Scottish National Investment Bank

Supporting Analysis

February 2018

Contents

List of figures

List of tables

Introduction

In September 2017, the Scottish Government announced within the Programme for Government that it would begin work to establish a Scottish National Investment Bank. The First Minister subsequently asked Benny Higgins, the Chief Executive Officer of Tesco Bank, to lead the work on developing the Bank's remit, governance, operating model and approach to managing financial risk.

This report sets out the analysis which supports the Implementation Plan, prepared by Mr Higgins for the Scottish Government, and is published alongside the plan.

It represents the work of a project team including secondees from the Scottish Government, Scottish Futures Trust and Scottish Enterprise, with consultancy support from EY.

It should also be read alongside the consultation analysis report and a commissioned paper mapping out international comparators of national investment banks:

Macfarlane, L. and Mazzucato, M. (2018), 'State investment banks and patient finance: An international comparison'. UCL Institute for Innovation and Public Purpose Working Paper, IIPP-WP 2018-01.

Each chapter in this report follows, as far as practical, the structure of the main three chapters of the Implementation Plan:

1. The opportunity of a Scottish National Investment Bank

2. Focus for investment activities

3. Classification and capitalisation of the Bank

Some material duplicates what is in the plan, but this evidence paper contains significantly greater detail, discussion and analysis. The conclusions of each chapter are the recommendations associated with the corresponding part of the Implementation Plan. The Plan itself summarises the evidence so no separate summary is provided within this document.

1. The opportunity of a Scottish National Investment Bank

This chapter provides the supporting evidence behind the first chapter of the Implementation Plan.

Section 1.1 sets out the strategic context of the economic policy framework in Scotland that informed the decision to create a Scottish National Investment Bank, henceforth "the Bank", as set out in the 2017-18 Programme for Government[1] (PfG). Section 1.2 draws, for the most part, on work by the Scottish Fiscal Commission (SFC) to illustrate the immediate economic environment and this is followed by a brief discussion of the nature of the economic opportunities which the Bank can be a catalyst for. As with the Implementation Plan, the focus is on the long-term and the potential economic benefit of the Bank, so section 1.3 looks at the constraints on meeting the challenges. Sections 1.4 and 1.5 examine the differences between the Scottish economy and others but also look at differences across the Scottish economy which establish the need for a specifically Scottish institution. Section 1.6 draws together the international evidence on investment banks to confirm that this new, mission-based institution should actively create and shape markets rather than simply solve existing market issues.

1.1 The strategic context

The starting point is the Scottish Government's aim to make Scotland a more successful country, with opportunities for all, through growing the economy in a sustainable way. Scotland's Economic Strategy[2] sets out the approach for achieving this, based around increasing competitiveness and tackling inequality.

The Economic Strategy highlights four key priorities for supporting sustainable economic growth in Scotland:

- Investing in people and infrastructure to safeguard Scotland's future
- Fostering a culture of innovation, entrepreneurship and research and development
- Stimulating inclusive growth and creating opportunity through a fair and inclusive jobs market
- Promoting Scotland's international trade, investment, influence and networks

The delivery of the Economic Strategy is supported by a number of actions including, most relevant to the Bank, taking advice from the Council of Economic Advisers on how to make Scotland's economy more competitive, tracked through the National Performance Framework and Scotland Performs, the targets and indicators of which measure and report progress towards improving Scotland's performance.

At a high level, the Scottish Government Purpose of sustainable economic growth is underpinned by five strategic objectives – to make Scotland wealthier and fairer, smarter, healthier, safer and stronger, and greener. Whilst the Bank can contribute to all these objectives, it is likely that the focus will be on wealthier and fairer and greener.

The strategic objectives are currently supported by 16 National Outcomes. The Scottish National Investment Bank, aligned with wider Scottish Government policy, should make a direct and significant contribution to several of these, most notably:

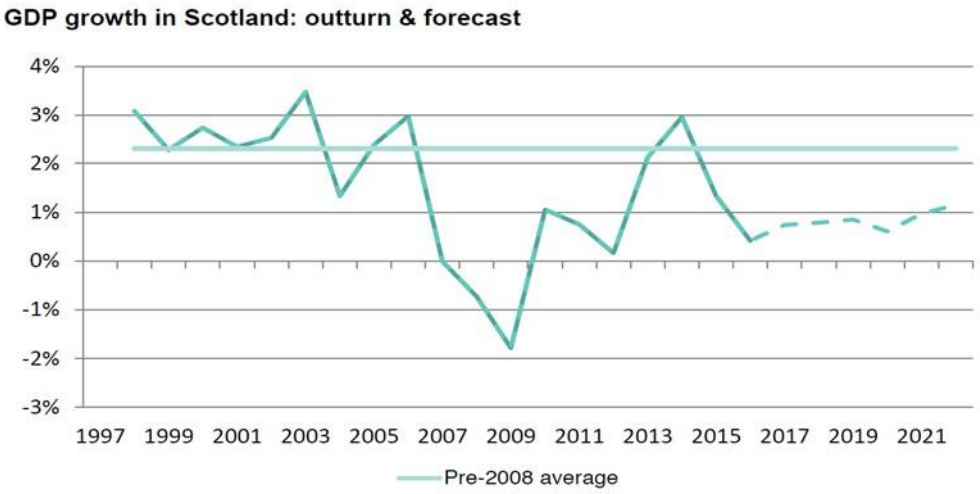
[1] http://www.gov.scot/programme2017
[2] https://beta.gov.scot/publications/scotlands-economic-strategy/

- We live in a Scotland that is the most attractive place for doing business in Europe
- We realise our full economic potential with more and better employment opportunities for our people
- We are better educated, more skilled and more successful, renowned for our research and innovation
- We have tackled the significant inequalities in Scottish society
- We value and enjoy our built and natural environment and protect it and enhance it for future generations
- We reduce the local and global environmental impact of our consumption and production

1.2 The nature of the challenges

The vision for the Bank is for a long-term cornerstone institution at the heart of the Scottish economy. It useful to set this in the context of the current economic climate.

Figure 1: Economic climate (SFC)

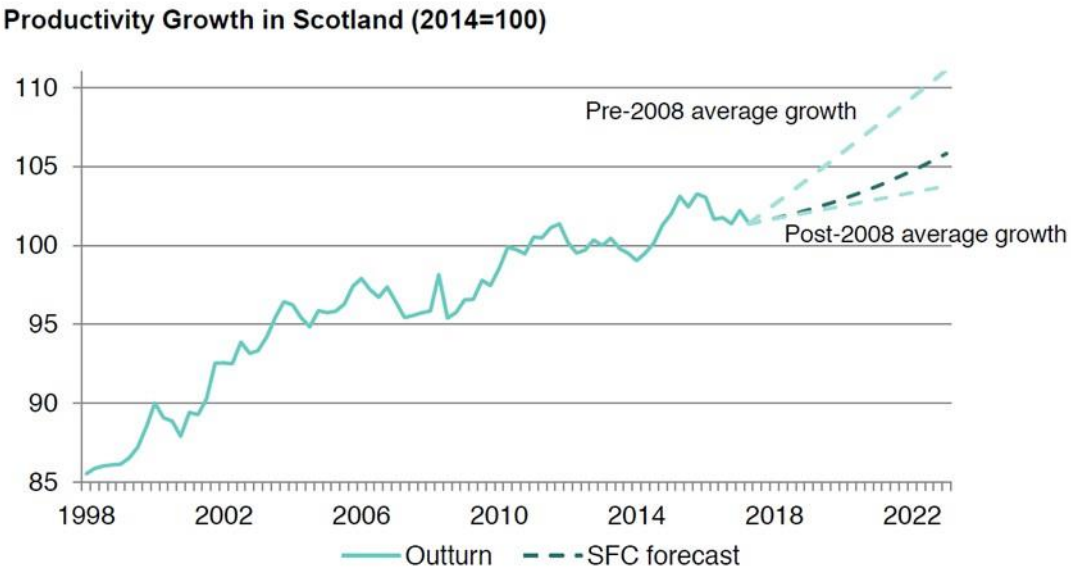


Source: Scottish Government (2017) Quarterly National Accounts Scotland Quarter 2 2017 (link), Scottish Fiscal Commission

The current Scottish Fiscal Commission ("SFC") economic forecasts[3] are for modest growth over the period to 2021, below the pre-2008 long-term trend (see Figure 1). The forecast is partially driven by SFC assumptions about productivity growth in the Scottish economy and partly by the modelled impact of the UK leaving the European Union.

[3]See http://www.fiscalcommission.scot/publications/scotlands-economic-and-fiscal-forecasts/scotlands-economic-and-fiscal-forecasts-december-2017/

Figure 2: Productivity growth

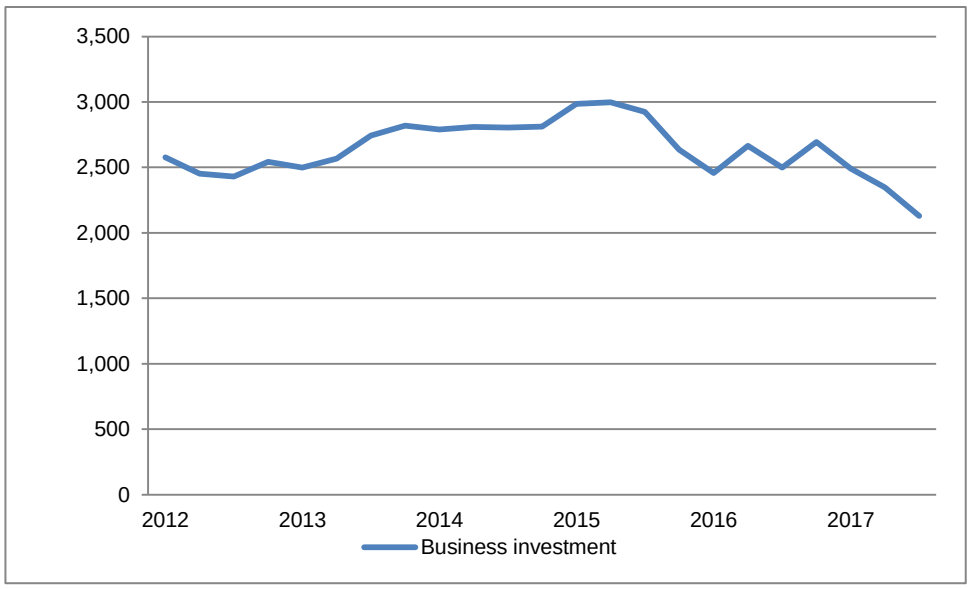


Source: Scottish Fiscal Commission

The SFC view of productivity is shown in Figure 2. Whilst there has been progress in recent years, there has been a distinct fall in the growth rate of productivity since the financial crisis in 2008 and SFC forecasts are much closer to the post-2008 average growth rate.

In terms of business investment, Figure 3 below shows that in Scotland this has fallen in recent years, indeed there has been a fall in cash terms of 27% between 2015 Q3 and 2017 Q3.[4] These figures are unadjusted for inflation so the decline will be even higher in real terms.

Figure 3: Business investment in Scotland (seasonally adjusted)

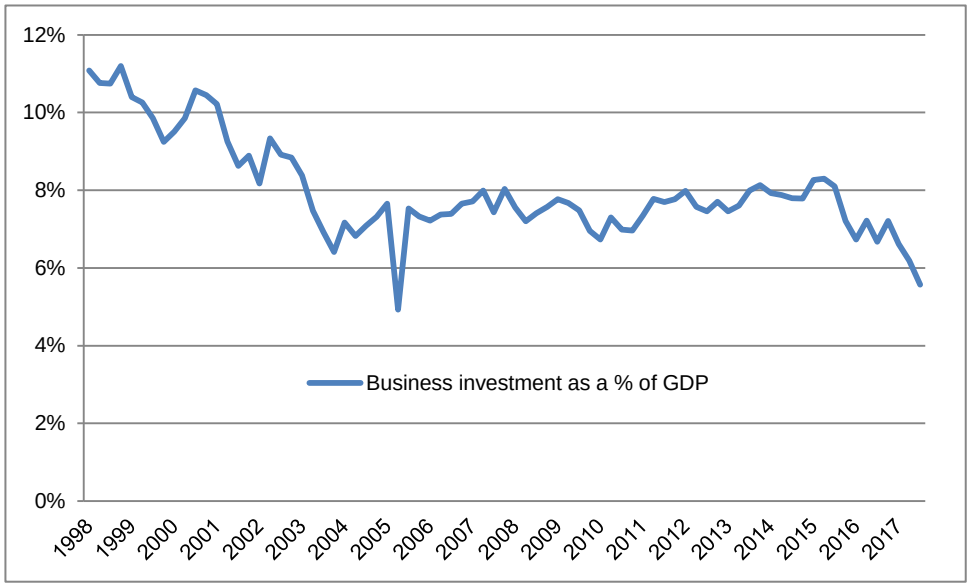


Source: Scottish Government, Quarterly National Accounts, 2017 Q3
(http://www.gov.scot/Topics/Statistics/Browse/Economy/QNA2017Q3)

[4] N.B. these are currently classified by the Scottish Government as experimental statistics, which are defined as new official statistics undergoing evaluation. Comparison with UK business investment figures should not be made: the Scottish series is generally lower due to methodological differences. Overall investment in the economy, including public sector infrastructure investment, has been higher in Scotland in recent years.

Looking at the longer term picture of business investment as a proportion of GDP (Figure 4) the recent decline can be seen after a period of stagnation which followed a significant decline in the late 90s/early 2000s.

Figure 4: Business investment in Scotland (seasonally adjusted) as a % of GDP



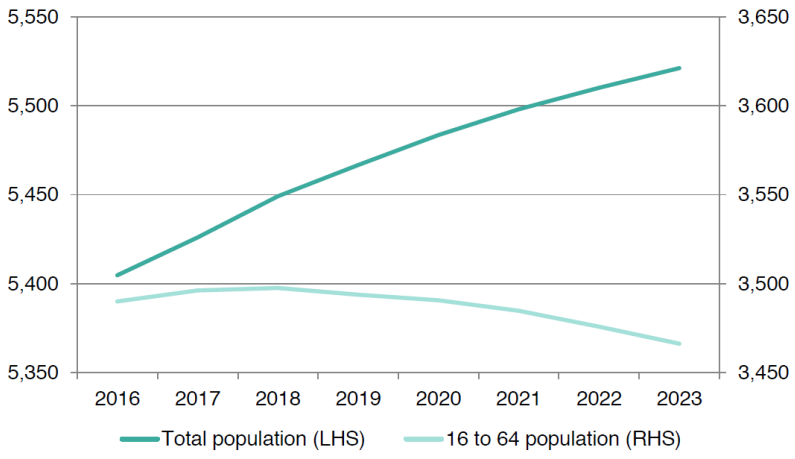
Source: ibid.

Separate Scottish Government analysis of the impact of Brexit[5] on Scotland's economy shows that, depending on the nature of the future relationship with the EU, GDP could be as much as 8.5% (or £12.7 billion) lower by 2030 and business investment in Scotland could fall by up to 10.2% by 2030, compared to continued EU membership.

In terms of the impact of Brexit on migration, SFC have used a population projection variation that assumes that EU migration falls by 50%. See Figure 5. This has a particular impact on reducing the projections for the working age (16-64) population which will have a negative impact within their economic model.

Figure 5: SFC population assumptions

Forecast Scottish total population and population aged 16 to 64, thousands

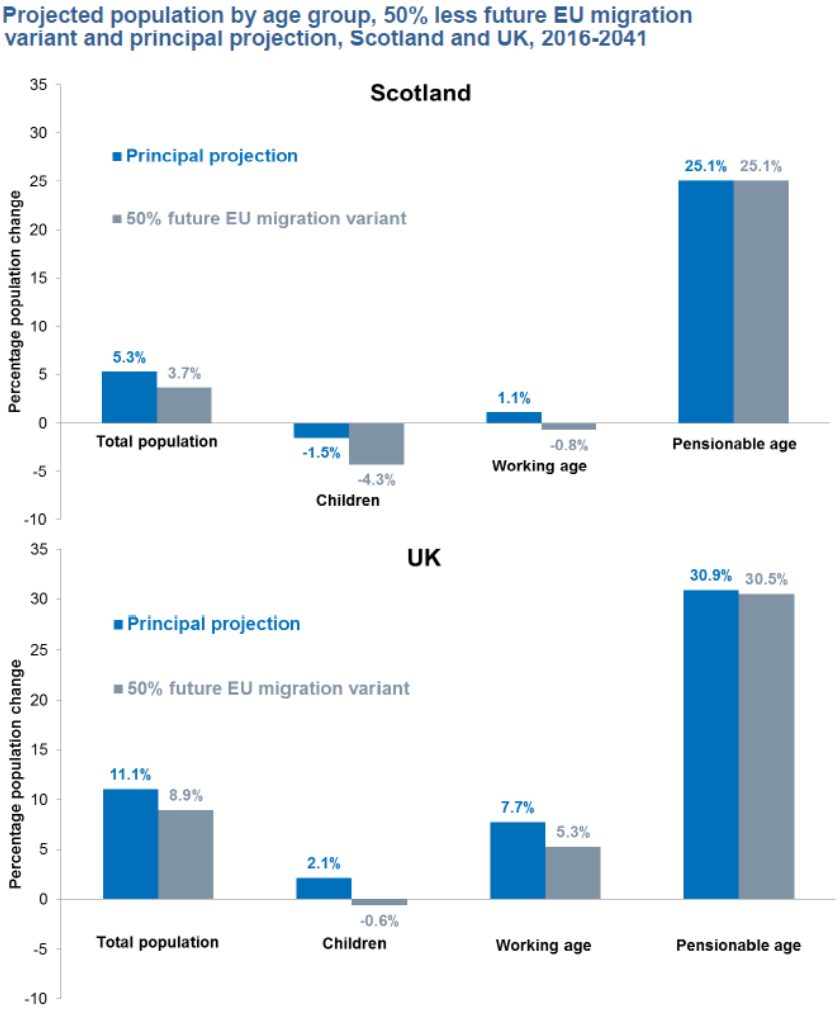


Source: ONS (2017) 2016-based Population Projections, 50 per cent EU Migration Variant Population projections Scotland (link)

[5] Scotland's Place in Europe: People, Jobs and Investment (2018) http://www.gov.scot/Publications/2018/01/6407/downloads

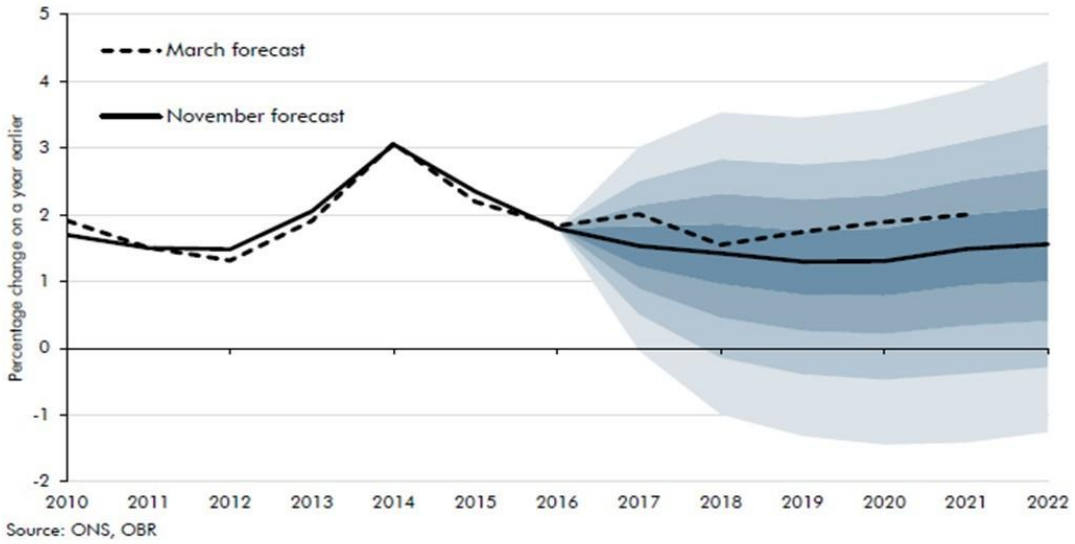
The Office of Budget Responsibility ("OBR") for the UK as a whole show a similar picture, although they are more optimistic in their central projection and use a non-adjusted (for Brexit) population projection. The impact of the OBR EU migration adjusted population projection (which is also available for the UK) is more pronounced in Scotland compared with the UK as a whole, in proportion to the Principal Projections. See Figure 6.

Figure 6: Relative impact of reduced migration



Source: National Population Projections (2016-based), including additional variants using alternative European Union migration assumptions, National Records of Scotland, Office for National Statistics

Figure 7: OBR UK growth fan diagram



Despite this clear difference, the SFC forecasts[6] for Scotland are close to the 4th decile of the spread of OBR forecast variation. This is shown in Figure 7.

This immediate economic outlook should be placed in the context of grand global trends that will have transformative impacts on the lives of everyone. There is an emerging consensus over what these are and how they might impact. The UK Industrial Strategy[7] talks of growing the Artificial Intelligence and data driven economy, clean growth, the future of mobility and an ageing society whilst in Germany, KfW (their development bank) prioritise combating climate change and protecting our natural environment, safeguarding competitiveness in a globalised world and promoting technological progress and tackling demographic change.

1.3 The constraints on meeting the challenges

This section draws on work by the New Economics Foundation in combination with input from Professor Mariana Mazzucato to the SG in her role as a member of the Council of Economic Advisors and the Bank Advisory Group. Together this work has identified numerous issues in the Scottish economy that a national investment bank can start to address to help the Scottish economy achieve its full potential. The two that were considered most important by the Advisory Group were:

- A need for greater long-term investment in small to medium size enterprises (SMEs):
- Scotland's relative innovation performance lags behind comparator countries.

Each of these are covered, in turn, in significant detail.

1.3.1 A need for greater long-term investment in SMEs

Businesses in Scotland 2017[8], which contains estimates of the business stock as at March 2017, has the following key findings:

- As at March 2017, there were an estimated 365,600 private sector enterprises operating.
- Between March 2016 and March 2017, the estimated number of enterprises increased by 3.1% (11,110 enterprises) but the increase over the latest year was driven by a rise in the number of unregistered businesses (the smallest sole traders and partnerships that

[6] See http://obr.uk/efo/economic-fiscal-outlook-november-2017/
[7] See https://www.gov.uk/government/publications/industrial-strategy-the-grand-challenges/industrial-strategy-the-grand-challenges
[8] http://www.gov.scot/Topics/Statistics/Browse/Business/Corporate

are not registered for VAT/PAYE). Unregistered businesses increased by 8,700 (4.8%) whilst the number of VAT/PAYE registered businesses also increased – up by 2,405 (1.4%) from 173,995 in 2016 to 176,400 in 2017.

- As at March 2017, there were 363,235 SMEs operating in Scotland, providing an estimated 1.2 million jobs. SMEs accounted for 99.4% of all private sector enterprises and accounted for 55.0% of private sector employment and 40.1% of private sector turnover.

Though this shows a large rise in unregistered businesses (that may be due to rises in entrepreneurship, but also to casualisation of the labour market and professionals taking advantage of favourable tax rates for the self-employed), for the Bank it is the relationship between registered business and the financial sector that is key.

Moving on to specific issues within the market for SME finance, the Patient Capital Review (Buffini, 2017),[9] commissioned by the UK Government, illustrates there are clear barriers in accessing long-term, patient capital in the UK's under-developed and fragmented ecosystem. The review identifies several specific barriers to investment in patient capital including that the majority of financing is concentrated in London and, therefore, that it is particularly difficult for businesses outside the capital to access the funding they require, especially for companies requiring more than £5m in equity investment.

Over time the business models of UK banks have shifted away from relationship based business lending in favour of lending to other financial institutions and mortgage lending. As a result, since the mid-1980s the share of bank lending going to businesses has been falling rapidly and now represents less than 10% of total lending.

Internal SG analysis has been undertaken of available evidence on the gap between the private sector supply of finance to and the demand for finance from viable SMEs in Scotland, focusing on the types and levels of finance where gaps are most significant and the types of firms most likely to be affected. Although some of the existing evidence,[10] particularly on levels of finance, is several years out of date, and many sources relate to the UK as a whole rather than Scotland, it is possible to draw out key aspects.

The existing range of financing options provided by the market means that many SMEs in Scotland are able to access the finance that they require. However, gaps in the SME finance market exist which result in some SMEs being unable to do so.[11] As the market for SME finance is continually evolving, the precise scale and nature of these gaps change over time. Clearly, it is these "changing gaps" where the Bank should concentrate which perhaps suggests that the role of the Bank, as far as SMEs are concerned, needs to be responsive to market changes.

At any point in time, funding gaps reflect two broad factors: cyclical gaps in lending that affect a range of SMEs and reflect changes in economic conditions and regulatory requirements; and long-standing structural gaps that primarily affect certain types of firms (including micro firms, start-ups, innovative firms and growth firms) mainly due to the existence of information asymmetries between lender and prospective borrower.

Demand side market failures also appear to exist which lead to a sub-optimal number of viable SMEs demanding external finance. Reasons for non-borrowing may include risk aversion, a desire to retain control, anticipated rejection and perceived time/effort required. Demand for certain types of finance remains low, with SMEs continuing to prefer debt over equity. This may be driven by a lack of awareness amongst SME of the range of finance options available to them and how to practically access them.

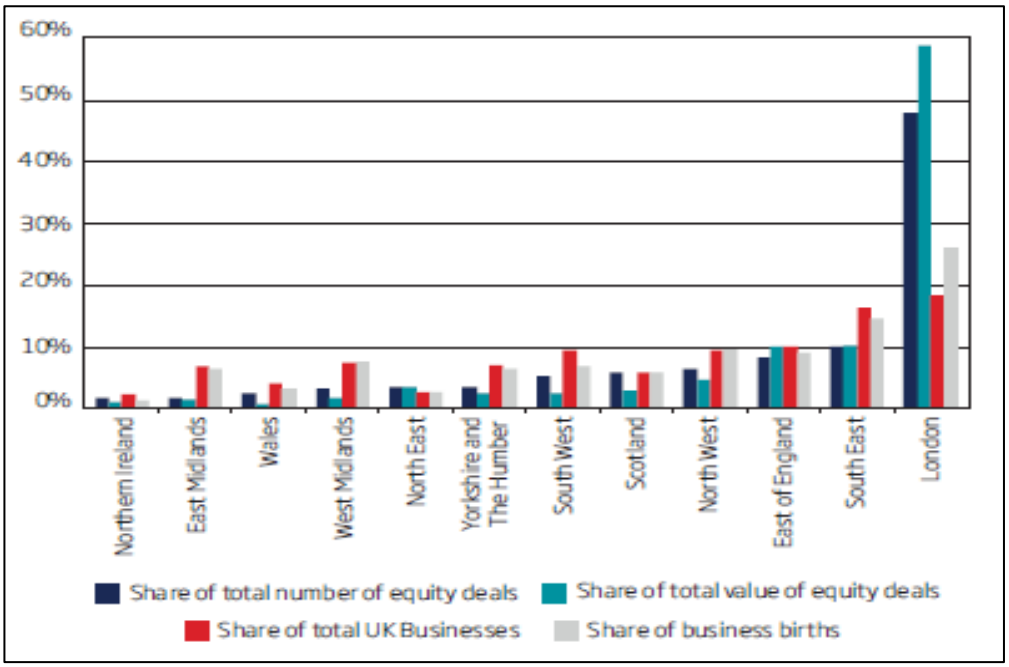
[9] http://www.gov.uk/government/publications/patient-capital-review
[10] For instance, SQW, 2009, The Supply of Equity Finance to SMEs: Revisiting the Equity Gap.
[11] See Scottish Government, 2015 The Market for SME Finance in Scotland

In order to examine this in detail, it is useful to focus on seed capital vs scale-up and debt vs equity finance.

Gaps in the traditional debt market appear to be most significant for funding between £100,000 and £1 million and for microfinance up to £25,000. There may also be under provision to SMEs in the private debt market. This falls into the "seed" category rather than scale-up.

Evidence from the British Business Bank (BBB)[12] suggests there are regional gaps in equity finance across the UK. It finds that whilst for core bank lending products, funding is broadly in line with the distribution of small business across the UK, a clear regional imbalance is evident for equity finance, where investment (by volumes and value) is concentrated in London and the South East. The analysis shows that whilst Scotland's share of the total *number* of UK equity deals is broadly in line with its share of UK businesses and business births, its share of the total *value* of UK equity deals is considerably smaller (Figure 8).

Figure 8: Proportion of equity deals by number and value by UK nations and regions



Source: British Business Bank analysis of Beauhurst Data (2015 Q4 – 2016 Q3)

The report also notes the persistence of structural market failures in the equity market which appear to lead to gaps for smaller investments.[13] As a result of imperfect information between the investor and business, investors must undertake due diligence to determine the riskiness of the business. Due diligence costs account for a higher proportion of smaller deals, leading funds to focus on larger investments. This may be an even bigger issue in areas of micro-finance for very small enterprises.

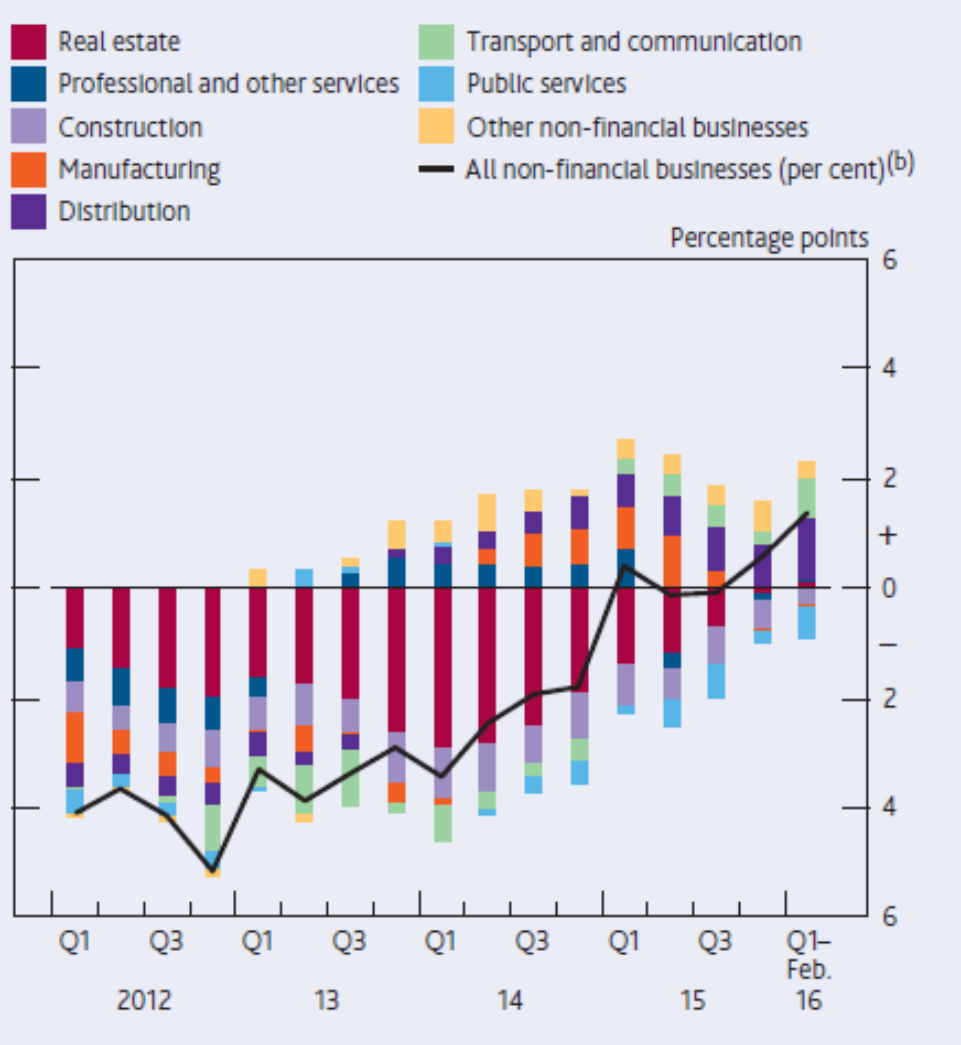
The available evidence on the levels of finance where gaps are most significant in the early stage equity SME market is now several years out of date. The 2009 research indicates that parameters of the gaps stretch from £250,000 to between £2 and £5 million for deals involving low capital expenditure, extending up to £10-15 million for deals involving extensive capital expenditure or R&D. In terms of value, earlier Scottish Government work estimates that the SME lending gap is currently in the range of £330 million to £750 million per year.

More recent evidence suggests there is a later stage venture capital funding gap in the UK, which is holding back growth companies from scaling-up. However, the evidence does not provide a strong indication of the levels of finance where the gap is most significant. Trends in

[12] British Business Bank, Small Business Finance Markets 2016/17
[13] The report does not provide an indication of what it regards as smaller investments.

lending have varied across sectors, with real estate and construction seeing a particular decline in recent years (see Figure 9). This trend will also reflect the demand factors discussed above. Consideration needs to be given to whether there is a role for the Bank in sector specific interventions and how this sits with a mission led approach.

Figure 9: Change in lending stock by major industrial sector



Source: Bank of England, Credit Conditions Report

Looking specifically at Scotland, net lending (debt) to SMEs as a whole in Scotland is generally positive but consistently negative for smaller firms. Overall SME success rates in obtaining external finance have increased from 77 per cent in 2012 to 86 per cent in 2016 in Scotland. See Table 1. However, success rates are much lower for micro firms. This chimes with British Business Bank analysis of rejected loan applications which shows higher rejection rates for younger small businesses. This is likely due to younger firms having security shortfalls and an inability to demonstrate a track record in performance.

This tends to suggest two areas of focus where current provision is poor specifically for SMEs – potentially (very) small amounts of seed capital, in the form of traditional debt and then equity finance (or a variation) for scale-up at a relatively high level £10m plus. But the key point is that the Bank must be reactive to developing gaps in the market and must not be constrained by requirements to target pre-determined segments. This should sit alongside the consideration of the parameters of transformative, mission-led investment that are considered below.

Table 1: Finance success by type of organisation

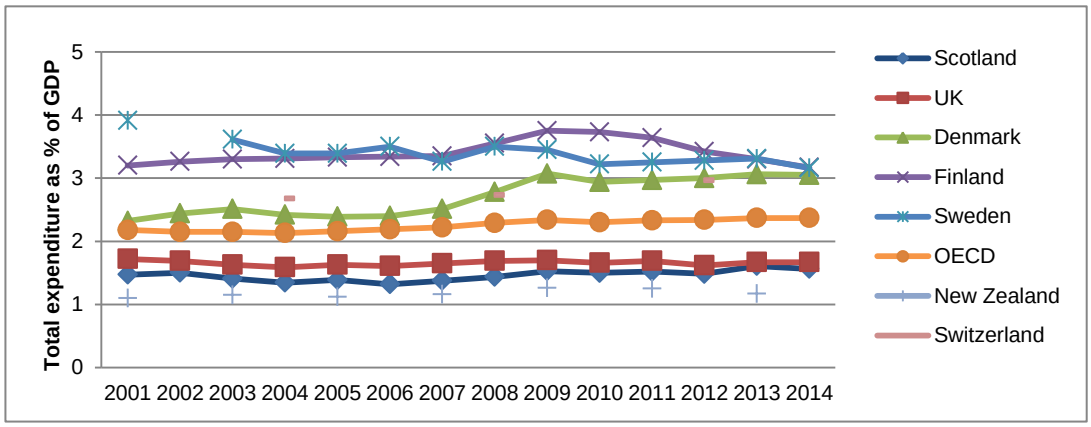
	All that sought finance	Micro 1-9	Small 10-49	Medium 50-249
2016				
Obtained any external finance	86%	64%	81%	87%
Did not obtain any	12%	11%	13%	13%
Decision pending	21%	25%	6%	0%
2015				
Obtained any external finance	83%	82%	85%	90%
Did not obtain any	6%	7%	1%	3%
Decision pending	12%	11%	14%	7%

1.3.2 Innovation performance

Overall Scotland's relative innovation performance lags behind comparator countries. According to the European Commission's Regional Innovation Scoreboard, Scotland is classed as an innovation 'Follower' and ranks around the middle of EU countries across a composite of innovation indicators. Scotland's country comparators all perform more strongly. For example, Switzerland is classed as an innovation 'Leader', as are the majority of regions in Sweden, Finland and Denmark (though regions within these countries have more mixed performance).

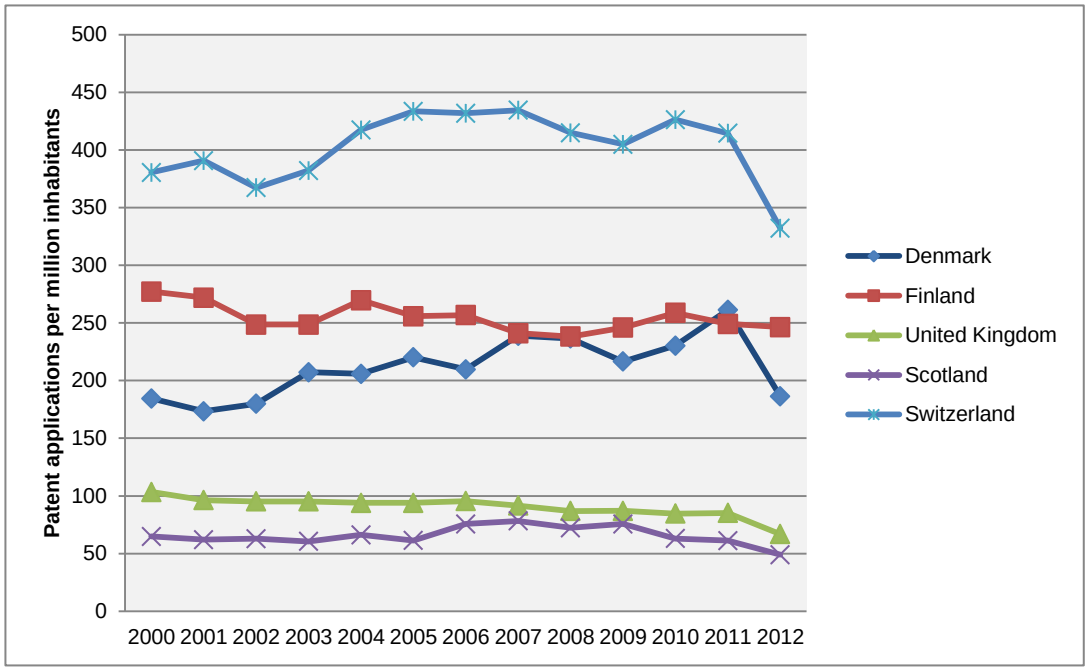
Scotland's overall expenditure on research and development (R&D) as a percentage of GDP is low relative to comparator countries. It has been relatively flat over time and lower than the OECD and all comparator countries, with the exception of New Zealand. See Figure 10.

Figure 10: Total expenditure on R&D as % of GDP, selected countries, 2001-2014



Within this, Scotland performs particularly poorly in terms of Business Expenditure on R&D (BERD), ranking 5th amongst 6 comparator countries. While it is challenging to directly compare countries on this measure, the figure below attempts to show the relative performance of key comparator countries in terms of the number of patent applications made to the European Patent Office. See Figure 11. On IP registrations to the UK Patent Office, Scotland performs worse than the UK, though performance has improved in recent years. Scotland's performance on all indicators within this is worse than that of the UK, with performance particularly lagging in trade mark registrations.

Figure 11: Patent applications per head – selected countries



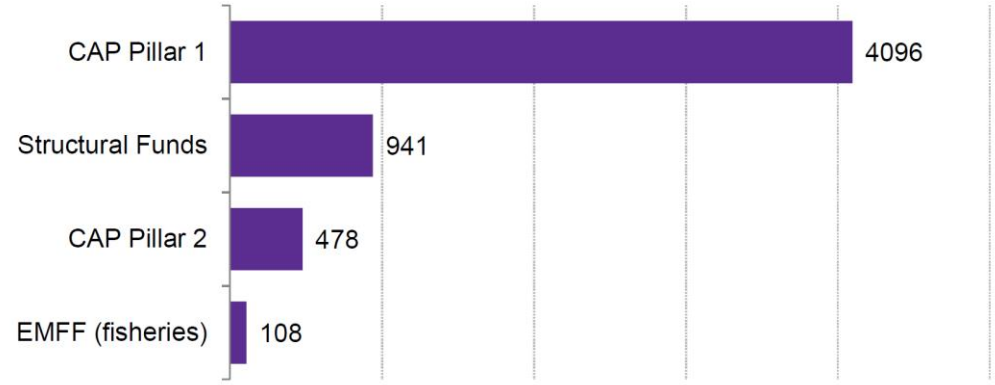
In contrast, a further unique feature of the Scottish investment landscape lies in the success and volume of investment by universities and other academic institutions. In 2012, for example Scotland's higher education R&D expenditure as a percentage of GDP was the 4th highest in the OECD, with half of Scotland's university research being assessed as world-leading or internationally excellent. However, as referred to previously, Scotland lags behind key competitors in *business* expenditure on R&D, which remains at less than 1% of GDP in Scotland. This makes that relative lack of technology-based companies more stark in Scotland and shows that there is a missed opportunity to use the intellectual capital that Scotland has in abundance.

1.3.3 Loss of European funds

Further uncertainty arrives in the shape of EU funding which may or may not be replaced at UK level, including CAP, Rural Development, Fisheries and Structural Funds, collectively worth €5.6 billion between 2014 and 2020; as well as the potential loss of access and diffusion of shared developments through the Horizon 2020 programme and European Territorial Cooperation programmes. It is not yet clear whether successor (UK) funding will be put in place, but consideration could be given to how such funding might best be managed in the interest of Scotland's economy and there may be a role for the Bank.

Figure 12 below sets out the major areas of pre-allocated European funding that prior to the Brexit vote Scotland was expecting to receive between 2014 and 2020.

Figure 12: EU funding 2014-2020



(Sources: Scottish Government 2016, UK Government 2016, UK Government 2014, UK Government 2013)

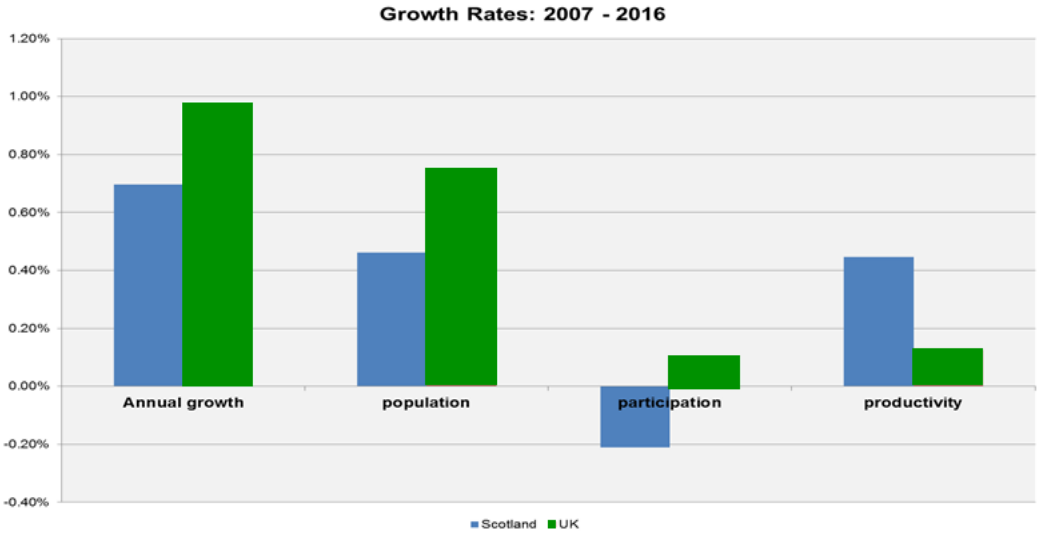
While the CAP Pillar 1 agricultural payments account for the largest proportion of this total, the European Regional Development Fund (ERDF) and European Social Fund (ESF) account for a substantial amount of funding (€941), a large proportion of which supports innovation, business support, co-investment and skills.

The Scottish Government is the Managing Authority for these programmes in Scotland. It has overall responsibility for the implementation, management and effectiveness of funds distributed through the programmes.

1.4 Comparing the Scottish economy to key competitors

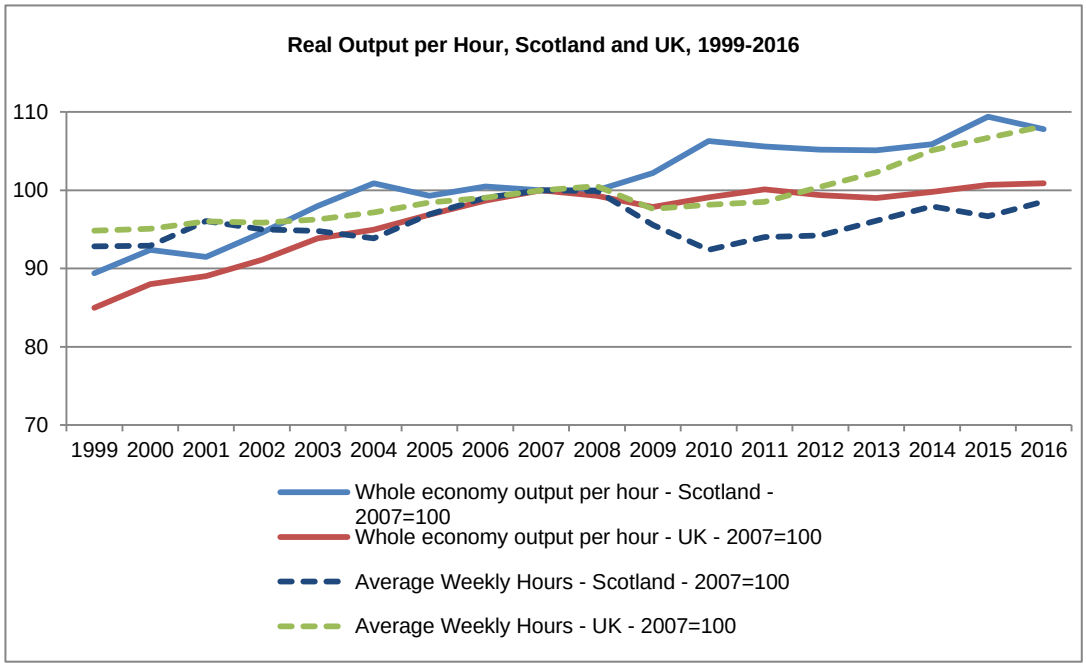
Over the last ten years, growth in both the Scottish and UK economy has been heavily affected by the financial crisis in 2007/8. Over this period Scottish growth (6.4%) was lower than the rest of the UK (9.1%) but GDP per capita growth was very similar. Growth in productivity and population were the key factors in Scotland whereas it was primarily population growth in the UK as a whole. See Figure 13 below.

Figure 13: Scotland and UK growth rates and causes, 2007-2016



As Figure 14 suggests, the productivity gap between Scotland and the rest of the UK has narrowed over the period since 2007. Scottish productivity is now above its pre-recession level but hours worked are not, whereas for the UK the opposite holds true: productivity has not grown whilst the number of hours worked are longer. See Figure 14.

Figure 14: Real output per hour, Scotland and UK, 1999-2016



This variation in productivity is even more stark when viewed through a sub-regional lens. Economic disparities between regions and countries of the UK have reached a much higher level than in other European countries. There are large gaps in productivity performance, with London and the South East outstripping performance in other areas. The four Scottish sub-regions with productivity levels above the UK average are Aberdeen City & Aberdeenshire; the City of Edinburgh; Inverclyde, East Renfrewshire & Renfrewshire; and South Ayrshire. In addition, performance in Scotland is more broadly diverse than all regions other than the North West, South East and London. See Figure 15.

Figure 15: Regional and sub-regional productivity (UK)

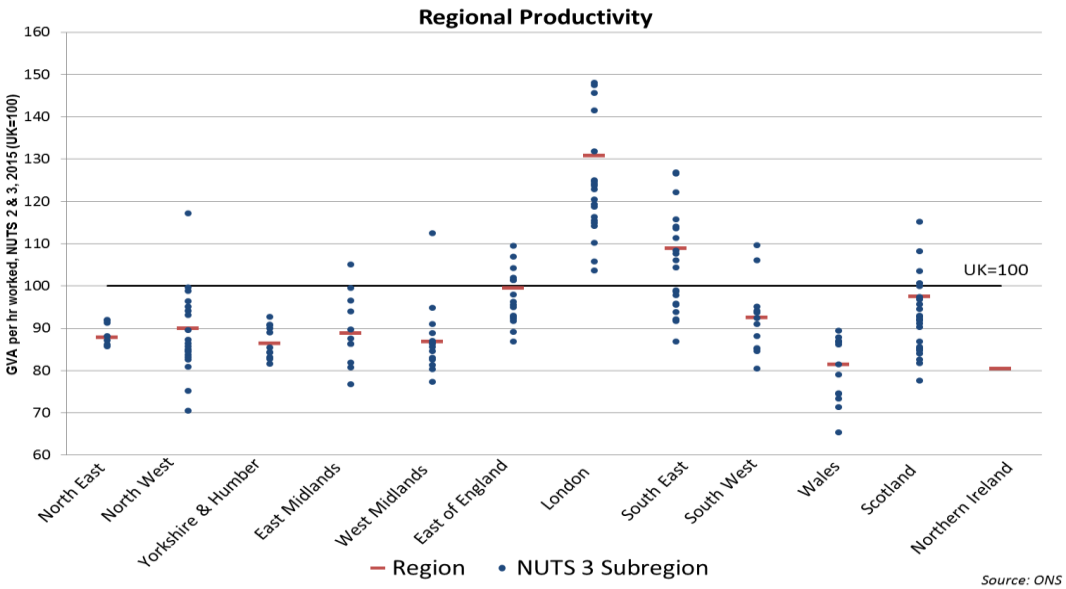


Table 2 shows where Scotland stands across selected measures relating to the drivers of productivity growth highlighted by the SG Enterprise & Skills Review[14]: skills, innovation, investment, internationalisation and enterprise. The table shows comparisons against other countries (either the OECD, EU or UK), showing where Scotland's ranks in terms of

[14] https://beta.gov.scot/policies/economic-growth/enterprise-and-skills-review/

'quartiles'. The table also illustrates the "Gap" between Scotland's current performance and the leading (Q1, or "*1st Quartile")* economies – and whether that gap is "improving" or "worsening".

From these data, Scotland's strengths are clear in areas like skills attainment, funding for companies and inward investment. Weaknesses include enterprise, business investment, and business R&D, as discussed earlier. Significantly, the trends suggest that, *while most of Scotland's strengths seem to be improving, our weaknesses mostly appear to be getting worse.* There is some evidence that many of Scotland's weaknesses are driven by a lack of dynamism in Scotland's *business base*, with a smaller population of firms, fewer high-growth firms, low levels of entrepreneurship and innovation, and a low business birth rate as discussed in section 1.3.

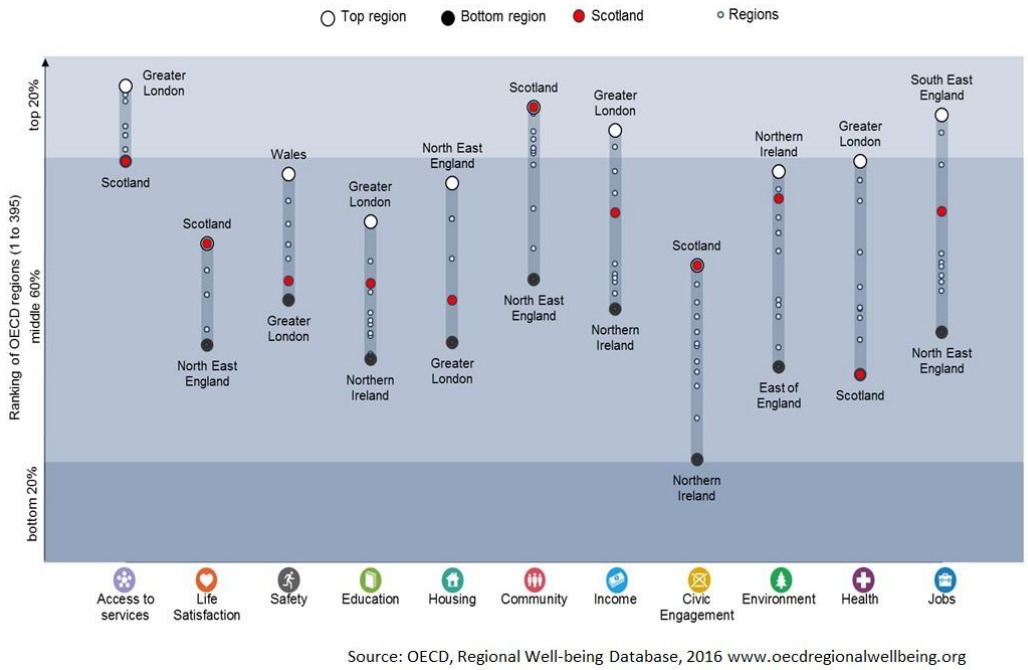
Table 2: Scotland's relative performance

Drivers	Measure			Gap / Issue	*Scotland's performance over last year:*
Skills	% of adults *tertiary education attainment*	Q1	EU	Graduates in non-grad jobs	↑
	Employees below the Living Wage	Q1	UK	*Mixed Performance on 'Fair Work'*	↑
	Youth Unemployment	Q1	EU	2nd lowest in EU	↑
Innovation	No. of *Innovation-active* firms	Q1	EU	Last OECD ranking: Q3	↑
	Business Expenditure on *R&D*	Q4	OECD	Gap to Q1: **£1.9bn**:	↓
	Gross Expenditure on R&D	Q3	OECD	Gap to Q1: **£2.0bn**	↑
Investment	Business *Capital Investment*	Q4	OECD	Gap to Q1: **£10bn**	↓
	Risk Funding for *Growth companies*	Q1	UK	*Best UK region outside SE England*	↑
	Net Bank Lending to *SMEs*	Q1	UK	*Above UK average*	↑
Internationalisation	Export level (rUK and overseas)	Q2	OECD	Gap to Q1: **£35bn**	↑
	Number of Exporters	Q3	UK	Gap to Q1: **4,000 exporters**	↓
	Inward Investment (FDI) projects	Q1	UK	*Best UK region outside London*	↑
Enterprise	Established Business Owners	Q3	OECD	Gap to Q1: **~110,000 entrepreneurs**	↓
	Number of firms	Q4	UK	Gap to UK average: **50,000 firms**	↑
	High-Growth Firms	Q4	UK	Gap to UK average: **80 firms**	↓

However, the key point is to highlight the differences between Scotland, the rest of the UK and EU and OECD nations. These differences strongly suggest that a one-size-fits-all approach for the UK is not the most suitable approach.

This view is reinforced by a similar comparison on wider factors that shows the variation between Scotland and the rest of the UK is even more marked. Figure 16 shows the different relative performance of British regions against OECD regions by a range of measures of well-being. Scotland reaches top ranking in terms of "Community", and has strong ratings in terms of "Access to Services", "Environment", "Life Satisfaction", "Civic Engagement", "Jobs" and "Income" but its ranking is poor (and worst in UK) on "Health". Scotland scores highest in the UK on Community, Life Satisfaction and Civic Engagement and poorest on Access to services (as well as health). But what is equally interesting is that Scotland is the most extreme (top or bottom of the ranking) in the UK in these 5 categories, a total that is only bettered by Greater London (6), which confirms the differences between Scotland and other (regional) parts of the UK.

Figure 16: “Well-being" performance of UK regions against rest of OECD



Source: OECD, Regional Well-being Database, 2016 www.oecdregionalwellbeing.org

Another important distinction is the divergence in the policy environment between Scotland and the rest of the UK. Some aspects of this have always existed – e.g., the different legal and education systems, but some differences have accelerated post devolution. A particular example is housing where there are now wide differences in legislation around homelessness and the nature of tenancies as well as a different approach to provision, all of which have specific and distinct impacts on the financing of housing interventions.

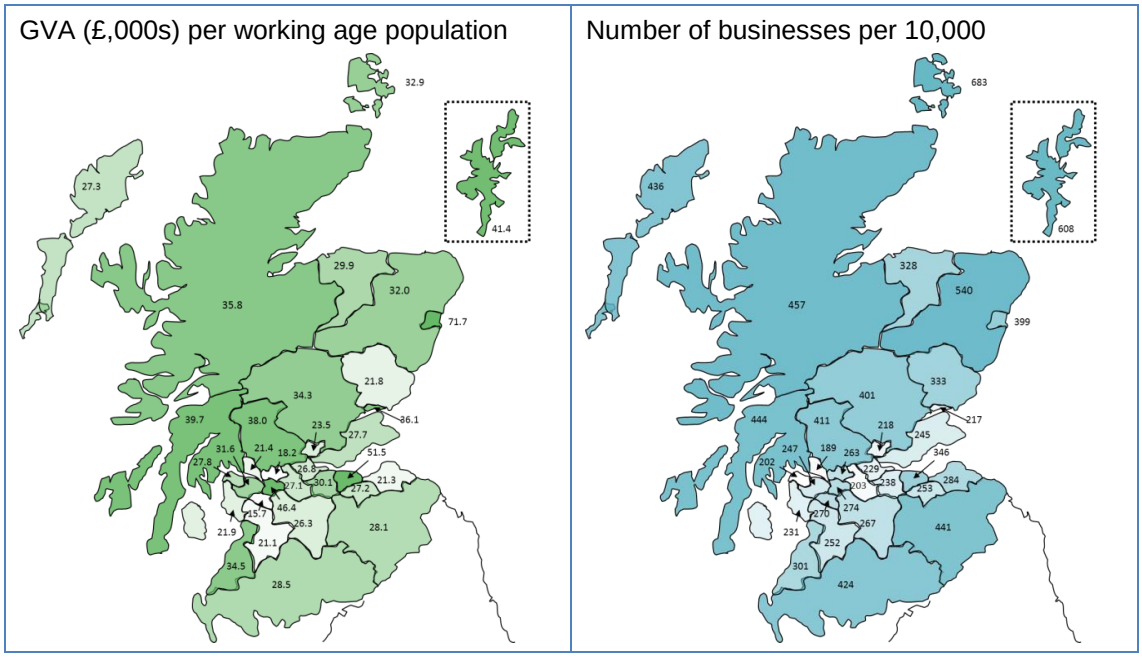
In summary, this section presents strong evidence on the distinctiveness of the Scottish economy compared to key competitors and the UK as a whole. This goes some way to confirm the requirement for a Scottish specific approach, in line with devolved powers, that would be difficult to achieve by a UK based institution.

1.5 Regional and local variation in Scotland

There is also considerable regional variation in the Scottish economy, as shown in the earlier discussion of productivity. A significant piece of work was undertaken for the work on the location of the Social Security Agency in Scotland that, as a by-product, demonstrated sharp variations in economic and wider indicators between areas. The work was undertaken in several phases. An initial phase looked at a small number of indicators across all Local Authorities in Scotland and areas with the ability to recruit the required number of staff were considered in greater detail in the second phase. However, detailed data was collated across all areas. There are particularly large variations in Gross Value Added (GVA) per working age person and the number of businesses per 10,000 population. These are illustrated in Figure 17

.

Figure 17: Key geographical indicators



Aberdeen has the highest GVA per working age person at £71,700 but is middle ranking in terms of number of businesses per 10,000 population at 399 – as might be expected this implies large, high productivity companies are prevalent in the area. One factor behind for these differences are the industries that predominate within local authorities, so that different areas have benefited and lost from structural change in the economy. For example, Edinburgh and Glasgow benefitted from the growth in services, whereas Fife and North Ayrshire have lost out to the decline in manufacturing. This is illustrated in the change in employment in different Local Authorities shown in Figure 18.

Some further highlights that demonstrate the variation across Scotland are shown in Table 3 further below. Finally, Table 6 and Table 7 below show a more detailed analysis for the more populous, connected areas of Scotland.

Figure 18: Change in employment across Scottish Local Authorities

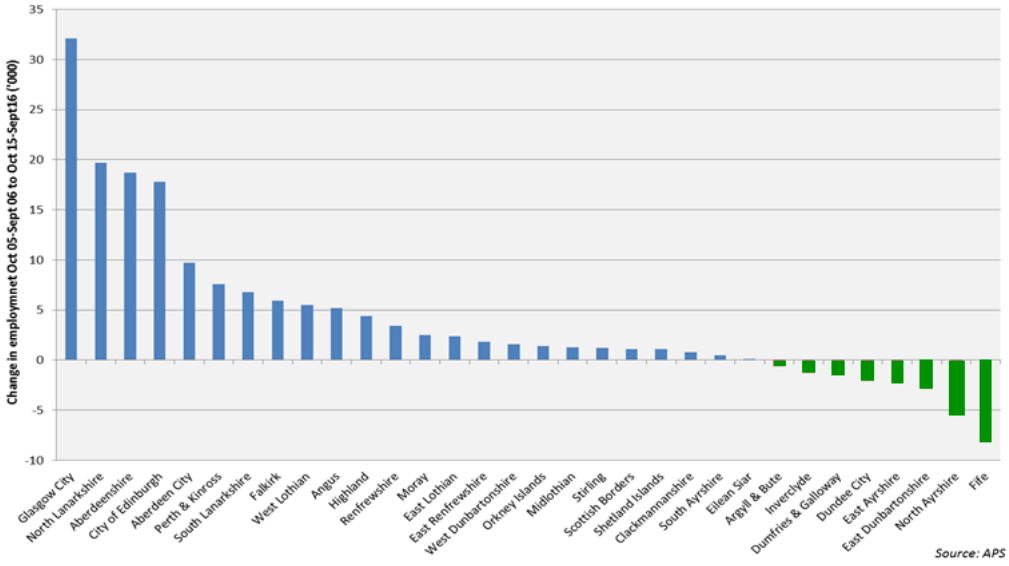


Table 3: Key data – min and max values across Scottish Local Authorities

Indicator	Minimum		Maximum	
Total GVA (£bn)	£0.8	Clackmannanshire	£18.8	Glasgow City
GVA by Sector: Public administration and defence; compulsory social security %	2.9%	Aberdeen City	17.2%	Argyll and Bute
GVA growth between 2004 and 2014	-7%	North Ayrshire	56%	Aberdeen City
Average annual growth rate 2010-2014	-1.6%	West Dunbartonshire	7.5%	Midlothian
GVA per working age person (£s)	£15,716	East Renfrewshire	£71,654	Aberdeen City
GVA per Worker	£34,830	Angus	£55,397	Aberdeen City
Number of businesses per 10,000	189	West Dunbartonshire	540	Aberdeen-shire
Businesses with 100+ employees as % of all businesses	0.2%	East Dunbartonshire	1.8%	Aberdeen City
Business Birth Rate (per 10,000 popn)	27	Inverclyde	57	Aberdeen City
Business Death Rate (per 10,000 popn)	20	Inverclyde	38	Aberdeen City
Business Survival Rate (per 10,000 popn)	39	Inverclyde	61	Aberdeen-shire
ILO Unemployment Rate	2%	Aberdeenshire	11%	North Ayrshire
Employment Projections (change between 2015 and 2024)	-3%	West Dunbartonshire	6%	Edinburgh City of
Employment – workplace based as % of 16-64 popn	23%	East Renfrewshire	118%	Aberdeen City
Change in number of employees 2015 to 2016 (BRES)	-6%	Aberdeen City	13%	Renfrew-shire
SIMD 20% most deprived	0.8%	Moray	48.3%	Glasgow City
SIMD 20% least deprived	4.1%	West Dunbartonshire	60%	East Renfrew-shire

N.B. does not include the three island authorities

Table 4: Selected economic indicators, selected Scottish Local Authorities

			Glasgow City	Dundee City	North Lanarkshire	Edinburgh, City of	North Ayrshire	Renfrewshire	Inverclyde	West Dunbartonshire	South Lanarkshire	Aberdeen City	East Ayrshire	Fife	Falkirk	Aberdeenshire	West Lothian
Inclusive Growth	Contribution to the economy	GVA per Worker	£44,027	£43,208	£40,851	£48,721	£41,166	£43,345	£43,714	£37,369	£40,945	£55,397	£35,004	£41,746	£38,077	£42,153	£41,411
		GVA per working age person (£s)	£46,415	£36,055	£27,119	£51,502	£21,938	£31,576	£27,775	£21,429	£26,273	£71,654	£21,098	£27,738	£26,754	£32,040	£30,085
	Recent performance	Change in unemployment rate (2015 to 2016)	-2.4	-1.8	-4.1	-1.3	-0.5	-0.8	-2.7	-1.4	0.3	3.3	0.0	-3.1	-1.9	3.0	-2.8
		Change in number of employees 2015 to 2016 (BRES)	0.5%	0.0%	-1.5%	0.6%	0.0%	13.3%	0.0%	3.3%	1.7%	-5.7%	2.5%	-0.7%	-1.6%	0.9%	-1.3%
		GVA growth between 2004 and 2014	11.1%	5.7%	23.4%	8.5%	-7.5%	-2.7%	-2.7%	-0.6%	1.9%	56.0%	-1.2%	9.9%	-7.1%	54.3%	-0.6%
	Employment opportunities	Employment Rate	67.5%	66.4%	75.2%	71.7%	64.3%	75.3%	70.2%	71.1%	75.1%	70.3%	66.3%	72.3%	76.5%	78.1%	75.3%
		Works in home area	76.2%	84.5%	53.2%	86.4%	55.2%	52.4%	66.5%	46.7%	50.3%	90.5%	53.8%	76.2%	57.9%	56.8%	59.4%
		Employment - workplace based as % of 16-64 popn	105.8%	83.4%	51.0%	96.2%	51.9%	60.1%	60.4%	72.4%	54.0%	117.7%	58.9%	62.7%	63.5%	59.5%	64.8%
		Employment Expansion Demand: Admin, secretarial, sales & custo	659	-331	-329	1,234	-342	-173	-157	-270	-391	243	-86	-406	-45	464	170
		Employment Projections (change between 2015 and 2024)	4.0%	0.4%	1.0%	6.2%	-1.9%	0.8%	-1.2%	-3.4%	-0.1%	-1.2%	-0.5%	0.5%	2.2%	2.1%	3.1%
	Business creation	Number of businesses per 10,000	274	217	203	346	231	247	202	189	267	399	252	245	229	540	238
		Businesses with 100+ employees as % of all businesses	1.6%	1.6%	1.1%	1.3%	0.6%	1.3%	0.9%	0.9%	0.8%	1.8%	0.7%	0.9%	1.1%	0.5%	1.3%
		Business Birth Rate (per 10,000 popn)	48	34	33	56	31	35	27	30	37	57	32	32	33	47	36
		Business Survival Rate (per 10,000 popn)	40	45	46	48	50	45	39	51	49	53	47	49	41	61	48
	Economic diversity	% employed in Business Admin/support and Public Admin sectors	19.0%	11.5%	16.4%	13.7%	10.9%	14.8%	14.9%	14.6%	13.8%	12.3%	16.3%	13.2%	12.5%	8.3%	13.8%
		Admin and support and Public Admin sectors as % of GVA	9.3%	10.6%	10.0%	7.7%	8.8%	5.1%	7.9%	12.1%	8.8%	10.0%	8.3%	12.6%	5.9%	7.0%	4.7%
		Public Sector employees %	22.5%	30.3%	28.7%	23.4%	25.4%	19.8%	31.4%	36.1%	23.4%	17.0%	33.1%	25.3%	29.1%	15.9%	19.4%
Ability to Recruit	Access to labour force within LA	Population aged 16-64 in 2016 (inc. neighbouring LAs)	520,980	135,330	314,020	424,890	139,760	191,960	101,320	129,340	267,090	182,840	116,160	286,110	220,880	182,820	205,940
		Working- age, economically active population level (inc. neighbour	379,200	98,760	241,450	317,870	101,750	147,330	74,760	96,220	207,870	141,280	85,540	216,110	169,750	150,480	159,940
		ILO Unemployment (inc. neighbouring LAs)	30,320	8,250	17,050	17,900	9,690	9,690	6,110	7,100	11,430	5,990	6,290	15,780	11,220	3,830	10,350
		Short-term unemployment level (inc. neighbouring LAs)	7,500	1,827	4,047	3,850	2,265	2,740	1,972	1,983	3,282	2,488	1,826	3,349	2,309	1,817	2,230
		Population density	34.0	24.6	7.2	18.1	1.6	6.7	5.1	5.7	1.8	12.0	1.0	2.8	5.2	0.4	4.1
		Employment by Occupation: Admin, Secretarial, Sales & Customer S	66,890	15,780	49,500	53,570	20,480	29,450	17,250	18,810	50,370	24,700	12,120	41,060	29,770	28,140	29,580
		Employment by Sector: Business admin/support, public admin & da	94,760	14,170	36,070	57,900	12,790	24,740	11,960	14,830	26,590	25,940	13,420	25,580	25,570	11,250	25,560
	Skills and education	% School Leaver in Positive Destinations	89.6%	89.9%	91.5%	92.3%	91.8%	93.4%	91.3%	89.1%	90.9%	91.2%	90.7%	90.8%	92.7%	94.9%	91.6%
		% of 16-64 year olds with SCQF 5 or higher	71.6%	72.5%	68.8%	84.1%	68.7%	76.8%	70.2%	66.6%	71.9%	80.9%	69.1%	76.5%	73.8%	81.7%	77.0%
	Skill shortages	Vacancies: Have at least one vacancy	23.0%	16.0%	18.0%	22.0%	13.0%	21.0%	21.0%	21.0%	18.0%	17.0%	13.0%	20.0%	22.0%	17.0%	15.0%
		Vacancies: Have at least one vacancy that is hard to fill	9.0%	6.0%	8.0%	8.0%	5.0%	8.0%	8.0%	8.0%	8.0%	8.0%	5.0%	11.0%	10.0%	8.0%	6.0%
		Vacancies: Have a skills shortage vacancy	7.0%	5.0%	5.0%	6.0%	3.0%	7.0%	7.0%	7.0%	5.0%	5.0%	3.0%	9.0%	8.0%	5.0%	4.0%
		Skills Gaps: Administrative/clerical staff	3.9%	3.4%	5.0%	4.2%	5.6%	5.1%	5.1%	5.1%	5.0%	4.4%	5.6%	9.7%	5.2%	4.4%	3.8%
		Skills Gaps: Sales & customer services staff	8.6%	8.1%	5.0%	6.3%	7.1%	1.8%	1.8%	1.8%	5.0%	11.6%	7.1%	8.4%	5.7%	11.6%	4.3%
Regeneration	SIMD	SIMD 20% most deprived	48.3%	36.7%	32.2%	13.7%	37.6%	27.1%	43.9%	39.7%	20.6%	7.8%	32.5%	19.2%	15.4%	1.8%	15.9%
		SIMD 20% least deprived	9.4%	15.4%	8.7%	41.9%	9.7%	19.1%	13.2%	4.1%	14.4%	39.9%	11.0%	21.1%	18.7%	35.6%	18.8%
		SIMD Income Domain	20.0%	16.0%	15.0%	9.0%	17.0%	13.0%	17.0%	18.0%	13.0%	8.0%	16.0%	12.0%	12.0%	6.0%	12.0%
		SIMD Employment Domain	16.0%	14.0%	14.0%	8.0%	15.0%	12.0%	15.0%	15.0%	12.0%	6.0%	14.0%	11.0%	11.0%	5.0%	10.0%
	Population Trends	Total Population change 2005-15	6.5%	3.2%	3.4%	11.0%	-0.4%	1.8%	-3.8%	-2.1%	3.1%	10.4%	1.5%	3.6%	5.5%	10.3%	8.2%
		Net Migration 10 Year Total as % of population	3.9%	3.8%	0.3%	11.1%	-0.1%	0.8%	-3.5%	-2.1%	3.0%	9.4%	1.0%	4.3%	5.1%	8.0%	3.6%

Table 5: Relative scoring – Selected Indicators, selected Local Authorities

			Glasgow City	Dundee City	North Lanarkshire	Edinburgh, City of	North Ayrshire	Renfrewshire	Inverclyde	West Dunbartonshire	South Lanarkshire	Aberdeen City	East Ayrshire	Fife	Falkirk	Aberdeenshire	West Lothian
Inclusive Growth	Contribution to the economy	GVA per Worker	5.6	6.0	7.1	3.3	7.0	5.9	5.7	8.9	7.1	0.0	10.0	6.7	8.5	6.5	6.9
		GVA per working age person (£s)	5.0	7.1	8.8	4.0	9.8	7.9	8.7	9.9	9.0	0.0	10.0	8.7	8.9	7.8	8.2
	Recent performance	Change in unemployment rate (2015 to 2016)	2.3	3.1	0.0	3.8	4.9	4.5	1.9	3.6	5.9	10.0	5.5	1.4	3.0	9.6	1.8
		Change in number of employees 2015 to 2016 (BRES)	6.7	7.0	7.8	6.7	7.0	0.0	7.0	5.3	6.1	10.0	5.7	7.4	7.8	6.5	7.7
		GVA growth between 2004 and 2014	7.1	7.9	5.1	7.5	10.0	9.3	9.3	8.9	8.5	0.0	9.0	7.3	9.9	0.3	8.9
	Employment opportunities	Employment Rate	7.7	8.5	2.1	4.6	10.0	2.0	5.7	5.1	2.2	5.7	8.6	4.2	1.2	0.0	2.0
		Works in home area	3.3	1.4	8.5	0.9	8.1	8.7	5.5	10.0	9.2	0.0	8.4	3.3	7.4	7.7	7.1
		Employment - workplace based as % of 16-64 popn	1.8	5.1	10.0	3.2	9.9	8.7	8.6	6.8	9.6	0.0	8.8	8.3	8.1	8.7	7.9
		Employment Expansion Demand: Admin, secretarial, sales & customer service occupations	3.5	9.5	9.5	0.0	9.6	8.6	8.5	9.2	9.9	6.1	8.1	10.0	7.8	4.7	6.5
		Employment Projections (change between 2015 and 2024)	2.3	6.0	5.5	0.0	8.4	5.6	7.7	10.0	6.6	7.8	7.0	5.9	4.2	4.3	3.2
	Business creation	Number of businesses per 10,000	7.6	9.2	9.6	5.5	8.8	8.4	9.6	10.0	7.8	4.0	8.2	8.4	8.9	0.0	8.6
		Businesses with 100+ employees as % of all businesses	1.6	1.8	5.4	3.6	8.9	4.0	6.6	7.0	7.4	0.0	8.8	7.0	5.3	10.0	3.9
		Business Birth Rate (per 10,000 popn)	3.1	7.8	8.0	0.4	8.6	7.5	10.0	9.1	6.8	0.0	8.4	8.4	8.0	3.5	6.9
		Business Survival Rate (per 10,000 popn)	9.9	7.4	7.1	6.1	5.0	7.2	10.0	4.4	5.6	3.6	6.4	5.3	9.5	0.0	6.0
	Economic diversity	% employed in Business Admin/support and Public Admin sectors	0.0	7.1	2.5	5.0	7.6	4.0	3.8	4.1	4.8	6.3	2.6	5.4	6.1	10.0	4.9
		Admin and support and Public Admin sectors as % of GVA	4.2	2.6	3.3	6.1	4.8	9.4	5.9	0.7	4.8	3.3	5.4	0.0	8.5	7.1	10.0
		Public Sector employees %	6.7	2.9	3.7	6.3	5.3	8.1	2.4	0.0	6.3	9.5	1.5	5.4	3.5	10.0	8.3
Ability to Recruit	Access to labour force within LA	Population aged 16-64 in 2016 (inc. neighbouring LAs)	10.0	0.8	5.1	7.7	0.9	2.2	0.0	0.7	4.0	1.9	0.4	4.4	2.8	1.9	2.5
		Working- age, economically active population level (inc. neighbouring LAs)	10.0	0.8	5.5	8.0	0.9	2.4	0.0	0.7	4.4	2.2	0.4	4.6	3.1	2.5	2.8
		ILO Unemployment (inc. neighbouring LAs)	10.0	1.7	5.0	5.3	2.2	2.2	0.9	1.2	2.9	0.8	0.9	4.5	2.8	0.0	2.5
		Short-term unemployment level (inc. neighbouring LAs)	10.0	0.0	3.9	3.6	0.8	1.6	0.3	0.3	2.6	1.2	0.0	2.7	0.9	0.0	0.7
		Population density	10.0	7.2	2.0	5.3	0.4	1.9	1.4	1.6	0.4	3.5	0.2	0.7	1.4	0.0	1.1
		Employment by Occupation: Admin, Secretarial, Sales & Customer Service (inc. neighbouring LAs)	10.0	0.7	6.8	7.6	1.5	3.2	0.9	1.2	7.0	2.3	0.0	5.3	3.2	2.9	3.2
		Employment by Sector: Business admin/support, public admin & defence (inc. neighbouring LAs)	10.0	0.3	3.0	5.6	0.2	1.6	0.1	0.4	1.8	1.8	0.3	1.7	1.7	0.0	1.7
	Skills and education	% School Leaver in Positive Destinations	0.9	1.4	4.1	5.5	4.7	7.4	3.8	0.0	3.1	3.6	2.8	2.9	6.2	10.0	4.3
		% of 16-64 year olds with SCQF 5 or higher	2.9	3.4	1.3	10.0	1.2	5.8	2.1	0.0	3.0	8.1	1.5	5.7	4.1	8.6	5.9
	Skill shortages	Vacancies: Have at least one vacancy	0.0	7.0	5.0	1.0	10.0	2.0	2.0	2.0	5.0	6.0	10.0	3.0	1.0	6.0	8.0
		Vacancies: Have at least one vacancy that is hard to fill	3.3	8.3	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	10.0	0.0	1.7	5.0	8.3
		Vacancies: Have a skills shortage vacancy	3.3	6.7	6.7	5.0	10.0	3.3	3.3	3.3	6.7	6.7	10.0	0.0	1.7	6.7	8.3
		Skills Gaps: Administrative/clerical staff	9.2	10.0	7.5	8.7	6.5	7.3	7.3	7.3	7.5	8.4	6.5	0.0	7.2	8.4	9.4
		Skills Gaps: Sales & customer services staff	3.1	3.6	6.7	5.4	4.6	10.0	10.0	10.0	6.7	0.0	4.6	3.3	6.0	0.0	7.5
Regeneration	SIMD	SIMD 20% most deprived	10.0	7.5	6.5	2.6	7.7	5.5	9.1	8.2	4.1	1.3	6.6	3.8	2.9	0.0	3.0
		SIMD 20% least deprived	8.6	7.0	8.8	0.0	8.5	6.0	7.6	10.0	7.3	0.5	8.2	5.5	6.2	1.7	6.1
		SIMD Income Domain	10.0	7.1	6.4	2.1	7.9	5.0	7.9	8.6	5.0	1.4	7.1	4.3	4.3	0.0	4.3
		SIMD Employment Domain	10.0	8.2	8.2	2.7	9.1	6.4	9.1	9.1	6.4	0.9	8.2	5.5	5.5	0.0	4.5
	Population trends	Total Population change 2005-15	3.0	5.2	5.1	0.0	7.7	6.2	10.0	8.8	5.4	0.4	6.4	5.0	3.7	0.5	1.9
		Net Migration 10 Year Total as % of population	5.0	5.0	7.4	0.0	7.7	7.1	10.0	9.1	5.6	1.2	7.0	4.7	4.1	2.1	5.2

1.6 The solution: solving a lack of mission-orientated investment

This section draws heavily on ideas from Mazzucato in "The Entrepreneurial State"[15] (Mazzucato 2013), and several related papers[16].

In many countries, state investment banks play a key role in financing and directing investment. The fundamental role of these institutions is to leverage relatively small amounts of public capital into a significant source of strategic and long-term finance that can be channelled into areas of the economy in most need.

Traditionally, the role of the state could be thought of as one of regulation to set a level and fair space for competition, to potentially facilitate private sector involvement and to solve market and wider system failures (such as provision of public goods, the reduction of negative externalities and solving information and co-ordination failures).

But a simple (correction of) market failure argument does not explain the development of transformative innovation which can be driven by the state but often for reasons that are not purely economic (e.g., internet technology for military purposes, space exploration to enhance "soft power").

As such, there is a strong and clear argument that public investment is essential not only for fixing market failures, but for actively creating and shaping new sectors and driving innovation targeted at particular social and environmental objectives. Transitioning to a post-fossil fuel society and reindustrialising the Scottish economy can be accelerated by directing strategic investment towards new industries and technologies.

Most developed (and developing countries) have some form of state or national investment bank. The range of activities varies across countries and indeed has varied across time. Over the course of the 20th century these activities moved from countercyclical lending to offset the 'credit crunch' during economic recessions (a **countercyclical role)** to funding for long-term projects, industrialization and capital development of the economy (a **capital development role)** to targeting investments in high-risk R&D, innovative start-ups, and lengthy innovations, areas that private capital has proved to be too short-termist and risk-averse to venture into (a **venture capitalist role)**.

[15] Mazzucato, M. (2013), The Entrepreneurial State: debunking public vs. private sector myths, Anthem Press: London, UK, ISBN 9780857282521

[16] See Mazzucato, M. and Macfarlane, L, (2017), "Patient strategic finance: opportunities for investment-led growth in the UK". *UCL Institute for Innovation and Public Purpose, Working Paper Series* (IIPP 2017-05) www.ucl.ac.uk/bartlett/public-purpose/wp2017-05, and

Mazzucato, M. and Penna, C. (2016), "Beyond market failures: the market creating and shaping roles of state investment banks", *Journal of Economic Policy Reform*, Volume 19 (issue 4): 305-326, (if you want to read it its online at SPRU working paper version www.sussex.ac.uk/spru/documents/2014-21-swps-mazzucato-and-penna.pdf)

Table 6: A selection of National Development Banks

	Business Development Bank of Canada	Est. 1944
	KfW Bankengruppe	Est. 1948
	Banca del Mezzogiorno	Est. 1952
	Small Business Administration (SBA)	Est. 1953
	BPI France	Est. 2005
	Japan Finance Corporation	Est. 2008
	British Business Bank	Est. 2014

Some of these banks have been operating for a very long time – BPI France evolved from the Caisse des Dépôts that was investing in innovative new technologies such as railways and the telegraph from the 1850s onwards. Such institutions are not exclusive to countries outside the UK. The UK Government had set up the Industrial and Commercial Finance Corporation 1945 which provided patient finance until 1987 when it was sold. The British Business Bank was established in 2014, with a goal to change the structure of finance markets for smaller businesses in the UK, so that these markets work more effectively and dynamically. By March 2017, the BBB had supported over £400m of financing to over 5,000 companies based in Scotland, helping intermediaries expand the scale of growth capital they could offer.

In Scotland there is already the Scottish Investment Bank (SIB), which was established in 2010 as an expansion of Scottish Enterprise's investment function and has a remit to grow Scotland's risk capital market and support early stage and expanding SMEs with growth and export potential to raise finance. The asset value of the SIB's equity portfolio to March 2017 was £260m, representing over 280 current active portfolio companies. This excludes the value of assets with SIB's holding in the Scottish Loan Fund, Epidarex Capital and the Lending Crowd.

For further evidence on the international impact of National Development Banks please see the accompanying paper.[17]

The argument made persuasively by Mazzucato is that, faced with complex societal problems, such as climate change, an aging population or major technological change impacting on the labour market, what is needed is a mission-oriented role that cannot be provided by the private sector.

In order to carry out such a role with maximum efficiency it is obvious that it must be aligned to the prevailing legislative and regulatory framework. This would suggest that in Scotland, if the mission orientated role stems from devolved policy or competency then there is a strong and clear case that it will require a Scottish institution to implement.

1.7 Conclusions and rationale for change

The initial part of this chapter (1.1) laid out the strategic framework for economic policy in Scotland. In this context examining the key economic challenges faced by Scotland over the coming decades (section 1.2) means that the constraints imposed by 2 key characteristics of

[17] Macfarlane, L. and Mazzucato, M. (2018), 'State investment banks and patient finance: An international comparison'. UCL Institute for Innovation and Public Purpose Working Paper, IIPP-WP 2018-01.

the economy in Scotland – a lack investment in infrastructure and long-term investment in SMEs and the fact that Scotland lags behind comparator countries in innovation – are of key concern. See section 1.3 for more detail.

These challenges are tackled elsewhere by various forms of state investment banks and this provides a compelling strategic case for the establishment of the Bank. There are issues to be addressed around finance and assistance for SMEs. Research suggests the gap changes over time, but recent evidence suggests that this might be a low level (micro-finance and below £2m) for debt-based seed capital ("start-up") and at a higher level (£2m plus) in equity finance for scaling up.

More generally a key market failure is around imperfect information between the investor and business, meaning investors must undertake due diligence to determine the riskiness of the business. These due diligence costs account for a higher proportion of smaller deals, leading funds to focus on larger investments.

Scotland, along with the rest of the UK, is weak compared with comparator countries in terms of innovation. This suggests that part of the mission focus should be on high innovation areas rather than traditional sectors.

Traditionally, the role of the state could be thought of fixing market failures. But this perspective does not account for the development of transformative innovation which is often driven by the state but not always for reasons that are purely economic. Public investment can thus actively create and shaping new sectors, driving innovation targeted at particular social and environmental objectives.

It is also clear that for this approach to be successful it must be aligned to the prevailing legal and regulatory framework. When the Scottish and UK economies are examined there are some stark differences that mean that what is needed in Scotland is very different to what is needed elsewhere in the UK. This issue is strongly exacerbated by the nature of Scotland's geography and regional diversity and means that it is very difficult to see how a UK based institution such as British Business Bank could develop the local knowledge required to properly serve Scotland fully. This reinforces the notion that a mission led approach that stems from devolved competencies, needs a devolved body to take it forward.

This evidence leads to **Recommendation 1** in terms of the overall vision for the Bank to "*provide finance and catalyse private investment in order to create opportunities for Scotland, by powering innovation and accelerating the transformation to a low carbon, high-tech, connected, globally competitive and inclusive economy"* and **Recommendation 2** in that the Banks strategic priorities should be centred on a core role of helping to address Scotland's economic priorities.

2. Focus for investment activities

This chapter sets out how the options for meeting the challenges set out in the preceding chapter were generated, sifted and then assessed in more detail. It develops a systematic framework for analysing the potential options and then applies that framework in two stages to produce a balanced view of the characteristics of the actions it is recommended the Bank should take. (Recommendation 3 and 4)

It then describes how the Bank will provide additionality to the Scottish investment landscape through an investment strategy that, whilst being different from that which incumbent market players would be looking to achieve, still provides a return. It describes the risk/return characteristics of the investment products that have been identified as appropriate interventions, before identifying a possible portfolio approach that balances the need to intervene in a way that is additional to the current market with the need for a long-term sustainable approach (Recommendation 5 and 6). The framework under which the potential actions are assessed forms the potential basis for a balanced score card approach to measuring the Bank's performance (Recommendation 7). Finally, analysis has been undertaken to model the potential short term and long term macroeconomic impacts of the Bank.

Recommendations 8 to 10, deal with how the Bank is aligned to the existing Landscape and the rationale for the recommendations is provided within the Implementation Plan itself.

2.1 Identification, sifting and assessment of options

This section details the framework by which a long-list of options was assessed across several workshops and presents the results.

2.1.1 Functions of the Bank

In this context, functions should be thought of as the broad areas of what the Bank would do. The goal of the vision statement is to accelerate the transformation of the Scottish Economy into *a low carbon, high-tech, connected, globally competitive and inclusive economy*. Given the mission statement it is clear that three capabilities that the Bank requires are to be able to act to encourage innovation through its own activities (financial or otherwise) and to catalyse investment from (new) additional sources by working with others and potential acting as a conduit for (existing) funds. In addition, the vision refers to inclusive growth that may require the targeting of specific groups. Finally, there is a need for a long-term management of government commercial interests that could fall within scope.

This gives rise to the following 5 functions:

- F1 Powering innovation (the Bank acts directly)
- F2 Catalysing investment (the Bank acts with others)
- F3 Acting as a conduit for existing funds
- F4 Targeting specific groups
- F5 Managing commercial interests

2.1.2 Activities and capabilities needed to deliver the Bank

The functions of the Bank relate to how it fulfils its mission but the Bank requires the capability to deliver these functions. This capability arises from the activities that the Bank undertakes. Some activities are financial and relate to the specific financial instruments that would be used or guarantees that could be given.

- A1 Financing – with several sub-categories: debt, mezzanine debt, equity
- A2 Guaranteeing
- A3 Advice and support
- A4 Commercial market shaping
- A5 Direct action

2.1.3 Long list of interventions

The initial generation of options was driven by a number of sources:

- Material that forms chapter 1 of this supporting analysis
- Discussions at advisory group and related undertakings
- 3 sector specific workshops undertaken in October 2017

The long list of potential Bank activities within the functions is set out in Table 7 below.

Table 7: Long list of Bank activities

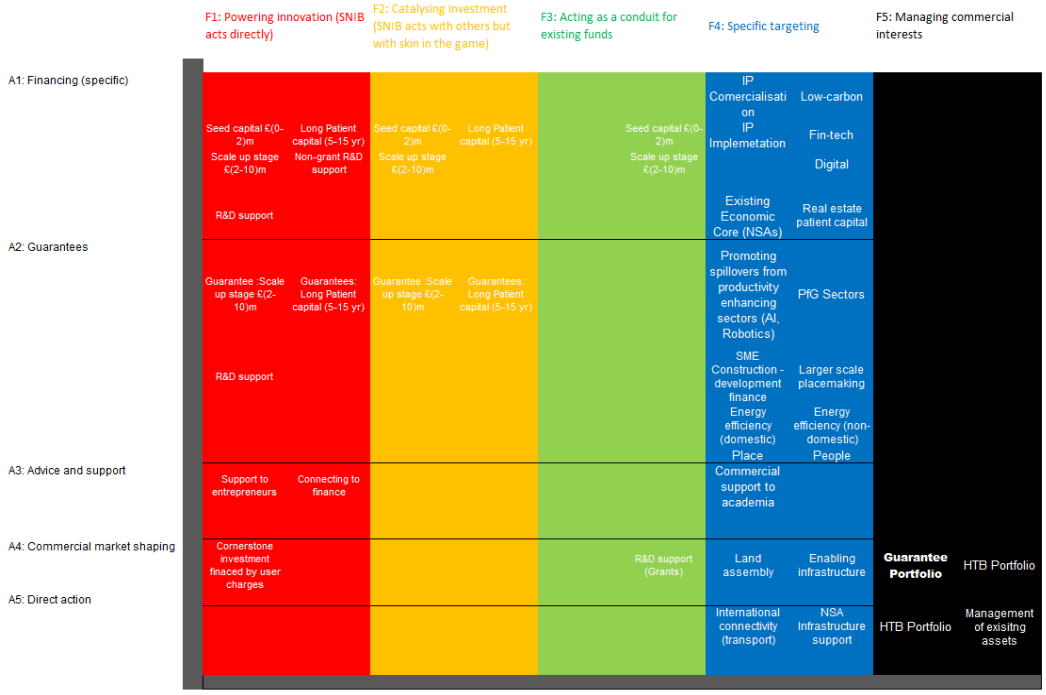
The Bank Function	Potential Activities	
F1: Powering innovation (the Bank acts directly)	Seed capital £0-2m Scale up stage £2-£20m Long patient capital (5-15 years) Non-grant R&D support R&D support Guarantees – scale up stage £2m-20m	Guarantees – Long patient capital (5-15 years) Support to entrepreneurs Connecting organisations to finance Cornerstone investment financed by user charges
F2: Catalysing investment (the Bank acts with others)	Seed capital £0-2m Scale up stage £2-10m Long patient capital (5-15 years)	Guarantees – scale up stage £2m-£20m Guarantees – Long patient capital (5-15 years)
F3: Acting as a conduit for existing funds	Seed capital £0-2m Scale up stage £2-10m	R&D support (grants)
F4: Specific targeting	IP commercialisation IP implementation Low-carbon Fin-tech Digital Existing economic core (NSAs) Real estate patient capital Promoting spillovers from productivity enhancing sectors PfG sectors SME construction – development finance	Energy efficiency (domestic) Energy efficiency (non-domestic) Place People Commercial support to academia Larger scale place-making Land assembly Enabling infrastructure International connectivity (transport) NSA infrastructure support
F5: Managing commercial interests	Guarantee portfolio Help-to-buy portfolio PWLB Replacement	Deposit taking Management of existing assets

2.1.4 Option generation

The options appraisal workshop followed the process:

- Participants discussed the long list of interventions and differentiated between Business Growth and Infrastructure to initially focus individual views
- Identified interventions were mapped to a matrix containing the five functions and the five activities. This is shown in Figure 19 below.

Figure 19: Options – functions and activities



- Interventions were plotted on a matrix assessing potential impact and ease of implementation

This process defined impact and implementation as follows:

- Ease of implementation – This was considered in terms of the legal, regulatory and practical hurdles to implementation and explicitly did not consider cost or finances.
- Potential Impact – This considered the potential impact of the intervention if undertaken successfully and was considered in terms of likely impact per unit of budget. The existing landscape of interventions was not considered explicitly but the extent to which the intervention was likely to be additional and the extent to which it would be likely to displace current activity were considered.

The options were scored relative to each other by placing each activity in an Impact-Feasibility space as illustrated in Figure 20. When this was complete it became apparent that it was possible to look at the potential impact rankings in terms of broad classes of activity:

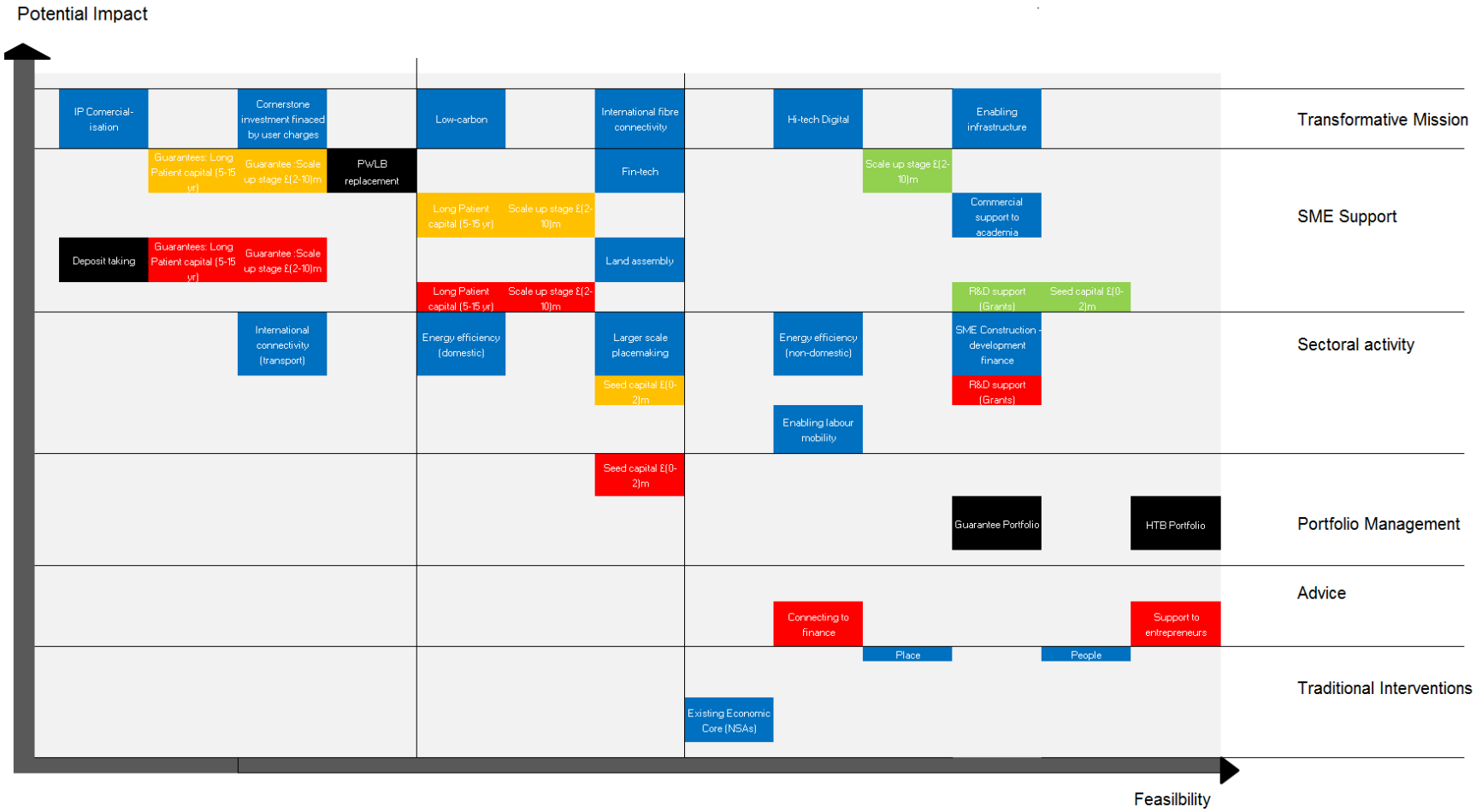
- Transformative mission
- SME/Business support
- Sectoral activity

- Portfolio management
- Advice
- Traditional interventions

Those within the upper quartile, i.e., high impact and easy to implement were considered a key focus for the Bank, followed by those with a high impact, but greater implementation difficulty.

Focus for investment activities

Figure 20: Scoring of long-list of options



2.1.5 High level conclusions from strategic analysis and initial option sifting

Based on the gap analysis in chapter 1 that Scotland's relative innovation performance lags behind comparator countries and thus needs to raise long-term investment in SMEs, the options appraisal suggests the Bank should:

- Provide early stage finance (potentially alongside grant funding, e.g., for proof of concept) at the sub £2 million level, including for development of technological solutions and R&D – some of this done through SIB now. Given the risk profile at this stage, this will mostly be equity funding.

- Provide investment of between £2-£20 million in growth capital for firms involved in innovation or mission-critical areas. This could come at a variety of different levels of risk and include some mezzanine debt.

Bringing together the strategic analysis and the initial work on options sifting, it is clear that in order to fulfil the vision and align with strategic priorities, the Bank should:

- Co-ordinate with the Scottish Government in terms of areas of mission-based focus, and the regulatory and spending activities that would support a mission.

This flows from the key message of chapter 1, specifically the work of Mazzucato on the nature of the "entrepreneurial state". This suggests that a number of key mission areas should be agreed with SG Ministers and this should form the basis of Bank activity in this area. Whilst the choice of mission area is best made by Ministers, the current Programme for Government (PfG) suggests that candidate missions could be constructed from a number of areas. Taking these in combination with three of the key challenges outlined in section 1.2 – decarbonisation, healthcare with an aging population and the hollowing out of the labour market by artificial intelligence – suggest a number of possible candidate missions:

- Decarbonising Scotland
  - Through transport – Creating the conditions for a low carbon economy with flagship commitments around investing in electric vehicles, low emissions zones, stimulating uptake of ULEVs, etc., and
  - Carbon capture and storage – early sites.
- Supporting an aging population through health technology
  - Promoting the development, export and adoption of leading technologies in Scotland for healthcare.
- The challenge of hollowing labour markets
  - Promoting internationalisation and innovation – 'Scotland as the best place in the world to do business: an entrepreneurial culture and a partnership approach with Business and wider society'.

The final choice of mission will be for the Scottish Government. It will be necessary for the Bank to develop the capacity for larger scale financing, including the provision of equity for large scale projects (for instance as would have been necessary to support wave energy), or the rollout of a new technology as part of a mission.

There are other things that it may be sensible for the Bank to undertake as they are either existing (and co-ordination would bring benefits), are straightforward and replace private sector activity that has disappeared, or are a strong conduit for government policy.

- Looking at the wider picture there may be a role for portfolio management in order to maximise co-ordination of different activities.
- There are gaps in advice, support and sign-posting that may be simple to fix.
- Consideration should also be given to how the Bank can contribute to the inclusive aspects of growth.
- The Bank could perform the role of a future conduit for a successor to EU funds in order to build larger more effective interventions, bringing in other sources of finance.

The following are areas in which the evidence suggests the Bank should not have a defined interest at launch, but which may be part of developing the Bank in later stages or in response to changing government priorities. These are areas in which there is either a danger of crowding out private investment or intervention is especially difficult.

- Real estate finance, supporting the general sector of building and construction. There may be some potential to focus on a defined mission on the built environment if one were to emerge;
- Supporting the existing economic core. This does not score highly on potential impact, will impact on classification and control (see chapter 3) and can be undertaken out with the Bank if deemed necessary,
- Intervention as a regulated bank, including the potential to take deposits. This could be considered if a need was identified for additional bank credit products that should provide but would face considerable implementation difficulties. The proposal would need to be precisely developed to gain approval and could be developed as the Bank got up and running but should not be a prerequisite for action.

2.1.6 Summary of conclusions

This section has laid out the framework that was used for initial options analysis and detailed the initial sifting and assessment that was undertaken. The conclusions form the basis of Recommendations 3 and 4. Firstly the Bank should have two main focuses – growth capital across the lifecycle of a companies need for capital and supporting transformational projects that are mission based. In addition, the Bank could also provide demand stimulus through working closely with Scottish Enterprise and Scottish Futures Trust.

In order to further assess these options and to provide an initial view of how the Bank's performance may be measured, the following section extends the analysis across multiple criteria in a standard manner.

2.2 Using Multi-Criteria Analysis to further assess the options

Multi-Criteria Analysis (MCA) refers to a set of techniques for comparing policy options without assigning monetary values to their impacts. MCAs are a good alternative to Cost-Benefit Analysis (used widely across the public sector) where there is insufficient information about monetary values or where deriving these is impractical. In the case of the Bank, while the broad categories of investment activity are being set out in advance, it will be for the Bank itself when up and running to decide on specific investments, each of which will have specific economic impacts. Thus, the socio-economic benefits of these investments cannot be anticipated at this stage.

Moreover, MCA offers a transparent means of presenting information even when some elements are monetisable that can provide a wider illustration of anticipated benefits. For a recent example of the use of MCA in Scotland, see the Outline Business case for the social security agency in Scotland[18].

[18] http://www.gov.scot/Publications/2017/04/9565

It will be desirable for the Bank to have a range of criteria by which it makes investment decisions. A key factor will obviously be financial – what is the financial or monetary return on investment – but as a national investment bank, the Bank should also look at wider economic, social and environmental objectives as well as alignment with the wider landscape (including the strategic direction required). It is also sensible to look at the risk involved and again at ease of implementation.

Figure 21: MCA – criteria sets

This suggests five broad criteria as shown in Figure 21.

The five high level criteria are:

- Economy – the net economic impact in terms of GVA, jobs, tax revenue and the impact on exports. As part of this criterion consideration was given to whether an intervention targets market failure or aims for market transformation. It also looks at the extent to which the intervention displaces current activity and the extent to which it may "crowd in" external finance.
- Equality and poverty – in terms of inclusive growth this criterion assesses, respectively, any impacts on income and spatial distribution, on specific groups (those with protected characteristics and other vulnerable groups) and on child poverty. It also considers the quality of any jobs created.
- Environment and technology – in line with the vision for the Bank this criterion considers the impact on CO2 in Scotland alongside any other environmental factors and the extent to which there may be improvements in digital connectivity, usage and the positive impact of technology on business performance.
- Efficiency and alignment – this category looks at likely resource cost (how much the intervention will cost to administer), the alignment to existing provision and the alignment to the wider SG vision (Programme for Government, Economic Strategy). It also considers the potential impact on the wider SG public sector reform agenda and the strategic tie up with regulation and policy.
- Implementation and risk – this category considers legal and technical feasibility or difficulty and the potential public perception of the interventions. It considers the likely time to implement and the risks to both implementation and continuing delivery. It does not consider the financial risk associated with the Bank financial portfolio.

These criteria have deliberately been defined at a high level and to be comparable across different areas of existing SG interventions (e.g., transport).

2.2.1 Developing the detailed Multi-Criteria Analysis criteria

For each criterion a range of detailed sub-criteria was developed in line with the vision statement and drawing upon wider aspects of the strategic and economic analysis. For this analysis, equal weighting is given to all criteria and sub-criteria.

These criteria are presented in the tables below:

Table 8: Economy sub-criteria

GVA	**The impact of the intervention on the overall size of the economy**
Employment	The impact on the overall level of employment. Note that the quality of employment is covered within Equality and Poverty
Tax	The impact on the level of devolved tax receipts. Likely to be income tax or associated minor taxes but could also relate to VAT assignment.
Exports	The impact on exports. Links to global competitiveness
Market failure	The extent to which the intervention tackles market failure.
Market transformation	The extent to which the intervention is likely to bring about or facilitate transformative change.
Displacement (crowding out)	The extent to which the intervention does not displace current activity. A high score represent zero or minimal displacement.
Crowding in	The extent to which the intervention generates new activity in addition to itself.

Table 9: Equality and Poverty sub-criteria

Impact on income distribution	**The extent to which the intervention makes the distribution of income more equal.**
Impact on spatial distribution	The extent to which the intervention helps address regional or smaller scale economic disparities.
Impact on specific groups	The extent to which the intervention benefits protected characteristics and other vulnerable groups.
Impact on child poverty	The extent to which the intervention helps SG move towards the child poverty target.
Quality of jobs generated	A measure of the quality of any employment created, e.g., are jobs secure, living wage, permanent, not exploitative zero-hours contracts.

Table 10: Environment and Technology sub-criteria

Carbon	**The extent to which the intervention contributes to reductions in CO2 emissions.**
Non-carbon	The impact on other environmental factors
Digital	The extent to which the intervention enables improvements in digital connectivity, usage and the positive impact of technology on business performance.

Table 11: Efficiency and Alignment sub-criteria

Likely resource cost/use	**The level of resource that will be required to run the intervention once implemented. A high score represents minimal resource.**
Alignment with/of existing provision	The extent to which the intervention fits with existing provision. This is either how easily existing public provision could be moved into the Bank or, if there is no existing identical public provision, how well the Bank intervention aligns with the rest of the landscape.
Alignment to SG vision	The extent to which the intervention aligns with SG strategic and other objectives, e.g., as set out in the 2017-18 PfG.
Strategic tie-up with regulation and policy (reserved vs devolved)	The extent to which the intervention lies in an area where there is control over regulatory and legislative powers and these could be used in conjunction with the intervention. This will have particular focus in terms of devolved or reserved areas of wider policy.
Public sector reform	The extent to which the intervention is able to improve efficiencies across the public sector.

Table 12: Implementation and Risk sub-criteria

Legal feasibility	**How difficult the intervention is to implement from a legal and legislative point of view. A high score represents minimal difficulty.**
Technical difficulty	How difficult the intervention is to implement from a technical and practical point of view. A high score represents minimal difficulty.
Public perception	
Resourcing (Staff and Expertise)	How difficult the intervention is to resource in terms of staff (numbers) and expertise (quality). A high score represents minimal difficulty.
Time to implement	How long the intervention will take to put into place. A high score indicates a shorter time period.
Risks to implementation	Any other risks to the initial delivery of the intervention. A high score represents minimal risk (this is delivery risk rather than risk associated with the Bank financial portfolio).
Risks to continuing delivery	Any other risks to the continuing and on-going delivery of the intervention. A high score represents minimal risk (this is delivery risk rather than risk associated with the Bank financial portfolio).

2.2.2 Methodology for assigning option scores against each broad criterion set

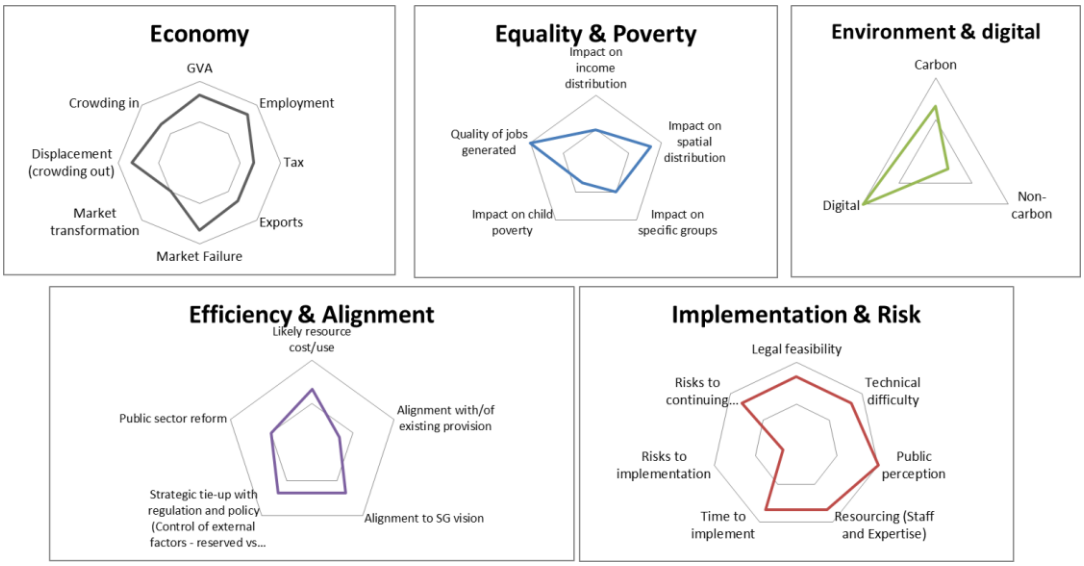
Each of the short-listed options is assessed against the 5 criteria by assigning each sub-criterion a score on a 7 point scale:

-3	-2	-1	0	1	2	3
strongly negative	moderately negative	weakly negative	neutral	weakly positive	moderately positive	strongly positive

A score of 0 indicates that the option is considered neutral against the sub-criterion. This score may also be assigned when the evidence about the nature of the impact is weak or when the impact depends on detailed design factors. In the interests of transparency, the scoring is undertaken in the absence of any mitigating action but potential actions are noted.

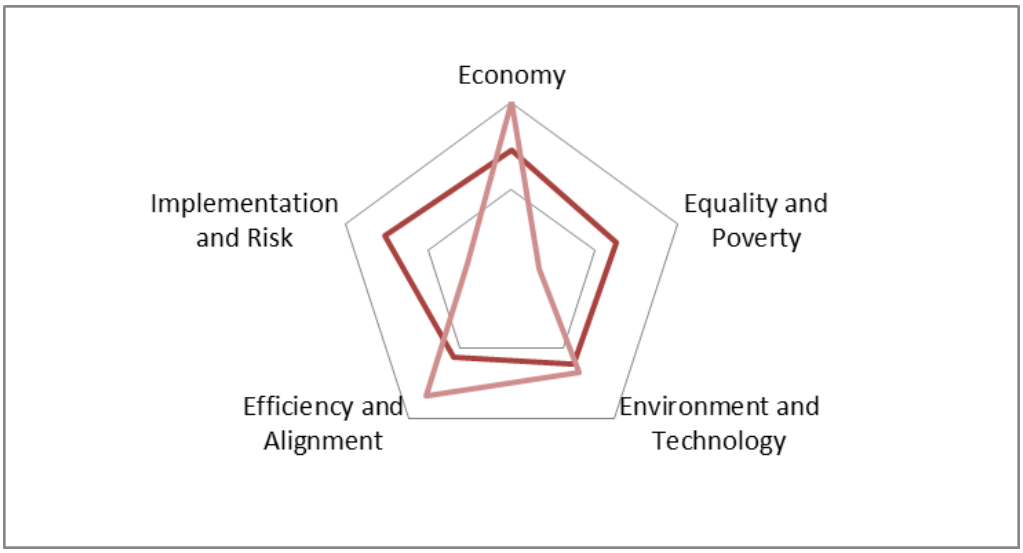
The results are presented as radar diagrams that show the impact against each of the sub-criteria for each of the 5 main criteria. See Figure 22. The outer line in each diagram represents a score of “strongly positive”, the middle line a score of “neutral” and the centre point a score of “strongly negative”. In each case, for each criterion, more area “covered” by the radar diagram indicates a more favourable assessment and the central line in each diagram represents a neutral scoring. In addition, for each option, the rationale for the score against each sub-criterion is explained in a narrative.

Figure 22: Sample radar diagrams for MCA



Results across options are best compared at the level of the 5 main criteria. This allows the potential trade-offs between options to be demonstrated. An example is shown in Figure 23, where the option shown by the pink line scores strongly against the Economy and Efficiency & Alignment criteria and moderately against the Environment and Technology criterion but poorly against the Equality and Poverty and Implementation and Risk criteria. In contrast, the option represented by the red line scores moderately across each of the criteria.

Figure 23: Sample summary diagram for multiple options (MCA)



The scoring was undertaken in a workshop comprising a group of internal stakeholders from across the SG and representatives from Scottish Futures Trust and Scottish Enterprise. The scoring and associated narrative were the result of several workshop sessions that compared aspects of the options from different perspectives. In the workshop, impacts on SMEs of three key forms of intervention were assessed:

- Early stage equity – provision of early stage finance (potentially alongside grant funding, e.g., for proof of concept) at the sub £2 million level, including for development of technological solutions and R&D – some of this undertaken through SIB now. Given the risk profile at this stage, most investment will be through equity funding.

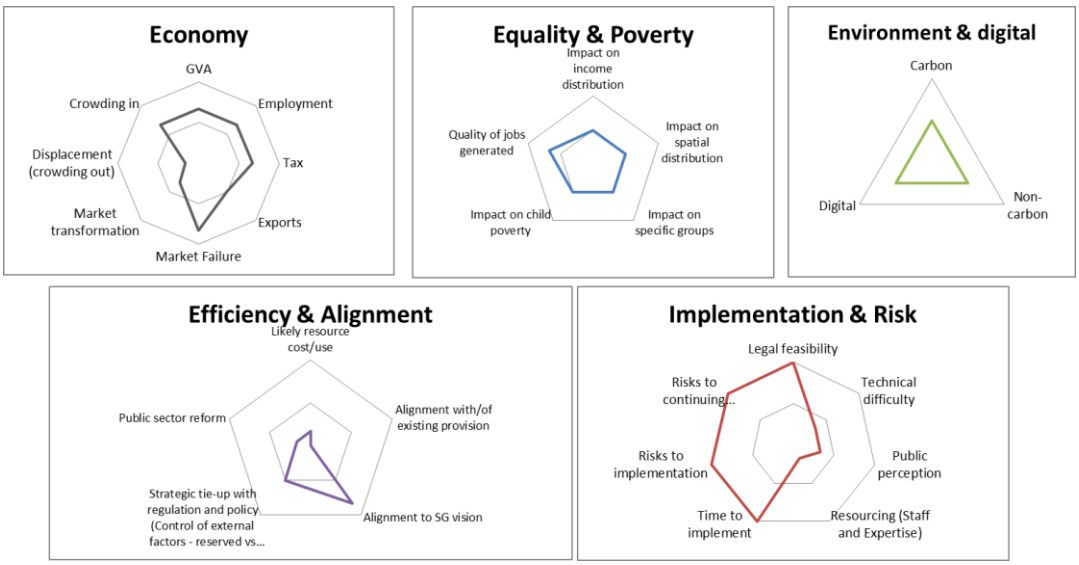
- Growth capital – provision of investment of between £2-20 million in growth capital for firms involved in innovation or mission-critical areas. This would likely involve investments with various different levels of risk and include some mezzanine debt.

- Mission led – large scale investments with transformative aims.

The results for early stage equity are shown in Figure 24, for growth capital in Figure 25 and for larger scale mission led or market transformative investments in Figure 26. It is helpful to consider each of the criteria and sub-criteria in turn for each of the interventions before comparing the interventions at a higher level via the main 5 criteria.

2.2.3 MCA for early stage equity

Figure 24: MCA results for early equity



Economy

- For the economy criterion early stage equity scores strongest against the market failure criterion. This is unsurprising as this criterion reflects early stage equity being primarily a "market failure" intervention (***Market Failure: 2: moderately positive***).

- While access to finance is an important issue, this intervention is less about transformation than other options (***Market transformation: -1: slightly negative***).

- Of more interest is the low score (***Displacement: -2: Moderately negative***) for potential crowding out or displacement. This arose from a discussion over the scale of the sector. Whilst the most recent Risk Capital Market in Scotland (2016)[19] reports total deals of around £340m the top twenty of the 285 deals reported accounted for around £210m of this. In earlier years the proportion of larger deals was even higher. The remainder were worth around £120m and Scottish Investment Bank (SIB) currently accounts for around £35m a year or with co-investment, over half the current market. Thus, notwithstanding the potential for the market to be grown, there is a danger of additional activity through the Bank causing significant displacement unless there is co-ordination with existing provision.

- At the same time existing activity plays an important role in crowding in external investment that means additional activity may not have a very strong impact (***Crowding in: 1 – Slightly positive***). Precise and detailed evidence is fairly weak on the economic impact of current (and potential future) activity as a whole but the suggestion was made

[19] https://www.scottish-enterprise.com/about-us/what-we-do/investment/sib

that it is difficult to achieve a strong commercial return at this point meaning that that key economic benefits may come later in the growth cycle of firms.

- However, there will be some impact on employment and overall economic activity (***GVA : 1: slightly positive, Employment: 1: Slightly positive, Tax: 1 Slightly positive***) but there is unlikely to be a significant impact on exports (***Exports: 0: Neutral***).

Equality and poverty

- It was difficult to reach any firm conclusions on the impact on equality and poverty as it will be intervention specific although it was thought likely that the quality of any additional jobs created would, broadly, be likely to be above average (***Quality of jobs: 1: Slightly positive, other sub-criteria: 0: Neutral/Unknown***).

Environment and digital

- It was also difficult to assess the Environment and Digital criterion (***All sub-criteria: 0: Neutral/Unknown***) in generic terms of SME finance. This is not to say that the two criteria are unimportant but simply that they required specific interventions to be applied. This led to an important conclusion that it would be sensible to illustrate these two criteria by examining more specific interventions, but it also meant that it was likely that the inclusion of these two criteria, although difficult in generic terms, would be crucial to assess the scope of the Bank activity in practice.

Efficiency and alignment

- Early stage equity is well aligned with the SG vision and the wider Scottish Government economic strategy (***Alignment to SG vision: 2: Moderately positive***).

- It has a neutral alignment with the regulatory and policy environment (some powers in this area remain reserved, e.g., British Business Bank, wider regulatory issues) (***Strategic tie-up: 0: Neutral***).

- However, given the existence of the Scottish Investment Bank, additional provision would be very badly aligned with existing provision (***Alignment with existing provision: -3: Strongly negative***)

- The public sector landscape would be made more complicated and so the Bank also scores badly on public sector reform unless the opportunity was taken to consolidate provision. (***Public sector reform: -2: Moderately negative***). As detailed elsewhere in the Implementation Plan, this issue would be solved by drawing the Scottish Investment Bank into the Bank and noting the importance of the relationship between Scottish Enterprise, Scottish Futures Trust [SFT]) and the Bank.

- Finally, it was considered that the resource cost of early stage equity would be high compared with other interventions (***Likely resource cost: -2: Moderately negative***).

Implementation and risk

- Setting aside any consolidation with SIB, there are no legal difficulties (***Legal feasibility: 3: Strongly positive***).

- The risks to implementation and continuing delivery are judged to be low (R***isks to implementation: 3: Strongly positive, Risks to continuing delivery: 3: Strongly positive***).

- There is a danger that public perceptions would simply be that the Bank was just continuing the work of SIB so the intervention scores slightly weakly on this sub-criterion (***Public perception ; -1: Slightly negative***). Again this is in the absence of mitigating

action – the intention within the Implementation Plan that SIB will become part of the Bank.

- Early stage equity is likely to be more technically difficult than other interventions as there would be a larger number of possible interventions and due diligence costs are likely to be high relative to the scale of investment and there may be issues caused by the existing provision within SIB (***Technical difficulty: -1: Weakly negative***).

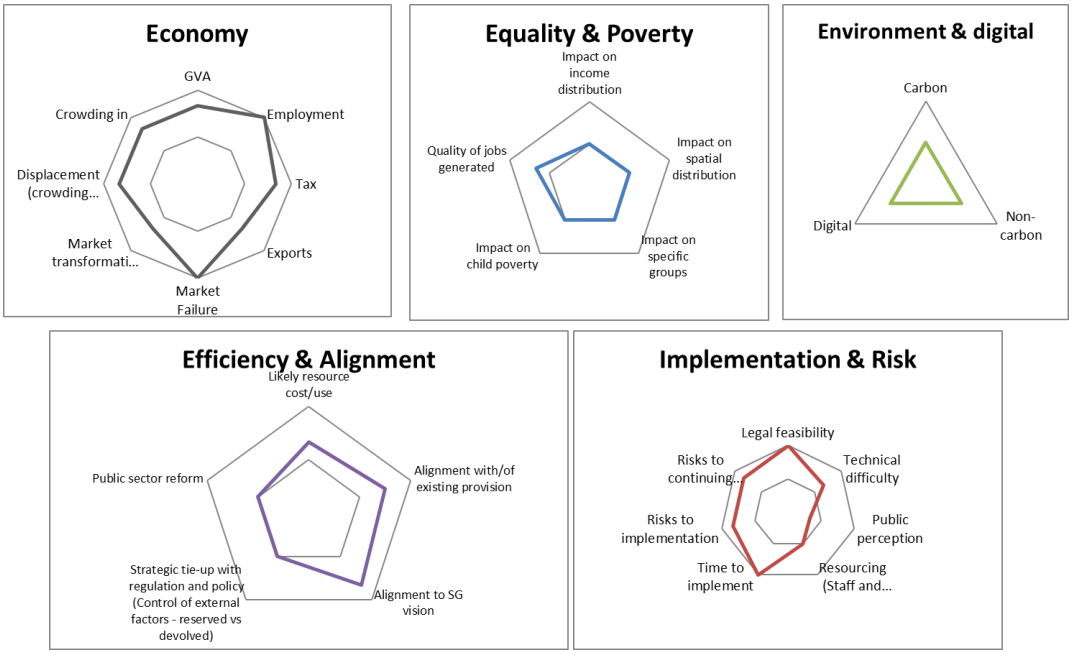
- These issues notwithstanding, it will be quick to implement (***Time to implement: 3: Strongly positive***).

- However, the amount of activity is also likely to mean that resource costs (staff in particular) are likely to be high (***Resourcing: -2: Moderately negative***).

The due diligence issue is one that is worth picking up separately – although this has been assessed as a negative for small scale equity, there is a clear informational market failure in this context. For small scale investments, due diligence costs are proportionally very high and potentially are a deterrence in commercial terms. It may be worth the Bank considering as part of its wider role how this issue could be addressed – perhaps by linking data or investing in new technology.

2.2.4 MCA for growth capital

Figure 25: MCA results for growth capital



Economy

- In terms of the economy criterion there is again a strong score against market failure (***Market failure: 3: strongly positive***).

- However, there is also possibility of interventions having a market transforming effect (***Market transformation: 1: weakly positive***).

- Growth capital is a key area, as discussed previously, and has a larger potential to generate large amounts of additional economic activity than early equity. The potential impact on overall economic activity (***GVA: 2: moderately positive***) and receipts from tax (***Tax: 2: moderately positive***) is considered to be high.

- There are likely to be significant positive impacts on job creation and employment (***Employment: 3: strongly positive***).

- There may also be a moderate impact on exports. (***Exports: 1: weakly positive***) Given the existing weak export performance (see the Internationalisation section of Table 2) compared to the rest of the UK success would improve this performance although the intervention is not specifically export led.

- Growth capital is an area where there are distinct existing gaps and so the intervention is unlikely to displace existing activity (***Displacement: 2: moderately positive***) and may indeed draw in additional interventions (***Crowding in: 2: moderately positive***).

Equality and poverty; Environment and digital

It is difficult to assess the impact on Equality and Poverty and Environment and Digital in generic terms although, again, there may be positive impacts on the quality of jobs. (***Quality of jobs: 1: Slightly positive, other sub-criteria: 0: Neutral/Unknown***).

Efficiency and alignment

- There are unlikely to be any significant public sector reform impacts (***Public sector reform: 0: Neutral***).

- There is a neutral score on the relationship with regulation and policy (***Strategic tie-up: 0: Neutral***).

- The likely resource cost will be smaller than early equity as it will involve a smaller number of larger interventions (although the resource cost per intervention will be higher) (***Likely resource cost: 1: Slightly positive***).

- The provision of growth capital aligns strongly with wider SG vision (***Alignment to SG vision: 2: Moderately positive***).

- The activity broadly compensates existing provision and may follow on from existing early stage interventions (***Alignment to existing provision: 1.5: Weak to moderately positive***). However, this is an area that would require further co-ordination.

Implementation and risk

- There is little in the way of legal difficulty (***Legal feasibility ; 3: strongly positive***).

- From a technical stand-point it would be relatively straightforward to deliver (***Technical feasibility: 1: Weakly positive***) with no obvious issues around interactions with the current landscape.

- Public perception issues are likely to be limited but may be slightly negative in terms of provision of resources to business (***Public perception: -1: Slightly negative***) rather than people.

- Resourcing is likely to be more straightforward than early equity as more evidence over the likely benefits of interventions will be available (***Resourcing: 0: Neutral***).

- The risks to implementation and continuing delivery are not particularly high and so the intervention scores well but is below that for initial equity (***Risks to implementation , continuing delivery: 2: Moderately positive***).

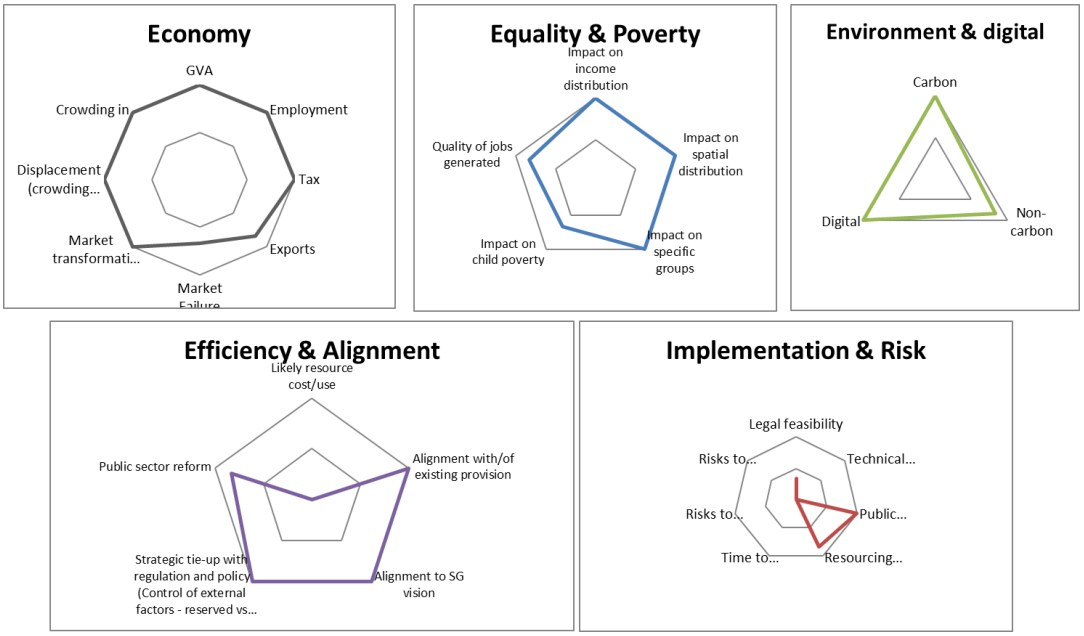
- Finally it would be quick to implement (***Time to implement: 3: Strongly positive***).

2.2.5 MCA for mission led interventions

This section considers the impact of clear, specific led mission-based investment. At this stage, specific missions have not been specified but it is assumed that such an intervention will take the form of concentrated, large scale investment in an area of activity, in line with the vision of the Bank.

Provide and catalyse investment in order to create opportunities for Scotland, by powering innovation and accelerating the transformation to a low carbon, high-tech, connected, globally competitive and inclusive economy

Figure 26: MCA results for mission led investments



Economy

- Clearly, by definition, this sort of intervention is about market transformation (***Market transformation: 3: Strongly positive***) rather than market failure although it is possible that some existing market failures could be made better, rather than worse (***Market failure: 1: Weakly positive***).

- This sort of intervention has the express purpose of having a major impact so is likely to have great potential in terms of economic growth, employment and tax revenue (***GVA, Employment, Tax: 3: Strongly positive***).

- The impact on exports is potentially significant. Although the nature of the missions may be domestic market focused there is potential for spillovers that result in export growth. (***Exports: 2: Moderately positive***).

- It is to be expected that the choice of mission will be such that there is great potential for crowding in investment and little chance of crowding out taking place (***Displacement, Crowding in: 3: Strongly positive***).

Equality and Poverty

- It is assumed that the choice of mission will have the potential to impact strongly on all factors – there could be positive impacts across the income distribution, spatially, and on specific groups (***Impact on income distribution, Impact on spatial distribution, impact on specific groups: 3: Strongly positive***).

- It may be more difficult to have a specifically strong impact on the quality of jobs through specification of the mission, so this is given a slightly lower score (***Quality of jobs: 2: Moderately positive***).

- Child poverty is more problematic – it is difficult to see how a mission for a National Investment Bank could be specified that would have a strong and immediate impact on child poverty. This should be taken forward with the relevant team within Scottish Government to analyse and explore the potential further (***Child poverty: 1: Weakly positive***).

Environment and Digital

- The missions, as currently proposed, would have a strongly positive impact on Carbon and Digital ***(Carbon, Digital: 3: Strongly positive)***

- It is reasonable to suppose that the impact on non-carbon environmental matters may be less (***Non -carbon: 2: Moderately positive***).

Efficiency and alignment

- It is likely that market transformative interventions will require significant resources once implemented (***Likely resource cost: -3: Strongly negative***).

- However, they will, by design, be strongly aligned with SG policy, vision and existing provision (***Alignment with existing provision/SG vision/Regulation: 3: Strongly positive***) but it may be more difficult to see significant impacts on public sector reform more generally unless this was specifically chosen as the basis of a mission (***Public sector reform: 2: Moderately positive***).

Implementation and risk

- The real difficulties with this option lie with implementation and risk. There may be legal difficulties depending on the exact nature of the mission (***Legal feasibility: -1: Slightly negative***).

- However, it is likely that given the complex nature of potentially market transforming interventions, there will be high levels of technical and practical difficulty (***Technical difficulty: -3: Strongly negative***).

- Despite this, it is suggested that the staff and resource cost would be smaller than with other interventions. This is simply a function of the fact that it is likely that the market transformative intervention is assumed to involve a small number of activities, albeit complicated, and so score well on this criterion (***Resourcing: 2: Moderately positive***) compared with a relatively large number of smaller interventions.

- By their very nature, it is highly likely that interventions of this type will be subject to significant and on-going risk (***Risk to implementation and continuing delivery: -3: Strongly negative***) and that they will take a significant time to deliver (***Time to implement: -3: Strongly negative***).

- On a positive note it is quite likely that such interventions will have a very positive public response (***Public perception: 3: Strongly positive***).

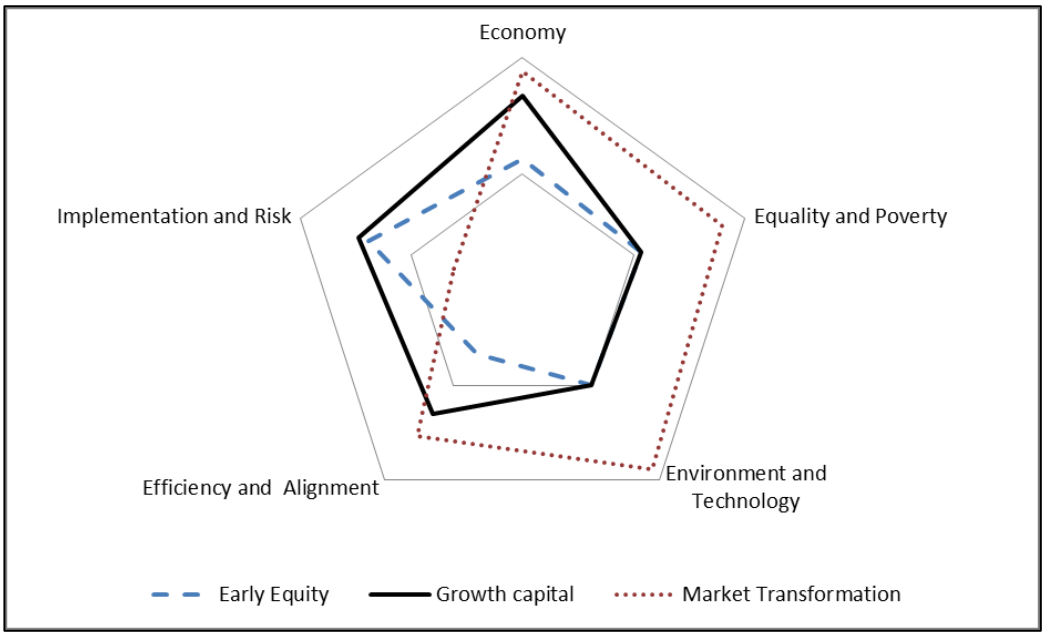
2.2.6 Comparing the three options

A comparison on the three options at the main criteria level is shown in Table 13 and Figure 27.

Table 13: Comparison of MCA options

	Early equity	Growth capital	Market transformation
Economy	0.4	2.0	2.6
Equality and Poverty	0.2	0.2	2.4
Environment and Technology	0.0	0.0	2.7
Efficiency and Alignment	-1.0	0.9	1.6
Implementation and Risk	1.1	1.4	-1.1

Figure 27: Comparison of MCA options (radar diagram)



As might be expected, the market transformation intervention has the potential to score most strongly on the Bank outcomes – Economy, Equality and Poverty and Environment and Digital – and is also likely to be well aligned to policy, regulation and the existing landscape and so scores well on Efficiency and Alignment overall. It is judged to be more difficult to implement and subject to much greater risk (unsurprisingly) compared with the other two interventions. Of these, growth capital outperforms early equity across all categories except Equality and Poverty and Environment and Digital (where the scores are broadly neutral). The difference is most stark in terms of the economy and alignment criteria. However, early equity still scores well and the alignment score is primarily due to the existing landscape, i.e., Scottish Investment Bank undertaking similar or identical activity.

This analysis tends to suggest that the prime focus of the Bank should be on market transformation but with growth capital having a strong role. Whilst market transformation scores best across most of the criteria it is judged to be much more difficult to implement and to carry much greater risk.

More generally, it was difficult to apply the Inequality and Poverty and Environment and Digital criteria to generic, unspecified interventions. This does not mean that the criteria are weak, simply that they require a specific intervention to assess. As part of the transition plan, it would be useful to explore this issue in more detail.

2.2.7 Conclusions

This analysis has reinforced the analysis undertaken within the strategic case as to the importance and value of a strategic investment institution. The Multi-Criteria Analysis demonstrated the wider benefits and difficulties of different types of intervention and should form the basis, along with more formal economic modelling, for the assessment of potential actual interventions for the Bank. The MCA analysis represents a strong potential basis for a balanced scorecard approach to the assessment of the Bank's performance once operational. This scorecard approach will include measures of economic, social and environmental performance as well as tracking the financial outcomes from investments (see Recommendation 7).

2.3 Macroeconomic analysis

This analysis was modelled using the Scottish Government Global Econometric Model (SGGEM). This model is an expanded version of the National Institute Global Econometric Model (NiGEM) and was developed by the National Institute of Economic and Social Research (NIESR) where they adapted their own NiGEM model to include Scotland as an explicit entity within the UK. Other than the incorporation of Scotland, SGGEM and NiGEM are largely the same model in that they are both large scale structural macroeconometric models of the world economy.

Both follow a "New-Keynesian" framework, where agents are presumed to be forward looking, but nominal rigidities slow the process of adjustment to external events, i.e., in particular people are resistant to decreases in their nominal wages which can lead to involuntary unemployment.

NiGEM is widely used for analysis by many international and financial institutions, research organisations and governmental departments and is primarily used as a policy advice model. Using SGGEM, therefore, allows the Scottish Government to perform policy analysis about Scotland in a similar manner.

It is important to note that the primary impacts of the Bank will be on the supply side of the economy, in terms of boosting business investment and productivity and helping create new economic opportunities in conjunction with policy and regulatory levers through mission oriented finance. Obviously, it is impossible to model these impacts in advance, given that the individual investment decisions of the Bank cannot be known at this stage. Therefore more illustrative analyses have been undertaken showing, first, the modelled demand side impacts of a single year expenditure and, second, the modelled impacts of reducing the effective user cost of capital in the Scottish economy by varying amounts.

2.3.1 Short run analysis

The scenario assumes a year one capitalisation of £225m[20] and examines the immediate potential economic impact. The assumption is that the level of capitalisation is fully invested across one year, boosting aggregate levels of Scottish business and housing investment (split equally) from 2019 Q2 to 2020 Q1 (financial year 2019/2020).

An economic stimulus is provided in 2019, increasing the stock of business and housing capital and boosting the productive capacity of the economy. The higher level of domestic demand helps to stimulate the labour market, boosting the level of employment, lowering unemployment and boosting real wages. These effects then help to boost annual GDP growth over 2019 via greater levels of aggregate household spending.

It should be noted that expressing the capitalisation in terms of cost per job is not appropriate given that the long term aim of the Bank is to be self-financing, i.e., that, on average across all investments, money is repaid with interest and costs are covered. Therefore, the

[20] £225m was chosen as it was the initial annual level of capitalisation suggested by the Common Weal in their submission to the consultation exercise. They also recommended leveraging private capital on top of this which is currently not possible within current budgetary rules so this has not been modelled.

capitalisation should not be treated in the same way as a grant-funded payment which will not be recycled. The results are shown in Table 14.

Table 14: Outputs of SG Global Econometric Model

	Boost to annual GDP Growth, Percentage Points (2019)	No. of Aggregate Jobs (2019)	Change in the Level of Unemployment, Percentage Points (2019)
Capitalisation (£225m)	+ 0.05%	+ 2,500	-0.1%

2.3.2 Long run analysis

Given the previous discussion relating to the short-term impacts of additional investment expenditure, this section extends the economic analysis to explore what could result in the longer term as SNIB becomes established and plays a fully transformative role in the investment landscape in Scotland. The modelling explores several "what-if" scenarios, whereby separate "shocks" are applied to the "user cost of capital".

The user cost of capital reflects, to a degree, the opportunity cost of investing, relative to some form of "risk-free" return – i.e., GILTS or government backed- securities. Lowering the user cost of capital, increases the incentive for economic agents, such as savers and firms, to invest into things like business capital, which can provide a future stream of revenue.

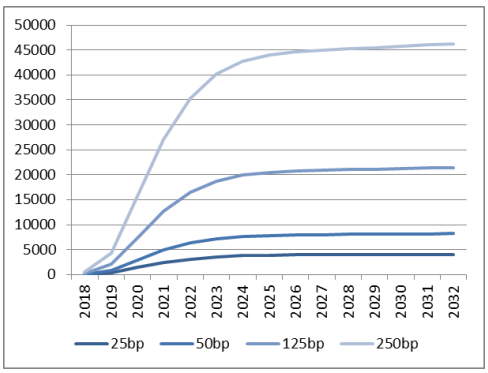
The range of scenarios show the modelled economic impacts of the reduction of the user cost of capital by 25, 50, 125 and 250 basis points, respectively. By way of illustration, the value of the variable in the model is around 16% (1600 basis points), so the 250 basis point reduction represents a fall of around 1/6. These changes reflected in the model by an impact on both the level of business investment (a flow) and the stock of business capital. Over time this has several effects on the economy.

The first is a demand driven effect with higher levels of investment and business capital, boosting both domestic demand and output per worker. These then have positive impacts on things like nominal wages and the domestic price level. In the Short term wages initially grow faster than the price level, then a brief period where the price level grows faster than wages. This can be better seen looking at Aggregate Real Personal Disposable Income – a measure of wages after changes in the price level.

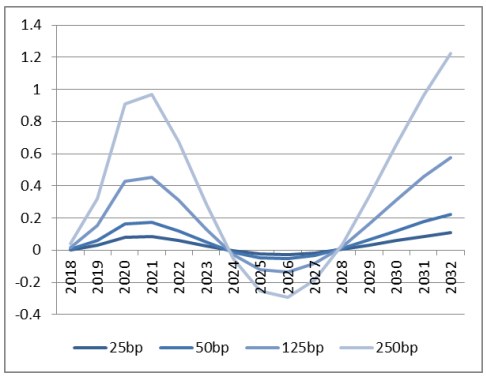
The second effect is a supply side effect, whereby, via a permanent improvement in the level of business capital, the productive capacity of the economy is permanently increased. In the Long-run this effect is the dominant impact and can be better seen when looking at "Potential Output". The overall result is a positive boost to the level of GDP relative to the no-shock baseline.

Figure 28: Macroeconomic modelling – for given percentage changes in the user cost of capital

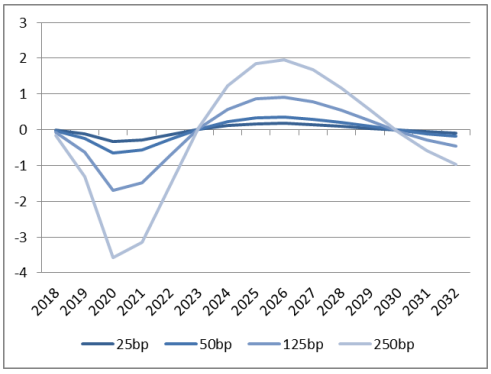
Change in the stock of business capital (£MN)



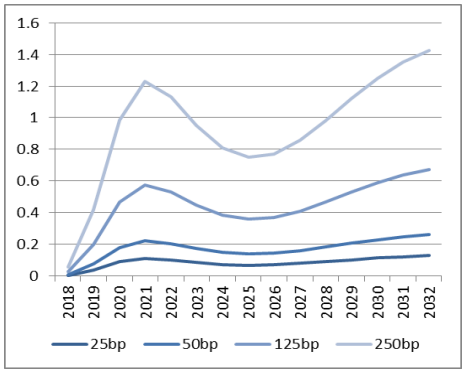
% Change in the level of Aggregate Real Personal Disposable Income



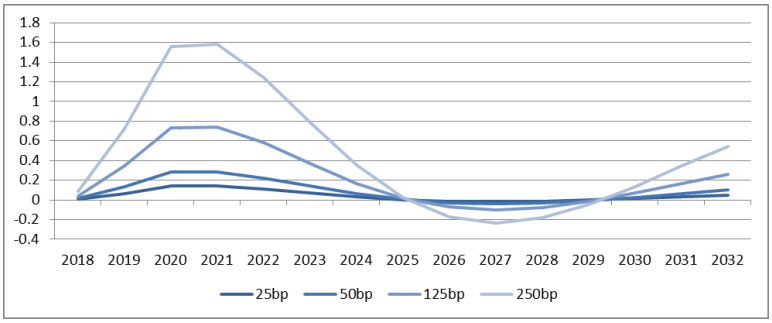
Change in the level of Unemployment (Percentage Points)



% Change in the level of "Potential Output".



% Change in the level of GDP



The path to this long-term outcome is also important. The model shows that there are significant initial positive impacts then a oscillating trajectory to the long-term steady state. This is a result of the impact on the cost of capital being modelled as taking place in a single year. In practice, the impact is likely to be more gradual so the transition path in the modelling is less useful as an illustration than the long-term steady state.

The modelling is constrained by a fixed scenario time limit and unfortunately it has not finished its transition path towards a new stable long run equilibrium point. The model should continue to work towards re-converging GDP towards Potential Output. It is safe to assume that the final permanent effect on GDP will be larger than the end point in 2032. For example, currently a 125bp percentage point decrease in the user cost of capital, which would represent an improvement of around a 1/12th results in an increase in the level of GDP of around 0.25% by 2032. This is in contrast to a permanent increase in the Potential Output of the economy of around 0.7%. It is likely that over a longer period of time that GDP would be somewhere in the middle of this, i.e., around 0.5%. The full results are shown in Table 15.

Table 15: Macroeconomic impact of changes in user cost of capital

	Change in user cost of capital (basis points, level = 1600)			
Impact on:	***25bp***	***50bp***	***125bp***	***250bp***
GDP	0.05%	0.10%	0.26%	0.54%
Potential output	0.13%	0.26%	0.67%	1.43%
Business investment	1.10%	2.22%	5.81%	12.61%
Stock of capital	0.97%	1.96%	5.11%	11.01%
Real disposal income	0.11%	0.22%	0.58%	1.22%

2.4 Commercial assessment

The evidence set out in chapter 1 showed a number of areas where intervention would help support the Scottish economy and where the current private market was not able to act. The Bank will act in a way complementary to the existing public and private sector, funding, financing and advisory landscape in Scotland. The evidence that we have from the UK and other countries suggests that it should seek to intervene across the lifecycle of businesses and projects as they move from development through to realisation and larger scale rollout of products and projects. This will mean addressing a number of key markets areas:

Growth capital

- Provide SMEs with access to micro loan finance by the continuation of the existing activities enabled by SG's SME Holding Fund.
- Expand the offerings of loan finance to SMEs by providing short to medium-term loan finance (senior and mezzanine debt) for which there is current unsatisfied demand.
- Consider the potential to deliver targeted debt support through the creation of specific loan funds. An example of this being the recently launched Brexit Loan Fund to be established by the Strategic Banking Corporation of Ireland.
- Provide early stage risk capital equity currently provided by the Scottish Investment Bank via its co-investment funds.
- Provide other targeted equity and mezzanine investment models, whilst also providing scale-up investment finance by way of equity and loans where opportunities are identified.

Mission-based finance

- Finance could be both debt and equity depending on the analysis of the gap or market opportunity, but focused on the transformative change agenda set by the Programme for Government.

In order for the Bank to be a sustainable intervention and make the desired long-term difference to the Scottish economy, it will need to adhere to a number of different commercial principles:

- Finance should be **additional to that provided by the current market** – and the Bank should adapt to changing market conditions to ensure that its interventions are always relevant.
- The Bank should make **a profit on its investments over the long term** and make considered commercial decisions to invest.
- The Bank **should recycle capital so that it can grow its scope of intervention over time** and have more firepower to advance the Scottish economy.

2.4.1 The Bank's commercial strategy

In addressing these different needs, it is intended that the Bank will provide additionality to the existing investment and financing market in Scotland. The market currently provides financing across a range of investment products, from early stage capital, through mezzanine debt growth capital and venture capital to senior debt.

Across each of these areas, and investment portfolios as a whole, market investors (banks and asset managers, such as those managing equity of debt funds) expect to make a return, with the level of that return commensurate with the scale of the risk to the assets – the higher the risk, the higher the return that investors require. The market is segmented into 'asset classes' in which operators group investments that have particular risk/return characteristics

and often legal and commercial practices that enable investments to be made. The Bank will need to work through these types of investment – but also over time look to innovate and also develop underused asset classes where appropriate (e.g., for instance mezzanine finance).

A key principle of the investment that the Bank should make investments that are additional to those being made in the current market in Scotland, and not reproduce the funding options already available to firms. As Mazzucato and others have noted, some national and multinational banks such as the European Investment Bank have been criticised for crowding out rather than crowding in private finance, particularly in offering debt finance to infrastructure promoters.

In order to provide additionality to this market, the Bank will need to invest in firms whose needs for capital the market is not adequately servicing already. There reasons for a lack of investment are often complex, and it will be important for the Bank's management team to ensure that its interventions take account of the reasons for the lack of investment in the current market. This can be where the market *perceives* the risks to be too high for the expected return, either in terms of total expected return and or the timescales required for the return to be realised, or where the market lacks the expertise or reach to discern appropriate opportunities. As set out earlier, the issues that affect markets can range from well-documented and enduring market failures (such as that of information, which leads equity providers to move toward larger, leveraged deals) to more specific issues in understanding of different sectors and different 'missions'.

The Bank would take decisions based on the viability of the firms in which it invests (either by itself or with others) and the expectations of returns from those firms. In some cases, it will invest *parri passu* on the same commercial terms and taking the same returns as the private sector. In other areas (e.g., where state aid allows in response to specific market failures) it may take different risks or different returns to the private sector, but always in expectation of a return. This will be assessed alongside the wider economic, social and environmental impacts.

The overall shape of the commercial return the Bank will seek will depend on what it needs to do in order to intervene in different areas, and this will mean that the Bank will differ in terms of its return profile in terms of risk/return and in terms of liquidity to that of banks and other private sector commercial institutions:

- Some investments, particularly in early stage companies are higher risk than the average returns would usually justify. As set out below much investment activity is state supported in some way, and the Bank would engage in this market and take on that stimulus role.

- Some investments the Bank will make will be illiquid, with the returns realised on an unpredictable exit. The Bank will be more 'patient' than many investors in these circumstances, and this will affect the timing of returns and the amount.

- In some areas the application of expertise and a focus on understanding some risks that the market is not interested in will mean that the Bank may be able to invest in terms similar to (or even better than) the commercial market, (although establishing such expertise is expensive.)

- Some markets may suffer from a lack of capacity, and there the Bank may invest on *parri passu* terms with private sector investors, enabling more deals to be done in Scotland than would otherwise be the case.

In order to be additional, while the Bank will seek full market returns in some circumstances, in will inevitably in some circumstances need to look for lower and/or longer-term returns that the private sector would for specific risks, accepting a lower overall return and engaging in activity the private sector on its own would not have the appetite for.

2.4.2 The Bank's portfolio approach and recycling of capital

The Bank would design its investment portfolio in a way that generates a profit overall. This would then be recycled into further investments, meaning that the Bank would become sustainable over time through careful portfolio management. While some investments may carry a running yield, some (including equity where interest is rolled up) will only be realised on some type of exit.

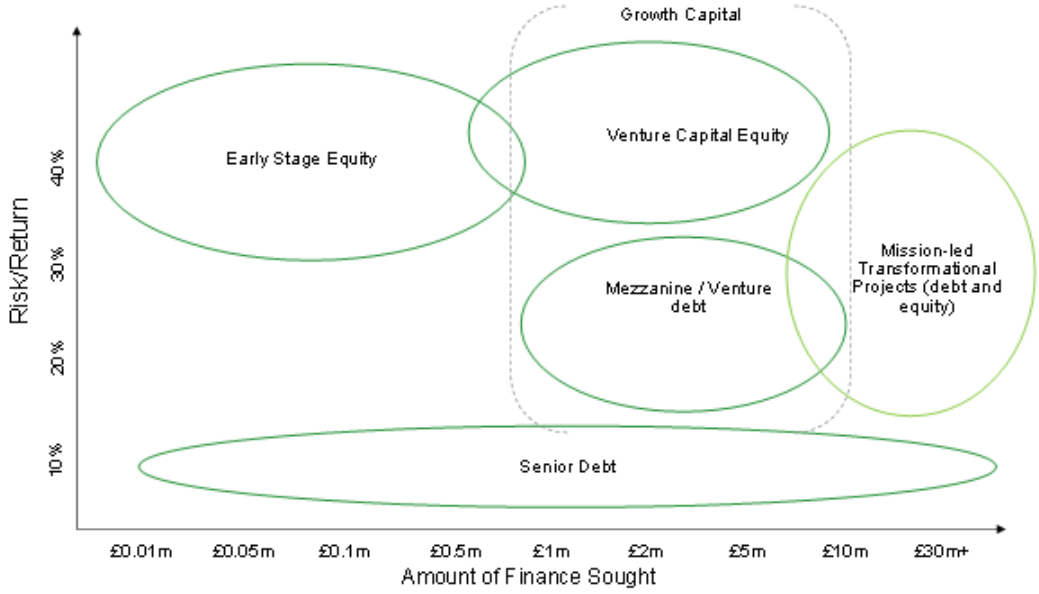
This means the Bank is very unlikely to make a profit or become a fully market body for a number of years given the illiquid nature of its investments. State aid considerations will shape the development of the institution and the investments it is able to make. One possibility is that while the Bank is focusing on 'patient; capital, once it has developed a particular portfolio and shown the sustainability of returns over a period, it would be able to sell this to private investors and recycle capital more quickly.

The investment products that have been identified as appropriate interventions for their Bank are described below, together with their risk/return characteristics, and a potential mix that would create a blended return to allow the Bank to become sustainable.

2.4.3 The Bank's investment interventions

The potential investment products are shown on axes that relate risk/return to the amount of finance sought in Figure 29.

Figure 29: Risk / return profiles of different instruments



Early stage equity financing for growth

Early stage equity is sought by firms at a nascent stage of their development and takes the form of the Bank taking a direct ownership stake in the firm, much like a venture capital firm would in the private sector. This forms a source of equity capital for the company, enabling the company to grow their balance sheet, and invest in business development and the initial delivery of their product to market.

Early stage equity investment provides an effective means of supporting the development of SMEs in Scotland. Such investment is made privately; the target companies not being of significant enough size or gestation to be publicly listed. As a consequence, valuing the investment proves challenging with no listed market price. Equity, and particularly private equity, investments should be classified at the riskier end of the portfolio and are traditionally volatile in both their value and their success rate. The Bank should be mindful of

concentration risk in specific sectors and the market risk correlation of seemingly disparate investments.

The Bank would take a long-term view on such investments, with gains being realised through future dividends and growth in equity value. The value may be realised through an Initial Public Offering (IPO) or private sale. It is likely that such investments may play a much smaller role than growth capital in the form of debt.

Growth capital – mezzanine and non-senior debt

Companies use non-senior, or subordinated debt instruments to raise funds in exchange for interest repayable on the debt. These provide companies with a means of raising funds without reducing their equity stake, while offering investors a higher yield than senior debt. This occurs through placing the debt holder further down in the list of creditors than a senior debt holder, but higher in the list than the equity shareholder, in the event of a bankruptcy.

Mezzanine debt is a hybrid form of non-senior investment, taking elements of debt and equity capital. It offers a flexible mechanism for the investor and investee, whereby the debt stake in the firm can convert to an equity holding where certain conditions are realised. As such, it is often employed by companies funding business growth or organisational change.

Such investments would generate a debt-like return for the Bank through interest receivable on the outstanding principal, however these will often include a conversion mechanism through which the principal converts to an equity stake. Examples include convertible bonds, warrants and redeemable preferred stock. The accounting principles associated with these instruments can be complicated, and is generally dependent on the conversion and bifurcation of the debt and equity components.

For this tier of investment, credit risk, including the risk of default and bankruptcy, would need to be carefully reviewed prior to the investment decision, and then closely monitored and managed alongside market risk and concentration risk during the lifecycle of the investment.

Senior debt

Senior debt instruments are fixed-term investments which provide the holder with defined returns through interest received on the investment, while the issuer receives an immediate injection of funds which can be employed to support investment. Examples include bonds paying a regular coupon and zero-bonds, where the initial purchase price is discounted to reflect the interest payable over the term. Issuers of senior debt tend to be more mature in their development than those issuing more bespoke mezzanine type debt products.

Senior debt holders are placed higher up the list of creditors in the event of bankruptcy than equity and non-senior debt holders, reducing the risk profile of the product. The trade-off for this risk reduction is a reduction in the yield received on the investment.

The largest risk associated with these investments is credit risk, or the risk that the issuer will default on the payment of the interest or principal.

Mission-led, market-making, large scale investments

Large scale equity is employed to fund infrastructure projects that may not otherwise be addressed by the private sector, or, if addressed, prove expensive to use. Such projects tend to have a greater public good not necessarily realised directly through the price mechanism and may have a very long gestation period from investment to return.

Associated with such projects is the risk of delivery of the infrastructure. With investment being made upfront at the infancy of the project, the Bank needs to be very mindful that the project is delivered on time and on budget. Failure to do so can lead to the Bank being asked to further invest to achieve the initial deliverable.

Once delivered, there may be a considerable period of time before the investment repays the initial investment. As such, the Bank is exposed to liquidity risk where funds are absorbed by a single investment and therefore intangible.

The size of such investments often needs to be very large, and consequently will have a significant opportunity cost associated to it. The governance in the investment decision will need to be robust and thorough to mitigate this cost.

Commercial debt guarantees

Guarantees are contingent liabilities whereby the guarantor would pay out in the event the party being guaranteed defaults on a payable. The guarantee is often provided in exchange for a fee, reflecting the guarantor's opportunity cost of reserving the capital associated and the credit risk being assumed by the guarantor.

Guarantees can be used by the Bank to promote private investment into Scotland. Through supporting local companies and guaranteeing their liabilities, the Bank can attract inward investment and develop the local financial system. The Bank could leverage its relatively cheap sources of funding to facilitate cheaper-than-market loans to Scottish businesses by guaranteeing those loans for a fee.

For the Bank guarantees would be capital-intensive on the balance sheet, though, with associated funds needing to be reserved. These will, as such, inhibit the Bank's ability to offer other products and make further investment.

The Bank will also need to be mindful of the credit risk of individual guarantees, and the contagion risk and correlation of the broader portfolio.

2.4.4 The risk profile of different investments and proposed asset allocation for the Bank

The proposed product base has a spread of risk attributes which is profiled in high-level terms along a high-medium-low scale (Red-Amber-Green) below to highlight areas for attention. While not traditionally independent risk categories, contagion and concentration risk are included as separate elements as they should impact the investment decision-making process at a portfolio level.

Through making this assessment, certain assumptions have had to be made about the target companies issuing the equity and debt products. As noted above, early stage equity and mezzanine debt products tend to be issued by companies during growth phases in their development and as such are more volatile in nature; senior debt is a longer term investment which tends to be employed by more mature issuers to raise capital for specific purposes, so is inherently less risky. The risk profile in terms of different factors is summarised in Table 16.

Table 16: Risk profile of different activities

	Early stage equity	Large scale equity	Mezzanine & non-senior debt	Senior debt	Guarantees
Market risk					
Credit risk					
Contagion risk					
Concentration risk					
Liquidity risk					
Operational risk					
Reputational risk					
Legal risk					

The risk profile of each investment type is discussed further below.

Early stage equity

Overall, early stage equity investments represent higher risk than a more mature investment.

Market risk, concentration risk and contagion risk have been marked as high in this product category. By their nature, early stage equity investments aid SME enterprises get started; there is a traditionally high rate of SME failure in the early stages, with the failure rate (4 out of 10 businesses fail in first five years) demonstrating a significant market risk. Contagion & concentration risks are also paramount from a portfolio management perspective; where investments demonstrate significant correlation through alignment to specific characteristics (e.g., regions or industries) economic externalities can impact the success of the broader investment portfolio, not just insulated companies.

Liquidity risk is given a high risk rating. Investments in early stage equity will not be listed and openly traded. As a consequence, these investments are harder to extricate oneself from, presenting more challenges in terms of on-going valuation and identifying potential buyers. Where investments are undertaken through a fund structure, there usually require a multi-year commitment (for instance 12 years or longer if 'patient' capital is being provided) before full returns come back.

It should be noted, credit risk has been marked as low as a function of the shareholder being an equity owner rather than a creditor of the company. That said, the risk of company failure and the lowest standing of equity holders in insolvency proceedings signals that there is a high likelihood of loss of principal where the company fails (captured under market risk).

Large scale equity

These investments are idiosyncratic in nature, often presenting a public good as well as a commercial benefit, so risk-profiling these is more binary in nature. This means that concentration risk is high, especially as the Bank is envisaged to undertake only a few of these investments each year.

Liquidity risk, reputational & legal risks are assessed to be particularly high. The projects require significant investment, with large opportunity costs; they are consequently difficult to crystallise and the market offers very little liquidity until it becomes clearer that the project is going to be successful.

Reputational risk and legal risk also present challenges. Progress in large infrastructure projects for example is reported in media outlets, with historically high rates of delivery delay. This represents a reputational risk for those involved in the delivery, including the Bank where it is financing the project. Likewise, delays cost money and there is scope for legal challenges in the delivery aligned to delays, overruns and changing project scoping.

Mezzanine & non-senior debt

These classes of investment historically represent the riskier end of the debt asset class, and as such are identified as involving a number of high and medium risk categories.

Credit risk, or the risk that the holder will not be repaid by the issuer, represents the primary high risk. Such debt is often issued by companies during growth phases, demonstrating a level of risk that the target growth will not materialise. With the holder being positioned below a large number of creditors (including employees, commercial partners and senior debt holders) in the event of default of bankruptcy, these investments come with a high likelihood of a loss of principal, and a corresponding high degree of credit risk.

Much like with early stage equity, contagion and concentration risks have been assessed as high. Again, this is more of a concern for the portfolio than the individual investment, however the potential for economic externalities to impact businesses during growth phases are particularly high, and where the portfolio is focused regionally or is heavily invested in specific

industries, there may be accelerated risks of failure sweeping across otherwise distinct investments.

Alongside the high risk categories, market risk, liquidity risk, operational risk and legal risk have been scored as medium risks.

Market risk being the risk an investor will suffer loss through a market event, can take many guises. Interest rate risk for example may increase the Bank's cost of funding, while being locked into a static interest receivable in the debt product; alternatively equity risk is the risk of volatile share prices. For these products, interest rate risk may represent a concern, however the interest chargeable on the debt should reflect the enhanced riskiness of the investment, offering a buffer.

Due to the convertibility of mezzanine debt into equity, the Bank would be exposed to equity risk; this though would be directly aligned to the specific conversion criteria of the product in question. Legal risk has been assessed as medium due to the inherent risk attached to the conversion between debt and equity, and the dilutory impact this may have on other equity holders. The conversion also presents operational challenges, both capturing the change and reflecting this appropriately on the balance sheet. Again, this added complexity increases the risk to medium.

Finally, liquidity risk was assessed as medium risk due to the nature of the investment. The issuing company is unlikely to list and as such there is unlikely to be a mature or liquid market for trading debt in the company. Again, like early stage equity, pricing and valuing such debt would be challenging, requiring non-public information and by nature being more subjective.

Senior debt

As an instrument, senior debt is at the more risk-averse end of the spectrum, and as such offers a lower return in investment. In performing this assessment, it has been assumed that the target issuer of the debt is more mature in nature than the early stage equity and mezzanine debt issuer, and as such the product is more liquid and more stable.

Market risk is given a high risk-rating on the basis of the interest rate risk attached. Much like with mezzanine and non-senior debt, there is a risk of there being a differential of funding costs versus benefit receivable through interest on the debt. Due to the lower rates of return senior debt offers though, the Bank would have a smaller buffer, and thus a higher risk of loss.

Credit risk, contagion risk and concentration risk are scored medium for senior debt. Credit risk still exists, however, with the Bank being placed further up in the order of creditors there is a greater chance of restitution, and conversely a reduced risk of loss. Contagion risk and concentration risk are reduced by virtue of the reduced risk of idiosyncratic loss, but should not be ignored by the Bank in the balancing of their portfolio.

Guarantees

Guarantees offer a slightly different profile as the Bank is not making a direct investment, but rather underwriting the guaranteed party's ability to make a payment. As such, the risk profile is heavily aligned to the guaranteed party's own performance, liquidity and business management. It is unlikely that the Bank would be taking any of these risks on its own balance sheet but making recommendations to Government (either the SG or HM Treasury).

By having to reserve the funding associated with the guarantee, these come at an opportunity cost and may prove illiquid in nature. The Bank will be contractually obliged to provide the guarantee, and would likely find it challenging to cancel or hedge this exposure. As such a high risk rating has been placed on liquidity risk.

Legal risk is the other category scored as high risk for guarantees. The nature of the product suggests a trigger being invoked at which point the Bank would be liable to make payment. There is a high risk of the trigger point being challenged legally or the extent of the guarantee

being questioned. Likewise, there is potential for the Bank to be absorbed into other legal challenges being made against the firm.

Reputational risk is a medium risk, however, aligned to legal risk it presents a challenge for the Bank. A guarantee can be viewed as a tacit seal of approval for a company, with the Bank underwriting its debt and validating its business model. As such, any failure would reflect negatively on the Bank too.

Credit risk, contagion risk and concentration risk have been assessed as medium level risks. The rationale for these scores is consistent with that applied to senior debt, where the likelihood of payment is low, it is represented in the price charged, and the Bank's creditor status then reduces the risk of loss.

2.4.5 Portfolio management

The Bank will consider the above range of risks in the allocation of capital, the investment decision process and in the on-going managing and rebalancing of the investment portfolio. Having a specific mandate to support industry in Scotland, the Bank will be mindful of ensuring appropriate diversification and risk management.

Risks are not necessarily distinct in nature – a credit event at one company can in turn lead others to question the sector or region, with contagion spreading, causing market events. The Bank needs to demonstrate risks are appropriately managed more broadly. Contagion and concentration risks have been addressed in the individual product descriptions above, however more generally they pose a threat of losses quickly materialising across otherwise distinct investments. Likewise, wrong way risk is the risk that arises where the Bank is adversely correlated to the credit-worthiness of a counterparty or sector. Should the Bank make investments to similar firms it may find that its equity interests are heavily correlated with its debt positions, with degradation in one company impacting a broader portfolio.

2.4.6 Development of the portfolio and conclusions

The Bank's directors and officers will be tasked with designing a portfolio that balances the risks and returns of its investments. This will reflect the needs to the Scottish investment market and the Scottish Government Mission-led objectives of the Bank.

An example portfolio can be developed using assumed investment levels, failure rates and investment returns across each of the interventions types. An example is provided below, which assumes and annual investment of £200 million in equity, £50 million in mezzanine and non-senior debt, £50 million in senior debt and £50 million in mission-led Transformational Project investment, and then calculates two scenarios by applying an upside return rate and a downside return rate.

The upside scenario illustrates the importance of the portfolio approach as a low return against the Transformational Projects is compensated by higher returns across the other asset categories. The downside scenario illustrates the potential impact of lower returns across a single asset category such as the Transformational Projects – the scale of the investment in one area requires particular attention, mitigation and management.

Table 17: Simplified portfolio modelling

	Bank Investment (£m)	Upside Scenario Return (£m)	Upside Scenario % Return	Downside Scenario Return (£m)	Downside Scenario % Return
Equity	200	210.0	5%	182.0	-9%
Mezzanine & Non-Senior Debt	50	54.0	8%	51.8	3%
Senior Debt	50	53.2	6%	49.9	0%
Transformational Projects	50	60.0	20%	46	-8%
Total	350				
Total Returns		**377.2**		**329.6**	
Total Returns (%)		**8%**		**-6%**	

Source: EY

It should be noted that this simplified scenario only assumes *one year's* investment and assumes an accelerated return on a number of investments which are likely in reality to be longer-term. A portfolio approach will look at how the Bank's asset book will grow significantly over time, which will further enhance the Bank's opportunity to develop a wide-ranging portfolio to diversify risk, reducing the likelihood and impact of the downside scenario. The Bank will also need to respond to the emerging performance of the asset it holds from earlier years as it develops its portfolio – successful investments will allow the Bank to reinvest more quickly or invest more broadly.

One issue the Bank will face is the unpredictability of the investments, meaning that particularly in early years the portfolio may develop in ways they could not predict in terms of the proportion of the different investments, particularly the larger scale 'transformative' projects. It will be for the management team to put together a business plan that sets out in detail the strategy of the Bank to achieve this balance, while investing in the areas that have been set out and making a difference to the Scottish economy. They will monitor the investments and adjust the portfolio approach over time as investment outturn becomes apparent.

To do this there will need to be significant analysis undertaken. For instance, factors such as the variance of returns as well as the expected value will need to be considered along with the impact of spreading capital across numerous smaller investments as opposed to bigger single undertakings. Of importance will be the potential correlation of returns across different assets.

It is recommended that as part of the Transition plan, financial modelling capacity is developed in-house within the SG/bank-team to examine these issues in greater detail although it is acknowledged that sophisticated portfolio management is available within Scotland. However, an understanding an detailed examination of the issues will allow the transition team to progress in an appropriate manner.

Taking this evidence together results in Recommendation 5 and 6 that the Bank will need to adopt a balanced portfolio approach across a range of potential investments that should be additional to the current market. As discussed, at a portfolio level it should look for a positive return but the nature of patient capital means that the Bank may seek this return over a period, perhaps a 10-15 year horizon, that is lengthy compared with the market.

3. Classification and capitalisation of the Bank

This chapter considers the evidence behind recommendations 11 to 13. The first section looks at classification and structure and results in recommendation 11. The second section examines the amount of capitalisation that is likely to be required and results in recommendation 12. A further section examines the likely operating costs of the Bank. The timescale and specific milestones in Recommendation 13 arise from the chapter as a whole.

3.1 Classification and structure

This section considers the different types of classification under which the Bank could be treated and the implications that such treatment could have for the impact on SG budgets and hence the Bank's suitability to bring in private sector capital and therefore probably its ultimate scale given budgetary constraints. The Bank will be either classified as a non-departmental public body (NDPB) or General Government (GG), a Public Financial Corporation (all of which are classified as public sector) or a Private Financial Corporation.

3.1.1 Classification to General Government

Non Departmental Public Body (NDPB)/General Government (GG)

- Institutional unit owned and/or controlled by public sector (NDPB) and/or
- Not an institutional unit (GG) or
- Non market institutional unit (NDPB)

Relevant examples

- British Business Bank (GG)
- Green Investment Bank (pre privatisation) (NDPB)
- GIB Offshore Wind Fund (pre privatisation)

Accounting and budgeting implications for the Bank

- Any borrowing by the body would be included in SG capital budgets. This does not include the private sector contribution to equity co-investment.
- Annual budgeting – no carry forward of balance sheet reserves

Where a Bank type body does not fit Eurostat guidance as to a financial corporation (see section 3.1.2 below) and where it is owned and/or controlled by the public sector, it will be classified to General Government (GG). This would be the case if the Bank was set up as an statutory NDPB or as a limited company (in which case it would be a non-statutory NDPB).

The advantages of such an approach is that there is a clear and on-going oversight from Ministers and therefore the setting and retention of a public sector mission can be ensured. SG can appoint the Chair and/or directors and approve the on-going business plan.

However the implication of such classification is that any in year investment activity of the body would normally (see below for 'dispensation' of BBB and GIB) score against departmental (in this case SG) budgets and such body would not be able to hold reserves over the year end. If such an approach were taken with the Bank, it would make it difficult to act as a traditional bank and it may make little point for it to borrow externally, as such borrowing would also use SG budget. Instead a structure such as Scottish Enterprise's investment funds ('SIB') is likely to be preferred, and with investment quantum limited to the availability of SG budget to invest. [21]

In the case of British Business Bank ('BBB') and Green Investment Bank ('GIB') (prior to privatisation), a dispensation was given by HM Treasury to BIS/BEIS. This dispensation

[21] One of the forerunners of the Bank proposal was a proposition of a 'Business Development Bank' – looked at by SG officials in 2015. Given classification and budgeting constraints (as above), it is understood that it was decided to enhance SIB's activities rather than establish a separate financial vehicle to lend and invest in SMEs and issue guarantees.

allowed any investment activity (equity or debt) by these bodies to be outside of the existing BIS/BEIS departmental budgets and these bodies could also carry reserves between financial years. Whilst this dispensation is likely to have had an agreed quantum in each case and was given, in the first instance, only for the period of a spending review; it granted these bodies substantially greater freedom in order to invest more freely and also to bring in private capital. GIB, prior to privatisation, established an offshore wind equity fund, 80% of the capital for which came from private investors (estimated £800 million at its peak) – despite the fact that all of this capital (£1bn including GIB investment) was included within the UK National Accounts (i.e., UK Government Debt).

If the Bank is to be set up as an NDPB (with consequent advantages of control over public mission, etc., compared to a private financial corporation as described below) and there is the ambition to invest more than SIB's current activities without the SG budget to support such increased investment; then a request to HMT for a dispensation similar to those granted to BBB and GIB could be considered. It is unclear how such request would be received by HMT.[22]

3.1.2 Public Financial Corporation

Public Financial Corporation (PFC)

- Institutional unit owned and/or controlled by public sector and 'intermediary' – as per ESA10 and MGDD16

Relevant examples

- Royal Bank of Scotland plc
- Scottish Municipal Banks
- Commonwealth Development Corporation

Accounting and budgeting implications for the Bank

- Any borrowing by the body would be included in SG capital budgets. (RBS is an exceptional case.)
- Can carry forward balance sheet reserves from one year to the next

A financial corporation that is either owned or controlled by the public sector is considered to be a public financial corporation ('PFC'). Eurostat set out in MGDD16 and ESA10 the rules as to what is regarded as a financial corporation:

A financial corporation is considered to be principally engaged in 'financial intermediation' and/or 'auxiliary financial activities' (ESA10 2.55).

A financial intermediary does 'not only act as an agent for other institutional units, but places itself at risk by acquiring financial assets and incurring liabilities on its own account' (ESA10 2.57).

Auxiliary activities comprise 'realising transactions in financial assets and liabilities or the transformation or repackaging of funds.' (ESA10 2.63)

In practice the main operative test for public sector development banks is whether they are granted the ability to borrow and then incur these liabilities in making investments (whether debt or equity). In the case of the two most recent relevant precedents (BBB and GIB), no such borrowing capability was established, which in turn meant that these were both initially classified to general government. [23]

Given a PFC can be owned and controlled by the public sector, such a structure would (like with an NDPB) give SG oversight of the body's mission and business plan and appointment rights over directors. To be a public corporation, a body needs to have more than 50% of its income coming from the market rather than from government. While the rules are potentially more relaxed for a public financial corporation, the Bank would have great difficulty in showing that it should have this status until the return on its investments produced a large

[22] An alternative approach would be to propose to HMT an increase in SG borrowing powers.
[23] Lending to such a public body using SG 'financial transactions' would not be a possibility to establish it as an intermediary, since financial transactions can only be directed towards private organisations.

proportion of its income. In order for the Bank to qualify as a public financial corporation, it would be beneficial for it to be capitalised on its own account with existing assets.

Unlike in most of the rest of the EU (such as KfW, discussed in earlier papers), the liabilities of UK public financial corporation usually score against the relevant departmental budget. A public financial corporation being outside the National Accounts boundary means in practice that is has substantially more freedom to leverage in private sector capital (though constrained by its credit rating, which in the case of the KfW has been established over a number of years) and hence make a far greater investment impact. KfW had total assets of €507bn as at 31st December 2016, of which only €27.1bn was equity (i.e., public sector capital). KfW's bonds benefit from an explicit guarantee from the Federal Republic of Germany. [24]

There are some exceptions in the UK to the National Accounts impact described above. For example, the Royal Bank of Scotland plc, which has been a public financial corporation since 2008, does not score its liabilities against the National Accounts. This was decided due to both the scale of RBS' balance sheet at the point of nationalisation and the stated temporary nature of the majority ownership by UKG.

Whilst being classified as a public financial corporation gives the ability to carry forward reserves; PFC status (without the 'RBS exception') would confer for the Bank to have no additional ability to leverage private sector capital compared to being part of general government. One option for the Bank is to establish a structure which fulfils the requirements of a PFC and which operates at a smaller scale (i.e., no private capital) whilst seeking an exemption from HMT for the Bank to be outside of the National Accounts boundary.

3.1.3 Private Financial Corporation

Private Financial Corporation

- Institutional unit owned and controlled by private sector
- Minority/seed public sector capital permissible
- Commercial profit making entity or private sector charity
- 'Intermediary' or 'auxiliary'

Relevant examples

- Green Investment Group post privatisation (McQuarrie)
- 3i (listed in 1994 – previously ICFC)

Accounting and budgeting implications for the Bank

- Any private capital (equity or debt) excluded from SG capital budgets. Any seed capital from public sector included in SG budgets.
- Carry forward of balance sheet reserves (including private sector capital)

A private financial corporation has to fulfil the same requirements as those in the box above – intermediary or auxiliary. However, if such a body is also judged to have the following, it would be a classified as a private financial corporation:

- Owned by private sector shareholders (minority stake by the public sector can be consistent with this); and

- Not under public sector control. Therefore, the shareholders agreement/articles do not give significant powers[25] to a minority public sector shareholder and/or there is not excessive public sector regulation over such vehicle.

[24] Having such an approach (i.e., guaranteed debt by government) is unlikely to be accepted now by Eurostat for a new development bank as being consistent with a public financial corporation classification.
[25] Even some minority protection rights that might be considered normal in a private sector joint venture arrangement may be considered as public sector control.

Such status for the Bank would accord it freedom to operate outside of government and hence be able to issue debt/bonds without any impact on SG capital or resource budgets and therefore at greater scale. However it may be difficult to retain sufficient confidence that the body would keep to its stated mission over time, given there may be few meaningful controls over its operation by government. Further work is on-going to explore whether this is considered to be a practical option for the Bank. The original (public sector) mission might be subject to some protection within the shareholding structure[26] and/or a private sector charitable structure could be considered, if the objectives of the body were consistent with one of the charitable objectives recognised by the Office for the Scottish Charities Regulator and such structure was otherwise consistent with the Bank business plan.

3.1.4 Supranational Bank

The other structure for a public-sector bank that has been used to leverage in private sector capital without impacting on individual government National Accounts is by different sovereign states each taking a minority shareholding in a supranational bank and no one shareholder having control. The best-known example of this is the European Investment Bank ('EIB') in which the UK has a 16% stake. It is understood that EIB have largely stopped making new investments in the UK since Article 50 was triggered in March 2017. Any attempts to establish a separate supranational bank to replace EIB's new investment activity in the UK would, in all likelihood, have to be led by UK Government and therefore is probably not worthy of further consideration for the Bank.

3.1.5 Conclusions

The potential part of the Bank which is closest to current SG operations is Scottish Enterprise's SIB. SIB deploy small amounts of capital budget each year in order to co-invest in early stage Scottish investee companies (in the order of £54-£65 million in the current 2015-18 Scottish Enterprise Business Plan). This investment is matched by private sector capital, which does not score against SG budgets, as the investee companies are not controlled by SIB and hence are classified as private. This has been successful in attracting greater private capital into these types of companies. SIB is not able to carry reserves across the year end and is under the direct control of SG. SIB is classified as being part of general government. It remains an option to devote greater SG budget to SIB to increase its impact, with the enlarged operation trading as the Bank.

However, the ambition is that the Bank has a significantly greater impact on the Scottish economy than SIB, but without a significant increase in SG budgetary support, given the other calls on this budget. It will only be possible to achieve this, whilst retaining SG control over its on-going mission and management, if HMT were to grant a dispensation, such that the Bank's public capital investments did not score against the current levels of SG budgets and reserves could be carried between financial years (at least for the period of a Spending Review). This approach is not without precedent. HMT granted this approach both to Green Investment Bank (prior to its recent privatisation) and to BBB, which has an on-going dispensation over and above BEIS' existing budget to invest public capital into SMEs. A similar arrangement is in place for Scottish housing associations on a temporary basis, as these are currently classified to the public sector. Such dispensation has been granted whilst legislation is passed to reduce public sector control over these bodies and return them to a private classification.

If such budgetary dispensation was not forthcoming from HMT, an alternative approach might be to establish the Bank as a private financial corporation. This approach would require SG to give up most of the control over the Bank's on-going mission[27] (which could be problematic if the organisation were to receive substantial public investment or grant) and management

[26] GIB, on the sale to Macquarie, added a 'special share' as part of their shareholding structure, which is owned by a trustee company (Green Purpose Co). GIB can only change its objects with approval from the trustee company. ONS have recently opined that both GIB and the Green Purpose Co are privately classified entities. The public sector cannot appoint the directors of Green Purpose Co, but these are individuals who are independent from Macquarie / GIB.

[27] Albeit it may be possible to make it difficult for the private body to change the original mission that is set for it by SG, by having a special share held by a (private sector but independent) trustee company.

appointments and be operating sufficiently close to existing commercial investment models to attract a majority of private capital. The upside would be an ability to raise private capital (both equity and debt) which would not score against SG budgets and for SG to lend 'financial transaction' funds to this entity.[28]

An NDPB structure is preferred over that of a Public Financial Corporation, at least in the early years of the Bank's operation, before it has substantial investments that would enable it to be independent as a public financial corporation. Whilst both would confer control by SG over on-going mission, the latter would require the Bank to be a financial intermediary (borrowing from private sources and lending out/investing). However, even if the Bank were to do this (and this would require the Bank to be sufficiently 'commercial' to attract private capital), there remains the likelihood that the private borrowing that it did take on, would still score against SG budgets (i.e., be included in National Accounts). Whilst Royal Bank of Scotland was excluded from National Accounts on its nationalisation in 2008 (which turned it into a public financial corporation), that was due to the scale of its balance sheet and the stated temporary nature of UKG's majority shareholding. It seems that HMT are unlikely to make a special case for the Bank, given the likely long term nature of it, the precedent that this would set and given the number of other UK public corporations and public financial corporations that are included within National Accounts (hence departmental budgets).

Given the precedent set by BBB and GIB and the desired direct control and retention of public sector mission associated, it is recommended that the preferred route for the Bank is that of a NDPB with SG budgetary dispensation from HMT. This (Recommendation 11) is dependent (without a scaling back of impact towards the SIB model) upon gaining agreement with HMT (i.e. dispensation) about the Bank's budget treatment now or having a clear expectation that this will be achieved within a practical timeframe for the Bank's business plan development.

Different parts of the Bank's activities could also target different classifications, dependent upon the relative importance within each business line of retaining public sector control and attracting private sector capital. This would require different corporate entities for each differently classified body, with separate governance and financial accounts for each, but which could all be presented under the same Bank brand. This approach is considered in the following section, to some extent, as an illustration of how corporate entities, under a specific overarching classification, may vary as a result of different activities.

3.2 Capitalisation

In deciding a target level of initial capitalisation, it is instructive to compare established national investment banks across the world. Of course, any international comparison must adjust for size; here adjustments are made to show assets in proportion to GDP. It is also important to note that the value of assets held is different from the level of capitalisation, which links to length of time each institution has been operating – and building this asset base – and the discussion of dispensation further below. See Table 18. (N.B. capitalisation and assets are shown in own currency so are not comparable.)

[28] SG can only lend financial transactions to privately classified entities.

Table 18: Capitalisation of comparator international institutions

National Investment Bank	Currency	Capitalisation (bns; own currency)	Capitalisation (% of GDP)	Assets (bns; own currency)[29]	Assets/ GDP (%)	Year established
Germany: KfW	Euro	27.1	0.9	507.0	16.2	1948
EU: European Investment Bank (EIB)	Euro	243.3	1.6	573.2	3.9	1958
Brazil: BNDES	Real	55.2	0.9	876.1	14.0	1952
Finland: Finnvera	Euro	1.2	0.6	9.5	4.4	1999[30]
China Development Bank (CDB)	Yuan	1,162.7	1.6	14,340.5	19.3	1994
Italy: Cassa Depositi e Prestiti (CDP)	Euro	23.2	1.4	357.7	21.4	1850
Nordic Investment Bank (NIB)[30]	Euro	6.1	0.4	30.2	2.2	1975[2]
Bpifrance	Euro	23.0	1.0	68.4	3.1	2014
The Bank	Sterling	2.0	1.3	2.0	1.3	

In time the aim for the Bank should be to make a positive financial return and become self-sustaining. Initially, however, it will require capitalisation from SG to commence activities. An early commitment to this has been made by SG in the 2018-19 Draft Budget with an undertaking to provide initial capital of £340m over 2019-20 and 2020-21.

The Draft Budget also announced establishing a new £150m Building Scotland Fund (£80m in 2018-19 and £70m 2019-20) to increase house building, commercial property and R&D. It is proposed that any investments entered into by this Fund and any pipeline investments and remaining balance on the Fund transfers to the Bank for its shadow year of operation in 2019-20.

The proposed target level of initial public capital for the Bank from SG is a minimum of £1bn over the first 5 years. A further £1bn target should be set for public capital in years 6-10. This scale of public capital is deemed to be of a level that will make a material difference to the supply of capital to the Scottish economy, balancing the need to capital with the availability of resources that SG can allocate.

It is also consistent with other NIBs. The review of international comparators shown in Table 18 indicates the level of public capitalisation typically ranges between 0.5% and 1.5% of GDP. In a Scottish context, £2bn broadly equates to 1.3% of GDP.

3.2.1 Non-government sources of finance

A key objective of the Bank will be to bring in other sources of capital to supplement the activities of the Bank. Most successful NIBs area able to leverage initial public capital by issuing bonds – thereby increasing the amount of funds available for investment in the economy. The ability to leverage relatively small amounts of public capital into a significant

[29] Macfarlane, L. and Mazzucato, M. (2018), 'State investment banks and patient finance: An international comparison'. UCL Institute for Innovation and Public Purpose Working Paper, IIPP-WP 2018-01.
[30] Finnvera: merger of two existing financing institutions. NIB: established by Denmark, Finland, Iceland, Norway and Sweden in 1975; joined by Estonia, Latvia and Lithuania in 2005.

source of strategic and long-term finance is a key source of strength for NIBs around the world.

Over the longer-term the Bank should also look to leverage its initial capital base, further strengthening its investment capability. However, in its early years this option will not be immediately available to the Bank, as it will take time to develop an investment portfolio and the track record that is necessary to issue its own bonds. But this should be an objective to provide the Bank with the full range of financing powers and flexibility that is required to play a major role in the economy in perpetuity. It is recognised that dispensation from HM Treasury would be required for the Bank to raise its own finance.

From the outset, however, the Bank should bring in private capital to advance its objectives at the level of particular interventions where the investment criteria and expected returns are clear. This has been achieved successfully elsewhere, including in Scotland via SIB, which has leveraged significant private capital.

3.2.2 Milestone objectives

The Bank should seek to reinvest its financial returns, both capital and interest, to create a lasting, self-sustaining institution with increasing influence on the Scottish economy. To achieve this, there are some key milestone objectives:

- To secure a dispensation from HM Treasury to have the flexibility to manage, retain and carry-forward cash balances over financial year-ends
- To become self-funding over the medium-term that is; the Bank covers its operating costs from investment returns
- To be able to raise capital in its own right and no longer be reliant on capital advances from SG to fund its investments.

3.2.3 Initial HM Treasury dispensation

Each year, SG must operate within the budget limits set for capital and revenue by the Scottish Parliament. The money available for this comprises the budget settlement provided by the UK Government and the taxes raised within Scotland. This annuality of approach means that money must be spent in year; capital receipts, for example, have to be re-cycled into other projects in the same year.

Under the Fiscal Framework there is some limited flexibility at SG level to carry forward capital and revenue balances from one financial year to another through the Scotland Reserve. At present, the Reserve is capped in aggregate at £700m and the maximum which can be drawn down during the financial year is limited to £350m, of which capital is limited to £100m.

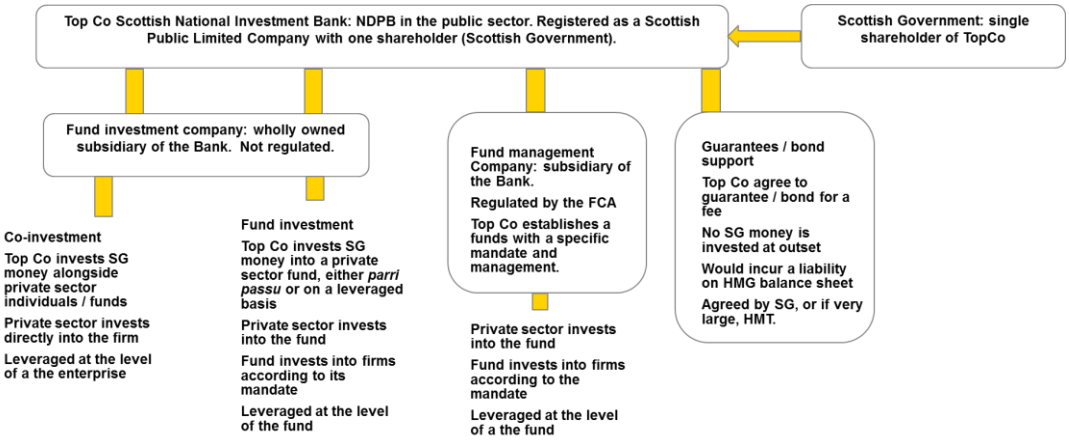
SG should request dispensation from HM Treasury for the Bank to hold reserves and carry these over between financial years, outwith the existing limits set for SG.Securing a different approach to management of year-end balances is not without precedent. HM Treasury agreed a different approach to the Green Investment Bank (prior to its recent privatisation) and to BBB, which has an on-going dispensation over and above BEIS' existing budget to invest public capital into SMEs. A similar arrangement is in place for Scottish housing associations, on a temporary basis, which are currently classified to the public sector whilst legislation is passed to reduce public sector control over these bodies and return them to a private classification. Without such dispensation the Bank would be unable to deliver the scale and ambition which is set out for it here, including through the adoption of a long-term, patient investment strategy.

3.3 Potential commercial structure

Given the issues raised in the discussion of financial instruments and because the Bank performs a variety of functions across the options, it is sensible for the Bank to take an

umbrella form with different legal entities for different activities. The nature of this umbrella is illustrated in Figure 30.

Figure 30: Umbrella structure of the Bank



The Bank has a range of options available to it in terms of structure, with various precedents being set by public bodies with a similar purpose. The structure set out above could be established over time and would allow the Bank to engage in different types of activity under an umbrella organisation. This will simplify the permissions and the regulatory aspects of the Bank's operation. This will make the achievement of consents and state aid clearance more straightforward.

Where the Bank seeks to encourage a private-public co-investment model through raising funds on an equity basis, the Bank would adopt a fund-based model, whereby the private sector parties would become equity owners on a pro rata basis of the fund. The investment allocation decisions would likely need to include a rigid investment framework and a demonstration of objectivity, and the fund would require its own board of directors. One method for this would be to engage an independent investment manager to make the investment and risk management decision based on a prescribed set of strategic objectives and parameters. Alternatively the fund manager could be a subsidiary of the Bank itself. The equity fund route would also have operational obligations, for example a requirement to provide liquidity to investors at specific times, and a dividend-style return on equity. Such a fund would likely need to be directly regulated by the FCA, particularly where listed or where open to retail or unsophisticated investors.

This structure would enable the Bank to leverage private finance from different sources (such as insurance companies and pension funds) to further the aims of the Bank and provide the greatest possible uplift to the Scottish economy.

3.4 Operating costs

3.4.1 Introduction

The purpose of this section is to set out is the Bank's expected operating costs by giving consideration to its structure, functions, activities, and systems based on the activities that the current Implementation Plan (IP) sets out for the Bank. While debt is envisaged as an instrument, the structure we have followed is typical of an asset manager as the IP does not currently envisage that the Bank will develop and manage a loan book directly as a bank might (though it may invest in loan funds or through other third parties). The structure and costs are therefore set out in terms of different branches of an asset management structure, including a significant amount of investment through third parties.

At this early stage, this paper should be used as a basis for an outline understanding of costs. As the operating model is better defined it will be possible to be more precise about the costs and how they are likely to evolve. This should be an iterative process as the

management team sets up the Bank and the activities of the Bank become clearer. Two aspects of the Business Plan that the management team will be required to write are relevant here – first the investment activity they plan and the balance between direct investment and investment through third parties and funds, and second the internal management structure, processes and systems required to run the bank.

There will also be a process of ramping up: some costs will be incurred before the Bank is operational and by the same token the bank is unlikely to have the full complement of staff envisaged here at the outset. The pace of this process will be determined in part by the pace of legislation and what requirement there is to begin investment activity before the Bank is formally established. We envisage that some activity will commence in 2019 under the badge of the Bank, and that it would take at least two years from that point before the Bank's staff and activities were at the full fun rate.

3.4.2 Comparator bank costs

This section examines similar promotional banking models to gain an understanding of relative costs. This will provide benchmarks during the costing exercise for the Scottish National Investment Bank.

British Business Bank (BBB)

The BBB launched in November 2014 as a public limited company wholly owned by the UK Government, with an aim to increase the supply of finance to small businesses in the UK facing 'market failure' and to provide advice. It is headquartered in Sheffield and the 2017 Conservative manifesto set out plans to open six new regional offices.

BBB does not directly lend or invest money, rather it works with over 100 partners such as banks, leasing companies, venture capital funds and web-based platforms. It offers a mix of debt and equity finance through its Start Up Loans Company, Enterprise Finance Guarantee, ENABLE Wholesale programmes, Angel CoFund, Enterprise Capital Funds and Venture Capital Catalyst.

The BBB's latest financial information is set out in the table below:

Table 19: British Business Bank financials

British Business Bank	2017
Employee costs	£15.4m
Other operating costs	£7.3m
Total operating costs	£22.7m
Number of employees	144
Average total cost per employee	£157,291
Board costs (non-execs)	£275k
Board number (non-execs)	8

Source: British Business Bank — Annual Report and Accounts 2017

The Green Investment Group

The Green Investment Group (GIG) was a non-departmental public body of the Department for Business, Energy and Industrial Strategy (BEIS), known as the Green Investment Bank, but was sold to Macquarie Group Limited as an independent organisation in August 2017.

The GIG targets debt and equity investments across all stages of the project lifecycle in green infrastructure projects. It invests in established technologies such as offshore and onshore wind, solar, hydro, inter-connectors, waste and biomass, as well as emerging technologies like tidal, biofuels and smart grid. It provides financial advice and green impact

reporting services as well as consultancy services and advice to government and multi-lateral institutions on how to set up effective green finance institutions.

The group's latest financial information is set out in the below table:

Table 20: The Green Investment Group financials

The Green Investment Group	2017
Employee costs	£19.5m
Other operating costs	£12.6m
Total operating costs	£32.1m
Number of employees	120
Average total cost per employee	£267,417
Board costs (non-execs)	£320k
Board number (non-execs)	9

Source: Green Investment Group — Annual Report and Accounts 2017

This analysis identifies a range in the average total cost per employee between £157k and £267k.

3.4.3 Expected teams and activities

With reference to the Topco structure introduced in the previous section, the table below provides an overview of the teams which we anticipate within the Bank and the activities that each of these teams would perform.

Table 21: Expected teams and activities within the Bank

Teams	Activities
Board and Management	Monitoring and control
	Recruitment
Investment Units	Investment management (asset allocation and stock selection)
	Research, analysis
	Deal Origination
Operations and Fund Administration	Investment transaction processing, settlement, trade support
	Fund accounting, performance measurement, client reporting, client services
	Other fund administration (incl. ISA administration, etc.)
Risk	Credit risk modelling
	Performance and investment risk analysis
	Operational risk analysis
Compliance and Reporting	Compliance monitoring (e.g., MiFID II, CASS, etc.)
	Regulatory reporting
	Performance Reporting
	Risk Reporting
Corporate Administration	Accounting
	HR, training
	Other corporate administration
IT	IT system implementation and maintenance
	IT/Data security
	IT audit
	Technical support, administration

3.4.4 Organisational structure and staffing[31]

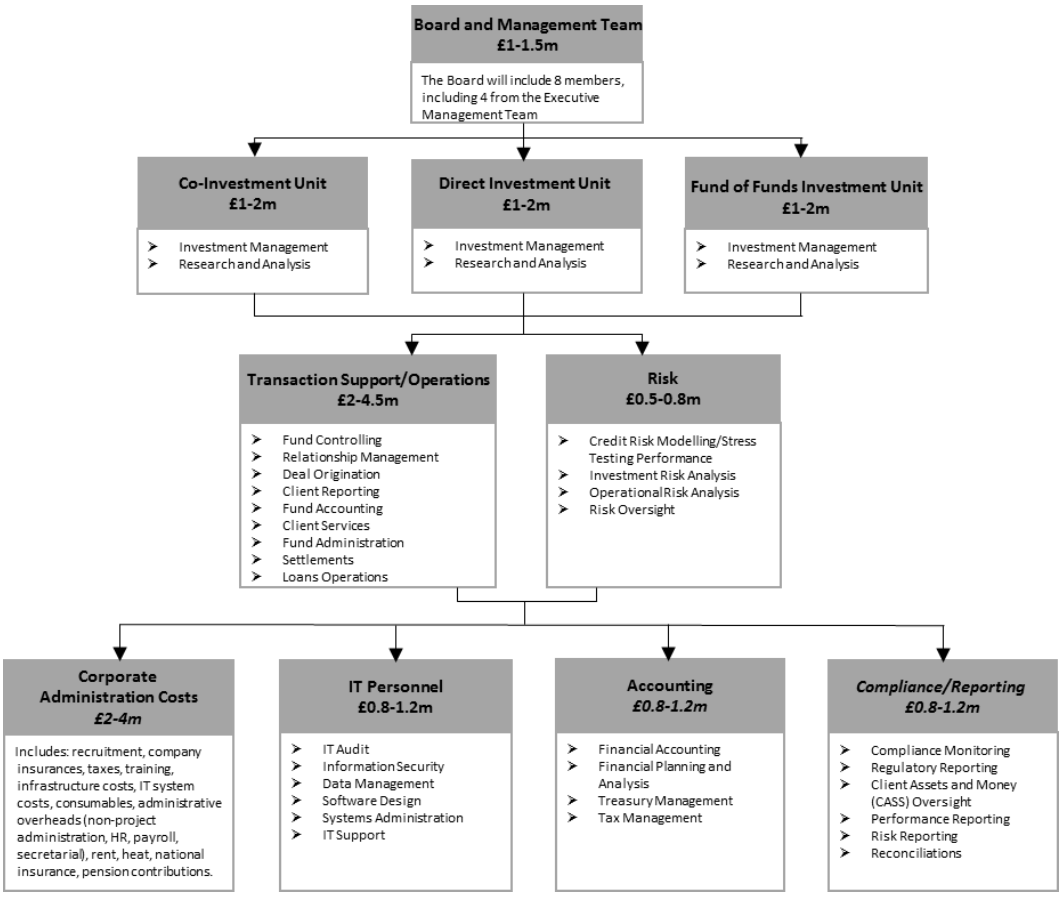
This section provides an estimate of the anticipated operating costs and required inputs from a bottom-up perspective. It starts with likely systems and staffing to determine an overall cost. IN advance of more detail on the operating model, this can only be a rough estimate of costs but should give an idea that can guide the evolution of the Bank.

It must be noted that for the purposes of this analysis, we have not accounted for cost impacts associated with the existing landscape (e.g., expected synergies with SIB) and have not considered the effects of any outsourced activity (in reality a number of these functions can and normally are outsourced).

The diagram below sets out the detail of the teams and functions that it is estimated the desired operations of the Bank would require.

[31] Figures have been taken from the Robert Walters salary survey 2018 using London regional salaries unless stated otherwise. Available at: https://www.robertwalters.com/content/dam/robert-walters/global/files/salary-survey/RW-European-Salary-Survey-2018.pdf

Figure 31: Organisation structure and staffing



Source: EY

Staffing assumptions:

- The relevant investment management market information relates to London therefore we have been consistent and applied London based salary figures throughout
- The identified salaries do not account for bonuses
- For future reference, when calculating employee 'on costs', one should be aware of whether they are looking at total costs or marginal costs. E.g., a new employee in an office would not generate additional infrastructure costs but would still be occupying floor space on which you may be paying rent
- Corporate administration costs have been estimated as an 'on cost' at 25% of payroll costs to cover accommodation, IT systems, etc.
- Staffing costs will fluctuate depending on the level of outsourced activity
- We have not separated out the cost of those activities (particularly on the co-investment side) where the current Scottish Investment Bank is carrying the cost. It is difficult to disaggregate the back-office staff that would be required in the new Bank from that which currently exists and in addition not all SIB staff are engaged in activity that would necessarily migrate to the Bank. The process of developing the operating model will flesh out what aspects of current expenditure can be used within the bank, but it would be premature to make assumptions on this.

IT/systems assumptions:

Most operating systems come with up-front implementation costs, administrative unit operating costs and upgrade costs (e.g., for new regulations) and depending on the types of assets they are holding, there may be quite significant data costs, over and above the systems (e.g., benchmarks, instrument data costs).

Additionally, there is a significant variation in the level of systems investment by asset managers depending on the range of software features and the volume of outsourced activity. Therefore at this early stage, accurate costs cannot be identified until the operating model has been further defined. This has led us to include IT system costs within corporate administration costs.

The typical systems we would expect in an asset management business are as follows:

Front office

- Research and modelling tools to assess assets and portfolios (purchased, proprietary or outsourced)
- Fund Management & Dealing system to generate transactions and support execution of them
- Risk Analysis (purchased, proprietary or outsourced)

Middle/back office

Most asset managers outsource this activity to a third party administrator given the high cost of systems and leverage of their scale, but where in-house, the investment admin system would typically come in modules, and include the following:

- Trade processing and settlement
- Valuation
- Income and corporate actions processing
- Derivatives and collateral management
- Cash management
- Performance measurement
- Client reporting

Support systems

- Finance – ledger, planning and budgeting, etc.
- HR
- Compliance & risk etc.

3.4.5 Overall cost

An initial operating costs figure is estimated to be £11m-20m, excluding contingency.

It is also prudent to factor in contingency costs owing to the uncertainty on the completeness of elements within the estimate, especially at this early stage with a proper operating model yet to be defined. The contingency is designed to cover unknown elements of cost at this stage of the estimate. Accounting for contingency costs at 41 per cent of initial operating costs, (based on the most appropriate HM Treasury guidance on optimism bias), provides an updated estimated annual range of £15m-28m. At this stage, this indicative amount does not include any transfer that may come with SIB.

Analysis of other organisations shows a range of costs depending on the structure and prominence of the organisation. The estimate of £15m-28m identified above is broadly in line with the identified BBB running costs at the higher end. To allow for further cost creep, we have adopted an estimate of £20m-30m.

Staffing and costs profile

The table below sets out the impact of staffing and costs as a result of ramp up in activity in the early years of the Bank. It is important to note that an element of cost will be incurred before the Bank is operational and it will be an on-going process to reach the full complement of staff envisaged.

Table 22: Recruitment and costs profile

	2019	2020	2021
Number of staff	25-50	50-100	100-150
Operating costs	£5-10m	£10-20m	£20-30m

Source: EY

The following next steps to further refine these initial estimates are recommended:

- Consider the Bank's intended operating model, and how this would be built out over time (including incorporation of any activities/staff/systems from the SIB).
- Examine the robustness of the organisational structure outlined.
- Identify the level of outsourced activity and the resources to run the initial operations of the Bank.
- Ensure no operational activities have been neglected.