Economic Impact of the Scottish Enterprise Seed Fund

Final Report

A report prepared by

PACEC

for

Scottish Enterprise

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The research, analysis and conclusions and those of PACEC

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Executive Summary

X1 Introduction

X1.1 In January 2011 Scottish Enterprise (SE) commissioned PACEC to carry out an evaluation of the Scottish Seed Fund (SSF). In summary SSF addresses the equity gap for businesses in the £20,000-£100,000 range for start-up and very early stage companies that seek to grow. The Fund started in November 2006. The management of the fund was taken over by the Scottish Investment Bank (SIB) which was formally launched in December 2010.

X1.2 SSF forms an initial source of funding for businesses as one of a suite of SE loan and equity co-investment funds, together with the Scottish Co-Investment Fund (SCF) and the Scottish Venture Fund (SVF) which focus on larger businesses at later stages in their development.

X1.3 SSF, as with the other funds, was set up after and in parallel with a range of studies which showed a relative shortage of finance for business in Scotland and for early stage businesses. The aims of the evaluation, in summary, are to:

- Assess whether the original strategic rationale for SSF is still valid in terms of its policy fit, the perceived market failures for capital, and its market impact.
- Estimate the economic impact of SSF arising from the investee companies to date and into the future.
- Assess views on the management and delivery
- Assess the progress towards the objectives set for SSF
- Make recommendations on the Funds' future direction.

X1.4 PACEC was also appointed to carry out an evaluation of the Scottish Venture Fund (SVF) in parallel with SSF, using a similar methodology, to enable comparisons to be made and complementarities explored, although the funds address two different gaps in the market.

X2 The Evaluation Methodology

X2.1 In order to achieve the aims of the evaluation, an integrated and customised research programme for SSF was undertaken, which involved inception stage meetings with SE and SIB[1] staff on the aims and delivery of SSF, a desk study of management information and relevant background reports, interviews and survey research with a representative sample of 61 businesses (from a total of 72 – that showed a very high response rate of 85%) that received SSF investments (followed by in-depth discussions with a sample of the businesses). Interviews were also held with some eleven investors in SSF along with other stakeholders in Scotland with

[1] Reference to SE staff in the report also includes the SIB staff as they both form part of the SVF team.

knowledge of the funding including the business angels syndicates market. Hence these consultations comprise a significant evidence base to address the evaluation aims.

X2.2 The research results were analysed to show the response to the issues, coupled with econometric modelling to estimate the economic impacts, i.e. net additional jobs and GVA and the economic impact cost/benefit ratios.

X2.3 The research issues and questions posed in the surveys and interviews were deisgned and customised from the outset to add value to the brief and provided evidence on which to base the evaluation. Further insights and inferences are drawn out where this is appropriate and can be supported by the evidence.

X3 The Extent to which the Strategic Rationale for SSF is Still Valid

The Fit with the Scottish GES and SE's Business Plan

X3.1 In 2010 the Scottish Investment Bank (SIB) was set up to manage SE's co-investment funds (including SSF). SSF, through the commercial co-investment concept with private investors, its aims and design, **provides a good strategic fit** with the GES and the SE Business Plan. It strengthens the business support environment by providing a flow of capital for growth businesses to help address the funding gap working with the private investors and address **market feature and failure** issues. It provides advice and support to businesses through, for example, SE account managers and the representatives of SSF investors who sit on company boards that had received investment. SSF also focuses on the key sectors that are important for the growth of the Scottish economy. They include digital media and enabling technologies, life sciences, and energy in the main.

X3.2 **This strategic fit** is also demonstrated through the evidence gained as part of the evaluation, and is presented in detail below. In summary, SSF addresses **market failures** with regard to finance and helps to fill the funding gap in the £20,000 to £100,000 range; it has positively impacted on the capacity and scale of the funding market; it has helped to build funding partnerships and collaborations and created dependencies between the investment funds and formed wider linkages in the business support network. The business and economic impacts generated by SSF have contributed to the overall growth of the Scottish economy, for example business capabilities, innovation and net additional jobs and GVA.

Market Failures and Features of the Capital Market

X3.3 The primary issue that SSF seeks to address is the funding gap that exists in the supply of risk capita for start-up and early stage SMEs in Scotland. SSF sought to address a number of market features and market failure issues. The literature and research, which underpinned the SSF rationale, underlined these features. They are

examined primarily through the views and behaviour of investors and wider stakeholders[2] who were interviewed as part of the evaluation.

- A shortage of information or information failure on investment opportunities

  It was considered by investors and wider stakeholders that investors could well not be aware of individual businesses seeking investment that make potential viable investments because many of the businesses were small and as such lacked visibility. Although collectively investors were made aware of potential opportunities through their own searches, approaches by businesses and their extensive network and interactions with other investors and agencies including SE, it was likely viable businesses may not come to the attention of investors.

- The high cost of due diligence and transactions which restricts investment

  The filtering of potential investments and businesses by investors and the carrying out of some form of review / due diligence takes place in stages. A high proportion of opportunities are not taken forward, leaving a small proportion who are selected for some form of review / due diligence. Part of the reason for not proceeding with **full** due diligence was the sheer cost for smaller investments relative to the potential returns (compared to larger investments) and the funds available to investors to carry out due diligence. The investors agreed that especially for start-up and early stage firms, and where initial / first round investments were being considered, the costs of due diligence could be too high and restrict their investment.

- The perception of risk which prevents investments

  The main grounds for not going ahead with investments were that ultimately businesses were seen as too risky and that the revenue stream was not strong enough or likely to be. These views in some cases demonstrate excessive risk aversion on behalf of some investors. For investors their general view is that companies seeking funding were refused because many proposals from early stage businesses were not very thorough or suitable enough and hence the business team, the products and the investment readiness were not strong enough, e.g. potential competition was considered to be too great, or sometimes too much money was sought which deterred investors. Investors were also sceptical about the optimism shown in some business plans which needed to be viewed realistically when implemented in “live” situations. This risks for investors were also greater, in the current climate, because businesses found it more difficult to obtain finance from the banks for operating capital.

- Low returns and yields on high tech companies

  The risk factors above were more pronounced where many of the high tech companies sought finance and the uncertainty increased, partly because of less information available (from high tech companies and other investors) on the likely potential returns but also because of the risks at the early product research and development stage and the long lead in times for commercialisation and subsequent revenue streams – although it was recognised there could be some very successful high fliers.

  However, while the % growth was high it was from a low base in absolute terms, ie low levels of turnover and profit. There were doubts in some cases about whether IP could be protected from potential competition.

- Larger deals limit risk exposure

  The investors confirmed that this was the case when the significantly smaller investments were being considered for start-ups and early stage businesses. There was a finance gap opening up in the traditional flow of funds and

[2] LINC Scotland, the Business Angels network, Scottish Government and academics

"hand-over" between the business angels and their syndicates, who made the early stage investments, and the venture capital companies who made larger investments. The business angels, through syndicates, had sought to fill this emerging gap to some extent for the early stage businesses.

- Fund managers remuneration is influenced by larger deals

  The investors accepted that to some extent this was a feature of the remuneration process when rewards are linked to returns. Early stage investments often went hand in hand with higher risks. This constraint is reinforced to some extent by the fact that due diligence costs are proportionally higher for the much smaller investments and fund managers sought to keep their costs down as part of their overall portfolio management and performance targets.

X3.4 These factors, in combination, demonstrate the continued market failures and features which influence the flow of funds in Scotland, and underpin the rationale for the SSF. If anything they have become more prominent in the current period of economic uncertainty.

X3.5 The factors above, and the fact that capital has gone into higher performing, less risky and more liquid capital funds and alternative assets, especially where markets are volatile and there is significant investment switching, have all led to a lower than optimal supply of funding to viable SMEs in Scotland.

X3.6 An improvement of information, in itself, is not sufficient to overcome market failure, nor is a commitment to due diligence costs, where risk aversion (or excessive risk) results in the shortage of funds.

X3.7 Over half of the SSF investors would not have invested in the businesses at all without SE co-investment and 36% would only have made a partial investment (i.e. 91% in total) which shows a high degree of SSF additionality.

X3.8 The existence of potential **market failure** for capital on the demand side was explored through the interviews with businesses that SSF has invested in. The main reasons in wider research literature for demand side market failures and features are[3]:

- Shortage of information. Businesses are not sure of the sources of finance and advice or how to obtain it at acceptable costs. This is more likely to be the case for smaller businesses who have less visibility of the market.
- Lack of investment readiness. Start-ups lack the ability to present themselves as investable opportunities, eg poor business plans and models or inadequate management skills through lack of experience.
- Aversion to equity. A lack of understanding of investors' aims and a reluctance to cede ownership are the most common features, especially at an early stage, along with relatively lengthy periods to agree deals.

[3] Note the Rowlands Review (2009) and BIS. BIS Equity Finance Schemes. Survey of Investors July 2011. BIS Equity Finance Programmes: Qualitative Review of UKHTF and the Bridges Fund July 2011

X3.9 On the demand side of market failure, it is not apparent that SSF businesses, on the basis of the survey research, were not aware of the sources of funding or how to access it – and that therefore there was general information failure. However, other businesses may well be unaware of funding sources and the literature would support this. Overall, the behaviour of the businesses that did not obtain alternative finance, although they sought it, or did not seek it, reflects a degree of market failure in that they potentially could not demonstrate investment readiness (e.g. that they had products and services with actual or potential revenue streams and they had a good team at their early stage of development - and were therefore seen as too risky). Some businesses did not find the conditions of funders acceptable, especially equity release. Of the businesses that applied for additional finance to SSF once they had secured it, almost all were successful, hence the market failure issues had been alleviated to some extent.

X3.10 Both businesses and the investment partners consulted considered the market failure issues and features with respect to finance for start-ups and early stage firms would continue in the short to medium term. The availability of capital would remain in short supply over the next three to four years up to 2015, because of continuing economic uncertainty. There was some degree of market segmentation in the market amongst investors, although it was not so relevant to SSF businesses at their early stage of development. However, it meant a funding gap was forming for the £5-10m range for capital for larger businesses in that business angels (including syndicates) were investing up to the £5m, but the VCs were increasingly more likely to be investing around £10m and above.

X3.11 These features add weight to some of the supply side issues that result in a shortage of finance and support the rationale for SSF.

The Impact on the Funding Market

X3.12 The management information from Scottish Enterprise shows that SSF provided £6.7m funding for 83 different businesses, and that this has levered in some £14.5m from other funding sources, primarily the BAs and VCs, a leverage ratio of 2.2. The total amount invested via SSF was, therefore, £21.2m.

X3.13 The SE management information also shows that there was a range of private investors who were active. Most of the private investors operated as part of a business angels syndicate, with increasing rounds of investments compared to the mid 2000s. None of them considered that there had been any crowding out or displacement of funds or investments that had or would otherwise been made in Scotland in the absence of SSF.

X3.14 All the private investors considered that SSF had improved both the scale and quality of seed funds available in Scotland. Similar proportions of investors said that new funders had entered the Scottish market, although many of these were already located in Scotland.

Linkages and Dependencies With Other Support

X3.15 Interdependencies between SE programmes and other business support services help to strengthen the overall capacity of business support in Scotland and the expertise businesses can draw on. The MI and the survey research show that some three-quarters of businesses received advice from an SE account manager and other investment staff. In terms of the benefits of advice and support on the business and its growth, 41% of businesses that had an SE account manager said they were very important, and a fifth said they were important (i.e. almost two thirds of businesses). .

X3.16 As well as the SE business support, there were linkages between SSF businesses and other advisers and agencies in Scotland. These links were with other public and private sector advisers. Of critical importance, many businesses had investors on their boards and drew on their advice and their pool of specialist advisers in Scotland. Wider support was used from a number of other sources. A quarter obtained support from HE / university advisers, and smaller proportions obtained support from specialist consultancies. More than a quarter (28%) claimed positive linkages with their collaborators, who were mainly other businesses, who worked jointly on R&D and innovation.

X3.17 SSF also generated international linkages. For example, a small proportion of the SSF funders were located outside Scotland. For the SSF businesses two-fifths had increased their export sales through overseas links and almost three-quarters thought they would start exporting and increase their export sales after five years, and expected to retain this position over a foreseeable ten year period.

X4 The Economic Impact of SSF

X4.1 The evaluation has sought to assess the impacts on businesses invested in through SSF and in particular the innovation and business performance effects and benefits and how these translate into economic benefits for the Scottish economy (e.g. net additional jobs and Gross Value Added).

X4.2 The evaluation focused on some key indicators. The research with businesses showed that SSF stimulated innovation and R&D. In terms of R&D some 79% had or would increase spending on R&D, and two-thirds had improved innovation outputs, i.e. tested the commercial and technical feasibility of ideas, produced new scientific and technical knowledge and developed new products and services.

X4.3 The majority of businesses invested in were in the more innovative sectors, including digital media and enabling technologies (49%), life sciences (19%) and to a lesser extent in energy, chemicals and aerospace, food and drink and finance.

X4.4 The discussions with businesses indicated that just over half had actually increased their productivity as a result of SSF, and three-quarters expected to do so over the next ten years. In terms of exports, around half of businesses had started to export,

38% had increased their exporting sales, and just under half had entered new export markets. Around three-quarters would envisaged exporting over the next 10 years. At the time of the evaluation two-thirds of businesses had increased their employment, and nine out of ten expected to do so over the next 10 years. At the same time, 62% of businesses had increased their turnover, and nine out of ten expected to do so over the next ten years.

X4.5 Some seven in ten businesses would not have achieved these impacts without SSF.

X4.6 Overall the research shows that at the time of the evaluation the net additional employment attributable to SSF was 151 (FTE) jobs which were likely to rise to 403 in the short term (5 years) and 546 in the medium term (10 years). The corresponding net additional GVA per annum estimates were minus £6m (due to companies making initial losses), (+) £21m and (+) £34m, which shows that in line with the GES and the SE Business Plan SSF was likely to make a significant contribution to the Scottish economy in key priority sectors. Also for sectors, such as life sciences, the period of time to commercialisation and subsequent jobs can be relatively long.

X5 The Management and Delivery of SSF

X5.1 SSF has to a large extent provided an integrated, cohesive, and consistent approach, in that the delivery has been endorsed by both businesses and funders. Almost all those consulted thought the design and the implementation procedures were “good”, especially the amount of funding, what it could be spent on (i.e. business operation and investment functions) and the support from the SE team of advisers and account managers.

X5.2 Very few weaknesses in SSF were identified by businesses or investors. The latter (i.e. a very small minority) suggested that SIB/SE staff should be given more discretion to go ahead initially with investments and with further funding rounds for businesses to prevent delays and provide more certainty. A few suggested that there should also be a reduction in the amount of information required from investors (although it was recognised that approval for the use of public finance required greater scrutiny to help ensure it was justified and represented value for money). Other points mentioned were a reduction in approval times, and an increase in the overall amount of SSF funding that could be made to individual companies, subject to the availability of funds.

X6 The Overall Progress Towards SSF Objectives

X6.1 The evaluation brief sets out four main objectives for SSF. The evidence from the research presented for each of these is as follows:

1 *Provide an integrated, consistent and cohesive approach to small business funding within the Scottish Enterprise network.*

The evaluation evidence shows that SSF supported this objective. The support was integrated in that it combined the funding of co-investors with SIB/SE SSF funds and businesses drew on the advice from the SE account, transaction and investment managers. Additional advice was also provided by the Scottish business innovation and support network. A small number of SSF businesses also went on to use the Scottish Co-Investment Fund (SCF) as they grew which demonstrated the consistency and cohesion of SSF with other co-investment programmes.

2 *Improve access to risk capital for growing businesses raising their first round of external finance by filling a critical gap in the availability of development funding.*

SSF improved the access to risk capital for start-up and early stage businesses with growth potential primarily because many of those who sought alternative finance were unable to obtain it because they were not seen as appropriate by investors (e.g. they did not reflect their portfolio experience, did not make detailed enough applications with sufficient information, and they did not seem investment ready or seemed too risky). Those businesses who did not apply for alternative finance to SSF did not think they would obtain it primarily because they would be seen as too risky or they did not think the conditions would be acceptable, especially the cost and the release of equity at an early stage in their development.

3 *Provide greater liquidity and share risk, pari passu, with Certified Sophisticated Investors (working with and through LINC Scotland, the national association for business angels in Scotland) at an intervention stage earlier than that of the Co Investment fund.*

SSF has provided greater liquidity in the risk capital market for start-up and early stage businesses. It has led to £6.7m of investment and levered in £14.5m which is mainly equity and risk capital rather than loans. This is invested pari passu with the co-investors. Hence SSF funding is on a commercial basis. The investors and experienced business angel funders and syndicates combined with some of the venture capital investors. The investments are made prior to the Co-investment Fund stage. Both investors and SMEs consider that SSF has improved the supply and quality of commercial funds in Scotland and brought in new investors who would not normally invest in Scotland.

4 *Form the first in a suite of SE's complementary investment products which provide risk capital through the early stages of developing companies of scale.*

SSF has formed the first investment stage as part of the suite of funds, ie the Scottish Co-investment Fund (SCF), the Venture Funds (SVF) and the Portfolio Fund (SPF). Almost a quarter of the SSF businesses have moved on to use the SCF investment, one in ten the Scottish Portfolio Fund, and some four fifths have successfully sought and raised additional finance to SSF (following the initial SSF investment) from the private sector.

X6.2 Overall these findings show that SSF has made progress significantly towards its objectives.

X7 The Positive Impact of SSF

X7.1 SSF has made significant progress in terms of its objectives and brought positive benefits to the Scottish economy in a number of ways:

a *Economic Benefits.* It has generated some 151 net additional FTE jobs. The jobs figure is likely to rise to 546 by 2021. The cumulative GVA

generated is likely to be £68m by 2016 and £191m by 2021 *(2011 prices - Table 6.3)*

b *Intermediate Business Impacts*. The early stage businesses have strengthened their R&D activity and spending, innovation and technological outputs which have resulted in improved and new products and processes which have reached the market place or are likely to do so.

c *Key Sectors.* The main thrust of the impacts has taken place in the priority and innovation sectors in Scotland, eg digital media and life sciences with some in energy, chemicals, aerospace, food and drink and science which are increasingly important for the Scottish economy.

d *Improvements in the Supply of Finance*. SSF has led to an injection of funding in Scotland provided by business angels and the risk capital investors.

e *The Innovation System and Support Infrastructure*. There has been increased and collaborative engagement in SSF businesses by the network of advisers in the innovation system, eg SE, HEIs, private consultants and the specialist advisers of business angels and their syndicates and VCs.

X7.2 Overall, the cost of impacts (eg for jobs and GVA) has probably been fairly typical of other seed funding programmes elsewhere, although it takes some time for the impacts of equity funding to feed through. Life sciences, which has attracted SSF funds, is a good example here where it takes some years to develop products and test them fully prior to going to market. The impacts are also potentially slower to emerge in the current economic context. However, the positive impacts of SSF show that it has, and will continue to, demonstrate value for money.

X8 Future Direction and Recommendations

X8.1 The research and consultations with businesses and private investors has shown that the basic concept of SSF remains valid reflecting its relationship with other funds i.e. SCF and SVF, together with the level of funding available, i.e. £20-100k for start-ups and early stage businesses. This is still the case within the changing funding investment and economic contexts.

X8.2 The key lesson is that the operation and delivery of SSF has worked well. Some suggestions are made for the future operation.

a Improvements in delivery. These are a combination of points made by a small minority of businesses and private investors as part of the research.
   - While businesses recognised the benefits of SE account management, the relationship could be strengthened to help ensure a consistent flow of advice working with the Board representatives of private investors and the businesses.
   - There was some uncertainty as to the roles of transaction, investment / portfolio and account managers for SSF which could be clarified for businesses and investors.

b The management data. The information on businesses and investors is already robust and comprehensive. SE is already addressing the issue of making the annual employment figures more complete.

c Monitoring of the economic impacts. It takes time for the full actual impacts of equity impacts to feed through. Hence these impacts need to be regularly

monitored, especially in the current economic context, to assess the implications for policy and ultimate cost effectiveness.

X8.3 The key lesson is that the management and delivery of SSF has worked well. Some suggestions are made for the future operation.

X8.4 The suggestions above are given equal priority for consideration and implementation by SE.

1 Introduction and Aims

1.1 Introduction

1.1.1 In December 2010 Scottish Enterprise commissioned PACEC to carry out an evaluation of the Scottish Seed Fund. The objectives of the evaluation were to:

- Assess the extent to which the strategic rationale for SSF intervention in the market is still valid, given the current economic climate, and look at the extent to which SSF may have changed the market
- Estimate the economic impact of SSF arising from the investee companies to date and into the future and equity and equalities issues
- Assess views on the management and delivery of SSF
- Assess the progress towards the objectives set for SSF, in summary:
  - Provide an integrated, consistent and cohesive approach to small business funding within the Scottish Enterprise network.
  - Improve access to risk capital for growing businesses raising their first round of external finance by filling a critical gap in the availability of development funding.
  - Provide greater liquidity and share risk, pari passu, with Certified Sophisticated Investors (working with and through LINC Scotland, the national association for business angels in Scotland) at an intervention stage earlier than that of the Co Investment fund.
  - Form the first in a suite of SE's complementary investment products which provide risk capital through the early stages of developing companies of scale.
- Make evidence-based recommendations on the Funds' future direction

1.1.2 A key aim of the evaluation is to access the potential impacts over a five and ten year period up to 2021, in recognition of the time it can take investment to bear fruit (and the innovation practices of companies). This period also reflects the 5 to 7 year disposal aspirations of investors.

1.1.3 As part of the evaluation, consideration was given to carrying out a review of the performance of SSF in terms of the commercial return. However, it was considered that this was not appropriate in that, primarily, it was too early and as a result of the economic context it would take longer for returns to feed through. This position was confirmed by the investors, especially for the start-up and very early stage businesses where revenue streams were still developing.

1.1.4 PACEC was also appointed to carry out an evaluation of the Scottish Venture Fund (SVF) in parallel with the SSF, using a similar methodology, to enable comparisons to be made and complementarities exposed, although the funds address two different gaps in the market.

1.1.5 For each evaluation, a number of issues needed to be considered, which are set out in Appendix A in summary. These relate directly to the objectives set out above and provide more detail.

1.1.6 This report covers the evaluation of SSF and sets out the results of the evaluation.

1.2 Strategic Policy Context for SSF

1.2.1 SE's policies and activities contribute to the Scottish Government's wider policy objectives, especially those outlined in the Government Economic Strategy (GES)[4] This identifies five strategic priorities that are critical to economic growth:-

- *Learning, Skills and Well-being;*
- *Supportive Business Environment;*
- *Infrastructure Development and Place;*
- *Effective Government; and*
- *Equity.*

1.2.2 SE's provision of investment contributes directly to the Supportive Business Environment priority. This promotes responsive and focused enterprise support, working in partnership with others in the public, private and third sectors to increase the number of highly successful, competitive businesses and their access to skills, finance and business infrastructure. This includes actions to:-

"Address gaps in access to capital that are constraining Scottish businesses from reaching their full potential, while helping to build capacity in the investment community to remove barriers to investment". (GES, p. 28)

1.2.3 This is recognition of the fact that, whilst the UK has a strong private equity market, it tends to invest significantly less in early stage risk capital (as a percentage of GDP) than many of its major competitor economies. Historically, Scotland has had a relative lower level of risk capital investment than the UK average, which could influence its relative performance[5].

1.2.4 SE's Business Plan[6] highlights how, by working with private investors to increase the availability of early stage risk capital, this will allow companies to develop and become globally competitive.

1.2.5 The Business Plan recognises that in the current economic climate, the role of risk capital has become even more important in stimulating and supporting start-up and early-stage companies. Through the investment funds, SE is helping to bridge the gap for many companies and helping to improve the investment market in Scotland. SE is also aiming to improve access to finance by working with the Scottish Government on plans for the Scottish Investment Bank[7].

[4] GES is available at: http://www.scotland.gov.uk/About/scotPerforms/purposes

[5] GES is available at: http://www.scotland.gov.uk/About/scotPerforms/purposes

[6] The 2010/13 Business Plan is available at: Scottish Enterprise Business Plan 2010-13

[7] Scottish Government news release, "Support for jobs and investment" - http://www.scotland.gov.uk/News/Releases/2010/04/21115645

1.2.6 The focus of SE Investment is on continuing to build capacity and scale in the early-stage risk capital market. The success to date of the approach is based on the principle of commercial investments with the private sector. This is in line with the core objective of increasing the numbers of investors available to Scottish companies to help them to progress from start-up to growth and expansion. Aligned to developing the scale of the market is the related objective of improving the capability of the indigenous investment community. Reaching out to UK and international investors helps ensure that Scottish companies can access the capital and experience they need to become global companies.

1.2.7 In this context and to achieve its strategic aims, Scottish Enterprise has developed its approach to work with its partners including the banks, venture capitalists and business angels to make it easier for SMEs to access growth finance, in the form of loans or equity or a combination of the two. **Hence policy in Scotland towards the venture capital industry has changed. The focus has shifted to indirect support for private sector players in the market. The overall policy for this shift has been clearly articulated: "Enhancing the quality and focus of support for business and innovation will have a direct impact on business competitiveness and growth. Responsive, accessible business support services will allow all areas of Scotland to contribute to and benefit from a shared approach to economic growth"[8]. Specifically, "the Strategy should not be to pick individual companies as winners – the market does that. Rather, the job of government should be to facilitate and accelerate the growth sectors and to provide the necessary environment to make sure that it happens in Scotland."** This has been the position since 2003.

1.2.8 SE's investment activity provides capital and expertise that will enable Scottish companies to develop and grow from a Scottish base and retain high value activities in Scotland, thus ensuring that more Scottish companies can become internationally competitive.

1.3 Finance for Business in Scotland. Background Research

1.3.1 There has been considerable research on finance available to businesses in Scotland. It has focused on SME finance, but does not generally distinguish between start-up and growth finance. The availability of finance for SMEs has remained in relatively short supply, underlying the market failure issues related to the requirements of viable firms and investments. In the early 2000s, there was a withdrawal of VC investors from the Scotland market following the dot-com crash, liquidity constraints faced by business angels syndicates and reports of good companies failing to raise capital[9]. More recent research in 2008, however, indicated that the early stage and risk capital market for growth companies in Scotland showed

[8] Scottish Government (200&) *Government Economic Strategy*

[9] Richard T Harrison. Public Policy and Regional Risk Capital Markets. A Case Analysis of the Scottish Co-investment Fund. 2009

some buoyancy, especially for later stage and larger deals.[10] There were a number of key trends emerging:

- The number and proportion of larger and later-stage deals was increasing, suggesting that as the market develops there is an increased requirement for follow-on finance; which may, paradoxically, limit the availability of finance for start-up and early stage ventures.
- Reflecting the economic downturn, there is evidence of an increased number of mature companies seeking equity investment for the first time, as access to bank finance becomes more constrained.
- The recession does not appear to have significantly affected the appetite of investors for larger investments, and there are still good investment opportunities, and some deal levels have come down.
- Business angel investors dominate, in terms of deals reported in Scotland – increasingly through syndicates. While there are still examples of co-investment by business angels and VC funds, there is segmentation, with business angel syndicates providing the follow-on investment to their portfolio companies rather than 'handing over' to a VC investor. In the absence of a strong exits market, through trade sales or, more rarely, a listing, this feature of the market may in the longer run constrain the availability of investment capital.

1.3.2 The SME Access to Finance research in 2010[11] provided an update on credit conditions. It concluded that overall lending to Scottish SMEs in 2010 is lower than in 2009, reflecting a combination of weak demand and constraints in the supply of finance for viable companies, i.e. market failure. However, the demand for finance has also fallen since 2009, reflecting among other things, an easing of working capital pressures and an increase in the proportion of firms revising growth objectives downwards. The report notes that there is a mixed picture on the new supply of finance. Outright rejection rates for businesses have increased and supply for new lending appears constrained, yet there is some evidence of an overall improvement in total amount of finance secured by firms - but probably through more larger deals. Although economic conditions have improved somewhat in Scotland, GDP has yet to return to pre-recession levels, and a great deal of uncertainty remains as to the pace and sustainability of the recovery.

1.3.3 Additional evidence shows that market failure issues for capital persist in the English context which provide a rationale for the range of co-investment funds run with the Department for Business, Innovation and Skills (BIS)[12]

1.3.4 In a wider context the central government Project Merlin Initiative seeks to encourage the main banks to provide loans for SMEs. However, the £19bn Q1 target in 2011 was not likely to be achieved (with a £2bn shortfall recorded)[13], although the Q2 trend

[10] Scottish Enterprise. The Risk Capital Market in Scotland. 2008

[11] Scottish Government. SME Access to Finance 2010

[12] The Rowlands Review (2009) and BIS. BIS Equity Finance Schemes. Survey of Investors July 2011. BIS Equity Finance Programmes: Qualitative Review of UKHTF and the Bridges Fund July 2011

[13] BIS / HMT. Project Merlin Progress Report. May and September 2011

potentially show some improvement. However, the banks argue that there is lack of demand amongst SMEs. In order to counteract this, the government has announced a co-investment initiative with funders and a new Green Bank for 2012.

1.3.5 The specific case for the Scottish Seed Fund (SSF) is shown below in section 1.5 on Market Failure Issues.

1.4 The Equity and Loan Schemes for Business

1.4.1 In response to the research on finance for businesses, Scottish Enterprise, since the mid 2000s, has developed a suite of co-investment funds as part of a funding escalator to help them meet the needs of businesses at different stages and with different finance needs. They included the Scottish Seed Fund, the Co-investment Fund, the Scottish Venture Fund and the Portfolio Fund. Details are shown below.

1.4.2 The management of these funds were taken over by the Scottish Investment Bank (SIB) which was formally launched in December 2010 (having been announced in 2009). It was announced by the First Minister (April 2009) in response to a call from the STUC for the formation of a "single door" approach to financial support for companies, building on the success of the Scottish Co-investment Fund model, working directly with the private sector. The Scottish Investment Bank is not a "bank" but is a division of Scottish Enterprise delivering existing early stage equity schemes and a new loan fund (The Scottish Loan Fund) aimed at established growth and exporting companies. Access to finance is primarily a role for the banks but when there are elements of market failure, the Scottish Investment Bank will seek to address these gaps. All funds are operated on a fully commercial basis with private sector partners and are delivered in a way that seeks to maximise net economic impact. The characteristics of each of the funds is as follows.

- Scottish Seed Fund (SSF)

  The Scottish Seed Fund addresses the early stage equity gap for high growth potential seed and start up stage companies by investing £20,000 - £100,000 (primarily in the form of ordinary shares) on a £ for £ pari passu basis with private sector investors. The Scottish Investment Bank (SIB) carries out due diligence and makes investment decisions on all applications to the Fund. Companies apply direct or via SE's Investment Readiness contacts, or investors can bring potential deals to SE through LINC Scotland. The Fund started in September 2006 and invests £2m in approximately 20 companies per annum.

  A description of the ways in which SSF operates is shown below.

- Scottish Co-Investment Fund (SCF)

  The Scottish Co-investment Fund (SCF) is an equity led fund which addresses the early stage equity gap for high growth potential early stage companies by investing £100,000 - £1 million within a deal ceiling of £2 million and on a £ for £ pari passu basis with private sector SCF Partners who bring deals and make investment decisions on SIBs behalf. Companies apply directly to the private sector SCF Partners. The Fund started in June 2003 and has secured ERDF backing.

- Scottish Venture Fund (SVF)

The Scottish Venture Fund addresses the second equity gap in the range £2 million - £10 million for high growth companies at development and expansion stage by investing £500,000 - £2 million on a £ for £ pari passu basis with private sector deal promoting partners. If the deal cannot be fully financed by these partners and SVF, then the SVF team will identify and bring in other private institutional investors. The Fund started in November 2006.

- Scottish Portfolio Fund (SPF)

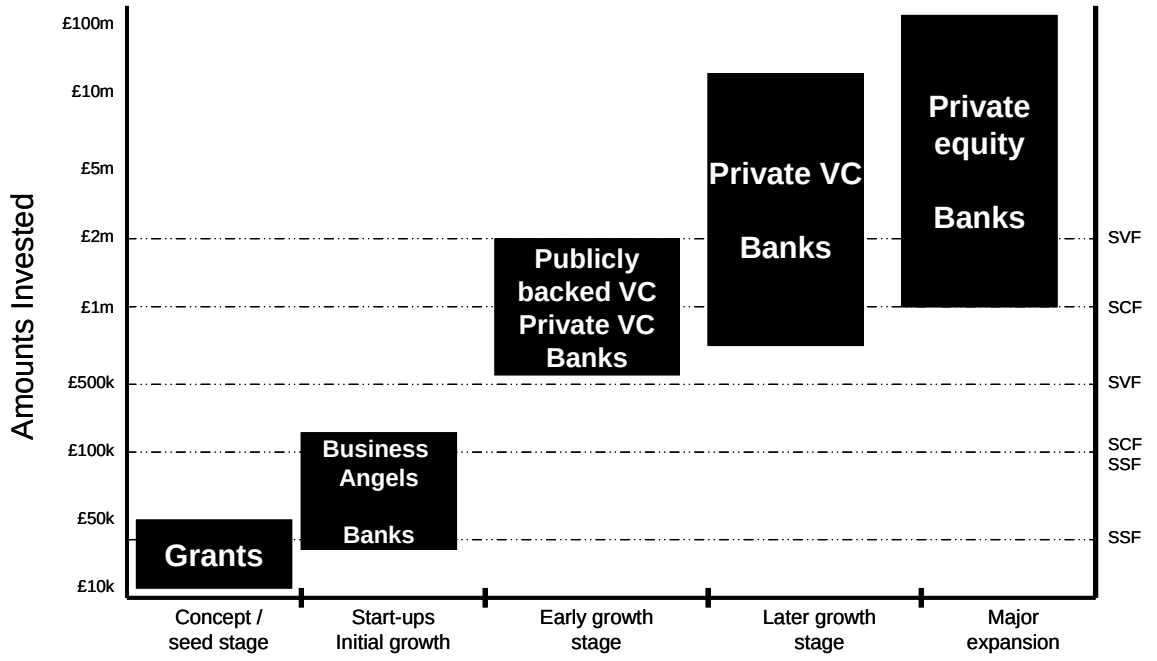
  The Scottish Portfolio Fund allows the SIB to invest in its portfolio companies to help them achieve their growth ambitions. This also ensures that SIB acts commercially and follows its earlier investments to maintain its shareholding and to avoid dilution in those instances when there is a rights issue and SCF (see above) and SVF are not involved. SIB currently has a portfolio of 250 companies in which it has invested and provides advice for through a combination of the co-investment funds and SE staff.

1.4.3 Investors may have used other SE funds such as the Business Growth Fund[14].

1.4.4 SVF funds form part of a funding escalator for SMEs run by the SIB which provides co-investment funds through the schemes above reflecting the different development and growth stages of businesses and their funding needs. This is illustrated in general terms below. SSF is designed to address needs up to £100k (overlapping with grants, bank and business angel funds). SCF addresses the £100k to £2m range (with publically backed and private VC monies and banks), and SVF focuses on the £2m - £10m range (with VCs and banks).

[14] The Business Growth Fund (BGF) was designed to support Britain's fast growing smaller and medium sized businesses as a partner investor through long term equity investments along with advice and support.

Table 1.1 SME Illustrative Funding Escalator[15]



1.5 Equity Funding. The Market Features and Failures

1.5.1 Small and medium-sized enterprises (SMEs) and the early stage businesses potentially constitute the most dynamic firms in the economy. However, they often face economic and institutional barriers to growth. These include issues related to limited access to working capital and long-term credit, legal and regulatory restrictions, and limited managerial and technical expertise which can more often be the case for the early stage businesses. The lack of adequate finance for many viable early stage businesses with growth potential is a significant obstacle to their development and growth. The consequences are that businesses cannot achieve their full potential and generate additional economic benefits. Following the credit crunch and the recession, more emphasis has been placed on this obstacle.

1.5.2 A lack of finance for **all** companies does not constitute the existence funding 'market failures'. Market failures exist where **viable** businesses with a proven track record of sales and profits (or likely good prospects) and growth potential experience difficulties in raising the appropriate levels of small, medium and larger amounts of equity and debt follow-up capital required for continued development[16].

1.5.3 There is evidence of a lack of funding for early stage high growth companies. This is despite only a small proportion of UK SMEs seeking equity growth capital (only about 1-2% of UK SMEs[17]). There is also evidence of an equity gap in that companies

[15] Adapted from Perakkis and Westlake (2009) *Reshaping the UK Economy: The Role of Public Investment in Financing Growth*. NESTA

[16] Scottish Enterprise. Market Failure in the Scottish Risk Market. R T Harrison report. 2000s.

[17] BIS equity finance programmes qualitative reviews of: a) UKHTF and b) the Bridges Fund (BIS, 11)

looking for certain amounts of funding may find this difficult to obtain. A second equity gap emerges as a result of many businesses that had previously received very early stage funding not being able to access further rounds of funding.

1.5.4 A number of recent research reports have highlighted the structural problems, features and market failures that have combined to cause this 'funding/equity gap' and which make it difficult for viable SMEs with growth potential to raise the capital they require[18]. These failures and features are summarised below.

1.5.5 On the supply side for early stage businesses, causes of the funding / equity gap include:

1.5.6 **Shortage of information or information failure.** This arises because businesses for potential investors are not known through sources and investor networks. This may be particularly the case for start-ups and very early stage businesses who have less market prominence compared to later stage and larger businesses[19].

1.5.7 **The high cost of due diligence and transactions.** Small equity deals with fixed transaction costs require dis-proportionally higher, due diligence, research and exit costs, than for medium sized and significantly larger deals[20]. This acts as a disincentive to investors and makes it more difficult for them to distinguish good borrowers from bad ones[21], especially where the start-up and very early stage businesses are concerned who may not have revenue streams. This is a major disincentive for investors when considering the smaller and early stage businesses. Without due diligence research information it is more difficult for investors to distinguish good opportunities, amongst the early stage businesses, from bad ones.

1.5.8 **The perception of risk.** Start-up and very early stage deals are thought to be higher risk. Very young companies have unproved performance (eg many may not have revenue streams or profits), may have less experienced management staff, and assets of uncertain value for collateral. Information on deal returns generally is limited as only a few growth funds exist with comparable data. Investors can become excessively averse to risk, especially for new and very small unproven businesses. In this context investors may maintain their existing portfolios rather than identify new investment opportunities.

1.5.9 **Past poor performance**. Historically, there have been low returns and yields on investments in high tech companies. For example, in the 1980s, investors often made very low returns when financing early stage high technology companies as a result of poor quality investment decisions (the investment industry had little knowledge of making technology investments). Low returns continued with the long

[18] The Provision of Growth Capital to UK Small and Medium Sized Enterprises (BIS, 2009), BIS equity finance programmes qualitative reviews of: a) UKHTF and b) the Bridges Fund (BIS, 2011)

[19] HMSO. The Green Book. 2010 edition.

[20] Scottish Enterprise. Market Failure in the Scottish Risk Market. R T Harrison report.

[21] Centre for Business Research. University of Cambridge. Financing UK SMEs. 2007, 2010.

recession of the 1990s has led to a current perception of poor returns from this type of investment.

1.5.10 **Fund manager remuneration**. Later stage and buyout deals have provided better returns and personal remuneration for fund managers so that there is less incentive for them to invest in earlier stage deals

1.5.11 The factors above, and the fact that capital has gone into higher performing, less risky and more liquid capital funds and alternative assets, especially when markets are volatile and there is significant investment switching, have all led to a lower than optimal supply of funding to viable SMEs.

1.5.12 On the demand side amongst SMEs, the main market features and failures are:

1.5.13 **Shortage of information**. Businesses are not sure of the sources of finance and advice or how to obtain it at acceptable costs. This is more likely to be the case for smaller businesses who have less visibility of the market.

1.5.14 **Lack of investment readiness**. Start-ups lack the ability to present themselves as investable opportunities, eg poor business plans and models or inadequate management skills through lack of experience.

1.5.15 **Aversion to equity**. A lack of understanding of investors' aims and a reluctance to cede ownership are the most common features, especially at an early stage, along with relatively lengthy periods to agree deals.

1.5.16 As a result of the supply and demand side market features and failures, the market cannot, in itself, always deliver efficient outcomes and economic efficiency as some viable growth businesses or investment opportunities may not receive the investment required. Also, in the recent and current period of credit and economic uncertainty, the causes and effects of the equity gap have become more prominent, now affecting mature businesses with positive track records.

1.5.17 As noted above, not all the causes of the funding/equity gap are market failures, some are simply features of the growth capital and equity funding market. However, they do result in viable growth potential SMEs and early stage businesses facing difficulties in accessing funding and so do provide a strategic rationale for public sector support through initiatives such as SSF.

1.5.18 These market features and failures are tested in terms of their existence and continuing relevance in Scotland in this research and have generally been confirmed, and this will be expanded on in later sections.

1.5.19 A number of these factors relate to imperfect or asymmetric information market failures (e.g. the lack of information on the track record of returns from equity investment and SMEs, and early stage businesses, not being aware of funding options or not being investor ready). However, an improvement in information, in

itself, is not sufficient to overcome these market failures as there are other aspects of market failure as shown above, eg related to due diligence costs.

1.5.20 The notion of market failure is subject to some testing through the discussions and negotiations between investors and investees, for example on the issue of the risk for investors and potential due diligence costs they face. Its incidence can be reflected in the discussions and negotiations between the investors and businesses and before a decision is made as to whether Scottish Enterprise co-investment funding is appropriate. This is unlike most other public sector support where the market failure rationale for intervention is rarely negotiated on but is implicitly assumed to exist. An exception to this is possibly where businesses seek grants from the public sector (eg for R&D) following discussions and negotiations with investors who do not provide the funding required because of market failure issues.

Design and Operation of SSF

1.5.21 The SSF is a £14m equity investment fund established initially for five years by Scottish Enterprise in 2006. SSF is designed to improve the availability of finance for start-up and young growing companies in Scotland. The SSF can invest between £20,000 and £100,000 on an equity basis in early stage businesses that are keen to grow. Priority will be given to businesses demonstrating high-growth potential in terms of launching new products, entering new markets and increasing employment. Since it started operating the annual funds allocated have been drawn down. The objective of SSF is to:

- Provide an integrated, consistent and cohesive approach to small business funding within the Scottish Enterprise network;
- Improve access to risk capital for growing businesses raising their first round of external finance, by filling a critical gap in the availability of development funding;
- Provide greater liquidity and share risk, pari passu, with Certified Sophisticated Investors (working with and through LINC Scotland, the national association for business angels in Scotland) at an intervention stage earlier than that of the Co Investment Fund; and
- Form the first in a suite of SE's complementary investment products which provide risk capital through the early stages of developing companies of scale.

1.5.22 SSF was established to intervene at the first round of fund raising for start up and early stage companies (and only exceptionally for established SMEs), and forms the first in a suite of 3 investment products (Scottish Seed Fund, Scottish Co Investment Fund, Scottish Venture Fund) designed to grow and retain companies of scale. The Fund provides debt (both secured and unsecured) and equity (preference and ordinary shares) on a fully commercial basis, therefore lending will be offered at the prevailing European Reference Rates and equity will be on pari passu terms with private sector investors.

1.5.23 The intended investments and impacts are shown below in Table 1.2.

Table 1.2 SSF: Planned Investments and Impacts

	2006/7	2007/8	2008/9	2009/10	2010/11
Number of Investments	30	40	40	40	40
Value of investments	£2m	£3m	£3m	£3m	£3m
Gross Value Added	£3.6m	£5.4m	£5.4m	£5.4m	£5.4m
Private sector leverage	£2m	£3m	£3m	£3m	£3m
Gross new jobs	60	80	80	80	80
Failure rate	20%	20%	20%	20%	20%
Compound growth	20%	20%	20%	20%	20%
Exits/realisations	0	0	£0.38	£0.47	£2.6m

Source: SIB / SE

1.5.24 The fundamental operating principle for all SE funds, including SSF, is that the Fund should operate at minimal cost to the public purse 'on a fully commercial basis' and will not provide any form of subsidy or guarantee. Also the SSF in applying a fully commercial approach will make investments that require no subordination of public funds. In effect as a genuine co-investment vehicle the entire operation of the Fund will be on an equal risk, equal reward terms (*pari passu*) between the private and public investors. As a result, SSF is state aid compliant.

1.5.25 Companies are eligible for SSF investment if they meet a number of criteria: including that they are incorporated and fall within The European Commission's definition of an SME[22]. Additionally, the company must operate in an approved business sector. Restrictions apply to SSF investments in a number of sectors where investment is less likely.

- real estate/property development;
- social and personal services;
- pubs, clubs and restaurants;
- local services;
- banking and insurance;
- motor vehicles;
- nuclear decommissioning;
- professional services;
- retail
- or such other activities as specified by Scottish Enterprise from time to time, acting reasonably (having regard, for example, to ERDF requirements).

1.5.26 The operation of SSF is as follows:

- A company applies to the Fund usually via a known intermediary (SE Team or private sector);
- An initial review of the application against key eligibility criteria is carried out;

[22] http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/sme-definition/index_en.htm

- The SE Appraisal and Due Diligence process is carried out: specific to the investment deal but will likely include financial (Business Plan and existing & new investors); and Legal & Corporate Governance/Management;
- The scope and preparation of investment Legal Agreement is carried out (SE uses a state aid compliant template).

1.5.27 In terms of deal characteristics, SSF can invest up to a maximum of £100,000 in any one individual company, either in one tranche or in multiple rounds. The investment must be at least matched pound for pound by the private sector and the terms of the deal must be without a share that is too high for Scottish Enterprise. Scottish Enterprise cannot own more that 29.9 per cent of the voting rights of a company, including those acquired through other investment schemes previously invested by Scottish Enterprise, and public money cannot account for more than 50 per cent of the total risk capital funding in a deal.

1.5.28 Investors may have used other SE funds such as the Business Growth Fund.

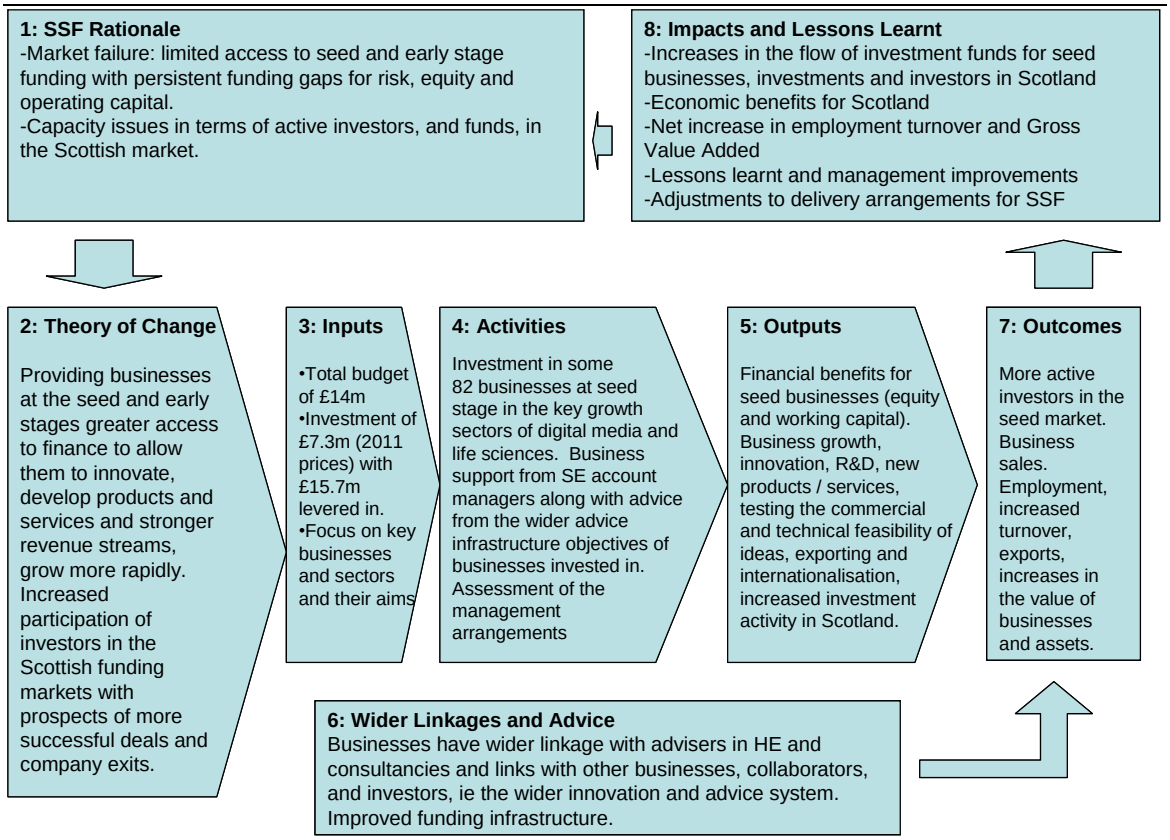
1.5.29 The SSF product is combined with regular advice to the businesses from the SE account managers, the transactions and portfolio management teams at SE/SIB who work closely together. They liaise directly with the SSF businesses and investors, and can bring in support and expertise form other staff in SE, as well as the wider network of support in the Scottish innovation and business support system (e.g. HE and other advisers). The specific roles of these managers are shown below.

- **Account Managers (AMs).** They lead the strategic relationship with the company. AMs seek to understand, challenge and support the company's management team – their ambitions, plans for growth and what they need to unlock to achieve their growth. AMs articulate where SE can add most value in achieving company growth plans and based on this key role, establishes an account team to support the realisation of this. The AC leads and co-ordinates the work of the account team and is the main point of contact for the company.
- **Portfolio Management (PM).** To meet SIB's strategic objective of maximising value for money from SE's investment portfolio, the role of the PM team is to substantially undertake a market practice investment portfolio management approach via a dedicated, skilled, in-house team to create, preserve and maximise returns (commercial & economic) to SIB/SE over the longer term whilst minimising risks.
- **Transaction Managers (TMs).** The transaction team is responsible for completing investments brought to SE by its investment partners: this means that the team will instruct and review due diligence as appropriate and will also ensure that investments are made on commercial terms and on an equal basis alongside the investment partners. The team is also responsible for initiating and managing the investment partner relationships.

1.6 The Evaluation Methodology

1.6.1 To help develop the narrative and storyline for the evaluation, the context and the flow of benefits against the aims, an evaluation framework or logic chain has been applied. It covers the following aspects and stages.

Figure 1.1 SSF. Evaluation Framework and Logic Chain



1.6.2 This approach reflects the SE guidance, which has been customised for SSF, and allows the assessment of net additional impacts and economic impact ratios.

1.6.3 The research results were analysed to show the response to the issues, together with economic modelling to estimate the economic impacts i.e. net additional jobs and GVA and the economic impact ratios. The main results of the evaluation, reflecting the aims, are reported below.

1.6.4 The guiding principles of the research were to ensure that

- A representative cross section of SSF businesses was interviewed, together with a sufficient number of interviews to provide confidence in the information obtained
- Telephone interviews were held with the most appropriate representatives of the businesses and private investors
- The views of different participants could be compared and contrasted on similar issues in order to triangulate and confirm or corroborate the research results
- The research provided both “harder” quantitative information (for example on business performance and economic impacts) and “softer” qualitative information, for example reflecting attitudinal and behavioural changes and impacts that result from SSF

1.6.5 The research programme was customised for SSF and comprised the following linked and integrated tasks:

- The inception meeting. This was held to clarify the evaluation aims, the design and delivery arrangements for SSF, and the overall methodology, access the management information on SSF, and identify the background reports and the contact information for the SE team, businesses, private investors and stakeholders.

  Interviews were held with the SSF Directors responsible for policy and the operation of SSF, staff responsible for investments, and thereafter telephone interviews with staff covering investment and delivery, in particular those responsible for the SSF's operation (6 interviews). During the evaluations, telephone interviews were also held with further staff, including account, transaction, and portfolio managers at SE and SIB (12 interviews) at different stages in the project. A full list of those interviewed can be found in Appendix C.

- A desk study, particularly focussing on the management information for SSF, was carried out on the number of investments and types of businesses and financial performance.

- Background reports and previous evaluations to inform the evaluation design and methodology.

  These were used in an attempt to collect benchmarking and comparative evidence against which to compare SSF. However, this had some limitations because: the other research did not fully quantify the impacts in the same way; was more qualitative, and was carried out at a different point in the economic cycle, which had an impact on the results. As well, the programmes were at different stages in their development. Nevertheless, the results from the SCF research are used where appropriate.

- A survey and telephone interviews with successful SSF businesses for the period from 2006 onwards. The interviews were conducted with a representative sample of 61 businesses (i.e. a high 85% response rate from the 72 funded businesses still surviving). A structured questionnaire was used which was designed with the Steering Group and piloted before the full fieldwork. The questions, especially on employment and turnover impacts, were based on timescales for the past and future, that the firms thought were practical and for which they could provide useable information. Follow-up interviews with a representative sample of 19 successful businesses were carried out to obtain more detailed information on the nature of impacts.

- Interviews with SSF private sector investors (i.e. business angels and syndicates, and some venture capital companies) were carried out, with a focus on those who had made an investment. Eleven active organisations were interviewed, along with other stakeholders with knowledge of the seed funding issues in Scotland. The analysis reports the views of all the investors, with differences drawn out between the larger investors (by the average number of investments made each year) and the smaller investors.

1.6.6 An attempt was made to obtain from funding investors a matched sample of businesses who applied unsuccessfully for SSF investment (being rejected at the last hurdle). This would have not only broadened the assessment of the application process, but would also have been useful in estimating the extent to which economic benefits (such as jobs and GVA) might have occurred without SSF. However, none of the funding investors was either able or willing to provide this information.

Quantified analysis

1.6.7 The overall analysis has focused on the evidence derived from the research programme above. This, together with the questions posed in the survey and

interviews, was designed using the insights of businesses, investors, experts in the field and the literature. The analysis is supported by interpretation and judgement where appropriate, related to the evidence.

1.6.8 The quantified analysis of SSF is in two parts. The analysis in chapter 2 is based on information supplied by Scottish Enterprise on the 83 businesses which received SSF funding. This indicated that 72 (87%) were operational at the time of the study.

1.6.9 The second part of the analysis, in chapters 3 to 8, is based on a survey of 61 out of the 72 fund recipients who were operational at the time of the study. This is an exceptionally high response rate (85%) for survey research, giving rise to a five percentage point margin of error due to sampling.

1.6.10 In addition to analysing data for all those who received SSF funding, particular attention is given to those key attributes of companies which might give rise to differential performance:

- The amount of SSF funding received (whether they received the maximum of £100k, or not)
- Whether any funding was received from SE in addition to SSF
- The amount of assistance given by SE, covering Business Growth, Business Improvement, Innovation, International, Market Development, Organisational Development and Strategy Development. Here a cut-off of four (4) assistance products was chosen to split the companies into roughly two equal groups.

1.6.11 The particular groups (and cut offs) for data were determined by the distribution of the data and practical issues.

1.6.12 Tabulations of data are given in Appendix B.

Economic Impact Analysis

1.6.13 The key Impact of SSF investments is their rate of return. However, since these returns are likely to take place only around seven years after the investments were made, it is not possible to produce estimates of these impacts at this moment.

1.6.14 The other measures of impact available are the standard ones used to measure Economic Impact, namely those of employment (in Full Time Equivalents, or FTE) and Gross Value Added (GVA)[23]. However, it is important to stress at the outset that these are impacts for which the SSF investments were **necessary, but not sufficient.** The investments are *necessary* in that without them the impacts would not occur, but they are not *sufficient*, in that other factors in the past, present and future are also likely to be necessary for the impacts to occur. Since it was not in the remit of this study to investigate all the factors which contribute to the economic

[23] GVA, also known as GDP at market prices, is an indicator of wealth creation and measures the contribution to the economy of each individual producer, industry or sector in the UK. GVA is generally regarded as the best measure of the sum of economic activity within an area.

impact of the organisations receiving SSF investment, it is not possible to identify the impacts which are due solely to SSF. **Caution should, therefore, be used in the interpretation of the high levels of impact reported,** in that the impacts may not be directly related to the funding investment alone, but also as a result of wider support, both in the past and in the future.

1.6.15 Three estimates are made of both FTE employment and GVA per annum, namely current (2011), short term (2012-16) and medium term (2017-21). Due to the very high response rate (82%), it is possible to produce estimates of economic impact which do not suffer from large levels of sampling error. However, the main problem with estimating economic impact arises from the fact that much of the impact is still in the future, and needs to be estimated. Not only is there an unknown margin of error associated with estimates up to 10 years into an uncertain future, but also there is the possibility of an **optimism bias**. This systematic tendency for people to be overly optimistic about the outcome of planned actions is mitigated in two ways. In the first case, the actual annual **survival rate** of businesses receiving SSF of 95 per cent per annum is applied cumulatively to all future estimates (so that after 5 years 77% of businesses survive, and after 10 years 60% survive). Secondly, the active participation of investors in the businesses receiving SSF (including being on the board), means that the entrepreneurial optimism is tempered by the more objective realism of the investors. The resulting estimates of growth are finally compared with the benchmark of actual growth of Scottish Companies in receipt of SMART awards and judged to be reasonable.

1.6.16 The current estimates of **GVA** are, in many cases **negative,** as a result of the (negative) profits being greater than the (positive) employment cost element of GVA. This occurs when (typically early stage) companies spend money on wages and materials and services prior to having (any) turnover to cover this expenditure. It should be noted that some companies are pre-revenue/ at the technology development and commercialisation stages, and as such not yet generating sales at the time of the evaluation.

1.6.17 Each of the six impact measures (the current, short term and long term measures of employment and GVA) is the difference between the intervention case (in which the SSF investment occurred) and the reference case (in which the SSF investment would not have occurred – the **deadweight**). This estimate of deadweight takes into account not only the views of businesses, but also the views of private investors.

1.6.18 The final net estimates take account of any negative impacts on Scottish competitors (**displacement**), positive effects on Scottish suppliers (**multipliers**), the effects of either production taking place outside Scotland or staff living outside Scotland (**leakage**), and, in cases where more than one type of Scottish Enterprise of funding has been received, an estimate of the impact **attributable** to SSF (as a share of the impact of all the Scottish Enterprise funding). It was not possible to estimate the relative effects of other SE support, as the businesses could not disentangle this in the interviews.

1.6.19 A more detailed description of the estimation of economic impact is given in Appendix B.

1.7 The Report Structure

1.7.1 Following this introduction, the remainder of this report comprises the following chapters:

- Funding details (management information)
- Results of the survey of SSF-supported businesses:
  - Businesses invested in
  - The objectives of participation
  - Outputs: intermediate effects/outputs
  - Outcomes: business performance effects and economic impacts
  - Wider effects on other organisations and staff
  - Funder support and other advice
  - Assessment of the schemes
- The impact on private investors for SSF and the market
- Appendices

1.7.2 The results from the interviews with businesses and private investors are reported separately in different chapters in order to retain the narrative from the respective interviews. They are combined in the conclusions chapter and executive summary, in terms of the main areas of the evaluation.

1.7.3 This report is accompanied by appendices which show the specific evaluation questions, methodology and estimation techniques.

2 The Inputs and Funding Details

2.1 Introduction

2.1.1 The previous chapter covered the rationale for SSF and the project aims, which reflect stage 3 of the evaluation framework described in the methodology section. This chapter deals with the inputs to SSF, which forms the next stage in the evaluation framework. It covers the number of SSF investments, the nature in terms of equity and loans, the types of SE funding used by businesses, and the amounts of investment for businesses.

2.2 Funding details

2.2.1 The statistics in this chapter are drawn from the Scottish Enterprise Management Accounts. These provide information on the population of firms receiving support, and the contextual data for the evaluation and net additional impact assessment. The data tables, together with brief commentary, are presented below.

2.2.2 Around 103 SSF investments, totalling £6.7m, were made over the period 2006-10. At 2011 prices (i.e. taking account of inflation) the total investment is £7.3M.

Table 2.1 SSF Investments

	Investments		
Year	Number	Value (£M)	Value (£M, 2011 prices)
2006	4	0.4	0.5
2007	17	1.2	1.3
2008	26	1.9	2.1
2009	24	1.3	1.4
2010	32	2.0	2.1
Total	103	6.7	7.3

Source: Scottish Enterprise SSF Management Accounts (PACEC analysis)

2.2.3 The majority of the 103 investments are in equity (£5.7m over 85 investments) rather than loans (£1.0m over 18 investments).

Table 2.2 SSF Investments split between loan and equity

	Investments			
Year	Loan (#)	Equity (#)	Loan (£m)	Equity (£m)
2006	0	4	0.0	0.4
2007	2	15	0.1	1.1
2008	3	23	0.1	1.8
2009	6	18	0.4	0.9
2010	7	25	0.4	1.6
Total	18	85	1.0	5.7

Source: Scottish Enterprise SSF Management Accounts (PACEC analysis)

2.2.4 The 103 SSF investments have been made to 83 different companies. For 50 (60%) of these, SSF is the only SE investment fund they have benefitted from to date. 28 companies have accessed two SE funds, and five companies have accessed three or more sources of SE investment funding.

2.2.5 The main SE investment funds which these 33 (40%) companies have accessed are the Scottish Co-Investment Fund (23%) and the Scottish Portfolio fund (11%). One company (1%) accessed the Scottish Venture Fund and 4 (5%) accessed other SE funds.

2.2.6 Just over half (59%) the businesses received £100k, with the remainder receiving amounts ranging from £4k to £99k.

2.2.7 The total amount of funding received varied according to the total number of sources accessed. Just under a third (31%) had received under £100k in funding, and 33% had received exactly £100k – these two groups contained all those companies which had only received SSF funding from SE (as well as 9% of those which had accessed 2 or more funds). A fifth (20%) had received between £101-499k in total funding, and 16% had accessed between £0.5 and 2.2m in funds.

2.2.8 The average amount of SE funding received by the 83 SSF-funded companies was £234k. However, those who have only accessed SSF funds, received on average, £80,000 in total funding, whereas those who had used more than one SE fund averaged £466,000 in total funding. Among the multiple fund recipients, the average additional funding included £256,000 in SCF monies, £81,000 from the Scottish Portfolio Fund, and £25,000 from the Business Growth Fund.

2.2.9 On average the total amount of SE funding (£234k) given to those who received some SSF[24] is broken down as follows

- £145k of shares (£141k ordinary, £4k preference)
- £20k of outstanding loans
- £28k of Unit revaluations
- £1k of write offs

[24] A breakdown of SSF funding alone is not available from the SE management accounts.

- £40k of share disposals / loan redemptions

2.2.10 On average, the SSF monies levered in £175,000 of third party funding in addition to the £81,000 average SSF funding, a leverage ratio of 2.2 for the SSF. The total SE funding, averaging £234,000, was accompanied by £424,000 of total third party funding, giving a total SE leverage ratio for SSF recipients of 1.8.

2.2.11 In addition to arranging funding for companies, Scottish Enterprise delivers assistance covering a range of products. The majority of businesses have had assistance with market development (66%), as well as innovation (64%). In addition, between a quarter and a third have received assistance with strategy development (38%), organisational development (27%), business improvement (26%) and investment (23%). One in seven have received assistance with regard to start-up development. Those with larger SSF funding are more likely to have received assistance with innovation, strategy development and organisational development.

2.2.12 The recipients of SSF are found in the following sectors[25]

- 49% in Digital Media & Enabling Technologies
- 19% in Life Sciences
- 32% spread relatively evenly over Energy, Food and Drink, Construction, Chemicals, Financial Services, Textiles, Aerospace and Forest Industries (i.e. c4% each)

2.2.13 A key finding from the management information is that the annual survival rate of companies receiving SSF was 95% over the first three years (after 3 years 72 out of 83 survived). This is in excess of the 87% annual survival rate of all new start companies in Scotland.[26] It is highly likely that this high survival rate is a reflection of the high quality of the due diligence in selecting companies to be invested in and which, therefore, are most likely to survive and the ongoing support from investors as board members. When consulted on this issue, SSF-funded businesses and SSF advisors both suggested that this survival rate was enhanced by the operation of the fund and the additional SE support available as part of the whole package. This was primarily because of the range of support services available through Scottish Enterprise. The due diligence performed prior to investment was also a key factor.

The Performance of SSF

2.2.14 At the time of the evaluation only three businesses had been sold, generating income from investments in SSF. However, many of the investments are at an early stage and the businesses are relatively young, also the economic climate over the past 3 to

[25] There are no significant differences between the sectors in terms of amount of SSF funding, amount of other SE funding or amount of SE assistance. SE have no breakdown of the Digital Media and Enabling Technologies.

[26] Source: 2009 Business Demography dataset from the Office for National Statistics, downloaded from http://www.statistics.gov.uk/statbase/product.asp?vlnk=15186 on 22/6/11 (using the 3 year survival rates of companies which begin 2006)

4 years which has created significant uncertainty has been a factor. Up to March 2011 there were three major income returns from SSF shares totalling £285k, these arose from investments totalling £250k, which represents a return of 14%. In each case the returns were made after one year.

2.3 Key Points

2.3.1 The key findings from this chapter are as follows:

Panel 2.1 Inputs and Funding Details

- 103 investments have been made, accounting for £6.7m or £7.3m at 2011 prices.
- The majority of investments (£5.7m) are in equity rather than loan investments (£1m).
- Investments have been made in 83 different companies. For 60% of businesses SSF is the only investment used.
- Other significant sources of funding include the Scottish Co-investment Fund.
- The main recipients of SSF were in the digital media and enabling technologies sector (49%), in life sciences (19%) and 32% spread relatively evenly across energy and renewables, food and drink, construction, chemicals, financial services, textiles, aerospace and forest industries (i.e. c4% each)

3 The Businesses Invested In

3.1.1 This chapter outlines the nature and characteristics of the businesses invested in, and draws on the results from the surveys of businesses and funders at stage 3 in the evaluation framework. This part of the research is the main source of information from the participants. The chapter covers the characteristics of businesses, in terms of employment size, the age and status of businesses, their growth aspirations, and turnover trends. It provides much of the information essential for the assessment of impact, and the key points are summarised below.

3.1.2 In order to test whether the key attributes of the funding received gave rise to differential performance, the results for the survey of businesses have been cross-tabulated by the amount of funding received (those receiving £100k, the maximum, versus those receiving less than £100k), by whether or not companies have received funding from other Scottish Enterprise products (chiefly the Co-Investment Fund), and the total number of other support products/interventions received e.g. internationalisation and innovation support (under 4 'support products' / 4 and above).

3.1.3 The SSF is designed to provide funding to early stage businesses. The businesses supported have the following characteristics:

- Almost nine out of ten (88%) of the recipients interviewed had fewer than 10 employees at the time their earliest SE funding was approved, and 91% had under £1M in turnover (with 67% having under £100k in turnover).
- At the time of interview, 67% of the businesses had fewer than 10 employees, and 28% had between 10 and 24. Four-fifths (80%) had under £1M in turnover, and 32% had under £100k. The growth of the companies is shown in the following table.

Table 3.1 Change in employment and turnover

	Earliest Funding (% of companies)	Current (2011) (% of companies)
Employment		
<10	88	67
10+	12	33
Turnover		
Zero	52	18
<100k	15	14
0.1-0.9m	24	48
1m+	9	20

Source: PACEC of SSF recipients, 2011 (Q8)

- Around 80% of the businesses established their business as a completely new start-up. One in ten (10%) were spin-outs from a university or college, 7% were spin-offs from an existing business, and one business arose from a merger or acquisition.
- The great majority of businesses (85%) reported that they were independent businesses with no subsidiaries when they first received SE funding. Just

under a tenth (8%) were independent businesses with subsidiaries, and 7% had not yet incorporated or started trading.

- The great majority (88%) of companies started trading between 2000 and 2011, and almost three-fifths (57%) started within the last five years (between 2006 and 2011). Around one in ten (8%) started trading before 2000.
- At the time they received their first SE funding, all companies had been assessed as being "high growth ambitious companies", although this was not quantified in order to qualify for SSF. However, half (50%) subjectively viewed their growth ambitions to be moderate, rather than significant (50%).

3.1.4 Since they received their SE funding, the growth objectives of the SSF firms have become more ambitious, with 70% of firms stating that they are currently aiming to grow significantly (compared with 50% of firms at the point of first SE funding). Around a quarter (27%) aim to grow moderately (as against 50% of firms at point of first funding).

3.1.5 More than half of the businesses have grown since receiving their first SE funding. More than two-fifths (45%) have gained 1-9 jobs, and 14% gained 10 or more jobs. Almost half (47%) gained £0.1-0.9M in turnover, and 9% gained over £1M in turnover, while 16% gained between 0 and £100k. Three out of five (59%) businesses reported they had increased productivity since they received their first SE funding. A third (33%) reported an increase of £10-49k per job, and 21%, that productivity had increased by £50k per job or higher.

Table 3.2 Change in employment and turnover

	Change (Earliest funding to 2011)	% of companies
Employment	Loss 1-9 jobs	7
	No change	34
	Gain 1-9 jobs	45
	Gain 10+ jobs	14
Turnover	No gain	29
	Gain up to 100k	16
	Gain 0.1-0.9m	47
	Gain 1m+	9
Productivity	<10k/FTE	45
	10-49k/FTE	33
	50k/FTE+	21

Source: PACEC of SSF recipients, 2011 (Q8)

3.1.6 These impacts, and the extent to which they can be attributed to the SSF funding, are examined in greater depth in Chapter 6..

3.1.7 The key findings from this chapter are as follows:

Panel 3.2 The Businesses Invested In

- Around 80% of the businesses were established as completely new start-ups.
- 85% of the businesses were independent businesses with no subsidiaries when they first received SE funding.
- At the time they received their first SE funding, a half of the businesses were aiming to grow significantly.
- A substantial proportion of the businesses have grown their employment and turnover since they received SVF. 59% have increased their employment, and almost 56% have increased their turnover.

4 The Businesses Objectives for Participation in SSF

4.1 Introduction

4.1.1 This chapter, reflecting the fourth stage of the evaluation framework, investigates the objectives businesses had when they received their SSF funding. It also covers their background and objectives, the **alternative** sources of funding they had sought **before** receiving SSF funding, their route to participation in SSF, and the **additional** sources of funding they sought **alongside** SSF. The results from the analysis here are important, as they relate to the assessment of the intermediate outputs, i.e. what was achieved through SSF, in the next chapter.

4.2 Background and objectives

4.2.1 Demand for equity funding is typically seen by SSF advisors, as part of the SE team, as being reasonably strong at the time of the evaluation, but they recognised the uncertainty in the current economic context. Since the credit crunch, banks have been less willing to provide loan funding, particularly to early stage, pre-revenue companies. This has forced small businesses to seek loan and equity (mezzanine) funding as an alternative to bank loans. Investments made through the SSF provide equity and loan funding, and in recent years convertible loans have been issued through the SSF to seed stage businesses with the option of a future conversion to equity.

4.2.2 Two-fifths (39%) of SSF recipients could not recall who had first advised them about applying for SSF funding. But just over one in ten (13%) indicated they had been advised by a consultant or other professional financial adviser, whilst one in twenty (5%) had been referred by a business angel. On the other hand, just under one in ten (7%) indicated they had conducted their own research into the possibility of applying for SSF.

4.2.3 The SSF-funded businesses were asked about their objectives in using SSF. The potential objectives they were asked to consider could be grouped under four headings: **general business objectives**, **financial objectives**, **business operation objectives**, and **innovation objectives**:

- The most common **general business objective** in using SSF was to help the business to grow, which was cited by three out of four (73%) businesses. Three-fifths (59%) aimed to develop new products or services, and more than half (56%) indicated they required seed/start-up funding, or were looking to share risk (54%).

  The SSF investors confirm these views, as shown in Chapter 9 below.

- The most common **financial objectives** in using the funding were to provide early-stage funding (59% of businesses), to lever in other finance, or to provide working capital (58% in each case). For at least two-fifths of the respondent businesses, the main aim here was to secure investment capital (46%), or to meet a funding gap (44%).

  The SSF investors confirm these views, as shown in Chapter 9 below.

- The major **business operation objective** for most of the respondent businesses was the ability to finance recruitment or skills (56% of businesses). For a small but significant minority, though, the attraction included financing the rent or purchase of buildings (19%), financing the purchase of other assets (15%), and financing the purchase of plant or machinery (also 15%).
- The main **innovation objective** in using the funding was to finance research and development (68% of businesses). The other objectives, and cited by more than half of the SSF-funded firms, were to develop new or existing products or services (61%), improve the image of the firm (56%), and to produce new scientific or technical knowledge (56%).

4.2.4 These points were broadly confirmed by the SSF investors (see below). Overall the businesses had multiple but related objectives in using SSF funds.

4.3 Market Failure and Alternative Funding Sought

4.3.1 The SSF was established to address **market failure and feature** issues related to capital for seed stage businesses. On the demand side, these market failures and features (reflecting the points in the introduction to the report) are considered to be:

- *Shortage of information*. Businesses are not sure of the sources of finance and advice or how to obtain it at acceptable costs. This is more likely to be the case for smaller businesses who have less visibility of the market.
- *Lack of investment readiness*. Start-ups lack the ability to present themselves as investable opportunities, eg poor business plans and models or inadequate management skills through lack of experience.
- *Aversion to equity*. A lack of understanding of investors' aims and a reluctance to cede ownership are the most common features, especially at an early stage, along with relatively lengthy periods to agree deals.

4.3.2 Around three-fifths of the SSF-funded businesses (61%), indicated that they had sought **alternative** funding **before applying for SSF funds.** Some 34% said that they had not. A very small number (3 businesses) were not sure. In terms of market failure it is not apparent that the businesses were not aware of funding – none of them gave this reason for not seeking it. However, the evaluation does not have a comparison group of businesses not funded through SSF but in general terms the literature indicates that some businesses think a lack of information is a constraint[27].

4.3.3 The businesses that had sought alternative funding (ie 61%) prior to applying for SSF support were asked about the types of alternative funding sought:

- More than a quarter (29%) of businesses seeking alternative finance had sought business angel finance, in the form of equity or share capital. More than one in ten (13%) had sought a bank loan, and one in six (16%) said that they had sought a bank loan with the Small Firms Loan Guarantee, or applied for venture capital finance in the form of equity or share capital (16%). Around a tenth (11%) had applied for other public sector funding. In all

[27] Note the Rowlands Review (2009) and BIS. BIS Equity Finance Schemes. Survey of Investors July 2011. BIS Equity Finance Programmes: Qualitative Review of UKHTF and the Bridges Fund July 2011

cases, the amount of funding sought was less than £100k. The balance could not recall to whom they applied (15%).

Given that banks are a traditional source of additional funding for the majority of businesses, the relatively small proportions seeking bank finance probably reflects the recent caution in bank lending following the credit crunch and recession. But it could also be partly explained by the fact that businesses themselves may be reluctant to approach banks if they believe that their requests for bank finance are unlikely to be successful.

- Perhaps not surprisingly, a third of the businesses seeking alternative funding (32%) indicated that they had not been successful and a similar proportion only partially successful, ie some two thirds in total. Generally, while they considered themselves viable (albeit with revenue streams that were not necessarily developed), they considered that they were potentially seen as too risky. However, they may not have been able to demonstrate investment readiness.
- In the majority of cases where offers of alternative funding were made (prior to application for SSF monies), these were accepted. Thus, for example, two out of the three businesses that had been offered a bank loan with the Small Firms Loan Guarantee had accepted it, and two businesses received equity or share capital from a venture capitalist (out of the three which had received such offers). The most common reason for refusing an offer was because the businesses considered the terms and conditions unsatisfactory and part of this concerned the release or dilution of equity – a market feature issue.

4.3.4 Some one third of businesses did not seek alternative finance to SSF because they did not think they would get it or the conditions would not be acceptable. Businesses thought they would be seen by investors as being at a very early stage and too risky. They thought the investors did not think that they had the skills to overcome these barriers and demonstrate investment readiness. For others the conditions likely in terms of a loss of equity were not attractive. They had a good business idea and were not prepared to share it at an early stage in spite of the higher growth and absolute values for their equity they could have achieved with investors.

4.3.5 These findings also reflect the views of the SSF investors. They all considered that businesses faced significant issues when seeking to obtain capital, in part for the above reasons.

4.3.6 While benchmarking evidence is difficult to obtain, other research shows that full or partial additionality for raising finance was over 90% for SCF based on the views of both the investors and business partners[28]. Over half of SCF investee companies felt that their chances of raising capital elsewhere would have been 'poor' without SCF and 70% stated that the fund had been 'vital' to their business survival[29].

4.3.7 The businesses were also asked if they had sought **additional** funding **as well as their SSF funds**. Over three quarters of businesses (79%) said that they had. These businesses were asked a set of follow-up questions about the types of additional funding sought:

[28] Richard T Harrison. A Case Analysis of SCF and Evaluation of ERDF Supported Venture Capital and Loan Funds and the Scottish Co-Investment Fund, Scottish Executive 2008

[29] Hayton et al (2008) op cit

- The most common forms were business angel equity or share capital (22% of those seeking additional finance), a business angel loan (11%), equity or share capital from other businesses (11%), or other public sector funding (9%). The one in ten (11%) seeking a business angel loan only included firms receiving the maximum £100k SSF funding, and did not include any firms receiving SE funding via SSF alone.
- Most businesses seeking additional finance secured offers of finance. Business angels, the most common sources of finance, also made offers of additional finance to all applicants. This shows a degree of success which may be attributed to the fact that SSF in itself helped to secure finance perhaps because investors considered that some of the risks and transaction costs had been reduced considerably, ie the process of securing SSF funds, and the information available through the due diligence process was helpful to providers of the additional funds and reduced their costs. All offers of finance were accepted.

4.3.8 This finding shows that the degree of **market failure and features** that potentially prevented businesses from receiving alternative funding prior to SSF had eased somewhat (eg risk and due diligence issues) when additional funding to SSF was sought. This was mainly because investor confidence had been demonstrated, the businesses were performing adequately, and the fact that having SSF investor and SE adviser support made it easier to raise additional funds, ie SSF funding made businesses a less risky prospect for future funding.

4.3.9 The businesses that had *not* sought additional funding were also asked why they had not done so. Six out of the eight businesses indicated that they were able to manage without other finance. Other reasons included the high costs of raising additional funds and the terms and conditions attached.

4.4 Key points

4.4.1 The key findings from this chapter were as follows:

Panel 4.3 The Business Objectives of Participation in SSF: key findings

- On the information failure side of market failure, it is not apparent that SSF businesses were not aware of the sources of funding or how to access it. However, other businesses may well be and the general literature would support this[30]. This is especially the case with start-up and very early stage businesses who may have less awareness of the market compared to larger ones.
- In terms of alternative finance to SSF, some three fifths of SSF businesses sought alternative funding. A third of these were not successful, and a further third were only partially successful. The other third were offered what they sought.
- The 30% that did not seek alternative funding did not do so because they thought they would not get it.

[30] Note the Rowlands Review (2009) and BIS. BIS Equity Finance Schemes. Survey of Investors July 2011. BIS Equity Finance Programmes: Qualitative Review of UKHTF and the Bridges Fund July 2011

- Overall the behaviour of the businesses that did not obtain alternative finance, although they sought it, or did not seek it reflects a degree of market failure in that they potentially could not demonstrate investment readiness at their stage of development (and were seen as too risky) or the conditions likely to be set by investors in terms of a dilution of ownership were not acceptable to them.
- Some four fifths of businesses applied for additional finance to SSF, and almost all were successful, hence the market failure issues had been alleviated to some extent, following the receipt of SSF funds and perhaps investor confidence was demonstrated.
- The most common objectives for businesses when seeking SSF funding were to help the businesses grow (73%), carry out R&D (68%), and develop new or existing products (61%)

5 The Outputs: Intermediate Effects / Outcomes

5.1 Introduction

5.1.1 A key part of the research is to assess the outputs for businesses receiving SSF, as an important element in the evaluation framework, i.e. stage 5. This chapter deals with the intermediate effects and outcomes for the SSF funded businesses. The outcomes themselves provide an early indication of the impacts and business performance effects. Importantly, they help to validate these impacts, and demonstrate the capacity and skills that are required by businesses to help underpin their performance, especially over the ten years or so of investment funding. The intermediate indicators are concerned with, for example, new and improved products and processes, general business and financial effects, and impacts on the operation of the businesses and innovation activities, skills and practices.

5.2 The Business Operation

5.2.1 As was noted in Chapter 4, two-thirds (67%) of the businesses indicated that they had wholly met their objectives for using SSF set out in the previous chapter. However, in terms of their business operation, around one in six (16%) claimed they had "largely" met their objectives, whilst an identical proportion (16%) had "partly" met those objectives. Only one business said they had not met their objectives at all. There is no evidence of a time lag in respect to companies believing that their objectives are not being met, nor is there significant evidence that the support the companies receive affects whether their objectives are met.

5.2.2 More than two-thirds (69%) of SSF businesses had brought **new** products or services to the market as a result of their funding. Around a quarter (24%) had not done so, but considered that they were likely to within the next three years. Only one of the businesses (2%) said that they were not likely to take products or services to the market within three years, and 5% were not sure.

5.2.3 **The SSF investors identified the ability to get to market more quickly and develop new products and services as key benefits for businesses who obtained funding. See Chapter 9 (Table 9.3).**

5.2.4 One in five (20%) businesses had brought **improved** products or services to the market as a result of their funding (some of whom have also brought new products or services to the market). A small number (5%) had not done so but believed they were likely to within the next three years. However, three-fifths (58%) were less optimistic and did not think improved products or services were likely within three years. Almost one in five (17%) were not sure.

5.2.5 One in ten (9%) of businesses had developed new processes as a result of SSF investment. Here too, a very small proportion (2%) had not done so, but said they were likely to within the next three years. On the other hand, almost three out of four

(71%) said that new processes were not likely within three years, possibly because they were focusing more on new products and services. Again around one in five (18%) were not sure.

5.2.6 Where new or improved products, services, or processes had been developed, more than half of the businesses (55%) considered that the level of technological innovation involved had been "significant". A third (32%) of businesses thought that the level of technological innovation had been "high", and 10% that it had been "moderate". Only few of the businesses (3%) reported a low level of innovation.

5.2.7 Nine out of ten (90%) of the businesses who said they had developed new or improved products or services indicated that some or all of production would take place in Scotland. However, 14% thought that some production would take place elsewhere in the UK, and 17%, that some production would be based abroad. This result is used to estimate leakage from the economy in section section 6.4 on economic impact.

5.2.8 Approximately half (51%) of the businesses stated that their new or improved products and services had increased their business growth or performance; whilst 49% said that there had been no change in the growth of the company (indicating that the introduction of the new or improved products and services enabled the company to grow at its former rate).

5.2.9 Those businesses introducing new or improved products or services were asked if they had faced any particular barriers to doing so. Three out of four (75%) indicated that they did not face any barriers. However, almost one in ten (7%) had failed to achieve their technical objectives, while 3% (in each case) cited a change in market conditions and lack of finance. Other factors were mentioned by a smaller proportion of businesses. This failure on the part of some businesses to achieve objectives in the past is an indication that such failures may happen in the future, contributing to an optimism bias (in which projected employment and turnover impacts are not fully realised).

5.3 Actual and likely outcomes

5.3.1 Using the same groups of [potential] objectives in the previous chapter, the businesses were asked to describe the actual and likely effects of their SSF funding:

- The most common **general business effect** of the funding was to help the businesses to grow, and was cited by three in four (75%) of SSF recipients. Another key effect was the ability to share risk (72% of businesses) and obtain seed/start-up funding (59%).

  The SSF investors confirmed these impacts, especially the business growth effects and the ability to meet funding gaps and obtain investment capital. See Chapter 9 (Table 9.3)

- The main **financial effects** of the funding included: provision of working capital (80% of businesses); meeting a funding gap (70%); improving cash flow (67%); obtaining early funding (64%); levering in other finance (62%); and provision of investment capital (56%).

- Four-fifths (79%) of businesses highlighted actual or likely **business operation effects**. By far the most common was finance to recruit the right people with key skills that were mentioned by two-thirds (66%) of the businesses.
- The main actual and likely **innovation effect** of SSF was the ability to finance research and development (79% of businesses). The other effects of significance were: developing existing or new products or services (70%); testing of the commercial feasibility of ideas (67%), producing new scientific or technical knowledge (64%); and testing the technical feasibility of an idea or some ideas (64%).

5.3.2 The SSF businesses were asked for their views about the extent to which their funding had helped the business achieve these objectives. **Three out of five (59%) said that the funding had helped them to wholly achieve their objectives. A quarter (26%) also said that the effect of SSF was that they had "largely" achieve their objectives, and just over a tenth (12%) thought the funding helped them "partly" achieve their objectives.**

Additional finance

5.3.3 Lastly, in this section, the businesses were asked the effect (if any) of the SSF funding on their ability to obtain additional finance. While 32% said that it had made no difference, 14% said that it had made obtaining other finance "a little easier", and 52% said that it had become "much easier". Only few (2%) thought that it had become "a little more difficult" to obtain other finance, **possibly because other investors may be deterred and may not obtain a sufficient stake in their business. This was not viewed as crowding out which was confirmed by the views of SSF investors in Chapter 9**. When follow-up interviews were conducted, several businesses suggested that involvement with the SSF improved the credibility of their business when they sought further funding. Some SSF advisors also thought that the SSF could improve a business's credibility, but the role of SSF in permitting a business to move towards profitability and progress to the next funding milestone was seen as more important.

5.4 Key points

5.4.1 The key findings from this chapter were as follows:

Panel 5.4 Intermediate Effects / Outputs: key findings

- 67% of businesses had **wholly met their objectives** by using SSF
- 69% of SSF businesses had brought **new** products or services to market
- 20% of SSF businesses had brought **improved** products or services to market
- New or improved products, services, and processes involved **significant technological innovation** in 54% of cases, and were **produced in Scotland** 90% of the time
- 52% of businesses believed SE funding made it **much easier to obtain other finance**

6 The Outcomes: Business Performance and Economic Impacts

6.1 Introduction

6.1.1 This chapter, which forms the seventh stage of the evaluation framework in the introduction, focuses on the impacts, including the business performance effects, of the SSF investment, i.e. the impacts on turnover, employment, the value of assets and profitability. These represent the features of business performance that private investors seek to enhance before selling the business on and achieving their exit strategies. The business performance effects can generate wider effects on customers, clients, suppliers and collaborators. More importantly, the performance effects are critical to the net economic impacts for the Scottish economy, in terms of jobs and GVA. The final section of the chapter shows these effects and the economic impact ratios to date and for the short and medium terms.

6.2 Business performance impacts

6.2.1 Part of the **market failure** rationale for SSF was to alleviate business finance constraints and assist start-up and early stage businesses to grow and develop, hence adding value and opportunities to the Scottish economy[31]. To assess the impact of SSF, businesses were asked to describe the actual business performance effects **resulting from SE funding** to date, and how these are likely to change within the next 5 and 10 years. In depth discussions with the businesses and with investors allowed some estimates to be made reflecting uncertainty and the fact that businesses, in particular, can be optimistic at the time of estimation, i.e. in advance of the "live" or "real" implementation phase. Almost two-thirds (64%) of businesses said they had increased employment, and 69% believed that employment had been safeguarded as a result of the SE funding (that is, jobs that would otherwise have been lost were retained). A little over three-fifths (62%) had increased sales in existing domestic markets, and slightly more that this (64%) had increased the value of their companies. Another 62% had increased their overall turnover or sales. The detailed business performance effects observed to date are shown in Table 6.1 below.

6.2.2 There is some optimism, albeit cautious, that the observed business performance effects would persist into the future. An indicator of future impacts can be gauged from the views of businesses. More than nine out of ten said that in five years' time, they will have increased their overall turnover/sales and growth, increased the value of their assets, and increased the value of their company. A slightly lower proportion than this believed that they will have increased employment and increased their profit margin on sales over the same period. Just over four-fifths are confident that they will have increased their sales in existing domestic markets.

[31] The Scottish Enterprise Approval Paper for SSF and the evaluation brief

6.2.3 **The views of SSF investors were that profits would increase, especially over the 5 to 7 years that they require to realise their investment and exit.**

6.2.4 The anticipated full impact of SSF funding after 10 years is very similar to that expected over 5 years indicating that very few business performance impacts are anticipated to **start** more than 5 years in the future (although the **scale** of these impacts is likely to grow, as shown below). This shows the importance of the short to medium term and reflects the time period investors anticipate prior to exit.

Table 6.1 Actual and likely business performance as a result of SSF

	Percentages of businesses		
	Actual	Actual plus likely (5yrs after funding)	Actual plus likely (10yrs after funding)
Increased sales in existing domestic markets	62	84	85
Opened up new domestic markets	57	79	79
Started exporting	48	75	75
Increased export sales	38	72	75
Opened up new export markets	46	74	74
Intelligence property registered / underway	57	59	59
Increased income from intellectual property	28	51	51
Increased overall turnover / sales	62	92	92
Increased employment	64	89	90
Safeguarded employment	69	77	77
Increased profit margin on sales	49	90	92
Increased the value of its assets	56	89	89
Increased the value of the company	64	92	92
Increased productivity	52	75	75
Other	3	7	7
None of the above	2	0	0
Number of respondents (rate=100%)	*61*	*61*	*61*

Respondents could select more than one option; so percentages in any column may sum to more than 100
Source: PACEC Survey of SSF recipients, 2011 (Q35)

6.2.5 Some 59% of businesses would not have achieved any of these impacts without SSF, and a further 26% said that the impacts were "largely" due to the funding. The SSF businesses were also asked to estimate the scale and timing of the impact of the investment on their employment, salaries of employees, and turnover and attribute these effects to the different sources of funding used. The responses to these questions were used for an economic impact model to estimate the gross and net additional impacts and the factors which may be influencing these impacts. The results from the modelling are set out in the next section. The methodology for the modelling is shown in more detail in Appendix B.

6.3 Wider effects influencing economic impacts

6.3.1 In addition to the intermediate and final effects on their own businesses, the SSF businesses were asked for their views on any other actual or likely effects on other organisations and their staff. Almost three-quarters of SSF businesses considered that SSF funding would have positive knock-on effects on their **customers.** One in five did not think there would be any effect, and 8% did not know. The anticipated effects included new and improved products and services which their customers would sell on as separate products or as a product component which would help customers vary and extend their markets and provide greater choice in turn for their customers.

6.3.2 One possible unwelcome effect of public funding can be to disadvantage the local competitors for businesses supported, which reduces the net benefit to the local and Scottish economy. To gauge this effect (the "**displacement**" of the impact), the SSF-funded businesses were asked the proportion of sales arising from funding which would be taken by Scottish competitors if their business ceased trading. More than nine out of ten of the businesses were firmly of the opinion that none of their additional sales would be taken by Scottish competitors. This is a positive result, as it implies that the impact of the funding is not offset by any substantial displacement within the Scottish economy. This effect usually occurs when the activity funded is genuinely innovative and unique (reflecting unique spatial and product markets), or scarce enough that competitors are not likely to have developed, at least in the short to medium term. It may take them some time to enter the markets.

6.3.3 Looking at the issue of the impact on **competitors**[32] more widely (including those outside Scotland), one in seven (14%) thought their SSF funding would have a negative effect upon their competitors, mainly because they had become more competitive; with one business saying that a competitor had already gone into liquidation as a result. However, exactly half thought there would be no effect, while a small number (2%) thought that there would be a positive effect. Interestingly, a third of the respondent businesses were not sure.

6.3.4 SSF companies indicated that, on average, 47% of their goods and services came from Scottish **suppliers**. Furthermore, 20% said that the SSF funding and their activities would have a positive knock-on effect upon their suppliers, typically in the form of increased orders or continuity of custom. On the other hand, 46% thought that there would be no effect, and 34% did not know.

6.3.5 In contrast to their [negative] views on the impact on their competitors, more than a quarter (28%) of SSF businesses believed that the funding would have a positive knock-on effect upon their **collaborators**. In particular SSF funding was likely to provide greater opportunities for collaboration (as they appeared to be more attractive and could find collaborators), with an improved skills base to draw upon. However, one in three thought that there would be no effect, and two fifths did not know.

[32] Research was not undertaken into the extent to which these competitors were Scottish.

6.3.6 In the qualitative follow-up interviews, most companies said that they had been able to start exporting and open up markets outside Scotland. Another potential wider effect for businesses especially in cleantech sectors was the potential to reduce the environmental impacts of a range of products (developed through SSF funding) and thus reduce negative externalities in the economy more generally.

6.3.7 The discussions with the businesses also looked at the effects of SSF funding on the wider economy of Scotland. More than three-quarters (78%) of the SSF businesses claimed that all of their staff lived in Scotland, and most of the remainder (20%), that the majority lived in Scotland. This is important, as it means that wages are more likely to be spent on goods and services in Scotland, thereby increasing the local benefit of the funding by "recycling" it through the Scottish economy (e.g. reducing **leakage** of wages through expenditure outside Scotland).

6.3.8 Lastly in this section, the SSF businesses were asked how market conditions in their main area of business had changed over the last three years. Their views were fairly evenly spread over a wide range of options. In the main: 27% thought that conditions had remained the same; 25% thought they had improved moderately, while 22% thought they had declined moderately; 12% thought they had improved strongly, while 14% said they had declined strongly. These views are contextual and helped to interpret the impacts based on the views of businesses.

6.4 The economic impacts

6.4.1 In this section an estimate is made of how the business performance data outlined above converts into employment and Gross Value Added (GVA) for the Scottish economy over time. The estimates are based on the grossed up impacts reported by the businesses themselves, which are adjusted to take account of optimism bias and are in line with the actual business growth achieved by similar Scottish companies in receipt of SMART awards[33]. The estimates take account of deadweight, displacement, leakage, substitution and multiplier effects in the Scottish economy to arrive at net additional and attributed estimates from the SSF investments. **This approach, set out in Appendix B1, follows best practice as set out in the SE, Green Book and BIS RDA evaluation guidance.**

6.4.2 At the time of the evaluation, 11 out of the 83 companies which received SSF funding were insolvent. On the basis of this research we estimate that the 72 companies which are still trading are providing 737 FTE jobs. This rises to 1,618 in the short-term (2012-16) and 2,102 in the medium-term (2017-21). These estimates assume a 95% annual survival rate, resulting in 43 companies being in existence in 2021.

6.4.3 The company survival rate, at 95%, is higher than the national average of 87% after three years. When consulted on this issue, SSF-funded businesses and SSF advisors both tended to think that this survival rate was enhanced by the operation of the fund and other support provided. This was primarily because of the range of support

[33] PACEC's Evaluation of SMART Scotland (2009 for Scottish Government Social Research)

services available through Scottish Enterprise and due diligence helped to identify issues that could be dealt with as part of the package.

6.4.4 In order to estimate the net impacts of the SSF funding from these gross intervention case effects (in Table 6.2), a number of steps are taken recognising that it can take time for effects to feed through, which are here illustrated by the short term employment impacts along with the numbers estimated at each stage:

- From the Gross impact (1,618 FTEs) we subtract the negative impact on competitors (85 FTEs or 5% **Displacement**). This low level of displacement reflects the niche markets of the SSF recipients.
- We also subtract from the gross impact the proportion of economic benefit which goes outside Scotland due to staff living in other countries (134 FTEs or 9% **Leakage**). This gives a Net Intervention impact (1,399 FTEs).
- We then add the jobs associated with the supply chain (expressed as a **multiplier** of 1.7) to produce the Full Net Intervention impact (2,340 FTEs).
- The Full Net Reference case (645 FTEs) is estimated in a similar way based on what would have occurred in the absence of SE funding (28% of 2,340 FTEs **deadweight**), which is subtracted from the Full Net Intervention case to give the net additional impact (1,695 FTEs).
- Only a certain percentage (24%) of the additional effect is **attributable** to the SSF funding (the rest is due to other SE funding received alongside SSF), which gives rise to the final estimate of Net Additional-Attributable effect (403 FTEs). While this figure of net additional attributable removes the effects of other SE funding received, it does not remove the effects of SE support products.

6.4.5 The approach to estimating GVA per annum as shown in Table 6.2 is similar to that used for the employment impacts.

6.4.6 On the basis of this research we estimate that the net additional attributable effect of the SSF funding on the 83 companies is

- Currently: -£6m per annum in GVA, and 151 FTE jobs
- In the short-term: £21m per annum GVA and 403 FTE jobs
- In the medium-term: £34m per annum GVA and 546 FTE jobs

Table 6.2 Grossed up impacts: Employment and Gross Value Added

	Employment (FTE)			GVA (£m per annum)		
	Current	Short term	Medium term	Current	Short term	Medium term
A: Intervention case Gross	737	1,618	2,102	20	97	140
B: Intervention case Displacement	42	85	101	2	5	6
C: Intervention case Leakage	57	134	171	2	9	12
D: Intervention case Net (=A-B-C)	638	1,399	1,830	17	83	122
E: Intervention case Multiplier	1.6	1.7	1.7	1.6	1.7	1.7
F: Intervention case Full Net (=D*E)	1,030	2,340	3,062	27	139	204
G: Intervention case Company Losses	0	0	0	67	43	19
H: Intervention case Full Net– Losses (=F-G)	1,030	2,340	3,062	-40	95	184
I: Reference case Gross	294	468	568	9	29	39
J: Reference case Displacement	23	45	50	1	3	3
K: Reference case Leakage	21	36	42	1	3	4
L: Reference case Net (=I-J-K)	250	387	476	8	23	32
M: Reference case Multiplier	1.7	1.7	1.7	1.6	1.6	1.6
N: Reference case Full Net (=L*M)	416	645	793	13	37	53
O: Reference case Company Losses	0	0	0	34	23	6
P: Reference case Full Net – Losses (=N-O)	416	645	793	-22	14	47
Q: Net Additional (=H-P)	614	1,695	2,269	-18	81	138
R: Net Additionality (=Q/A)	83%	105%	108%	-89%	84%	98%
S: Attribution	25%	24%	24%	36%	25%	25%
T: Net Additional Attributable (=Q*S)	151	403	546	-6	21	34
U: Intervention case displacement ratio (=B/A)	6%	5%	5%	8%	5%	4%
V: Intervention case leakage ratio (=C/A)	8%	9%	9%	9%	9%	9%
W: Reference case displacement ratio (=J/I)	8%	10%	9%	11%	9%	8%
X: Reference case leakage ratio (=K/I)	8%	9%	8%	8%	13%	12%
Y: Deadweight (=N/F)	40%	28%	26%	46%	27%	26%
Z: Substitution	0%	0%	0%	0%	0%	0%

Note: In this table, "Short term" refers to the period 2011-2016, "medium term" to the period 2017-2021.
The intervention case is what happened with the SSF programme.
The reference case is what would have happened in the absence of the SSF programme.
The gross effect is the full observable effect
The net additional effect takes account of displacement, leakage and multiplier effects.
Displacement is the impact on Scottish competitors.
Leakage is income falling outside Scotland.
The multiplier effect measures the additional jobs and GVA created in the supply chain.
Multipliers can differ between cells due to differing levels of impact and expenditure in Scotland between companies – see paragraph in Appendix B for example
"Loss" refers to the negative effect upon GVA of companies trading at losses
Attributable impact is that associated with the direct SSF expenditure.

Source: PACEC survey of SSF companies 2011

6.4.7 A fuller explanation of terms is given in Appendix B1, particularly Table B1.4. An explanation of the variation of displacement, leakage, deadweight and multiplier is given in Appendix B2, which also comments on the data and potential linear trends.

6.4.8 Because many of these companies currently have low or zero turnover, they currently have a negative impact on net additional Gross Value Added (GVA) of minus £18m. However as turnover is projected to increase this rises to positive impacts of £81m (by 2016 at 2011 prices).

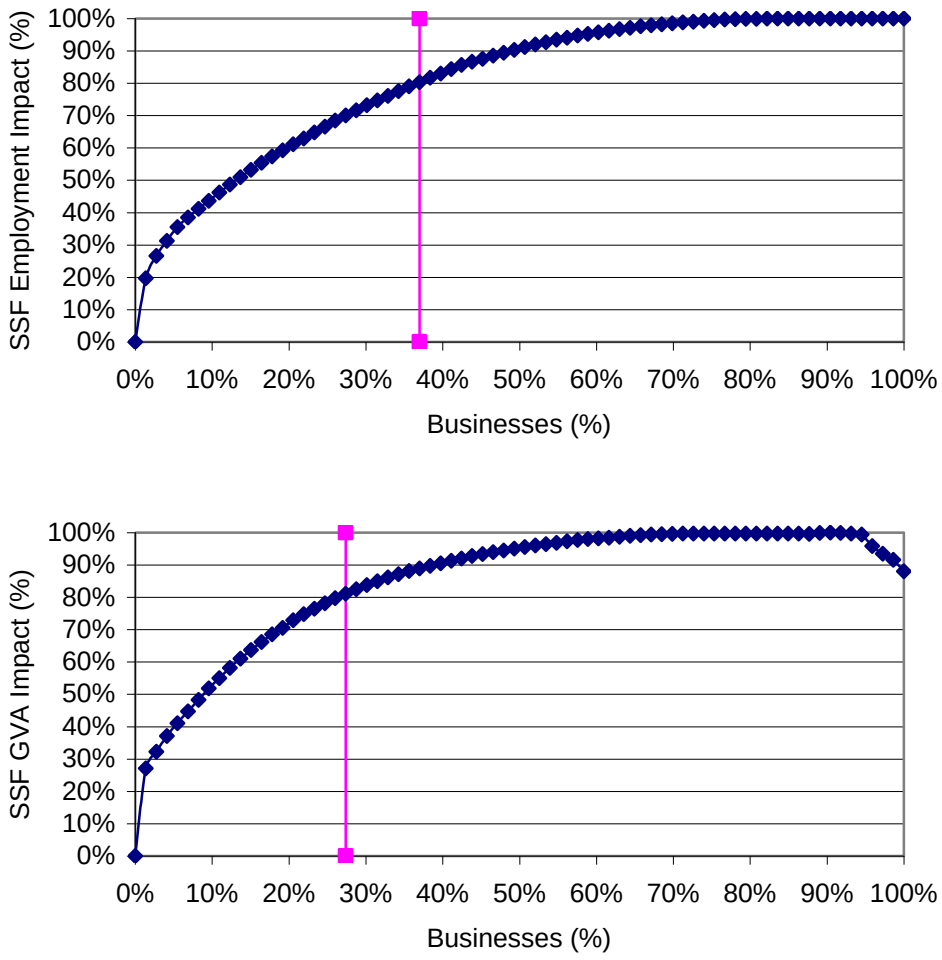
6.4.9 On average, businesses using SE assistance had higher-than average deadweight in terms of employment growth over the short term – that is, they attributed a lower share of their employment growth to SSF and said that more of the employment growth would have happened anyway. This is possibly because they could have obtained SE or other support through other routes – but this was not tested. Innovation support, however, was associated with reduced deadweight. However, certain types of companies all tended to have lower-than-average deadweight – more of their employment growth was attributable to their SSF funding. These included companies receiving less than the full £100k in SSF funding, companies in the DMET sector, companies accessing only equity funding (no loan funding), companies receiving funding in 2009/10, companies with fewer than 10 employees, and companies accessing no other forms of SE funding (see chapter 10 for any policy implications that can be drawn). However, the data does not indicate apparent reasons for this based on the characteristics of companies or the views of businesses.

6.4.10 At this point, it is important to reiterate that the SSF investments were **necessary, but not sufficient** for these very large impacts**:** i.e. without the SSF investments, it is anticipated that, in the short-term, 403 FTE jobs and £21m of GVA per annum would not exist in the Scottish Economy. However it is not being claimed that SSF investments are solely responsible for these large economic impacts. In particular some of the impacts may be attributable to SE support products. It was not possible to disentangle the impacts of the SSF funding from the SE support products.

6.4.11 SSF advisors often focus on addressing investment readiness weaknesses within small businesses, such as advising the management team or making sure that professional investors are involved at an early stage, even if the company could benefit from funding before improving its readiness – the rationale here is to ensure that companies are ready for subsequent rounds of funding where required. This approach may also contribute to the high survival rate of SSF-funded companies. SSF-funded businesses report high levels of satisfaction with board-level advice from investors and SE advisers.

6.4.12 It is usual for impacts not to be evenly distributed across businesses, since organisations grow at different rates. A Pareto distribution, in which 80% of the benefits accrue in 20% of the beneficiaries, is typical in the field of economics and business support interventions. In the case of SSF, 80% of the employment impacts are concentrated in 37% of businesses, indicating a more even distribution of employment benefits (than in Pareto ratio), and 80% of the GVA impacts are concentrated in 27% of businesses, indicating a slightly less even distribution of GVA impacts. The potential reason for this is that the profit element of GVA has not fed through in terms of business performance. This can reflect the practice, often a feature of small and growing businesses, of recruiting ahead of sales and profits, especially where external funding is used.

Figure 6.2 Distribution of Short Term Employment and GVA net additional attributable impacts



Note: Some businesses are still forecasting negative GVA in the short
Source: PACEC survey of SSF companies 2011

6.4.13 The annual Full Net Attributable Impacts are set out below. Over time this shows 403 FTE jobs to 2014[34]. The five year[35] net total row for 2011-2016 is given for GVA since these impacts are cumulative over time. The equivalent figure ten years into the future is shown for illustrative purposes only and is heavily qualified as this is a very difficult period over which to forecast.

Table 6.3 Annual Full Net Attributable Impacts

Year	FTE	GVA per annum (£m current prices)	GVA per annum (£m, 2011 prices)
2011	151	-6	-6
2012	235	3	3
2013	319	12	11
2014	403	21	19
2015	432	23	20
2016	460	26	22
2011-2016 cumulative		78	68
2017	489	29	23
2018	518	31	25
2019	546	34	26
2020*	546	34	25
2021*	546	34	24
2011-2021 cumulative		240	191

* It is not possible from the research to estimate the growth beyond 2019, so an artificial plateau is used.
Source: PACEC survey of SSF companies 2011

6.4.14 To date, the estimated economic impact ratio (ie discounted cost effectiveness at 2011 prices) of the SSF scheme is £48k per net additional FTE (full-time equivalent) job. In the short term, the estimated economic impact ratio will be £21k per net additional FTE job, and over the medium term the cost per FTE job will fall to £19k (both figures in 2011 prices). The cumulative GVA over the short term will be £68m, and over the medium term £123m, for a total impact 2011-2021 of £191m (at 2011 prices). It should be stressed that not all of the costs are included in this ratio (i.e. those things which are also necessary for the impacts to occur), so these ratios should be treated with caution. **Also, the impacts for 2017-2021 are based on the responses of the relatively small number of companies which gave estimates of impact for that period of time, and used for grossing-up purposes, and so should be treated as a broad indication of what growth and performance might be expected from the cohort.**

[34] 2014 is used here as the midpoint of the period 2011-2016.

[35] The use of a five year period for GVA shown is a practical period of time to estimate the impacts and is supported by the views of the investors who strongly advised against considering impacts over a shorter period as profits may not have fed through, or a longer period of more than 5 years into the future as impacts would be difficult to estimate.

6.4.15 Table 6.4, on cost effectiveness discounted, also shows for GVA the impact per £1m of SSF spend, ie £9.3m GVA in the short term and £16.8m in the medium term, a total of £26.2m over the period 2011-2021 (with the caveats in 6.4.13).

Table 6.4 Economic impact ratios

	Employment (FTE)			GVA	GVA - cumulative		
	Current	Short term	Medium term	Current - 2011	Short term 2011-2016	Medium term 2017-2021	2011 - 2021
Cost and impacts (not discounted – current prices)							
Cost (£m)	6.7	6.7	6.7	6.7	6.7	6.7	6.7
Impact (000 FTE or £m)	0.2	0.4	0.5	-6	78	162	240
Cost per FTE (£k)	45	17	12				
£m GVA impact per £1m cost					11.6	24.2	35.8
Cost Effectiveness (discounted – 2011 prices)							
Cost (£m)	7.3	7.3	7.3	7.3	7.3	7.3	7.3
Impact (000 FTE or £m)	0.2	0.3	0.4	-6	68	123	191
Cost per FTE (£k)	48	21	19				
£m GVA impact per £1m cost					9.3	16.8	26.2

The process of deflating (to produce constant 2011 prices) has the effect of increasing the value of past items (costs) and decreasing the value of future items (benefits)
Impacts are Net Additional-Attributable
Source: PACEC survey of SSF companies 2011

6.4.16 The cost per job of £48k is probably fairly typical for public interventions related to seed funding.

6.4.17 These estimates reflect the results in other research, i.e. the SCF has had, and is forecast to continue to have, an economic impact on the companies that have been supported, in terms of identifiable increases in turnover, gross value added and employment[36].

6.4.18 The previous table indicated that the short term employment impact was c.60 FTE per £m (not discounted), ie £17k per job. Table 6.5 below shows how this impact varies for different company characteristics. The higher than average companies are those:

- Accessing support for innovation or market development
- Receiving the maximum £100k in funding,
- Companies receiving funding in 2009/10[37]

[36] Hayton et al (2008) op cit and Richard T Harrison, A Case Analysis of SCF and Evaluation of ERDF Supported Venture Capital and Loan Funds and the Scottish Co-Investment Fund, Scottish Executive 2008

[37] It is possible that the 2009/10 cohort of SSF funded companies have a relatively high impact because they have not had as long as the 2006-08 cohort to fail, which reduces the impact.

- Companies outside the life science and DMET sectors where the impact may feed through more quickly (ie they are usually slower in life sciences where product testing can take longer to get to market).

These all had higher-than average employment impacts per pound of funding. Companies with lower than average outputs included those accessing fewer than 4 different SE business support products. Those taking their funding entirely via equity, and those having accessed two or more SE funds, also had higher impacts per pound of funding on average. These results are broadly consistent with the views of SE advisors that companies with more external support for the management teams and with more comprehensive sources of funding (via equity funds rather than loans) and those more interested in innovation and market development are more likely to be successful. Also, where the funding is over a longer period it is likely to have more impact.

Table 6.5 Short term employment benefit Economic impact ratios

High impact company characteristic	FTE/£m	Low impact company characteristic	FTE/£m
SSF Funding:* £100k	65	SSF Funding:* <£100k	46
SSF Funding: 100% equity	64	SSF funding: Some loan	40
2+ SE Funds	65	SSF only	56
SE assistance: <4 products	76	SE assistance: 4+ products	46
SE assistance: Market development	71	SE Assistance: Start development	31
SE assistance: Innovation	80	SE assistance: Investment	34
Non Life-Science / DMET sector	77	Life sciences sector	48
Funding Year: 09-10	78	Funding Year: 06-08	43
Non arms length co-funder	67	Arms length co-funder	51
Funding over 3 or more years	64	Funding over 1-2 years	58

* In addition to this, the probability of having high impacts increases as total SE funding increases.
A multivariate regression was undertaken using all of the variable in this table, but none were significant at the 95% confidence level.
Benefits are Net Additional-Attributable
Source: PACEC survey of SSF companies 2011

6.4.19 The relatively low impacts for the life sciences sector may reflect the fact that for companies in the sector it can take much longer for products to get to market (often because they required significant testing and trials before they are ready for public consumption) and hence stimulate jobs compared to some innovating sectors (eg DMET).

6.4.20 The GVA impacts relative to SSF investment suggested by the evaluation modelling are high (£24 GVA impact for each £1 SSF investment over the medium term at current prices, or £17 at constant 2011 prices). However, it is likely that for some companies, further funding support through the SIB (for example Scottish Co-investment Fund or the Scottish Venture Fund) will be required to achieve their turnover growth aspirations. This seems unlikely to have been factored in by the companies. This therefore suggests that the forecast impacts of some SSF investments are potentially overstated, although this is very hard to quantify.

6.4.21 Also, 24% of SSF companies received further funding support through Scottish Enterprise (with a higher proportion of debt funding) in parallel with or post-SSF awards. This was almost always the Scottish Co-investment Fund (SCF) (although one company had progressed to SVF). Although companies were asked to assess the effect of the SSF alone on growth, for many it may have been hard to disentangle the impacts of SSF from other funding support. This may also result in a slight overestimation of the GVA impacts relative to SSF investment, although again this is very hard to quantify.

6.5 Effects of company takeovers (Scenario 2)

6.5.1 Our research with SSF investors suggests that they would aim for a successful exit between years 5 and 7 after SSF investment. The available exits for investors include acquisition by another company (potentially foreign-owned). In the event of acquisition by another company, there is the potential for economic activity to be relocated outside Scotland (e.g. senior management being provided from overseas, relocation of administrative or manufacturing activities etc). We have prepared a second economic impact scenario to account for the potential impacts upon the Scottish economy if a proportion of the more successful businesses are taken over.

6.5.2 The parameters we have used to adjust our economic model for this new scenario (Scenario 2) are based upon our research with SSF companies and investors, and two further sources provided by Scottish Enterprise:

- Work undertaken by the Department for Business Enterprise and Regulatory Reform (BERR) and published in 2008 looking at high growth firms in the United Kingdom[38]; and
- Work undertaken for Scottish Enterprise, published in 2005, looking at corporate headquarters in Scotland[39].

The key finding of the BERR report was that over a period of ten years, around a third of the high-growth firms in the study were acquired by other firms. The Scottish Enterprise work focuses upon company headquarters in Scotland, but is relevant to this work as the great majority of companies in the sample were independent single-site businesses. This work suggests that, on average, employment in the companies which were acquired will have halved by ten years after acquisition. The acquired companies lost their autonomy and lost jobs in senior management to the HQ of the acquiring company, potentially leading to a relocation of their R&D and marketing functions.

6.5.3 The evidence from the BERR report suggests that by the end of Year 10, one third of the high-growth companies will have been acquired. The SSF investors stated that they would ideally aim for exit between years 5 and 7. As a result, we have assumed for this scenario that acquisition begins in Year 5 after funding, and occurs at a

[38] http://webarchive.nationalarchives.gov.uk/+/http://www.bis.gov.uk/files/file49042.pdf

[39] http://www.evaluationsonline.org.uk/evaluations/Search.do?ui=basic&action=show&id=2

constant rate until one-third of the companies have been acquired by the end of Year 15. This is equivalent to an annual acquisition rate of 6.5% .

6.5.4 We have made the further assumptions that the impact upon GVA will be the same as the impact upon employment (i.e. halving ten years after acquisition) and that the highest-growth firms are the ones that will be most attractive to potential purchasers. Elsewhere in the report we examine the distribution of companies and find that 19 are responsible for 80% of the GVA impact of SSF in the short-term. We assume for this scenario that these 19 companies are considered for takeover.

6.5.5 The 2005 Scottish Enterprise work referenced above suggests that employment will drop by 50% over the 10 years following acquisition. We have assumed that this employment loss will occur at a constant rate, starting the year after acquisition. This is therefore equivalent to an annual employment loss of 6.7%. This adjustment has been applied in the reference case as well as the intervention case (i.e. in the absence of SSF funding) because some companies claimed that they would grow in the absence of SSF funding and as such remain viable targets for acquisition. Companies that did not expect growth in the absence of SSF funding are unaffected by this adjustment calculation in any case.

6.5.6 In the long term (ie ten years plus), these effects would lead to substantial impacts upon the total performance of the SSF-funded firms. However, most of the effects occur outside the time impact frame used for this study (i.e. more than 10 years after funding). The companies which are affected most are those acquired in Year 5, which lose 29% of their employment and GVA by Year 10. The full employment impact is reached between years 15 and 20 after funding. Another factor mitigating the impact of acquisition upon employment and GVA is that the companies exhibiting the largest effects tended to have high leakage due to the location of staff and production outside Scotland. The impact of further loss due to acquisition is therefore lower on these companies.

6.5.7 Table 6.6 shows the grossed-up impacts in the medium term for employment and gross value added under the acquisition scenario (which we shall call Scenario 2) and the original scenario discussed previously, which we shall call Scenario 1. The effect of this on scenario 2 is to reduce the net additional attributable impact by 3% for employment and GVA.

Table 6.6 Grossed up impacts: Employment and Gross Value Added in the medium term under 2 scenarios

	Employment (FTE)		GVA (£m per annum)	
	Scenario 1	Scenario 2	Scenario 1	Scenario 2
A: Intervention case Gross	2,102	2,102	140	140
C: Intervention case Leakage	171	220	12	16
D: Intervention case Net	1,830	1,780	122	118
F: Intervention case Full Net	3,062	2,977	204	197
H: Intervention case Full Net– Losses	3,062	2,977	184	177
K: Reference case Leakage	42	46	4	5
L: Reference case Net	476	472	32	32
N: Reference case Full Net	793	784	53	52
P: Reference case Full Net – Losses	793	784	47	46
Q: Net Additional (=H-P)	2,269	2,192	138	132
R: Net Additionality (=Q/A)	108%	104%	98%	94%
S: Attribution	24%	24%	25%	25%
T: Net Additional Attributable (=Q*S)	546	528	34	33
V: Intervention case leakage ratio (=C/A)	9%	11%	9%	12%
X: Reference case leakage ratio (=K/I)	8%	9%	12%	13%

Note: In this table, "medium term" refers to the period 2017-2021.
The intervention case is what happened with the SSF programme.
The reference case is what would have happened in the absence of the SSF programme.
The gross effect is the full observable effect
The net additional effect takes account of displacement, leakage and multiplier effects.
Displacement is the impact on Scottish competitors.
Leakage is income falling outside Scotland.
The multiplier effect measures the additional jobs and GVA created in the supply chain.
"Loss" refers to the negative effect upon GVA of companies trading at losses
Attributable impact is that associated with the direct SSF expenditure.
Source: PACEC survey of SSF companies 2011

6.5.8 The main finding resulting from the preparation of economic impact scenario 2 is that the impact of company acquisitions upon the SSF-funded businesses and their economic activities over the time period of the study is likely to be small. The bulk of any reduction on economic activity in Scotland would be likely to occur more than 10 years after first funding. We would reiterate that the impacts for 2017-2021 are based on the responses of a relatively small number of companies, due to the difficulty in forecasting the performance of a potentially rapidly-growing company that far into the future.

6.6 Key points

6.6.1 The key findings from this chapter are as follows:

Panel 6.5 Business performance and economic impacts: key findings

- 64% of businesses had **increased their employment** as a result of the SSF funding
- 69% said SSF funding had safeguarded jobs and **prevented them from being lost**
- 64% had increased the value of their companies
- 62% had increased turnover
- By 10 years after their SSF funding, 90% will have increased employment and 92% increased turnover
- We estimate that 151 FTE jobs have been created or safeguarded due to the SSF funding over and above what would have happened anyway (i.e. 151 net additional attributable FTE jobs)
- In the short term (2012-16), we estimate that this net additional attributable impact will be 403 FTE jobs and £19m per annum GVA (at 2011 prices)
- In the short term, the estimated economic impact ratio will be £21k per net additional FTE job. £9.3m GVA per annum (at 2011 prices) will be generated per £1m of SVF spend.
- In the medium term, we estimate that the net additional attributable impact will be 546 FTE jobs and £26m per annum GVA (at 2011 prices), although this estimate is provided for illustrative purposes only as it is a very difficult period over which to forecast.
- In terms of impacts, there is some evidence to show that companies with the higher impacts are those that access support for innovation and market development, receive the maximum funding of £100k, received funding in 2009/10 and were outside the Life Science and DMET sectors.

Based on the evidence above, SSF has had a positive effect on the Scottish economy which would not otherwise have occurred in its absence. This effect is likely to increase in the future. At one level this provides value for money (VfM) in the sense that the impacts are not negative or trivial. However, the VfM compared to other schemes (funded by SE) is difficult to determine because there is little comparable quantitative information on similar equity / loan schemes.

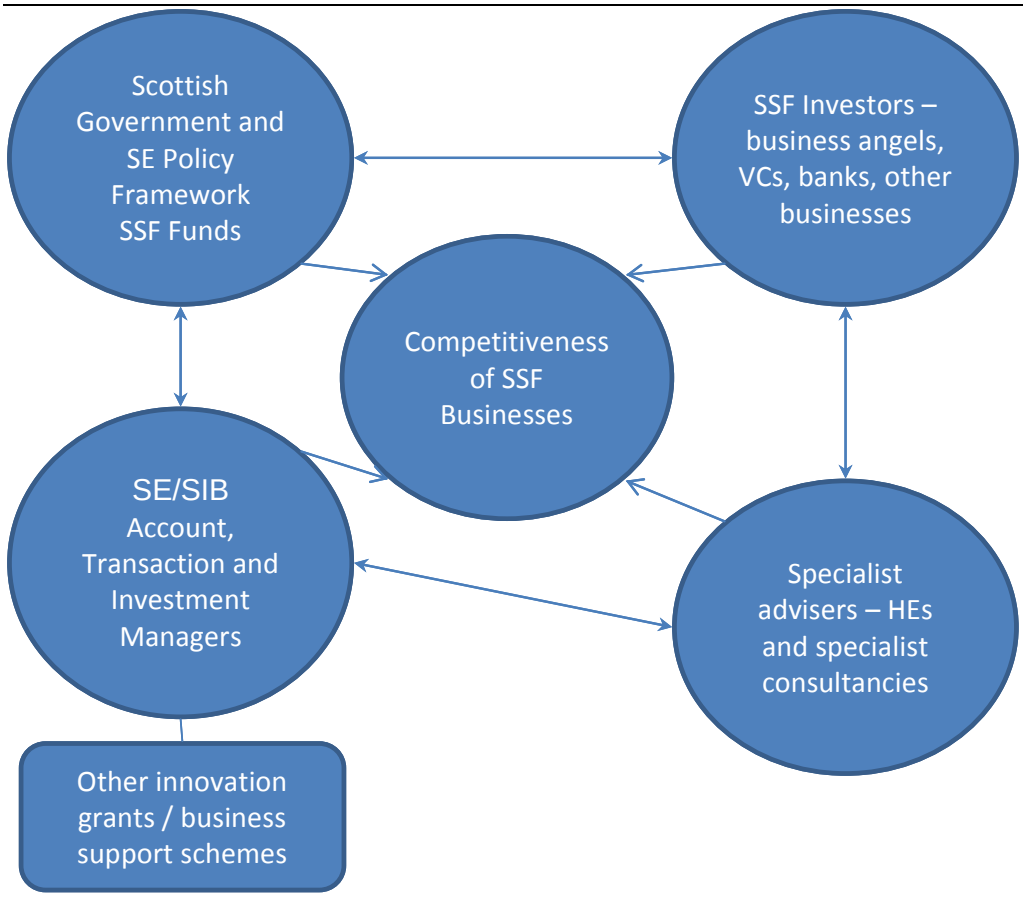
7 SSF Support and Other Advice

7.1 Introduction

7.1.1 This chapter examines the role of advice and support arising from SSF investment that helps to generate the outputs and outcomes (i.e. business performance effects) discussed in the previous chapter, and forms the sixth stage in the evaluation framework. In particular, part of the inquiry is to examine to what extent the SSF investors are considered to adopt a hands-on approach, in conjunction with SE/SSF advisers, in order to help ensure their investments bear fruit. The chapter also examines the use of support from other agencies. These advisers play an important role in the wider innovation and business support system, which helps demonstrate further the linkages and interdependencies for SSF businesses invested in.

7.1.2 The overall innovation support system is shown below in Figure 7.3. It comprises a number of key features; the policy framework of Scottish Government and Scottish Enterprise, the support from SE account managers and advisers on other schemes, the support from SSF investors through finance and advice and the advice and expertise and assistance from other specialists in the public and private sectors. In combination these contribute to the innovation and competitiveness of the SSF businesses.

Figure 7.3 The Innovation System for SSF Businesses



Source: PACEC

7.2 SE and investor support

7.2.1 The businesses receiving Scottish Enterprise support via the SSF scheme were asked the extent to which they had received advice and support from other funders. Some three quarters of the businesses had received assistance from Scottish Enterprise in the form of account management, but much less so from portfolio / investment managers. Two in five (45%) had an investor board member, and one in six (16%) had received regular advice from investors (i.e. some three fifths in total).

7.2.2 Two-fifths of SSF businesses said that assistance from their SE account manager had been "very important", and a quarter said that it had been "important". Account managers have provided strategic advice and business skills mentoring as well as referrals to other sources of information and specialist advice. But one in ten (11%) thought the assistance from their SE account manager was "not important" to them. About two in five (42%) considered they had received "very important" advice from their investors, and a third thought that the presence of a board member from investors had been "very important". The benefits of advice, on the whole, included: access to other sources of funding; financial and strategic advice including the market positioning of the businesses; alternative perspectives on the market; and

introductions to customers, suppliers, and collaborators to help move the business plan forward.

7.2.3 SSF companies have used a wide range of other support products provided by Scottish Enterprise and investors. At the seed stage, Investor Readiness and the High Growth Start-up Unit are well-used. Account-managed companies have received differing levels of direct support depending upon their stage of development, the skills of their management teams, the level of experience of their proposed investment partners, and their industrial sector.

7.3 The wider support used

7.3.1 The discussions with businesses focused on the nature of public or private sector support or advice used in conjunction with the advice arising from the SSF investment (over and above the investment and account management support provided by Scottish Enterprise). More than two-fifths (43%) of the businesses indicated they had accessed other specialist support or advice. The businesses that received less than the full £100k in funding were more likely than any others to have accessed support or advice; and almost two-thirds had done so.

7.3.2 In terms of the wider innovation and business advice system, more than two-fifths (43%) of businesses had used this additional advice, and mainly from higher education or university advisers (25%). This in part reflects the innovative nature of the SSF businesses. Fewer than one in ten used independent advisers or consultants (8%), other venture capital or business angel advisers (7%), or the SE Investment Readiness support (7%), aimed primarily at businesses with under £100k of SSF investment.

7.3.3 Businesses considered that the wider support they used was generally useful to them. The HE and university advisers were very useful, especially through advice on business innovation issues and R&D. Equally, the VCs and BAs were very useful for the business operation and finance issues. The more general business or innovation advisers were considered useful in the round.

7.4 Key points

7.4.1 The key findings from this chapter are as follows:

Panel 7.6 SSF support and other advice: key findings

- 76% of businesses had received assistance from their SE account manager.
- 45% had an SSF investor board member and a sixth had received other regular advice from their investors
- Two fifths of SSF businesses said that assistance from their SE account manager had been “very important”, a quarter said that it had been “important”.
- 43% of businesses had accessed other support or advice. Most commonly this advice was via higher education or university advisers as part of the wider innovation and business support system. This in part reflects the innovative nature of the SSF businesses.

8 The Businesses' Assessment of SSF

8.1.1 Part of the evaluation is concerned with the lessons learnt and what may be appropriate to develop and improve the SSF scheme in order to enhance the outputs, outcomes, business performance and economic impacts discussed in the preceding chapters. Consequently, this chapter forms the eighth stage of the evaluation framework, and sets out the views of businesses. The views of the private investors are shown in the next chapter.

8.2 The good and poor aspects of SSF

8.2.1 The final section of the business interview sought views on the various aspects of the scheme. Notably, two-thirds of businesses said they did not consider that there were any poor aspects of the scheme. The most common negative feature, mentioned by 11% of businesses, concerned the length of time taken for funding to be made. Other aspects that were identified by a small minority of the businesses to be unsatisfactory included the application procedures (7%), the investment criteria (7%), and support from the SE team (also 7%).

8.2.2 A quarter of businesses did not single out any particular aspect of the SE funding for comment. More generally, though, almost three-fifths (58%) rated the scheme as good overall. Where they were more specific, around two-fifths thought that placing no restriction on what the funding could be spent on was a good aspect of the support. This was particularly the consensus among firms for whom SSF was the only SE funding received to date (58% of these). Another two-fifths thought that the business benefits of the scheme were good; and this applied particularly to 55% of those for whom SSF was the only SE funding received to date. About one in three also thought the amount of funding was good. Again, businesses benefitting from only one fund were the most likely to highlight the amount of funding made available.

8.2.3 **These points reflected the views of the SSF investors shown in Chapter 9 in that the majority thought that most aspects of SSF were good. Very few said any aspects were poor.**

8.2.4 The SSF businesses showed a high degree of awareness of the full suite of SE funds for different stages of development available through SE (i.e. in particular SSF, SCF and SVF), with 93% stating that they were "very aware" of the full suite, and 5% "quite aware".

8.2.5 Just over a third of the SSF businesses said that the relationship between SE funds was wholly consistent and cohesive. Just under a fifth thought that the relationship between SE funds was "largely" consistent and cohesive, and around one in ten (12%), that it was "partly" consistent and cohesive. The remainder with a view considered that consistency and cohesiveness existed "to a small extent" (6%) or not at all (also 6%). On the other hand, one in five said that the question was not applicable to them.

8.2.6 **The views on the consistent and cohesive role of SE investment schemes were shared by SSF investors.**

8.2.7 Overall, around a quarter (27%) of businesses said that SE funds had improved the scale and quality of **funding** for businesses "significantly", 48% thought that scale and quality had been improved "to a large extent", while 15% said that there had been an improvement only "to some extent" while the others had no view.

8.2.8 When they were probed further, two-fifths of businesses indicated that SSF had improved the scale and quality of **advice** for businesses in Scotland "to a large extent", and a further 22% believed it had been improved "significantly". Only about one in ten said there had been no change to the scale and quality of business advice available. However, it is quite possible that the particular circumstances of each business may colour their view of how the entire business community is affected. The remainder were not sure of the impact on advice

8.2.9 Interviews with SE advisors indicated some positive changes have come about since the inception of SSF, including the use of convertible loan options, improvements to transaction speeds, the quality of investor liaison, and the general capability that had built up through the experience of administering SSF. These were mentioned as key changes. It was considered that some work needed to be done to maintain and improve the quality of the propositions which are brought to SSF, including advising the management team and making sure that professional investors are involved at an early stage in all rounds of investment – this will help ensure that businesses will be ready for the next rounds of funding and therefore help to maintain growth.

8.2.10 Lastly, 28% of the SSF businesses said they expected future positive impacts reflecting the ones already covered in this research. Two-thirds thought that the research had taken account of all the actual and likely impacts.

8.3 Key points

8.3.1 The key findings from this chapter are as follows:

Panel 8.7 The businesses' assessment of SSF: key findings

- 43% of businesses thought that the **business benefits** were a particularly good aspect of SSF support and advice
- 43% thought that the options for **what funding could be spent on** were particularly good
- 34% considered the **amount of funding** to be particularly good
- 11% thought that the time taken for funding to be granted was an unsatisfactory aspect of the scheme
- 35% of businesses believed that the relationship between SE funds (i.e. SSF, SCF and SVF) was wholly **consistent and cohesive**; 18% thought it was largely so, and 12% partly so
- 42% of businesses said that SSF had **improved the scale and quality of advice** for businesses in Scotland "to a large extent", and a further 22% thought that these had been improved "significantly"

9 The Impacts on the SSF Investors

9.1 Introduction

9.1.1 This chapter builds on the previous chapters which have covered the company impacts. It deals with the issues in the evaluation framework (outputs, outcomes, and lessons) from the perspective of the investors in the private sector (i.e. primarily business angels and syndicates). The analysis initially covers the characteristics of investors, and their aims in investing through SSF. It sets out the assessment of the market failure and feature issues, how SSF addresses these and the reasons for investing through SSF. It examines the role of SSF in encouraging more funds and investors into the Scottish market. It outlines the benefits to the partners (and businesses to compare with the business views). The final section considers the views on the management arrangements and improvements suggested by investors, i.e. the lessons learnt.

9.1.2 The interviews were held with some eleven private investors, a number of whom were managing business angel funds, on a confidential basis, who focused on SSF and some SVF investors[40]. There were also discussions with financial stakeholders and advisers on funding in Scotland who had views on SSF[41]. They had invested in a reasonably representative sample of some twenty six companies through SSF. Generally the private investors and stakeholders shared the same views reflected below. Where they are different it was mainly by the size of the investors in terms of the number of investments they made, i.e. those who generally made fewer investments per annum are referred to as the smaller investors. The percentages in the tables and charts have been rounded to take account of the number of interviews.

9.2 The Characteristics of Investors

9.2.1 The management information shows that there were a range of private investors and business angels who had invested in businesses by size of investment portfolios and the number of investments. Many of the private investors operated as part of a syndicate, especially for the smaller businesses, with increasing rounds of investments and larger investments compared to the mid 2000s in part because the VCs were tending to make larger investments in more mature businesses. Hence a gap was developing between business angels and VCs in the funding market.

9.2.2 The majority of the investors made investments in the key priority growth sectors in Scotland with the focus on digital media, life sciences and health, energy, food and drink, aerospace and electronics. The overwhelming majority are UK investors and

[40] In the chapter the term investor is used for private investors, including business angel fund managers, and stakeholders for the sake of brevity.

[41] They include LINC Scotland, the Scottish Government, and academics who have carried out research on the Scottish funding market.

can invest internationally. Almost all the private investors are based in Scotland and many invest with business angel syndicates.

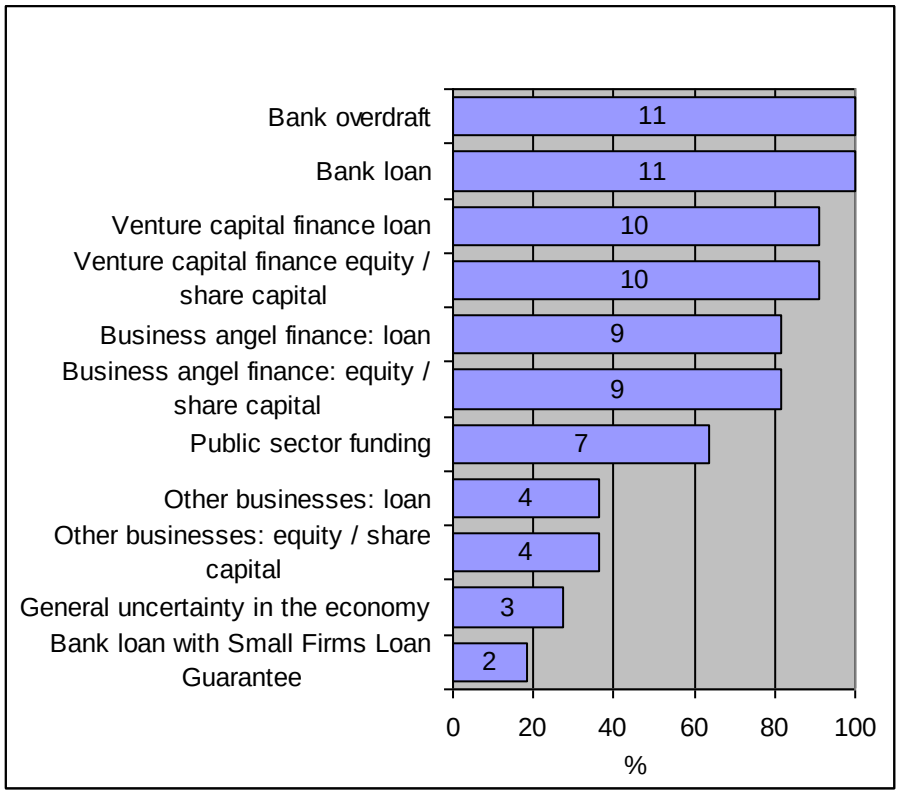
9.2.3 As with the business angel and venture capital sector as a whole, the SSF investors are highly selective when making investments, especially at the seed or start-up stage. This is particularly the case for the smaller investors. The average number of potential investments for individual private investors (by company) per annum in the past two years has been in the range of 200 to 500 potential opportunities in total (including Scotland and elsewhere). Of these some 1% to 3% are approved, with 97% to 99% refused.

9.2.4 Investments are made initially at the concept, seed and start-up stages and potentially often in several rounds thereafter. Over a period of 5 to 7 years or more in the current economic context a listing, trade sale, or disposal to VCs is sought based on clear and demonstrable revenue streams, profitability and a reasonable / strong market position with good future prospects.

9.3 Capital Market Failures and Features

9.3.1 The shortage of funds for start-up and early growth businesses which are viable is a key issue for SE and SSF. The economic and investment climate had been critical for investors over the past two to three years, especially for start-up and seed businesses, arising from the credit crunch, recession, and ongoing uncertainty in markets. All the investors interviewed (ie eleven) as part of the evaluation considered that there was a lack of funds, as a feature of the market, available with respect to seed finance and this had persisted before and since the establishment of SSF and businesses faced significant issues when seeking to raise finance (i.e. reported by 90% of funders). The views on the types of finance that are limited are shown below in Figure 9.4. All the investors considered businesses faced problems accessing bank overdrafts and loans for use as operational finance. However, business angel and venture capital equity with loan (mezzanine) finance was slightly easier for the right start-ups to obtain. It was considered that public sector funding was in short supply generally because of expenditure reductions.

Figure 9.4 Limited capital available by type of finance



Each bar in the figure shows the number of investors that responded
Source: PACEC Interviews

9.3.2 **The research with SSF businesses confirms the views of the investors in that many of the businesses could not find alternative funding to SSF that met their requirements and conditions.**

9.3.3 The discussions with the investors sought to examine evidence of the market features and failures for capital in that some viable companies at the start-up and early stages found it difficult to obtain the finance they required and the reasons. The main types of market failure and features on the supply side, drawing on the wider theory and literature , are summarised below and these are tested through the discussions with investors :

- **Shortage of information or information failure.** This arises because businesses for potential investors are not known[42] through sources and investor networks. This may be particularly the case for start-ups and very early stage businesses who have less market prominence compared to later stage and larger businesses[43].

9.3.4 The interviews with investors examined some aspects of the process that investors go through to identify and assess investments. These are simplified in the discussions and reporting below and in practical terms overlap. The discussions examined, initially, the extent to which investors were able to have sufficient information to identify businesses to invest in. It was considered that this was not

[42] HMSO. The Green Book. 2010 edition.
[43] HMSO. The Green Book. 2010 edition.

likely to be the case for a range of businesses for potential investments as they were small, early stage and lacked visibility. Investors became more aware of investment opportunities through their own searches and approaches by potential businesses and their extensive network and interactions with other business angels, investors and agencies including those with SE. However, it was considered that some viable businesses would not come to the attention of investors as they were early stage and small.

- **The high cost of due diligence and transactions,** ie small equity deals with fixed transaction costs require disproportionally higher due diligence, research and exit costs than medium sized and significantly larger deals[44]. This acts as a disincentive to investors and makes it more difficult for them to distinguish good borrowers from bad ones[45], especially where the start-up and very early stage businesses are concerned who may not have revenue streams. This is a major disincentive for investors when considering the smaller and early stage businesses. Without due diligence which provides research information it is more difficult for investors to distinguish good investments, amongst the early stage businesses, compared to bad ones.

9.3.5 The filtering of potential investments for some form of review / due diligence once investors are aware of them, ie the 300 to 700 per annum potential opportunities mentioned above (of which some half to two thirds are probably early stage) takes place in stages by investors. On the basis of experience, and because many of the proposals from early stage businesses were not very thorough, a high proportion are considered as unsuitable fairly quickly and probably up to 5% to 6% are selected for some form of review / due diligence as being potential investments and hence viable prior to full due diligence. Part of the reason for then not proceeding with full due diligence reviews was the high cost relative to the potential returns (compared to the intermediate and larger investments) and the resources available to investors. The investors agreed that especially for the start-up and early stage businesses, where initial / first round investments were being considered, the costs of due diligence were thought to be too high and investors needed to be selective and cautious.

- **The perception of risk.** Start-up and very early stage deals are thought to be higher risk. Very young companies have unproved performance (eg many may not have revenue streams or profits), have less experienced management staff, and assets of uncertain value for collateral. Data on deal returns generally is limited as only a few growth funds exist with comparable data. Investors can become excessively averse to risk, especially for new and very small unproven businesses. In this context investors may maintain their existing portfolios rather than identify new investment opportunities.

9.3.6 For the final stage of the selection process the discussion with investors focused on why the potentially viable early stage businesses were refused funding at the due diligence stage. These reasons reflected the other market failure and feature issues associated with risk, highlighted above. The main grounds for refusal were that ultimately businesses were into early stage and so seen as too risky (90% of investors). For many the revenue stream was not strong enough or the prospect of it not sufficiently clear. These views in some cases demonstrate risk aversion on

[44] Scottish Enterprise. Market Failure in the Scottish Risk Market. R T Harrison report.

[45] Centre for Business Research. University of Cambridge. Financing UK SMEs. 2007, 2010.

behalf of some investors. Other reasons for not responding to companies seeking funding was that the business team, the products and the investment readiness were not strong enough, or too much money was sought.

- **Past poor performance**: Historically, there have been low returns and yields on investments in high tech companies, especially the start-up and early stage one (eg the dot com phase). For example, in the 1980s, investors often made very low returns when financing very early stage high technology companies as a result of poor quality investment decisions (the investment industry had little knowledge of making technology investments). Poor returns continued with the long recession of the 1990s. This has led to a current perception of poor returns from this type of investment.

9.3.7 The risk factors above were more pronounced where high tech companies were involved and the uncertainty increased, partly because of the high risks at the research and development stage, especially for start-ups and early stage businesses. For these businesses there could be a single product, with long lead in times for commercialisation and subsequent revenue streams, coupled with uncertainty over the market and potential competition. There was also the possibility intellectual property could be copied – although there could be some very successful high fliers with strong growth in percentages terms from a small revenue base.

- **Limiting risk exposure and larger deals** – the business angel and equity sector has in recent years sought to limit its exposure to risk. They have sought to focus on a smaller number of investments where the fund manager (often operating for syndicates) can have more control and influence on business operations and strategic decisions. This has reduced investment in earlier stage deals even with the more established businesses.

9.3.8 The investors confirmed that this was the case and a hedge against this was spreading the risks through syndicates. There was a gap was opening up in the traditional flow of funds between the business angels and syndicates and the venture capital companies. The business angels, through syndicates, had sought to fill this emerging gap to some extent. The literature on the funding market also shows this trend[46].

- **Fund manager remuneration** compared to early stage investments (ie for the SSF businesses) later stage and buyout deals have provided better returns and personal remuneration for fund managers so that there is less incentive for them to invest in earlier start-up stage deals.

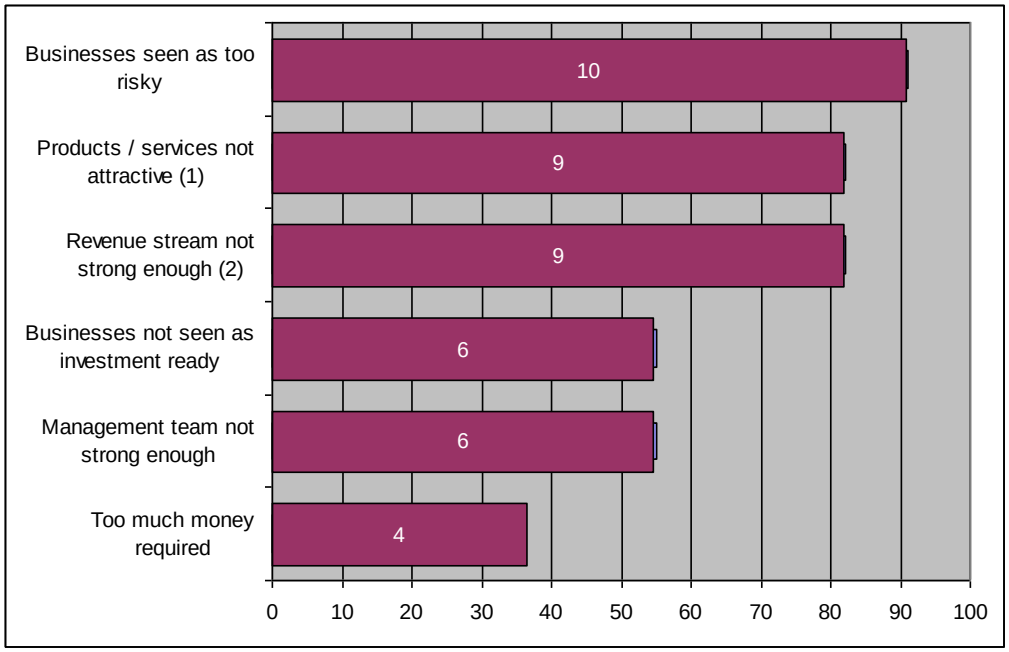
9.3.9 The investors accepted this to some extent, although a portfolio spread was usually the case as investors focused on the early stage market anyway and were reluctant to turn smaller scale funding opportunities away – because of the growth potential from a small base. This market feature is reinforced to some extent by the fact that due diligence costs are proportionally higher for early stage investments and fund managers sought to keep their costs down as part of their overall portfolio management and performance considerations.

[46] Richard T Harrison, A Case Analysis of SCF and Evaluation of ERDF Supported Venture Capital and Loan Funds and the Scottish Co-Investment Fund, Scottish Executive 2008 and LINC Scotland, the Business Angels network, Scottish Government and academics

9.3.10 The factors above, and the fact that capital generally, in the current context, has gone into higher performing, less risky and more liquid capital funds and alternative assets, with a higher degree of investment switching, have all led to a lower than optimal supply of funding to viable early stage businesses.

9.3.11 An improvement in information, in itself, is not sufficient to overcome market failure, nor is a commitment to due diligence costs, where risk aversion (or excessive risk) results in the shortage of funds for the early stage businesses.

Table 9.7 Investors' views: reasons why funding is refused



1: Uncertainty about the uniqueness of products, the fact that IP could be copied, and too much competition
2: A future potential revenue stream was not identified or apparent
Source: PACEC. Interviews with investors

9.3.12 The discussions with key investors demonstrate that each of the market failures are relevant to SSF in their different ways and that potentially businesses face shortages in terms of capital. All the factors are interrelated and influence one another.

9.3.13 SSF investors considered that the notion of a "funding gap" was difficult to define in value terms in the current economic and financial climate. Table 9.1 shows that it was considered to be relatively difficult and between £100,000-£500,000 – identified by some three quarters of investors.

Table 9.1 Market failure: the funding gaps

£ value of funding gap	Percentage of all investors	Number of investors
Less than £100,000 (start-ups)	36	4
£100,000-£500,000 (early stage)	73	8
£500,000-£1,000,000	27	3
£1,000,000-£2,500,000	45	5
£2,500,000-£5,000,000	45	5
More than £1 million	27	3

Respondents could select several options; so percentages in any column may sum to more than 100
Source: PACEC Interviews

9.3.14 Funding issues arose for companies for all operational and development costs within a relatively even spread for particular types of expenditure e.g. product development / innovations, premises and marketing costs.

9.3.15 Generally, it was considered that the availability of early stage funding would only improve partially over the next 2 to 3 years for both loan and equity funds. Where early stage businesses depended more on the banks this was likely to be the case in spite of government stipulations and policies to encourage the flow of finance. It may be slightly easier for the start-ups and early stage businesses because they required smaller amounts of finance and a small increase in the total available may help them more – subject to the investment risks. The smaller investors did not foresee any change over the next few years that would result in a more positive environment especially amongst the banks.

9.4 Reasons for Investing Through SSF

9.4.1 The reasons for co-investing in SSF for all investors were to grow their businesses, increase the profits, increase the value of their businesses and the assets primarily through trade sales (or exit) or disposal of equity to VCs over an optimal planning period of some 5 to 7 years (a period which had lengthened because of the credit crunch, recession and increased uncertainty). SSF also allowed investors to reduce the risk through co-funding with other private investors (in addition to SSF), to tap into SE local / sector knowledge and experience and SE advice available to them and to the businesses. Three quarters of investors took a place on the company board or were regular advisers in order to play a strategic role in the companies but all liaised with the companies and closely monitored investments. This was especially the case for the smaller investors.

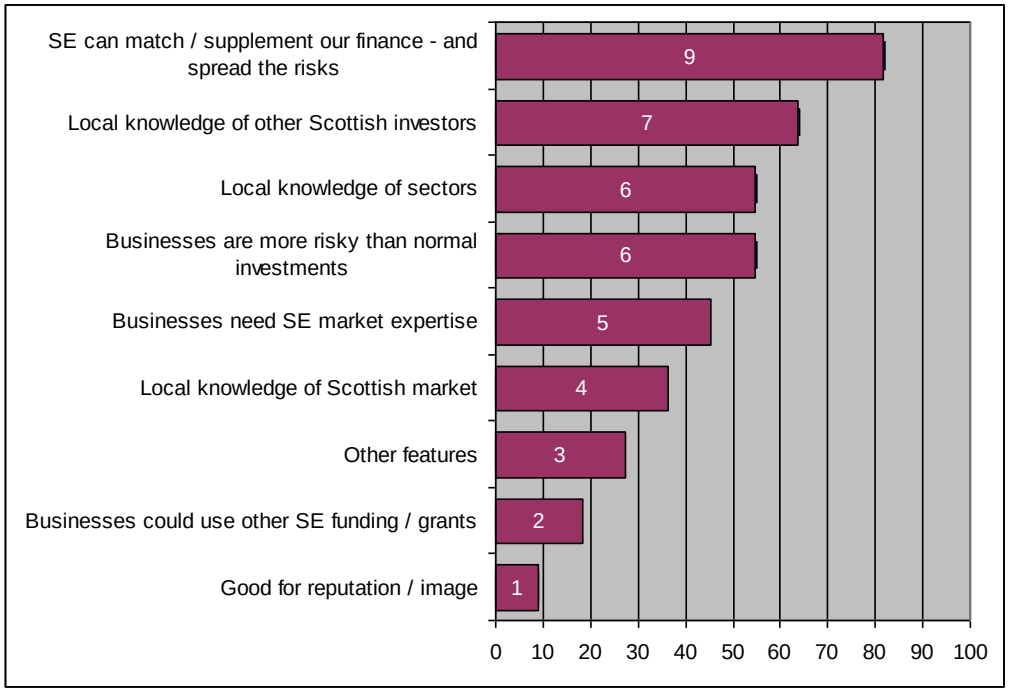
9.4.2 The views of investors on why businesses used SSF were to obtain working capital and meet the funding gaps (in terms of overcoming **market failure** with respect to finance), help their businesses grow, improve profitability, help them get to market, improve competitiveness, and fund new products and services. Smaller investors stressed the need to use the initial finance to lever in other funds. Less emphasis was put on innovation, R&D, and technology issues, although they were seen as important for early stage businesses.

9.4.3 The SSF businesses invested in had in many cases (ie three fifths of businesses) sought alternative finance to SSF but a third of them respectively did not obtain the funding they sought or only received partial funding, primarily because they were deemed to be too risky or not investment ready. Almost a third of businesses did not seek alternative funding, for similar reasons, or because they thought that equity funding would mean a dilution of their ownership, or intellectual property rights, which they were not ready for at their stage of development. Hence there was a degree of aversion to equity.

9.4.4 Most of the investors identified companies to invest in themselves and brought these forward for investment to SE and the transaction managers. In parallel there had been some prior liaison with SE account managers. In some cases SE or other private investors also identified the opportunities. The two main sources of deals were other business angels and the syndicates (especially for the smaller investors) followed by the larger venture capital companies bringing the opportunities forward that were more suitable for BAs and syndicates prior to discussions with SE transactions and investment managers for SSF funding (i.e. 91% of private investors stated this). Businesses themselves also approached the private investors (for 88% of investors). A third of investors were already working with the start-ups. Ongoing funding rounds were initiated by the private investors themselves or the businesses that had been invested in.

9.4.5 The most important reason for investing through SSF was that the funds were available to match investors' capital. This spreading of risk was a key part of addressing the market failures and features where investors in particular thought the businesses were too risky. The SSF finance also helped them lever in other investors over time. This spreading of risk with SE was the aim of four fifths of investors (and especially the smaller ones). Hence SSF was addressing some of the supply side financial constraints. For almost two thirds of investors, SE advisers also had local knowledge of other potential investors (67%) and of the industrial and opportunity sectors in Scotland (55%). For over a half the investments were more risky than usual investments. Hence the co-investment with SE.

Figure 9.5 Investors: reasons for investing through SSF



Each bar in the figure shows the number of investors that responded
Source: PACEC Interviews

9.4.6 A key issue is the additionality of SSF and how investors may have acted without it. Over half of the investors would not have invested in the businesses at all without SE and 36% would only have made a partial investment (i.e. 91% in total) which shows a high degree of SSF additionality. Only one investor would have invested a similar amount of capital in the same businesses, primarily because they considered that the risk was not great enough to deter them. None would have invested to the same level without SE, which shows the contribution of SSF to helping address the supply side funding gap and the **market failure** issues associated with risk (acting as a deterrent to business investment).

Table 9.2 Investors would have invested in the business without Scottish Enterprise

	Percentage of all investors	Number of investors
Yes, wholly	0	0
Yes, largely	9	1
Yes, partially	36	4
Not at all	55	6

Source: PACEC Interviews

9.4.7 Private investors would only invest in businesses without SSF where the businesses were less risky (100% of private investors) and/or the businesses could be sold (73%), were growing (64%) and were showing profits (55%). Hence investors did not use SSF where businesses were less risky and were safer investments.

9.4.8 Almost all investors did not think that SE would invest in the same companies anyway through other programmes without the SSF private investors.

9.4.9 Discussions with the investors showed that some 55% of them would not have invested in the same start-up and very early stage businesses anyway – SSF encouraged them to make more investments than they otherwise would have done as it helped spread the risks.

9.5 The Impact on the Funding Market

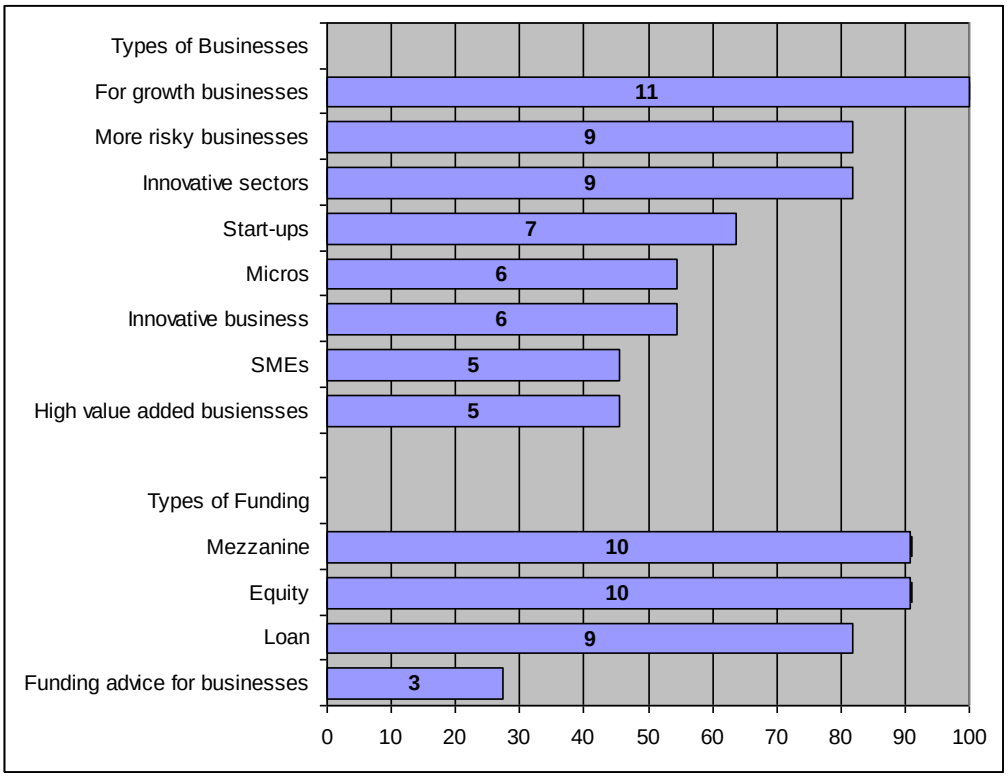
9.5.1 With market features and failure causing a funding gap in Scotland in terms of seed finance, one of the key aims of SSF is to change the funding market and improve the supply of funds in Scotland for the start-up and early stage businesses and hence the operation of the funding market, including the participation of investors who may not otherwise have invested. All private investors considered that SSF had improved the scale and quality of seed funds available in Scotland significantly or to a large extent and the funding pipeline had been extended (along with SCF and SVF). Hence SSF had been a significant intervention to help alleviate the **market failure** issues in terms of seed finance. Correspondingly, all private investors said that funders were more active in the Scottish market than they would otherwise have been although most of these were already located in Scotland. The amount of finance levered in is difficult to estimate.

9.5.2 A key feature of SSF is that it had improved the supply of commercial funds through deals with SE, ie the SE finance was being used commercially, supported by the aims to stimulate returns through business growth.

9.5.3 Follow-up interviews with businesses and advisors suggested on balance that the supply of equity funding in England (particularly London, Oxford, and Cambridge) was stronger, although this feeling was not universal; in particular, Scotland was perceived to have emerging strengths in the cleantech and renewable sectors for start-ups and early stage businesses.

9.5.4 As a result of SSF, some 90% of private investors considered that equity funds (from BAs and VCs) had improved (with respect to the scale of funding and quality), while 82% thought loan funds had improved and two thirds said start-up funding had strengthened. The availability of finance had improved in particular for growth businesses (all private investors), and the innovative and the more risky businesses sectors (82% of private investors). For almost two thirds of investors funding for start-ups had improved and just over a half said finance had increased in supply for the more innovative businesses and micro businesses.

Figure 9.6 Improvements in the types of funding for businesses in Scotland



Each bar in the figure shows the number of investors that responded
Source: PACEC Interviews

9.5.5 The participation of investors had also strengthened the market because they levered in other BAs through syndicates and in their own right. The smaller investors placed more emphasis on this impact.

9.5.6 Other research shows that SSF compared favourably with SCF [47]. The SCF model had helped develop the local financial community by increasing the deal capacity of investment partners and attracting investment partners not previously involved in company finance in Scotland.

9.5.7 None of the SSF investors thought there had been any crowding out, or displacement, of investment funds in Scotland as a result of SSF. Other research reached similar conclusions for SCF. The structure of SCF, with investment partners bringing deals to SCF, ensures that there is no displacement of private sector finance providers – indeed, the SCF evaluation concluded that SCF is likely to enhance the market rather than displace other providers because it only invests in deals that are brought to it by other venture capitalists[48].

[47] Richard T Harrison. A Case Analysis of SCF and Evaluation of ERDF Supported Venture Capital and Loan Funds and the Scottish Co-Investment Fund, Scottish Executive 2008

[48] Richard T Harrison. A Case Analysis of SCF and Evaluation of ERDF Supported Venture Capital and Loan Funds and the Scottish Co-Investment Fund, Scottish Executive 2008

9.5.8 The private investors considered that there was something of a gap emerging between the investments of BAs (at an early stage) and VCs at a later stage, i.e. some segmentation in the market. This issue was highlighted more strongly by the smaller investors. The BAs were investing in slightly smaller and larger amounts per deal and the VCs were tending to invest larger amounts and over £5m, leaving a funding gap between the two. Hence the chain between BAs and VCs was weakening with the BAs forming syndicates to try in part to address this with increased rounds of funding per business[49].

9.5.9 Interviews with businesses and SE advisors also highlighted the emergence of the funding gap between BAs and VCs. One suggested barrier to greater BA funding was the existence of Enterprise Investment Scheme (EIS) tax reliefs which proportionally disadvantage BAs from providing higher levels of funding. VCs were also seen as increasingly more likely to invest in later-stage companies falling outside SSF investment parameters.

9.5.10 Other research shows that SSF had some similar impacts to SCF. The SCF model had helped develop the local financial community by increasing the deal capacity of investment partners and attracting investment partners not previously involved in company finance in Scotland[50].

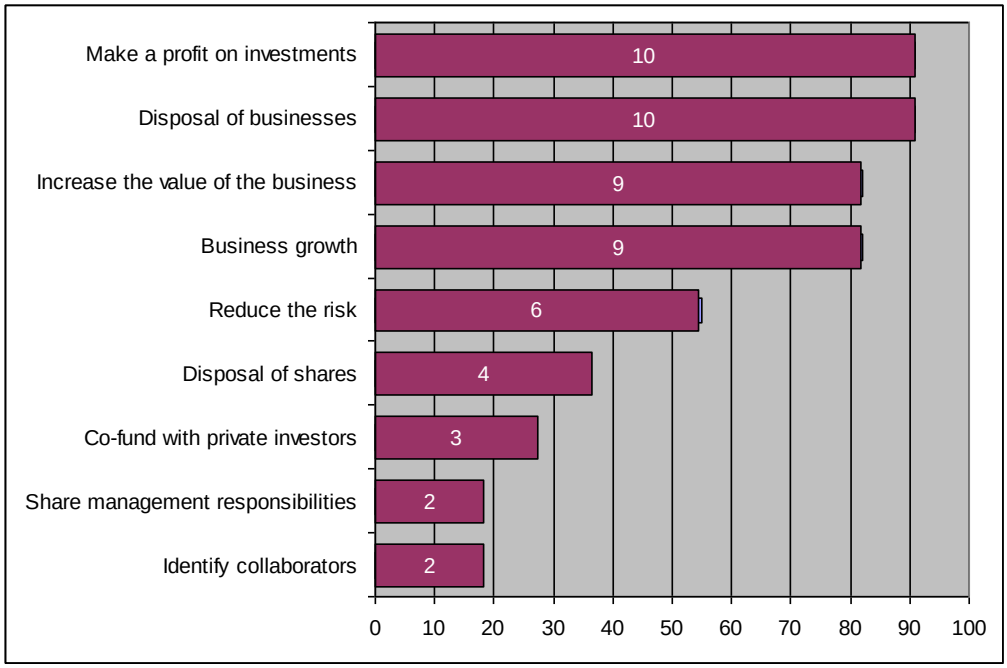
9.6 The Benefits for Investors

9.6.1 The main actual benefits for the private investors were that they had reduced their exposure to risk (reported by two thirds of investors and especially the smaller investors), grown the businesses invested in and increased their value and profitability. The likely future benefits were disposal of the businesses primarily through trade sales or listing and a profit on investments (i.e. nine out of ten businesses), together with an increase in the value of the businesses and business growth (c.82% of investors for each benefit). Not all investors made these points, so it is possible some investments could fail. See Figure 9.7.

[49] This trend is confirmed in other research. LINC and SSF Business angel Thinking on Exits. International Paper. Based on research by Robert E. Wiltbank

[50] Richard T Harrison. A Case Analysis of SCF and Evaluation of ERDF Supported Venture Capital and Loan Funds and the Scottish Co-Investment Fund, Scottish Executive 2008

Figure 9.7 Likely benefits for investors



Each bar in the figure shows the number of investors that responded
Source: PACEC Interviews

9.6.2 In terms of the additionality of SSF, for four fifths of private investors, these benefits would definitely or probably not have occurred without participation in SSF. This was especially the case for the smaller investors. For a fifth they possibly would have occurred through investments in the same or other similar companies. However, these the benefits would have been smaller in scale, shallower in scope and potentially later in time which helps to illustrate that the deadweight aspect of SSF is relatively low.

9.6.3 For businesses invested in, the investors considered that the actual benefits were that the investments helped the businesses to meet a funding gap (addressing the market failure issues), obtain working and risk capital and grow. All investors identified these benefits for the businesses invested in. The other main actual benefits were that the businesses at the seed stage were helped to get to market more quickly and develop a revenue stream with relatively early funding and could demonstrate an improvement in their profitability. The likely future benefits arising from SSF funding that investors expect over the 5 to 7 years of their investment prior to exit are shown in Table 9.3. They include continued investment to meet funding gaps and address the ongoing market failure issues, business growth and improved profitability (73%). The other main benefits were likely to be increased prospects of selling out / merging with other businesses, obtaining more working and risk capital, helping the businesses get products / services to market, improved competitiveness and a strengthening of the management team. All these factors were identified by almost two thirds of investors or more.

Table 9.3 Investor views: likely future benefits for the business invested in

	Percentage of all investors	Number of investors
Business growth	73	8
Meet a funding gap	73	8
Provide working capital	73	8
Improve profitability	73	8
Help the business get to market	64	7
Obtain further early funding	64	7
Provide investment capital	64	7
Improve competitiveness	64	7
Strengthen the management team	64	7
Obtain business operational expenditure	64	7
Develop new products / services	64	7
Sell out / merge / be taken over	64	7
Test technical feasibility	45	5
Test commercial feasibility	45	5
Improve R&D	36	4
Improve innovation	36	4
Improve cash flow	36	4
Lever in other finance	36	4
Become the market leader	27	3
None of the above	18	2

Respondents could select several options; so percentages in any column may sum to more than 100
Source: PACEC Interviews

9.6.4 The businesses that received SSF funding generally agreed with the views of investors on the business benefits. See chapters 4, 5 and 6.

9.6.5 Investors thought that some four fifths of businesses would not have achieved the same benefits without SSF (with the smaller investors underlining this view). A small proportion may possibly have achieved similar benefits but they would have been later in time, smaller in scale, and moderately different in scope and depth. No businesses would definitely have achieved the same or similar benefits.

9.7 Potential Improvements to SSF

9.7.1 The majority of private investors considered that most features of SSF were “good” (which also reflects the views of businesses), and the scheme was well managed by SIB / SE staff. In particular the amount of funding available (stressed by the smaller investors) was a strength along with the ability to graduate to other funds including seed funding such as the co-investment fund (SCF), the flexibility of the scheme and the “application” procedures. The support from the SE team in terms of their investment and market knowledge with respect to early stage businesses was also highlighted.

9.7.2 There were very few investors who considered that any of the features of SSF were "poor". Some suggested improvements, referred to by a very small minority of investors, were giving more discretion to the SIB / SE staff to go ahead initially and with further funding rounds for businesses to prevent potential delays, speeding up the decision process and providing more certainty, on the use of SSF. This may reflect the view of investors that they make decisions relatively quickly when they undertake due diligence. A further suggestion was a reduction in the amount of information required from private investors (although it was recognised that approval for the use of public finance required greater scrutiny to help ensure it was justified and represented value for money). A reduction in approval times was also suggested, and an increase in the overall amount of funding that could be made to individual companies – subject to the availability of funds. For investors, the potential use of the SCF and the Portfolio Fund would mean further decision making time periods.

9.7.3 The SSF businesses confirmed the views of the investors - three fifths said that overall SSF was "good" and two thirds did not consider that any of the factors were "poor". The suggestions for improvements mirrored those of investors.

9.7.4 The Seed Fund investment management team within SIB has a large portfolio of companies to deal with. This necessarily means that resourcing decisions need to be made about which companies to focus support. Two key factors are the size of investment (and potential for return) and the relative needs of companies for basic business support such as management effectiveness and financial know-how. Interviews with account managers and SIB staff suggest that there is a constructive level of interaction between SIB and the other SE support services available. At Seed Fund level, many companies do not have SE account managers, and the most important SE service available is Investor Readiness (with Proof of Concept also valuable). Effective signposting to these services, and effective liaison with account managers (where appropriate) prior to SSF investments, enables SIB staff to focus their portfolio management activity on larger investments, companies with significant potential for growth and a return on investment, and on companies with more experienced management teams.

9.8 Key points

9.8.1 The key findings from this chapter were as follows:

Panel 9.8 The impacts of private investors of SSF: key findings

- All funders considered that start-up and early stage businesses faced issues raising finance in Scotland and the market failure issues for capital persisted.
- On the issue of the information, in that investors were not able to identify businesses, it was likely to be the case as the early stage businesses were small and lacked visibility. It was the case that some viable business may not come to investors' attention even though they were approached by relatively large numbers of businesses (a high proportion were start-ups or very early stage businesses) and had networks and interactions with other investors (eg business

angel syndicates) and agencies. However, improving this information in itself is not sufficient to address market failure issues at the point of funding when potential deals can be made.

- Investors consider that relatively high due diligence costs, especially for the very small and early stage businesses (a type of market failure) and was a potential constraint for initial / first round investments.
- A key reason given by investors for not funding very small and start-up businesses were that they were seen as too risky, even at the review / due diligence stage (especially for the high tech businesses at the proof of concept, research and development stages where there could be very long lead in times for commercialisation and uncertainty over the protection of intellectual property, the strengths of markets and the competition) which gives an indication of market failure and is a feature of the market.
- A focus on larger scale deals with a known portfolio of businesses was a hedge against risk which potentially reduced capital for the early stage businesses and was a feature of market failure – and again is a feature of the market.
- Investors were influenced to some extent by the higher personal and remuneration rewards associated with relatively successful larger investments compared to smaller ones in early stage businesses.
- Over half of the investors would not have invested in the businesses without SSF. 36% would only have made a partial investment (i.e. 91% in total).
- All investors considered that SSF had improved the scale and quality of seed funding in Scotland significantly or to a large extent.
- A key feature of SSF is that it had improved the supply of commercial funds through deals with SE, ie the SE finance was being used commercially, supported by the aims to stimulate returns through business growth.
- None of the investors considered that there had been any displacement or crowding out of other investment funding in Scotland.
- SSF had met gaps in the funding market by helping to encourage the flow of seed / early stage investments in Scotland.
- The main benefits for the private investors were that they had reduced their exposure to risk, grown the businesses invested in, and increased their value and profitability. For four fifths of private investors, these benefits would definitely or probably not have occurred without participation in SSF hence demonstrating the additionality of SSF.
- The majority of private investors considered that SSF was well managed by SIB / SE staff and most features of SSF were “good”. Some suggested improvements, made by a small minority of investors, were:
  - more discretion for SE staff to go ahead initially and with further funding rounds – potentially to speed up the decision making process
  - reduce paperwork and reduce approval times.
  - increase the overall amount of funding for SSF and for individual deals – subject to the availability of funds.

10 Conclusions and Recommendations

This concluding chapter sets out the results of the research in the previous chapters, reflecting the evaluation aims which are shown in the introduction. The aims are assessed sequentially with the overall progress towards SSF objectives shown in section 10.4. The final section makes some suggestions on the future direction of SSF based on the evidence presented and the interpretation of the results of the research. The research issues and questions posed in the surveys and interviews were designed and customised from the outset to add value to the brief and provide evidence on which to base the evaluation. Further insights and influences are drawn out where this is appropriate and can be supported by the evidence.

10.1 The Extent to which the Strategic Rationale for SSF is Still Valid

The Fit with the Scottish GES and SE's Business Plan

10.1.1 The Government's Economic Strategy (GES)[51] focuses on creating a more successful country, with opportunities for all of Scotland to flourish through increasing sustainable economic growth. It identifies five strategic priorities that are critical to economic growth:-

- Learning, Skills and Well-being;
- Supportive Business Environment;
- Infrastructure Development and Place;
- Effective Government; and
- Equity.

10.1.2 There are a number of key sectors, including creative industries (with digital content and technologies), energy, the financial and business services sector, food and drink, life sciences, tourism, and education and healthcare.

10.1.3 SE's investment contributes directly to the Supportive Business Environment priority in the GES. This promotes responsive and focused enterprise support, working in partnership with others in the public, private and third sectors to increase the number of highly successful, competitive businesses, and their access to skills, finance and business infrastructure. It includes actions to address gaps and **market failure and feature** issues in accessing to capital. This is recognition of the fact that, whilst the UK has a strong private equity market, it tends to invest significantly less in early stage risk capital (as a percentage of GDP) than many of its major competitor economies. Historically, Scotland has had a relatively lower level of risk capital investment than the UK, putting the economy at a significant competitive disadvantage.

[51] GES is available at: http://www.scotland.gov.uk/About/scotPerforms/purposes

10.1.4 SE's Business Plan for 2010/13[52] highlights how by working with private investors to increase the availability of early stage risk capital, this will allow companies to develop and become globally competitive. The plan (2010-13) recognises that in the current economic climate, the role of risk capital has become even more important in stimulating and supporting start-up and early-stage companies. Through the investment funds, SE aims to bridge the gap for many companies by helping to improve the investment market in Scotland and address **market failure and feature** issues, especially in key innovative and growth sectors.

10.1.5 In 2010 the Scottish Investment Bank (SIB) was set up to manage SE's co-investment funds (including SSF) as evidence of SE's actions to improve finance for SMEs. SSF, through the commercial co-investment concept with private investors, its aims and design, **provides a good strategic fit** with the GES and the SE Business Plan. It strengthens the business support environment by providing a flow of capital for growth businesses to help address the funding gap working with the private investors and address **market failure** issues. It provides advice and support to businesses through, for example, SE account managers and the representatives of SSF investors who sit on company boards that had received investment. SSF also focuses on the key sectors that are important for the growth of the Scottish economy. They include digital media and enabling technologies, life sciences, and energy in the main.

10.1.6 **This strategic fit** is also demonstrated through the evidence gained as part of the evaluation, and is presented in detail below. In summary, SSF addresses **market failures** with regard to finance and helps to fill the funding gap in the £20,000 to £100,000 range; it has positively impacted on the capacity and scale of the funding market; it has helped to build funding partnerships and collaborations and created dependencies between the investment funds and formed wider linkages in the business support network. The business and economic impacts generated by SSF have contributed to the overall growth of the Scottish economy, for example business capabilities, innovation and net additional jobs and GVA.

Market Failures and Features of the Capital Market

10.1.7 The primary market failure and feature issue that SSF seeks to address is the funding gap that exists in the supply of risk capital for start-up and early stage and viable SMEs in Scotland. The evidence from a number of reports prior to and during the period of SSF implementation has continued to demonstrate this. In the early 2000s, following the dot-com crash, there was a withdrawal of BA investors from the Scotland market who normally fund the start-up and early stage businesses., There were liquidity constraints faced by business angels syndicates for start-ups and early growth businesses and reports of good early stage prospects with companies failing to raise capital[53].

[52] The 2010/13 Business Plan is available at: Scottish Enterprise Business Plan 2010-13

[53] Richard T Harrison. Public Policy and Regional Risk Capital Markets. A Case Analysis of the Scottish Co-investment Fund. 2009

10.1.8 More recent research in Scotland in 2008 indicated that the early stage and risk capital market in Scotland remained buoyant prior to the recession. The market for the smaller, larger and later stage deals was increasing; there was an increase in the number of mature companies seeking equity; and investor appetite had returned. However, the business angel investors dominated the market for the smaller scale investments, with less 'handover' to the VCs as part of an investor chain, which was potentially constraining the market for further funding and exits.[54]

10.1.9 The SME Access to Finance research in 2010[55] provided an update on credit conditions. Its intended purpose was to identify whether any improvements had occurred related to credit conditions. Overall lending to Scottish SMEs in 2010 was lower than in 2009, reflecting a combination of weak demand and constraints in the supply of lending. The demand for finance had fallen since 2009. This reflected a number of factors, including an easing of working capital pressures and an increase in the proportion of firms revising growth objectives downwards. Although economic conditions have improved, particularly in Scotland, GDP has yet to return to pre-recession levels, and a great deal of uncertainty remains as to the pace and sustainability of the recovery.

10.1.10 Additional evidence shows that market failure and feature issues for capital persist in the English context which provide a rationale for the range of co-investment funds run by the Department for Business, Innovation and Skills (BIS)[56]

10.1.11 The evaluation evidence from this study continues to demonstrate that the market failure and feature rationale, and causes, for SSF are still valid on both the supply and demand sides for start-up and very early stage businesses, with the case underpinned by the impacts of the credit crunch, and the limitations on both loan and equity funds exacerbated by the current relatively low or flat growth in the economy and related uncertainty.

10.1.12 The discussions with the investors sought to examine evidence of the market features and failures for capital in that some viable companies at the start-up and early stages found it difficult to obtain the finance they required and the reasons. The main types of market failure and features on the supply side, drawing on the introduction, are summarised as follows:

Shortage of information or information failure. The interviews with investors examined the extent to which they were able to have sufficient information to identify businesses to invest in. It was considered that this was not likely to be the case for a range of businesses for potential investments as they were small, early stage and lacked visibility. Investors were made more aware in part through their own searches and approaches by potential businesses and their extensive network and interactions with other business angels, investors and agencies including those with SE. However, it was considered that some

[54] Scottish Enterprise, *The Risk Capital Market in Scotland*, 2008.

[55] Scottish Government. SME Access to Finance 2010

[56] BIS. BIS Equity Finance Schemes. Survey of Investors July 2011. BIS Equity Finance Programmes: Qualitative Review of UKHTF and the Bridges Fund July 2011

viable businesses would not come to the attention of investors as they were early stage and small.

The high cost of due diligence and transactions, The filtering of potential investments for some form of review / due diligence once investors are aware of them, ie the 300 to 700 per annum potential opportunities mentioned above (of which some half to two thirds are probably early stage) takes place in stages by investors. On the basis of experience, and because many of the proposals from early stage businesses were not very thorough, a high proportion are considered as unsuitable fairly quickly and probably up to 5% to 6% are selected for some form of review / due diligence as being potential investments and hence viable prior to full due diligence. Part of the reason for then not proceeding with full due diligence reviews was the high cost relative to the potential returns (compared to the intermediate and larger investments) and the resources available to investors. The investors agreed that especially for the start-up and early stage businesses, where initial / first round investments were being considered, the costs of due diligence were thought to be too high and investors needed to be selective and cautious.

The perception of risk. For the final stage of the selection process the discussion with investors focused on why the potentially viable early stage businesses were refused funding at the due diligence stage. These reasons reflected the other market failure and feature issues associated with risk above. The main grounds for refusal were that ultimately businesses were not sufficiently far on in that they were seen as too risky (90% of investors). For many the revenue stream was not strong enough or the prospect of it not sufficiently clear following further research. These views in some cases demonstrate excessive risk aversion on behalf of some investors. Other reasons for not responding to companies seeking funding was that the business team, the products and the investment readiness were not strong enough, or too much money was sought which deterred them. Investors were also wary of the over optimism shown in business plans for businesses at the very early stage (and at the start of product life cycles) which was tempered with greater reality in the development stage which reduced expectations.

Past poor performance: The risk factors above were more pronounced where some of the high tech companies were involved and the uncertainty increased, partly because of the high risks at the research and development stage, especially for start-ups and early stage businesses where there could be a single product, with the long lead in times for commercialisation and subsequent revenue streams, coupled with uncertainty over the market and potential competition costs and the possibility intellectual property could be copied – although there could be some very successful high fliers with strong growth in percentages terms from a low base.

Limiting risk exposure and larger deals: The investors confirmed that this was the case and a hedge against this was spreading the risks through syndicates. There was a gap was opening up in the traditional flow of funds between the business angels and syndicates and the venture capital companies. The business angels, through syndicates, had sought to fill this emerging gap to some extent. The literature on the funding market also shows this trend[57].

Fund manager remuneration: The investors accepted this to some extent, although a portfolio spread was usually the case as investors focused on the early stage market anyway and were reluctant to turn smaller scale funding opportunities away – because of the growth potential from a small base. This market feature is reinforced to some extent by the fact that due diligence

[57] Richard T Harrison, A Case Analysis of SCF and Evaluation of ERDF Supported Venture Capital and Loan Funds and the Scottish Co-Investment Fund, Scottish Executive 2008 and LINC Scotland, the Business Angels network, Scottish Government and academics

costs are proportionally higher for early stage investments and fund managers sought to keep their costs down as part of their overall portfolio management and performance considerations.

10.1.13 An improvement of information, in itself, is not sufficient to overcome market failure, nor is a commitment to due diligence costs, where risk aversion (or excessive risk) results in the shortage of funds.

10.1.14 Nine out of ten SSF investors considered that start-up and early stage businesses faced significant issues when seeking to raise capital. It was considered that there was an overall shortage of funds at the early stages, especially bank overdraft and loan funds, as well as VC and business angel loan and equity funds – although businesses at almost all stages were affected. There were also problems obtaining public sector funding too, because of recent expenditure reduction policies, although the SSF investors thought that the public sector was generally more amendable to early stage businesses because smaller sums of money were involved and they could help lever in private sector funds.

10.1.15 The companies were of the view that potential investors were being cautious and saw the risks as excessive which contributed to market failure for capital.

10.1.16 Investors considered that the main funding gap was for capital in the range of £100,000 to £500,000. This was identified by three-quarters of investors, although they thought overall that a specific funding gap was difficult to define in the current economic and market context. However, it was considered that viable investments for seed business proposals, that produced acceptable returns, would continue to attract investors.

10.1.17 Consequently, the critical reasons for investing with SE were that the funds were available through SSF to match investors' funds (and spread risk). This was true for four-fifths of investors. This helps demonstrate that SE is addressing the **market failure** and supply side issues. Two-thirds of private investors thought SE account, transaction, and investment managers also had useful local knowledge of the investors and the industrial sectors in Scotland (55% of investors). Two-thirds of investors felt that the businesses invested in would also benefit from SE market expertise.

10.1.18 Over half of the investors would not have invested in the SSF businesses without SE, and 36% would only have made a partial investment, primarily because there was not a strong enough business case (i.e. nine out of ten investors in total) and the risks were too great.

10.1.19 The overwhelming majority of investors focused their investment (without SSF) on businesses which were less risky, but which would grow profitably, and could be sold.

10.1.20 The primary evidence of the continued evidence of market failure for capital (and market features) on the demand side is based on the interviews with businesses that

SSF has invested in. On the demand side for very early stage businesses the main causes of market failure have been:

- Shortage of information. Businesses are not sure of the sources of finance and advice or how to obtain it at acceptable costs. This is more likely to be the case for smaller businesses who have less visibility of the market.
- Lack of investment readiness. Start-ups lack the ability to present themselves as investable opportunities, eg poor business plans and models or adequate management skills through lack of experience.
- Aversion to equity. A lack of understanding of investors' aims and a reluctance to cede ownership are the most common features, especially at an early stage, along with relatively lengthy periods to agree deals.

10.1.21 Almost all the businesses that were consulted had specific financial issues that needed to be met, resulting in their use of SSF, and some four-fifths faced a specific funding gap for working capital. Some six in ten businesses had sought alternative funding to SSF. A third of these had been unsuccessful, whilst a third had only been partially successful, in part with funds from other business angels and venture capital sources. Those that did not apply for alternative finance did not think they would get it or they were seen as too risky and could not demonstrate investment readiness. They also considered the overall terms would not be acceptable, eg it would be too costly or they did not wish to dilute their equity at an early stage of their businesses.

10.1.22 On the demand side of market failure, it is not apparent that SSF businesses, were not aware of the sources of funding or how to access it – and there was general information failure. However, other businesses may well be and the literature would support this[58]. Overall the behaviour of the businesses that did not obtain alternative finance, although they sought it, or did not seek it, reflects a degree of market failure in that they potentially could not demonstrate investment readiness in that they had products and services with actual or potential revenue streams, and a good team at their early stage of development (and were seen as too risky). Some businesses did not find the conditions of funders acceptable, especially equity release. Of the businesses that applied for additional finance to SSF once they had secured it, almost all were successful, hence the market failure issues had been alleviated to some extent.

10.1.23 Both businesses and the investment partners consulted considered the **market failure** issues and features with respect to finance for start-ups and early stage firms would continue in the short to medium term. The availability of capital would remain in short supply over the next three to four years up to 2015, because of continuing economic uncertainty. There was some degree of market segmentation in the market amongst investors, although it was not so relevant to SSF businesses at their early stage of development. However, it meant a funding gap was forming for the £5-10m range for capital for larger businesses in that business angels (including syndicates)

[58] Note the Rowlands Review (2009) and BIS. BIS Equity Finance Schemes. Survey of Investors July 2011. BIS Equity Finance Programmes: Qualitative Review of UKHTF and the Bridges Fund July 2011

were investing up to the £5m, but the VCs were increasingly more likely to be investing around £10m and above.

10.1.24 The results of the research show that on grounds of **market failure** and the market features related to the supply of capital and the potential demand for it, there is a continued justification for SSF funding for businesses at the start-up and very early development stages where the funding gap lay in the £100k range.

The Impact on the Funding Market

10.1.25 A feature of the funding gap was that Scotland was not attracting investors from outside Scotland that could increase the flow of funds. This partly reflected declining investment elsewhere and a general consolidation brought on by the credit crunch and ongoing economic uncertainty. Hence one of the aims of SSF is to address the market failure issues with respect to finance by encouraging new investors to Scotland and the supply of funds for the early stage and growth businesses. This would help improve the operation of the funding market for the start-up and early stage businesses.

10.1.26 The management information from Scottish Enterprise shows that SSF provided £6.7m funding for 83 different businesses, and that this has levered in some £14.5m from other funding sources, primarily the BAs and VCs, a leverage ratio of 2.2. The total amount invested via SSF was, therefore, £21.2m.

10.1.27 The SE management information also shows that there was a range of private investors who were active. Many (about a half) of the private SSF investors operated as part of a business angel syndicate, with increasing rounds of investments compared to the mid 2000s. None of them considered that there had been any crowding out or displacement of funds or investments that had or would otherwise been made in Scotland in the absence of SSF.

10.1.28 A key feature of SSF is that it had improved the supply of commercial funds through deals with SE, ie the SE finance was being used commercially, supported by the aims to stimulate returns through business growth.

10.1.29 In terms of addressing market failure and feature issues, all the private investors considered that SSF had improved both the scale and quality of seed funds available in Scotland, either significantly or to a large extent, and the funding pipeline had been extended (along with SCF and SVF). Correspondingly similar proportions of investors said that new funders had entered the Scottish market, although many of these were already located in Scotland. Three quarters of investors thought loan funds had improved and half considered that start-up funding had improved. There was improved funding in particular for growth businesses (all private investors), the innovative sectors and more risky businesses (i.e. four out of five investors respectively).

Linkages and Dependencies With Other Support

10.1.30 Interdependencies between SE programmes and other business support services help to strengthen the overall capacity of business support in Scotland and the expertise businesses can draw on. The research evidence shows some positive interdependencies between the SSF funds with other SE funding (especially SCF) and other advisers to businesses in Scotland which help to underpin and add benefits to businesses. They also help to strengthen the network of support in Scotland and help develop an active system for innovation, linking the key players (e.g. businesses, investors, advisers in HE and the private sector and SE).

10.1.31 SSF is targeted on start-ups and early stage businesses, with SCF and SVF being available for more mature businesses as part of a funding escalator. The evidence from the SE management information shows that 23% of businesses receiving SSF were also in receipt of SCF, and one had progressed to the SVF. One in ten also used the Portfolio Fund.

10.1.32 The MI and the survey research show that some three-quarters of businesses received advice from an SE account manager and other investment staff. In terms of the advice and support on the business and its growth, 41% of businesses that had an SE account manager said they were very important, and a fifth said they were important (i.e. almost two thirds of businesses). The introduction sets out the different roles of these managers.

10.1.33 As well as the SE business support, there were linkages between SSF businesses and other advisers and agencies in Scotland which helps to demonstrate the linkages. These links were with other public and private sector advisers. Of critical importance, some 21% of businesses had investors on their boards and drew on their advice and their pool of specialist advisers in Scotland. Wider support was used from a number of other sources. Thus, a quarter obtained support from HE / university advisers, and smaller proportions obtained support from specialist consultancies. More than a quarter (28%) claimed positive linkages with their collaborators, who were mainly other businesses, who worked jointly on R&D and innovation.

10.1.34 SSF also generated international linkages reflecting its aims. For example, a small proportion of the SSF funders from the survey and SE management information were based outside Scotland, and for the SSF businesses two-fifths had increased their export sales through overseas links. Three-quarters thought they would be exporting and increase their export sales after five years, and expected to retain this position over a foreseeable ten year period.

10.2 The Economic Impact of SSF

10.2.1 The evaluation has sought to assess the impacts on businesses invested in through SSF and in particular the innovation and business performance effects and benefits and how these translate into economic benefits for the Scottish economy (e.g. net additional jobs and Gross Value Added). The assessment has been both qualitative

and quantitative, in terms of actual impacts at the time of the evaluation and likely future impacts. It recognises that the seed businesses are at early stages with revenue streams emerging. The impacts take time to feed through, primarily because of the nature of equity investment: the fact that many of the businesses are concerned with innovation and the development of new products and services which take time to reach the market, and the current economic context reflecting ongoing uncertainty as to future prospects.

10.2.2 The evaluation focused on some key indicators. The research with businesses showed that SSF stimulated innovation and R&D. In terms of R&D, some 79% had or would increase spending on R&D, and two-thirds had improved innovation outputs, e.g. tested the commercial and technical feasibility of ideas, produced new scientific and technical knowledge and developed new products and services.

10.2.3 The majority of businesses invested in were in the more innovative sectors, including digital media and enabling technologies (49%), life sciences (19%) and to a lesser extent energy, chemicals and aerospace, food and drink and finance. These sectors reflected the priority sectors in Scotland, the strategic policies and growth aims, especially in the creative industries, energy, finance, food and drink and life sciences sectors.

10.2.4 The discussions with businesses indicated that just over half had actually increased their productivity as a result of SSF, and three-quarters expected to do so over the next ten years. In terms of exports, around half of businesses had started to export as indicated above, 38% had increased their exporting sales, and just under half had entered new export markets. It was expected that around three-quarters would see impacts in these exporting areas over the next 10 years. At the time of the evaluation two-thirds of businesses had increased their employment, and nine out of ten expected to do so over the next 10 years. At the same time, 62% of businesses had increased their turnover, and nine out of ten expected to do so over the next ten years.

10.2.5 Some seven in ten of the businesses would not have achieved these impacts without SSF.

10.2.6 Overall the research shows that at the time of the evaluation the net additional employment attributable to SSF was 151 (FTE) jobs which were likely to rise to 403 in the short term (5 years) and 546 in the medium term (10 years). The corresponding net additional GVA per annum estimates were minus £6m (due to companies making initial losses), (+) £21m and (+) £34m, which shows that in line with the GES and the SE Business Plan SSF was likely to make a significant contribution to the Scottish economy in key priority sectors in terms of value for money.

10.2.7 At this stage of development of SSF and the investments it is not appropriate to assess the full commercial performance of the fund, as the investments are still at a relatively early stage, have not matured, and are likely to take longer to come to fruition, particularly because of the economic context and ongoing uncertainty.

Funders were also of this view and anticipate a 5 to 7 year period for existing investments to bear fruit, compared to 3 to 5 years in the mid 2000s. This time period was confirmed in discussions with other stakeholders including LINC Scotland and the BVCA.

10.2.8 At the time of the evaluation two businesses had been sold, generating income from investments in SSF. Up to March 2011 there were three major income returns from SSF shares totalling £285k, these arose from investments totalling £250k, which represents a return of 14%. In each case the returns were made after one year.

10.2.9 However, there are some early indications of commercial success, in the sense that nine out of ten funders believed that they would be successful in disposing of the SSF businesses and showing profitable investments that met their expectations. This was based on their anticipation that the businesses would grow, become profitable and increase in value. Underpinning this there was evidence that the businesses had, and were likely to strengthen, their R&D activity, develop intellectual property and new products and services, increase their sales (and exports), the value of their assets and profitability, and progress towards their disposal through a merger or take-over.

10.3 The Management and Delivery of SSF

10.3.1 The interviews with investors and businesses indicated a high level of satisfaction with SSF, reflecting key strengths in the operation of the fund, the quality of advice and knowledge of SE managers, together with the level of investment, the opportunities to graduate to other funds (e.g. SCF and SVF), the flexibility, the application procedures and support from SE staff, combined with the benefits (actual and likely) which would help them to achieve their aims. Very few weaknesses were identified. A very small minority of funders suggested that there should be more discretion given to the SE staff to go ahead with further funding rounds for businesses in order to prevent potential delays, speed up the process, and provide more certainty. This minority of investors also suggested a reduction in the amount of information required from private investors (although they recognised that approval for the use of public finance required greater scrutiny to help ensure it was justified and represented value for money); as well, a reduction in approval times, and an increase in the overall amount of funding that could be made to individual companies through SSF, although they noted that businesses could seek additional funding, especially through SCF where additional private sector investment partners could be identified. The SE account and investment managers provided a key role here.

10.3.2 Some 58% of businesses considered that the management and delivery of SSF as “good”. SSF allowed them to cover all relevant aspects of their companies’ operating and investment expenditure, and there were positive views about the amount and level of funding and support from the SE team. A small minority of the businesses (c. one in ten), reflecting the views of investors, considered that the time taken to receive funding could be shortened, the application procedures (primarily time and detail

required) improved, and more support provided by the SE team on the whole process to speed it up. This is a reflection of the shorter time horizons that the smaller businesses face when planning and running their businesses and the fact that they prefer to deal with matters relatively quickly.

10.3.3 While the financial support was important, it was complemented by the non-financial support SSF businesses received. Some three-quarters said they worked with SE account, transaction and investment managers, and two-thirds said this support was important to them. There was strong interaction with Board members (who were representing the SSF funders) which would not have taken place without SSF. In addition, businesses were signposted to HE specialists, advisers and consultancies. For half the businesses, these relationships were either very important or important, and they would not have had access to it without the SSF investment.

10.3.4 Interviews with SE account managers, in particular, suggest that they are proactive in referring SSF companies to the type of specialist business support required, from early investment onwards, in order to help generate returns and attract further investment. This in turn permits SIB / SE portfolio managers to proportionally focus attention on those companies which already have the necessary management skills and products / services that will generate revenue and future investment potentially through other co-investment funds or investors.

10.3.5 Very few weaknesses in SSF were identified by businesses or investors. The latter (i.e. a very small minority) suggested that SIB/SE staff should be given more discretion to go ahead initially with investments and with further funding rounds for businesses to prevent delays and provide more certainty. There should also be a reduction in the amount of information required from investors (although it was recognised that approval for the use of public finance required greater scrutiny to help ensure it was justified and represented value for money). Other points mentioned were a reduction in approval times, and an increase in the overall amount of SSF funding that could be made to individual companies – subject to the availability of funds.

10.3.6 The performance management data held by SE is stored in a clear and consistent manner, and for each company in receipt of SSF it already covers:

- Complete and comprehensive contact details and company characteristics (particularly sector)
- Complete and comprehensive details of SE funding: Date, Equity/Loan, 3rd party
- Complete and comprehensive details of loan interest/repayments, dividends and sales with dates
- Incomplete but comprehensive annual summary accounts since year of first funding: including turnover, profits, employment costs and the number of employees. SE is in the process of making this element of the management data more complete.

10.4 The Overall Progress towards SSF Objectives

10.4.1 The evaluation brief sets out four main objectives for SSF. The evidence from the research presented for each of these is as follows:

1 **Provide an integrated, consistent and cohesive approach to small business funding within the Scottish Enterprise network.**

The evaluation evidence shows that SSF supported this objective. The support was integrated in that it combined the funding of co-investors with SIB/SE SSF funds and businesses drew on the advice from the SE account, transaction and investment managers. Additional advice was also provided by the Scottish business innovation and support network. A small number of SSF businesses also went on to use the Scottish Co-Investment Fund (SCF) as they grew which demonstrated the consistency and cohesion of SSF with other co-investment programmes.

2 **Improve access to risk capital for growing businesses raising their first round of external finance by filling a critical gap in the availability of development funding.**

SSF improved the access to risk capital for the start-up and early stage businesses with growth potential primarily because many of those who sought alternative finance were unable to obtain it because they were not seen as appropriate by investors, ie they did not reflect their portfolio experience, and did not make detailed and focussed enough applications, they did not seem investment ready or seemed too risky. Those businesses who did not apply for alternative finance to SSF did not think they would obtain it primarily because they thoughts they would be seen as too risky or they did not think the conditions would be acceptable, especially the cost and the release of equity.

3 **Provide greater liquidity and share risk, pari passu, with Certified Sophisticated Investors (working with and through LINC Scotland, the national association for business angels in Scotland) at an intervention stage earlier than that of the Scottish Co- Investment fund.**

SSF has provided greater liquidity in the risk capital market for start-up and early stage businesses. It has led to £6.7m of investment and levered in £14.5m, which is mainly equity and risk capital rather than loans. This is invested pari passu with the co-investors. Hence SSF funding is put on a commercial basis. The investors and experienced business angel funders and syndicates combined with some of the venture capital investors. The investments are made prior to the Co-investment Fund stage. Both investors and SMEs consider that SSF has improved the supply and quality of commercial funds in Scotland and brought in new investors who would not normally invest in Scotland.

4 **Form the first in a suite of SE's complementary investment products which provide risk capital through the early stages of developing companies of scale.**

SSF has formed the first investment stage as part of the suite of funds, ie the Scottish Co-investment Fund (SCF), the Venture Funds (SVF) and the Portfolio Fund (SPF). Almost a quarter of the SSF businesses have moved on to use the SCF investment, one in ten the Scottish Portfolio Fund, and some four fifths have successfully sought and raised additional finance to SSF (following the initial SSF investment) from the private sector.

10.4.2 At the time of the evaluation some 103 SSF investments (with 83 businesses) had been funded, against a target of 150 (to 2010/11). Progress towards the target has potentially been affected by the recession and associated uncertainty. Some 737

gross FTE jobs had been generated, against the target of 380 (2010/11). Some £20m gross value added had also been generated against a target of £14m (2010/11).

10.4.3 Overall these findings show that SSF has progressed significantly towards its objectives.

10.5 The Positive Impact of SSF

10.5.1 SSF has made significant progress in terms of its objectives and brought positive benefits to the Scottish economy in a number of ways:

a *Economic Benefits.* It has generated some 151 net additional FTE jobs. The jobs figure is likely to rise to 364 by 2021. The cumulative GVA generated is likely to be £12m by 2016 and £21m by 2021.

b *Intermediate Business Impacts*. The early stage businesses have strengthened their R&D activity and spending and their innovation and technological outputs which have resulted in improved and new products and processes which have reached the market place or are likely to do so.

c *Key Sectors.* The main thrust of the impacts has taken place in the priority and innovation sectors in Scotland, eg digital media and life sciences with some in energy, chemicals, aerospace, food and drink businesses.

d *Improvements in the Supply of Finance*. SSF has led to an injection of funding in Scotland provided by business angels and the risk capital investors.

e *The Innovation System and Support Infratructure*. There has been increased and collaborative engagement in SSF businesses by the network of advisers in the innovation system, eg SE, HEIs, private consultants and the specialist advisers of business angels and their syndicates and VCs.

10.5.2 Overall, the cost of impacts has probably been fairly typical of other seed funding programmes elsewhere based on discussions with funders, although it takes some time for the impacts of equity funding to feed through. Life sciences, which has attracted SSF funds, is a good example here where it takes some years to develop products and test them fully prior to going to market. The impacts are also potentially slower to emerge in the current economic context. However, the positive impacts of SSF show that it has, and will continue to, demonstrate value for money.

10.6 Future Direction and Recommendations

10.6.1 The research and consultations with businesses and private investors has shown that the basic concept of SSF remains valid reflecting its relationship with other funds i.e. SCF and SVF together with the level of funding available, i.e. £20-100k for start-ups and early stage businesses. This is still the case within the changing funding investment and economic contexts. The evaluation has shown positive evidence of likely and future business performance and economic impacts and the positive impact that SSF has had on the funding market in Scotland.

10.6.2 The key lesson is that the operation and delivery of SSF has worked well. Some suggestions are made for the future operation. However, it is recognised that the budget availability for SSF is liable to be constrained in the current economic climate.

a Improvements in delivery. These are a combination of points made by a small minority of businesses and private investors.
   - While businesses recognised the benefits of SE account management, the relationship could be strengthened to help ensure a consistent flow of advice working with the Board representatives of private investors and the businesses.
   - There was some uncertainty as to the roles of transaction, investment / portfolio and account managers for SSF which could be clarified for businesses and investors.

b The management data. The information on businesses and investors is already robust and comprehensive. SE is already addressing the issue of making the annual employment figures more complete.

c Monitoring of the economic impacts. It takes time for the full actual impacts of equity impacts to feed through. Hence these impacts need to be regularly monitored, especially in the current economic context, to assess the implications for policy and ultimate cost effectiveness.

10.6.3 All the above suggestions could be transferred to the other funding programmes, as appropriate, especially SCF and SVF.

10.6.4 The suggestions above are given equal priority for consideration and implementation by SE.

Appendix A Specific Evaluation Questions

A1.1 For each of the main evaluation aims shown in the introduction, the brief outlined some specific questions which the research should seek to cover if possible, based on the evidence available and the methodology agreed with the Steering Group. In addressing **the strategic rationale** for SE's involvement in the provision of venture capital the following should to be considered:

- A brief assessment of the fit with GES, SE's Business Plan and sector strategies and sector delivery plans. This should include an assessment of the Funds' role in contributing to these strategies and plans and any actions that might improve the effectiveness of the "fit";
- An assessment of the original and current **market failure**s that justified, and continue to justify, involvement in this area;
- Determine how the market has changed, looking at such issues as market adjustment, the role that SE has had in this and the evidence for new failures in the light of the current economic conditions and other factors;
- Assess the extent to which these failures justify public sector investment in this area;
- Assess the linkages and dependencies of the Investment Funds, looking at:-
  - The effectiveness of progression and the complementarities between the Funds;
  - Linkages with other SE interventions, especially account management. This should include an examination of the extent to which the Funds have been able to support the growth plans of companies that are, or have previously, been account managed and the extent to which support through the Funds has resulted in companies being able to become account managed;
  - The extent to which support through the Funds has resulted in other opportunities such as internationalisation; and
  - Links with other public and private sector activity.

A1.2 In addressing this, and indeed the other objectives, the appointed consultants need to report on the SEED and Venture Funds individually. However, it is recognised that there may be some commonalities between them that may mean that the two reports have common elements.

A1.3 Assess progress that the two funds have made in achieving their original objectives. This could involve both qualitative and quantitative assessment and judgements as to whether these objectives are still valid.

A1.4 In undertaking **the impact assessment** it is important that the impacts to date and potential future impacts are assessed in a way that fits with SE's current practice.

A1.5 For each of the Funds (or collectively in those cases where investees have received support from both Funds and other Funds such as Co-Investment and individual Fund impacts cannot be separately identified) the consultants should assess the net additional impact of the Funds both to date and into the future on:-

- Research & development spend;
- Innovation spend;

- Productivity;
- Exports;
- Employment;
- Turnover; and
- Gross Value Added (GVA)[59];

A1.6 The commercial performance of each of the Funds should also be assessed in terms of:-

- Reviewing and critically assessing the overall performance in terms of the commercial return achieved to date, number of company failures, exit opportunities, and the overall risk profile of the portfolio;
- The activities and key achievements. This will include reviewing the quantitative and qualitative benefits, outputs, outcomes and impacts achieved to date and those forecast;
- Assessing the usage, quality and demand for each Fund. This will include establishing the levels of customer satisfaction of the support provided and identifying key strengths and weaknesses; and
- Assessing each of the Funds' additionality both from the point of view of the investor; the investee and SE.

A1.7 Finally, the consultants should assess the impact of SE's interventions on the venture capital market covering such things as:-

- Has the market been stimulated and if so, in what way;
- To what extent the gaps been addressed and to what extent there is evidence of market adjustment;
- Consider what future actions are required before market adjustment is achieved so that the market is performing as well as in, say, comparator regions;
- Assess the impact on the investors; and
- Assess the impact on the overall market (in terms of the supply of risk capital: effectively whether the Funds have addressed the gap).

A1.8 The evaluations should look at the contribution of each of the Funds to SE's **Equity and Equalities Agenda.** We are particularly interested in what proportion of our equity investments are low carbon/ clean tech and how this has changed over time.

A1.9 In considering the Funds **Management and Delivery** consultants should:-

- Assess the effectiveness of the management and delivery of each Fund from the investors and investees perspectives and highlight any areas where improvements could be made;
- Assess the type and extent of non-financial support provided; and
- Review the performance management data and its robustness.

[59] Gross value added (GVA) is a measure of the economic output of a producer, industry or the economy as a whole. GVA can be defined as the turnover of an organisation less the cost of brought in materials, components and services. An alternative definition, that gives the same figure, is operating profit plus employee costs plus depreciation.

A1.10 Attainment of the above objectives should enable **Future Direction** for the Funds to be assessed[60]. Accordingly consultants should:-

- Highlight the lessons that have been learnt from the evaluations as to the management and delivery of public sector venture funds. This should cover what works well and what improvements and changes could be made. As far as possible comparator evaluations should be drawn on;
- Consider any options for improving the economic impact of the Funds
- Highlight any transferable learning, that is learning that could be transferred into other projects or programmes or could have an impact on future strategy or policy;
- Comment on the management data collected by the Funds, its ease of access, validity and outline any suggestions for improvements in the type of data collected, its management and use; and
- Outline evidence based recommendations for the future direction of public sector venture funds that would optimise performance.

[60] It should be noted that it is likely that the SEED and Venture Funds will be incorporated into the Scottish Investment Bank at some stage. Despite this it is felt that there may be relevant learning points coming from these evaluations that could influence the future management and delivery of public sector venture capital support.

Appendix B Estimation of economic impact

B1 Estimation method

B1.1 Six measures of gross impact are sought from each business (Q37a, Q39a in the questionnaire) :

- Current (2011) FTE employment and annual sales
- Short term (2012-16) FTE employment and annual sales[61]
- Medium Term (2017-21) FTE employment and annual sales

B1.2 The number of responses for current and short term impacts is particularly high for a survey of this nature, whereas those for the medium term drop by around 50%. As a result, the short term (2012-16) impacts are given greater prominence in the report.

Table B1.2 Response rate for economic impact questions

Impact measure	Number of respondents	
	Employment	Annual Sales
Number of surviving companies	72 (100%)	72 (100%)
Current (2011)	61 (85%)	61 (85%)
Short term (2012-16)	61 (85%)	59 (82%)
Medium term (2017-21)	28 (39%)	30 (42%)

Note: Percentages are the number of responses as a share of the number of surviving companies
Source: PACEC survey of SSF companies 2011

B1.3 In cases where this information is not available (either because the respondent was not willing/able to answer the question, or because the organisation did not complete a questionnaire at all), the following estimates are made:

- The **Current estimate of employment or turnover** estimate (for the 9 organisations who didn't answer the question) is equal to the mean Current employment or turnover value of the 61 who did answer the question.
- The **Short-term estimate of employment** (for the 9 organisations who didn't answer the question) is generated from the Current estimate by multiplying it by the mean ratio of Short-term to Current employment for the 20 who did answer the question.
- The **Short-term estimate of turnover** (for the 11 who didn't answer the question) is equal to the Current estimate of turnover added to the mean difference between Short-term and Current turnover for the 59 who did answer the question. In many cases companies currently have zero turnover, so a multiplicative algorithm is not appropriate.
- The Medium-term estimate is a straight line projection from the Current and Short-Term estimates[62]. This is based on survey evidence in which the

[61] Given the difficulty that organisations have in estimating future employment and sales, it was not considered appropriate to ask for ten separate annual estimates of future employment and sales. The wording of short term (2012-2016), and medium term (2017-2021) reflects the inexact nature of these estimates. In the unusual instances where respondents requested clarification, interviewers asked for estimates for the mid points of the periods (2014 and 2019)

median change from current to short term is approximately equal to the change from short term to medium term (for both employment and turnover).

- There is no evidence that these estimation techniques give rise to either over or under estimates.

B1.4 In order to check the estimates, the grossing up for the total number of businesses that received SSF was carried out using the non responses as missing values from the outset. The results were the same.

B1.5 In cases where a business is known to have gone into liquidation (and has therefore not been surveyed), the gross effects are set to zero.

B1.6 **Optimism Bias,** the extent to which businesses over-estimate of how they will grow in the future is addressed using two sources of evidence, following the spirit of the current Green Book Guidance[63]. In the first place the actual death rates of SSF businesses is used to estimate future death rates, and in the second place, the actual growth of Scottish Companies in receipt of SMART awards[64] is used as a benchmark to check whether the growth rates are plausible.

- The assumption is made that the annual rate at which SSF businesses will fail in the future is equal to the annual rate at which they failed in the past. The annual survival rate in the past, in which 72 out of 83 survived over 3 years, is calculated to be 0.95 (=[72/83]^[1/3]). The 5 year (short term) effects are then multiplied by 0.77 (=0.95^5). [65]
- After this optimism bias adjustment has been taken into consideration, the annual growth rate in employment of the 72 businesses, from 723 in 2011 to 1,553 in 2016 is 17% (=[1553/723]^[1/5]). This is compared with the actual annual growth rate of 15% of micro businesses in receipt of SMART awards. Given that the average SMART award was £67k, and the average SSF investment was £81k (plus at least as much from the private sector), the slightly higher growth rate of SSF businesses is judged to be reasonable. It is therefore judged that the adjustments which were made to avoid over-estimating impacts were valid and of a realistic size, and that no further optimism bias adjustment is deemed necessary.

[62] MediumTerm=ShortTerm + (ShortTerm-Current)). So if Current Employment is 10, and ShortTerm employment is 15, MediumTerm employment will be 20.

[63] www.hm-treasury.gov.uk/data_greenbook_index.htm downloaded 22nd June 2011

[64] Using data for micro companies and recent start-ups from PACEC's evaluation of SMART Scotland (2009 for Scottish Government Social Research) – this is the best available evidence of actual recent growth figures for Scottish micro companies in receipt of public assistance, which are similar with regard to size, sector, age and stage of development.

[65] The projected growth of a company which actually fails is one form of optimism bias (the other being the project growth of companies which do not fail). The projection forward of death rates deals with the first form of optimism bias. However, there is an argument that death rates may slow down - this would be the case where the poor companies had been weeded out in the first 3 years. This means that projecting forward the death rate may address not only address the first form of optimism bias, but it may be addressing the second as well

B1.7 Optimism bias in relation to turnover (which affects GVA estimates) is addressed in two ways[66]:

- The projected annual survival rate used for employment is applied to turnover.
- A maximum turnover per employee of £250k (based on the top decile of SMART award recipient businesses and double the mean value from Scottish National Accounts) is applied to all turnover estimates. This eliminates one form of optimism bias (an excessive forecast increase in turnover giving rise to unrealistic output per employee) and also ensures that the adjusted values of turnover and employment are mutually consistent.

B1.8 Estimates of GVA (both current, short term and medium term) are then made using estimates of GVA as a share of turnover for the relevant industrial sector, given in the following table.

Table B1.3 Gross Value Share of Turnover by Sector

Sector	GVA % of Sales	Sector	GVA % of Sales
Aerospace	**33**	Food & Drink	**40**
Chemicals	**21**	Forest industries	**32**
Construction	**39**	Life science	**49**
Digital Media & Enabling Technologies	**52**	Tourism	**57**
Energy	**23**	Textiles	**35**
Financial Services	**53**		

Source: 2008 Scottish Input-Output Tables; PACEC analysis

B1.9 A further four measures are obtained from each business, as outlined below. In cases where respondents were unable or unwilling to make estimates of deadweight, displacement or leakage, the arithmetic means of those who did are used.

- **Deadweight** is the business's estimate of what would have happened to employment and turnover in the absence of SE funding (Q37b, q39b). The actual question asks for the employment and annual sales which they would have expected if they had not received SE funding. This is converted to a percentage of what happened/is likely to happen *with* SE funding. It should be noted that the level of **substitution** is assumed to be zero, i.e. in the absence of SE funding, no other public equity funding would have been used.
- **Displacement** is the business's estimate of the percentage of its sales which, if the firm ceased trading tomorrow, would be taken by its competitors in Scotland (Q46)
- **Direct Leakage** is the business's estimate of the percentage of staff / value who live outside Scotland (Q45[67]). [68]).
- In addition, a **Mergers and Acquisitions** adjustment has been made that accounts for evidence, arising from research by Scottish Enterprise, that in future years a third of all economic impact is lost to Scotland due to takeovers by and mergers with companies operating outside Scotland.

[66] Turnover growth rates were not used due to the problem of some companies having zero turnover.

[67] The actual question asks for the percentage of staff who live in Scotland

[68] The actual question asks for the percentage of staff who live in Scotland

- **Attribution proportion** is the business's estimate of what proportion of the gross additional impact could be attributed to SSF in cases where the business received multiple funding from SE (Q41). The default estimate is the SSF funding as a share of the total SE funding. Furthermore, in cases where companies have only received SSF, the attribution is set to be the average of those companies who have gone on to receive further SE funding (particularly SCF) in order to take account of this.

B1.10 Two sources of evidence are used for estimating the supply chain effect **multipliers.** The first source of evidence is the **t**ype II employment and GVA multipliers from the 2007 Scottish Input-Output tables[69]. The second source of evidence is businesses own estimates of the proportion of their goods and services which come from Scotland.

- In the Input-Output tables, multipliers vary quite considerably by sector - for example the employment multiplier for Energy is 6.2. However, it is understood that these larger multipliers are appropriate for the core and rather large organisations in these sectors, and less appropriate for those organisations receiving SSF. The DMET multiplier (of 1.7) is the median multiplier for the SSF recipients. Furthermore, the Input-Output tables show that this multiplier of 1.7 arises from a sector which purchases 40% of its goods and services from Scotland.
- In cases where businesses have estimated the proportion of their goods and services which come from Scotland, this is used to modify the multiplier, so that a company purchasing 20% (rather than 40%) of their goods and services from Scotland would have a multiplier of 1.35 (=1 + 0.7 * 20/40), whereas a company having 0% Scottish goods and services would have a multiplier of 1 (=1+0.7*0/40), and a company having 40% Scottish goods and services would have a multiplier of 1.7 (=1+0.7*40/40).

B1.11 The following calculations are then performed (for each of the six measures of current, short-term and medium-term employment and GVA)

- For both the Intervention and the Reference Cases
  - Subtracting the **Displacement** and **Leakage** from the **gross** impact we obtain the **net** impact.
  - The **Full net** impact is equal to the **net** impact plus the **supply chain** impact.
  - Finally, companies which recorded losses have the value of these losses subtracted from the GVA impact to give **Full Net – Losses**. Losses are taken into account at the end of the calculation as it is a company's turnover generates multiplier effects in the supply chain even if records a loss.
- The **Net Additional** impact is the difference between the Intervention and Reference case Full Net Impacts.
- The **Net Additional-Attributable** impact is equal to the Net additional impact less the **non attributable** effect (namely the part of the impact which was attributable to other SE funding).

[69] The median multiplier of the sectors of SSF recipients is used

Table B1.4 Economic Impact Measures

	Comment
Intervention case Gross	*Estimate of impact with SSF*
Intervention case Displacement	*Estimate of impact on Scottish competitors*
Intervention case Leakage	*Estimate of Gross impacts falling outside Scotland*
Intervention case Net	Intervention case Gross **MINUS** Intervention case Displacement **MINUS** Intervention case Leakage
Intervention case Full Net	Intervention case Net **PLUS** supply chain or multiplier effects *Some call this direct, indirect and induced*
Reference case Gross	*Best estimate of impact **without** SSF*
Reference case Displacement	*Estimate of impact on Scottish competitors*
Reference case Leakage	*Estimate of Gross impacts falling outside Scotland*
Reference case Net	Reference case Gross **MINUS** Reference case Displacement **MINUS** Reference case Leakage
Reference case Full Net	Reference case Net **PLUS** supply chain or multiplier effects *Some call this direct, indirect and induced*
Net Additional	Intervention case Full Net **MINUS** Reference case Full Net
Net Additional-Attributable	Net Additional **MINUS** non attributable
Intervention case Displacement %	Intervention case Displacement **DIVIDED BY** Intervention case Gross
Intervention case Leakage %	Intervention case Leakage **DIVIDED BY** Intervention case Gross
Intervention case Multiplier	Intervention case Full Net **DIVIDED BY**[70] Intervention case Net
Reference case Displacement %	Reference case Displacement **DIVIDED BY** Reference case Gross
Reference case Leakage %	Reference case Leakage **DIVIDED BY** Reference case Gross
Reference case Multiplier	Reference case Full Net **DIVIDED BY** Reference case Net
Deadweight %	Intervention case Full Net **DIVIDED BY** Reference case Full Net *(This is the deadweight of the full intervention – before attribution has taken place)*
Attribution %	Net Additional-Attributable **DIVIDED BY** Net Additional *(This is the proportion of Net Additional impacts that is due to the SSF part of the funding package)*

Source: PACEC

B1.12 The 3 estimates for each of GVA and Employment are then interpolated to give 11 annual estimates as follows:

- 2011 The Current value
- 2012, 2013 a straight line between Current and Short Term
- 2014 the Short Term value (2012-2016)
- 2015-2018 a straight line between the Short and Medium Term values

[70] As set out in Table B1.4 above, multiplier effects are estimated on a case-by-case basis using input-output statistics and information from the business survey. The multiplier for the intervention **as a whole** is the **total full net effect** divided by the **total net effect**.

- 2019-2021 the Medium Term value (2017-2021)

B1.13 Cumulative estimates of GVA as made as follows:

- The cumulative net GVA impact is the sum of the eleven annual GVA estimates
- The net present value GVA impact is the sum of the eleven annual GVA estimates using a suitable discount rate (3.5%[71]) to convert GVA into constant (2011) prices.

B1.14 Economic impact ratios, both Cost/Benefit and Benefit per £1m cost, are calculated. In the first place these are calculated using unadjusted financial information (both costs and benefits). Secondly, they are calculated using 2011 constant prices (which takes inflation into account)

B2 Interpretation of results

B2.1 Estimates of displacement, leakage, deadweight, and attribution vary between Employment and GVA, despite the fact that, in the case of displacement and leakage, there is no difference in measures between employment and GVA. The difference in the overall rates is due to each company having different base levels of employment and GVA impacts. A worked example is given below where one company has a displacement rate (for both employment and GVA) of 0% and the other company has a 10% displacement rate. The overall employment displacement rate is 5% (the average of the two displacement rates, due to the level of employment being the same), whereas the overall GVA displacement rate is 7.5% (much closer to the second company's rate, due to it having three times the impact of the first company).

Table B2.5 Example of variation of displacement rates

	Company A	Company B	Company A+B
Employment impact	10	10	20
GVA impact	£1m	£3m	£4m
Employment displacement	*0*	*1*	*1*
GVA displacement	*£0.0m*	*£0.3m*	*0.3m*
Employment displacement (%)	*0%*	*10%*	*5.0%*
GVA displacement (%)	*0%*	*10%*	*7.5%*

Source: PACEC

B2.2 Similarly, the multiplier effects for employment and GVA in the reference and intervention cases can all be different in the current, short- and medium-term, according to the different sizes of organisation and the proportions of their expenditure on goods and services which is spent in Scotland.

[71] HM Treasury Green Book

Table B2.6 Example of variation of multiplier effects

	Company A	Company B	Company A+B
Net employment impact	10	10	20
GVA impact	£1m	£3m	£4m
Sector multiplier	*1.7*	*1.7*	-
% of expenditure in Scotland	*20%*	*40%*	-
Adjusted multiplier	*1.35*	*1.7*	-
Full net employment impact	*13.5*	*17*	*30.5*
Full net GVA impact	*£1.35m*	*£5.1m*	*£6.45m*
Adjusted employment multiplier	*1.35*	*1.7*	*1.525*
Adjusted GVA multiplier	*1.35*	*1.7*	*1.6125*

Source: PACEC

B3 Turnover of SSF Companies

B3.1 The 72 companies which were still in business at the time of the PACEC research (Spring 2011) are split into 4 cohorts (2007, 2008, 2009 and 2010), depending on the year in which they first received SSF funding.

B3.2 Turnover figures were estimated used the following sources:

- SE management information: 2007-10
- PACEC survey: 2011 (current), 2012-16 (short term) & 2017-21 (medium term)

B3.3 Turnover figures for 2012-2021 were interpolated using different assumptions for different cohorts shown in Table B3.7.

Table B3.7 Interpolation estimates

Cohort	Year in which short term (2012-2016) turnover is achieved	Year in which medium term (2017-2021) turnover is achieved
2007	2014	2019
2008	2014	2019
2009	2015	2020
2010	2016	2021

Source: PACEC

B3.4 The estimates of turnover by calendar year for each cohort and for all 72 companies are shown in Table B3.8, with the annual growth rates in Table B3.9

Table B3.8 SSF Turnover (by calendar year)

Co-hort	#Cos	Estimated Turnover (£m)														
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
2007	13	**2**	**3**	**4**	**6**	8	11	14	18	21	23	26	29	33	36	39
2008	19		**5**	**11**	**14**	22	28	36	47	56	65	74	83	92	103	115
2009	16			**4**	**5**	9	12	15	19	25	28	31	35	39	44	50
2010	24				**6**	10	15	18	22	27	35	45	59	77	101	133
Total	72				**31**	49	66	83	106	129	150	176	205	241	284	337

Source: SE Management Information (bold), PACEC of SSF Companies

Table B3.9 SSF Turnover growth rates (by calendar year)

Co-hort	#Cos	Annual % change in the aggregate turnover of each cohort														
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
2007	13		**46%**	**49%**	**51%**	30%	29%	30%	15%	11%	11%	12%	13%	10%	9%	10%
2008	19			**133%**	**35%**	30%	28%	29%	20%	15%	14%	12%	11%	11%	12%	21%
2009	16				**42%**	37%	27%	28%	29%	13%	12%	11%	13%	12%	13%	3%
2010	24					51%	20%	23%	25%	28%	30%	30%	31%	32%	32%	21%
Total	72					35%	26%	28%	22%	17%	17%	17%	17%	18%	19%	17%

Source: SE Management Information (bold), PACEC of SSF Companies

B3.5 The estimates of turnover by year after first SSF investment for each cohort and for all 72 companies are shown in Table B3.10 with the annual growth rates in Table B3.11

Table B3.10 SSF Turnover (by year after first SSF investment)

Co-hort	#Cos	Estimated Turnover (£m)											
		Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11
2007	13	**2**	**3**	**4**	**6**	8	11	14	18	21	23	26	29
2008	19	**5**	**11**	**14**	22	28	36	47	56	65	74	83	92
2009	16	**4**	**5**	9	12	15	19	25	28	31	35	39	44
2010	24	**6**	10	15	18	22	27	35	45	59	77	101	133
Total	72	16	28	41	57	73	93	120	147	175	209	249	298

Source: SE Management Information, PACEC of SSF Companies

Table B3.11 SSF Turnover growth rates (by year after first SSF investment)

Co-hort	#Cos	Annual % change in the aggregate turnover of each cohort											
		Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11
2007	13		**46%**	**49%**	**51%**	49%	30%	29%	30%	15%	11%	11%	12%
2008	19		**133%**	**35%**	53%	30%	28%	29%	20%	15%	14%	12%	11%
2009	16		**42%**	63%	37%	27%	28%	29%	13%	12%	11%	13%	12%
2010	24		66%	51%	20%	23%	25%	28%	30%	30%	31%	32%	32%
Total	72		77%	47%	38%	29%	27%	29%	22%	19%	19%	19%	20%

Source: SE Management Information, PACEC of SSF Companies

B3.6 Overall SSF companies grow at 32% per annum over the first decade after their first SSF investment. There is evidence that the growth rate is higher in the first 5 years (43%), than in the second 5 years (22%).

B4 GVA of SSF companies

B4.1 Using a similar methodology, interpolated estimates of GVA by cohort and by year have been produced for the SSF companies. The estimates of GVA by calendar year for each cohort and for all 72 companies are shown in Table B4.12, with the annual growth rates in Table B4.13.

Table B4.12 SSF GVA (by calendar year)

Co-hort	#Cos	Estimated Turnover (£m)															
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
2007	13	**1**	**1**	**2**	**3**	4	5	7	9	10	11	12	14	15	17	19
2008	19		**1**	**4**	**5**	8	10	13	18	22	25	29	33	36	40	45
2009	16			**2**	**2**	4	6	7	9	11	13	14	16	18	20	23
2010	24				**3**	5	7	8	10	12	15	20	25	33	43	55
Total	72				**13**	20	28	35	45	55	64	75	88	102	120	142

Source: SE Management Information (bold), PACEC of SSF Companies

Table B4.13 SSF GVA growth rates (by calendar year)

Co-hort	#Cos	Annual % change in the aggregate turnover of each cohort														
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
2007	13		**46%**	**47%**	**48%**	52%	29%	28%	29%	14%	10%	11%	12%	13%	10%	10%
2008	19			**182%**	**34%**	58%	33%	31%	33%	23%	17%	15%	13%	11%	11%	12%
2009	16				**38%**	66%	36%	26%	27%	28%	12%	13%	12%	13%	13%	14%
2010	24					65%	43%	19%	21%	24%	27%	29%	29%	29%	30%	30%
Total	72					60%	35%	27%	28%	22%	17%	17%	17%	17%	17%	18%

Source: SE Management Information (bold), PACEC of SSF Companies

B4.2 The estimates of turnover by year after first SSF investment for each cohort and for all 72 companies are shown in Table B4.14 with the annual growth rates in Table B4.15.

Table B4.14 SSF GVA (by year after first SSF investment)

Co-hort	#Cos	Estimated Turnover (£m)											
		Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11
2007	13	**1**	**1**	**2**	**3**	4	5	7	9	10	11	12	14
2008	19	**1**	**4**	**5**	8	10	13	18	22	25	29	33	36
2009	16	**2**	**2**	4	6	7	9	11	13	14	16	18	20
2010	24	**3**	5	7	8	10	12	15	20	25	33	43	55
Total	72	7	12	17	24	31	39	51	63	75	89	105	125

Source: SE Management Information, PACEC of SSF Companies

Table B4.15 SSF GVA growth rates (by year after first SSF investment)

Co-hort	#Cos	Annual % change in the aggregate turnover of each cohort											
		Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11
2007	13		**46%**	**47%**	**48%**	52%	29%	28%	29%	14%	10%	11%	12%
2008	19		**182%**	**34%**	58%	33%	31%	33%	23%	17%	15%	13%	11%
2009	16		**38%**	66%	36%	26%	27%	28%	12%	13%	12%	13%	13%
2010	24		65%	43%	19%	21%	24%	27%	29%	29%	29%	30%	30%
Total	72		78%	45%	37%	30%	28%	29%	23%	19%	19%	19%	19%

Source: SE Management Information, PACEC of SSF Companies

B4.3 Overall, the GVA of SSF companies grows at 32% per annum over the first decade after their first SSF investment. There is evidence that the growth rate is higher in the first 5 years (42%), than in the second 5 years (22%).

Appendix C Interviews with Scottish Enterprise staff

C1.1 The staff had views on SVF and SSF as well as other SE products and services.

- Susan Armes, Investment Manager
- Ute Beck, Account Manager
- James Cameron, Account Manager
- Roslyn Campbell, Investment Manager
- Murray Campbell, High Growth Fund
- Paul Crookshanks, Account Manager
- Laura Finlayson, Transaction Team
- Joan Gordon (Senior Investment Manager)
- Michelle Howell, Transaction Team
- Gerard Kelly, Director
- Sarah Kenhard, Account Manager
- Jaye Martin, Transaction Team
- Pat McHugh, Director
- Campbell Murray, Account Manager
- Louise Provan, Transaction Team
- Neil Ross, Director
- Derek Shaw, Investment Manager
- Andy Sloane, Transaction Team
- Gordon Stewart, Investment Readiness Programme
- Karen Tang, Transaction Team
- Gary Torbett, Investment Manager