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Financial instruments post Brexit: building on success

FINE

FINANCIAL INSTRUMENTS NETWORK

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FINE (Financial Instruments Network) is an informal group of departments and agencies in the UK involved in the implementation of financial instruments using the European Regional Development Fund (ERDF). Members of the group are:

1. British Business Bank
2. Development Bank of Wales
3. Greater London Authority
4. Highlands and Islands Enterprise
5. Invest NI
6. Ministry of Housing, Communities and Local Government
7. Scottish Government
8. Welsh European Funding Office

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Glossary

Business Angel	A wealthy private individual who invests directly in new and growing unquoted businesses and provides them with advice.
Debt	Loans and other funding instruments that provide the investor with mostly fixed minimum return and are at least partly secured.
Equity	Ownership interest in a company, represented by the shares issued to investors.
Guarantee	An instrument that covers potential losses on an individual basis (usually debt).
IPO	An initial public offering, or IPO, is the very first sale of stock issued by a company to the public.
Mezzanine Finance	Type of external loan funding which fits between standard bank lending and equity investment. Generally in the form of repayable debt capital, but with options to convert to equity.
Microfinance	Unsecured loans in modest amounts targeted at individuals seeking to set-up or expand existing micro businesses
Pari Passu	Relates to both making investments and how returns are attributed to investors. For making investments, where the funds provided in advance by each co-investor and/or lender to the venture capital or loan fund are drawn down in exact proportion to finance individual investments in and/or loans for SMEs. For fund returns, where they are attributed to the co-financing partners without subordination in respect of any particular co-investors and/or lenders.
Patient Capital	Another name for long term capital.
Quasi-equity	Quasi-equity fills the gap between debt and equity and aims to reflect some of the characteristics of both. Mezzanine finance is an example of quasi-equity.
Seed Capital	Financing provided to study, assess and develop an initial concept. Precedes that start-up phase.
Venture Capital	Investment in unquoted companies by venture capital firms.

Introduction

1. The United Kingdom has been one of the key proponents of financial instruments (FIs) – loans, guarantees and equity - and spends a larger share of its Structural Funds allocations in the form of FIs than most Member States. FIs have played an increasingly prominent role in EU policies, including Cohesion policy, and the UK has often been at the leading edge of policy practice in this area. As the United Kingdom prepares to leave the structures and policies created under EU Cohesion Policy, it is appropriate to consider what lessons can be retained from the Structural Funds experience with financial instruments, where it could be improved and how it might inform future policy design.

2. This paper provides a brief overview of the rationales and role of financial instruments[1] and sets the UK experience within a broader EU context. Drawing on the views of the FINE partners[2] it goes on to review policymaker assessments of how EU financial instruments have worked, and what has worked well.

What are financial instruments?

3. The term "financial instrument" embraces an array of financial products that operate in diverse ways, are of differing orders of magnitude, address a variety of policy objectives, use various modes of governance and function within assorted socio-economic, institutional and geographic contexts. The common thread is that financial instruments provide funding that is intended to be repayable. The conventional breakdown of financial products distinguishes loans, guarantees and equity, but there are numerous variants on these, and scope to combine measures to meet the needs of the funder and the final recipient.

   - **Loans** are the most widely used source of private finance for small and medium-sized enterprises (SMEs) and are offered almost everywhere in domestic and/or co-financed economic development policies; loans are also widely used by other project promoters, such as local authorities, for upgrading public buildings and spaces and other capital investments, and by householders and landlords for energy renovation. Loans are comparatively easy to administer from a public administration perspective, to the extent that the implementation of a loan fund can be "outsourced" or funds can be used to increase the volume of finance available through existing commercial sources. Loan products can help address credit rationing, as well as cost-of-credit issues (through interest rate subsidies or easier terms).

[1] This draws on recent existing work by EPRC, notably: Wishlade, F and Michie, R (2018) Financial instruments in practice: uptake and limitations, *EC-OECD seminar series on designing better economic development policies for regions and cities,* OECD, Paris, available at: http://www.oecd.org/cfe/regional-policy/Wishlade_Michie_Financial-Instruments-in-Practice.pdf; . Wishlade, F, Michie, R, Robertson, P and Vernon, P (2017) Improving the Uptake and Effectiveness of Financial Instruments, *Final report to the European Commission,* Brussels, available at: http://ec.europa.eu/regional_policy/en/information/publications/studies/2017/improving-the-take-up-and-effectiveness-of-financial-instruments; Wishlade, F, Michie, R and Vernon, P (2017) Financial instruments for energy efficiency and renewable energy, Research for REGI Committee – European Parliament, Policy Department for Structural and Cohesion Policies, Brussels, available at: http://www.europarl.europa.eu/RegData/etudes/STUD/2017/601992/IPOL_STU(2017)601992_EN.pdf; Wishlade, F, Michie, R, Familiari, G, Schneiderwind, P and Resch, A (2016) Financial instruments for Enterprise Support – Ex post evaluation of Cohesion policy programmes 2007-13, final report to the European Commission, available at: http://ec.europa.eu/regional_policy/en/information/publications/evaluations/2016/financial-instruments-for-enterprises-final-report-work-package-3-ex-post-evaluation-of-cohesion-policy-programmes-2007-2013-focusing-on-the-european-regional-development-fund-erdf-and-the-cohesion-fund-cf

[2] See inside cover for details of FINE.

Loans are often preferred by SMEs because there is no loss of control or ownership, as with equity, but they can lack the flexibility required by young firms.

- **Guarantees** are arguably the most straightforward financial instrument to design, implement and recalibrate as economic development needs change. They have most potential for impact where collateral-based lending is the norm and the business population is not asset-rich. The use of guarantees is significant in only a few countries, and the sums covered are, on average, often modest, partly because they are frequently combined with loans in microfinance packages for start-ups and young firms. However, where they are used, their reach can be significant, with many thousands of publicly backed guarantees offered annually in some countries.
- Publicly backed **equity** or venture capital is the least used of the three "conventionally defined" financial products and is often regarded as a "niche" product for fast-growing or innovative firms. Equity products can provide significant amounts of medium- to long-term capital, but imply at least some loss of management control by founders and are typically more difficult to manage for public authorities. The UK is somewhat distinctive in having more developed venture capital and business angel markets than other European countries (though much less so than the United States), and making much more use of equity under the Structural Funds. In particular, Scotland and Northern Ireland have launched innovative co-investment models under their Structural Funds programmes.

4. Financial instruments for economic development **address a range of policy objectives**. The main focus is on *access to finance for SMEs*. This is a varied market segment including high-growth firms, high-tech spin-out companies, "mainstream" SMEs as well as individuals seeking self-employment. Within the overarching aim of supporting business development, these groups require quite different financial products and delivery mechanisms, with specialised fund managers required for some, but relatively standardised banking products suitable for others. Less common, but also significant, financial instruments are used for *urban development, energy efficiency and renewable energy sources.* The substance of financial instruments for these policy areas, and the way in which the instruments function, is different again from SME support, with final recipients including public authorities, housing associations, landlords and private householders, as well as firms.

When is public intervention justified?

5. In broad terms, the justification for public intervention in economic development policy is to support activities that **market operators cannot or will not undertake alone, but which are considered in the wider public interest**. This may be characterised as "market failure", but can arise where there simply is no market, where it is considered desirable to grow, or to accelerate the growth of, the market, or where the market is imperfect but private players are acting quite rationally. In the case of public goods, especially, and to a large extent merit goods, public intervention is needed to ensure that certain infrastructure, facilities and services are available as a matter of public policy. *Public goods* are generally defined as "non-excludable" and "non-rivalrous", meaning that access cannot be limited to those who pay for them and their use by some does not affect their availability to others. Classic examples include lighthouses and street lighting, but clean air and certain types of public infrastructure such as flood defences might also be included since there is no scope to create an efficient market for them. *Merit goods* are those which governments consider would be consumed at a lower level than desirable if determined solely by the free market, and where public authorities should intervene in order to ensure uptake at optimal levels. Examples include aspects of education, culture, health services, museums and

libraries. It is fair to say that government intervention in the provision of public goods and merit goods is largely uncontroversial.

6. The justification for public intervention in areas where there *is* a market is both **more complex and more contested.** This arises in two main areas:

   - *First,* in the presence of **externalities.** This is the notion that the activities of an individual or a firm have spillovers that affect others, but that these are not reflected in market prices. In other words, commercial assessments of returns on investment do not necessarily capture the wider social or longer-term benefits. The conventional example of a positive externality is research and development. Firms may be deterred from investing in R&D because they cannot reap all the gains from their investment (assuming a successful outcome) and there are risks that others will "free ride" on their innovation. This may result in suboptimal levels of investment in R&D, and yet the dissemination of new technology has wider societal benefits justifying public sector intervention to provide the 'patient' capital increasingly considered important for innovation. Similarly, firms may be discouraged from spending on vocational training if it increases the likelihood of staff being "poached" by other employers, and yet there are wider benefits to society (and individuals) of a better skilled workforce. Urban development is another area where there is potential for longer term societal and environmental gains, but where the cost and/or risk means that insufficient commercial funding can be attracted to deliver on these wider benefits. Similarly, the market alone is not currently delivering sufficient energy from renewable energies (RES) to meet agreed climate change targets. RES often requires significant upfront capital investment, but in contexts where returns are uncertain, partly owing to market and regulatory imperfections and the risks associated with different technologies. Energy efficiency may also require significant investment, but a number of barriers impede investment at levels needed to achieve energy-saving targets. These include: cultural barriers among lenders whose mindset is more oriented towards growth than cost optimisation; payback times that exceed the time that home owners expect to live in the property; and split incentives – for example, in the case of rented property where the investment cost is born by the landlord but the savings accrue to tenants.

   - *Second*, a rationale for public intervention can arise where there is **imperfect information** in financial markets. Information asymmetries can be particularly acute among start-ups which have no track record and new firms in high-technology sectors, where the risks are difficult to assess precisely because their activities are innovative. Such firms often lack the collateral needed to secure capital or the cost of capital is too high because of their risk profile; access to finance is likely to be especially difficult for start-ups, small and/or young firms, and high-tech enterprises. This is an important policy consideration because there has been an increasing policy focus, at European, national and subnational levels, on the nurturing of high-growth firms. This partly reflects the role that private venture capital is considered to have played in the development of new technology firms in certain locations – like Silicon Valley and Israel – and in the development of some high-profile firms such as Google and Facebook.

7. In practice, **two or more justifications for public intervention** may be present simultaneously. For example, information asymmetries may mean that assessments of very small projects requiring microfinance incur disproportionate transaction costs for investors, leading to a dearth of funds for initiatives that could have a positive impact on society by reintegrating individuals into the labour market, supporting disadvantaged groups and/or reducing welfare dependency. Similarly, investments in renewable energy sources could have a positive environmental impact, but information asymmetries arising from the capacity to assess the risk involved in new technologies can mean suboptimal investment.

When are financial instruments more suitable than grants?

8. Financial instruments are only feasible where the ultimate **investment is income-generating or cost-saving**, enabling the initial support to be repaid. This means that where public intervention is justified by the need for public goods, and to some extent merit goods, repayable support is unlikely to be well-suited. In other words, appropriate forms of finance need to be tailored to the market imperfection being addressed.

9. Where they are potentially suitable, there are three principal arguments for using financial instruments in place of grants:

   - Financial instruments are more **sustainable** because funds are repaid, creating a legacy to invest again. For policy makers with long experience of financial instruments, this is often regarded as the key benefit, even if it is not always the primary consideration among newer practitioners. Importantly, however, the scale of returns depends not only on the presence of sufficient numbers and scale of viable projects that are not commercially funded and the scope for timely exits and repayments, but also on the extent to which management costs and fees, defaults and losses erode returns.
   - Financial instruments can improve **project quality** – this may be partly through the due diligence involved in private sector project assessment, but also because the recipient is more focused on project viability because of the obligation to repay. This rationale is partly founded on the idea that the level of deadweight involved in financial instruments is lower than for grants; there is also a psychological dimension as both investee and investor share the risk, though how this is distributed will depend on how the instrument is designed. In addition, the use of financial instruments is influenced by the view that private sector expertise in assessing business plans improves the viability of projects compared to grants. Further, financial instruments can involve a more "hands-on" ongoing relationship between funder and recipient than grants, especially in the case of equity.
   - Financial instruments can make more **cost-effective** use of public funds, both because of their potential to attract private funds and because funds may be recycled. This argument was prominent in the financial crisis, which affected both public spending and the willingness of the private sector to lend and invest.

10. A further benefit is that publicly backed financial instruments can **support the development of local financial markets**. For example, in Lithuania and in the North-East of England ERDF co-financed SME financial instruments had a positive impact on the development of the market.[3] Further, in Estonia, ERDF co-financing of loans for energy efficiency in housing in 2007-13 was discontinued because the private market had developed to the extent that public financing was no longer required.[4]

11. Notwithstanding these claims, it should be acknowledged that **financial instruments are not without their critics**. Among the concerns are the risks of 'crowding out' the private market for loans, the effectiveness of intervention and the costs of administering FIs. Ross Brown and Neil Lee reviewed some of these concerns in their recent contribution to OECD work on economic

[3] See Wishlade *et al* (2016) *op cit* at footnote 1.

[4] See Wishlade, Michie and Vernon (2017) *op cit* at footnote 1.

policy design[5] and the *What Works Centre for Local Economic Growth* considered the evidence on the efficacy of interventions to improve access to finance.[6] Some of the issues raised are pertinent to the present discussion. In particular, unless financial instruments address a defined gap in the availability of private finance, there is indeed a risk of *crowding-out* commercial players – for this reason, the mandatory *ex ante* assessment undertaken before committing ERDF funds to FIs has gained widespread support among policymakers. Regarding *effectiveness,* a number of academic studies have made detailed assessments of financial instruments in relation to recipient firms or the outcomes of specific schemes. Many compare the performance of publicly-backed FIs with private funds (especially in the case of equity instruments), typically finding that pure public sector venture capital operations tend not to be very effective, but funds that co-invest with the private sector show more positive effects.[7] An important issue here concerns the *objectives* of public intervention: many studies assess outcomes that were not part of the initial rationale for policy; the aims of a public investor will differ from the motives of a private one and it is not always relevant to assess public and private sector performance in relation to the same criteria. In addition, differences in performance may in part reflect different levels of risk – publicly-backed FIs should be targeting projects that the private sector is unwilling to take on (otherwise there clearly would be crowding-out), and it is rational to conclude that this may result in more defaults. Regarding the *management costs* of FIs, it is worth recalling that financial instruments are not only a means to address a finance gap, but also an alternative policy delivery mechanism to grants. As grants, by definition, are not repaid, even comparatively high management costs may represent good value to the public purse. That said, few studies consider the rationale for the *form* of intervention – grants as opposed to repayable mechanisms – or the relative efficiency of public funds disbursed in repayable form and their capacity to draw in private funding; these issues are mentioned in some studies, but are not the primary focus of any existing research, as far as could be determined for the purposes of this paper.

12. Rather than undermining the potential benefits of FIs, concerns at crowding-out, effectiveness and costs point to the **need for financial instruments to be carefully designed and for the roles of grants and FIs to be well-articulated**. Financial instruments are not attractive when grants are available for similar purposes, but financial instruments can help limit grant dependency and promote an "entrepreneurial culture". Some policy makers have observed that good-quality applicants prefer loans both because a larger proportion of their costs can be covered and because they have sufficient confidence in their investment to be comfortable with repayable support. Also, loans can potentially be used for working capital, rather than being earmarked for a specific project, as with grants. That said, grants are generally considered easier to administer. The scope to combine different forms of support has been given limited consideration in Cohesion Policy, partly owing to the regulatory challenges. However, the wider evidence base suggests that it is important not to view financial instruments in isolation, or purely as part of a funding package; instead, a holistic approach that combines advice and other support, whether training, consultancy, energy audits, etc. is needed to optimise intervention.

[5] See Brown R and Lee N (2017) The theory and practice of financial instruments for small and medium-sized enterprises, *EC-OECD seminar series on designing better economic development policies for regions and cities,* OECD, Paris, available at: http://www.oecd.org/cfe/regional-policy/Brown_When-to-use-financial-instruments.pdf

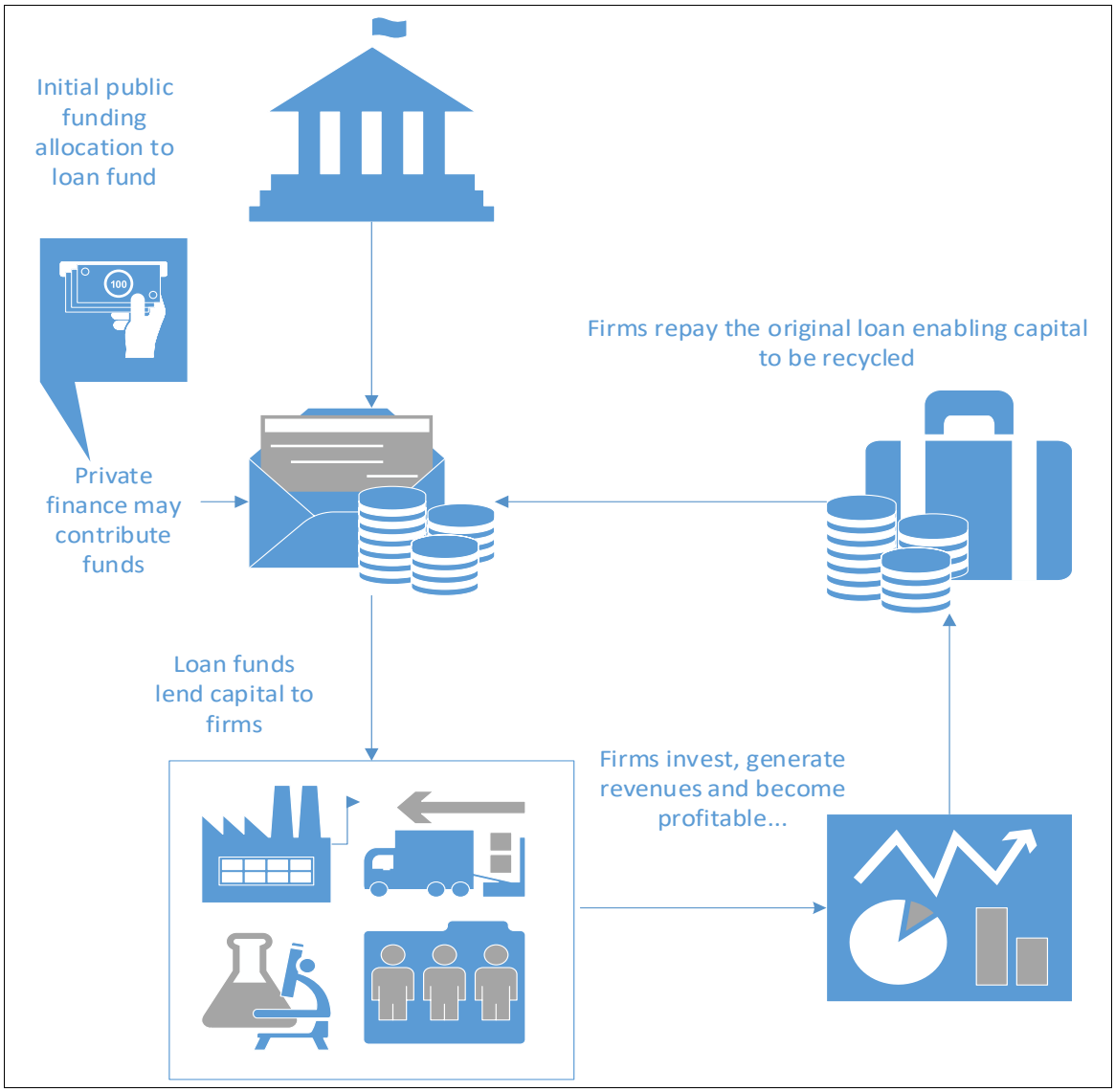
[6] See: http://www.whatworksgrowth.org/policy-reviews/access-to-finance/.

[7] Manigart, S *et al* (2014) *Revue de la littérature relative au financement des jeunes entreprises innovantes,* Institut Wallon de l'évaluation de la prospective et de la statistique: http://www.iweps.be/sites/default/files/evaluation_thematique_financement_spinoff.pdf

How do financial instruments work?

13. Figure 1 illustrates the logic underlying a public sector financial instrument that offers loans. In practice, there are many different possible options in the design of loan schemes (institutional issues aside) including not only variants in the seniority of the debt, the rate of interest and repayment period, but also the scope to combine loan funds with guarantees – particularly common for microfinance – or to convert debt into quasi-equity in the form of mezzanine funding.

Figure 1: How a loan financial instrument works

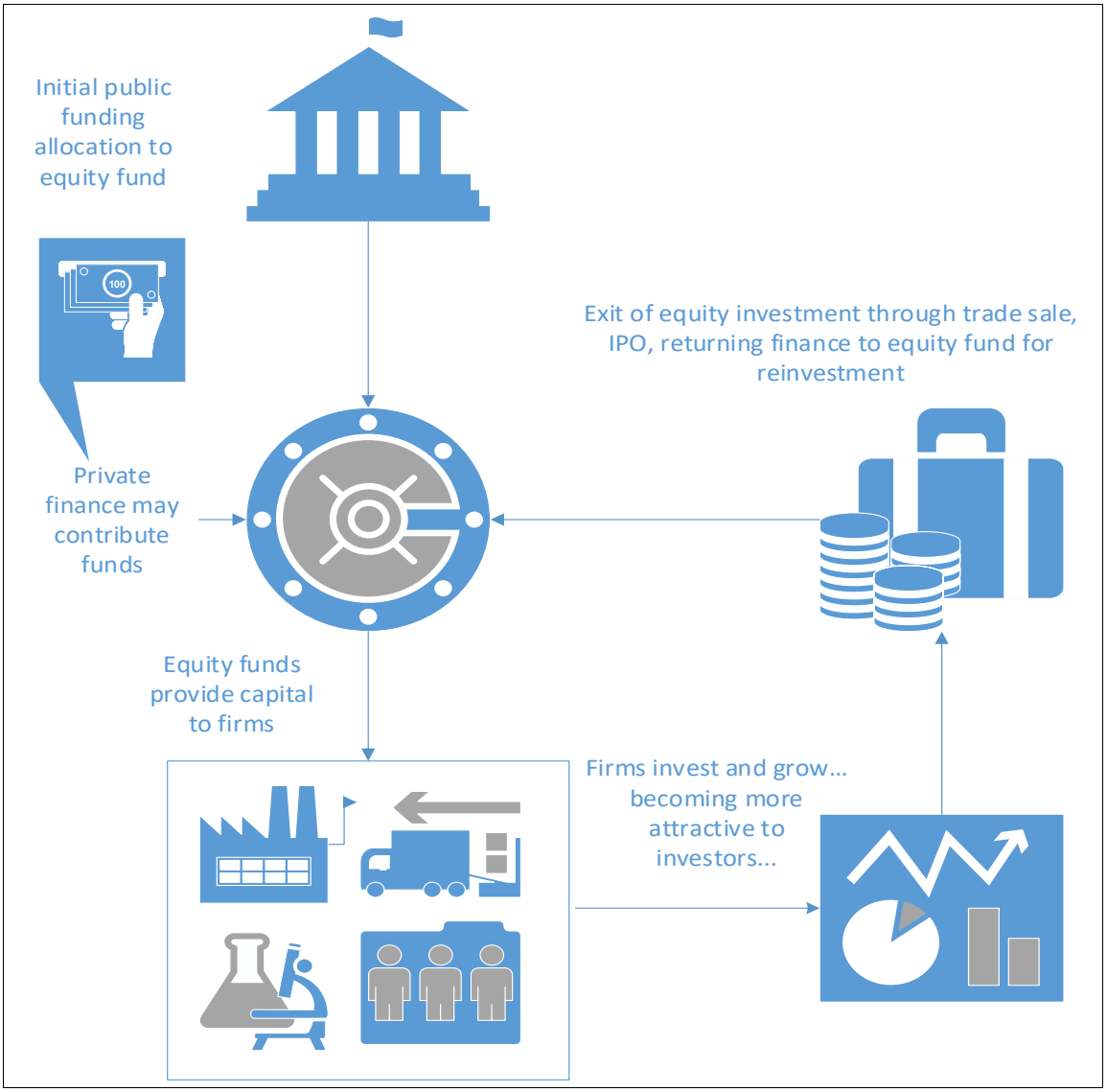


14. In some instances loans schemes operate as co-investment where there is evidence from ex-ante assessments that commercial banks lack the confidence to invest in SMEs on their own but are prepared to do so if the risk is shared. The aim of such funds is to encourage banks to return to the SME finance market. Depending on the objectives of public intervention, loan schemes may also involve State aid – for example, to encourage SMEs to undertake investment which they would not have done otherwise, interest charged may be below market rates. This can improve the uptake of loans by SMEs, but the subsidy element means that steps must be taken to ensure that the scheme complies with competition policy requires in relation to State aid.

15. There are potential negative effects that should be noted, and factored into the design of the measure. First, the loan fund should not crowd out the commercial banking sector by, for example, lending to creditworthy investments at less than market rates, or, for that matter, fund uncreditworthy firms to the detriment of their more efficient competitors. Second, interest rates should be sufficient to cover repayment defaults and fund management costs in order for the fund to be sustainable. As such, a key part of the investment strategy should be concerned with identifying projects that are too risky, commercially undesirable or out of scope for commercial banks to take on, or that rank lower in terms of returns on capital, and yet offer sufficient viability and interest from a policy perspective.

16. Equity is the most complex form of publicly-funded financial instrument (Figure 2). The two principal forms are so-called hybrid funds, where public funds are placed with and invested by a fund manager, and co-investment funds, where public funds are invested alongside private funds on a *pari passu* basis with due diligence being undertaken by private investors. This second model depends on the presence of sufficient private investment capital in the region.

Figure 2: How an equity-type financial instrument works

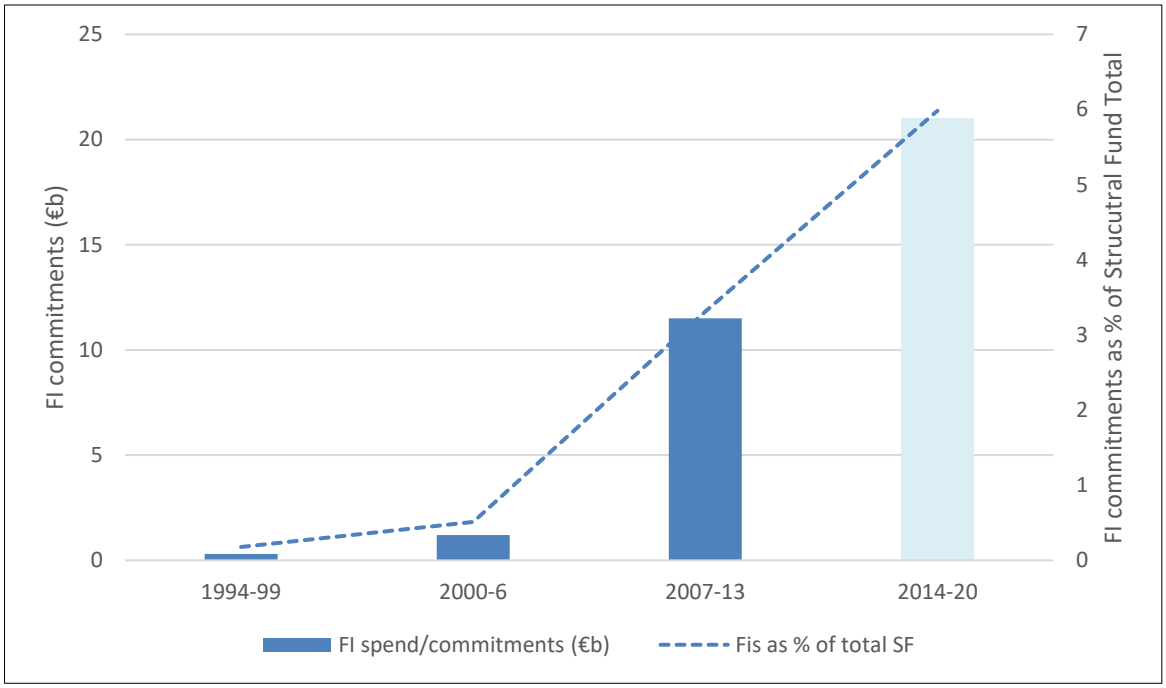


Financial instruments in EU Cohesion Policy – the UK in context

17. **Until 2007, financial instruments were a low-key part of EU Cohesion policy**. A number of countries used Structural Funds to co-finance FIs, the United Kingdom among them. However, there were no detailed regulatory provisions for FIs in the Structural Fund regulations, and overall levels of commitment remained modest. **From 2007-13, the use of FIs was actively promoted by the Commission** against a backdrop of budgetary constraints, and as a means of improving value-for-money. Initially, FIs were foreseen only for investment in firms, especially SMEs, but were later extended to include urban development and energy efficiency and renewables projects. Commission enthusiasm for financial instruments was backed by an emerging body of rules and guidance, and overall commitments to FIs rose significantly. The 2014-20 Cohesion policy regulations built on this, extending the scope to use FIs to all of the thematic objectives of policy. The regulatory framework became considerably more detailed and the Commission invested heavily in providing support for Managing Authorities, notably in liaison with the EIB through the *fi-compass* platform. Actual implementation of FIs for 2014-20 is still at a comparatively early stage given the lead times involved (and the reporting lag), but initial indications were that Member States planned to double European Structural and Investment Funds (ESIF) spend on FIs.

18. Notwithstanding these trends, **overall commitments to FIs by EU Member States remain modest as a proportion of the total budget**, as Figure 3 shows. Even if plans to use FIs in 2014-20 come to fruition, the total commitment will amount to less than six percent of the ESIF budget. This is partly explained by the fact that large areas of Cohesion policy spend concern public goods and investments (for example in physical infrastructure) that normally require grant funding.

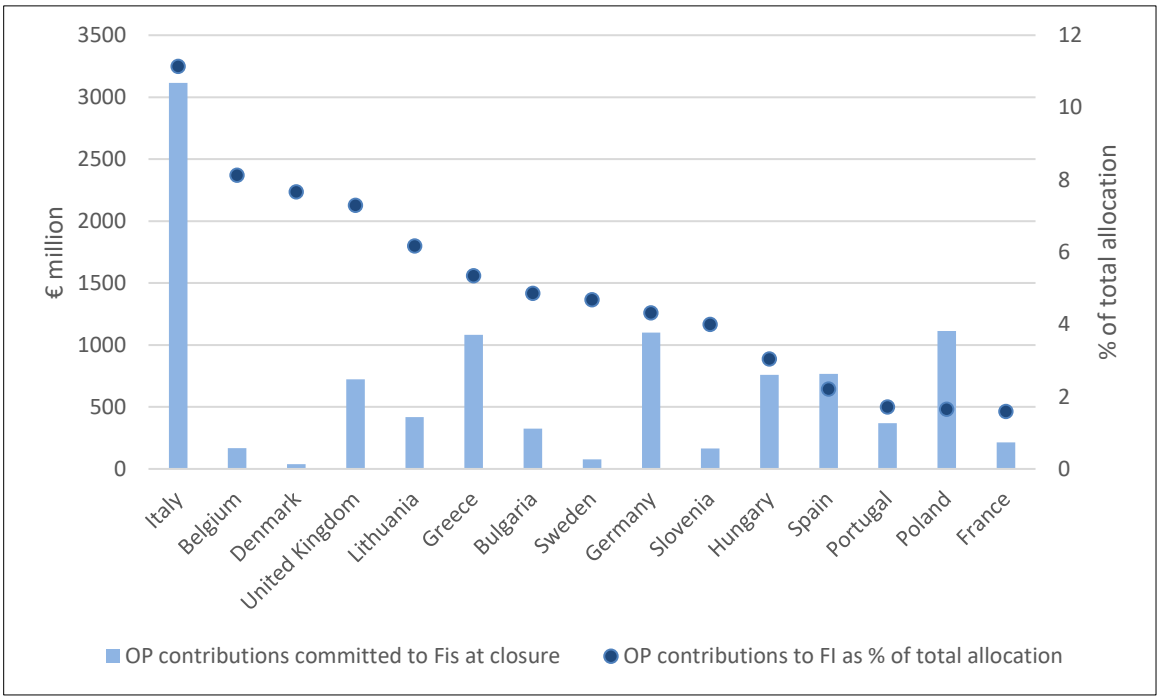
Figure 3: EU trends in the use of financial instruments (FI) in Cohesion policy (EU amounts)



Note: This chart is purely illustrative. FI commitments are in current prices with no adjustments for inflation. Data for 2014-20 are based on indications of intent to use FIs in the ESIF Operational Programmes.
Source: EPRC compilation from: CSES (2007) Comparative Study of Venture Capital and Loan Funds Supported by the Structural Funds; European Commission (2017) Summary of data on the progress made in financing and implementing financial engineering instruments: http://ec.europa.eu/regional_policy/sources/thefunds/fin_inst/pdf/closure_data_fei_2017.pdf; and ESIF Open data portal: https://cohesiondata.ec.europa.eu/dataset/Total-EU-Allocations-Per-MS-For-2007-2013/4taz-54g9

19. Within these aggregate figures, **the use of financial instruments varies widely between Member States.** The **United Kingdom** has tended to be among the main proponents of FIs and, along with Belgium and Denmark, committed over three percent of its Structural Funds allocation to FIs as far back as 2000-6, compared to the EU average of just 0.8 percent in that period. By 2007-13, shares of FIs in total allocations had risen to over three percent of OP allocations on average; however, some Member States did not use FIs at all (Luxembourg, Ireland), while others, the **United Kingdom** included, committed over five percent of total Structural Funds allocations to financial instruments, as Figure 4 shows.

Figure 4: Financial instruments (FI) in EU Cohesion policy 2007-13: position at closure (selected countries)



Source: EPRC calculations from European Commission (2017) Summary of data on the progress made in financing and implementing financial engineering instruments: http://ec.europa.eu/regional_policy/sources/thefunds/fin_inst/pdf/closure_data_fei_2017.pdf and data available at: https://cohesiondata.ec.europa.eu/

20. Differences in country size and the scale of Cohesion policy allocations complicate direct comparisons. However, there are **significant variations between Member States** in the use of FIs, even where countries are otherwise broadly comparable (see Figure 4). For example, the **United Kingdom** committed considerably more to FIs (7.3 percent of OP commitments) than Germany or France (4.3 percent and 1.6 percent, respectively), while in Italy, FI commitments were considerably higher (over 11 percent of OP commitments). Indeed, Italy alone accounted for over 27 percent of OP commitments to FIs in 2007-13. That said, Italy also struggled to invest these sums in final recipients, with only 83 percent of payments to funds invested in final recipients at closure.

21. Co-financed FIs sit in a wider **economic, institutional and financial context that differs between Member States, and between regions** within them. The use of financial instruments is heavily influenced by that context. In some cases ESIF Operational Programmes are considered too small to have the critical mass needed to operationalise financial instruments, or the OP does not target activities that are considered suitable for FIs, but significant use may be made of FIs in domestic

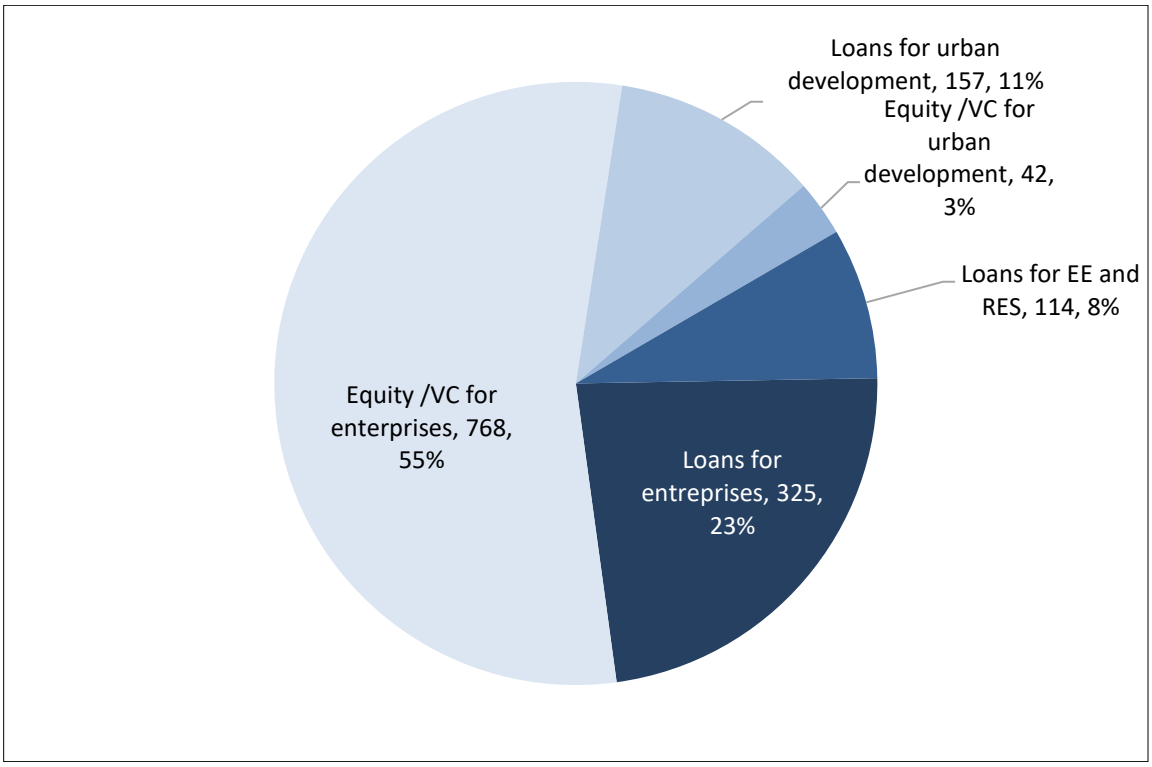
policy. This is the case in Flanders (Belgium), the Netherlands and Austria, for example. In some countries co-financing is used to supplement domestic funding of existing measures – this is typical in Germany where blocks of finance are created within regional banks; in other countries, as in the United Kingdom, a more common approach is to set up bespoke FIs with Structural Fund co-financing, distinct from existing arrangements.

22. Member States also differed widely in their targeting of financial instruments:

- All Member States using FIs (25 of the EU27 in 2007-13) targeted enterprises (especially SMEs)
- Eleven Member States, including the United Kingdom – used FIs for urban development in 2007-13
- Nine Member States – again including the United Kingdom – used FIs for energy efficiency and renewables in 2007-13

23. There are also **sharp differences in the financial products** used. Across the EU, loans for enterprises account for approaching half (43 percent) of FI investment in final recipients, with guarantees for enterprises accounting for a further 25 percent of the total (see Figure 5). By contrast, in the **United Kingdom**, most FIs (55 percent) take the form of equity investment in SMEs, with much less emphasis on loans (23 percent), and no use of guarantees under co-financed FIs. In addition, support for urban development and energy efficiency in the form of FIs was more prevalent in the **United Kingdom** than elsewhere in the EU27 in 2007-13.

Figure 5: Financial instruments by product and objective (€m and % of total investment in final recipients, Structural Fund and national contributions) – United Kingdom



Source: EPRC calculations from European Commission (2017) Summary of data on the progress made in financing and implementing financial engineering instruments: http://ec.europa.eu/regional_policy/sources/thefunds/fin_inst/pdf/closure_data_fei_2017.pdf

24. Perhaps the **key benefit from the use of financial instrument as opposed to grants is that of sustainability**. Member States were required to report on resources returned, or expected to be returned, for the latest European Commission Summary report. This amount should be the sum of: gains from investment; resources paid back; and value of resources at the final recipient level which have yet to be paid back. The report does not provide a breakdown by country or FI; however, Managing Authorities estimate the legacy at €8,464 million. This amounts to around 85 percent of Structural Fund resources invested in final recipients.

25. The **2014-2020 regulations introduced a number of changes to the implementation of FIs** in ESI Funds. In particular: they made an ex ante assessment of the need for intervention a pre-requisite to setting-up FIs with ESI Funds; they set limits on management costs and fees that could be co-financed with ESI Funds; they introduced phased payments so that commitments were more in line with payments; and they provided for more detailed reporting requirements. Among these, the mandatory ex ante assessment has been widely welcomed as providing a firm evidence base for intervention in the form of FIs.

26. A number of features **distinguish the United Kingdom experience** with ESIF co-financed FIs. In particular:
    - as an early-adopter, the UK has long-standing positive experience with financial instruments and UK ESIF FIs are regularly used as models of good practice disseminated across Europe.
    - UK authorities have pioneered innovative approaches to using ESIF FIs, often with limited funding, to facilitate investment in areas of market failure.
    - although comparatively little is known about the impact of ESIF FIs across Europe, UK authorities have been systematic in their analysis and evaluation of the effects of FIs and are able to point to tangible effects of intervention through financial instruments.

Showcasing the UK experience with ERDF co-financed financial instruments

27. In **England**, a range of spatially-focused financial instruments are being implemented under the England 2014-20 ERDF programme. The British Business Bank is delivering the Northern Powerhouse Investment Fund, Midlands Engine Investment Fund and Cornwall and Isles of Scilly Fund, which are complemented by the North East Fund, the Greater Manchester Urban Development Fund and the Mayor of London Energy Efficiency Fund. These FIs build on successful interventions in previous periods, including three JEREMIE type funds (Finance Yorkshire, Finance for Business North East and North West Business Finance), the North West Urban Investment Fund, the South Yorkshire Development Fund, and the London Green Fund – which has been frequently used as an exemplar case study EU-wide.

South Yorkshire Development Fund - 3 St Paul's Place, Sheffield

A £3.25m loan through the South Yorkshire Development Fund and a further £6.8m ERDF grant secured a landmark agreement to construct 3 St Paul's Place, Sheffield, the final element in the pioneering £130 million Heart of the City project and the first speculative office building in Sheffield to be developed since the recession. 3 St Paul's Place comprises 76,000 sq. ft. of prime Grade A BREEAM Excellent office space with each of the ten floors providing 8,000 sq. ft. offering offices suites from 2,000 sq. ft.

The development will target the growing business professional and financial services sector in Sheffield as part of developing a dynamic and diverse economy. The overall development has created a high quality central business district in the heart of Sheffield and marks the revival of investor confidence in Sheffield and the wider City Region, acting as a catalyst for further growth and development.

28. The Northern Powerhouse Investment Fund (NPIF) was the first ERDF FI to be established in England in 2014-20. NPIF provides commercially-focused finance through microfinance, debt and equity funds. The Fund is managed by the British Business Bank (BBB). The Holding Fund is owned by the Secretary of State for Business, Energy & Industrial Strategy (BEIS) and has been capitalised with £140m ERDF matched with a combination of public and private contributions from BEIS, the European Investment Bank (EIB) and BBB, to create a £400m fund. The fund covers ten Local Enterprise Partnership (LEP) areas in the North West, Yorkshire, the Humber and the Tees Valley. The fund launched in late February 2017, with the first investments being made in March 2017. Cumulative performance to June 2018, NPIF has achieved: £59m invested in 285 SMEs; £47m of private sector investment levered; 47 new enterprises supported; 108 enterprises receiving non-financial support; and 425 jobs created.

29. In **Scotland**, the SME Holding Fund is a fund of funds part financed by the ERDF element of the Scottish 2014-2020 ESIF Programmes. The Fund was established in 2015, operates Scotland-wide, and is managed by a specialist unit within Scottish Government, with an initial capitalisation of £100 million (£40m ERDF and £60m co-finance provided by the sub fund managers). The Fund has recently been re-capitalised at £75m (£30m ERDF and £45m co-finance provided by Scottish Government) as part of the Scottish Growth Scheme, and the Fund manager has recently started a procurement process to appoint sub fund managers, with contracts scheduled to commence August 2018. Contracts will initially be for up to nine years, comprising a three-year investment phase followed by up to six years realisations phase, with the potential to extend the investment phase by up to two years. All realisations will accrue to the Holding Fund for re-investment in same or similar funds, assuming market conditions prevailing at the time justify public sector intervention. Between July 2015 and December 2017, 330 companies received £223 million (funds invested plus private sector leverage), with 1,005 jobs created. With 12 months still remaining to closure of the initial phase, the Holding Fund is expected to achieve - and in most cases exceed - all of its targets.

Business Loans Scotland - Water and Pipeline Services Limited (WPSL)

WPSL has been trading since 2012 and provides specialist construction and pipeline services to the blue chip customers mainly in the gas, water, electric and civil engineering sectors. The company received a loan of £100,000 to invest in a suction excavator to improve productivity, safety and enhance competitiveness, making WPSL the only Scottish company to have this equipment. The company employs 35 staff and expect to double that number as a result of the expansion that will be generated by new contracts secured.

30. In **Wales**, ESIF funded financial instruments have allowed Wales to build the expertise and experience to successfully deliver financial instruments over a long period. This has proved the ground for the current suite of FIs managed by the Development Bank of Wales. This exceeds £550m, including the £171m EU financed Wales Business Fund. Probably the most important ESIF FI was the £157m Wales JEREMIE Fund, which was set up in April 2009 and managed by Finance Wales (now Development Bank of Wales). The fund comprised £64m ERDF matched with a £75m loan from the European Investment Bank (EIB) and £18m from the Welsh Government. The Wales JEREMIE Fund was fully invested at the end of September 2015. Its EIB loan has now been fully repaid in line with the original schedule. The Fund invested in over 600 SMEs creating 4,459 jobs and safeguarding 7,317 jobs and leveraged in £202m of private sector investment, £126m of which came from £70m of equity investments.

31. The Wales Business Fund, originally launched in 2016 comprises £111m ERDF in four operations, together with £30m from Welsh Government and £30m legacy generated from the Wales JEREMIE Fund, which will be invested once the ERDF operations are complete. Targeted at generating £115m deal level match, and creating and safeguarding over 11,000 jobs in over 500 SMEs, the Wales Business Fund is a pan-Wales Fund administered by the Development Bank of Wales PLC as an Entrusted Entity. DBW Investments were awarded the contract to deliver the investments as 'fund managers' following a fully open and competitive OJEU tender.

Wales JEREMIE Fund – Wholebake

A £750,000 equity and debt investment from the Wales JEREMIE Fund attracted a further £350,000 in additional private investment (private sector leverage) to finance a management buy-out of North Wales-based Wholebake. The investment created and safeguarded 89 jobs at the company's sites in Wrexham and Denbighshire and also achieved the largest return to date on an investment from the Wales JEREMIE Fund.

32. In **Northern Ireland**, the Access to Finance suite of funds is part financed by the ERDF under the EU Investment for Growth and Jobs Programme 2014-2020. The Access to Finance Initiative was set-up in 2010 and developed in response to the Barroso proposal for the use of Joint European Resources for Micro to Medium Enterprises (JEREMIE). It uses some of the JEREMIE architecture, and governance is provided by the Invest NI Board, through a Board Working Group. There are six funds in total, providing c£185m of finance. Five of the funds are part-financed by ERDF – Techstart NI, Co-Fund NI, Co-Fund NI II, and two development funds managed by Kernel Capital and Crescent Capital. The funds are either debt or equity based and are designed to support the growth of SMEs substantially based in Northern Ireland. By 31 March 2018, the Access to Finance funds

under the current ERDF programme had invested a total of £75 million, including £46m leverage, and contributed to the creation of 275 jobs. Exits to date total £2.65m.

Co-Fund NI - Fusion Antibodies plc

Fusion Antibodies is a Contract Research Organisation established in 2001 that offers a range of antibody engineering services for all stages of therapeutic and diagnostic antibody development. The company specialises in the production of monoclonal antibodies, antibody engineering, antibody humanization, antibody sequencing and antibody expression. From May 2012 to October 2014, Co-Fund NI, alongside private sector leverage, invested over £815k in Fusion Antibodies. This funding facilitated export and employment growth prior to the company being listed on the London AIM market in December 2017.

Lessons for UK financial instruments post-Brexit

33. Based on their experience of implementing financial instruments, FINE partners identified a number of valuable features of ESIF FIs which could usefully continue to be associated with the use of financial instruments post-Brexit. Overall the **positive aspects of financial instruments** were taken as a given by the partners, provided that they target appropriate forms of investment. These are mainly centred on there being a clear business case for investment and the identification of need through the ex ante assessment (Market Assessment), the development of commercial markets where none previously existed, the long-term nature of the measures financed producing results which would have been unlikely with short-term funding, and the move away from a grant-based culture. The FINE partners also identified a number of negative features of ESIF FIs and elements that should not form part of a future system; here the emphasis is on reducing complexity in relation to reporting and audit.

34. The table below summarises the views of FINE partners in relation to the key aspects of FI implementation.

Ex ante assessment	Unanimous support for retaining.
Implementation options	Retain the current range of options; rules on selection of implementing bodies perceived to be onerous, but also good practice. Ability to recapitalise existing funds supported.
Management and use of returns	General view that there should be constraints on how returned funds are used.
Multiannual programming	Unanimous support for multi-annual programming.

35. The partners were unanimous in considering an **ex ante assessment** (Market Assessment) to be essential to the process of developing and implementing financial instruments. There was also, not surprisingly, a strong commonality of rationales for retaining an ex ante assessment (or similar market assessment), relating to the requirement for an evidence base for public intervention.

36. Current flexibility in the range of **implementation options** is welcomed. The rules surrounding the **selection of financial intermediaries** have been a source of tension in the 2014-20 ESIF programming period. However, the broad **consensus is for the retention of the current range of**

options, especially the ability to entrust. The ability to recapitalise existing funds would be welcomed. It is also noted that even though the rules on selection of bodies are sometimes considered onerous, they are also generally viewed as **sound practice**. FINE partners did not propose significant change to the **management and use of returns** post-Brexit, but clearly much of the detail would depend on the new context, and its geographical scope. That said, there does seem to be some appetite for constraints on how returned funds are re-used, particularly that they should be used within the jurisdiction of the Managing Authority.

37. Finally, FINE partners were unanimous in taking a positive view of **multi-year programming**, viewing this as important for attracting investment, flexibility and forcing long-term thinking (beyond political cycles) in economic development. A longer-term perspective is particularly important for some types of financial instrument such as equity, which typically operates with a ten-year lifecycle.

ANNEX I

Selected ESIF Financial Instruments in England, Wales, Scotland and Northern Ireland

ENGLAND - NORTHERN POWERHOUSE INVESTMENT FUND (2014-20)

1. Basic information

The Northern Powerhouse Investment Fund (NPIF) supported by the European Regional Development Fund (ERDF) provides commercially focused finance through Microfinance, Debt and Equity funds. The Fund was established in November 2016 and is managed by the British Business Bank (BBB). The Holding Fund is owned by the Secretary of State for Business, Energy & Industrial Strategy and has been capitalised with £140m ERDF matched with a combination of public and private contributions from BEIS, the European Investment Bank (EIB) and BBB to create a £400m fund. The fund covers ten Local Enterprise Partnerships (LEPs) in the North West, Yorkshire, the Humber and the Tees Valley.

2. Scope and objectives

NPIF was announced by the Chancellor in his Autumn Statement of 2015 as part of the Northern Powerhouse Vision. The Fund aims to:

- create sustainable economic activity across the Northern Powerhouse region through supporting sustainable, new and growing businesses;
- build a sustainable legacy from a successful investment and lending programme:
- have a demonstrable presence across the NPIF area linking up the wider finance community to create an impact beyond the NPIF fund.

NPIF will specifically focus on investments which support economic growth and job creation with the following three key priorities in mind;

- Research & Innovation
- Supporting and promoting small and medium enterprises
- Creation of a low carbon economy

NPIF aims to address market failures and imperfections in the supply of finance to SMEs. Equity finance is particularly important but it is underprovided in NPIF areas mainly due to the less developed networks. Access to finance is also difficult for companies in the early stages of development or starting out which have little track record.

NPIF will provide a targeted and flexible approach by increasing debt and equity in the regions affected by these market failures.

3. Operation

Three financial instrument funds are currently offered through NPIF via five sub fund managers:

- Equity offering investments of between £50,000-£2m and is managed by two fund managers:
    - Mercia (Enterprise Ventures) covering Yorkshire, the Humber and the Tees Valley;
    - Maven covering the North West.

The fund will invest in both start-up and later stage equity along with early stage businesses and more established businesses with high growth potential:

For early stage or more established businesses that can demonstrate growth potential:

- Debt in the range £100,000 to £750,000 is managed by the following fund managers:
    - FW Capital covering the north West excluding Cumbria;
    - FW Capital covering Cumbria & Tees Valley:
    - Mercia (Enterprise Ventures) covering Yorkshire and the Humber.

For new or growing businesses to support working capital needs:

- Microfinance in the range of £25,000-£100,000and is managed by the following fund managers:
    - Business Finance Solutions/Merseyside Special Investment Fund covering the North West;
    - Business Enterprise Fund/Finance for Enterprise covering Yorkshire, the Humber and the Tees Valley.

SMEs can access funding by applying directly to the fund managers or enquiring through the NPIF website www.npif.co.uk from where they will be put in touch with the most appropriate manager. It is likely that some SMEs will also be referred to NPIF from various ERDF projects in operation such as the Growth Hubs.

4. Performance

The fund launched in late February 2017, with the first investments being made in March 2017. Cumulative performance to June 2018, NPIF has achieved the following:

- £59m invested in 285 SMEs;
- £47m of private sector investment levered;
- 47 number of new enterprises supported;
- 108 number of enterprises receiving non-financial support;
- 425 jobs created.

5. Case studies

5.1 Equity – Microbiosensor

- Established in 2012, Microbiosensor is a University of Manchester spin-out company which develops disposable point-of-care medical devices for the early diagnosis of microbial infection.
- The £700,000 equity investment, facilitated by Maven Equity Finance is a co-investment deal alongside Catapult Cheshire Life Sciences Fund.
- This unique feature enables patients and physicians to be alerted to escalating infections, allowing more timely and effective targeting of appropriate intervention.
- The investment will allow critical development and clinical trials phases which will bring the product to market.

5.2 Debt – AEV Limited

- Manufacture of varnishes, resins, compounds and insulating products for the electrical and electronic sectors.
- Since its establishment in 2009, the family company has grown to become a £3.8m turnover business, and is now targeting further expansion.
- The company has recently expanded its product range to service the electronic motor repair, transformer and motor manufacturing industries.
- The company received £350,000 Debt Finance from FW Capital.
- The investment has allowed the company to recruit 13 additional members of staff.

ENGLAND – FINANCE YORKSHIRE (2007-13)

1. Basic information

The Finance Yorkshire Regional Venture Capital and Loan Fund was set up in 2009 (operational in 2010), with a total investment of £113m comprising:

- £37m ERDF;
- £16m Department for Business Innovation and Skills;
- £45m European Investment Bank;
- £5m South Yorkshire Investment Fund (£1.4m from ERDF 2000-06 legacy funds); and
- £10m co-investment from the Round 6 of the Regional Growth Fund.

The Fund operated in Yorkshire and Humber.

2. Scope and objectives

Finance Yorkshire is a £113 million Venture Capital Loan Fund which provided access to finance for businesses in Yorkshire and Humber. The fund was established to address market failure in access to finance by providing debt and equity finance to Small and Medium Enterprises (SMEs) across Yorkshire & Humber, where the private sector was unwilling or unable to do so.

The Fund addressed market failure in the provision of long term, patient capital for businesses in conditions where banks and private investors were investing less and were more risk averse.

3. Operation

The project was managed by Finance Yorkshire and operated under the European JEREMIE initiative. The fund worked with other financial intermediaries, lenders and investors and comprised three types of products: seedcorn funding, business loans and equity finance. The funds were managed by fund managers, each regulated by the Financial Conduct Authority (FCA).

The following financial products were offered:

- Seedcorn funding designed to provide funding for start-up or early stage technology and knowledge based businesses innovative businesses with the potential for rapid growth and high return realisation. The fund invested up to £78,000 over the lifetime of the business through equity-base, tranched investments and up to £2m when syndicating with other funds.
- Business loans provided fixed rate loans between £15,000 and £250,000 to start up and existing businesses and in some instances were packaged with other forms of debt finance including bank finance. The range of investments included working capital, capital expenditure, investment in premises and international trade.
- Equity-linked finance provided equity finance from £100,000 up to £2m and mezzanine loans from £100,000 to £1m. The fund was targeted largely at businesses with the potential for growth. All types of investment were considered including finance for development capital or finance to support expansion plans.

4. Performance

The Fund invested circa £113m, and levered £293.4m of private sector investment which equates to £2.62 for every £1 invested. In excess of 8,500 new jobs were created and 5,400 safeguarded. Other indicators included:

- increased turnover in local businesses by an estimated £532 million;
- invested in 440 small and medium sized enterprises;
- 770 investments;
- the creation of a lasting legacy in the form of a c £40m legacy fund which will be re-invested in local businesses.

5. Case studies

5.1 Xeros, Rotherham- Seedcorn Fund investment totalling £1.45m

The Xeros cleaning system is a British innovation – a revolutionary way of cleaning clothes that delivers a wide variety of benefits to people, businesses and the environment. Xeros provides an alternative to traditional water-based and solvent-based laundering systems and garment cleaning technologies. Its patented technology, which is the result of pioneering research originally carried out at the Textile Design department of the University of Leeds, comprises a washing machine designed to release polymer beads during the washing cycle. Unlike water, Xeros beads are designed for cleaning. Their physical and chemical properties have been tuned to increase agitation in the wash and absorb soil. Combined with a proprietary detergent solution, the result is a cleaning medium that is even better than water. The Xeros system delivers these superior cleaning results by utilising at least 70% less water, 50% less heat and approximately 50% less detergent. The dirt and vagrant dye from soiled garments are attracted and absorbed by the beads, producing cleaner results than aqueous washing methods. The polymer beads have a lifespan of hundreds of washes before being collected and recycled. Xeros machines will deliver up to £1 billion savings to UK consumers per annum and could save the UK 400 million tonnes of fresh water per annum. The technology also generates a 22% net reduction in carbon footprint

The Xeros company was founded in 2006 to commercialise polymer cleaning technology and make it available for homes and businesses alike. The $100 billion global laundry industry is the initial market for the Xeros cleaning system. The technology entered the commercial laundry market in late 2012 with affirmation sites in the UK and the United States. The success of these pilot installations allowed Xeros to launch formally in June 2013 at the Clean Show in New Orleans. Xeros has successfully completed a £10 million fundraising from new and existing investors. The funding will be used to accelerate the roll-out of the Xeros commercial laundry cleaning system and finalise the development of a household system to replace conventional washing machines. The core markets are the UK, China / Southeast Asia and North America, where Xeros has established operations. The commercial strategy for these markets is being developed and led out of the UK from Xeros' R&D headquarters on the ERDF funded Advanced Manufacturing Park, Rotherham.

5.2 OptiBiotix - York

York-based OptiBiotix Health plc has won a major industry award for its weight loss additive SlimBiome. The life sciences company triumphed in the 'Best Functional Ingredient for Health and Wellbeing' category at the Food Matters Live awards held in London. On the same day, OptiBiotix was included in the first 'York Top 100 Businesses' and presented with a 'One to Watch' award by the organisations behind the listing, Make it York, York St John University and the York Press.

Finance Yorkshire invested more than £500,000 from its seedcorn fund to support OptiBiotix in the early stage development of products to tackle obesity, high cholesterol and diabetes. Its patented SlimBiome additive was formulated by scientists at Sheffield Hallam University and is available in GoFigure products. OptiBiotix founder and CEO Stephen O'Hara said: "These awards are a great achievement for our team. The Food Matters award recognises that our SlimBiome product is innovative and demonstrates a new approach to weight loss management. It allows you to control your calorie intake and stops you from feeling hungry. The One to Watch award is great recognition from colleagues and peers in York where the business started. When we formed the company we worked with Finance Yorkshire who invested in what was just an idea at the time. We have grown from a concept to become a listed company valued at £55-60 million in a very short period of time.

"We have completed most of the scientific development and are commercialising a large number of products. As the promise of the microbiome materialises into a wider range of products and we extend into overseas territories the scale of the opportunity enlarges allowing us to fully exploit the revenue generating potential of our products. Our aim is to grow to a £200m market cap company and take the health benefits of the microbiome to consumers around the world."

ENGLAND - SOUTH YORKSHIRE DEVELOPMENT FUND (2007-13)

1. Basic information

South Yorkshire Development Fund was set up in 2012. The fund total was £23.9 million, from the following sources:

- £15 million ERDF;
- £8.1million Growing Places Fund;
- £0.8 million DCLG (ERDF bank interest).

2. Scope and objectives

The South Yorkshire Development Fund is the JESSICA fund for Sheffield City Region. It made repayable investments in urban projects across South Yorkshire as part of the Sheffield City Region's integrated plan for sustainable economic growth.

The fund was designed to provide development and construction finance at a time when banks and other institutions are reluctant to lend. It seeks to address this market failure and deliver local growth and jobs, supporting the growth objectives of the Sheffield City Region.

The target market is infrastructure and property projects primarily in the office and industrial sectors across South Yorkshire.

3. Operation

The JESSICA Urban Development Fund is managed by CBRE Group.

4. Performance

- £23.586m has been invested
- £14.35m of private funding has been attracted
- In addition the following indicators have been achieved:
- 38,117 sq.m of new employment space (office/development);
- 2,247 Jobs accommodated (facilities to support/accommodate jobs);
- 8.23 hectares of brownfield land brought back into economic use.

5. Case studies

5.1 R-Evolution, Advanced Manufacturing Park, Rotherham

A South Yorkshire Development Fund loan to Harworth Estates supported the R-Evolution development at the Advanced Manufacturing Park (AMP) at Waverley (pictured below). This was the first speculative industrial development in Yorkshire for six years with the £2.7m loan from the SCR JESSICA Fund paying for infrastructure works and the construction of five new high spec units. Three of the five units were immediately taken up illustrating the latent demand for high-quality industrial space.

One business benefitting from the R-Evolution development is X-Cel Superturn, who has tripled the size of its operation at the Advanced Manufacturing Park. X-Cel produces precision-machines

components to the petrochemical, power generation, aerospace and construction industries and its rapid growth meant it quickly outgrown previous premises. The provision of the facilities has enabled the Company to realise its growth in the City Region.

5.2 3 St Paul's Place, Sheffield

A £3.25m loan through the South Yorkshire Development Fund and a further £6.8m ERDF grant secured a landmark agreement to construct 3 St Paul's Place, Sheffield, (pictured below), the final element in the pioneering £130 million Heart of the City project and the first speculative office building in Sheffield to be developed since the recession.

3 St Paul's Place comprises 76,000 sq. ft. of prime Grade A BREEAM Excellent office space with each of the ten floors providing 8,000 sq. ft. offering offices suites from 2,000 sq. ft.

The development will target the growing business professional and financial services sector in Sheffield as part of developing a dynamic and diverse economy.

The overall development has created a high quality central business district in the heart of Sheffield and marks the revival of investor confidence in Sheffield and the wider City Region, acting as a catalyst for further growth and development.

ENGLAND - NORTH WEST URBAN INVESTMENT FUND (2007-13)

1. Basic information

The North West Urban Investment Fund (NWUIF) was established as a JESSICA initiative in 2009. The fund was established by the North West Development Agency (NWDA) and transferred to the Homes and Communities Agency (HCA) after the NWDA was closed. The European Investment Bank (EIB) was appointed as Holding Fund manager. The EIB procured two Urban Development Funds:

- North West Evergreen – covering Greater Manchester, Lancashire and Cheshire;
- Chrysalis – covering Merseyside.

The Holding Fund was originally capitalised with £50m ERDF from the 2007-2013 Programme. The ERDF investment was matched with a combination of cash and land to create a £100m fund. The land was progressively substituted with match-funding of equivalent value secured at the level of the Final Recipients. An additional £10m ERDF was invested in the Fund in late 2014 which would be matched by investment secured at the level of the Final Recipient.

2. Scope and objectives

The Fund was established following the financial crisis to address clear market failures in the availability of commercial finance for property development in the North West of England. Developers were experiencing significant challenges in securing investment for speculative developments without a significant level of pre-lets being in place or offering lenders increased and often onerous security. The Fund would invest in Urban Projects which:

- Supported urban regeneration and stimulated private sector investment;
- Created high-value employment;
- Invested in science, research and innovation;
- Supported strong and diverse town centres;
- Promoted a stronger and sustainable industrial base;
- Brought forward sustainable sites ready for development.

The Fund would only support Final Recipients who were delivering commercial developments.

The NWDA/HCA and EIB also agreed a State Aid notification with the Commission which would allow, in certain circumstances, sub-commercial investments to be offered.

3. Operation

Whilst the Fund had the opportunity to provide both loan and equity investments, all of the investments made were loans.

The Evergreen Fund is managed by CBRE. The public sector partners play a significant role in driving the project pipeline which the Fund Manager then takes forward.

The Chrysalis Fund was managed by Igloo. The interaction with the market is different as the Fund Manager is responsible for going out and identifying proposals and working closely with the promoter to develop the scheme and structure a deal.

Both Fund Managers actively promote the fund at international events such as MIPIM.

4. Performance

The North West Evergreen Fund covered Greater Manchester, Cheshire and Lancashire. It was capitalised with £59.34m of investment. By the end of the investment period in June 2016 the Fund has fully invested its allocation. Ekos were appointed to undertake an interim evaluation in October 2016 and identified the following set of indicators:

- £185m of private sector investment levered;
- £70m of public sector investment levered;
- 147,758 sqm of commercial floorspace developed/refurbished;
- 20 hectares of brownfield land redeveloped;
- 7,380 jobs created – a forecast using HCA employment densities.

To date the Fund has made £110m of investments, generated £58.792m of capital returns and £3.477m of repaid interest.

5. Case studies

5.1 Citylabs

- Specialist research facility for biomedical SMEs – located on Manchester's Oxford Road corridor;
- Refurbishment of Grade II listed Royal Eye Hospital with new build extension;
- £20m project cost;
- £4.75m debt from Evergreen – matched pari-passu with Lloyds;
- Fully let facility.

5.2 XYZ Building

- Speculative commercial development located in Spinningfields – Manchester's central business district;
- Delivering 13,500 square metres of Grade 'A' office space;
- Evergreen and Growing Places Fund provided senior debt – mezzanine loan provided by third party;
- Building bought by a pension fund and the loan has been repaid.

ENGLAND – LOW CARBON INNOVATION FUND (2007-13)

1. Basic information

The Low Carbon Innovation Fund (LCIF) was open for investments between October 2010 and December 2015. The fund operates in the East of England, and funding sources included ERDF £20.5m, private co-investment of £48.9m, bringing a total of £69m.

2. Scope and objectives

The Low Carbon Innovation Fund (LCIF) is a regional venture capital fund to boost the growth of small businesses introducing new products, processes and methods which reduce our impact on the environment.

LCIF aims to address market failures and imperfections in the supply of finance to SMEs introducing new products, processes and methods which reduce our impact on the environment.

LCIF aims to plug funding gaps experienced by young and innovative small and medium enterprises (SMEs).

3. Operation

LCIF is split into two funds:

- the Main Fund, which offered initial investments of equity of between £150,000 and £1m, and
- the Smaller Investment Scheme (SIS), which invested lower amounts in the form of loans convertible to equity, mainly in the range of £35,000 to £75,000. This was introduced in late 2013 to address a distinct gap in the finance market, offering a means for smaller companies to attract risk capital without giving up equity at the outset.

LCIF is managed by the University of East Anglia, through its Adapt Low Carbon Group, act as Fund Operators and Turquoise International as Fund Managers.

LCIF is a 'co-investment' fund, where public monies are invested alongside private sector investors, company by company. All investors participate on an equal footing, sharing risks accordingly.

4. Performance

- £69m has been invested
- Private funding of £48.9m has been attracted
- 73 jobs created / 169 jobs safeguarded
- There have been 5 exits and 6 company failures, leaving 32 businesses under management in the portfolio.

5. Case Study

5.1 Breathing Buildings Ltd - Cambridge

Breathing Buildings (www.breathingbuildings.com) is a manufacturer of natural ventilation systems for buildings.

The Company's 'e-stack' technology provides extremely energy-efficient ventilation, reducing the building's carbon footprint, helping to save money on power bills and giving better air quality so that the occupants can work more efficiently.

Since Breathing Buildings was formed as a spin out company from the University of Cambridge in 2006, the Company has installed systems in over 100 different buildings across the UK, ranging from retail projects to local primary schools. There is also a growing pipeline of new projects for which Breathing Buildings is actively engaged in supplying e-stack systems.

Breathing Buildings has strong links with the University of Cambridge research team at the BP Institute and has won several awards including being honoured as a top 100 sustainable solution at Rio+20 and as a winner of the 2012 Berti Green Accelerator.

Breathing Buildings first approached the Low Carbon Innovation Fund (LCIF) in March 2012, as part of a fundraising round to strengthen the Company's sales team and provide working capital to grow the business. LCIF were impressed both by the e-stack product, which was considered to be market leading, but also by the management team headed up by Shaun Fitzgerald (MD) and David Wilkinson (FD). The Company is also distinct from its competitors in that it has a highly qualified team of sales engineers including several with PhDs from Cambridge University.

The £1,000,000 investment was led by LCIF, with an investment of £400,000 ERDF derived monies. A syndicate of investors including MMC Ventures and Berti Investments put in private sector investment totalling £600,000.

LCIF provided a non-executive Director (NED) to the Board of Breathing Buildings, who contributed to the growth plans and execution of the business providing regular updates and monitoring information to the LCIF portfolio management team and conveying the Funds' comments, ideas and connections back to the company Board.

The investment helped create 10 jobs and safeguarded a further 14. Since the investment a further 38 jobs have been created.

To date, six successful innovation related initiatives have been delivered by the company and three successful environmental related initiatives which have been assessed for carbon savings. Up to 2016, the products sold by the company saved 1,830,351 kg CO2, with sales projections up to 2020 looking to save 33,657,596 kg CO2.

LCIF exited this investment in December 2016 providing a multiple return for re-investment of legacy funds to new opportunities.

ENGLAND - LONDON GREEN FUND (2007-13)

1. Basic information

The London Green Fund (LGF) is a £110m fund established to help meet the Mayor of London's environmental targets, particularly to reduce CO_2. It was launched in October 2009 by the Mayor of London and was made up of £60m from ERDF, £32m from the Greater London Authority (GLA), and £18m from the London Waste and Recycling Board (LWARB).

Investments from the LGF were only for London-based projects.

2. Scope and objectives

London is a densely populated city and faces significant environmental challenges in the future as projected economic and population growth exerts further pressure on already strained resources. To achieve sustainable development, the Mayor of London has set targets to cut CO_2 emissions; reduce waste to landfill; and increase energy supplied from decentralised systems.

The inability to secure funding is a key barrier to establishing low carbon infrastructure projects, particularly those of small or mid-size, that is needed to achieve these environments targets. This was borne out by a feasibility study commissioned to inform the development of the LGF. The study found that imperfect market conditions made the type of environmental projects envisaged too risky for the private sector. This was due to uncertain market demand, new or emerging technology, or an unusually long lead time until returns are generated.

The LGF was therefore established to use limited public resources to attract and unlock private capital to boost the scale and pace of delivery of low carbon projects to meet the mayoral targets. Specifically, the LGF provided investment finance for waste management, decentralised energy and energy efficiency projects.

3. Operation

The LGF was initially managed by the European Investment Bank (EIB) on behalf of the GLA and LWARB but it is now managed by the GLA. It was set up using a 'holding fund model' and therefore did not invest directly in projects. Instead, it made allocations to three smaller 'urban development funds' (UDFs), which are independently managed by professional fund managers. The three UDFs established under the LGF are:

Foresight Environmental Fund (FEF) – this was launched in March 2011 with £35m from LGF. The fund manager, Foresight Group LLP, leveraged £25m from the private investors, including Pension Funds, which created a £60m pot for investment. FEF provided equity finance for waste management facilities.

London Energy Efficiency Fund (LEEF) – it commenced operation in August 2011 and is managed by Amber Infrastructure Ltd. The LGF committed £60m to LEEF and Amber secured an additional £50m commitment from the Royal Bank of Scotland. LEEF provided loans for energy efficiency and decentralised energy projects. We built on the success of LEEF to create the new £500m Mayor of London's Energy Efficiency Fund (MEEF) during the 2014-20 programming period.

Greener Social Housing Fund (GSHF) – with investment of £12m from the LGF, this fund provided loan finance for energy efficiency measures for existing social housing. It is managed by The Housing Finance Corporation.

Applications from final recipients were submitted directly to the UDF managers who were responsible for taking decisions on which projects are funded, based on the investment policy agreed by the LGF Investment Board. The UDFs are now fully invested but the fund managers will continue to manage the portfolio of projects until the end of the UDFs' lifespan.

The LGF Investment Board provided overall direction for the LGF whereas the UDFs' Advisory Committees monitored deal flows and reviewed the pipeline of eligible projects. Each UDF manager provides regularly monitoring reports on the performance of the fund.

4. Performance

Combined, all three UDFs have invested in 19 projects, valuing just over £0.5bn, and once all construction works are completed they should achieve:

- annual CO_2 savings of nearly 290,000 tonnes;
- 440,000 tonnes of waste diverted from landfill per annum;
- energy savings of 19,500,000 kWh per annum; and
- creation of nearly 1,800 jobs

5. Case study

5.1 St Georges Hospital

LEEF finance supported the installation of low carbon technologies identified in the 15-year energy performance contract (EPC). This provided guaranteed savings to the NHS Trust and allowed St. Georges, one of the UK's largest teaching hospitals, to put savings towards critical medical care, training and research facilities.

The St Georges project is one of the largest EPC health projects in the UK, and includes a new CHP plant, a re-modelled energy centre and broad energy efficiency retrofit technologies. The investment will deliver the following outcomes:

- Energy spend reduced by 25%; a net saving of over £1.3m per annum to the NHS Trust during its 15-year life;
- Savings of a forecast 7,000 tonnes of carbon (equivalent to removing over 6,000 cars from the road); and
- reducing energy usage by 6,500,000 kWh

ENGLAND – SOUTH YORKSHIRE INVESTMENT FUND (2000-06)

1. Basic information

The South Yorkshire Investment Fund was set up in 2001. The fund total of £48.9m comprised:

- £25.4m ERDF
- £1.6m Public
- £21.9m Private

2. Scope and objectives

South Yorkshire Investment Fund provided seedcorn, loan and equity linked investments to help small and medium businesses meet the gaps in funding they need for development or acquisitions.

Identified gaps in funding businesses need for development or growth, where conventional sources of finance are insufficient or unavailable.

3. Operation

The Fund provided three main products:

- Seedcorn Finance, investment from £50k to £500k to back early stage technology-based ventures;
- Business Loans, unsecured loans ranging from £15k to £50k for early stage businesses, and from £15k to £150k for established and profitable businesses;
- Equity Linked Investments (Development and Capital Funds), equity linked investments from £100k to £1m and mezzanine loans from £150k to £1.5m.

South Yorkshire Investment Fund, created as part of the ERDF Objective 1 programme, was a private and public sector business finance provider. The ERDF and Yorkshire Forward (The Government's Regional Development Agency) were investors in the Fund.

4. Performance

- £48.9m invested
- £21.9m attracted into the Investment Capital (not private sector leverage through investment deals)
- Over 9,000 jobs were created or safeguarded
- Over 2,500 businesses received assistance
- Over 600 investments
- £14.9m cash Legacy ready to be invested in a new fund
- £1.4m of ERDF Legacy already invested as part of a £5m contribution to the 2007-2013 Finance Yorkshire ERDF fund.

5. Case study

5.1 Atomising Systems, Sheffield

Atomising Systems, is a family business established by John Dunkley in 1992, create the technology to convert metal into powder for the automotive industry. The company has seen turnover increase from £500,000 in 2004 to more than £3m by 2008 and become the leading supplier of atomising technology and equipment to the global metal powder industry.

Atomising Systems, has grown rapidly in recent years and now employ 20 people to support the global development of the business. The company required financial support to enable them to complete a £1million deal with a client in Germany.

Exporting has been key to the growth of the business, with Atomising Systems developing a client base around the world, including the Far East. Atomising Systems needed to spend money in advance to create the hardware and ship the technology to Germany. Without the finance they would have found it difficult to complete the project.

South Yorkshire Investment Fund provided Atomising Systems with a £100,000 loan to support the businesses working capital to finance the contract with the European firm.

The company turnover has now grown to £8.4m, and the number of employees has increased to 63. The company is now managed by the manager/owners son, demonstrating the sustainability of investee companies.

SCOTLAND – THE SME HOLDING FUND (2014-20)

1. Basic information

The SME Holding Fund is a fund-of funds part financed by the ERDF element of the Scottish 2014-20 ESIF Programmes. The Fund was established in 2015, operates Scotland-wide, and is managed by a specialist unit within Scottish Government, with an initial capitalisation of £100 million (£40m ERDF and £60m co-finance provided by the sub fund managers). The Fund has recently been re-capitalised at £75m (£30m ERDF and £45m co-finance provided by Scottish Government) as part of the Scottish Growth Scheme, and the Fund manager has started a procurement process to appoint sub fund managers, with contracts scheduled to commence August 2018. Contracts will initially be for up to nine years, comprising a three-year investment phase followed by up to six years realisations phase, with the potential to extend the investment phase by up to two years. All realisations will accrue to the Holding Fund for re-investment in same or similar funds, assuming market conditions prevailing at the time justify public sector intervention.

2. Scope and objectives

The SME Holding Fund delivers Scottish Government policy to address market failures and imperfections in the supply of finance to SMEs with growth and/or export potential by appointing sub fund managers (delivery agents) with demonstrable experience and track record. These market failures were identified by the SME Holding Fund manager via an ex-ante assessment of financial instruments, published early 2015, which highlighted the need for Scottish Government to address market failures/imperfections in the supply of microfinance, debt, and early stage equity for SMEs with growth and/or export ambitions as follows:

- Microfinance – lending in the range up to £25,000 for businesses employing less than 10 staff;
- Debt – SME lending in the ranges: £25,000 to £100,000; and £100,000 to £1 million;
- Equity – SME investment in the range £20,000 to £2 million within a deal ceiling of up to £10 million.

The Fund does not support sector specific sub funds – the emphasis is on financing SME growth ambitions.

In addition to investing in sub funds and in order to augment Scottish Government policy to increase the supply of money to growing SMEs, the Fund also provides grant support to part-finance a Trade Body in order to increase the capacity and capability of Scotland's informal investment market (business angels and angel syndicates).

3. Operation

Four financial instruments are currently offered by the SME Holding Fund via three sub fund managers:

- Microfinance is provided through the £6 million Scottish Microfinance Fund which is managed by DSL Business Finance Limited, a Community Development Financial Institution and a subsidiary of Community Enterprise in Strathclyde;
- Lending in the range £25,000 to £100,000 is provided through the £8 million Business Loans Scotland fund, and managed by a company with the same name. Business Loans Scotland's

members comprise Scotland's Local Authorities and builds on the experience of the previously ERDF-supported West of Scotland Loans Fund and the East of Scotland Investment Fund;

- Early stage equity is provided through the £75 million Scottish Co-investment Fund and the Scottish Venture Fund, both managed by the Scottish Investment Bank team, the investment division of Scottish Enterprise. In the Highlands and Islands region, Scottish Enterprise works in partnership with Highlands and Islands Enterprise.

The microfinance and debt funds have been running since September 2016, with the two equity instruments investing since July 2015. All four financial instruments lend/invest on a fully commercial basis (and on pari passu terms in the case of the Scottish Co-investment Fund), with the private sector providing at least 50 percent of the funding package at individual deal level. Recipients access funding by applying directly to the sub fund managers, with the exception of the Scottish Co-investment Fund when recipients apply directly to the private sector Co-investment Partners who make the investment decision on behalf of Scottish Enterprise.

The Trade Body contract was awarded to LINC (Scotland) and has been running since July 2015. LINC is the national association for business angels in Scotland, which currently has 18 member groups and will help launch at least five more over the next two years. The Scottish business angel marketplace is recognised as amongst the most developed in Europe: for example, the most recently available data (2016) shows that total investment in the Scottish risk capital market was £189m, the highest point for over a decade. Angel groups, most of whom are LINC members, were responsible for £89m of the total investment for 2016.

4. Performance

During the period July 2015 to December 2017, and as a result of the four delivery agents (three sub fund managers and the trade body) investment activity, 330 companies received £223 million (funds invested plus private sector leverage), with 1,005 jobs created. With 12 months remaining to Fund closure of its initial phase, the Holding Fund is expected to achieve - and in most cases exceed - all of its targets. Other targets include: 'number of SMEs introducing new to the market products', 'number of innovative active SMEs', 'additional leverage of Business Expenditure on R&D', and 'number of new angel groups created'. Performance against these will be reported in full at a later date and as part of the Fund Closure report.

5. Case studies

5.1 Lending – Water and Pipeline Services Limited (WPSL)

WPSL has been trading since 2012 and provides specialist construction and pipeline services to the blue chip customers mainly in the gas, water, electric and civil engineering sectors. The company received a loan of £100,000 to invest in a suction excavator to improve productivity, safety and enhance competitiveness, making WPSL the only Scottish company to have this equipment. The company employs 35 staff and expect to double that number as a result of the expansion that will be generated by new contracts secured.

5.2 Equity – Vert Rotors Limited

Vert Rotors was established in 2013 and produces the world's smallest, most powerful, air compressors designed for aerospace, medical and other applications where vibration and noise are not acceptable, and dimensions and weight are mission-critical. The company's design and CNC manufacturing facility is based in Edinburgh. Vert Rotors secured £1.5m in funding from the Scottish Co-investment Fund, angel syndicate Equity Gap, US syndicate Aero-Den, and venture capital firm Par Equity to scale up manufacturing and help make the transition from R&D to major commercial contracts. As a consequence, the company is forecasting sales growth and five new jobs to be created over the next two years.

5.3 Microfinance – Angel Share Glass Limited

The company has been trading since 2013 and manufactures 'hand blown' glass products primarily for the whisky industry in Scotland. The company completed a re-fit of a new production area with a total funding package of £25,000 to enable the business to expand and as a consequence, two new jobs were created and four safeguarded.

5.4 Trade Body (LINC Scotland) investment activity – Scottish Bioenergy

The company has developed a natural blue extract from algae (phycocyanin) that is used as an internationally approved food colorant, powerful anti-oxidant, and anti-inflammatory. An investment of over £500,000 to allow the company to scale up was led by two of LINC's syndicate members: Kelvin Capital and Investing Women. The market for phycocyanin is growing rapidly with limited worldwide supply. With its IP established, Scottish Bioenergy is now in a position to scale up and expand its operations in a global marketplace.

WALES - THE WALES BUSINESS FUND (2014-20) AND JEREMIE WALES (2007-13)

1. Background

EU ESIF funded financial instruments have allowed Wales to build, over a long period, the expertise and experience to successfully deliver financial instruments. This has proved the ground for a current suite of financial instruments (FIs) managed by the Development Bank of Wales exceeding £550m, which includes the EU financed Wales Business Fund.

Probably the most important EU-funded FI for Wales was the £157m Wales JEREMIE Fund which was set up in April 2009 and managed by Finance Wales (now Development Bank of Wales). The fund comprised £64m ERDF matched with a £75m loan from the European Investment Bank (EIB) and £18m from the Welsh Government. The fund provided finance under Priority 1 – 'Knowledge and innovation for growth' and Priority 2 – 'Business competitiveness and growth', of the 2007-13 ERDF Operational Programmes, across all of Wales.

Its successor, the Wales Business Fund, comprises £111m ERDF in four operations, together with £30m from Welsh Government plus £30m legacy generated from the Wales JEREMIE Fund which will be invested once the ERDF operations are complete. Targeted at generating £115m deal-level match, the Wales Business Fund is a pan-Wales fund administered by the Development Bank of Wales PLC as an Entrusted Entity. DBW Investments were awarded the contract to deliver the investments as 'fund managers' following a fully open and competitive OJEU tender.

2. Scope and objectives

Research from Economic Intelligence Wales (EIW) shows that the Welsh economy is made up of 99 percent SMEs, and that 74 percent of Welsh SMEs (in line with SMEs across the UK) are grouped into the 'Caution' and 'High risk' credit risk categories. This has resulted in Welsh SMEs being unable to access finance, creating the market gap.

The Wales JEREMIE Fund's objective was to provide commercially-managed, sector generalist finance. The £157m was invested in the form of equity, loans and mezzanine, focused into technology investments, micro-loans to micro-businesses, risk capital, co-investments and standard loans. Wales JEREMIE fund investments were commercial, marking a move by the Welsh Government to provide more sustainable forms of finance other than grants, and were made on the basis of 'money, with management'. The experience gained in applying for and managing commercial debt and equity investment helps the supported businesses to professionalise and enhance their competitiveness.

From the experience and expertise built up around investing the Wales JEREMIE fund, a suite of FIs was created to complement the fund and build a funding escalator to support businesses through all investment stages. In 2011, the £40m Wales SME Fund was created to ease pressure on JEREMIE and provide an active fund between the end of the investment period until the replacement for JEREMIE (the Wales Business Fund) was operational. This fund consisted £20m Welsh Government funding and £20m private sector loan. Through 135 investments, split between equity, mezzanine and loans, it levered £25m private sector investment and created and safeguarded nearly 2,900 jobs.

Following a Welsh Government Micro Business review in 2013 the Micro-business Loan Fund was created, complementing the Wales JEREMIE Fund microfinance sub-fund. Now reaching £18m, the

fund provides loans between £1,000 and £50,000. As of [end March 2018] the fund had invested £13.3m, leveraged £11.3m and created and safeguarded 2,800 jobs. A proportion of these jobs are attributed to the 57 start-ups the fund supported. Also in 2013, the £10m Wales Property Fund was launched to support small builders in Wales to build residential and some commercial property. It provided loans between £150,000 to £4m. Because the funding cycle is short it has recycled the loans enabling it to lend £32.2m. The Fund is on track to pay back more than the £10m initial investment to the Welsh Government. The success of this FI, particularly its ability to deliver affordable housing, has led to an additional £30m being committed to the Fund in 2017. In addition a £40m fund to unlock stalled sites which can then be developed for residential housing has been launched and through recycling it will aim to invest £160m.

The ability to recycle funds provides increased value and greater impact for the money invested but is not appropriate for all funds. To date, in addition to the property funds, Wales has two other active funds that include an element of recycling. These are the £25m Wales Capital Growth and the £130m Wales Flexible Investment funds - both contain elements of recycling. For example, the £25m Wales Capital Growth fund, aimed at shorter term working capital financing, will invest until 2021/2022 but has already invested £33.2m. The sector generalist £130m Wales Flexible Investment fund, set up in 2017 to complement the Wales Business Fund and provide continuity of finance through the EU withdrawal period, will utilise £40m of legacy generated from the suite of FIs and recycle a £30m element of its committed capital.

To complement Wales JEREMIE Fund's risk capital and technology venture sub-funds and build on the expertise accumulating in delivering these, a £6m Wales Technology Seed and £9.5m Wales Technology Venture Investment Funds were created in 2014 and 2015 respectively. Up to the end of March 2018, loans and equity investments between £50,000 and £2m from the Technology Venture Fund have levered £38.6m from the private sector. Equity investments between £50,000 and £150,000 from the Tech Seed Fund created and safeguarded 546 jobs, 803 percent of its target. The Tech Seed fund has secured an additional £20m for investment.

In 2016, The Development Bank of Wales developed the £25m Wales Management Succession Fund to make loans and equity investments between £500,000 and £3m to support management teams take businesses into the next life cycle. Wales also began administering a £5m Wales Local Energy Fund to promote smaller scale renewables.

In expanding the suite of FIs further, the £8m Angel Co-investment Fund was launched in 2018. This makes Wales a more attractive place to angel investors and will co-invest in Welsh businesses in investment between £25,000 and £250,000 sourced from Angel syndicates. Co-investment is not the only priority of this fund; Angel syndication and concentration in Wales and further support for innovation based companies are also performance measures.

3. Operation

Wales JEREMIE Fund and the suite of FIs are managed by an expanding fund management operation. The £171m Wales Business Fund manager was appointed through a fully open and competitive OJEU tender. The remaining funds are operated under an entrusted entity basis by the Development Bank.

Potential recipients apply directly to the fund managers through an online application or directly through the Investment Executives. The Development Bank has HR, marketing, finance, compliance, monitoring and governance functions which support the fund management activities.

4. Performance

The Wales JEREMIE fund was fully invested at the end of September 2015. Its EIB loan has now been fully repaid in line with the original schedule. The fund invested in over 600 SMEs creating 4,459 jobs and safeguarded 7,317 jobs, and levered in £202m of private sector investment. This is a significant proportion of the £0.5bn of investments made by the organisation, leveraging an additional £0.7bn investment and created and safeguarded over 49,000 jobs since 2001.

Equity investments from the Wales JEREMIE Fund alone, over £70m, levered over £126m from the private sector and created and safeguarded over 1,900 jobs. With the additional amounts of subsequent equity investments made through Development Bank of Wales's funds alone, Cardiff is now a defined by the British Business Bank as an 'equity hotspot'.

5. Case studies

5.1 North Wales

A £750,000 equity and debt investment from the Wales JEREMIE Fund attracted a further £350,000 in additional private investment (private sector leverage) to finance a management buy-out of North Wales-based Wholebake. The investment created and safeguarded 89 jobs at the company's sites in Wrexham and Denbighshire and also achieved the largest return to date on an investment from the Wales JEREMIE Fund.

Award-winning ADC Biotechnology, which is headquartered in St Asaph, received equity investments totalling £910,000 from the Wales JEREMIE Fund, attracting additional private investment. The company is currently implementing the £6.5m plan to build a facility to manufacture anti-cancer drugs in St Asaph, scheduled to be operational in September 2018, and has recently received additional private sector investment to further their U.S. growth plans.

5.2 Mid Wales

Invertek Drives created 71 jobs and safeguarded 76 jobs in Powys with the backing of the Wales JEREMIE Fund in 2010. The award-winning company employs 190 people worldwide, including more than 150 at its Welshpool headquarters, and has nearly doubled its turnover to £31 million in the last five years. A new 5,000m² factory in Welshpool, which is scheduled for completion in 2018, will increase the production capacity of this 'Made in the UK' award winner.

5.3 South Wales

Schoop received a £25,000 micro loan from the Wales JEREMIE Fund to fund the start-up costs of the Schoop smartphone app. Since its launch the app, which is available in a number of different languages, has been adopted by over 150 UK schools improving communication with parents and is also being used by charities, churches, public bodies and other organisations.

Six years after receiving a £150,000 equity investment from the Wales JEREMIE Fund as part of a co-investment involving other technology funders, Diurnal achieved a successful £30m listing on AIM. Headquartered in Cardiff, the company has raised investment totalling £67m in the last 18 months and created 5 high-calibre jobs to date.

NORTHERN IRELAND – THE ACCESS TO FINANCE SUITE OF FUNDS (2014-20)

1. Basic information

The Access to Finance suite of funds is part financed by the European Regional Development Fund under the EU Investment for Growth and Jobs Programme 2014-2020. The Access to Finance Initiative was set-up in 2010 and developed in response to the Barroso proposal for the use of Joint European Resources for Micro to Medium Enterprises. It utilises some of the JEREMIE architecture, and governance is provided by the Invest NI Board, through a Board Working Group.

There are six funds in total, providing c£185m of finance, five of which are part-financed by ERDF – Techstart NI, Co-Fund NI, Co-Fund NI II, and two development funds managed by Kernel Capital and Crescent Capital. The funds are either debt or equity based and are designed to support the growth of SMEs substantially based in Northern Ireland. Growth Loan Fund II, expected to commence in September 2018, will also be part-funded by ERDF.

Co-Fund NI, Co-Fund NI II, and the Development Funds are financed through 60% ERDF with a minimum of 50% private match at deal or fund level. The techstart funds can also have baseline match as well as private match at deal level.

2. Scope and objectives

Northern Ireland is predominantly an SME economy. Market failures have meant that N Ireland businesses, particularly high growth SMEs, have not been able to access the finance needed to grow. Northern Ireland represents a peripheral market and one that is generalist in nature and therefore unattractive to private investors in venture capital.

The objective of the Access to Finance strategy is to provide a managed approach for access to finance solutions where there is a need for government intervention to stimulate economic development and to enhance the competitiveness of SMEs.

The Access to Finance initiative addresses market failure and injects additional capital across a range of sectors into the local market with a focus on innovation and growth. As well as providing access to finance, venture capitalists can input essential business support for companies including leadership development, in-market targeting, strategic direction, Board representation and acquisition targeting.

The funds are designed to support SMEs of different sizes, or at different stages of growth or development. They are not sector specific.

Techstart NI, awarded in 2014, includes three equity funds aimed at addressing the funding gap encountered by entrepreneurial seed and early stage businesses. Its target markets are Northern Ireland technology based SMEs that demonstrate high growth potential and potential university spin-outs. It includes a £17m SME equity fund investing in the range of £50k-£250k and two university funds of £1.5m each providing capital to university spin-outs with initial investments in the range of £50k-£250k. Follow-on investments can also be made.

Co-Fund NI II, awarded in 2017, follows on from Co-Fund NI and is a £50m fund for SMEs that co-invests alongside business angels and other private investors. The fund provides co-investment in

deals typically valued between £150k and £1m, at a ratio of up to 50%. The fund is aimed at addressing the funding gap encountered by entrepreneurial seed and early stage businesses, and at stimulating more private investment in NI companies which demonstrate high growth potential and have innovative and export focused products. Co-Fund invests on a pari passu basis with the private sector providing at least 50% of the investment. Around £18m of funding is provided by Invest NI with the balance coming from private investors at deal level.

Crescent III and Bank of Ireland Kernel Capital Growth Fund (NI), awarded in 2013, are two venture capital funds designed to help SMEs accelerate their growth. Invest NI has committed £15m of funding to each fund with £15m also provided by private investors. The deal size range is £450k to £3m over a number of investment rounds. The development funds invest in high growth potential SMEs which have the potential to compete in global markets.

Growth Loan Fund II will be a £22m revolving loan fund for SMEs that can demonstrate sales and profitability growth, or strong growth potential with loans in the £100k to £500k range. Growth Loan Fund I finishes its investment period in September 2018 and it is anticipated that Growth Loan Fund II will follow-on in the market at that time.

3. Operation

Each fund is managed by an independent, experienced fund manager appointed via a competitive OJEU tender. Potential recipients apply directly to the fund manager. Applications are subject to a series of eligibility checks including due diligence and investment approval processes.

The fund managers undertake a comprehensive range of marketing activities to promote their funds across all the regions in Northern Ireland.

4. Performance

To 31 March 2018, the Access to Finance funds, supported under the current ERDF programme, have invested a total of £75 million, including £46m leverage, and contributed to the creation of 275 jobs. Exits to date total £2.65m.

Co-Fund NI's investment period ran from June 2011 to May 2017 and the Fund was ERDF supported. Through 118 investments, the Fund invested a total of £13m into 37 companies. Private sector leverage totalled £33.1m. To date, 3 companies have exited or floated on the stock market.

5. Case studies

5.1 Co-Fund NI - Fusion Antibodies plc

Fusion Antibodies is a Contract Research Organisation established in 2001 that offers a range of antibody engineering services for all stages of therapeutic and diagnostic antibody development. The company specialises in the production of monoclonal antibodies, antibody engineering, antibody humanization, antibody sequencing and antibody expression.

From May 2012 to October 2014, Co-Fund NI, alongside private sector leverage, invested over £815k in Fusion Antibodies. This funding facilitated export and employment growth prior to the company being listed on the London AIM market in December 2017.

5.2 Co-Fund NI – Ingresso Group Ltd

Ingresso, formed in January 2011, is a technology company which has built a global distribution system for the entertainment industry. It owns and operate a middleware platform called TicketSwitch that connects directly to multiple, non-compatible ticketing platforms, allowing low cost distribution of time-and-date-specific tickets in a seamless, dynamic environment. It also offers an API and a white label website that is used to power a number of sites, in particular those selling global content and London theatre tickets.

From May 2012 to October 2014, Co-Fund NI, alongside private sector leverage, invested approximately £1.88m in Ingresso.

Ingresso exited in March 2017 following a successful bid for the Company by Accesso.

5.3 Development Fund - Crescent - Shnuggle

Shnuggle, established in 2009, designs clever baby products to make life easier for parents and safer for babies. In July 2017, Crescent Capital invested £450k. The principal product at the time of investment was its design-patented infant bathtub. The company continues to expand its range of products. Since the investment the company has employed additional staff and has had significant export sales growth.

5.4 Development Fund - Kernel – Cirdan

Cirdan Imaging Ltd develops novel hardware and software systems for sale to the pathology and laboratory market. Kernel initially invested in Cirdan in January 2015 and to date the Fund has invested £2.3m with additional private leverage of £2.2m. Cirdan continues to develop their export markets with significant increase in forecast sales. Staff numbers have increased by over 50% since the initial investment.

5.5. Techstart SME Fund and QUB Fund – Titan IC Systems Limited

Titan IC provides Security Analytics Acceleration for Network appliances and products used in a broad range of market sectors, including Next Generation Wirewalls, Smart network Interface cards, Network Adaptors and Acceleration cards used as network and data centres. Techstart first invested in January 2015 and has invested a total of £700k, including £200k in an investment round of £1.9m, led by Mellanox Inc in November 2017. The company continues to progress its sales pipeline with a number of technical evaluations beginning to mature to commercial licensing opportunities.

EPRC

EUROPEAN POLICIES RESEARCH CENTRE

University of Strathclyde Glasgow

EPRC RESEARCH ON FINANCIAL INSTRUMENTS

The European Policies Research Centre (EPRC) is an independent research institute in the School of Government & Public Policy at the University of Strathclyde in Glasgow. Its research spans all the countries of Western, Central and Eastern Europe, involving research at European, national and regional scales. Research covers six main themes:

- regional development and regional policy in Europe
- EU Cohesion policy
- European territorial cooperation
- EU Competition policy, State aid and subsidy discipline
- policy governance
- financial instruments in economic development policy

Recent EPRC research on financial instruments

Over the past seven years, EPRC has developed a programme of research and knowledge exchange on financial instrument design and implementation in different policy contexts. Recent research includes:

- Financial Instruments and Territorial Cohesion (for ESPON, with TU Delft, Nordregio and Red2Red Consultores)
- Financial instruments in practice: uptake and limitations (for OECD)
- Financial instruments for energy efficiency and renewable energy (for the European Parliament)
- Improving the take-up and effectiveness of financial instruments under the ERDF, Cohesion Fund, ESF and EMFF (for DG Regio, European Commission)
- Ex ante assessment of FIs under EAFRD in England (for DEFRA, led by EKOS Ltd)

Selected EPRC publications on financial instruments

Financial instruments in practice: uptake and limitations (2018) EC-OECD seminar series on designing better economic development policies for regions and cities, OECD, Paris (Fiona Wishlade and Rona Michie) available at: http://www.oecd.org/cfe/regional-policy/Wishlade_Michie_Financial-Instruments-in-Practice.pdf

Financial instruments for energy efficiency and renewable energy (2017) Report to the European Parliament (Fiona Wishlade, Rona Michie, Philip Vernon) http://www.europarl.europa.eu/RegData/etudes/STUD/2017/601992/IPOL_STU(2017)601992_EN.pdf

Improving the take-up and effectiveness of financial instruments (2017) Report to DG Regio, European Commission (Fiona Wishlade, Rona Michie, Patricia Robertson and Philip Vernon) http://ec.europa.eu/regional_policy/en/information/publications/studies/2017/improving-the-take-up-and-effectiveness-of-financial-instruments

Ex post evaluation of cohesion policy programmes 2007-13, Work package 3: Financial instruments for enterprise support (2016) Report to DG Regio, European Commission (Fiona Wishlade, Rona Michie, Giovanni Familiari, Peter Schneidewind, Andreas Resch) http://ec.europa.eu/regional_policy/sources/docgener/evaluation/pdf/expost2013/wp3_final_en.pdf

Financial instruments under Cohesion Policy 2007-13: How have Member States and Selected Financial Institutions Respected and Preserved EU Financial Interests? (2016) Report to the European Parliament (EPRC and EPC) http://www.europarl.europa.eu/RegData/etudes/STUD/2016/552306/IPOL_STU(2016)552306_EN.pdf

Financial Instruments in 2014-20: learning from 2007-13 and adapting to the new environment (2015) Paper to 2nd Regional Studies Association and European Commission Joint Policy Conference Fiona Wishlade and Rona Michie https://fi-compass.eu/sites/default/files/publications/Financial%20instruments%20in%202014_20_learning_from_2007-13%20_wishlade_and%20michie_0.pdf

Guidelines for the Implementation of Financial Instruments: Building on FIN-EN – sharing methodologies on FINancial ENgineering for enterprises (2014) Fiona Wishlade and Rona Michie with Claudia Gloazzo http://www.fin-en.eu/files/9114/1355/7888/FIN-EN_Guidelines_EN.pdf

Financial Instruments: A Stock-taking Exercise in Preparation for the 2014-2020 Programming Period (2013) Report to the EIB (EPRC with Mazars and Ecorys) http://www.eib.org/attachments/documents/jessica_stocktaking_final_report_en.pdf

Access to finance in Europe's disadvantaged regions: Can 'new' financial instruments fill the gap? (2012) Report for the EoRPA Regional Research Consortium (Colin Mason, Rona Michie and Fiona Wishlade) http://www.eprc.strath.ac.uk/eorpa/Documents/EoRPA_12_Public/EoRPA%20Paper%2012-6%20Financial%20Instruments.pdf

Between Scylla and Charybdis. Navigating Financial Engineering Instruments through Structural Funds and State Aid Requirements (2011) IQ-Net Thematic Paper (Rona Michie and Fiona Wishlade) http://www.eprc-strath.eu/iqnet/knowledge-exchange/research-papers.html

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