made investment at this level without the public support, and that a market failure remains. As set out in the North East Strategic Economic Plan

“Public intervention through the highly successful JEREMIE programme has had a significant impact on market failure with the current scheme responsible for almost all venture capital investment in the North East of England since 2011. Intervention via a renewed JEREMIE resource is still needed to increase the amount of venture capital accessed by local businesses in order to support growth and to attract further external investors locally”¹³⁰

Given the structural challenges in the UK – with London and the broader South East dominating the market and home to the majority of investors, and established market failures at the Series A level – this is not unreasonable. Further, this increased activity may in time help to generate and support a sustainable market, through addressing the underlying issues experienced by the region on the supply-side. But only time will tell, and this is likely to be a long-term game – consultees recognised that it will take time for the market to ‘reach maturity’, and as noted in the recent European Structural and Investment Funds Strategy 2014 – 2020 for the North East LEP area ‘a full market adjustment is not imminent.’¹³¹ As such, the messages for Northern Ireland at this point are more about lessons in ‘process’ than evidence of ‘impact’.

¹³⁰ <http://nelep.co.uk/wp-content/uploads/2014/11/North-East-Strategic-Economic-Plan-More-and-Better-Jobs.pdf>

¹³¹ European Structural and Investment Funds Strategy 2014 – 2020 <http://www.nelep.co.uk/media/4497/draft-european-funding-strategy-2014-to-2020.pdf>

12. Nova Scotia

Summary messages

- Nova Scotia is a small, peripheral province on Canada's Atlantic Coast. For several decades its economic performance has lagged behind the rest of Canada. However, both Nova Scotia (and the other Atlantic Canada provinces) are experiencing a mini-start-up boom which can be attributed, at least in part, to a variety of demand-side initiatives, notably accelerators, mentoring schemes, networking events and university entrepreneurship education initiatives.
- In Canada venture capital investing is concentrated in Ontario and Quebec. Nova Scotia lacks its 'fair share' of venture capital investments. The public sector is the main source of venture capital, notably the provincial government-backed Innovacorp. There is also has a fairly sizeable business angel community although the investment backgrounds of the investors raises questions about its ability to add value. Recent years have also seen increasing investment activity by non-local investors, linked to the Atlantic Venture Capital Forum, a showcase for the region's best emerging companies, and some large exits that have attracted the attention of non-local investors. These exits have also provided role models and stimulated the business angel community.
- New government venture capital initiatives are occurring at the regional (Atlantic Canada) rather than provincial scale and are being established at arms-length from government. These features are seen in Build Ventures which is funded by provincial governments, the Business Development Corporation and the Federal Government but managed by two private sector managers who have also invested in the fund. Its intention was to make series A investments but the lack of deal flow has forced it to make earlier stage investments.

Characterisation of the early stage growth finance market

Nova Scotia is one of Canada's three Maritime Provinces (the others being New Brunswick, and Prince Edward island) and constitutes one of the four Atlantic Canada provinces (with the addition of Newfoundland and Labrador). Its population (2011) is 927,000, 2.8% of the national population, of whom over 40% live in Halifax, its provincial capital. In terms of its physical geography, it comprises the Mainland and the island of Cape Breton which is connected by a causeway to the Mainland. It is largely English speaking (92%).

Canada is federal state. Nova Scotia has taxation powers on personal and corporate income (as does the federal government), taxes on tobacco, alcohol and the Atlantic Canada lottery and oil and gas royalties. It also levies a sales tax on top of the federal GST. In order to reduce provincial disparities the federal government operates a system of equalisation payments which distributes income from the 'have' to the 'have not' provinces. Provinces have considerable powers to use their income to support business development.

In Canadian terms, Nova Scotia is a 'have not' province. Its per capita GDP (\$38,475) is significantly below the national average (\$47,605). Its growth has lagged behind the rest of Canada for several decades. Unemployment is well-above the national rate while average wages are below. It has suffered from persistent outmigration, historically to central Canada and Boston, but now to the resource-rich western provinces. Its prosperity peaked in 1920. Indeed, at the turn of the 20th century Sydney, Cape Breton was described as North America's second Pittsburgh on account of its coal and steel industries. Since then, Ontario emerged to account for much of Canada's manufacturing capacity, but as the Canadian economy moved into a post-industrial era it has been overtaken by the resource-based provinces of the west, notably Alberta, which have become the most prosperous provinces. From the 1920s to the 1950s Nova Scotia's rural economy dominated, based around resource production (fishing, agriculture, timber) and processing (e.g. pulp and paper mills). However, many of the processing firms have closed in recent decades. Economic growth has increasingly focused on the Halifax-Dartmouth metropolitan region, creating a widening urban-rural divide.

Government is the dominant sector in the economy. Other significant sectors are defence and aerospace, military (the province has 40% of Canada's military assets), film, tourism and a growing ICT sector. The biggest manufacturing employer in the province is Michelin with three plants. A key problem for the province is its inadequate access to capital. The major finance institution (including the Bank of Nova Scotia) moved to Montreal and Toronto early in the 20th century. The problem of weak private sector capital provision persists to this day.¹³² The task force on the future of the Nova Scotia economy offered this gloomy prospect. "After a decade or more of slow economic growth, and with an ageing and shrinking population, Nova Scotia is on the verge of a significant and perhaps prolonged decline in our standard of living, in the quality of our public services, and in our population base, most seriously in the rural regions of the province where more than two-fifths of our population now make their living."¹³³ The Task Force identified the growth in entrepreneurial activity as one of the key factors that is necessary to turnaround the province's economy. Amongst the 'goals for transformation' are increases in business start-ups and growth-oriented enterprises and in venture capital.

Accordingly, the emergence of a vibrant start-up community in recent years in both Nova Scotia, and across the Atlantic region as a whole, is a positive development. Entrevestor¹³⁴, a news and data service for Atlantic Canada, identified 290 start-ups that were locally owned, product based companies that are commercialising proprietary technology. More than half (58%) are less than three years old; more than one-fifth were started less than a year ago. This recent surge in start-ups (since 2009) is attributed to some critical features of the ecosystem falling into place, including start-up competitions, mentoring programmes, the fostering of university-business links (Springboard Atlantic), various events and the introduction of ACOA's Business Development Program (BDP). (ACOA – the Atlantic Provinces Development Agency is region's economic development agency). The recession

¹³² One Nova Scotia: *Shaping Our New Economy Together*. Report of the Nova Scotia Commission on Building Our New Economy. February 2014. Duruflé, G (2014) Fuelling Entrepreneurship and Innovation: A Review of the Nova Scotia Government's Role in Venture Capital Provision. Halifax: Department of Economic and Rural Development and Tourism, Government of Nova Scotia.

¹³³ Ibid.

¹³⁴ Atlantic Canadian Startup Data 2013, Entrevestor. www.entrevestor.com

was an important push factor. Around half of the companies which responded to the survey had minimal or no revenue, although collectively revenue had increased by 30%. The firms reported employing a total of 3,000 people, with 43% predicting job growth during 2014. Older firms, started before 2009 (in a few cases up to 20 years ago), many of which will now be in their growth phase, collectively employ 1420 people, an increase of over 20% on the previous year. Their revenues increased by 30%. IT is the largest sector, accounting for 63% of firms but within IT there is considerable diversity. As we discuss below, many of these companies have raised venture capital from both public and private sources.

Moreover, there has been some tremendous exits in the last three years:

- Salesforce.com bought Radian6 of Fredericton for \$326 million and GoInstant of Halifax for more than \$70 million¹³⁵,
- IBM bought Q1 Labs, which started life in Fredericton, reportedly for more than \$500 million.
- Other major exits have included Ocean Nutrition systems (\$540m), and Biovestra (£100m).

Whereas the local view is that these exits demonstrate the emerging quality of the entrepreneurial community in Atlantic Canada and has had important signalling effects to external investors and demonstration effect to local entrepreneurs and potential entrepreneurs, the view from elsewhere is not as positive. Paul Singh, formerly of 500 Startups and now managing a Washington DC based fund, commented that “*Atlantic Canada has become the development shop of Salesforce.com due to the San Francisco giant’s acquisitions in the region.*” He argued that founders are exiting too early and too cheap. Large American companies are buying startups “for pennies” because Atlantic Canada entrepreneurs do not have the resources or confidence to move through the growth phase. Singh argued that Canadian venture capitalists and other investors should be looking at ways to let founders remain in business longer. He noted that U.S. investors are now doing growth-stage rounds in growing companies that would allow the founders to take money out of the company, improve their lifestyle and continue to grow the company.¹³⁶ We will return to this theme in the closing section.

The early stage growth finance market in numbers

Venture Capital in Canada¹³⁷

Canada accounts for 2.1% of global venture capital, slightly less than India and Israel. Investment activity has almost doubled in terms of amounts invested between 2009 and 2013, reflecting rapid growth from 2010 to 2011 and from 2012 to 2013 (see figure (a))

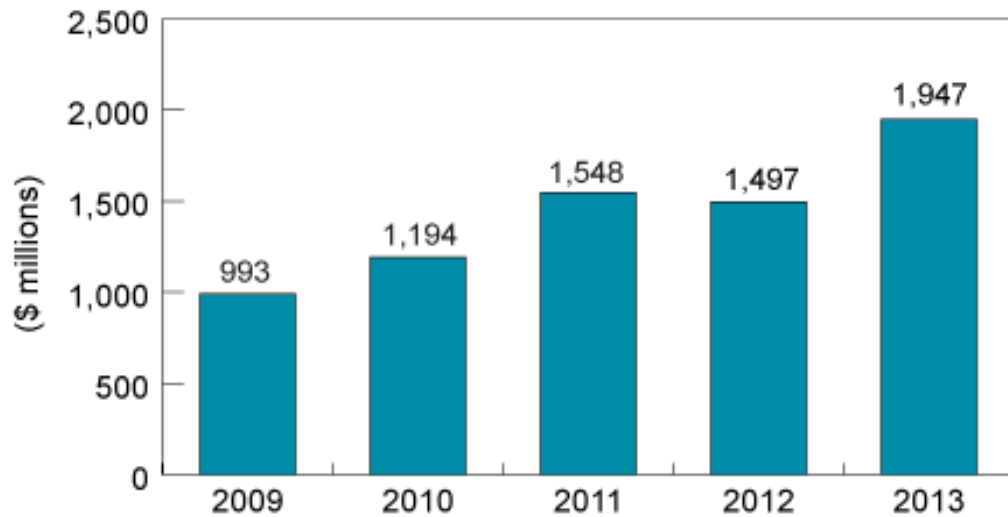
¹³⁵ GoInstant had earlier raised \$1.7m from some illustrious Silicon Valley-based ‘super’ angels, including Reid Hoffman of Greylock Partners, a co-founder of LinkedIn; Howard Lindzon, managing partner of Social Leverage and founder of StockTwits; Josh Felser and Dave Samuel of Freestyle Capital; Steve Anderson of Baseline Ventures, an early investor in Twitter; Chamath Palihapitiya of Embarcadero Ventures; Boris Wertz of W Media Ventures; Ed Sim of BOLDstart Ventures; Yuri Milner; Matt Wyndowe; Jonas Brandon, a co-founder at StartupNorth; and Rypple’s Daniel Debow.

¹³⁶ Singh sets sights on incubators, grants, *Entrevestor*, 18 June 2013. <http://entrevestor.com/blog/singh-sets-sites-on-incubators-grants>

¹³⁷ Statistics cover both venture capital and private equity,

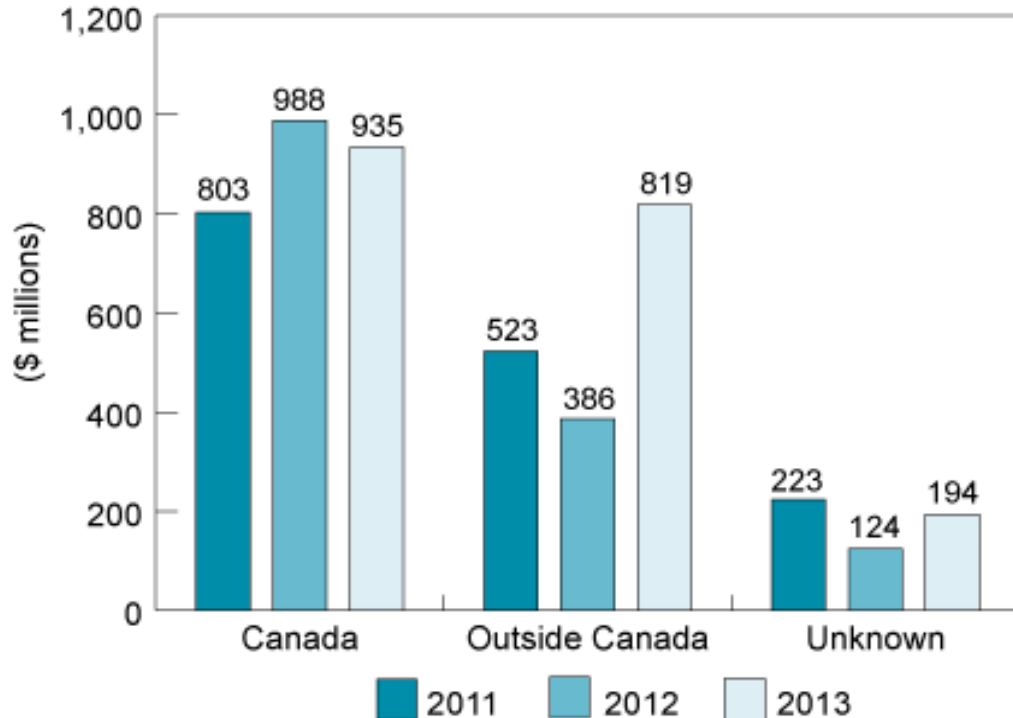
below). A significant proportion of this investment originates from outside Canada (see figure (b) below). This reflects investments by US venture capital firms in Canada.

(a) Venture Capital Investment Trends in Canada, 2009-2013



Source: Thomson Reuters Canada, published in *Industry Canada: Venture Capital Monitor: Q4, 2013*.

(b) Sources of Venture Capital in Canada

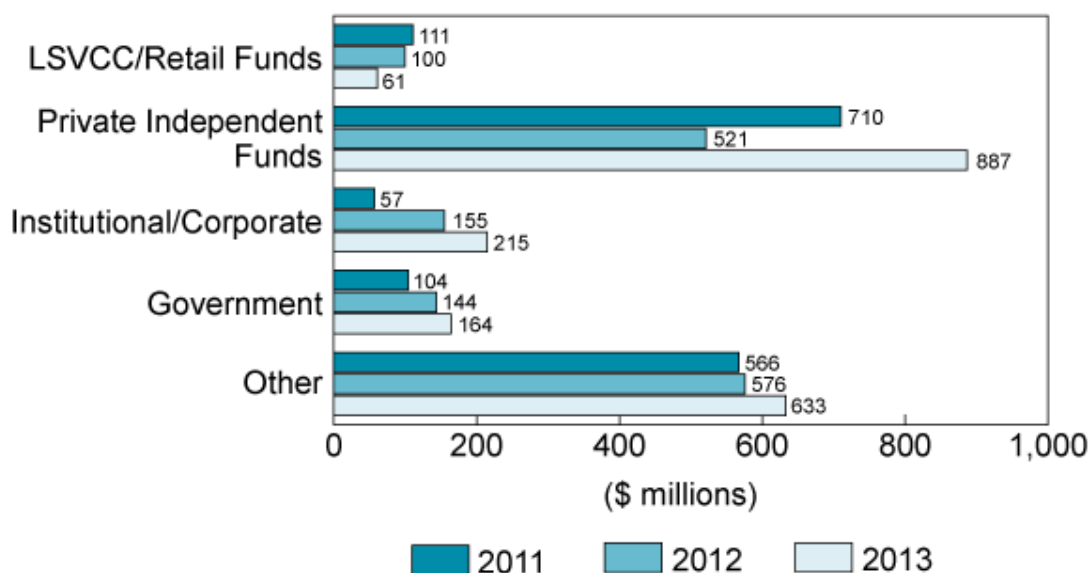


Source: Thomson Reuters Canada, published in *Industry Canada: Venture Capital Monitor: Q4, 2013*.

The main types of investors are private independent venture capital firms. However, government also plays a significant role. This takes two forms. First is the Business

Development Corporation (BDC), a Crown Corporation. It is a business development bank which has been in operation for 30 years. Its subsidiary BDC Capital provides venture capital. It has \$1bn of capital under management and claims to be the largest early stage venture capital investor in Canada. Second is the investment activities of the various provincial governments across Canada. A further distinctive feature of the Canadian venture capital scene are the Labor-Sponsored Venture Capital Funds (LSVCFs). These originated in Quebec in the early 1980s as ‘solidarity funds’ but gradually spread to the rest of Canada during the 1980s. Funds are raised from the general public who receive both federal and provincial tax incentives. They operate as open-ended mutual funds. The funds are restricted to investing in SMEs. Further tax benefits accrue if they are held in Registered Retirement Savings Plans (RRSVPs). The funds have to be ‘sponsored’ by labor-unions (although they will recruit professional managers to run the fund). LSVCFs came to dominate the Canadian venture capital market during the 1990s, accounting at one stage for 50% of all funds under management. However, they have under-performed against other market indicators. This has been attributed to various factors, including onerous regulations (such as having to invest the funds within a limited time period), weak or amateur fund managers, and the amount of money under management that was simply too great to invest effectively. LSVCFs are also criticised for crowding out private sector venture capital funds from the early stage market.¹³⁸ The Federal tax incentive is to be reduced to 10% in 2015, 5% in 2016 and will be eliminated in 2017, much reducing their ability to raise new cash, even if the provincial tax credits remain. This change has had an adverse effect on GrowthWorks Atlantic, the only LSVCF in Nova Scotia.

Types of venture capital investors in Canada



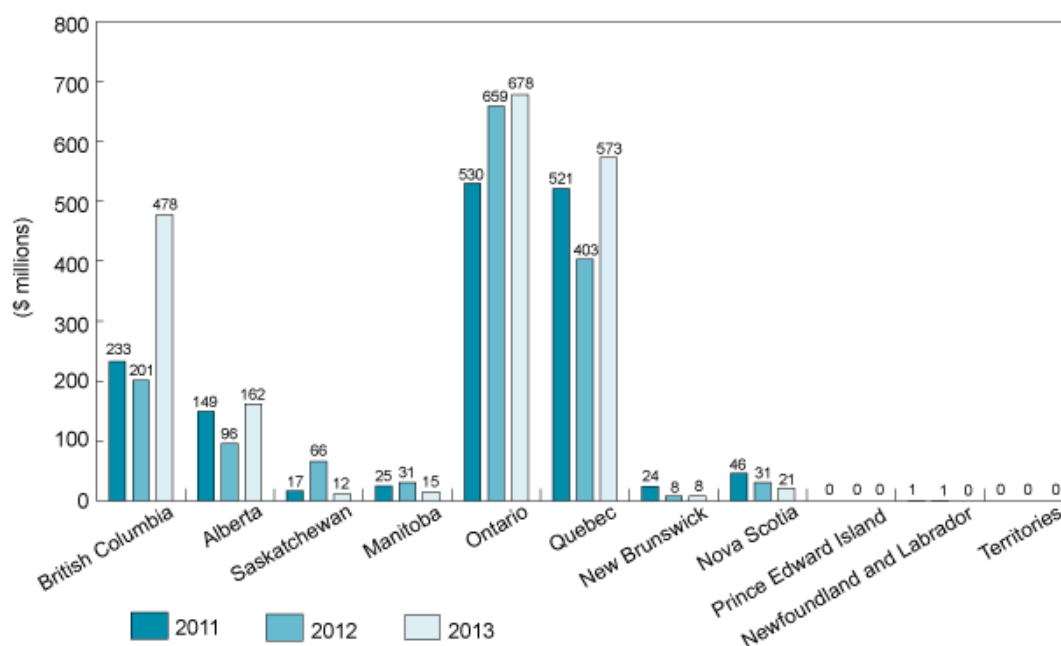
Source: Thomson Reuters Canada, published in *Industry Canada: Venture Capital Monitor: Q4, 2013*.

In terms of geography, venture capital investing in Canada is concentrated in Ontario and Quebec which together accounted for 77% of investments by value and 64% by number in 2013 (58% and 64% in 2012). Indeed, in a North American context when ranked by

¹³⁸ Cumming, D (2003) Canadian Labor Sponsored Venture Capital Funds: Bane or Boon? In A. Ginsberg and I. Hasan, eds., *New Venture Investment: Choices and Consequences*, Elsevier, pp.169-200.

state/province Ontario is the 6th largest location of venture capital investment by dollar amount in 2013, with Quebec in 11th position. By contrast, the Atlantic Provinces¹³⁹ together attracted just 2% of investments and dollars in both 2012 and 2013, well below its 7% share of both businesses and population. A more disaggregated picture is presented below. This underlines that although Nova Scotia has more venture capital investments than the other provinces in the region, it is nevertheless insignificant when compared to the amounts invested in Ontario, Quebec and British Columbia

Venture Capital Investments in Canada: by province



Source: Thomson Reuters Canada, published in *Industry Canada: Venture Capital Monitor: Q4, 2013*

As a small, peripheral province in a country in which venture capital is concentrated in the core regions, Nova Scotia would therefore appear to offer an excellent comparator with Northern Ireland.

Sources of Venture Capital in Nova Scotia Public Sector

The respondents to the Entrevestors survey (covering the Atlantic region) reported raising over \$200m in the three year period 2011-2013. There are some important caveats. In particular, there are response and survivor biases. In addition, given the ‘lumpiness’ of venture capital investments annual totals can be skewed by a single large investment: the 2011 data included a single investment of \$30m while the 2012 data include two large investments of \$8m and \$15.9m. Year-on-year trends should be interpreted with caution. More insightful is the break-down of investments by source is set out below.

¹³⁹ Canadian Venture Capital Association data does not give individual provincial totals for Atlantic Canada.

Total Capital Raised by Atlantic Canada Start Ups (\$'000s)

	2013	2012	2011
Founders	4,468	3,712	6,144
Family and friends	2,294	1,165	3,300
Angels	10,897	15,927	8,600
Venture capital*	30,807	23,090	51,525
Strategic investors	2,852	16,948	11,195
Total	51,318	60,642	80,764
Nova Scotia total	30,064	34,324	56,415

Source: *Entrevestors (2014) Atlantic Canada Startup Data 2013*. * The venture capital category includes all institutional investment, including private equity, family offices, etc

The venture capital segment can be further broken down into the following categories: (i) local private sources; (ii) external private sources; and (iii) public sources. The private sector categories include business angels, super angels, family funds and venture capital funds, including BCD and LSVCFs. Note that this category includes Build Ventures (see below) was created in 2012 on the initiative of the four provincial governments and whose funding is almost entirely provided by these governments and the BDC. However, it is privately managed, with each of the managers investing \$500,000 of their own money in the fund. The intention is over time to draw in more money from private limited partners. The public sector investments come from provincial government-backed agencies. In the case of Nova Scotia, these comprise NSBI and Innovacorp. The major investors in 2013 were as follows: Innovacorp (8), GrowthWorks Atlantic (7), BDC (5) and Build Ventures (4).

Sources of institutional venture capital in Atlantic Canada

	2013	2012	2011
Private sector local and regional investor	8.9	5.3	3.8
Private investors external to the region	15.4	0.8	5.3
Public sector investors (local)	6.9	17.2	12.6

Source: *Entrevestors (2014) Atlantic Canada Startup Data 2013*.

Interventions and initiatives

Public Sector Venture Capital

Public sector investors have been by far the dominant source of venture capital in the region, but their significance declined sharply in 2013, their share of institutional investment falling from 74% in 2012 to 22% in 2013. Nova Scotia has two public sector organisations that provide venture capital, summarised below.

Institution	Details
Nova Scotia Business Incorporated (NSBI),	<ul style="list-style-type: none"> A branch of the provincial government, which provides later stage investment in the \$1m-\$3m range in five key sectors. NSBI can also make follow-on investments. NSBI also offers a range of other financial support, including loans, guarantees and payroll rebates.

Institution	Details
	<ul style="list-style-type: none"> It does not operate a fund; rather, it recommends investments to the minister who considers them in a case-by-case basis. However, its decision-making process is criticised for being long and unpredictable and open to explicit or implicit political interference. It has invested in 15 companies since 2002.
Innovacorp	<ul style="list-style-type: none"> The provincial innovation agency which early stage venture capital, making investments of under \$250,000 using a simplified term sheet. Investments of over \$250,000 have to be approved by its board – which includes two Deputy Ministers (senior civil servants) - which operates at arm's length from the Provincial Government. It may also invest in follow-on rounds up to \$3 million. Established in 1995 under unique legislation following the recognition of the need for risk capital for entrepreneurs with good ideas based on strong IP. It is intended to be a hands-on investor, assisting the management team in all aspects of its business strategy, talent recruitment and access to market

Innovacorp has two investment instruments:

- the Nova Scotia First Fund is funded by provincial government money. It focuses on knowledge-based start-ups. However, it holds money in reserve for follow-on funding.
- Co-investment fund which invests alongside business angels. Its impact is based on several metrics: the amount invested, leverage, people hired by the investee companies and the revenue of these companies. As a seed investor it does not see exit as being an appropriate metric.

Innovacorp invested \$15.3m in 31 companies between 2012-13 and 2013-4. These companies went on to raise a further \$23.4m, underlining the important leverage role of public sector venture capital. Innovacorp made a return of \$1m on its \$100,000 investment in GoInstant. These companies employ over 1,000 people, underscoring that with most the money it invested is used for payroll and so is returned to the local economy. It should also be noted that these investments arose from 463 company 'engagements'. As a venture capitalists Innovacorp is investing with a view to an exit in five to eight years. However, there is considerable variability around this time horizon – GoInstant was sold in 18 months.

In 2013 the Nova Scotia Government announced a restructuring of the supply of venture capital. The key change is that Innovacorp, which is a Provincial Crown Corporation, will become the sole government agency responsible for venture capital investment. NSBI will no longer make venture capital investments and instead its primary role will be business attraction and the development of business and trade.¹⁴⁰ The suggestion is that this change may be attributed to NSBI's reputation as investor of the last resort, its poor investment record, the need for Ministerial sign-off on every investment and the resultant effect on speed of decision, and, finally, politicization of the investment process, with some suggestions that government made decisions that favoured NSBI-backed companies. Although Innovacorp is less subject to these criticisms it is nevertheless the case that its

¹⁴⁰ Entrevestor: Nova Scotia revamps VC funding, 18 July 2014. <http://entrevestor.com/blog/nova-scotia-revamps-vc-funding>

investments have to be approved by its board whose members mostly do not have venture capital backgrounds.

A further source of public sector venture capital is the Atlantic Canada Venture Capital Fund, which is funded by the four provincial governments, BDC and the federal government, but is managed by two private fund managers who have invested \$1m of their own money. This \$60m fund, which was established in 2012 has been named *Build Ventures*. Its head office is in Halifax. Its investment focus will be series A rounds of \$1m-\$3m in companies that have demonstrated market traction. In practice, because of the gap in funds to enable companies to get to this point it has found that its initial deal flow has been early stage companies, hence its early investments (three from 350 engagements) have been in pre-revenue companies.

Build Ventures was created to address two major problems with the existing approach of government increasing the supply of venture capital. First, it is regional rather than provincial because of recognition that the individual provinces are too small to have their own funds. Second, it is run by private sector managers who will make investments on their merits, free from political influence and without the need to refer its investment decisions to a board for approval. As noted above, the expectation is that its 2nd and subsequent funds will attract more private sector limited partners, and investments made by these funds will make a key contribution to the economic transformation of the regional economy.

There is some debate about the role, and need for government involvement in the provision of venture capital. One view is that the recent acquisitions of companies in the region suggests that the market is maturing, so government should work with market forces to offer equity tax credits to attract private venture capital into the region. Taking the opposite view is Charley Baxter, vice-president of investment with Innovacorp, who still sees a role for public venture capital funds. "We exist to fill a funding gap identified for early-stage companies," he said. "It exists now." Indeed, he did not foresee a time when publicly funded venture capital investments, which he said are made by similar agencies in other jurisdictions, will not be needed in the province. Baxter said agencies such as Innovacorp assess venture capital investments through "the same lens" as the private sector. "The difference is the stage we play at," he said, which is often too early and too risky for many private sector investors. Patrick Keefe, co-manager of Build Ventures observes that innovation-based businesses have particular problems in raising finance:

"No fixed assets, plus negative cash flow, pretty much shuts off traditional avenues for financing. The core issue from a public policy perspective is that there is very little capital available to fund these businesses."

This issue is, of course, national, not just provincial, but its impacts are more pronounced in the Atlantic region. According to Keefe:

"If you look at the data from 2010, a typical Canadian tech company is able to raise about 50 per cent of the money compared to a similar U.S. company. In Atlantic Canada in 2010, a typical tech company was able to raise 50 per cent of what a typical Canadian company could. So the problem is more acute here."¹⁴¹

¹⁴¹ Lack of venture capital concerning for NS, *The Chronicle-Herald*, 21 February 2014.

Whereas attention has focused on the lack of seed stage finance, the region also has a lack of later stage investors with the capacity to make Series A, Series B and Series C deals.

Provincial government agencies, ACOA and the Federal Government also provide non-dilutive forms of finance – notably grants and soft loans – which can substitute for the need to raise venture capital, or delay the point at which venture capital is raised. Two schemes have been of particular importance. The first is ACOA's Business Development Programme – described by one commentator as “the gem in Atlantic Canada's funding formula”¹⁴² - which provides commercial lending at zero interest and non-secured to businesses that can demonstrate external validation by having raised either loan or equity finance. The amount that ACOA provides is matched to the amount raised by the business, so in a sense the program can be regarded as a non-equity version of a co-investment scheme. This is a widely used programme, with the Halifax office lending \$7.2m in 21 start-ups in 2013-14. The second is Industrial Research Assistance Program (IRAP) which is operated by the National Research Council (NRC) and is available across Canada. It provides advisory and financial assistance to help small and medium-sized companies build their innovation capacity and create high-paying jobs. It is delivered by a network of Industrial Technology Advisers (ITAs). The ITA-client relationship is a critical feature of the program. Regarded worldwide as one of the best programs of its kind, National Research Council's Industrial Research Assistance Program (NRC-IRAP) is a cornerstone of Canada's innovation system. More companies in Atlantic Canada accessed IRAP than any other programme in Atlantic Canada.

Business angels

Business angels are also an important source of investment. Nova Scotia is not a wealthy province and its lack of entrepreneurship means that there are relatively few self-made high net worth individuals (HNWIs) with the potential to become business angels. It is argued that self-made business angels have a different approach to investing than angels whose wealth services from high income, inheritance or family business. Moreover, business angels who have made their money in traditional sectors often do not understand technology based businesses. Indeed, one interviewee observed that “Nova Scotia has lots of HNWIs who can write cheques but not much value added.”

Nova Scotia has two angel groups, only one of which is active. First Angel Group (FAN) was established in 2005 in Halifax and currently has close to 100 investors, although membership is reported to be stagnant. It makes four investments a year across the region. At October 2013 it had made 23 investments, investing \$9.5m. Just over half are in Nova Scotia. The investee companies had gone on to raise a further \$70m. Two of their investments had failed and there had been two exits. Surviving companies employ 165 people.¹⁴³ The current total of investments by FAN is 26, with a majority in the Halifax area. Each investment has typically involved between 10 and 30 of their investors.

FAN attracted controversy in 2013 when they were accused by StartUp North of charging companies \$3,000 and about 8 percent of the funds raised to pitch to FAN, which it claimed is unfair to the entrepreneurs who need capital to develop their business. In response FAN

¹⁴² Peter Moreira: Atlantic Canada's ecosystem. <http://atlanticventureforum.ca/start-it>

¹⁴³ <http://entrestor.com/blog/atlantic-angels-new-funding-network>

argued that its critics had misinterpreted the fee.¹⁴⁴ Nevertheless, the controversy resulted in the establishment of a second angel group, Atlantic Angels, attracting some 30 investors to its inaugural meeting on October 2013. Key organisers include the directors of a mentor-based work hub and a mentor organisation in the region. However, it has not got off the ground, underlining how long it takes to assemble a group of angels and develop working practices.

East Valley Ventures, an angel group based in neighbouring New Brunswick has also invested in Nova Scotia companies. Nova Scotia lacks an equivalent tech-savvy group of business angels.

Government supports angel investing in two ways. First, as in many other jurisdictions around the world, the provincial government offers tax credits to individuals who invest in unquoted companies. However, this is limited to \$50,000 investment per year which equates to a £17,500 tax credit. Qualifying investments have to be in common shares. Second, as noted earlier, Innovacorp provides co-investment funds and has invested with FAN on six occasions.

The handful of large exits in the past two or three years has provided a significant boost to angel investing in the region. Although the investors in the companies have generally been external to the region, the founders and other internal shareholders have also benefitted. Importantly, they have remained in the region and re-invested locally. The high level of angel investments in 2012 (see table above) is thought to reflect the re-investment of the proceeds of the Q1 and Radian6 exits that occurred in 2011. The founders of Radian6 are reported to have invested in more than 30 start-ups in the Fredericton, New Brunswick, region.¹⁴⁵ However, unlike the existing angels in the region, these new angels operate very informally.

It is also important to note that some companies have attracted investments from angels located outside of the region. In 2012 21 companies in Atlantic Canada brought in angel money from outside the region.

The current situation therefore is that start-ups in Atlantic Canada have limited access to 'smart money' (meaning investors who bring expertise and contacts as well as capital) – of which the main source is business angels¹⁴⁶, although this is changing for the better as cashed out entrepreneurs with deep-expertise in starting and growing tech companies recycle their wealth and expertise.

Locally-based sources of venture capital

Both Nova Scotia and Atlantic Canada have very few locally-based sources of venture capital. Most are based on family money. Nevertheless, there has been a steady increase in investment by local private venture capital firms. The largest is Growth Works which has an office in Halifax from where it manages its Atlantic Venture Fund. This is a Labour Sponsored Venture Capital Fund and, as noted earlier, the tax relief offered to investors by the Federal Government will be ended in 2017. It was the second largest investor in the

¹⁴⁴ Ibid

¹⁴⁵ I am grateful to Peter Moreira for this information.

¹⁴⁶ Comment from Trevor MacAusland, executive director of Launch36, a business accelerator. Source: *ibid*.

region in 2013. This is attributed to two successful exits and the reinvestment of this money. Some of the increase can be accounted for by Build Ventures which made three investments in 2013, accounting for under £3m. Local funds invested more in 2013 than public sector funds.

Private venture capital funds from outside the region

Finally, there was a huge increase in investment by private venture capital funds from outside the region in 2013. This is in contrast to the view that has prevailed until very recently that venture capital fund managers elsewhere in Canada and in the US would not look at the region because “there had never been any good companies come out of that place.” A total of nine venture capital funds from outside the region made significant investments in Atlantic region companies in 2013. This included BDC, which had closed its Halifax office five years earlier, which made its first investment in the region since then.

The number of large exits in 2011, 2012 and 2013 is seen as being a significant factor in raising the attention of external investors in the region. Another factor that is thought to have encouraged non-local investors to invest in the region (although establishing direct cause-and effect is difficult) is the Atlantic Canada Venture Forum, the third of which took place in 2014. ACOA is a founding partner in the forum. It is an event at which the best 25 technology companies in IT, cleantech and life sciences are identified through an exhaustive screening process to present to the leading Canadian, US and international venture capitalists. There have also other region-wide events to socialise investors from outside the region, notably Silicon Valley and Boston (e.g. network events, conferences, ski days).

The anticipated benefits of the Atlantic Canada Venture Forum are as follows:

- Provide emerging tech companies with a platform for moving onto the radar screens of Fortune 500 firms, which constitute the most vibrant M&A market for high growth technology companies.
- Provide an opportunity for emerging company founders to have direct personal contact with influencers and decision makers.
- Provide venture capital funds and other private equity investors with a comprehensive conduit into the Atlantic Canada opportunity landscape.

Interventions to stimulate the demand side

Increasing the supply of venture capital will only generate economic benefits if there is sufficient demand to make effective use of the finance. Both Nova Scotia and the region have business accelerators. These include Propel ICT, which began in New Brunswick but has now expanded across the region, and Volta Labs based in Halifax. Both receive government funding. There are also a variety of mentoring and peer-to-peer support, including Mentorcamp started in Halifax in 2011 with ACOA’s support, and events that bring together members of the entrepreneurial ecosystem, notably DemoCamp Halifax and Invest Atlantic

Dalhousie University in Halifax is seen as a vigorous research institution but poor at engaging with investors. Its Social Media Lab is one of North America’s leading facilities for the analysis and development of social media. It is recognised that more needs to be done to

build bridges between investors and university researchers with IP that has commercial potential. However, it has established an entrepreneurship curriculum – Lean Start-Up - across the university. Several graduates from this course have gone on to start businesses. Saint Mary's University, also in Halifax, has developed a Masters in Technology Entrepreneurship and Innovation programme which has produced two start-ups from its first (2014) cohort. Springboard Atlantic provides resources to Atlantic Canadian universities and colleges to connect publicly-funded research with industry experts through a range of programs and services and thereby facilitate the transfer of knowledge and technology to the region's private sector. It is funded by the Government of Canada through the Atlantic Canada Opportunities Agency (ACOA).

Lessons and implications for Northern Ireland

The main funding gap in Nova Scotia is between the initial prototype and real market traction. This not only a financial gap but also a gap in experience and expertise. Most entrepreneurs are inexperienced and do not have sales and product marketing expertise or the networks to reach their potential markets. Finding and hiring the right talent to do so is costly. In capital-intensive sectors such as life science and clean tech this gap is wider and therefore requires more time and capital to get to the point where it can attract outside capital. Investorcorp plays an essential role in filling this gap as the only institutional source of seed capital in the province. However, commentators stress its limitations in adding value, to undertake mentoring and external networks. Build Ventures was intended to invest in Series A rounds when market traction is already demonstrated. However, the limited number of companies in this position means that it may have to invest somewhat earlier and play a more active role in supporting the go-to-market strategies of its investee companies.¹⁴⁷

The establishment of Build Ventures Future is a signal that government interventions in the venture capital market will increasingly be at arms-length. Indeed, the Nova Scotia Government is considering the establishment of a new venture capital fund that will be private sector led. This is based on several considerations. First, government involvement in venture capital creates confusing objectives – economic development or financial returns. Second, government venture capital funds typically have counter-productive geographical constraints on where they can invest. Third, they cannot offer an appropriate level of compensation to attract the best managers, offer the wrong type of incentives and have inadequate decision processes. The implication is that private sector venture capital funds do not see government venture capital funds as like-minded co-investors, they offer limited value-added, and they do not attract the best entrepreneurs. All of this leads to a poor financial performance.¹⁴⁸ This shift, in turn, underscores that government is no longer 'giving money to companies'; rather it is 'making investments' in companies. Other emerging trends are for initiatives to be regionally focused rather than at the provincial level, enhancing demand, notably by enhancing mentoring activities, fostering stronger external networks

¹⁴⁷ Duruflé, op. cit

¹⁴⁸ Duruflé, op. cit.

Nova Scotia's experience of seeking to promote venture capital has several implications for Northern Ireland.

- There is a danger of over-supply. Venture capital is intended to support emerging businesses with high growth potential. The number of such companies is small. Creating too much venture capital will lead to investments in companies with lower potential, thereby depressing returns and quite possibly being detrimental to the companies themselves. This is one of the reasons why the Atlantic Canada provinces have collaborated on Build Ventures rather than developing further provincial initiatives.
- Politicians and bureaucrats must create a respectable distance between themselves and public venture capital organisations. Risks of not doing so include slow decision-making, bad investment decisions, the politicalisation of investment decisions and the reluctance to close down unsuccessful investments and 'living dead' investments. This was the reason for establishing Build Ventures to operate like a private fund and immune from government influence. It is run by professional managers and has an advisory board that provides oversight but is not involved in investment decisions. This structure is essential if its subsequent funds are to attract private sector limited partners.
- The LSVCP funds highlight the limits of providing tax incentives to provide individuals to invest in SMEs. These have proved across Canada to have been less effective than private and institutional venture capital and hence a disappointing use of government money.¹⁴⁹ Here again, this is linked to the inability of the economy to absorb the funds available to invest.
- Where to intervene? In Nova Scotia as well as elsewhere the traditional approach has been for the public sector to invest at the seed stage. However, successful seed stage investments are likely to require at least one, and probably several, follow-on funding rounds. If there are also gaps in the availability of series A, series B, etc then the outcome may be a premature exit, stunted growth or even failure. Build Ventures was designed to invest at the Series stage. Intervention therefore needs to be joined-up, addressing all stages in the funding escalator, not just the seed stage.
- Related to earlier comments concerning the limits to how much venture capital can be absorbed by a small economy, it is essential for initiatives to boost start-ups to run in parallel with venture capital initiatives to boost the demand side. Indeed, a more appropriate objective for policy-makers, along with other stakeholders, is to foster a thriving entrepreneurial ecosystem rather than isolating one component. Gerry Pond, a key player in the New Brunswick technology entrepreneurship ecosystem, argues that policy needs to address four issues: mentorship, international sales and marketing, access to capital and less government overlap.¹⁵⁰ However, a small economy needs to focus its efforts on just a handful of niches where it has some advantage, rather than trying to promote everything. So, in

¹⁴⁹ Fancy, T (2012) *Can venture capital foster innovation in Canada? Yes, but certain types of venture capital are better than others*. CD Howe Institute, E-Brief.

¹⁵⁰ Gerry Pond: A quartet strategy. *Entrevestor.com Intelligence Report*, 2013.

Atlantic Canada Newfoundland has a focus on ocean technologies, New Brunswick on food processing, Prince Edward Island on animal health and life science and Nova Scotia on information technology.

- The Atlantic Canada Venture Forum underlines that government can stimulate the supply of venture capital in various indirect ways.
- What is the ultimate objective of increasing the supply of venture capital. The investment model requires an exit. As the Nova Scotia case shows, this can be an effective mechanism for boosting a local entrepreneurial ecosystem if there is a recycling of talent and wealth. However, it results in promising local companies being acquired by external businesses, which may be their longer term detriment. The challenge for public sector initiatives must surely be to grow large locally-managed companies. For this to occur other exit routes need to be available, in the form of either an IPO or secondary purchases. It is noteworthy that there has been no IPOs by Atlantic region companies since the heyday of the dotcom boom.

13. Republic of Ireland

Summary messages

- Ireland has pursued the *pari passu* model since the emergence of a growing venture capital market in the 1990's. This has been pivotal to its success in developing a strong private sector market, and in providing value for money to the taxpayer.
- Key drivers of change in Ireland's finance landscape were the establishment of Seed Funds by Enterprise Ireland from 2007 onwards, and the broader growth in entrepreneurial activity in part a reaction to the economic crisis.
- An issue for Ireland and a barrier to private sector investment is the lack of support from the pensions industry (this has stemmed from the way the pension contribution system was set-up). Ireland also has a lack of long-term investors, such as foundations and endowment funds. This is an area of concern and as it makes the market very dependent on state funding.
- Ireland needs to be conscious of the UK market to remain competitive. Arguably the UK is 'ahead' of Ireland in terms of tax incentives for business angel activity, EIS, and the entrepreneur tax credit.
- Evaluation was highlighted as a challenge in the area of fund set-up/creation due to the time-lag before lessons and impact can be learnt.

Characterisation of the early stage growth finance market

In the early 1990s, Ireland's early stage and growth finance market was very different to its present landscape. There was no business angel networks on the island, and there was a clear funding gap for start-ups. Historically Ireland struggled at both ends of the finance market – the pipeline quality was poor and there was very little funding of venture capital funds. However, the venture capital market expanded dramatically in Ireland in the early to mid-1990s as a flow of investment opportunities emerged, primarily in the indigenous computer software sector, the most dynamic indigenous high-tech sector of the "Celtic Tiger" era.¹⁵¹

Earlier developments in the Irish venture capital market included the setting up of the IDA's Enterprise Development Programme in 1978; the establishment of the National Enterprise Agency in 1981, its replacement by the National Development Corporation in 1986 and its amalgamation with the IDA in 1991; and the introduction of the Business Expansion Scheme in 1984 and the Seed Capital Scheme in 1993. Alongside the Celtic Tiger developments, a

¹⁵¹ Bary, F., O'Mahony, C., Sax, Beata: Venture Capital in Ireland in Comparative Perspective. Irish Journal of Management 32, pp1-27.

number of important policy changes helped to stimulate the venture capital market, these included, in 1994¹⁵²:

- the establishment in Irish law of “the investment limited partnership”, which had proved a suitable vehicle for venture capital activities in the USA and provided double taxation relief such that investments through qualifying venture capital funds are treated as though they are direct investments in the underlying companies
- the publication of government guidelines advocating that pension funds “support the venture capital industry by becoming a recognized form of finance for entrepreneurial companies”
- a shift away by public agencies from grant assistance towards equity participation in companies to which they advanced support.

Key subsequent stages in the development of the market included:

- the establishment by Enterprise Ireland of the Seed and Venture Capital Measure 1994-1999, with the objectives of (i) making seed and equity capital available to SMEs, primarily in the knowledge economy; (ii) developing the seed and venture capital market in Ireland; (iii) encouraging private sector participation, and (iv) developing seed and VC management skills.
- in 2001, the Seed and Venture Capital Fund Scheme was established to leverage €400million in private funding; this was achieved by 2002, and by 2004 the 15 funds established under the programme (with about €500 million in capital raised) had made investments in 75 companies totalling €133 million (Enterprise Ireland, 2005).¹⁵³
- the establishment of Seed Funds by Enterprise Ireland from 2007 onwards. Enterprise Ireland created these funds with banks and the management of the funds handed to commercial venture capitalists.

Another driver of the change in the market in Ireland has been the broader growth in entrepreneurship. Stakeholders consulted for this work believe this growth was driven by entrepreneurs knowing they would get funding due to the changed landscape i.e. supply helping to creating demand. Stimulating the demand-side was key. There was growth in the number of incubators and accelerators programmes in Ireland that helped to develop a pipeline of young knowledge/technology based firms seeking investment at both seed and early stage - for example, AIB Start Up Accelerator Fund (€22m), MedTech Accelerator (€10m). In addition, the emergence of Ireland as a location for knowledge/technology multinationals was also important in developing the broader knowledge economy and as a source of spin-outs and start-ups.

The recent review of finance for SMEs across the island of Ireland¹⁵⁴ described the Irish venture capital industry as “vibrant” and pointed out that there has been “significant and sustained” support from the Irish Government. For example, during the last few decades

¹⁵² Ibid.

¹⁵³ Ibid

¹⁵⁴ Access to Finance for Growth for SMEs on the Island of Ireland, December 2013

Enterprise Ireland committed c. €348m to over 40 local seed and VC funds resulting in capital of c. €1.2bn for investment in innovative high growth firms. Importantly, the research further refers to the challenge to secure follow-on finance, suggesting there is a continued need for government support of seed and early stage finance.

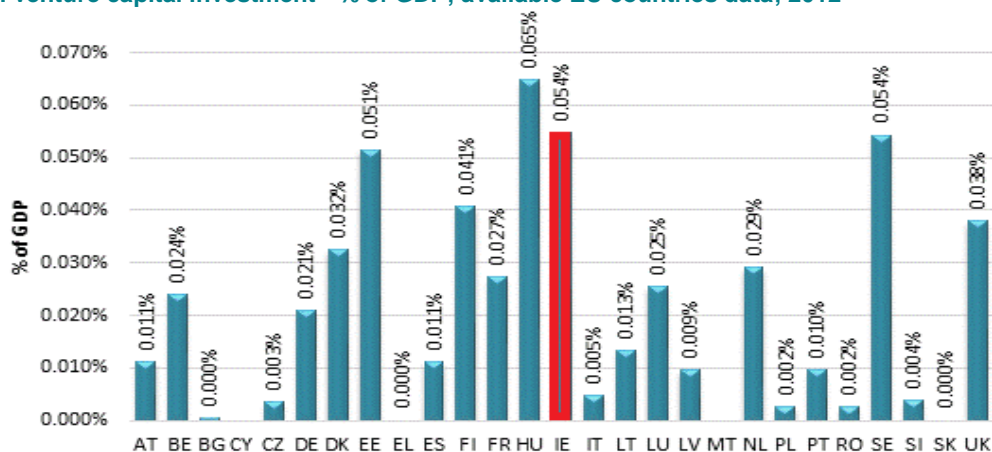
Importantly, as identified in the latest Guide to Venture Capital in Ireland¹⁵⁵ Irish venture capital firms have reached the ‘critical mass needed to sustain a professional cost structure and to allow sufficient diversification to spread portfolio risk. In addition, as a sign of the maturation of the domestic sector, the market is now segmented with both early/expansion stage and seed stage funds present.’ It is also reported that as in the USA, Ireland has seen a shift towards domain focused funds, with considerable investment expertise accumulated by Ireland’s venture capitalists. Further, prior to 1998 expansion stage investments were dominant, but since then the share of early stage financing changed with Ireland far exceeding both the European and US average in terms of the proportion of VC finance in early stage investments¹⁵⁶. The focus has been and continues to be on seed funds in Ireland.

Looking forward, for the period 2014-2019 the Irish Venture Capital Association estimates that the capital required to fund innovative SMEs is €1.65bn.¹⁵⁷ The Irish Government, through the Seed and Venture Capital Programme, has provided €175m as the cornerstone investor. Whilst private sources of capital are in short supply, the challenge for the VC industry will be to gear up this commitment but combined with a number of other innovative funding initiatives, the SME funding requirement should be largely met.

The early stage growth finance market in numbers

Ireland’s total venture capital investment as a % of GDP was one of the highest in the EU in 2012, the joint second highest percentage, behind Hungary, at 0.054% of GDP¹⁵⁸. Narrowing this calculation to just venture capital investments in seed and start-up companies, Ireland’s position is third, behind only Hungary and Estonia, at 0.039% of GDP.

Total venture capital investment - % of GDP; available EU countries data; 2012



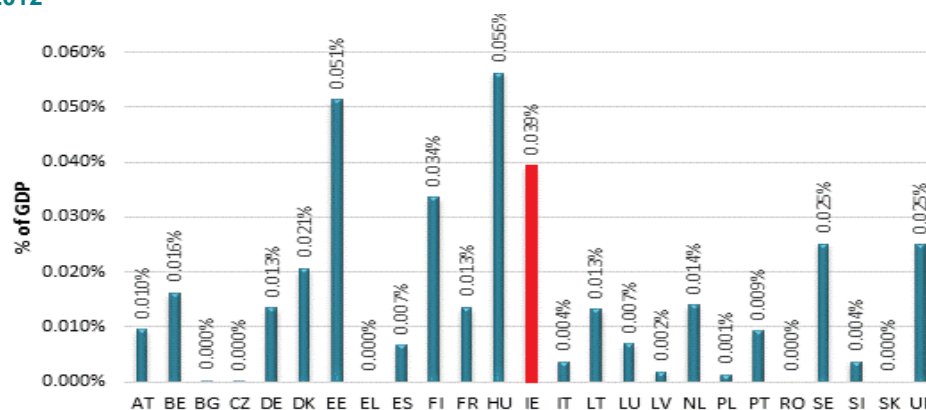
¹⁵⁵ <http://www.ivca.ie/wp-content/uploads/2014/07/Guide-to-Venture-Capital-2013.pdf>

¹⁵⁶ Ibid.

¹⁵⁷ http://www.ivca.ie/wp-content/uploads/2014/06/IVCA_Submission_300514.pdf

¹⁵⁸ SQW research for EC (2013), based on EVCA data [NBSQW - check].

Venture capital investments in seed and start-up companies - % of GDP; available EU countries' data; 2012



Source: SME Enterprise Finance Index

In absolute terms, OECD data indicated venture capital investment of US\$145m in 2013, with Ireland ranked 15 out of 31 OECD members, with venture capital investment above larger countries such as Spain, Belgium and Italy.

Strategic and policy context

The Irish Government's current policy focus around early stage and growth finance has been around improving access to finance for micro, small and medium enterprises. The current strategic focus includes:

- increasing new lending to SMEs, drawing on both bank and non-bank sources of funding
- increasing participation in Government sponsored access to finance schemes for SMEs such as the Microenterprise Loan Fund, the Credit Guarantee Scheme, the Seed and Venture Capital Scheme, Seed Capital Scheme (SCS), Employment and Investment Incentive Scheme (EIIS), the NPRF SME Funds and the Credit Review Office
- raising the level of awareness amongst SMEs and entrepreneurs of the full suite of developmental business supports available through a comprehensive communications strategy involving the widest possible range of stakeholders
 - maximise the full potential of the soon to be established Local Enterprise Offices as the key conduit for providing advice, information and guidance to SMEs on access to finance issues including available state sponsored supports
- enhancing the financial capability of SMEs
- enhancing research and policy evaluation on access to finance for SMEs and the potential for innovative sources of finance.

Venture capital backed companies provide a substantial impetus to the ongoing development of a knowledge-based economy in Ireland and to the achievement of public policy objectives in this regard¹⁵⁹. Since 2009, 94% of venture capital funds were raised by SMEs in the high technology sector. This investment preference by venture capitalists reflects sectoral strengths in Ireland including:

- Expected growth prospects
- Access to global markets
- Capital efficiency in terms of building the technology and business model
- Available skill base to build the business and
- Domain expertise of the venture capitalists.

Some of the consultees interviewed for this study highlighted an issue for Ireland and a barrier to private sector investment in the early stage and growth finance market was the lack of support from the pensions industry – this stemmed from the way the contribution system was set-up. Also it was highlighted Ireland has a lack of long-term investors, such as foundations and endowment funds. This is an area of concern for Ireland and as it makes the market very dependent on state funding.

Interventions and initiatives

The Table below provides an overview of the main networks and associations in Ireland relating to the early stage and growth finance market.

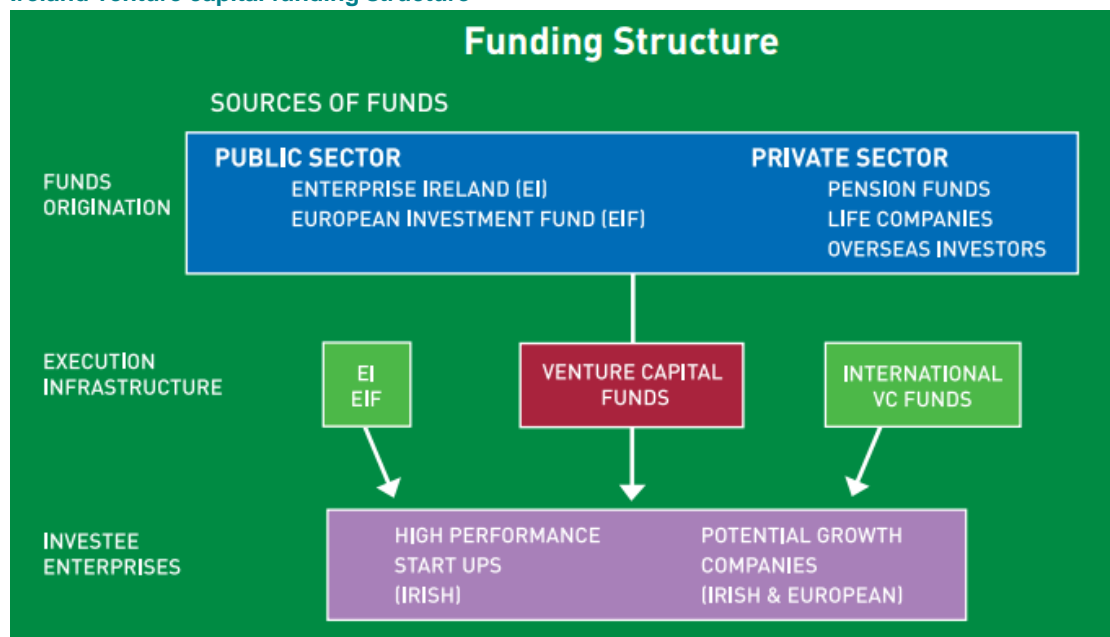
Networks and associations in the Republic of Ireland

Network	Details
Irish Venture Capital Association	The Irish Venture Capital Association (IVCA) represents venture capital in the Republic of Ireland and Northern Ireland. Its full members are venture capital firms which provide equity funding to growing unquoted companies. Associate members of the IVCA include firms that provide advisory services including corporate finance houses, commercial and intellectual property law firms, accountants and other advisers experienced in the venture capital field. It is an honorary member of the British Private Equity and Venture Capital Association (BVCA) and the European Private Equity and Venture Capital Association (EVCA).
Halo Business Angel Network	This is an all-island umbrella group responsible for the development of business angel syndicates – e.g. the All-Island Medtech Syndicate, and the All-Island Food Syndicate. HBAN actively works to increase the number of angel investors involved in investing in early stage companies and supports the formation of new and existing angel networks, both regionally and internationally, and within industry sectors. It is a joint initiative of Enterprise Ireland and InterTradeIreland. HBAN is also a member of the European Business Angels Network.

The VC funding structure in Ireland is illustrated in the Figure below.

¹⁵⁹ IVCA (2012) *The Economic Impact of Venture Capital in Ireland - 2012*

Ireland venture capital funding structure



Source: <http://www.ivca.ie/wp-content/uploads/2012/04/IVCA-Ire-The-vestment-Opp.pdf>

Following from the above, set out below and public agencies and selected interventions operating in the Republic of Ireland.

Public agencies and funds in the Republic of Ireland

Agency/Fund	Details and evidence of 'success' where available
Enterprise Ireland	<ul style="list-style-type: none"> Enterprise Ireland is the government organisation responsible for the development and growth of Irish enterprises in world markets. They work in partnership with Irish enterprises to help them start, grow, innovate and win export sales on global markets. In this way, they support sustainable economic growth, regional development and secure employment.
Western Development Commission	<ul style="list-style-type: none"> The Western Investment Fund provides Seed and Venture Capital to new and existing businesses across a range of sectors in the Western Region (Counties Clare, Donegal, Galway, Leitrim, Mayo, Roscommon and Sligo). This also considers MBOs/MBIs. Larger investments are considered on a syndicated basis with other private investors. The Commission is a statutory body. The Commission invests £85k to £850k.
The 2013–2018 Seed and Venture Capital Scheme	<ul style="list-style-type: none"> The scheme encompasses indirect investments where Enterprise Ireland has no executive role and is actually a minority partner. This is a €175m initiative that aims to provide additional growth funding for high-growth Irish firms. Through Enterprise Ireland, the Department of Jobs, Enterprise and Innovation it provides investment in private seed and venture capital funds. In turn, these funds invest in high-growth firms in priority sectors such as ICT, life sciences, high-tech manufacturing, and the green economy. Under the first call of expressions of interest, Enterprise Ireland will be committing up to €100 million, which will establish up to 5 non-seed funds targeted at the ICT and life sciences sectors. The deadline for submitting expressions of interest for this first round was June 2013 although there will be additional rounds in 2014-2015. Enterprise Ireland invests on the same terms as the private sector and negotiates accordingly.
Competitive Start Fund	<ul style="list-style-type: none"> This fund supports start-up companies active in manufacturing and internationally-traded services by investing €50,000 for a 10% ordinary equity stake. The fund aims at supporting the growth of start-up companies that have

Agency/Fund	Details and evidence of 'success' where available
	<p>the capability to succeed on international markets.</p> <ul style="list-style-type: none"> • The maximum support is €50,000 for a 10% ordinary equity stake and will be released in two equal tranches. • As of year-end 2013, 204 early stage companies have been funded, with over €10 million committed.
The Development Capital Scheme	<ul style="list-style-type: none"> • The scheme encompasses indirect investments where Enterprise Ireland has no executive role and is actually a minority partner. The Scheme is a €75 million initiative that aims to provide additional growth funding for high-growth Irish firms. Through Enterprise Ireland, the Department of Jobs, Enterprise and Innovation provides investment in private equity funds. In turn, these funds will invest in SMEs with growth potential. • This fund invests in high-growth firms in priority sectors such as engineering, food, medical devices and software. Enterprise Ireland invests on the same terms as the private sector and negotiates accordingly.
Innovative High Potential Start Up (HPSU) Fund	<ul style="list-style-type: none"> • Enterprise Ireland established the Innovative HPSU Fund to help support the start-up and development costs of high potential start-ups (HPSUs). These are deemed to be companies that can develop innovative products and services that can be sold on international markets. • The Innovative HPSU fund enables Enterprise Ireland to purchase equity in a client on a co-funded basis. • Around €25 million is usually invested in around 80 companies per year. 15 Seed and VC funds are backed by a total investment of €400 million. The fund has invested in 827 companies since its creation in 1989.
Innovation Fund Ireland Scheme	<ul style="list-style-type: none"> • The scheme encompasses indirect investments where Enterprise Ireland has no executive role and is actually a minority partner and is jointly managed by Enterprise Ireland with the National Pensions Reserve Fund. • The Scheme aims to provide additional growth funding for high-growth Irish firms. Through Enterprise Ireland, the Department of Jobs, Enterprise and Innovation has provided investment in private equity funds. In turn, these funds will invest in SMEs with growth potential. A similar amount has been ring fenced by the NPRF for investment. • Total amount committed: €125 million for 2013-2018. There have been two calls for expressions of interest. Enterprise Ireland owes a significant capital percentage of a number of funds. A further call for expressions of interest maybe issued in the future. • The focus is on investing with International VC that will establish a presence in Ireland and invest the equivalent for Enterprise Ireland's commitment in Irish companies or companies with significant operations in Ireland. Enterprise Ireland invests on the same terms as the private sector and negotiates accordingly. This programme is publicly financed by the Government and privately financed by private equity funds.
Start-Up and Emerging Sector Fund	<ul style="list-style-type: none"> • The Start-Up and Emerging Sectors Equity Fund, developed by the Bank of Ireland, with Enterprise Ireland as co-investors, and managed by Delta Partners, intends to make investments of between €100,000 and €500,000 to high potential start-up companies that have an innovative idea. • Prospective beneficiary businesses should also have the potential to export, and be operating in one of the following sectors: greentech/cleantech, life sciences, medical devices, ICT, software, internet, emerging technologies, R&D and trading companies.
Seed and Early Stage Fund	<ul style="list-style-type: none"> • This fund comprises of an investment by Bank of Ireland, Enterprise Ireland, University of Limerick Foundation and National University of Ireland Galway. • SESEF seeks to make investments of between €100,000 and €500,000 in start-up and early stage enterprises that have a great idea for products, have the potential to export and are operating in the following sectors: technology, including green technology, food and financial services sectors, in addition to supporting patent and patent pending projects within Irish universities.

Agency/Fund	Details and evidence of 'success' where available
	<ul style="list-style-type: none"> As part of this fund, the Bank of Ireland has set up a MedTech Accelerator Fund, managed by Kernel Capital. The €10m MedTech Accelerator Fund is Ireland's first Seed Fund to focus exclusively on the indigenous Medical Technology sector. With investments ranging from €100,000 to €500,000, the Fund is focused on export orientated high potential start-up Life Sciences companies that operate in one of the following sectors: Medical devices; Diagnostics; Medical/laboratory.
The Bank of Ireland Kernel Capital Venture Funds	<ul style="list-style-type: none"> The Bank of Ireland Kernel Capital Venture Funds, investing in the Republic of Ireland and Northern Ireland, are one of the largest and most active sources of equity finance for technology companies on the island of Ireland. The strategic alliance between Kernel Capital and Bank of Ireland, the wide range of institutional investors in the funds and the network of over 80 institutional portfolio co-investors mean that Kernel Capital can deliver 'access to funding' for all stages of company growth. To date, they have raised €173m/£145m in venture capital funds, the latest being in 2013, and with portfolio companies have raised over €500m/£420m in equity and debt funding.
AIB Seed Capital Fund	<ul style="list-style-type: none"> The Fund was established by Allied Irish Banks, plc in partnership with Enterprise Ireland. The AIB Seed Capital Fund was established in 2007 under the Seed and Venture Capital Programme 2007 – 2012 as a joint venture between Enterprise Ireland and AIB Bank, who have jointly committed €53 million to the Fund. The fund's investments are jointly managed by Enterprise Equity Venture Capital Group and Dublin Business Innovation Centre. Cumulative investments to end 2013 by the AIB Seed Capital Fund of over €26 million have leveraged in excess of €85 million of additional capital from other external investors, including Enterprise Ireland.

All Enterprise Ireland funds were designed using Enterprise Ireland's own internal expertise. This is through the growth capital department which has built substantial expertise on designing and establishing funds. Over the last 15-20 years the unit has set-up 30-40 funds and negotiated 30-40 legal agreements around these. Feedback from consultees for this comparator review on these funds highlighted the following:

- the pari passu model has made setting-up funds easier
- Enterprise Ireland sit on the Advisory Boards for all their funds, so are '*plugged into the eco-system*'.
- evaluation was highlighted as a challenge in the area of fund set-up/creation due to the time-lag before lessons and impact can be truly learnt
- the early stage/growth finance market will only remain sustainable if the funds are renewed in Ireland. There is a strong will from government to keep renewing the funds. Although an issue for policy makers is that they do not have the same "strangle hold on the banking sector" that they used to.

Lessons and implications for Northern Ireland

Taking into account the evidence presented above, the key lessons from the Republic of Ireland and related implications for Northern Ireland are set out below.

- A major and long-term commitment by the Government to support the supply of venture capital finance (by investing as a commercial investor) sustained support to develop the demand-side. Ireland has developed entrepreneurial structures that provide high levels of support (e.g. through accelerator schemes).
- Critical mass and expertise has been reached in the venture capital investment market (degree of sophistication)
- The level of angel investment has risen and formal angel networks continue to develop in line with international best practice but it is recognised that further improvements could be made - interviewed stakeholders were hopeful Ireland would get to a point where the growth in venture capital activity would further encourage business angel activity.
- Ireland needs to remain closely sighted on policy and strategy in the UK to ensure it remains competitive. Tax incentives play an influencing role for investors (e.g. tax incentives for business angel activity, EIS, and the entrepreneur tax credit).
- There exist significant structural differences in economic dynamics between Ireland and Northern Ireland. For example, the nature of international investors in the South – often in knowledge/R&D focused activity is different to the North where ‘back-office’ functions are more common.
- Further, Northern Ireland is more reliant on the public sector as a source of employment and investment than the Republic of Ireland. The latter has a stronger private sector-led economy which is crucial in developing a pipeline of investment propositions at seed and early stage. It also has substantial government support for business sector R&D and innovative start-up firms¹⁶⁰ (thus, proactively driving innovation and stimulating the demand-side).
- There may be potential for the development of ‘one market’ across the Republic of Ireland and Northern Ireland in the early stage/growth finance market. Whilst Northern Ireland cannot simply ‘copy’ the Republic given the different economic structures, there is scope for the further development of the all-island market in order to help achieve scale. However, in many cases “start-ups require a lot of handholding at initial stages and as such the structure and delivery [of all-island funds] would have to address the importance of local knowledge, relationships and contacts and may be complicated in practice.”

¹⁶⁰ Over the period 1995- 2006 the share of government investment in R&D fell in both the EU and the OECD but it rose in Ireland (Barry et al. 2012)

Annex A: Stakeholders engaged

Michael McAllister - ASM Accountants
Ian Kerr - Beltrae Corporate Advisors, PE investors
Hal Wilson - Pentech Ventures
Harry MacDaid - Ulster Community Investment
Niall Olden - Kernel Capital Funds
Jayne Brady - Kernel Capital Funds
Iain Lees - PWC
Mike Bowman - E-Synergy
Debbie Rennick - ACT Venture Capital
Tim Brundle - University of Ulster
Professor Russell Griggs
Brian McCaul – Queen’s University Belfast
Jenny Tooth – UK Business Angels Association
Alan Watts – Halo
Tim Mills – British Business Bank
Patrick Graham - Business Growth Fund
Paul McElvaney - Learning Pool
Colin McGoldrick – Proofpoint
Dr Richard Horton – Carritech
Steven Houston – Angel Investor
Ciaran McGarrity – DETI
Drew O’Sullivan - InterTrade Ireland
Steve Orr - NISP Connect
William McCulla - Invest Northern Ireland
Aidan Gough - InterTrade Ireland
Bryan Keating – Matrix NI
Regina Breheny, Irish Venture Capital Association
Mark Ennis - Invest NI
Philip Maguire - Northern Ireland Science Park
Paul Millar - Whiterock Capital Partners
Neil Simms - Clarendon Fund Managers
Judith Totten - Keys Commercial Finance
David Waugh - Queen’s University Belfast
Deirdre Terrins - Crescent Capital

Grannie Lennon – InterTrade Ireland

Mark Maguire - Invest NI

John Miller - Invest NI

Helen Kirkpatrick

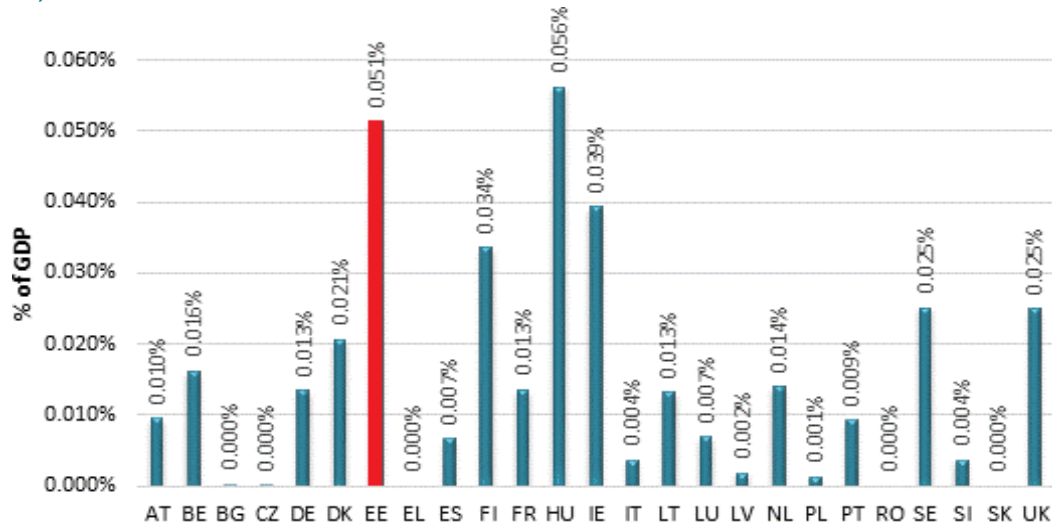
David Moore – QUBIS Ltd

Alison Reid - Invest NI

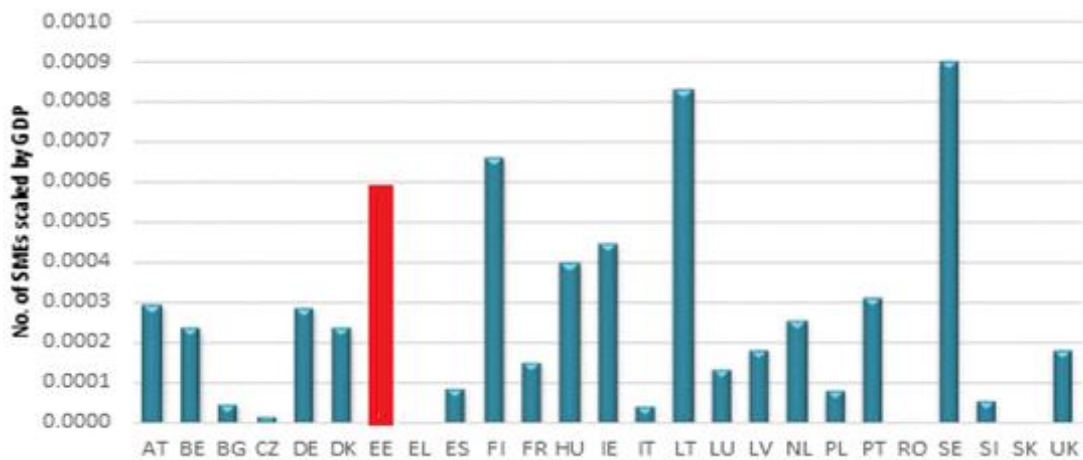
Annex B: Comparator appendices

Estonia

Venture capital investments in seed and start-up companies - % of GDP; available EU countries' data; 2012

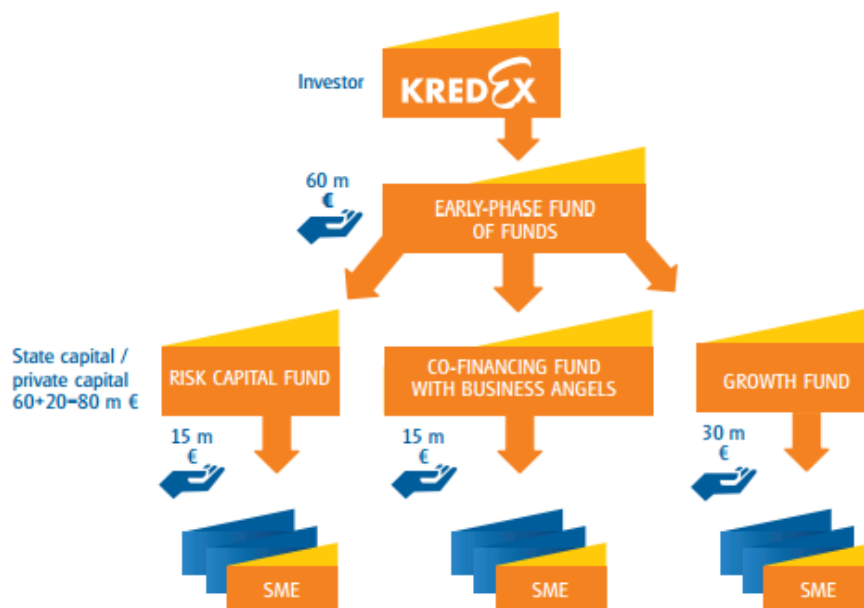


Number of beneficiary SMEs scaled by GDP; available EU countries data; 2012



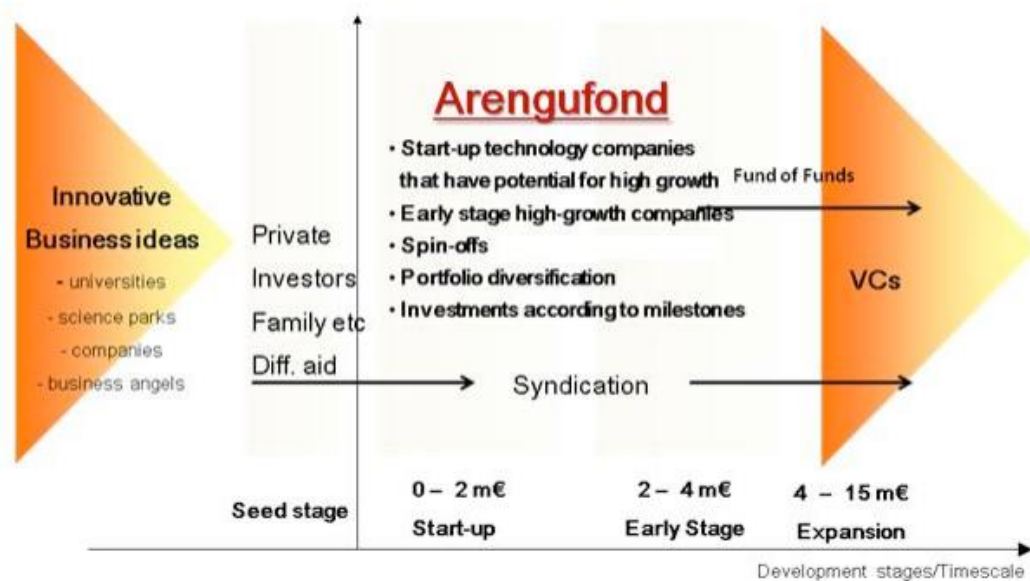
Source: SME Finance Index

Figure: Additional KredEx fund



Source: http://www.kredex.ee/public/aastaraamat2013/en/KredEx_annual_report_2013.pdf

Figure: Preparing venture to capital



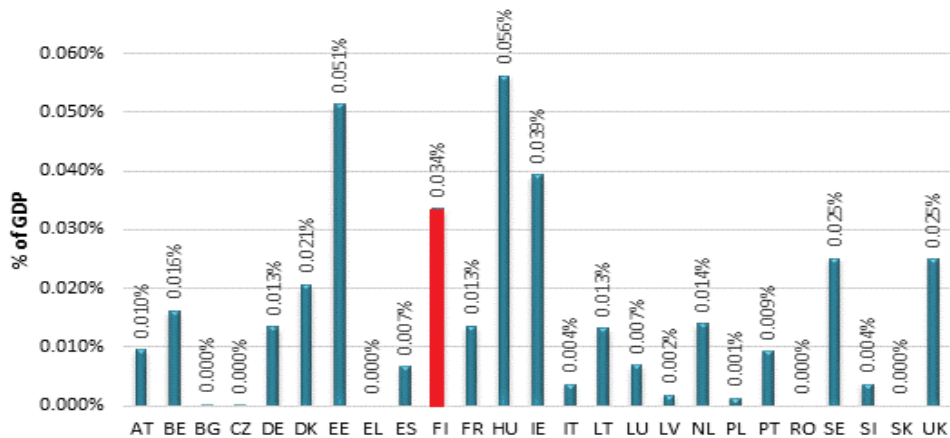
Finland

Number of investments made in Finnish portfolio companies by origin of investor in 2007-2014

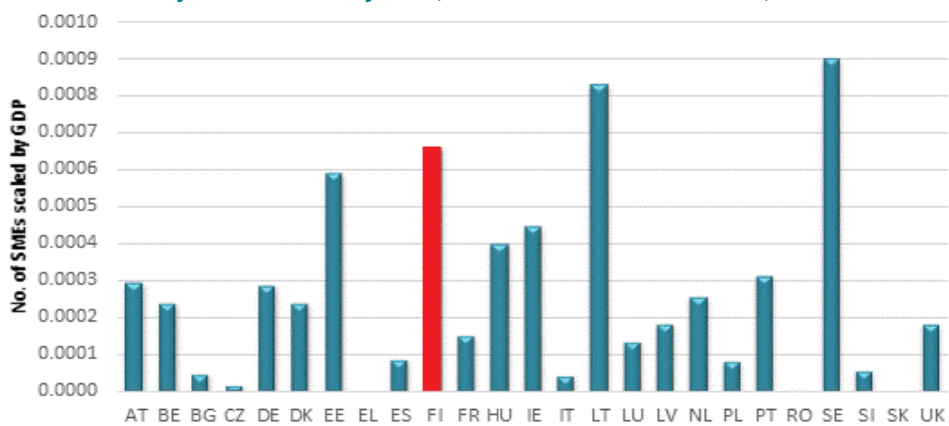


Source: http://www.fvca.fi/files/864/14H1_VC-PE_Industry_in_Finland.pdf

Venture capital investments in seed and start-up companies - % of GDP; available EU countries' data; 2012



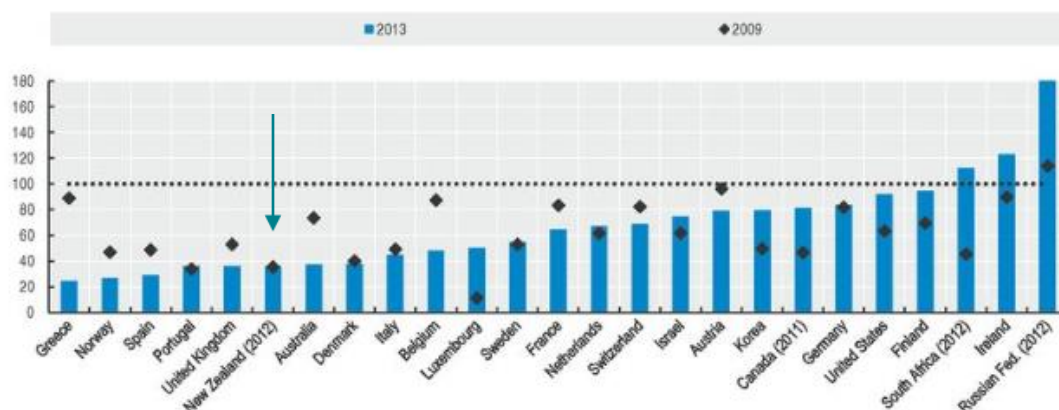
Number of beneficiary SMEs scaled by GDP; available EU countries data; 2012



Source: http://ec.europa.eu/enterprise/policies/finance/data/enterprise-finance-index/access-to-finance-indicators/venture-capital/index_en.htm

New Zealand

Venture capital trends – 2007 = 100



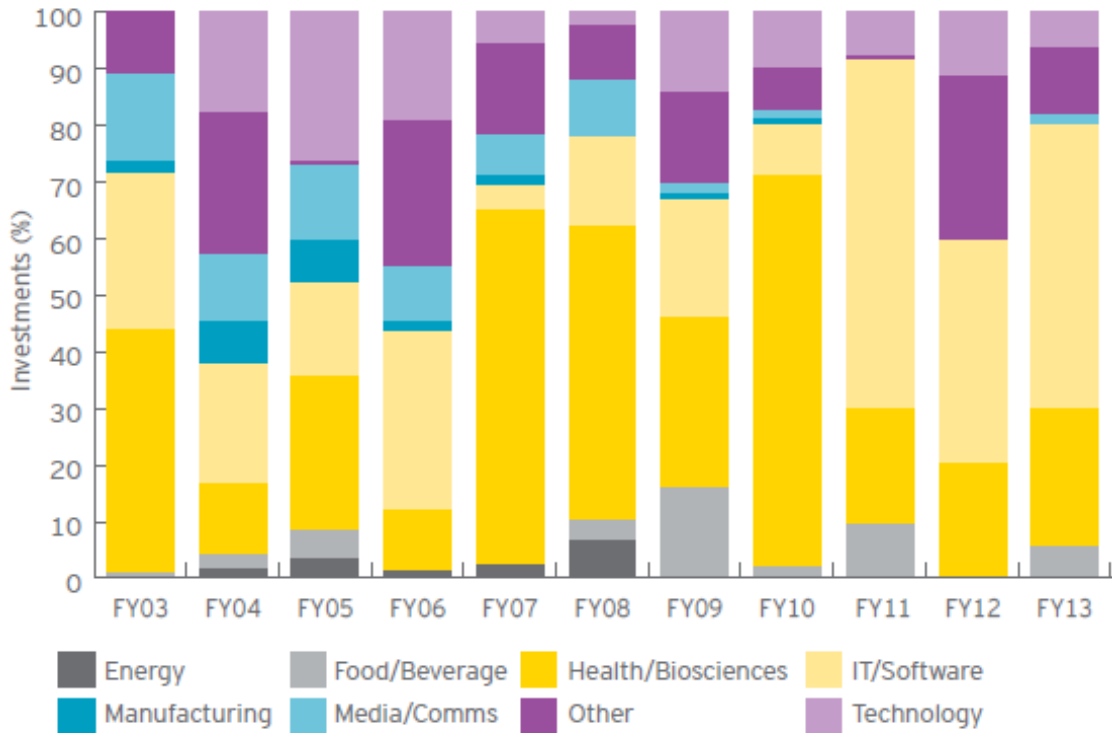
Source: OECD Entrepreneurship at a Glance 2014

Venture capital investments by country 2013 (US\$m)

Country	Value	Country	Value	Country	Value
Czech Republic	3.69	Austria	86.37	Russian Federation*	398.00
Slovenia	5.28	Norway	94.57	Korea	635.47
Greece	6.42	Denmark	107.17	United Kingdom	740.38
Luxembourg	7.02	Belgium	118.83	Israel	895.00
Estonia	8.20	Spain	134.98	France	902.24
Poland	20.76	Ireland	145.46	Germany	932.85
New Zealand*	21.71	Finland	170.95	Japan*	1,284.58
Hungary	22.93	Australia	252.93	Canada (2011)	1,406.58
Portugal	50.40	Netherlands	257.02	United States	29,364.96
Italy	80.70	Switzerland	260.63		
South Africa (2012)	81.34	Sweden	307.26		

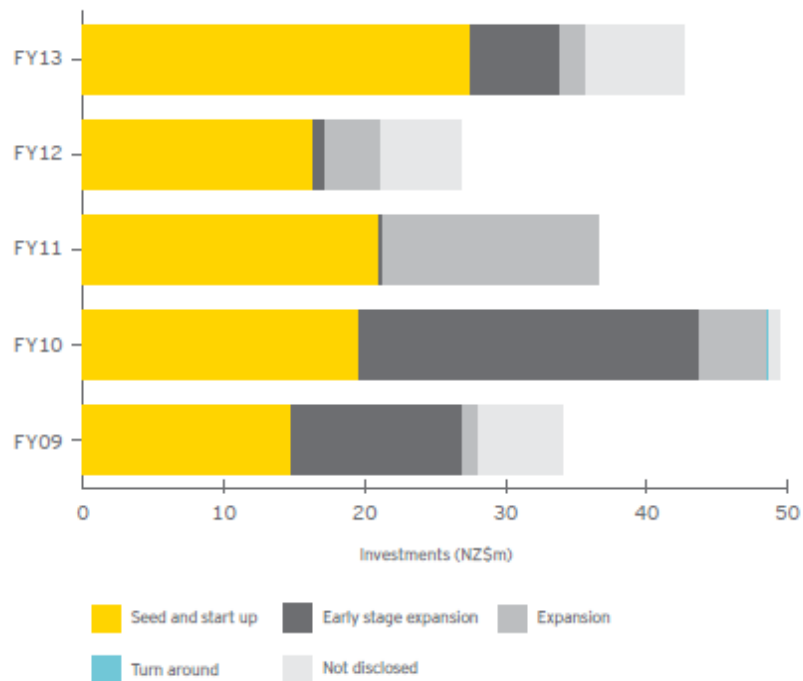
Source: OECD Entrepreneurship at a Glance 2014* Data for 2012

Venture and early stage investments by sector



Source: New Zealand Private Equity and Venture Capital Monitor 2013 full year review

Stage of investment



Source: New Zealand Private Equity and Venture Capital Monitor 2013 full year review

NVIF Timeline

Impact	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
	\$100m: Crown commitment to VC Fund			\$40m: Crown commitment to Seed Fund	\$60m: Additional commitment to VC Fund				\$40m: Crown underwrite for VC Fund			\$60m: Crown underwrite for VC Fund
Increased levels of private capital		\$150m new private capital committed for VC investment		\$50m new private capital committed for VC investment		\$65m new private capital committed for VC investment			Angels invest over \$50m	Total of \$400m private capital invested		Establishment of Taiwan NZVIF/NDF Co-Fund
Increased number of experienced and professional investors	First 2 NZVIF VC Funds established	4th NZVIF VC Fund established		5th NZVIF VC Fund established	6th NZVIF VC Fund established First Seed Fund partner established	5th Seed Fund partner established	9th Seed Fund partner established	11th Seed Fund partner established	12th Seed Fund partner established	16 active angel networks or funds	8th NZVIF VC Fund established 14th Seed Fund partner established 2 Seed Fund partnerships renewed	9th NZVIF VC Fund established
A conducive early-stage investment environment	NZVCA established	VC Fund investment template developed by NZVIF NZVCA Monitor established		YCF established Venture capital tax exemption legislation enacted	Standardised investment agreements adopted by the Angel industry	Limited Partnership legislation enacted	AANZ established PE investment performance data published by NZVIF	NZVCA adopt Code of Conduct Changes to overseas investment rules	Power of Angel investing seminars PE investment performance data published by NZVIF	Valuation of early-stage investment data presented by NZVIF	Early exits & valuation and execution intel seminars IPEV institutional best practice reporting guidelines adopted Institutional investment in VC and PE Report published PE investment performance data presented	
Increased number of successful high growth companies				First successful realisation by NZVIF portfolio company	Total employees in NZVIF portfolio companies exceeds 500	Total NZVIF portfolio company revenue exceeds \$100m	Two NZVIF portfolio companies exceed \$30m revenue	NZVIF portfolio company average revenue per employee is \$250k		100 companies invested into by NZVIF \$300m invested alongside NZVIF into high tech companies		146 companies invested into by NZVIF

Source: NZIF Annual Report 2013, http://www.nzvif.co.nz/documents/publications/NZVIF_Annual_Report_2013.pdf

NZVIF Fund partners (as of late-2014)

Name	Vintage	VIF Capital Allocation (\$million)	Total Fund Size (VIF + Private)	Drawdown of VIF Capital	Number of Investments	Number of Exits ⁷	Status
No 8 Ventures No2 Fund	2003	\$11.8 m	\$35.25 m	\$11.8 m	9	4	Post fund life – liquidation mode
TMT Ventures	2003	\$ 21 m	\$63 m	\$20.6 m	9	7	Post fund life – liquidation mode
Endeavour i-Cap Fund	2004	\$13 m	\$39 m	\$13 m	18	9	Post fund life – liquidation mode
iGlobe Treasury Fund	2004	\$10.4 m	\$31.2	\$10.4 m	6	2	Post fund life – liquidation mode
BioPacific Ventures	2006	\$10 m	\$49 m	\$9.5 m	5	1	Post investment period
Pioneer Capital Partners I	2007	\$20.0 m	\$65.9 m	\$16.9 m	9	2	Post investment period
VIF Annex Fund	2009	\$15 m	\$45 m	\$12.2 m	12	1	Post fund life - Annex Fund linked to individual fund life.
Movac 3	2011	\$16.5 m	\$42.5 m	\$8.5 m	6	0	Investment period
Valar Ventures	2011	\$ 20 m	\$40 m	\$8.5 m	4	1	Investment period
Pioneer Capital Partners II	2013	\$18.8 m	\$150 m	\$5.7 m	4	0	Investment period
GRC	2014	\$25 m	\$80 m	-	-	-	Investment period
TOTAL		\$181.4 m	\$641 m	\$120.7 m	66^a	23^c	

Source: NZVIF

Angel views on what is working well and less well in the NZ Seed Co-investment Fund

Working well

SCIF is run by a professional team and has an efficient system of determining funding eligibility.

SCIF funds are transferred efficiently.

The very fact matching funding is available to top up ventures and to provide confidence is beneficial.

Deal documentation and templates, together with Simpson Grierson interface and legal assistance and support around the release of funds provides useful support.

SCIF processes deliver prompt decisions and SCIF manager's respond promptly and take a practical approach to deals.

SCIF investor education initiatives primarily around sponsoring expert visits are invaluable. Offshore presenters are always attractive to local investors.]

Not working so well

Angel industry data is very "SCIF-focused" so there is inadequate visibility of non-SCIF deals and angel venturing. There is a need for a wider and more detailed set of data on angel deals and profiles. What data does exist needs to be more widely and effectively communicated.

A maximum of up \$750k SCIF funding in any one venture is too small, particularly for life science and clean-tech deals.

SCIF should focus more on companies already in its portfolio. There is anecdotal evidence that the lack of follow-on funding is forcing trade sales earlier than optimal and that companies are "going to the wall" when it may not be entirely necessary. Government policy makers might consider an "expansion fund" which could be deployed to provide larger sums of follow-on funding for venture growth.

SCIF should move from 4% to 6% success fees both on upfront and follow-on rounds to allow professional leads to invest sufficient time in leading due diligence and syndication and enable them to syndicate with other groups, which require at least 3% in a shared or syndicated deal.

SCIF should have a more flexible and nimble mandate with more money to deploy with new partnerships. The current \$40m fund is too small. The SCIF mandate should be reviewed every two years with the ability to amend it expeditiously. The market moves and changes more quickly than the mandate.

There is a real need for administrative support for the networks and funds. The groups are unsustainable as they are and the angel membership base and quantum of funding being provided is not growing as fast as it could. Were government funds to be provided for administration these should preferably be provided other than through SCIF to avoid potential conflicts of interest.

The Halo Fund, developed by the industry in conjunction with SCIF in 2009, was designed to fill an obvious market gap providing for passive angel investment. The gap in the capital market is still there and it should be filled.

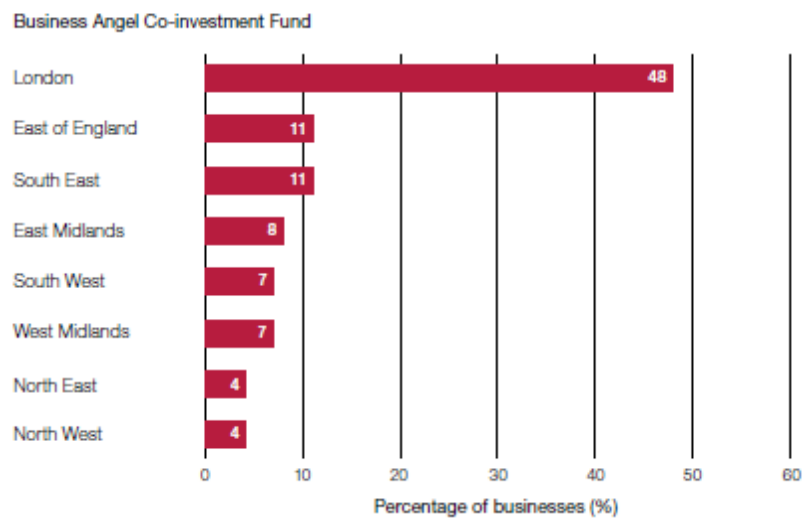
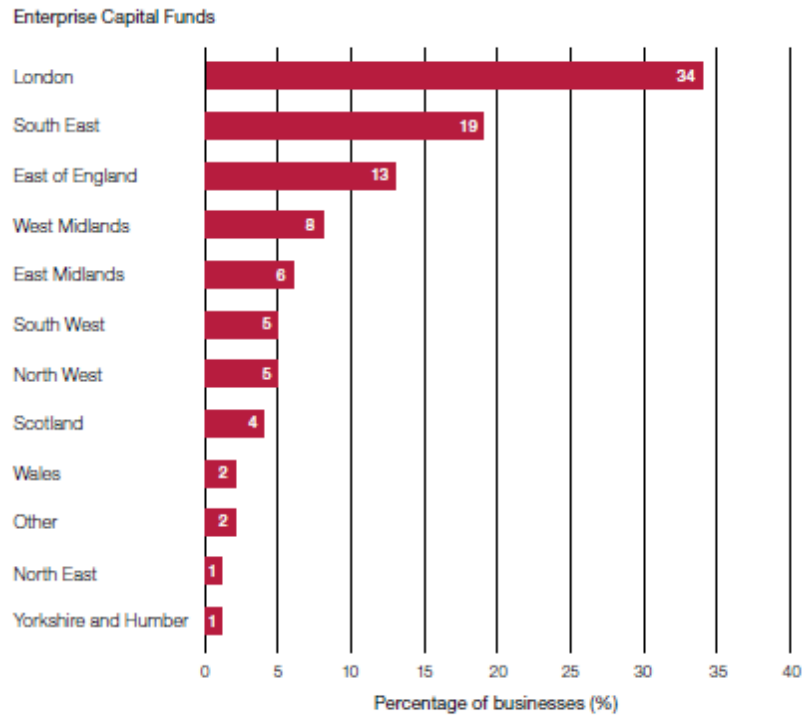
The pathway to a follow-on SCIF fund should be clearer and more straightforward. In a similar vein so should the pathway to establishing a venture capital fund. Specifically, it would be very useful for the partner, particularly in attracting Asian investors, to be able to demonstrate a soft commitment from SCIF/NZVIF conditional upon securing private funds.

At the very front end of securing opportunities for angels to invest in, there is a need for a small fund to assist companies to become investment-ready for angels. This would be early seed money and could be capped at \$50,000, not requiring co-investment and could be administered the same way as SCIF. The angel network or SCIF partner would prepare the documentation and certification and SCIF would manage the fund. In effect this would be a market validation fund. If a company came through an incubator, there might be a weaker rationale for the provision of this intervention as by virtue of incubation much of the market validation and other investment readiness work will have been provided.

North East England

Regional effects of national venture capital funds

Regional effects of the Enterprise Capital Funds and Business Angel Co-Investment Fund



Source: NAO Improving access to finance for small and medium-sized enterprises, November 2013