



Patient strategic finance: opportunities for state investment banks in the UK

Policy Report

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Working Paper
IIPP WP 2017-05

December 2017



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Suggested citation

Mazzucato, M, Macfarlane, L, (2017). "Patient strategic finance: opportunities for state investment banks in the UK". *UCL Institute for Innovation and Public Purpose, Working Paper Series* (IIPP WP 2017-05).

<https://www.ucl.ac.uk/bartlett/public-purpose/wp2017-05>

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Mariana Mazzucato^a and Laurie Macfarlane^b

Abstract

This report looks at the ways in which a state investment bank can provide patient strategic finance for investment led growth and innovation. It positions this case in the context of the current challenges and opportunities in the UK economy. Lessons from six international state investment banks are used to reflect on the importance of mission statements, governance structures, financing instruments, relationship to national policies, and metrics of evaluations. The use of these lessons for the emerging Scottish National Investment Bank is given close attention.

Key words: State investment banks, patient finance, public finance, mission-oriented policy, innovation

JEL codes: G20; O16; O3; L52

Acknowledgements

This report was commissioned by Jim McColl, an industrial entrepreneur, to provide an independent in-depth analysis on specific opportunities for investment-led growth in the UK.

The authors would like to thank Professor Lavinia Barros de Castro, Harro Pitkänen, Anne-Kathrin Metzler, Daniel Mierow, Qiyuan Xu, Shuai Du and Christopher Knowles for participating in short informal interviews. The authors would also like to thank the following people for comments: Tommaso Gabellini, Jeremy Burke and Josh Ryan-Collins. All errors remain our own.

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Executive summary

Ten years after the onset of the Global Financial Crisis, the UK economy remains weak and unbalanced. Real wages have suffered their sharpest decline since records began, productivity growth has stalled, and economic growth remains highly dependent on private debt-driven consumption.

At the root of the UK's weak recovery is a low rate of investment. Despite having one of the largest financial sectors in the world, levels of public and private investment are low compared to other advanced economies. The banking sector has largely retreated from funding the real economy, and much of the sector is focused on trading of existing assets. Successive governments have underinvested in key strategic areas such as energy and transport, while comparatively lower levels of state support in areas such as trade finance and business guarantees have held UK firms back from competing effectively with international competitors. With household debt rising rapidly again, and Brexit posing new economic challenges, there is a need to find a new way of generating long-term sustainable growth.

The return of industrial policy to the political mainstream provides an opportunity to forge a new path. By making strategic investments and nurturing new industrial landscapes, a modern industrial strategy focused on solving important societal challenges can help to rebalance the economy and reinvigorate the industrial base. A 'mission-oriented' approach to industrial policy can help to determine the direction of growth by making strategic investments across many different sectors, and improving business expectations about future growth areas.

This requires not just any type of finance but patient, long-term, committed finance. This can take different forms, but in many countries, patient strategic finance is increasingly coming from state investment banks (SIBs). By developing new financial tools and working closely with public and private stakeholders, state investment banks can – if structured effectively – play a leading role driving growth and innovation.

State investment banks have recently entered the political spotlight in the UK. The European Investment Bank (EIB) has long been a key source of finance for infrastructure projects in the UK, financing £7 billion of projects in 2016. But in light of the UK's vote to leave the EU, HM Treasury is reported to be considering options to replace the European Investment Bank. In Scotland, First Minister Nicola Sturgeon has announced plans to establish a new Scottish National Investment Bank to be established in 2018.

In this report, we review the role of state investment banks and their potential to address both the challenges and opportunities of patient strategic finance. We examine the design features and activities of six state investment banks from different countries and regions, and analyse their role in their respective economies. We explore how different design features impact the role that each bank plays in its respective economy, and identify lessons that can be drawn for policy in the UK and Scotland. We also examine the rules and regulations relevant to setting up a state investment bank, such as State Aid Rules and public accounting rules. Our main findings can be summarised as follows:

- **Mandate and mission:** The overarching mandate and mission of an SIB is critical to the role it can play in the economy. The major international SIBs have converged around an objective of promoting smart, sustainable and inclusive growth, which enables them to play a leading strategic role in their respective economies. In the UK context, a mandate to provide high-risk, patient finance to firms and other organisations that are willing and able to innovate and go beyond fixing market failures, would maximise *additionality* (i.e. making things happen that otherwise would not). An SIB that is mission-oriented – rather than sector oriented – would enable it to shape the direction of growth by making strategic investments across many different sectors and nurturing new industrial landscapes, avoiding many of the pitfalls of a sectoral approach. Experience from elsewhere suggests that mission-oriented bodies are also better able to attract top talent.
- **Economic role:** There are four roles that SIBs play in economies: a countercyclical role, a capital development role, a venture capitalist role and a mission oriented role. Many SIBs play more than one of these roles at the same time. In the UK context, there would be benefits from an SIB playing all four roles: a countercyclical role would smooth the effect of the UK's cyclical financial markets; a capital development role would help to renew the UK's industrial base and competitiveness; a venture capital role would provide the early stage public, patient finance to firms that are willing to innovate; and a mission-oriented role would influence the direction of growth by making investments that address key societal challenges and crowd-in private sector investment.
- **Investment activities:** The investment activities of SIBs vary between countries according to the bank's mandate, socio-economic circumstances, the stage of development, and existing institutional landscapes. In the UK context, a mission-led SIB could provide additionality by catalysing activity that otherwise would not happen. This could most effectively be achieved by placing an SIB at the centre of the investment process, nurturing knowledge and expertise, coordinating other stakeholders in the investment ecosystem and acting as investor of first resort – not just investor of last resort. In some cases, it may be appropriate for the SIB to invest directly, while in other cases it may be more appropriate for a SIB to coordinate investment from other actors. Either way, the effect would be to act as a catalyst for growth and technical change across different sectors. Based our assessment of the existing landscape, areas where the SIB could play an important role include mission-orientated innovation (working with other stakeholders in the innovation ecosystem); the green economy (particularly in light of the privatisation of the Green Investment Bank); exports (either coordinating with or replacing UK Export Finance); industry and competitiveness (ensuring UK firms can compete effectively with international firms domestically and abroad) and infrastructure (particularly in light of the European Investment Bank's withdrawal from the UK).
- **Governance:** Governance arrangements are key to the success and legitimacy of SIBs. In particular, achieving the right balance between political representation and independent decision making is a key challenge. While political representation can help to maintain alignment with government policy and maintain a path of democratic accountability, steps should be taken to prevent undue political interference or capture by interest groups.

Including a wider range of stakeholders such as industrial trade bodies, trade unions and regional representatives can be beneficial as long as mechanisms are in place to make sure that none of these groups ask for special favours but remain objective evaluators.

- **Technical expertise:** Talent is key, so SIBs must attract a breadth of expertise within staff. In many cases this includes not only financial expertise but significant in-house engineering and scientific knowledge about the sectors the bank is active in. This enables SIBs to base investment decisions on a wider set of criteria than relying on market signals alone and create a hub of expertise that can be drawn on to provide expert advice on government policy design and implementation. It also enhances the ability of the SIBs to crowd-in private investment by giving private sector actors the confidence they need to invest.
- **Funding instruments:** Having a range of funding instruments available is important to manage the balance of risk and rewards effectively, and to best match the optimal finance for different types of projects across a portfolio. For example, guarantees can encourage private sector investment by de-risking projects, while equity investments may be suitable for capital intensive, high risk projects. In order to provide the bank with the flexibility required to fulfil a broad mandate, it is important to have a range of tools suited to different areas of the risk landscape. SIBs can also learn from portfolio strategies of venture capitalists. In addition to lending operations, offering advisory services can help to create viable projects and encourage business investment.
- **Sources of finance:** There are many different ways that SIBs can fund their business operations, including using savings and deposits from the public, raising money in the domestic or international capital markets, borrowing from other financial institutions, using return on investments, receiving budget allocations from the national Treasury, managing public pension or social security funds, or financing from the central bank. Sources of finance can have an impact on the ability of SIBs to successfully meet their mandates, and the most appropriate source of financing will vary depending on country specific circumstances. Within the UK, raising finance from capital markets should not be a problem given the UK's strong credit rating, however the UK's unusual public accounting rules make this more difficult than in other countries.
- **Links to government policy:** Close alignment between SIBs and government policy – both economic and innovation policy – can create a powerful synergy between policy, regulation and financing, which can be simultaneously coordinated for maximum impact. For example, new government policies can be complemented with new financing instruments in order to transmit policy objectives more efficiently. Although potentially powerful, this relationship is highly dependent on effective governance arrangements to ensure sound banking principles are maintained and undue political interference avoided.
- **Public accounting:** In most countries, the borrowing and lending activities of SIBs are not included in measures of public debt and deficits. The UK approach of including public corporations in debt and deficit targets is highly unusual, and creates an inherent bias against the establishment of SIBs and public investment more generally. Treating SIB investment as if it were simply another form of government revenue spending makes little sense. A strong

case can thus be made for aligning the UK's measurement of debt to the general government measure used in other countries including across the EU, thus allowing an SIB to borrow and lend on its own account without impairing the public finances.

- **State aid rules:** While State Aid rules are often held up as a barrier to more active government industrial policy, the UK has a long history of spending less on State Aid expenditure relative to other Northern European economies, suggesting that policymakers may have taken an overly cautious approach in the past. To comply with EU State Aid rules, SIBs should focus on providing additionality: i.e. doing what is not already being done by the private sector. This does not have to be limited to fixing market failures – it also includes mission-oriented investments focused on creating and shaping new markets, technologies and firms that otherwise would not arise.
- **Monitoring and evaluation:** Whereas private banks tend to be evaluated on the basis of their performance, SIBs are often evaluated on the extent to which they are fixing perceived market failures. However, since it is clear that in the case of SIBs that are playing a mission-oriented role, their activities cannot be explained solely by market failure metrics. As a result, new monitoring and evaluation frameworks are required in order to capture the dynamic outcomes and spillovers of mission-oriented investments to accurately evaluate the performance of these institutions.

1. Introduction

The UK is in a crucial time of transition. The Global Financial Crisis exposed major weaknesses in the UK economy, and this has been compounded by the post-crisis turn towards fiscal consolidation. Living standards have declined, productivity has stagnated and the country has become more divided – both economically and geographically.

The vote to leave the European Union poses new challenges. While the reasons for Brexit are complex, evidence shows that economic circumstances played a key role in determining the outcome of the vote^{1 2}. This has sparked a shift in the debate on economic policy, with policymakers across the political spectrum now recognising that a new approach is needed. Policymakers – both at the UK and devolved levels – have taken steps to increase investment and stimulate growth.

In his 2016 Autumn Statement, the Chancellor of the Exchequer abandoned the government's target to achieve a budget surplus by 2020, and launched a £23 billion 'National Productivity Investment Fund'³. In January 2017, the UK Government published proposals for its new industrial strategy which aims to "improve living standards and economic growth by increasing productivity and driving growth across the whole country"⁴. This includes a 'Patient Capital Review', led by HM Treasury, which is seeking to identify barriers to access to long-term finance for growing firms⁵.

In Scotland, the Scottish Government's economic strategy has sought to increase investment, innovation, inclusive growth and international trade since 2015⁶. In the wake of the UK's vote to leave the EU, the Scottish Government announced a suite of new stimulus measures including £100 million of infrastructure investment⁷ and £500 million to support to businesses with significant growth or export potential⁸. In September 2017, the First Minister announced plans to establish a new Scottish National Investment Bank to provide patient capital for growth⁹.

New measures to boost investment, productivity and trade are a marked departure from the austerity consensus of recent years. But simply increasing the availability of finance will not on its own transform the economy. As was seen in the run up to the financial crisis in the UK and other countries, plentiful finance can generate growth – but not growth that is necessarily sustainable or socially useful. What matters is not just the quantity of available finance, but the type of finance, the source of finance and the nature of the investments to be made.

The UK is unusual among major advanced economies in having few major public sources of long-term, patient, committed finance. This is despite clear evidence that this type of finance is essential for long-term growth and innovation. Numerous studies link the UK's lack of patient finance to many of the underlying weaknesses of the UK economy^{10 11}. Brexit is likely to make this problem worse. Many of the places that voted to leave have benefitted the most from EU structural and investment funding¹², while the European Investment Bank, which in 2016 financed nearly £7 billion worth of public infrastructure projects in the UK, has decided to put its UK operations on hold¹³.

In this paper, we focus on the role of state investment banks (SIBs), or development banks^c, as a source of patient, long-term finance and as agents of economic development. SIBs have played a key role in the economic development of many countries, and continue to do so today around the world. In recent years, some SIBs have taken on a new role as key domestic and global actors driving economic growth and innovation, particularly through addressing contemporary challenges such as climate change¹⁴.

We review the role of state investment banks and their potential to address both the challenges and opportunities of patient strategic finance. Drawing on academic literature and primary and secondary sources from other countries, we compare the activities of six SIBs from different countries and regions and analyse their role in their respective economies. We explore how different design features impact the role that each bank plays in its respective economy, and how this affects each bank's ability to successfully meet its mandate. We also examine the rules and regulations relevant to setting up a state investment bank, such as State Aid Rules and public accounting rules, and conclude by reflecting on the possible policy implications for the UK. The remainder of the report is structured as follows:

- Section 2 sets out the challenges facing the UK economy, and outlines the opportunity of a new investment-led growth strategy.
- Section 3 reviews how the current UK financial landscape supports investment in capital development and innovation.
- Section 4 compares the design features of six SIBs: Germany's KfW, the China Development Bank, the Brazilian BNDES, the Nordic Investment Bank, Italy's Cassa di Risparmio di Roma and the European Investment Bank.
- Section 5 reflects on the experience previous UK initiatives including the Industrial and Commerce Finance Corporation, the Green Investment Bank and the British Business Bank.
- Section 6 reflects on the experience of present Scottish initiatives including the Scottish Investment Bank and the Scottish Futures Trust.
- Section 7 discusses rules and regulations that are relevant to the establishment of SIBs, including EU state aid rules and the interaction with the public accounts.
- Section 8 concludes with a discussion on policy implications for the UK and Scotland.

2. The UK economy: challenges and opportunities

The past ten years have exposed deep structural problems in the UK economy. In this section, we summarise the key economic challenges, and identify the opportunities for a new investment-led growth strategy. The sections that follow focus on the role of a state investment bank in helping to provide the patient strategic finance that is essential for such a strategy.

^c The terms 'development bank' and 'state investment bank' are often used interchangeably. However, we prefer the later expression, to differentiate from 'development finance institutions', which are active in developing countries (e.g. providing aid). SIBs are active both in the developing and developed world.

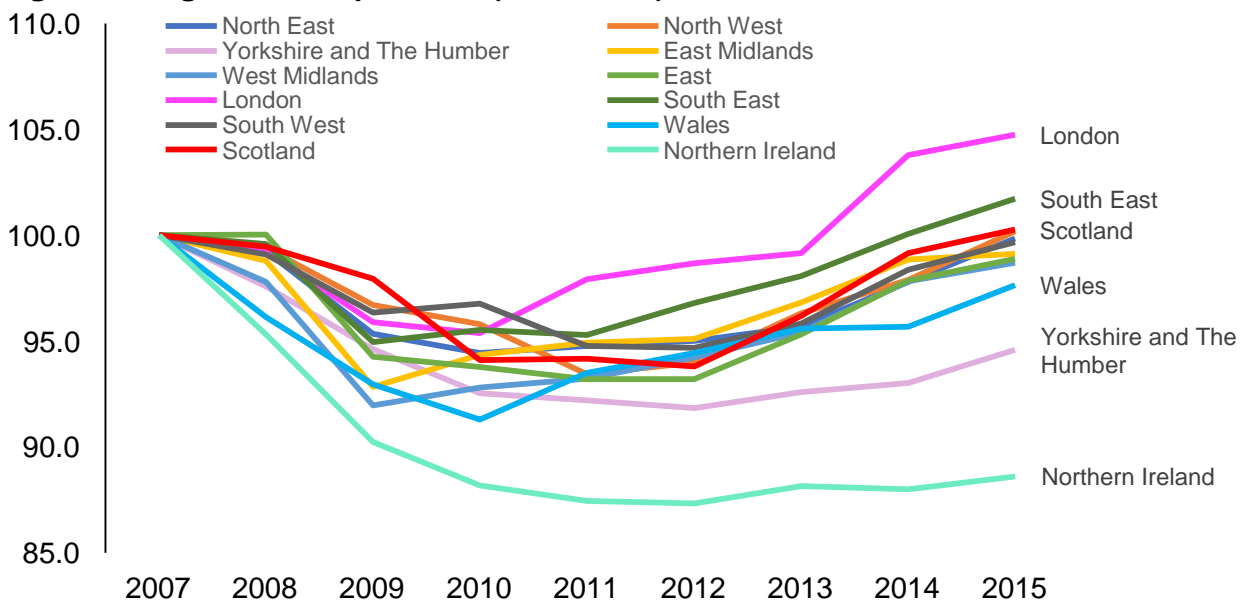
2.1 Economic challenges

2.1.1 Weak economic recovery

The recovery from the recession after the Global Financial Crisis has been the weakest in modern times. Measured on the basis of real GDP per capita, the UK only recovered to its pre-crisis peak in 2015 – seven years after the onset of the crisis. In contrast, following the two most recent recessions (1980 and 1990) it only took three years to recover¹⁵. But these aggregate figures mask widely varying fortunes across the country. In reality, it was only in London and the South East that GDP per capita had recovered to its pre-crisis peak by 2015. In Scotland, the East Midlands and the South West, GDP per capita was approaching pre-crisis levels by 2015. In Northern Ireland it still remained 11% below its peak, in Yorkshire and Humberside 6% below, in Wales 2% below¹⁶.

In November 2017, the Office for Budget Responsibility significantly downgraded its forecast for economic growth in the UK over the next five years¹⁷. Real GDP per capita is now expected to grow by just over 5% between 2016 and 2022. In contrast, the International Monetary Fund (IMF) expects real GDP per capita to grow by over 9% in Germany and 8% in France over the same time period¹⁸.

Figure 1: Regional GDP per head (2007 = 100)



Source: Office for National Statistics¹⁹

Note: Regional GVA deflated using GDP deflator

2.1.2 Falling real wages

After the crisis, real wages suffered their sharpest decline since records began, leading to an unprecedented squeeze on living standards²⁰. While real GDP has slowly recovered, there has been no recovery in wages. Between 2007 and 2015, the UK was the only large advanced economy in which wages contracted while output expanded²¹. Today the UK is one of only six OECD countries where wages are still below their 2007 peak²².

The Office for Budget Responsibility expects that real household income per capita will continue falling until 2022 – representing the longest sustained period of falling incomes since records began²³.

2.1.3 Low productivity

Over the past decade productivity growth, as measured by output per hour worked, has stalled. British workers are now 22% less productive than workers in the US, 23% less than in France and 27% less than in Germany²⁴.

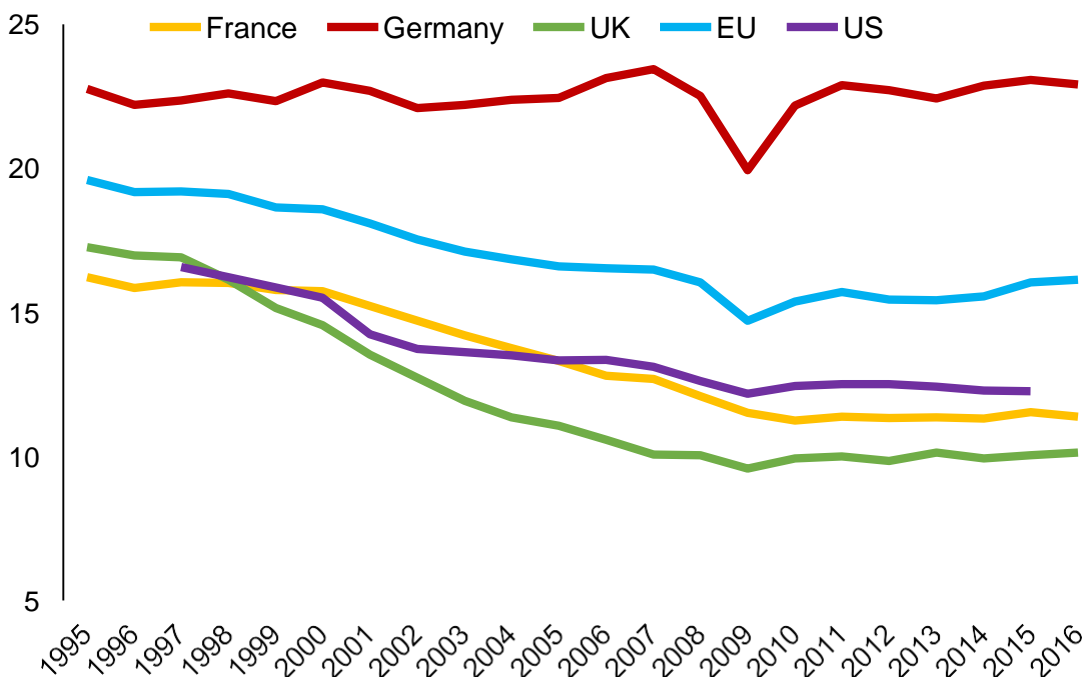
These aggregate figures mask wide disparities across firms. The UK has a small proportion of businesses with high productivity, and a large proportion of firms with low productivity. As Andy Haldane as highlighted, this ‘long tail’ of low-productivity firms is considerably greater in the UK than in other OECD countries²⁵. There are also wide geographical variations – average productivity is much higher in London and the South East than elsewhere.

In November 2017, the OBR significantly reduced its forecast for future productivity growth, forecasting it to remain significantly lower than its pre-crisis trend rate throughout the next five years²⁶.

2.1.4 Weak industrial base

Since the 1990s, manufacturing output has shrunk faster in the UK than in other advanced economies, and now makes up just 10% of GDP. This compared with 23% in Germany, 21% in Japan and 12% in the US²⁷. Entire industries have disappeared and regions that had been mining or manufacturing hubs have suffered a long period of industrial decline.

Figure 2: Manufacturing GVA as a proportion of total economy GVA



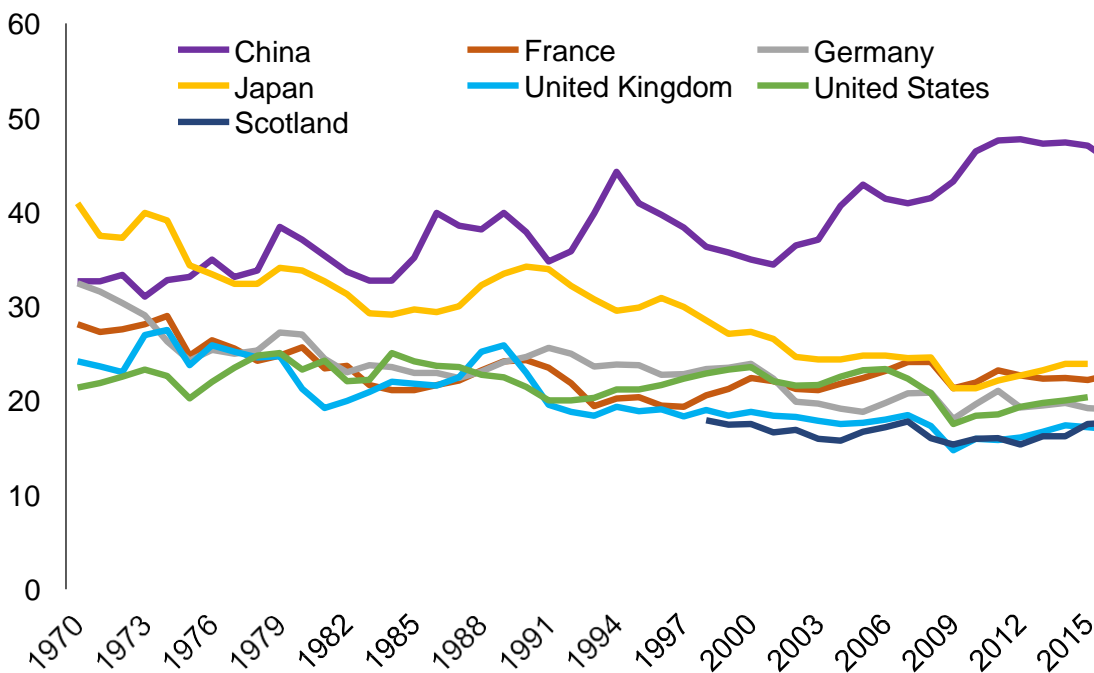
Source: Organisation for Economic Co-operation and Development²⁸

Meanwhile, the financial services sector grown rapidly relative to the non-financial sector. In 2016, financial and insurance services contributed £124.2 billion in gross value added (GVA) to the UK economy, 7.2% of the UK's total GVA²⁹. The extent to which this will be impacted by the UK's vote to leave the European remains unclear.

2.1.5 Low investment

Somewhat paradoxically, despite having one of the largest financial sectors in the world, the UK has a longstanding problem of underinvestment compared to other advanced economies. In 2016 public and private investment was 17% of GDP – the fifth lowest of the EU countries and ranking 118th in the world³⁰. Only Greece, Cyprus, Portugal and Lithuania were lower in Europe, while all other major advanced economies invest significantly more. The level of investment in the UK has been falling for much of the past half century, at the same time as the financial sector continued to grow ever larger. A similar pattern is observed in Scotland.

Figure 3: Gross fixed capital formation (% of GDP)



Source: World Bank³¹ and Scottish Government³²

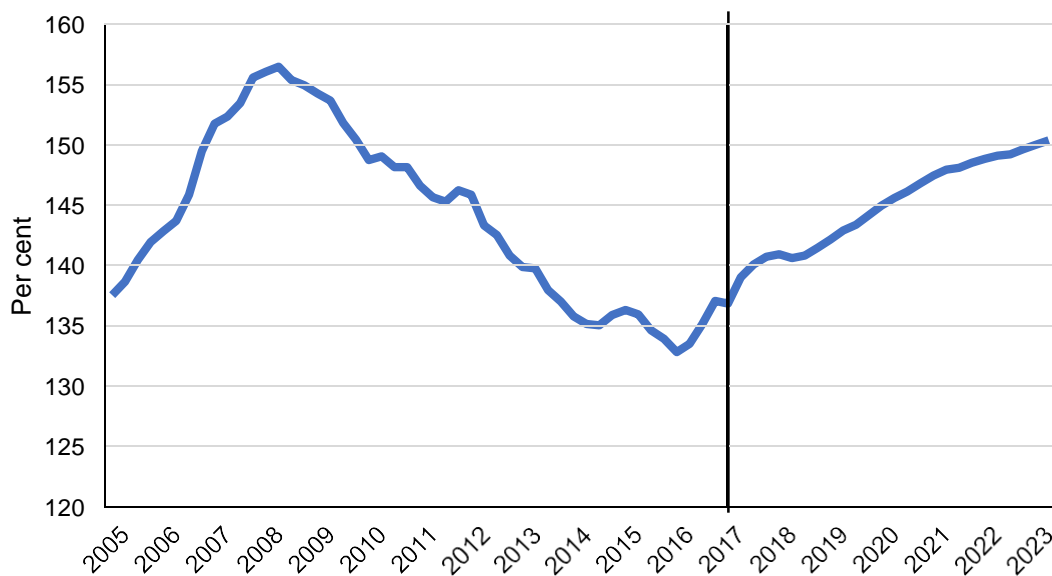
2.1.6 Dependency on debt-driven consumption

While the UK's low-investment model appeared to generate growth throughout the so-called 'Great Moderation' between the 1990s and 2007, the financial crisis revealed that much of this growth did not in fact represent a sustainable expansion of productive activity and output. Rather, consumption growth – which makes up two thirds of national income – was sustained through a

rapid and unsustainable increase in private debt and the formation of asset bubbles, particularly in real estate and financial markets³³.

The focus of economic policy since the financial crisis has been on reducing the fiscal deficit and the national debt. However, as was recently recognised by the International Monetary Fund (IMF), this approach has acted to constrain output and reduce welfare³⁴. By cutting government spending when business investment was still depressed, the effect was to reduce demand and make economic growth even more reliant on private consumption. By 2016, private consumption accounted for 100% of total GDP growth – all other elements (net trade, investment and government consumption) acted as a drag on output³⁵. But with real wages falling, households have only been able to maintain consumption by borrowing more or drawing down on savings. The result is that household debt is now rising rapidly once again, driven by a rapid increase in unsecured consumer lending which in 2016 grew at its fastest pace since the financial crisis³⁶. The Office for Budget Responsibility predicts that its forecast growth can only be achieved if household debt as a proportion of GDP rises to over 150% by 2023³⁷. This is not sustainable; continuing on this path risks repeating the mistakes of the past few decades.

Figure 4: Household gross debt to income



Source: Office for Budget Responsibility³⁸

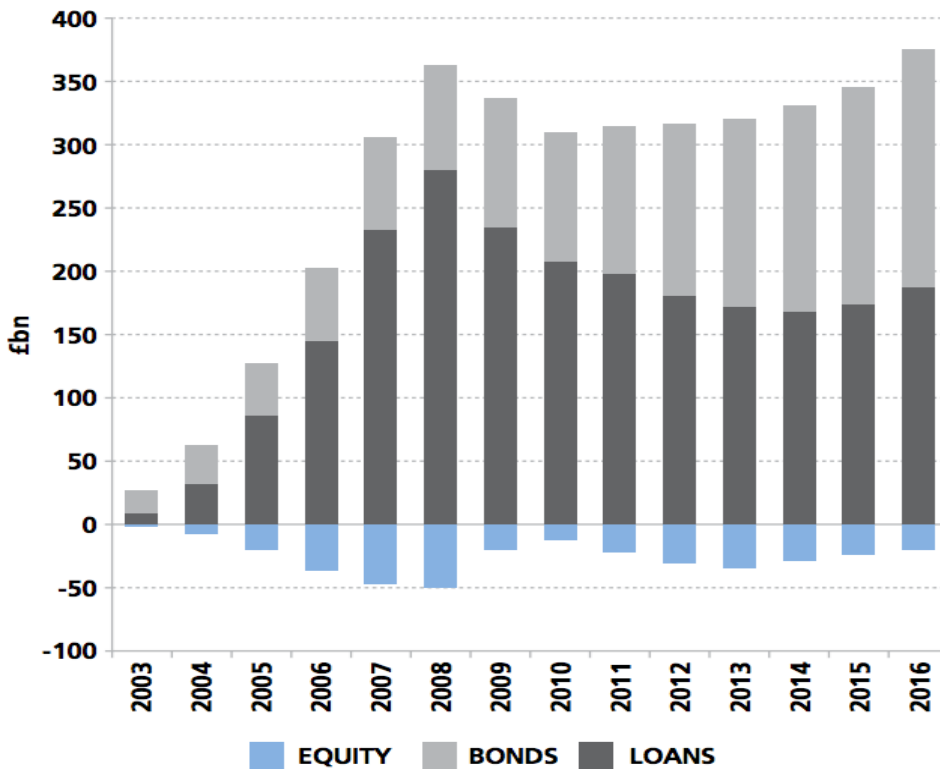
2.1.7 Short-termism

Numerous studies have found that the rise of the ‘shareholder-value’ model of corporate governance has contributed towards growing short-termism among industrial firms, and a reduced incentive for firms to undertake long-term investment projects^{39 40 41}. Investors have given an increasing priority to short-term returns over long-term returns, which has resulted in

firms distributing a higher share of profits back to shareholders in the form of dividends rather than retaining profits to finance future growth opportunities. For UK non-financial corporations, the proportion of discretionary cash flow returned to shareholders increased from 39% in 1990 to 46% in 2014, meaning that there has been less funds available for investment⁴².

Some large firms are also increasingly choosing to spend money on financial activities such as share buybacks in order to boost share prices, rather than make long-term investments⁴³. The value of share buybacks has exceeded the value of shares issued since 2003, meaning that the UK equity market is now mainly a channel for extracting money from firms rather than investing in them.

Figure 5: Net funding raised by UK firms



Source: LSE Growth Commission⁴⁴

2.1.8 Trade deficit

The UK trade deficit is currently more than 2% of GDP, driven by a large deficit in goods which is only partially offset by a surplus in services (mainly financial services)⁴⁵. In 2015 the UK recorded the largest current account deficit as a percentage of GDP of all G7 countries in 2015⁴⁶. This persistent imbalance indicates a growing problem of competitiveness relative to other developed economies.

Successive governments have pledged to improve the UK's balance of trade by increasing exports, but none have yet succeeded. The present UK government has promised to increase the value of exports to £1 trillion by 2020, and increase the number of exporters from 188,000 in

2010 to 288,000 by 2020. But on current trends there is little evidence that this target will be met. The Office for Budget Responsibility's central forecast is that exports in 2020 will be £575 billion – £425 billion short of the government's target⁴⁷.

Numerous reasons have been cited for the UK's comparatively poor trade performance. Compared with most other advanced economies, UK exports are disproportionately dependent on a small number of industries. The UK's 'revealed comparative advantage' (the ratio between a given industry's share of total UK exports and the same industry's share of global exports) is hugely dependent on just two industries – financial and insurance services – while countries such as Germany and Japan display a much more balanced and diverse spread⁴⁸. This reflects the UK's overall trade weakness, particularly in manufacturing.

The City of London's status as a global financial hub may also have hampered non-finance related industry through its effect on the exchange rate. By attracting capital inflows from around the world, the City has helped to sustain a strong currency, resulting in lost competitiveness for much of the rest of the economy. Often described as a form of 'Dutch disease', the effect has been to make British exports more expensive compared with other countries⁴⁹.

This effect has been amplified since the financial crisis by a dysfunctional property market. As London property prices began to rise dramatically in 2012, speculative foreign capital flowed into the property market to take advantage of rising property prices, which bid up the value of the pound. The prospect of short-term capital gains from both rising property prices and an appreciating pound attracted more foreign capital, which increased the pound's value further. The result of this "property price-exchange rate carry trade" was a widening current account deficit and a weakening of British competitiveness⁵⁰.

Since the UK's vote leave the European Union, the pound has suffered a sharp depreciation. However, a more competitive exchange rate alone will not be sufficient to support a revival of industry. After decades of policy neglect, the UK's industrial base has been significantly eroded. In the absence of industrial policies designed to enhance the competitiveness of firms, nurture emerging industrial landscapes and promote strategic trade, the UK's industrial base is unlikely to be able to recover. However, given the renewed focus on industrial strategy across the UK there is now an opportunity to reverse this decline.

2.2 Opportunities for investment-led growth

The challenge for policymakers is to find a new way of generating long-term sustainable growth. In particular, the task is to identify a way to move away from a consumption and household debt-driven growth model towards a modern investment-led growth strategy focused on rebalancing the economy and reinvigorating the industrial base.

With a renewed focus on industrial strategy across the UK, the debate should not be about whether the state should or should not be involved in driving investment and growth – but *how* it can do this most effectively. Traditionally, industrial strategy involves both 'horizontal' policies that attempt to improve conditions across the economy, for example by improving skills and

infrastructure, and 'vertical' policies that target interventions on particular sectors such as transport, health or energy. The UK government's Green Paper on Industrial Strategy proposes a primary focus on horizontal policies, with two vertical interventions focusing on "supporting energy innovation and "cultivating world-leading sectors" ⁵¹.

On top of horizontal policies, vertical ones are needed that stimulate investment and innovation across sectors. Given that firms often base their investments on the perception of future growth opportunities, such investments can drive future business investment⁵². If firms are confident about future technological and market opportunities they will invest; and if they are not confident, or see few market opportunities, they will not invest⁵³. Therefore, any industrial strategy should not only seek to improve the conditions under which firms invest, but also aim to stimulate demand and increase business expectations about where future growth opportunities might lie.

Vertical policies are aimed at not only the rate of innovation but also its *direction*⁵⁴.

Although certain sectors might be more suited for sector-specific strategies, the 21st century is becoming increasingly defined by the need to respond to major social, environmental and economic challenges. Sometimes referred to as 'grand challenges', these include environmental threats like climate change, demographic, health and wellbeing concerns, as well as the difficulties of generating sustainable and inclusive growth. The case for building a modern industrial strategy around addressing these key challenges, and stimulating investment across sectors, is compelling and increasingly recognised. Through well-defined 'missions' that are focused on solving important societal challenges, policymakers have the opportunity to determine the direction of growth by making strategic investments across many different sectors and nurturing new industrial landscapes, which the private sector can develop further^{55 56}.

This 'mission-oriented' approach to industrial policy is not about 'top down' planning by an overbearing state – it is about providing a direction for growth and increasing business expectations about future growth areas and catalysing activity that otherwise would not happen⁵⁷. It is not about de-risking and levelling the playing field, but tilting the playing field in the direction of the desired goals. It involves strategic thinking about the desired direction of travel, the kind of technologies and industrial landscapes needed to get there, and the policy frameworks required to make it happen⁵⁸.

Modern missions might focus on areas such as managing the impact of technological advance and artificial intelligence on the labour market; adapting to changing demographics and an ageing population; or making the transition to a low carbon economy⁵⁹. Germany's Energiewende policy aims to combat climate change, phase-out nuclear power, improve energy security by substituting imported fossil fuel with renewable sources, and increase energy efficiency. By providing a direction to technical change and growth across different sectors, Energiewende is tilting the playing field in the direction of a desired goal. Importantly, it is not just about growing 'green sectors' – it has required many sectors, including traditional ones such as steel, to transform themselves.

A mission-oriented approach to industrial policy across the UK has the potential to stimulate an investment-led rebalancing of the economy and support a renewal of the industrial base. In Scotland, the Scottish Government has established a challenge-led economic strategy oriented

around reducing inequality and making the transition to a low carbon economy while enhancing competitiveness⁶⁰. However, in both Scotland and the rest of the UK, successfully enacting mission-oriented policy requires a systemic approach. In particular, it requires a commitment to catalysing a step change in levels of investment in order to drive innovation and increase productivity across many sectors. The structure of the financial system is crucial to achieving this goal – and this is what we turn to next.

3. The role of finance

Economists have long recognised that the character of the financial system (for example, the types of banks and markets) has a material impact on the real economy^{61 62}. Finance is not neutral; the type of finance received affects the types of investments made and the type of economic activity^{63 64}. In particular, there is an important difference between types of finance that are conducive for investment in the real economy, and speculative finance which prioritises low-risk, short-term capital gains through the trade of existing assets⁶⁵. As outlined in the previous section, the UK has a longstanding problem of underinvestment in the real economy compared to other advanced economies – despite having one of the largest financial sectors in the world.

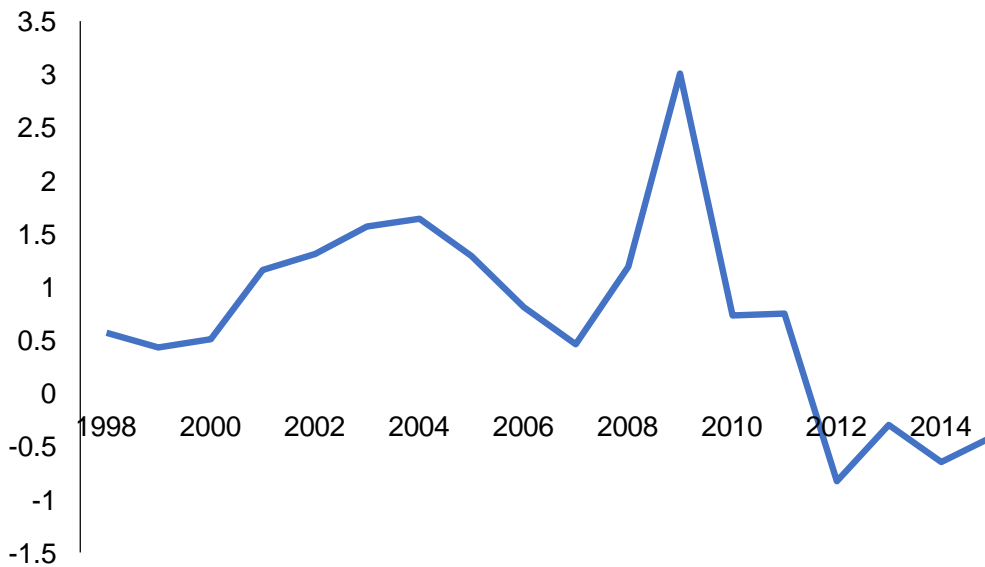
But investment is crucial for the long-term health of any economy, for two main reasons. Firstly, investment in physical and human capital increases the quantity and quality of a nation's means of production, driving productivity growth and living standards (hereafter referred to as 'capital development'). Secondly, investment is critical to the process of creating new technologies and new ways of doing things (innovation) which is increasingly becoming key to long-run growth⁶⁶. In this section, we review the UK's existing financial landscape with reference to each of these areas.

3.1 Capital development

Finance helps to allocate capital to firms looking to enhance business competitiveness and grow in regional, national and international markets, and to public goods such as infrastructure. Ongoing investment in the latest equipment, knowledge, techniques, and processes is essential to maintain and enhance a nation's productive capital stock, and drive productivity growth and living standards.

However, accounting for depreciation (or 'capital consumption') the UK's capital stock has been declining since 2011 on a per employee basis (see figure 6). This failure to maintain adequate levels of investment is perhaps the key weakness of the UK economy. The link between the UK's low investment, low productivity and stagnating wages is now increasingly being recognised^{67 68}.

Figure 6: UK growth in net capital stock per employee, 1998 to 2015 (%)



Source: Office for National Statistics⁶⁹

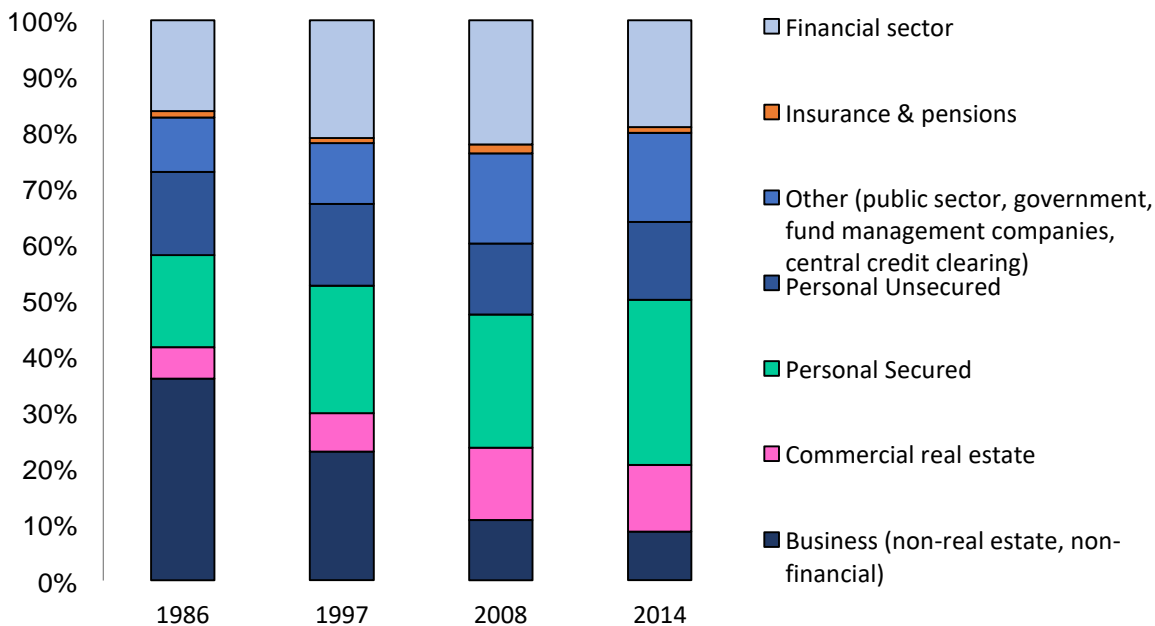
Note: The spike in 2009 represents the sharp fall in employment which occurred over the early part of the economic downturn.

The causes for the UK's comparatively lower levels of investment are multifaceted, but among them are a banking system that has retreated from funding the real economy; the short-termism of our financial and corporate sector; and comparatively lower levels of state support in areas such as trade finance and business guarantees. Each of these is discussed in turn below.

3.1.1 Banking sector retreat from the real economy

In recent decades, the UK's banking sector has grown rapidly relative to the non-financial sector. In 1960 UK banking sector assets totalled £8 billion, or 32% of GDP, but by 2010 this had increased to £6,240 billion, or 450% of GDP⁷⁰. However, much of the growth in banking sector activity in recent decades has happened outside the sphere of production. While in the past most bank lending financed productive business investment, in recent decades banks have increasingly favoured lending to other financial institutions (financial intermediation) and for real estate (household secured and commercial real estate)⁷¹ – lending which does not increase the productive capacity of the economy. Bank balance sheets have expanded through the proliferation of complex financial instruments such as securitised mortgages, commodities futures, and a range of other financial derivatives. The result is that since the mid-1980s the share of lending going to businesses has been falling rapidly, and now represents less than 10% of total lending.

Figure 7: Share of bank lending by industry sector, 1986–2014 (UK resident banks only)



Source: Bank of England⁷²

Part of the reason for this can be found in the evolution of banking business models away from a primary focus on payment services, deposit-taking activities and business lending, and towards a broader range of activities such as securities underwriting and trading, fund management, derivatives trading and general insurance⁷³. The rise of so-called ‘universal’ banking has also changed the nature of business lending, which has shifted away from relationship-based branch lending towards centralised and automated credit-scoring techniques, and a strong preference for collateral. A recent Bank of England survey of major lenders found that 68% of lending to SMEs and mid-size corporations (by volume) is secured on property, with 34% of lending secured with a personal guarantee, typically with an explicit or implicit claim against their residential property⁷⁴. This can often act as a constraint on the ability of firms to borrow; in a recent Bank of England survey, nearly 25% of SMEs said they were constrained in their borrowing by the need to provide collateral⁷⁵.

Moreover, the growing focus on short-term return on equity to boost share prices has shifted attention away from lending to productive enterprise. SME lending – often involving high transaction costs for relatively small loans – is particularly unattractive to large universal banks as it contributes little to the rate of return on equity compared with mortgage lending and financial sector lending^{76 77}. This is particularly relevant in the UK, which is uniquely dependent on commercial banks seeking to maximise shareholder return⁷⁸. In other countries, the banking sector is more diverse with large segments of the market served by banks characterised by ‘stakeholder’ ownership and governance, where the mission of the bank is not to maximise profits but to optimise returns to a range of stakeholders including customers, businesses, and the broader local economy. Empirical evidence shows that these institutions, such as co-operatives, mutuals and public savings banks, direct a much greater proportion of lending

towards productive enterprise and perform much better than their shareholder-owned competitors on measures of financial stability and financial inclusion⁷⁹⁸⁰.

Taken together, these factors appear to be contributing towards supply side constraints on the availability of debt finance for investment. A recent Bank of England survey found that 20% of firms are under-investing because they are unable to access the bank credit they need to expand⁸¹, while the British Business Bank acknowledges that a lack of finance to smaller businesses is contributing to lost output and growth⁸². Although bank lending remains the single largest form of lending for SMEs, in recent years there has been an increase in financing from alternative sources such as private equity, peer-to-peer lending, crowdsourcing and non-bank debt funds⁸³. However, these sources tend to be more expensive, relatively small in scale and are heavily skewed toward London and the South East⁸⁴.

3.1.2 Trade finance and guarantees

In addition to the issues faced by businesses outlined in section 3.1.1, firms that are buying and selling from abroad face an additional set of financing challenges⁸⁵. International trade involves buying and selling over extended periods across countries with different legal systems, political systems, cultures, and business environments. Financing exports is therefore often more risky and complex than financing domestic business. Typically, there is less understanding between suppliers and customers across different countries, a requirement to transact in foreign currencies and bear exchange rate risk, and longer lead times for physical trade to take place. Given that few exporters are able to sell to customers that will routinely pay in advance, there is often a cash-flow issue, and thereby an interim financing need⁸⁶.

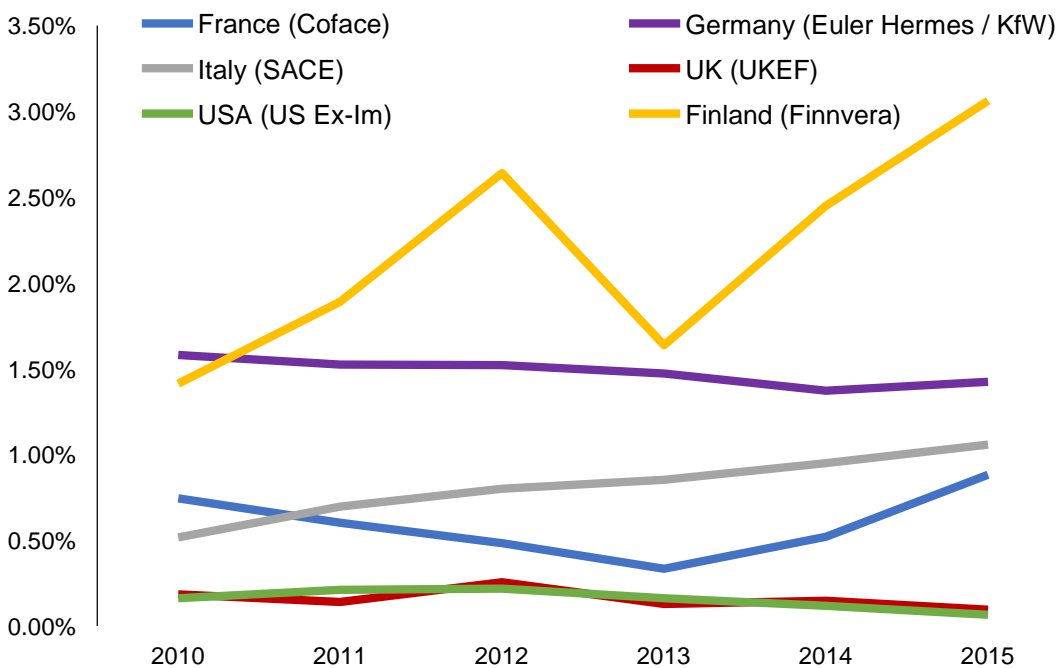
Because of the risks associated with international trade, the World Trade Organisation estimates that between 80% and 90% of world trade relies on some kind of trade finance, mostly of a short-term nature⁸⁷. However, historically UK firms have experienced difficulties when accessing trade finance, and most other advanced economies have offered a much greater degree of state support than has been available to British companies⁸⁸. In a recent study, 60% of potential exporters cited access to finance as a key factor in their export plans, and 24% of UK businesses preparing to export reported difficulties in accessing trade finance or credit insurance from lenders⁸⁹.

Today UK Export Finance (UKEF) is the export credit agency which is responsible for providing state support to UK firms. In recent years UKEF has taken steps to improve support offered to exporting firms and now offers guarantees to overseas buyers to finance the purchase of goods and services from UK exporters; insurance for UK exporters against non-payment by their overseas buyers; policies to share credit risks with banks to help exporters raise contract bonds and access to working capital finance⁹⁰. However, the British Exporters' Association (BExA) notes that while improvements have been made, UK firms remain at a competitive disadvantage in some areas compared to other countries where the state plays a more active role⁹¹. As shown in Figure 8, state support for export finance remains low in comparison to other major economies. Despite exporting similar amounts of goods and services (relative to GDP)⁹², the amount of state support for export finance is significantly higher in France and Italy. Although the Finnish economy is a tenth of the size of the UK's, state support for export finance is more than

three times higher in Finland than in the UK (in terms of absolute spend). These imbalances indicate the presence of a relationship between access to export finance and export volume – a relationship that is supported in empirical studies⁹³.

In the 2016 Autumn Statement the UK government increased UKEF’s capacity to support exports by doubling its risk appetite limit, potentially resulting in as much as £2.5 billion of additional capacity to support exports to some destinations⁹⁴. In July 2017, the UK government struck a deal with five of the UK’s largest high street banks to extend export support to SMEs as part of broader plans to boost exports and bolster the economy after Brexit. Under the agreement, UKEF will take on 80% of the risk of the working capital loan or bond required by overseas buyers in order to reduce the risk that banks take on by lending to smaller and, therefore, riskier companies⁹⁵. While these are positive developments, it remains to be seen whether banks will be willing to underwrite the remaining 20% of any working capital loan or bond. Export finance became less attractive to banks under the ‘Basel III’ changes to banking regulation, which has led to a significant retreat from this market⁹⁶.

Figure 8: Export credit agencies business volumes as a % of GDP



Source: British Exporters Association⁹⁷ and World Bank⁹⁸

Note: On 31 December 2016 France's export credit agency Coface transferred its export credit activities to Bpifrance Assurance Export S.A.S., a subsidiary of the French public investment bank Bpifrance S.A.⁹⁹

There is also evidence that a lack of public guarantees for domestic firms competing against internationally owned firms operating in UK markets has left UK firms at a disadvantage. In bidding for UK contracts, international firms are often able to access guarantees provided by the government in the country where the company is based. However, there is no such support for UK based firms (unless they are exporting the goods or services produced), which has in some cases resulted in loss of business.

This has had a particularly significant impact in industries such as ship-building, which has declined significantly in the UK in the face of international competition. When ship building contracts are awarded, the buyer will typically ask the supplier to arrange a guarantee or bond via a third party of up to 80% of the value of the contract so that the buyer can get their money back if the supplier fails. Often the third party will require the supplier to provide security or collateral for issuing this bond, which can mean placing a large proportion of the contract price in bank escrow for the duration of the contract. The supplier is also typically required to pledge ownership of the asset in construction to the buyer, limiting the ability of the supplier to borrow against its own assets. With large amounts of capital tied up in an escrow account and a limited capacity to borrow, the supplier firm is severely limited in its ability to take on multiple projects at any time and expand operations.

In contrast, international firms bidding on UK contracts are able to access financial export support from their respective governments to cover guarantees and provide working capital. This puts them in a better place to secure contracts in the UK, leaving domestic firms at a competitive disadvantage. This asymmetry has long been recognised in some countries such as Denmark and Italy, where domestic firms competing with international competitors receive similar forms of support to enable them to compete on an even footing. In recent years numerous countries have acted to level the playing field by introducing similar guarantee support for domestic firms, enabling them to bid more competitively for domestic contracts. In 2014 the Finnish state-owned financing company Finnvera announced that support for credit guarantees were to be expanded to cover domestic firms in order to “put them on an equal footing with their foreign competitors”¹⁰⁰.

As will be discussed in the next section, in many countries state investment banks have long played an active role supporting domestic firms to compete more effectively in international markets. In recent years a number of countries have merged numerous standalone agencies into a state investment bank to benefit from staff and organisational synergies. For example, in 2016 France's export credit agency Coface transferred its export credit activities to Bpifrance Assurance Export S.A.S., a subsidiary of the French public investment bank Bpifrance S.A.¹⁰¹ In 2016 the Cassa Depositi e Prestiti, Italy's state investment bank, merged two separate institutions in order to create an "Italian Export and Internationalization Hub" that sits within the bank's group structure¹⁰². In 2015 the European Investment Bank began engaging in export financing for the first time to support the internationalisation of European businesses¹⁰³.

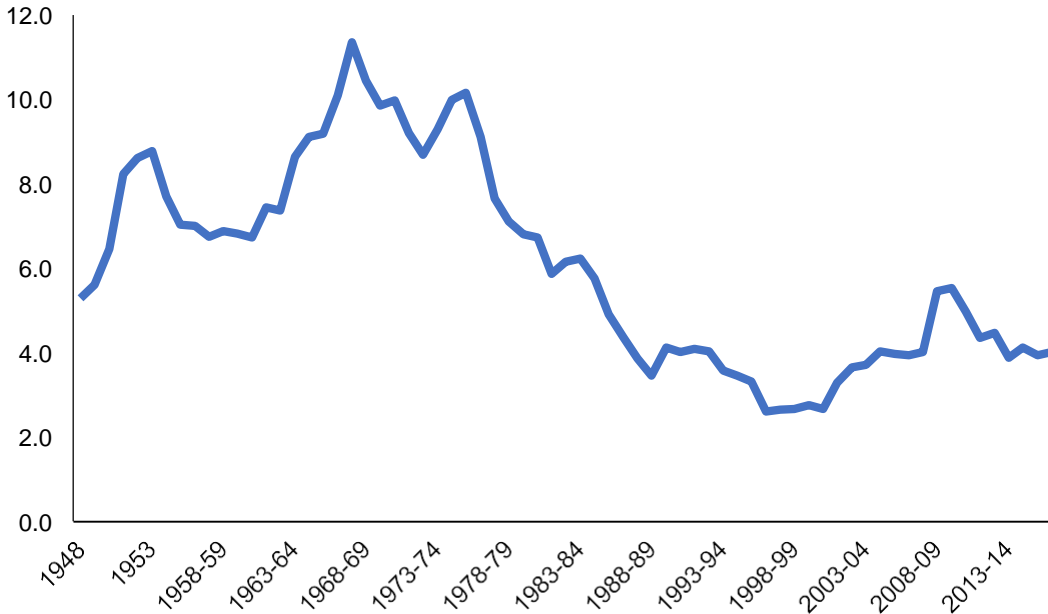
It is notable that in the evidence submitted to the recent BEIS Committee inquiry into exports and UKTI, numerous organisations including the British Chambers of Commerce¹⁰⁴ and the British Exports Association¹⁰⁵ called for a public bank such as the British Business Bank to play a more active role in helping firms to compete internationally.

3.1.3 Public capital investment

Public investment in physical and human capital formation plays a crucial role in the economy by improving the productive capacity of the economy, stimulating the crowding-in of business investment and driving long-term growth and living standards. As shown in Figure 9, UK public

sector gross investment (PSGI) has decreased significantly as a proportion of GDP over the past 50 years. Much of this reduction resulted from the transfer and sale of assets to the private sector from the 1980s, including the Right to Buy scheme and the privatisation of the energy, transport, telecommunications and water utilities¹⁰⁶.

Figure 9: Public sector gross investment as a % of GDP, UK



Source: Office for Budget Responsibility¹⁰⁷

However, it is now increasingly recognised that successive governments have underinvested in key strategic areas such as energy and transport, which has held back the UK's economic potential. A recent OECD study found that infrastructure in the UK has suffered from under-investment compared with other major advanced economies over the past three decades¹⁰⁸. The study concluded that this is partly attributable to insufficient long-term planning by successive governments, and noted that rising private sector participation since the 1980s may have led to sector fragmentation and impaired the ability of government to take a cross-sector, holistic view of the country's infrastructure needs. The study ranked the UK second last out of the G7 countries for overall infrastructure quality, and highlighted a stark regional disparity in the quality of infrastructure between the South East (including London) and the rest of the country.

In addition, there has been a shift away from direct public investment towards off-balance sheet private sector financing schemes. Since being introduced in the mid 1990s, the Private Finance Initiative (PFI) model has been used extensively to deliver infrastructure projects across the UK. Under the PFI model, projects are financed with private debt and equity and governments then pay an annual charge to private contractors over many decades which covers the capital repayment plus interest and maintenance costs, which is usually indexed to inflation.

The rationale for funding infrastructure projects using the PFI model is that the projects are held off the public-sector balance sheet and thus do not contribute to public sector net debt (PSND) or public-sector net borrowing (PSNB). However, using PFI to deliver infrastructure projects is significantly more expensive than using conventional public borrowing. According to HM

Treasury, the cost of servicing private finance debt is more than double that of government debt, with the cost of government borrowing averaging 3% to 4%, compared with an estimated financing cost of 7% to 8% for all private finance projects¹⁰⁹.

In total, there have been over £58 billion worth of projects financed through PFI in the UK since 1998. Under the current payment arrangements these will cost the public purse a cumulative total of nearly £310 billion by 2047-48 – more than five times the original capital outlay¹¹⁰. The high-profile closure of 17 PFI schools in Edinburgh in April 2016 as a result of safety concerns from construction defects have also raised questions around quality standards¹¹¹.

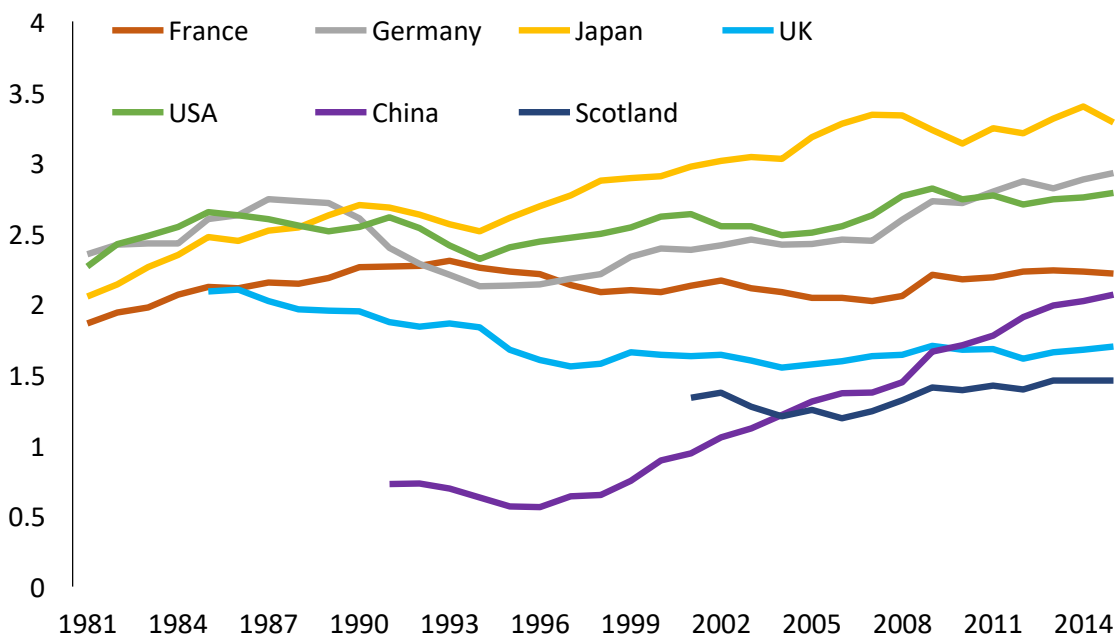
In response to concerns around PFI, the Scottish Government developed the Non-Profit Distributing (NPD) model to fund education, health and transport projects in a way that kept liabilities off the public-sector balance sheet. Under the NPD model there is no dividend bearing equity and private sector returns are capped, but financing is still undertaken through private loans with the expectation of a market rate of return. As such, projects funded through the NPD model are still significantly more expensive than they would be if they were funded through public borrowing.

The European Investment Bank (EIB) has long been a key source of finance for infrastructure projects in the UK, financing £7 billion of projects in 2016. However, following the UK's vote to leave the European Union the EIB has decided to put its UK operations on hold, creating a potentially significant gap in the availability of low-cost, long-term financing for infrastructure projects¹¹². A number of studies, including the LSE Growth Commission¹¹³, have called for a new infrastructure bank to be established to facilitate the provision of finance for infrastructure projects and reduce and manage risk.

3.2 Innovation

Finance is central to any system of innovation because it provides access to high-risk capital for firms interested in engaging with new technologies: from IT, to nanotech and the emerging green-tech industry. An imperfect but useful proxy for investment in innovation is gross research and development (R&D) spending relative to GDP. In the UK, public and private investment in research and development has fallen over the past 30 years and remains lower than other major advanced economies. In 2015, the UK invested 1.7% of GDP in R&D, compared with 3.3% in Japan, 2.9% in Germany, 2.8% in the US, 2.2% in France and 2% in China. In Scotland investment was even lower, at 1.5% of GDP.

Figure 10: Gross domestic spending on R&D, 1981 – 2015 (% of GDP)



Source: OECD¹¹⁴ and Scottish Government¹¹⁵

3.2.1 Focus on indirect support over direct support

Public financing of innovation can either be ‘direct’ in the form of direct capital investment, or indirect in the form of tax incentives to encourage private sector investment. Direct investments that help to create new technological and industrial landscapes tend to be more effective at crowding-in private investment than indirect tax incentives (i.e. at providing *additionality*). While tax incentives may work to increase investment in some cases, in contexts where technological opportunities are lacking in the first place, for instance due to the lack of industrial and innovation policies, those incentives may well be used to increase profits, without additional investment in R&D. It is well documented – for instance in Canadian and Dutch studies^{116 117} – that such indirect measures of support often do not create additionality and instead subsidise activity that would have happened anyway. Countries with a higher proportion of indirect mechanisms tend to have lower business expenditure on R&D (BERD)¹¹⁸.

In the UK, the government has shifted the balance of support towards indirect support mechanisms in recent years. In 2006, 42% of government support on R&D took the form of indirect tax incentives, however by 2016 this had risen to 57% of the total¹¹⁹. One example of an indirect innovation policy that does not create additionality is that of the so-called ‘patent box’, introduced in the UK in 2013. The patent box gives a tax relief on profits arising from registering a patent, which is itself a monopoly reward that seeks to defend the gain of the innovator from potential competitors. However, there is little economic benefit from giving an additional tax relief on that monopolistic rent: the patent entitlement is already the reward. The patent box is simply a second, additional compensation given to an activity that has already happened¹²⁰.

Support is more effective when it targets spending on initiatives that encourage new waves of production and innovation, rather than the profits that are produced from past activities. One example of this is technology and innovation centres such as the UK's ten Catapult centres which were launched in 2011. While the Catapult centres are a step in right direction, they still remain small scale compared with similar institutions in other countries. For example, Germany's network of 67 Fraunhofer Institutes have annual revenues of nearly £2 billion – eight times more than the combined revenue of the Catapult network¹²¹.

3.2.2 Lack of patient strategic finance

Because innovation is highly uncertain, has long lead times, is collective and cumulative, it requires a specific type of finance. Uncertainty means that finance must be willing to bear high risks; the long-run nature of innovation and its cumulateness imply that the kind of finance must be patient¹²². By nature, financial returns from investment in innovative activities are not always assured, and it usually takes time before they can materialise. As a result, the private sector will often not invest such high-risk areas until future returns become more certain – particularly in the UK which is dominated by short-term, speculative finance.

Across the world different forms of public agencies provide the early high-risk finance required by innovative companies. Patient strategic finance takes different forms in different places, including public R&D agencies such as the USA's Defense Advanced Research Projects Agency (DARPA), procurement programmes such as the US Small Business Innovation Research (SBIR) scheme, or public venture capital funds such as Israel's Yozma. In many countries, patient strategic finance is increasingly coming from state investment banks (SIBs) – the role of which are examined in more detail in section 4.

Early stage public investment helps to create and shape new markets, creating a new landscape which the private sector later develops. The regions and countries that have succeeded in achieving smart innovation-led growth have invested not only in basic R&D, but also along the entire innovation chain – basic research, applied research, early-stage funding of companies – and have defined new high-risk directions. From advances such as the internet and microchips to biotechnology and nanotechnology, many major technological breakthroughs – in both basic research and downstream commercialization – were only made possible by direct public investment. In each of these areas the private sector only entered much later, piggybacking on the technological advances made possible by public funds¹²³. Here the story is not one of the state getting out the way but of an 'entrepreneurial state' that is a lead investor and risk taker in the economy, supplying the patient strategic finance that the private sector is unwilling to provide¹²⁴.

For example, its early years Apple received \$500,000 from the Small Business Investment Corporation (SBIC), a financing arm of the US government. In addition, many of the technologies that have made Apple's products 'smart' (the iPhone, iPad, etc.) were initially funded by different public-sector institutions. The Internet, along with the voice-activated personal assistant Siri, was funded by DARPA; the global positioning system (GPS) was funded by the US Navy; and the touchscreen display was funded by the Central Intelligence Agency (CIA). Likewise, Compaq and Intel received early-stage funding from the public Small Business Innovation Research (SBIR)

programme, which has been particularly active in providing early stage finance to risk-taking companies¹²⁵. In all these examples, the state has not just sought to fix market failures but has created new technological and industrial landscapes by acting as investor of first resort, not simply as lender of last resort.

Because innovation is highly uncertain, for every success there will likely be many failures. Acting as lead investor necessarily means absorbing a high degree of uncertainty and accepting failures when they happen. One recent example of this was the guaranteed loans provided by DARPA to two green-tech companies: Solyndra (\$500 million) and Tesla Motors (\$465 million). While the latter is often glorified as a success story, the former failed. An acceptance of failure is therefore vital: for every Tesla, there will be many Solyndras.

This highlights the importance of finding the right balance between balance risk and reward. If the public sector is bearing the risk then it should also be able to benefit from successes. In making its investments public bodies can therefore learn from the portfolio strategies of venture capitalist firms, structuring investments across a risk-return spectrum so that lower risk investments help to cover higher risk ones¹²⁶.

The UK is unusual among major advanced economies in having few sources of long-term, patient, committed finance. The problem in the UK is therefore not of *quantity* of finance but *quality* of finance. Firms will be less likely to invest in the early stages of the innovation chain if there is no access to long-term, patient finance to facilitate it. However, simply increasing the quality of finance will not on its own increase innovation. If there are not enough courageous and innovative companies willing to invest in innovation (i.e. if there is insufficient demand for finance) then innovation will not happen¹²⁷. The challenge is therefore not just how to provide finance to businesses, but how to stimulate their courage and desire to do so.

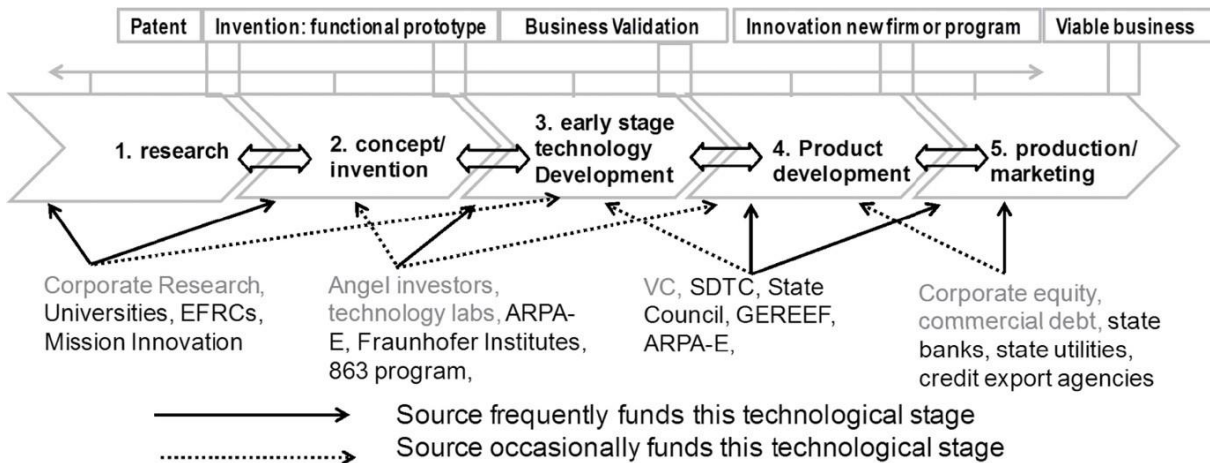
3.2.3 The innovation ecosystem and institutional capacity

Innovation is not the product of any single body or agency, but rather of the interactions between different agencies across the entire innovation chain, which in turn interact with private actors. In other words, the wider innovation ecosystem is important. The case of the global renewable energy market is illustrative.

While around 50% of renewable energy sector R&D spending originates in the public sector¹²⁸, public actors are also highly active further along the chain. Applied research and development takes place in such diverse settings as the German Fraunhofer Institutes and companies funded by the Chinese Ministry of Science and Technology. Several publicly owned agencies are also engaged in financing the commercialisation of technologies through providing venture capital. Globally these include Sustainable Development Technology Canada, the US Advanced Research Project Agency-Energy (ARPA-E), the Chinese State Council's Innovation and the Global Energy Efficiency and Renewable Energy Fund, a publicly run fund-of-funds with Norwegian and German government backing. At the subsequent market-creation and deployment stage, another set of public actors are active including government agencies, investment funds and state-owned utilities¹²⁹. Finally, export credit agencies play a key role by

providing guarantees for exporting firms when they develop risky renewable energy projects abroad. For instance, the Danish export credit agency has sponsored wind farm development to the tune of circa US\$1.5 billion, by insuring developers against risk with a repayment guarantee. This ecosystem of public finance in renewable energy is illustrated in figure 11.

Figure 11: Public finance along the innovation chain in the renewable energy sector



Source: Mazzucato and Semieniuk¹³⁰

In the UK, policymakers have traditionally ascribed little role to the public sector in driving innovation beyond funding universities and government labs. However, this fails to recognise the crucial role of investment, capacity building, and the ability to experiment and learn within mission-driven agencies in the innovation process. Without a systemic approach involving institutions in both private and public sector to pursue a mission-oriented approach, simply increasing the availability of finance will not be sufficient.

Thus, effective public financing of innovation should involve investing in the earliest-stage research and development; creating and funding networks that bring together business, academia and finance; funding high-risk ventures; and investing in high risk demonstration and deployment.

Successful innovation policy also depends on having the sufficient capacity, competencies and expertise within the relevant public institutions. Being a lead investor requires a clear understanding of the nature of the investment being made and a willingness to engage in big thinking. Experience from other countries suggests that institutions which are 'mission-led' (i.e. dedicated to solving major problems rather than facilitating or regulating) are often better able to attract top talent as it is an 'honour' to work for them¹³¹.

4. State investment banks as a source of patient strategic finance: a comparative approach

State investment banks (SIBs) have their historical roots in the reconstruction plans for Europe following the Second World War. Many were established with support from the United States through the European Reconstruction Program (ERP), commonly known as the 'Marshall Plan'. The idea was to create institutions that promoted financial stability through a flow of steady finance to fund the reconstruction plan and avoid the destabilising effects that speculative private finance could have on the post-war economic recovery¹³². Following this rationale, the International Bank for Reconstruction and Development (IBRD) was created, providing its first loan to France in 1947. Other SIBs soon followed, such as KfW in Germany, with the aim of channelling international and national funds to the promotion of long-term growth, infrastructure and modern industry. While in industrialised countries these institutions focused on niche areas (such as supporting specific sectors), in developing countries SIBs such as the Brazilian BNDES initially promoted a catch-up agenda, with heavy investments in infrastructure¹³³.

In subsequent decades, SIBs diversified their operations into areas such as providing finance for environmental protection and small and medium-sized enterprises (SMEs), and many new SIBs were established around the world. By the 2000s, China Development Bank (CDB) was one of the most active SIBs, investing in regional economic development and industrial catch-up, supporting and nurturing new ventures and innovation development, and, later in the decade, targeting finance to projects aimed at 'green growth'¹³⁴.

After the outbreak of the global financial crisis in 2007, many SIBs across the world played a significant counter-cyclical role, increasing their loan portfolio by 36 percent on average between 2007 and 2009, with some increasing their loans by more than 100%¹³⁵. As private finance has retreated from the real economy and become increasingly financialised, SIBs have increasingly stepped in to fill the gap and have become key domestic and global actors driving growth and innovation. For example, a recent report by Bloomberg New Energy Finance found that in 2013 state investment banks were the largest funders of the deployment and diffusion phase of renewable energy, outpacing investment from the private sector¹³⁶.

In this section, we review the design features and activities of six international SIBs in order to draw lessons for policymaking in the UK.

4.1 Methodology

Exact definitions of SIBs vary, but for the purposes of this study we use the following definition from a recent World Bank survey¹³⁷: "a bank or financial institution with at least 30% state-owned equity that has been given an explicit legal mandate to reach socioeconomic goals in a region, sector or particular market segment". By nature, comparing SIBs is complex as they differ widely according to a number of characteristics. The institutional design of SIBs varies between countries, as do as the political characteristics and the economic environments in which they act.

The roles performed by SIBs, and their areas of investment, evolve over time in line with country-specific developments and challenges, as well as the internal dynamics of each institution. In comparing SIBs we therefore adopt an exploratory methodology by use of an open-ended,

qualitative case study approach. With this method, we seek to explore how the different design features of each of the following SIBs impacts the role that they play in their respective economies, and how this affects each bank’s ability to successfully meet their mandates:

- Germany’s KfW;
- Brazil’s Banco Nacional de Desenvolvimento Econômico e Social (BNDES);
- the European Investment Bank;
- the China Development Bank;
- the Nordic Investment Bank; and
- Italy’s Cassa Depositi e Prestiti.

We do this by drawing on prior studies and data from several primary and secondary sources to compare the following features of each bank: mission, economic role, governance, lending activities, sources of finance, funding instruments and links with government policy. Our findings are summarised in the sections that follow.

Table 1: Institutional context of SIBs

| Bank | KfW (Germany) | BNDES (Brazil) | EIB (EU) | CDB (China) | CDP (Italy) | NIB (Nordics) |
|--------------------------------------|---|-------------------|------------------|------------------|-----------------|------------------|
| Year established | 1948 | 1952 | 1958 | 1994 | 1850 | 1976 |
| Ownership | 100% state owned (80% federal government, 20% local government) | 100% state owned | 100% state owned | 100% state owned | 80% state owned | 100% state owned |
| Employees | 6,104 | 2,859 | 2,500 | 8,838 | 2,017 | 192 |
| Assets (£ billion) | 453 | 201 | 512 | 1,629 | 320 | 25 |
| Assets (% of GDP) | 16% | 14% | 4% | 19% | 21% | 2% |
| Annual volume of lending (£ billion) | 72 | 21 | 75 | 162 | 14 | 3 |

Source: Annual reports, World Bank, IMF

Note: All figures are for the year 2016

4.2 Mission and vision

Any evaluation of the role of SIB’s in their economies must be based on what they are actually trying to achieve. Not all SIBs have the same mandate or aim to achieve the same objectives. Table 2 summarises the overarching mission of each SIB, along with the vision or challenges which guide their activities.

Table 2: Mission and vision

| Bank | Mission | Vision / challenges that guide activity |
|----------------|--|--|
| KfW (Germany) | To “support change and encourage forward-looking ideas – in Germany, Europe and throughout the world.” | Activities are guided by three key challenges: 1) climate change and environmental protection, 2) globalisation and technical progress and 3) demographic change. |
| BNDES (Brazil) | To “foster sustainable and competitive development in the Brazilian economy, generating employment while reducing social and regional inequalities.” | Investments are guided by the three major challenges: 1) innovation 2) socio-environmental development 3) local and regional development, prioritising the less developed regions in Brazil. |
| CDB (China) | To “enhance national power and improve the livelihood of the people”. | Five core values shape the bank’s activities: 1) responsibility 2) innovation 3) green growth 4) prudence 5) win-win development |
| CDP (Italy) | “We promote Italy’s future by contributing to economic development and investing in competitiveness.” | Four core values that characterise the activity of the people working in the bank: 1) accountability 2) skills 3) collaboration 4) courage |
| EIB (EU) | To “support the achievement of EU policy goals, acting as the EU’s catalyst for change in the drive to become a yet more dynamic inclusive green knowledge-based economy”. | Activities are aligned to two over-arching policy goals: 1) social and economic cohesion 2) climate action In addition to four “primary public policy goals”: 1) innovation 2) SMEs and Mid-cap financing 3) infrastructure 4) environment. |
| NIB (Nordics) | To “finance projects that improve competitiveness and the environment of the Nordic and Baltic countries”. | The vision is “a prosperous and sustainable Nordic-Baltic region” Core values are “competence, commitment and cooperation”. |

There is a notable contrast between the SIBs that are ‘mission driven’, with activities being driven by a desire to solve big societal problems, and those which are not¹³⁸. Although presented

differently in each case, the mandates of the KfW, BNDES, EIB and CDB are all linked to overcoming specific societal challenges and a broader vision of achieving smart, sustainable, and inclusive growth. In contrast, the Italian CDP's mandate is more static, focusing on 'economic development' and 'competitiveness' without signalling a desired direction for the economy. Moreover, underpinning the CDP's mandate is a set of internal company values, rather than specific societal challenges or outcomes.

Previous studies have made distinctions between institutions that have a narrow and specific mandate, which explicitly refers to the sector(s), type of customers or activities that a SIB is expected to support, and institutions that have broader legal mandates and are expected to support a broader range of activities and sectors¹³⁹.

Using this definition, all banks examined have broad mandates with the exception is the Nordic Investment Bank (NIB). While the NIB's mission to "finance projects that improve competitiveness and the environment of the Nordic and Baltic countries" could be interpreted as a broad mandate, the NIB has a clear set of criteria for what type of activity contributes to this mandate. All potential loans are assessed internally according to their contribution to these criteria and only projects that align sufficiently qualify for loan approval. This narrower mandate may in part reflect the fact that the NIB is the only bank that is not linked to central political authority, an issue that will be returned to again in section 4.8.

4.3 Economic role

As already discussed, SIBs have played different roles throughout their histories, reflecting changing socio-economic circumstances and evolving stages of economic development. We assess the roles played by each SIB in their respective economies using the following typology developed by Mazzucato and Penna¹⁴⁰:

- **Countercyclical role:** In playing a countercyclical role SIBs direct finance to productive opportunities throughout the swings of business cycles, providing a counterbalance to the processes of financialisation and speculation. In this sense, this role provides the basis for all others; it underpins investments in the capital development of the economy, the full utilisation of labour resources, the creation of new technologies and sectors, and the direction of techno-economic change through mission-oriented investments
- **Capital development role:** SIBs' capital development role involves supply of capital to public goods areas such as infrastructure and new knowledge. In order to do this, a SIB may work as an agency to nurture knowledge development, invest in infrastructure, promote strategic trade (such as export finance, import substitution, securing sources of materials), prioritise investments in existing strategic sectors (reinforcing comparative advantages) and create 'national champions' that are able to compete in international markets.
- **Venture capitalist role:** Because innovation takes a long time to develop, and most attempts end in failure, patient, long-term, committed finance is required. However, often the private sector does not often provide this type of finance, therefore SIBs have

increasingly been mobilised to provide long-term committed venture capital for individual entrepreneurs or high-tech start-ups.

- **Mission oriented role or challenge-led role:** In this role, SIBs go beyond addressing a market failure by helping to make things happen that otherwise would not by driving the direction of techno-economic change through mission-oriented investments, often by promoting radical innovations that address key societal challenges.

Table 3: Role in economy

| Bank | KfW (Germany) | BNDES (Brazil) | EIB (EU) | CDB (China) | CDP (Italy) | NIB (Nordics) |
|--------------------------|------------------|-------------------|-------------|----------------|----------------|------------------|
| Counter-cyclical role | X | X | X | X | X | X |
| Capital development role | X | X | X | X | X | X |
| Venture capitalist role | X | X | X | X | | |
| Mission-oriented role | X | X | X | X | | X |

As shown in table 3, KfW, BNDES, the EIB and the CDB play all four roles in their respective economies. In the case of the KfW, each role roughly corresponds to the bank's group divisions. The Kommunal- und Privatkundenbank/Kreditinstitute and the IPEXBank are responsible for KfW's investments in capital development, infrastructure and exporting; the Mittelstandsbank is responsible for KfW's venture capital and innovation investments; and the Stiftung is fully concerned with mission-oriented initiatives and investments. The fourth role – countercyclical – has been executed by the various KfW divisions, but since the Global Financial Crisis, has become an important aspect of the Mittelstandsbank's investments through the 'Special Programme'. All of KfW's divisions are guided by the three key challenges summarised in table 2: climate change and environmental protection, globalisation and technical progress and demographic change. The KfW has been played an instrumental role in the systemic greening of the German economy through the Energiewende policy.

In the case of BNDES, the bank has played a key capital development role by financing the construction of key infrastructure projects, expanding industry and assisting with the mechanisation of agriculture in Brazil – all of which have been crucial to Brazil's catch-up strategy. Following the Global Financial Crisis BNDES also played a major counter-cyclical role by executing a major stimulus package to offset the effects of the downturn. In recent years BNDES has begun to play an important venture capitalist role, and many of BNDES' venture capital investments are aimed at creating new technological landscapes and innovative solutions which fulfil a wider mission of achieving smart, sustainable and inclusive growth. As will be discussed in section 4.7, BNDES has developed an explicit toolbox for funding mission-oriented innovations. Thus, BNDES' venture capitalist role forms the basis for a broader mission-oriented role.

Since being established in 1994 the Chinese CDB has played a major capital development role. According to the United Nations, “from the time when the China Development bank was established in 1994 to the end of 2005, nearly 90% of its lending was directed towards infrastructure in eight key industries - power, road construction, railway, petro-chemical, coal mining, telecommunications, public facilities, and agriculture”¹⁴¹. Through these activities the CDB has played a key role in financing China’s catch-up strategy.

The CDB also plays a key counter-cyclical role; in 2009, the CDB increased loans by 88% to provide a stimulus to offset the shock of the Global Financial Crisis¹⁴². More recently the CDB has started to play a growing venture capitalist role, particularly through its investment arm, China Development Bank Capital Corporation Ltd, which specialises in growth capital, pre-IPO investments, mergers & acquisition, and restructuring. With its wider aim of promoting “innovative, balanced, green, open and inclusive development”¹⁴³, the CDB is now playing a mission-oriented role. In particular, the bank is the largest Chinese investor in environmental sustainability and green technology – at the end of 2016 the outstanding balance of green loans stood at RMB1.57 trillion, making the CDB one of the biggest green investors in the world¹⁴⁴.

The EIB also plays all four roles: it has played a key capital development role by financing key infrastructure projects and supporting industry, particularly in support of less-developed parts of the EU, and has been mobilised to play a major counter-cyclical role since 2012 to support the economic recovery in Europe¹⁴⁵. The EIB has also played a growing venture capitalist role, in particular through its majority shareholding in the European Investment Fund (EIF), which facilitates access to equity for high-growth and innovative SMEs, and a new joint initiative called InnovFin which aims to facilitate and accelerate access to finance for innovative companies or projects that deal with complex products and technologies, unproven markets and intangible assets¹⁴⁶.

In supporting the EU’s Europe 2020 strategy which outlines a vision of Europe based on smart growth (developing an economy based on knowledge and innovation), sustainable growth (promoting a more resource efficient and greener economy) and inclusive growth (fostering a high-employment economy delivering social and territorial cohesion) – the EIB is also playing a mission-oriented role¹⁴⁷. In particular, the EIB is playing a leading role in mobilising the finance needed to achieve the worldwide commitment to keep global warming below 2°C, and directs more than 25% of its total financing to climate change adaptation and mitigation, supporting low- carbon and climate-resilient growth¹⁴⁸.

In contrast, while the Italian CDP does play a capital development and countercyclical role, it does not play a venture capital or mission-oriented role. The CDP only started lending to businesses in 2009, and since then support has mainly focused on supporting strategic national enterprises and helping Italian firms compete internationally. CDP has acquired minority stakes in two small venture capital funds, however both are relatively new and small in scale. As a result, CDP does not yet have a major programme for providing patient, long-term committed venture capital for innovative firms. Similarly, while CDP does seek to promote economic growth, it does not actively seek to influence the direction of growth, and does not promote policies that target the development of particular technologies that address given societal challenges. However, the CDP is currently in the process of developing a sustainability strategy oriented around the UN Sustainable Development Goals, and this may involve adapting the bank’s

mission and core values, meaning that CDP may pivot towards a more mission-oriented role in future¹⁴⁹.

Like all the other SIBs examined, the NIB has played a counter-cyclical role during downturns, and has played a capital development role by financing infrastructure, human capital development and SMEs, both in and outside its member countries. However, the NIB does not play a significant venture capital role. This is partly because the bank does not offer equity instruments or provide venture capital for high-tech start-ups. While the NIB does promote innovation by financing R&D, this tends to be via long-term loans and guarantees to established firms, rather than venture capital or grants for more radical innovation¹⁵⁰. It is notable that many of the Nordic nations have separate state-owned venture capital funds, for example Vaekstfonden (Denmark), Argentum and Investinor (Norway), Finnish Industry Investment (Finland) and Industrifonden (Sweden).

Despite not playing a venture capitalist role, the part of the NIB's mandate that focuses on enhancing the environment means that some of the bank's activities take on a mission-oriented character. The NIB actively supports the transition to a low-carbon economy by financing green investments in areas such as energy, public transportation and buildings. Crucially, the NIB's environmental investments are not sector specific, as is evidenced by support for greening traditional industries such as steel¹⁵¹. The percentage of NIB's outstanding lending volume allocated to climate change mitigation was 22% in 2016¹⁵². As such, while the NIB is not primarily focused on promoting radical innovation or developing new technological, landscapes, it is playing a mission-oriented role by directing its lending towards addressing a key societal challenge.

4.4 Investment activities

As with their economic role, the investment activities of each SIB have evolved over time and vary based on socio-economic circumstances and stages of economic development.

In terms of sectors, all the SIBs examined are active in industry and manufacturing, infrastructure, construction and housing, the green economy and innovation. In some cases certain sectors are not supported by SIBs because they receive long-term financing from other public institutions in that country. For example, in Germany and China there are separate public banks dedicated to agriculture (Landwirtschaftliche Rentenbank and the Agricultural Bank of China), and in China and many of the Nordic countries there are separate public institutions dedicated to supporting exports and internationalisation such as the Export-Import Bank of China, Finnvera (Finland), EKN (Sweden), EKF (Denmark) and GIEK (Norway). While many SIBs are active in similar sectors, the emphasis put on each varies widely.

Table 4: Sectors targeted

| Sector | KfW (Germany) | BNDES (Brazil) | EIB (EU) | CDB (China) | CDP (Italy) | NIB (Nordics) |
|--------------------------|--------------------------|---------------------------|---------------------|------------------------|------------------------|--------------------------|
| Agriculture | | X | X | | X | |
| Construction and housing | X | X | X | X | X | X |
| Education | X | | X | X | | |
| Exports | X | X | X | | X | |
| Green economy | X | X | X | X | X | X |
| Industry / manufacturing | X | X | X | X | X | X |
| Infrastructure | X | X | X | X | X | X |
| Innovation | X | X | X | X | X | X |
| International aid | X | | X | X | | |
| Internationalisation | X | X | X | X | X | |

In terms of customers, all the SIBs examined lend to SMEs, large corporates and the public sector. Only the KfW lends directly to individuals and households – mainly due to provision of finance for education (student loans).

Table 5: Customer types

| Sector | KfW (Germany) | BNDES (Brazil) | EIB (EU) | CDB (China) | CDP (Italy) | NIB (Nordics) |
|----------------------------|--------------------------|---------------------------|---------------------|------------------------|------------------------|--------------------------|
| SMEs | X | X | X | X | X | X |
| Large corporates | X | X | X | X | X | X |
| Public sector / non-profit | X | X | X | X | X | X |
| Individuals / households | X | | | | | |

A key difference between many SIBs and private banks is breadth of expertise contained within staff. For example, in addition to staff with substantive financial expertise the KfW employs experts with specific knowledge in areas such as agriculture, energy, transport, water, natural resources, and civil engineering¹⁵³. The EIB, BNDES and CDB also employ staff from

engineering and scientific backgrounds. As a result, these SIBs base investment decisions on a wider set of criteria than relying on market signals alone.

This deeper understanding of sectors enables SIBs to undertake more robust appraisals from a social and environmental standpoint as well as a commercial one. It also enhances the ability of the SIBs to crowd-in private investment, as SIB approval acts as a hallmark of quality which gives private sector actors the confidence they need to invest. Thus, significant in-house expertise is key for SIBs to successfully play the role of investor of first resort, as opposed to investor of last resort. This in-house technical expertise also enables some SIBs, notably the KfW and EIB, to serve as important advisors to both the private sector and government policy.

4.5 Governance

Governance arrangements are particularly important for SIBs. On the one hand, it is the distinct governance structures of SIBs that enable them to play a fundamentally different role in the economy compared to that of private financial institutions. SIB governance arrangements typically do not create pressure to deliver short-term returns, meaning that they can provide patient financing over a longer time horizon and prioritise wider social and environmental objectives. However, many of the problems that have commonly been associated with SIBs, such as weak performance, financial problems, unfair competition with the private sector, capture by interest groups, can be attributed to poor governance¹⁵⁴.

Compared with private financial institutions the governance arrangements of SIBs can often be more complex, having multiple layers and involving a wider range of stakeholders. This can pose challenges, as different stakeholders may have different interests and opinions. Of particular importance is the role of political representatives, and their relative influence and control over the SIBs operations. Political representation can be beneficial to ensure alignment with government policy and maintain a path of democratic accountability. However, unless governance arrangements are robust enough to withstand undue political pressure, SIBs can become vulnerable to undue political interference or capture by interest groups.

Because of the complex nature of governance arrangements, it is difficult to make simple comparisons between SIBs. Among the SIBs examined, a formal division between the supreme decision-making body and the management or executive team is universal practice. However, the composition of these bodies varies widely between the banks. Table 6 shows the percentage of the most senior governing body that is made up by political representatives, and whether the government has the power to appoint and remove board members and CEOs.

Table 6: Governance

| Bank | KfW (Germany) | BNDES (Brazil) | EIB (EU) | CDB (China) | CDP (Italy) | NIB (Nordics) |
|--|------------------|-------------------|-------------|----------------|----------------|------------------|
| % of senior governing body made up of political representatives | 61% | 90% | 100% | 100% | 21% | 100% |
| Does government have power to appoint and remove board members and CEOs? | Yes | Yes | n/a | Yes | Yes | n/a |

Note: The European Investment Bank and Nordic Investment Bank are multinational institutions and are therefore not under the jurisdiction of any single government.

In all banks examined political representatives make up the majority of positions on the most senior governing body, with the exception of the Italian CDP where independent board members make up the majority. This may reflect the fact that the CDP was only designated as a formal promotional bank in 2015, before which it operated as a private joint stock company. As discussed in section 4.8, this may also partly explain why historically the CDP's activities have been less aligned with government policy compared to the other banks. However, because the Italian government is the majority shareholder it has the power to appoint and remove board members and CEOs if it wishes to do so. This happened in 2015 when Prime Minister Matteo Renzi replaced the Chairman and CEO of CDP with new appointees as part of a strategy to get the CDP to play a more active role in supporting the economy¹⁵⁵. This was the case in all banks examined: the government has the power to appoint or dismiss senior staff, either directly by decree from the head of the government or indirectly via the government's position as majority shareholder.

In the case of BNDES, 90% of the members on the Advisory Board, the most senior governing body, are nominated by government ministers and all require formal approval by the President of Brazil. This has led some to criticise BNDES for being overly susceptible to political interference. According to a recent World Bank report, because the Advisory Board is restricted by statute to only providing guidance, successive governments have been able to interfere with BNDES' policies and operations¹⁵⁶. Similarly, day-to-day management of BNDES is the responsibility of the Board of Directors which consists of the President, the Vice-President and seven Managing Directors, all of which are appointed by the President of Brazil and subject to dismissal at their sole discretion¹⁵⁷.

The most senior governing body of the EIB is the Board of Governors, which lays down credit policy guidelines, approves the annual report and financial statements, gives authorisation, on a

country-by-country basis, for the Bank to operate outside the EU and decides on capital increases. The Board of Governors comprises ministers designated by each of the 28 Member States, usually the Finance Ministers. The EIB has on occasion been subject to criticism on issues relating to transparency and accountability. For example, a recent report from Transparency International concluded that the EIB's governing bodies do not yet conform to the highest standards, highlighting a lack of scrutiny around Management Committee decisions and a lack of transparency in the decision-making process¹⁵⁸.

Detailed information about the CDB's governance processes is scarce. However, the bank's turnaround from a near bankruptcy in the late 1990s to one of the world's most successful SIB today has been partly attributed to a transformation of its internal governance¹⁵⁹. Initially when the CDB was set up, the choice of projects to finance was politically driven, and the bank was often seen as a "cash machine" – a *de facto* extension of the treasury¹⁶⁰. However, beginning in 1998 under the new leadership of Chen Yuan the CDB restructured the loans approval process by introducing three "firewalls" and an independent review committee. The loans approval system decentralised the decision-making power which de-politicised the lending process by creating a system that separates the people in charge of the credit risk assessments from those responsible for the loan approval. Today the CDB selects many of the projects it finances on the basis of its own judgement without political interference, and often rejects project applications from powerful state bodies¹⁶¹.

The most senior governing body of the CDB is the Board of Directors. In August 2017, the Board of Directors was expanded to include officials from government agencies including the National Development and Reform Commission (NDRC), Ministry of Finance (MOF), Ministry of Commerce (MOFCOM), and People's Bank of China (PBOC) as government agency directors. These directors act as coordinators in the making and implementation of major decisions, taking charge of the Bank's strategic planning and overall business development policies.

The NIB's supreme decision-making body is the Board of Governors which is composed of eight governors, one designated by each member country from among the Ministers in its government. The Board of Governors appoints a Chairman for a term of one year according to the rotation scheme it has adopted. The board is therefore 100% occupied by political representatives, albeit from different countries. Notably, the NIB is the only SIB examined which pays dividends to its owners. Operating surpluses are transferred to a reserve fund until the amount equals 10% of the authorised capital stock, at which point the Board of Governors decides whether to pay a dividend to the shareholders¹⁶².

The KfW's most senior governing body is the Board of Supervisory Directors. It is responsible for the supervision of bank's conduct, the appointment and dismissal of members of the Executive Board, the approval of the financial statements as well as the planning and selection of the auditor. The Board of Supervisory Directors comprises a mixture of political representatives and independent stakeholders, including representatives from across Germany's banking sector, industrial trade bodies and trade unions. This helps to minimise undue political interference and improve the legitimacy of the KfW's decisions among wider German society.

4.6 Sources of finance

There are many different ways that SIBs can fund their business operations, including taking savings and deposits from the public, raising money in the domestic or international capital markets, borrowing from other financial institutions, using return on investments, receiving budget allocations from the national Treasury, managing public pension or social security funds, or receiving financing from the central bank. As shown in Table 7, many SIBs combine a number of these funding options.

Table 7: Funding sources of SIBs

| Bank | KfW (Germany) | BNDES (Brazil) | EIB (EU) | CDB (China) | CDP (Italy) | NIB (Nordics) |
|--|------------------|-------------------|-------------|----------------|----------------|------------------|
| Customer deposits | | | | X | X | |
| Return on investments | X | X | X | X | X | X |
| Capital markets | X | X | X | X | X | X |
| Treasury funds | X | X | X | | | |
| Public pension / social security funds | | X | | | | |
| Other financial institutions | | X | X | | X | X |
| Central bank financing | | | | X | X | |

Among the banks examined the Italian CDP is the only bank which receives a significant amount of funding from a form of customer deposit. This is because CDP is responsible for managing Italy's postal savings – bonds and passbook savings accounts that are guaranteed by the Italian government and placed through Poste Italiane, the Italian postal service. Postal savings constitute a major share of Italian household savings; in 2016, they amounted to 8% of total household financial assets. Postal savings comprised 72% of CDP's total funding in 2016¹⁶³. A small amount of funding also comes from the European Central Bank's (ECB) long-term refinancing operation (LTRO).

All of the banks examined issue bonds on capital markets, however the extent to which this is relied upon varies widely. Bond issuance is the primary source of funding for the KfW, EIB and NIB, for whom capital markets offer a cheap source of funding due to their high-quality credit rating. The EIB and KfW also receive small amounts of funding from treasury sources to contribute towards priority concessionary activities. The CDB also raises most of its funding from bond issuance, although many of the bonds are purchased by other state-owned banks.

In January 2015, the European Central Bank (ECB) introduced the Public Sector Purchase Programme (PSPP) which expanded the list of public bodies whose securities were eligible for

purchase under the ECB's quantitative easing programme. Under the PSPP, the EIB, NIB, KfW and CDP were included in the list of institutions whose securities were eligible for purchase¹⁶⁴. However, ECB purchasing of SIB bonds is conducted only on the secondary market, as any primary market purchases would violate the prohibition of monetary financing laid down in Article 123 of the Treaty on the Functioning of the European Union¹⁶⁵. In addition, there is no coordination between the asset purchases of the ECB and the investment activities of the SIBs. As such, we do not count this as central bank financing for the purposes of this study.

The CDB has received direct central bank financing in recent years. In 2014 the Peoples Bank of China (PBoC) began lending directly to the CDB under an initiative called 'pledged supplementary lending' (PSL) which was designed as a new channel to inject liquidity into the economy and increase the money supply¹⁶⁶. Under PSL, the PBoC provides long-term loans to the CDB in order to support loans to sectors that struggle to obtain credit, including agriculture, small businesses, and shantytown redevelopment.

The composition of BNDES' funding has changed dramatically in recent years. Until 2009 BNDES' main sources of funding were two "quasi-public" funds (known as the PIS-PASEP and the FAT) which are associated with social insurance and workers' safety nets. Small amounts of funding also came from returns of its outstanding loans and equity investments, bond issuance, and borrowing from multilateral institutions. However, in 2009 after the bank sought to significantly increase disbursements in order to counteract the retrenchment of private financing that followed the Global Financial Crisis. Because BNDES was unable to borrow from capital markets at a pace compatible with the expansion of its loan portfolio, funding became highly dependent on transfers from the National Treasury, which increased from below 10% of total liabilities to more than 50% of the total¹⁶⁷.

However, after the impeachment of former president Dilma Rousseff in July 2016, a new government was formed and appointed a new leadership team at BNDES and implemented a new strategy. BNDES was asked to make an unanticipated repayment of the money it had borrowed from the National Treasury, starting with an R\$ 100 billion (US\$ 30 billion) in December 2016. This transfer, comprised of R\$ 40 billion in securities and R\$ 60 billion in cash, was justified by a political desire to reduce Brazil's overall national debt. This early payment was equivalent to 19% of the total amount that BNDES owes the Treasury, and over 120% of the bank's disbursements in 2016¹⁶⁸.

A key question is whether the source of funding impacts the ability of SIBs to successfully meet their mandates. In this regard, there are three important considerations. The first is the extent to which sources can provide funding on the scale required. It is clear that some SIBs such as BNDES have not been able to access capital markets on the scale required to meet their loan demands, which has led it to seek other sources. The second factor is the extent to which a source of funding is stable on an on-going basis. As the example of BNDES demonstrates, if a funding source proves to be volatile or unstable, or susceptible to political pressures, then it can seriously impair the ability of the SIB to fulfil its mission.

The third factor is the extent to which different sources of funding affect SIBs appetite for risk, and ability to invest in more risky, innovative projects. Our case studies do not provide clear answers on this issue and this is an area that would benefit from further research. One possible

hypothesis to explore could be the extent to which sources of funding which draw heavily on household savings – such as postal savings in the case of Italy’s CDP – creates political pressure to minimise risk taking and thus reduce investment in radical innovation. Another is the extent to which reliance on capital markets leads to lending decisions being influenced by the methodologies used by rating agencies to assign credit ratings.

A final area is the potential role of central bank financing. Currently only the CDB receives coordinated financing from its domestic central bank, while the EIB, NIB, KfW and CDP are eligible for indirect central bank financing via the ECB’s quantitative easing programme. Central bank financing of SIBs was common across a wider range of countries in the post-war period¹⁶⁹. An area for further research is whether such arrangements could be managed whilst preserving central bank operational independence¹⁷⁰.

4.7 Funding instruments

For the purposes of this study we classify funding instruments according to the following categories:

- Debt (short and long-term loans)
- Equity
- Guarantees
- Export finance
- Grants
- Technical assistance

Different types of economic activity require different types of finance. For example, guarantees can encourage private sector investment by de-risking projects, while equity investments may be suitable for capital intensive, high risk projects (e.g. green technology) and small technology-based firms focused on radical innovation. On the other hand, debt instruments such as long-term loans may be better for lower-risk, incremental activities, whereas grants may be more appropriate for visionary, early stage R&D. As outlined in section 3.1.2, exporting involves a specific set of challenges and risks which requires tailored financial support. Table 8 shows the different types of funding instruments deployed by each bank examined.

Table 8: Funding instruments

| Bank | KfW (Germany) | BNDES (Brazil) | EIB (EU) | CDB (China) | CDP (Italy) | NIB (Nordics) |
|--------------------------------------|------------------|-------------------|-------------|----------------|----------------|------------------|
| Short-term loans and working capital | X | X | X | X | X | |
| Long-term loans | X | X | X | X | X | X |
| Equity | X | X | X | X | X | |

| | | | | | | |
|----------------------|---|---|---|---|---|---|
| Guarantees | X | | X | X | X | X |
| Export finance | X | X | X | | X | |
| Grants | X | X | | | | |
| Technical assistance | X | | X | X | | |

As noted earlier, it is important to be mindful of the wider institutional landscape when comparing funding instruments. For example, the CDB and NIB do not offer export finance because there are separate national agencies focused on this area. Similarly, while the NIB does not offer equity instruments, it is notable that many of the Nordic nations have separate state-owned venture capital funds.

Aside from the NIB, all banks examined offer a range of both debt and equity instruments. All except BNDES offer guarantees, while only BNDES and the KfW offer grants (in the latter case for energy-saving investments in houses). Having a portfolio of funding instruments available is important to manage the balance of risk and reward effectively, and to best match the optimal finance for different types of projects. The range of funding instruments offered by SIBs is also important because the type of finance available may in turn affect the nature of investments made¹⁷¹. For example, firms will be less likely to invest in the early stages of the innovation chain if there is no access to long-term, patient finance. This in turn affects the role that SIBs play in their respective economies. As discussed in section 4.3, the Italian CDP does not yet have a major programme for providing patient, long-term committed venture capital for innovative firms, therefore it does not play a venture capital role and is not a major player in emerging technological landscapes.

In contrast, BNDES has developed an explicit toolbox for funding mission-oriented innovations, which have been key to the bank's transition to playing a venture capitalist and mission-oriented role in the Brazilian economy¹⁷². These tools and programmes focus on different areas of the risk landscape, organised around four categories: variable and fixed income; variable income; fixed income; and non-refundable resources.

Similarly, KfW provides loans through specific programmes that target particular projects that help address societal challenges, and these programmes are executed by KfW's divisions and subsidiaries. KfW also uses equity for capital intensive and risky projects in technically uncertain areas as offshore wind, and when investing in small technology-based firms and other venture capital investments¹⁷³.

In addition to lending operations, the KfW, EIB and CDB also offer advisory services such as strategic planning, capacity building, and training programs for their existing and prospective clients. For example, the KfW's mandate establishes that KfW shall provide 'advisory services and the implementation of promotional measures in the field of technical progress and innovations' for the promotional areas of (a) SMEs, liberal professionals and start-ups and (b) risk capital¹⁷⁴. In practice, this means that KfW performs a coordinating role in the German system of innovation. This is particularly visible in Germany's Energiewende programme, in which KfW engages in non-financial activities such as lobbying, networking, information and consulting¹⁷⁵.

A recent World Bank review of BNDES' activities concluded that the absence of technical assistance and consultancy services represents a major missing element in BNDES' business activities¹⁷⁶. According to the study, BNDES' well-trained staff could be instrumental in combining finance and technical assistance to subnational governments, which generally have a deficit of competence at the technical level to address the challenges of designing and effectively deploying new projects.

Another important consideration is the relationship between SIBs and the private banking sector. A common criticism of SIBs is that they crowd out private sector investment and holding back financial sector development. Another is that they distort the market by keeping companies alive that would otherwise have exited the market. In the case of the four European SIBs, this type of activity is prohibited by EU state aid rules, which are discussed in more detail in section 7.3. In order to comply with state aid rules, SIBs must complement rather than compete with private banks by demonstrating additionality i.e. by providing finance in areas that are not currently being served by the private sector. The KfW, EIB, CDP and NIB all lend to SMEs indirectly through the private banking sector, often sharing some of the risk of the loans. As well as helping to satisfy state aid rules, this is also intended to give a positive signalling effect and help to catalyse investment without crowding out private-sector activity. Thus, in Europe SIBs are focused on creating additionality in the system by "crowding in" private investment that otherwise would not occur.

In China, the CDB operates on both a first and second tier lending model, and has a network of 40 branches across the Chinese mainland. However, given that the Chinese banking sector is still predominantly state owned, with private banks accounting for less than 1% of total banking assets in China¹⁷⁷, the issue of crowding out private lending is less relevant.

Of the banks examined in this study, BNDES has received the most criticism in relation to crowding out. Because BNDES' funding structure means that it is able to provide loans at subsidised rates, critics argue that BNDES crowds out private sector bank lending and hampers the development of the local capital market¹⁷⁸. In a 2013 survey of the Brazilian economy the OECD stated that "Further development of long-term credit markets is hampered by a lack of private participation, owing to an uneven playing field caused by strong financial support to the national development bank which dominates long-term lending."¹⁷⁹

Others have argued that BNDES' competitive advantage is not due to its funding structure but because it operates with low loan spreads compared to traditional private banks, which focus on high-yield, short-term loan segments in order to maximise return on equity, and thus have little interest in expanding low-yield long-term financing for businesses¹⁸⁰. The bank has also been accused of providing finance to incumbents, yet it is also true that some of the large Brazilian companies, like Embraer (aerospace), compete with large international competitors which receive large amounts of state support—making the same level of support crucial in Brazil.

4.8 Links to government economic policy

All SIBs are created in the first instance by governments. However, the extent to which the day-to-day operations of the SIBs are aligned with government policies varies significantly.

For example, the KfW is tasked with implementing policy objectives of the German government, and receives the full backing of the German government to do so which enables it to borrow cheaply on capital markets. However, the KfW is not just a passive public body – it also participates in policy development. The KfW regularly assists the government in selecting targeted policy areas and designing projects as well as financing them, and is highly valued for its financial and sectoral expertise¹⁸¹. This close operational relationship between the KfW and the German government creates a powerful synergy which means that policy, regulation and financing can be simultaneously coordinated for maximal societal benefit impact. An example of this has been the KfW's instrumental role in the systemic greening of Germany's economy. By financing both the supply side (through the support of green technology firms) and the demand side (through the financing of solar and wind power) the KfW has been a key driving force behind the German government's Energiewende policy¹⁸².

Similarly, the EIB is required to finance investment projects that help implement EU policy objectives. As outlined in section 4.3, the EIB's current activities are guided by the objectives of the Europe 2020 strategy of smart, sustainable, and inclusive growth. The EIB is also regularly asked to provide expert advice or assistance on policy matters, and works closely with the other EU institutions, especially the European Parliament, the European Council and the European Commission.

BNDES also has an explicit duty to carry out government policy. The bank's basis in law states that BNDES "is the main instrument to implement and carry out the Federal Government's investment policy, and its foremost purpose is to support programs, projects, construction and services related to the country's economic and social development."¹⁸³ The evolution of BNDES' targeted programmes have closely followed Brazilian government's industrial policy. In particular the Trade, Technology and Industrial Policy plan (2003 to 2007), the Productive Development Policy plan (2008 to 2010) and the Brasil Maior Plan (2011 to 2014) gave increasing emphasis to innovation and strategic sectors including IT, pharmaceuticals and health, oil and gas, defence, aerospace, and renewables.

The CDB's overarching purpose is to "serve national strategies" and the bank has an explicit objective to implement the government's macroeconomic policies. The CDB is actively involved in the planning and implementation of the Chinese government's Five-Year Plans, and works with relevant government agencies in the formulation of major national plans for strategic emerging industries. In 2016, the CDB aligned its strategies and operations with the 13th Five-Year Plan of local governments. It developed provincial-level financing plans for 24 provinces and municipalities and cooperation plans for 70 key regions, aiming to leverage its financing advantage to assist local governments to improve the feasibility and operability of their plans¹⁸⁴.

Historically the CDP's narrow sphere of activity has meant that it has played a limited role with regards to government policy. However, in 2015 CDP was declared a formal promotional bank, and Prime Minister Renzi appointed Claudio Costamagna, former chairman of Goldman Sachs in Europe, and Fabio Gallia, who was chief executive of BNP Paribas in Italy, as part of a wider strategy to get the CDP to play a more active role in the economy. The CDP's new business plan for 2016-2020 includes €160 billion of investment across different areas of the economy¹⁸⁵. However, analysis of the plan has found no clear strategy in terms of links to a coherent

industrial policy¹⁸⁶. As a joint stock company that has to give priority to profitability of its investments, the CDP's corporate form may also make it difficult to align with wider policy objectives. The CDP's lending is mostly directed at supporting established businesses, while industrial policy should instead be focused on supporting firms with a great technological and growth potential, but that currently may not yet be profitable.

Of all the banks examined the NIB is least aligned with specific government policies. As a multinational bank spanning eight different Nordic and Baltic countries with no central political authority, there is no formal link between the activities of the NIB and any particular government's economic policy. However, the NIB's clear mandate means that it contributes towards government objectives around productivity and the environment in the bank's member countries. Moreover, the founding statutes state that investments in the member countries must be made in consultation with the authorities of the country concerned, who have a veto power over investments in their country¹⁸⁷. This means that, in practice, consideration is given to domestic policy priorities when the NIB makes lending decisions.

Table 9: Links to government policy

| Bank | KfW (Germany) | BNDES (Brazil) | EIB (EU) | CDB (China) | CDP (Italy) | NIB (Nordics) |
|--|------------------|-------------------|-------------|----------------|----------------|------------------|
| Formal duty to implement government policy | X | X | X | X | | |

5. Lessons from UK initiatives

Today the UK is unusual among major advanced economies in having few major public sources of long-term, patient, committed finance. However, throughout history – and to the present day – various initiatives have been set up to try and address the shortcomings of private finance.

5.1 Industrial and Commercial Finance Corporation

The Industrial and Commercial Finance Corporation (ICFC) was created in 1945 in order to increase the availability of funding to SMEs. It was established in response to the findings of the Macmillan Committee's report of 1931¹⁸⁸ which identified that high transaction costs and information asymmetries were resulting in an under supply of finance for SMEs – a problem that came to be known as the 'Macmillan gap'.

The ICFC was owned by a consortium of the 'big five' clearing banks and the bank of England, although it faced considerable opposition from the clearing banks who saw it as a competitive threat¹⁸⁹. The Bank of England opposed any plans to link the ICFC to government policy. Initially the ICFC focused on small manufacturing companies in the early development stage. Unusually for a British bank, its loan officers had a high degree of technical expertise and were committed

to long-term lending. In the decades that followed the ICFC was successful in fostering long-term relationships with SMEs and providing access to finance through a regional branch network. Investments by ICFC were regarded as a hallmark of quality certification.

In 1959 the clearing banks allowed it to raise external funds by issuing shares. New pressures to deliver shareholder returns meant that the ICFC came under increasing pressure to deliver profit, and it gradually shifted its activities towards more profitable short-term activities¹⁹⁰. Over time the bank departed from its original purpose and increasingly took the form of a private financial company. By 1987 it was sold off as venture capital firm 3i which proceeded to focus on management buyouts.

The key lesson from the experience of the ICFC is that banks set up with a specific promotional mandate must be protected from wider market pressures. It also highlights the importance of ownership and governance. The ICFC was majority owned by the clearing banks who were antagonistic towards its existence and who had little incentive to protect its core purpose. Because the ICFC was not linked to government policy it became vulnerable to market pressures which drew the bank away from its original purpose.

5.2 Green Investment Bank

The Green Investment Bank (GIB) was set up by the UK Coalition Government in 2012 as a Government-owned institution to support investment in green infrastructure, to mobilise private-sector capital, and to support viable projects which have difficulty obtaining funding¹⁹¹. The GIB invested on a commercial basis, primarily in areas such as non-domestic energy efficiency, waste, and offshore wind. Each project had to make a contribution to one of GIB's five green purposes, which are set out in the Enterprise and Regulatory Reform Act 2013¹⁹²:

- the reduction of greenhouse gas emissions
- the advancement of efficiency in the use of natural resources
- the protection or enhancement of the natural environment
- the protection or enhancement of biodiversity
- the promotion of environmental sustainability.

Each project was required to provide market-based commercial returns in line with the project's risk. The GIB invested with both debt and equity, but did not offer subsidised finance or grants. Structured as a Public Limited Company (PLC) 100% owned by the UK Government, the GIB's Articles of Association ensured it would maintain operational independence, although it was required to align its activities with the government's green policy objectives¹⁹³. Management with significant expertise were recruited from some of the world's top banking institutions. By 2016 the GIB had directly invested £2.8 billion and mobilised a further £8 billion in private capital through co-investment, primarily in energy efficiency, waste and bioenergy, offshore wind, and onshore renewables. The GIB also created the world's first offshore wind fund in response to the growing demand for low-carbon infrastructure investment opportunities, which attracted numerous UK-based and global institutional investors.

Despite its name the GIB was never technically a bank, as it was not allowed to borrow and incur liabilities on its own account. The UK government provided £3 billion of initial capital which it

used to finance investments, but it was never granted permission to leverage its own balance sheet. The Chancellor of the Exchequer at the time, George Osborne, said that the GIB would only be granted borrowing powers when the ratio of public sector net debt to of GDP was falling¹⁹⁴.

In 2015 NERA consultancy were commissioned by the government to review the impact of GIB. The study's findings included the following¹⁹⁵:

- The GIB helped to reduce various barriers to investment across the green economy, attracting private sector capital that otherwise may not have been invested – or that might have been invested with some delay, or at higher cost.
- The GIB successfully addressed liquidity barriers in the offshore wind and waste and bioenergy sectors, where it has deployed substantial capital. The GIB was less able to identify suitable projects and invest as much capital in the non-domestic energy efficiency sector
- The GIB helped other investors assess the risks of investment, drawing on deep specialist knowledge of its core sectors that other financial institutions lack. Partners trusted GIB as an experienced, honest broker, and this trust was enhanced by GIB's commercial stake in the investments.

In June 2015, the Government announced its intention to privatise the GIB, claiming that this would give it access to a greater volume of capital and freedom to operate across a wider range of green sectors. In 2017, the GIB was sold to Macquarie Group Limited for £2.3 billion, and it now operates under the name 'Green Investment Group' which has an international rather than a UK focus.

The experience of GIB offers a number of positive insights. In a relatively short space of time the GIB made a significant impact, and key to its success was its ability to recruit a high-quality management team and board; its operational independence from government; and the range of funding instruments it could offer¹⁹⁶. However, the fact that the GIB was privatised so soon after its establishment demonstrates that SIBs the importance of political support. A key reason given by the government for the privatisation was that it would enable the bank to leverage its balance sheet and borrow – something that it was not allowed to do under public ownership because of the political focus on reducing the fiscal deficit and national debt. However, as will be discussed in section 7.2, the UK's inclusion of public corporations in measures of public debt and deficit is highly unusual and not standard practice internationally.

5.3 British Business Bank

In 2012, the UK Government announced its intention to “build a single institution that will address long-standing, structural gaps in the supply of finance”, bringing together all Government finance support for small and mid-sized businesses into one place¹⁹⁷. On 1 November 2014, the British Business Bank began operating independently. Its mission is “to make finance markets work better for smaller UK businesses”, and its objective are:

- to increase the supply of finance available to smaller businesses where markets don't work well.

- to create a more diverse and vibrant finance market for smaller businesses, with a greater choice of options and providers.
- to build confidence in the market by increasing smaller businesses' understanding of the options available to them.
- to achieve this whilst managing taxpayer resources efficiently and within a robust risk management framework.

The BBB is responsible for central government's investments in venture capital. Currently it has a budget of £200 million per year for new commitments into venture capital funds which are then drawn down over the life of the funds, split equally between¹⁹⁸:

- **Enterprise Capital Funds (ECFs)**: this invests in funds making equity investments up to £5 million in early stage, high growth firms. The BBB invests up to two thirds of the size of the fund. The BBB investment is structured to increase the return to private investors if the fund is successful but does not provide any downside protection to private investors. Since the programme's inception in 2006, 23 funds have been invested in by the Bank worth just over £550 million (end of January 2017). £284 million of investment in total has so far been drawn down by these funds.
- **VC Catalyst**: the 2016 Autumn Statement 2016 provided the BBB with an additional £400 million to invest over four years to make commitments of up to £50 million in individual funds. It is targeted at funds seeking to make investments of over £5 million.

The BBB also invests in the Business Angel Co-Fund, which invests alongside syndicates of business angels. It has a dual mandate, both to make a commercial return on its investments and to encourage more business angel syndicates to form, thereby encouraging the professionalization of investment.

The BBB faces two major restrictions which prevent it from operating as a fully functional SIB. Firstly, the resources allocated to the BBB (£200 million per year across the UK) pale in comparison to most SIBs, and this limits the extent to which it can have a significant impact on the economy. As with the GIB, the BBB is not actually a bank but more akin to a fund and is therefore not able to borrow, meaning that its operations are limited by the fixed amount of resources it receives from the government. Secondly, the BBB's mandate is narrowly focused on fixing market failures for small businesses. While this may help address some financing gaps, without a broader focus on specific societal challenges or outcomes the BBB is not able to play the 'investor of first resort' role as part of a wider industrial strategy. As a result, the ability of the BBB to influence the direction of economic growth is limited.

6. Lessons from Scottish initiatives

In recent years Scotland has established a distinct set of initiatives to support investment in business and infrastructure. In light of the First Minister's announcement to establish a new Scottish National Investment Bank in September 2017, a key question is whether these initiatives will be merged into the new bank, or kept separate as standalone entities.

6.1 Scottish Investment Bank

In 2010, the Scottish Government renamed the investment arm of Scottish Enterprise, Scotland's main economic development agency, as the Scottish Investment Bank¹⁹⁹. It also expanded its remit to support the development of Scotland's private sector SME funding market to ensure that both early stage and established companies with growth and export potential have adequate access to growth capital. Today the Scottish Investment Bank manages a number of funds which co-invest into Scottish SMEs with high growth potential alongside private sector investors in a shared risk model. The Scottish Investment Bank is also an investor in multiple third party-investment funds.

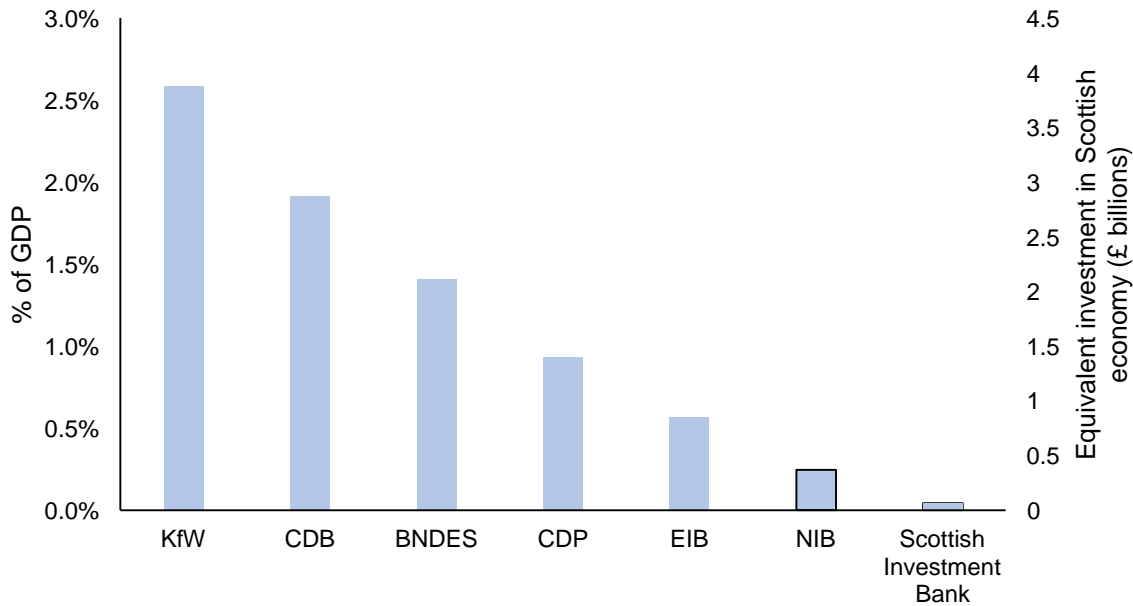
The Scottish Investment Bank also helps to deliver the Scottish-European Growth Co-investment Programme, a partnership between Scottish Enterprise, the Scottish Investment Bank and the European Investment Fund. Under this partnership, eligible companies will have access to £50 million from Scottish Enterprise and £50 million from the European Investment Fund, which will leverage at least £100 million from private sector fund managers²⁰⁰. The Scottish Investment Bank also houses significant expertise on the Scottish SME sector, who work with growth-oriented companies to help them articulate their funding requirements, develop their investment propositions and increase their chances of securing the most appropriate package of finance for their needs. In 2016-2017 the Scottish Investment Bank's financial readiness team engaged with over 700 companies and provided intensive support to 452 companies to get ready to raise finance.

While the Scottish Investment Bank has successfully helped firms to grow and expand, as with the BBB there are a number of constraints which limit its role as a major source of patient, strategic finance. Firstly, the Scottish Investment Bank's mandate, which is mainly focused on increasing the supply of growth finance and helping more companies to access finance, is narrower in scope than most SIBs, which tend to have a broad mandate focused on specific missions rather than filling gaps. Of the economic roles outlined in section 4.3, the Scottish Investment Bank mainly plays the 'venture capitalist' role, addressing market failures around access to early stage equity finance. This relatively narrow focus, combined with the limited range of instruments on offer, means that it is currently unable to play a more strategic and transformative role.

Moreover, the Scottish Investment Bank's operations are small relative to the size of Scotland's economy. As with the BBB, it is more akin to a small fund than a bank. Rather than raise its own finance, the Scottish Investment Bank receives a relatively small amount of resources from Scottish Enterprise which it disburses to firms. In 2016-17 the Scottish Investment Bank invested £63.5 million in 146 Scottish companies²⁰¹ – equivalent to 0.04% of Scottish GDP. As shown in Figure 12, this scale of lending is significantly smaller than the SIBs examined in this paper. The Nordic Investment Bank, the smallest SIB examined, lent 0.25% of GDP in 2016 – nearly six times more. This is equivalent to £370 million of investment in the Scottish economy. The KfW lent 2.6% of GDP in 2016 – more than sixty times more, which is equivalent to £3.9 billion of investment in the Scottish economy. While these comparisons are just illustrative, they demonstrate the significant difference in scale between the current Scottish Investment Bank and other international SIBs.

As outlined in section 2.1.5, Scotland already has among the lowest levels of investment in the world, and this may be reduced further by the loss of EIB investment. As such, the Scottish Government's recent decision to create a new Scottish National Investment Bank provides an opportunity to establish a major source of patient, strategic finance that can build on the successes of the existing Scottish Investment Bank and help to drive a transformational investment-led growth agenda in Scotland.

Figure 12: Investment activity, 2016



Source: Annual reports

6.2 Scottish Futures Trust

The Scottish Futures Trust (SFT) is an infrastructure delivery company owned by Scottish Government. Established in 2008, it was originally intended that the SFT would design, build, finance, operate, manage and own assets and raise its own finance through bond issuance at rates which would be cheaper than the prevailing PFI or PPP schemes²⁰². However, the SFT was never granted borrowing powers, and today the SFT is tasked with achieving best value for money on public infrastructure such as homes, schools, roads and hospitals and digital communications. The SFT does this by working with public and private sector partners to plan future investment, deliver major infrastructure programmes, deploy innovative financing approaches to build new infrastructure, and improve the management of existing assets.

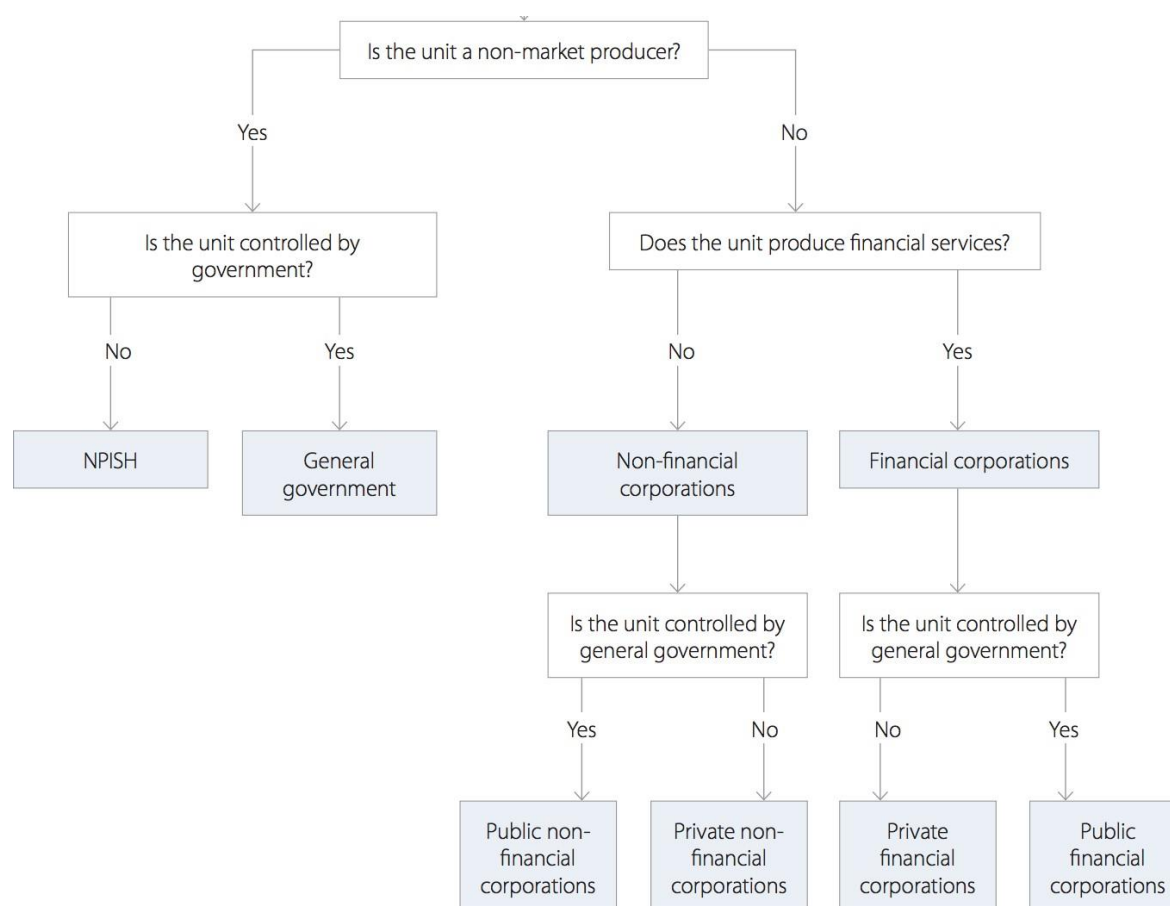
Between 2009 and 2014, the SFT secured £642m of savings and benefits and aims to secure a further £500-£750m of savings and benefits between 2014-2019²⁰³. The SFT houses significant commercial, technical and financial expertise and has an annual operating budget of £10.4 million. However, without the means to invest directly, the SFT is unable to act as a source of patient, strategic finance.

7. Rules and regulations

7.1 Sectoral classification

When the government establishes a new body, privatises or nationalises an existing one, or enters into a new partnership or joint venture with the private sector, the resultant body must be classified for National Accounts. The Office for National Statistics (ONS), as the UK's independent national statistics body, decides the treatment in the National Accounts by applying the European System of Accounts standards ('ESA10') and referring to a case history of previous classification decisions. Figure 13 illustrates the classification process.

Figure 13: Classification process



Source: European System of Accounts, ESA10²⁰⁴

The first step is to differentiate between market and non-market, and therefore between the general government sector and the corporations sector. In order to determine whether a body is a market unit the following criteria are applied:

- the producer is an institutional unit
- the producer is not a dedicated provider of ancillary services;
- the producer is not the only supplier of goods and services to government, or, where that producer is, it has competitors; and

- (d) the producer has an incentive to adjust supply to undertake a viable profit-making activity, to be able to operate in market conditions and to meet its financial obligations

Importantly, a market producer must have 50% or more of its production costs from items classed as sales. If a body is classified as a market producer, the next stage is to decide whether the body is a financial or non-financial corporation. Financial corporations are bodies which are independent legal entities and whose principal activity is the production of financial services and financial intermediation. Financial intermediation is defined as the activity in which an institutional unit acquires financial assets and incurs liabilities on its own account by engaging in financial transactions on the market. Importantly, if a public financial unit manages assets but does not place itself at risk by incurring liabilities on its own account, it is not a financial intermediary and the unit is classified in the general government sector rather than in the financial corporation sector. As discussed in section 5, neither the Green Investment Bank or the British Business Bank were classified as financial corporations. In its assessment of the Green Investment Bank the ONS stated that²⁰⁵:

“Although its name suggests it is a Bank, and therefore a financial intermediary, UK GIB is unable to borrow. Under ESA 95 rules, to be classified as a “financial intermediary” and therefore as a financial corporation, in general bodies are required to be able to incur financial liabilities (i.e. borrow) on the market. In the absence of this ability, public sector bodies are classified into the Government sector, hence UK GIB is classified as a Central Government body from inception.”

Once a body has been classified as either a financial or non-financial corporation, the next step is to decide whether it should be classified as a public or private sector body for National Accounts purposes. This determines how the body's assets and liabilities from its investments or operations are accounted for in the National Accounts. The ONS is clear that the key factor in determining whether a body is a public or private sector is where control over the organisation lies, rather than “ownership” or whether or not the entity is financed from public funds²⁰⁶. The international guidance defines control as the ability to determine corporate policy, appoint directors and have the majority voting interest, among other things. If a body is deemed to be controlled by government or a public corporation, then it will be classified as in the public sector. If not, then it will be classified as in the private sector.

7.2 Public accounting rules

Under normal circumstances, a body classified as a public financial corporation will have an impact on Public Sector Finance statistics and the UK Government's fiscal targets. This is because in the UK the main measure of public debt is ‘public sector net debt’, which is defined as public sector financial liabilities (for loans, deposits, currency and debt securities) less liquid assets. According to the ONS definition, the public sector comprises central government, local government and public corporations.

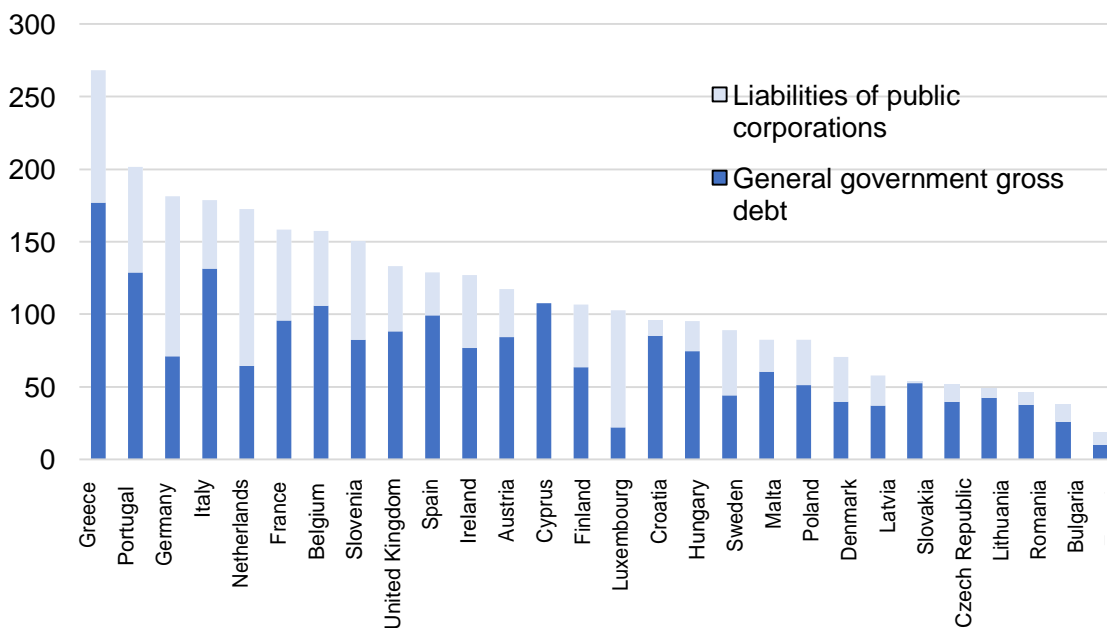
While the UK government targets total debt across the whole public sector, this is not standard practice internationally. Many countries monitor and target ‘general government gross debt’, which includes both central and local government but excludes public corporations. This is the

measure used by all EU Member States apart from the UK, and is the measure used to assess compliance with the Maastricht Treaty criteria and the Stability and Growth Pact.

In countries that use the general government measure, the liabilities of public sector corporations are not included in measures of government debt. Thus, the borrowing and investing activities of SIBs, such as the KfW and CDP, do not impact national debt and deficit figures. By providing a means to increase public investment without scoring against the strict limits imposed by the Stability and Growth Pact, some scholars have attributed this “loophole” as one of the major drivers behind the growing role of SIBs in Europe in recent decades²⁰⁷.

This is particularly significant for countries with a large SIB and widespread public ownership in the banking sector such as Germany. In 2015 Germany’s general government gross debt stood at 71% of GDP – slightly below the average for EU countries²⁰⁸. However, data on the so-called “contingent liabilities” of EU Member States is available from Eurostat and which covers liabilities not included in the general government measure such as government guarantees, public-private partnerships and government controlled entities classified as outside general government (public corporations)²⁰⁹. When liabilities of public corporations are added (as they are in the UK measure) the total amounts to 181% of GDP – the third highest in the EU. This is largely attributable to the scale of the German public banking sector which includes the KfW at the federal level, the state banks (Landesbanken) and the municipal savings banks (Sparkassen)²¹⁰.

Figure 14: General government gross debt and liabilities of public corporations



Source: Eurostat²¹¹

This illustrates the somewhat unusual and arbitrary nature of the UK’s approach to measuring public finances. A logical case can be made for aligning the UK’s measurement of debt to the general government measure used in other countries. The case for doing so is strong: there is a qualitative difference between general government borrowing because spending exceeds tax

revenues, and a SIB raising funds in capital markets to finance projects that will generate a stream of income in the future²¹².

It is also worth noting that following the bailout of the banking system in 2008 the UK government changed its main measure of public debt to ensure that the liabilities of the publically owned banks such as Lloyds Banking Group and the Royal Bank of Scotland did not affect the public sector net debt. Currently the main measure of public debt in the UK is 'Public sector net debt (excluding public sector banks)'. This change was not required under international accounting principles and demonstrates that there is flexibility in the way the performance of management of public finances is assessed.

7.3 EU state aid rules

In light of the vote to leave the European Union the UK's future of the relationship with the EU is unclear. However, as long as the UK remains part of the EU, or retains full access to the EU single market, all bodies must comply with EU state aid rules. State aid rules prevent governments from providing financial support that could distort competition and affect trade by favouring certain undertakings or the production of certain goods. Support has to pass four tests for it to count as state aid²¹³:

1. It has to be granted by the state or through state resources which can take a variety of forms (e.g. grants, interest and tax reliefs, guarantees, government holdings of all or part of a company, or providing goods and services on preferential terms, etc.)
2. It has to confer a selective advantage to an undertaking, for example to specific companies or industry sectors, or to companies located in specific regions.
3. It has to distort or have the potential to distort competition – i.e. strengthen the beneficiary relative to competitors
4. It has to affect trade between member states – in practice, to affect any market where the goods or services are tradable between member states.

In many instances State Aid will not arise because no advantage is conferred and the above State Aid criteria are not met. An important example is the Market Economy Operator Principle (MEOP), which occurs when an investment or loan is made by a public-sector body on a purely commercial basis. In order to apply the MEOP and for the investment to fall outside the remit of State Aid, the investment or loan must be at genuinely commercial rates, on the same terms and with the same risks and rewards that a commercial private investor or lender would invest or lend at. One of the most robust ways of demonstrating that public investment is on commercial terms is to ensure that there is a matching investment (made on the same terms and at the same time) by a commercial entity.

There are also certain categories of aid which are exempt from the requirement to notify State Aid to the European Commission. The first of these is the '*De Minimis* Regulation', which sets a threshold figure below which State Aid will not apply because it will be assumed that the aid will not distort competition. Below this limit, the European Commission does not need to be notified of any investments made. Current rules stipulate that the total *de minimis* aid granted to any one organisation must not exceed €200,000 over any period of three fiscal years.

If a proposed investment is above the *de minimis* limit, the next step is to assess whether it falls within the scope of the General Block Exemption Regulation (GBER). These exemptions outline the areas in which State Aid investment is allowable due to EU social, development or growth policies. Table 10 lists the current GBER categories where State Aid investment is allowable, as determined by the European Commission²¹⁴:

Table 10: State Aid GBER exemptions

| Category | Sub category |
|---|--|
| Regional aid | Regional investment aid |
| | Regional operating aid |
| | Regional urban development aid |
| Aid to SMEs | Investment aid to SMEs |
| | Aid for consultancy in favour of SMEs |
| | Aid to SMEs for participation in fairs |
| | Aid for cooperation costs incurred by SMEs participating in European Territorial Cooperation projects |
| Aid for access to finance for SMEs | Risk finance aid |
| | Aid for start-ups |
| | Aid to alternative trading platforms specialized in SMEs |
| | Aid for scouting costs |
| Aid for research and development and innovation | Aid for research and development projects |
| | Investment aid for research infrastructures |
| | Aid for innovation clusters |
| | Innovation aid for SMEs |
| | Aid for process and organisational innovation |
| | Aid for research and development in the fishery and aquaculture sector |
| Training aid | Training aid |
| Aid for disadvantaged workers and for workers with disabilities | Aid for the recruitment of disadvantaged workers in the form of wage subsidies |
| | Aid for the employment of workers with disabilities in the form of wage subsidies |
| | Aid for compensating the additional costs of employing workers with disabilities |
| | Aid for compensating the costs of assistance provided to disadvantaged workers |
| Aid for environmental protection | Investment aid enabling undertakings to go beyond Union standards for environmental protection in the absence of Union standards |
| | Investment aid for early adaptation to future Union standards |
| | Investment aid for energy efficient measures |
| | Investment aid for energy efficiency projects in |

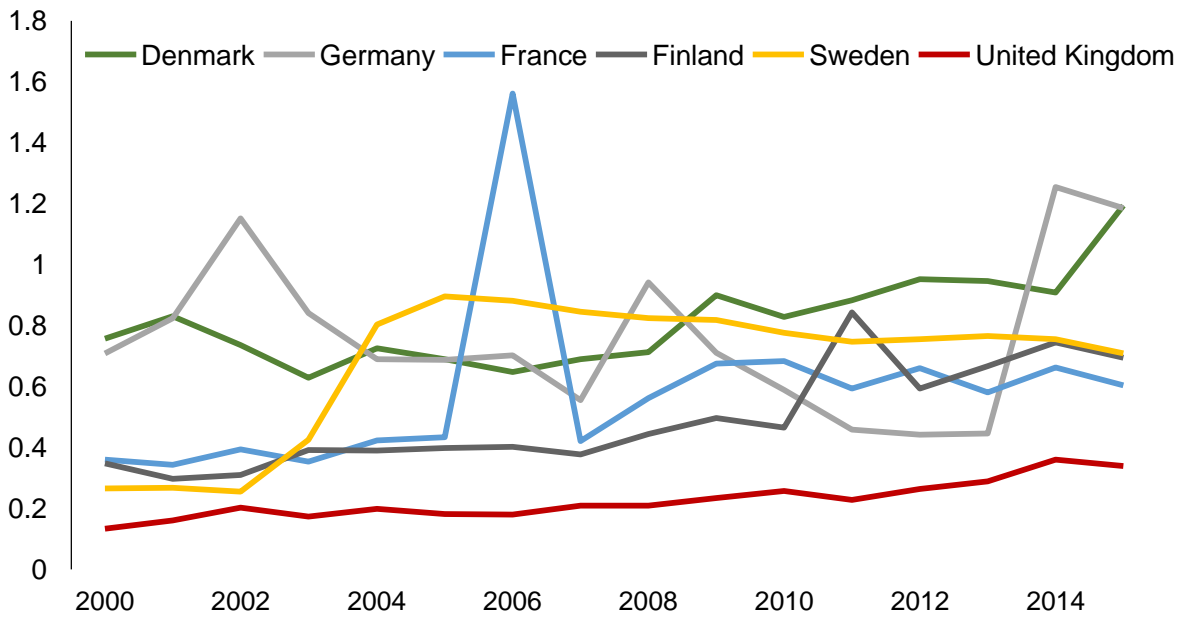
| | |
|---|---|
| | buildings |
| | Investment aid for high efficiency cogeneration |
| | Investment aid for the promotion of energy from renewable sources |
| | Operating aid for the promotion of electricity from renewable sources |
| | Operating aid for the promotion of energy from renewable sources in small scale installations |
| | Aid in the form of reductions in environmental taxes under Directive 2003/96/EC |
| | Investment aid for remediation of contaminated sites |
| | Investment aid for energy efficient district heating and cooling |
| | Investment aid for waste recycling and utilization |
| | Investment aid for energy infrastructure |
| | Aid for environmental studies |
| Aid to make good the damage caused by certain natural disasters | Aid schemes to make good the damage caused by certain natural disasters |
| Social aid for transport for residents of remote regions | Social aid for transport for residents of remote regions |
| Aid for broadband infrastructures | Aid for broadband infrastructures |
| Aid for culture and heritage conservation | Aid for culture and heritage conservation |
| | Aid schemes for audio-visual works |
| Aid for sport and multifunctional recreational infrastructures | Aid for sport and multifunctional infrastructures |
| Aid for local infrastructures | Investment aid for local infrastructures |

Source: European Commission²¹⁵

For interventions that do not fall within *de minimis* limits or a block exemption regulation, an ex-ante analysis of the market failure to be addressed is required.

As shown in figure 15, the UK has consistently spent less on State Aid expenditure relative to other northern European countries, suggesting that policymakers may have taken an overly cautious approach in the past.

Figure 15: Total State Aid expenditure as a % of GDP in 2015



Source: European Commission²¹⁶

In the case of SIBs, the European Commission and European Council recently published guidance to Member States intending to set up a new SIBs, including in relation to state aid compliance²¹⁷. The guidance draws on recent decisions by the European Commission to offer insight into how compatibility with State aid rules are assessed. These include the UK's Green Investment Bank and British Business Bank, the Portuguese Development Financial Institution and the Latvian Single Development Institution. In those decisions, significant emphasis was placed on the need to ensure that the SIBs will focus their operations on sectors where market failures are pervasive and which are underserved or not served by private providers. Commercial activities had to be separated from promotional activities in order to avoid cross-subsidisation. Governments were encouraged to make the SIB intervene indirectly via financial intermediaries in order to reduce risks of crowding out and discrimination among private finance providers. The new SIBs were also required to comply with the applicable State aid rules applying to final beneficiaries, meaning that undertakings in difficulty are not able to be subsidised unless where explicitly allowed (e.g. in line with the Rescue and Restructuring Guidelines).

Overall, setting up a new SIB should not encounter difficulties with state aid compliance so long as it aims to complement rather than compete with commercial banks by providing *additionality*: i.e. doing what is not already being done by the private sector. This does not have to be limited to fixing market failures – it also includes mission-oriented investments focused on creating and shaping new markets, technologies and firms that otherwise would not arise.

8. Conclusion: implications for the UK and Scotland

It is clear that policymakers across the UK need to find a new way of generating long-term growth. The task is to shift away from a consumption and private debt-driven growth model

towards a modern investment-led growth strategy focused on rebalancing the economy and reinvigorating innovation and the industrial base. The UK's current financial landscape, characterised by short-termism and low public and private investment, is contributing towards problems of low productivity, low growth and stagnating living standards. At the same time, there is an urgent need to address key societal challenges such as climate change. In this context, finding new ways to promote investment in a smart, inclusive and sustainable direction is vital.

This report has shown that correctly structured and governed SIBs can catalyse the transition towards a more sustainable, smart and inclusive type of economic development. In addition, SIBs can provide an effective means of smoothing the effect of financial and business cycles. By placing SIBs at the centre of the investment process, countries like Germany and China (and until recently Brazil) as well as the EU have taken centre stage in confronting the key social and environmental challenges of the 21st century. By steering the path of innovation towards overcoming key challenges, these SIBs are not just correcting market failures; they are actively creating and shaping markets. They are enabling activity that otherwise would not take place.

In the UK, state investment banks have recently entered the political spotlight. In light of the UK's vote to leave the EU, HM Treasury is reported to be considering plans for a new institution to replace the European Investment Bank. In September 2017, the Scottish Government announced plans to establish a new Scottish National Investment Bank – a new SIB that acts as a key cornerstone of the future Scottish economic development policy landscape²¹⁸. The Scottish Government is currently developing an implementation plan for the bank, and is due to report back in February 2018.

For policymakers exploring the option of establishing new SIBs in the UK, what key lessons can be drawn? Our conclusions can be summarised as follows:

8.1 Mandate and mission

The overarching mandate and mission is critical to the role that SIBs play in the economy. There is a notable difference between SIBs that have a mandate and mission which specifies a direction of economic activity, framed around key societal challenges, and those that do not. While the specific wordings vary, the four largest SIBs – the EIB, KfW, CDB and BNDES – have converged around an objective of promoting smart, sustainable and inclusive growth, and all play a mission-oriented role in their respective economies. In contrast, the mandate of the Italian CDP is more static, focusing on 'economic development' and 'competitiveness' without signalling a desired direction for the economy. The CDP, unlike the other banks examined, does not play a mission-oriented role. The NIB has a narrower role, reflecting the lack of a central political authority.

In the UK context, a mandate to provide high-risk, patient finance to firms and other organisations that are willing and able to tackle key challenges, and go beyond fixing market failures, would maximise *additionality* (i.e. making things happen that otherwise would not). An SIB that is mission-oriented – rather than sector oriented – would enable it to shape the direction of growth by making strategic investments across many different sectors and nurturing new

industrial landscapes. Experience from elsewhere suggests that mission-oriented bodies are also better able to attract top talent.

8.2 Economic role

Four of the SIBs examined (KfW, BNDES, CDB and EIB) play all the economic roles identified in this paper (countercyclical, capital development, venture capital, mission-oriented). The NIB does not play a venture capital role because it does not offer equity instruments, whereas there are signs that the CDP may play a more mission-oriented role in future.

In the UK context, there case for an SIB to play all four roles is compelling: a countercyclical role would smooth the effect of the UK's cyclical financial markets; a capital development role would help to renew the UK's infrastructure, industrial base and competitiveness; a venture capital role would provide the early stage public, patient finance that is critical for innovation; and a mission-oriented role influence the direction of growth by making investments that address key societal challenges.

8.3 Investment activities

The investment activities of SIBs vary between countries according to the bank's mandate, socio-economic circumstances and the stage of development. Existing institutional landscapes – both domestically and in competitor economies – also matter. For example, the NIB does not offer venture capital because many of the Nordic nations have separate state-owned venture capital funds. Similarly, UK firms have often been placed at a competitive disadvantage when bidding for domestic contracts because international firms have had access to financial support from domestic state institutions (often the SIB from their home country).

In the UK, a mission-led SIB would focus on catalysing activity that otherwise would not happen. Investment activities would be guided by specific challenges, rather than an *ex-ante* desire to serve any specific sector. This would likely require investing across multiple sectors and working with existing institutions. This could most effectively be achieved by placing an SIB at the centre of the investment process, nurturing knowledge and expertise and coordinating other stakeholders in the investment ecosystem. In some cases, it may be appropriate for the SIB to invest directly, while in other cases it may be more appropriate coordinate investment from other actors. Either way, the effect would be to act as a catalyst for growth across different sectors.

Based on the analysis of the current financial and industrial landscape outlined in this report, an SIB tasked with supporting a smart, sustainable and inclusive growth agenda could be active in the following areas:

- **Mission-oriented innovation:** Innovation is becoming increasingly important for economic growth, and is critical to overcoming the key challenges of the twenty-first century. However, investment in research and development in the UK has fallen over the past 30 years, and remains lower than other major advanced economies. The kind of early stage public, patient investment in innovation, which has been so critical to many modern advances, is critically lacking in the UK. An SIB could work closely with and

enhance the relationship between other actors in the innovation ecosystem such as Innovate UK, universities, enterprise agencies, large firms and innovative start-up firms to make strategic investments across the innovation chain, creating the potential for spill-overs across different sectors. By acting as investor of first resort, rather than lender of last resort, an SIB could help to steer the path of innovation towards desired ends.

- **Green economy:** The case for adopting an economy wide green direction is compelling. This does not just mean just a greater focus on renewable energy than fossil fuels, but also transforming patterns of production, distribution, consumption across the entire economy. As well as helping to address climate change, a green direction provides a significant opportunity for an investment-led rebalancing of the UK economy and a renewal of the UK's industrial base. Investment in the green economy should be supported both on the supply side and demand side: today SIBs are the largest global funders of the deployment and diffusion phase of renewable energy, outpacing investment from the private sector. On-going public investment is essential to nurture new green technologies and industrial landscapes, however with the recent privatisation of the Green Investment Bank it is not clear where this is going to come from in future in the UK.
- **Exports:** Many exporting firms in the UK have received less state assistance than in many other advanced economies, placing the UK at a competitive disadvantage and contributing to a growing trade deficit. While UKEF has made improvements in recent years, many UK firms still experience difficulties when accessing trade finance. In recent years a number of countries, including France and Italy, have merged multiple separate agencies into a state investment bank to create a 'one-stop-shop' for businesses. A new SIB could either work closely with UKEF to support exporting businesses, or replace UKEF as the main provider of export finance in order to maximise synergies.
- **Promoting industry and competitiveness:** After years of neglect, the UK's industrial base has been significantly eroded and now lags significantly behind leading advanced economies. Many UK firms struggle to compete on a level playing field with firms that have benefitted from a domestic industrial policy and financial support. A new SIB could work closely with government to support industrial policies designed to enhance the competitiveness of firms, nurture emerging industrial landscapes and promote strategic trade in areas which support the mission of the bank. Importantly, this does not simply mean subsidising whole industries or keeping struggling companies alive – it means increasing the 'animal spirits' of business and helping companies make investments that would otherwise have not been made.
- **Infrastructure:** Successive governments have underinvested in key strategic areas such as energy and transport, which has held back the UK's economic potential. Insufficient long-term planning and a growing role for private finance has increased costs and impaired the ability of government to take a cross-sector, holistic view. The decision of the EIB, which financed £7 billion of infrastructure projects in the UK last year, to freeze its UK operations creates a potentially significant gap in the availability of low-cost, long-term financing for infrastructure projects. A number of authors have called for a new infrastructure bank to be established to facilitate the provision of finance for infrastructure

projects and reduce and manage risk. A new SIB could either finance infrastructure directly or work with other actors in the investment landscape to provide strategic coordination, ensuring that infrastructure projects align with the wider mission of smart, sustainable and inclusive growth. Here lessons can be learned from the KfW's role in delivering Germany's Energiewende policy.

8.4 Governance

Governance arrangements are key to the success and legitimacy of SIBs. In particular, achieving the right balance between political representation and independent decision making is a key challenge. While political representation can help to maintain alignment with government policy and maintain a path of democratic accountability, steps should be taken to prevent undue political interference or capture by interest groups. Some SIBs achieve this by appointing independent, non-political representatives on the most senior decision-making body. The experience of the KfW indicates that including a wider range of stakeholders such as industrial trade bodies, trade unions and regional representatives can be beneficial as long as mechanisms are in place to make sure that none of these groups ask for special favours but remain objective evaluators. All successful SIBs have management teams that are free to make sound, long-term decisions, free of day-to-day political interference.

8.5 Technical expertise

A key difference between many SIBs and private banks is breadth of expertise contained within staff. In many cases this includes not only financial expertise but significant in-house engineering and scientific knowledge about the sectors the bank is active in. These SIBs are able to base investment decisions on a wider set of criteria than relying on market signals alone, and assess the potential of firms and projects more robustly. They are also better placed to appraise social and environmental considerations, meaning that SIB staff can be drawn on to provide expert advice on government policy design and implementation, as well as financing. Lastly, significant in-house expertise enhances the ability of the SIBs to crowd-in private investment by acting as a hallmark of quality, giving private sector actors the confidence they need to invest.

8.6 Funding instruments

Different types of investment activity require different types of finance. Having different funding instruments available is important to manage the balance of risk and reward effectively across a portfolio, and to best match the optimal finance for different types of projects. For example, guarantees can encourage private sector investment by de-risking projects, while equity investments may be suitable for capital intensive, high risk projects. In order to provide the bank with the flexibility required to fulfil a broad mandate, it is important to have a range of tools suited to different areas of the risk landscape. In this regard lessons can be learned from the experience of BNDES and the KfW which have become key players in the innovation system. SIBs can also learn from portfolio strategies of venture capitalists, ensuring that the upside of investments can be captured and structuring investments across a risk-return spectrum so that lower risk investments help to cover higher risk ones.

In addition to lending operations, offering advisory services such as strategic planning, capacity building, and training programs help to create viable projects and encourage businesses to make investments that otherwise would not happen.

8.7 Sources of finance

There are many different ways that SIBs can fund their business operations, including taking savings and deposits from the public, raising money in the domestic or international capital markets, borrowing from other financial institutions, using return on investments, receiving budget allocations from the national Treasury, managing public pension or social security funds, or receiving financing from the central bank.

Sources of finance can have an impact on the ability of SIBs to successfully meet their mandates. In the UK context, a number of factors should be considered. Firstly, sources of finance must be available on the scale required to meet the desired level of investment. The relative scale of the SIBs examined in this study varies widely: the assets of the NIB amount to 2% of GDP compared to 19% in the case of the CDB. Second, financing sources must be stable and readily available. If a source of finance proves to be volatile or unstable, or vulnerable to political pressures, then it can seriously impair the ability of the SIB to fulfil its mission – as the case of BNDES demonstrates.

A final consideration is whether different sources of finance may affect an SIB's appetite for risk, and ability to invest in innovative projects. On this issue, no conclusive conclusion can be drawn from this study, and this is an area where further research is required. One possible area for further study is the extent to which sources of funding which draw heavily on household savings – such as postal savings in the case of Italy's CDP – creates political pressure to minimise risk taking and thus reduce investment in radical innovation. Another area is the extent to which reliance on capital markets leads to lending decisions being influenced by the methodologies used by rating agencies to assign credit ratings. A final area for consideration is the potential role of central banks in financing SIBs, in particular given their much larger current balance sheets following the financial crisis of 2007-08.

8.8 Links to government policy

Close alignment between SIBs and government policy – both in terms of economic policy and innovation policy – can create a powerful synergy between policy, regulation and financing, which can be simultaneously coordinated for maximum impact. For example, new government policies can be complemented with new financing instruments in order to transmit policy objectives more efficiently. This close alignment between the KfW and government policy has been instrumental to the systemic greening of Germany's economy through the Energiewende policy²¹⁹. Although potentially powerful, this relationship is highly dependent on effective governance arrangements to ensure that sound banking principles are maintained and undue political interference is avoided.

8.9 Public accounting

In most countries, the borrowing and lending activities of SIBs are not included in measures of public debt and deficits. The UK approach of including public corporations in debt and deficit targets is highly unusual, and creates an inherent bias against the establishment of SIBs. A strong case can be made for aligning the UK's measurement of debt to the general government measure used in other countries, thus allowing an SIB to borrow and lend on its own account without impairing the public finances.

8.10 State aid rules

While State Aid rules are often held up as a barrier to more active government industrial policy, the UK has a long history of spending less on State Aid expenditure relative to other Northern European economies, suggesting that policymakers may have taken an overly cautious approach in the past. To comply with EU State Aid rules, SIBs should focus on providing additionality: i.e. doing what is not already being done by the private sector. This does not have to be limited to fixing market failures – it also includes mission-oriented investments focused on creating and shaping new markets, technologies and firms that otherwise would not arise.

8.11 Monitoring and evaluation

Whereas private banks tend to be evaluated on the basis of their performance, SIBs are often evaluated on the extent to which they are fixing perceived market failures. However, it is clear that in the case of SIBs that are playing a mission-oriented role, their activities cannot be explained by market failure theory. As a result, new monitoring and evaluation frameworks are required in order to capture the dynamic outcomes of mission-oriented investments and more accurately evaluate the performance of these institutions. This could include an array of new indicators aimed at assessing the extent to which SIBs have been successful at catalysing activity that otherwise would not have happened²²⁰.

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