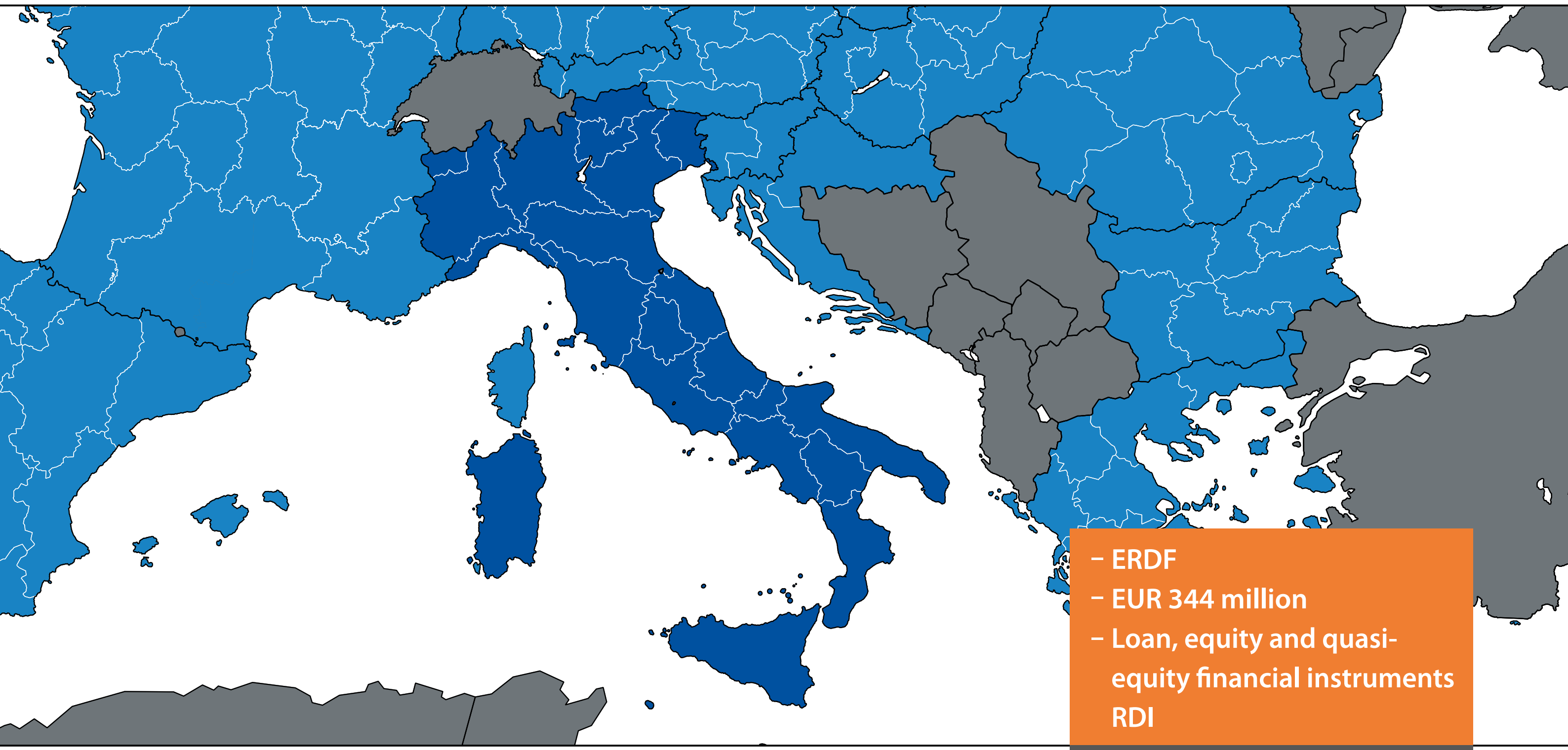


- ERDF
- EUR 344 million
- Loan, equity and quasi-equity financial instruments RDI

…using financial instruments to support research, development and innovation…

Research and Innovation Funds in Italy - ERDF loan and equity financial instruments

Case study

DISCLAIMER

The information is correct as at 30 June 2022.

Abbreviations

Abbreviation	Full name
CPR	Common Provisions Regulation
EC	European Commission
EIB	European Investment Bank
ERDF	European Regional Development Fund
EU	European Union
FA	Funding Agreement
GGE	Gross Grant Equivalent
MUR	Ministero dell'Università e della Ricerca (Ministry for University and Research)
NRP	National Research Plan 2015–2020
OP	Operational Programme
PON R&I	National Operational Programme Research and Innovation 2014–2020
RDI	Research, Development and Innovation
RIF	Research and Development Fund
SME	Small and medium sized enterprises

Table of contents

1. The Research and Innovation Fund of Funds in Italy

1.1. Executive Summary

In 2016, the Italian Ministry of Universities and Research (MUR) committed EUR 270 million of European Regional Development Fund (ERDF) programme resources (including national co-financing) to a Fund of Funds (FoFs), a separate block of finance managed by the European Investment Bank (EIB). The FoF selected three financial intermediaries to establish Research and Innovation Funds (RIFs), loan, equity and quasi-equity financial instruments to support innovative enterprises in the south of Italy.

The Investment Strategy of the FoF, which was adopted by the RIFs, was aligned with the Italian National Research Plan 2015–2020 (NRP), to identify twelve priority sectors which would be targeted by the financial instruments. Potential candidates for investment were also assessed against the Technology Readiness Level criteria described in the Horizon 2020 programme to establish their eligibility for investment. In order to build this dimension into their loan/investment appraisal processes financial intermediaries developed their own expertise in the science and technology sectors either through the recruitment and/or retention of science specialists or by the use of specialist consultancy services. The managing authority supported this process by offering its own view to the financial intermediaries in relation to the assessment of eligibility carried out.

Funding sources
ERDF Operational Programme 'Research and Innovation 2014–2020' (PON R&I)

Type of financial products
Fund of funds and three financial instruments that provide loan, equity and quasi-equity investment to support Research, Development and Innovation (RDI) by SMEs, Mid-Caps and larger companies in Southern Italy.

Financial size
EUR 344 million made up of EUR 270 million ERDF programme resources (including national co-financing) and at least EUR 74 million private investment at fund/final recipient level.

Thematic focus
Strengthening research, technological development and innovation (Thematic Objective 1)

Timing
2016–2023

Partners involved
Managing authority
Ministry of Universities and Research (MUR)
Fund of funds manager
European Investment Bank
Financial intermediaries
Fondo Ricerca e Innovazione S.r.l. (Gruppo Intesa Sanpaolo / Equiter S.p.A.)
Mediocredito Centrale - Banca del Mezzogiorno.
Banco di Sardegna S.p.A. / Sinloc S.p.A.

The financial intermediaries offered loans in the range of EUR 100 000 – EUR 12.1 million with the average loan being approximately EUR 2.5 million. The full benefit of the ERDF programme resources was passed through to the beneficiaries, resulting in long term loans with reduced collateral requirements where the ERDF resources were committed at zero cost to the final recipient. Equity investments were made pari-passu with private investors and ranged in size from EUR 3 million – EUR 25 million. The most common sectors in the financial instruments' portfolios are healthcare, technology and advanced manufacturing.

The RIFs targeted businesses in eight regions of Southern Italy where investment in research, development and innovation (RDI) has historically been below the national average. In addition, the FoF's Investment Strategy allowed the flexibility under Article 70 CPR 1303/2013[1] to invest up to 15% of the resources outside the target area, subject to satisfying the relevant criteria under the regulation. To date, one investment had been made outside the area to support a digital healthcare project of the Agostino Gemelli hospital in Rome.

By the end of June 2022, a total of EUR 140 million of programme resources, together with EUR 37.4 million of private sector co-investment has been committed to support 27 businesses. All but one of the businesses supported are in the eight regions initially targeted by the RIF financial instruments, which has had a significant impact in the development and retention of innovative businesses in Southern Italy.

During the implementation of the financial instruments, the demand for equity investment was particularly high. As a result, the Fund of Funds, following approval by the FoFs Investment Board, amended its Investment Strategy to allow funds to be moved from the loan instruments into the equity funds. As a result a total of 62% of the RIFs' investments by value[2] have been made by way of an equity investment. This may in part reflect how such financing is well adapted to finance innovation. It may also be, in part, due to the impact of the COVID-19 pandemic on the capacity of companies to borrow for investment.

1.2. Key takeaways from the Research and Innovation Fund of Funds in Italy

The experience of the RIFs in Italy demonstrates how financial instruments can be used to address market failures in the RDI sector in regions of historic under-investment. The success of the RIFs, and in particular the equity funds, demonstrates how financial instruments can leverage private sector skills and expertise, in addition to finance, to target investment in innovative enterprises.

The financial instruments have successfully supported the growth and retention in the region of high-tech companies such as Roboze and Gelesis[3] and allowed existing companies such as ITEL[4] to develop new products and services using innovative technologies such as proton beam therapy. By addressing the long-standing market failure in investment in RDI in Southern Italy, the FoF has enabled new products to be developed in the region, creating long term high quality employment and boosting the innovation ecosystem in Southern Italy.

1 REGULATION (EU) No 1303/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 December 2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) No 1083/2006

2 As at 30 June 2022

3 See pages 14, 15 and 33 for more information about the support provided to these companies.

4 For more information please see the fi-compass video case study, ESIF financial instruments in Italy - MIUR

The alignment of the PON R&I ERDF Operational Programme with the Italian NRP enabled a streamlined Investment Strategy to be developed for the FoF which ensured alignment of the financial instruments' objectives with those of the country's scientific institutions. The financial intermediaries assumed responsibility for assessing the eligibility of investments against the RDI requirements in the Investment Strategy. Two of the three financial intermediaries were consortia in which partners brought different skills and expertise allowing specialists in RDI to work alongside more traditional financial institutions.

The FoF structure provided a flexible governance framework within which resources were able to be redployed to meet market demand. In particular, this allowed for an increase in the proportion of the funds to be committed to equity financial instruments.

Agostino Gemelli University Hospital

Sector(s): ***Healthcare Infrastructure***

Intermediary: Fondo Ricerca e Innovazione S.r.l. / Equiter S.p.A.

Loan: EUR 12 million

The Gemelli University Hospital is a large general hospital in Rome, Italy. With 1575 beds, it is the second-largest hospital in Italy, the largest hospital in Rome and one of the largest private hospitals in Europe.

The RDI project concerns the development of a software platform to provide digital healthcare solutions, through the application of AI and Machine learning tools.

2. Design of the fund of funds

2.1. Context

Italy is one of the EU's founder Member States and has the third largest economy in the EU. After Germany, it has the second largest manufacturing sector[5] and is ranked twelfth in the EU for Quality of Life, based on purchasing power[6]. The most important sectors of Italy's economy in 2020 were wholesale and retail trade, transport, accommodation and food services (20.1%), industry (19.5%) and public administration, defence, education, human health and social work activities (17.5%).

Although it has one of the largest economies in the world, the country has a significant North-South divide in economic and social terms. Some regions in the South of Italy, such as Calabria, Sicily and Apulia have a regional Gross Domestic Product of less than half of that of regions in the North, such as Lombardy. As a result, southern regions with high rates of unemployment are losing population and high-skilled people. An increasing share of the population in the South, often young and highly educated people, are migrating to the North of the country or abroad, mainly to other European countries. In the 2002–2017 period, more than 2 million people left Italy's southern regions and in 2017 alone, more than 132 000 people left the South, including 66 557 young people, 33% of whom were graduates.

In addition, Italy lags behind other EU Member States in relation to investment in RDI[7]. In 2018, the country's RDI expenditure as a share of GDP amounted to 0.86%, compared to an EU average of 1.41%. The gap with the EU average registers consistently negative values for RDI expenditure both in the public and private sector. Furthermore, RDI investments remain unequal across regions, with the south of the country lagging behind the north. Italian regions also differ widely for employment in high-tech sectors. In 2017, more than 1 out of 2 employers in high-tech sectors was located in the North of Italy, while 28.4% were working in the Central regions of Italy and only 15.2% in the South.

2.2. The National Research Plan 2015–2020

In 2015, the Ministry of Education, Universities and Research (MIUR) launched Italy's National Research Plan 2015–2020 (NRP). With the objective of boosting the industrial competitiveness and economic performance of the country, the NRP provided a strategic framework for investment in RDI, identifying twelve areas of specialisation as shown in Table 1.

The NRP areas of specialization were built on the Horizon 2020 initiative which was at the heart of the EU's blueprint for smart, sustainable and inclusive growth and jobs in the 2014–2020 programming period. The Key Enabling Technologies (KETs) identified by the European Commission[8] under Horizon 2020 are included in the NRP areas of specialisation, although the NRP's priorities extend to other areas specific to the national and regional strengths in RDI.

5 Eurostat [Manufacturing statistics - NACE Rev. 2]
6 Eurostat [Statistics | Eurostat (europa.eu)]
7 European Commission, Country Report Italy 2020, https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1584543810241&uri=CELEX%3A52020SC0511
8 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions – "Preparing for our future: Developing a common strategy for key enabling technologies in the EU" {SEC(2009) 1257}, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52009DC0512&from=EN

Table 1. Areas of specialisation under the NRP 2015–2020

Environmental technologies;	Aerospace;
Sustainable mobility;	Smart, secure and sustainable communities;
Intelligent factories;	Green chemistry;
Energy;	Design creativity and Made in Italy;
Health;	Cultural heritage technology;
Agri-food	Blue growth

One of the priorities of the NRP was to extend RDI activity in Southern Italy, to try to address the North-South disparity in the sector. One of the measures put in place to achieve this was the alignment of the NRP with the ERDF National Operational Programme PON R&I. This programme was designed to channel EU Cohesion Policy instruments towards the most disadvantaged territorial areas of Italy. The programme, managed by the Ministry for University and Research (MUR, the successor to MIUR), targets the transition regions of Abruzzo, Molise and Sardinia; and the less developed regions of Basilicata, Campania, Calabria, Apulia and Sicily. The total budget allocated was EUR 1 286 million.

The priority objective of the PON R&I is the competitive repositioning of Southern Italy in order to produce structural changes to increase the ability to produce and use quality research and innovation to trigger smart, sustainable and inclusive development. The programme was developed through three priority axes of intervention, namely (i) Investments in Human Capital, (ii) Thematic Projects, and (iii) Technical Assistance, with eligible investments being aligned with the NRP areas of specialisation. This allowed innovative businesses and projects to access resources under several complementary funding sources to meet their financing needs at different stages of development. Financial instruments were identified at an early stage of the development of the programme as being a potentially important tool to finance innovative companies seeking to bring to market new products resulting from research and development, particularly in Southern Italy.

2.3. Ex-ante assessment

The managing authority commissioned EIB and PricewaterhouseCoopers (PwC) to carry out the ex-ante assessment on potential financial instruments under PON R&I in 2015, following publication of the NRP. The document was finalised in July 2016 and published later that year.

The study analysed the potential to use financial instruments with the aim of:

- Strengthening research, technological development and innovation, with particular reference to the areas of specialisation identified in the NRP 2015–2020, and
- Stimulating private participation in research, development and innovation activities in support of an innovative and competitive environment.

The focus on these interventions was intended to ensure that the PON R&I financial instruments complemented interventions and actions implemented within other national and regional Operational Programmes in the country. In undertaking the study, the main actors of the RDI market were involved in order to ensure that the results of the ex-ante assessment reflected the needs of the market.

The key findings of the ex-ante assessment included that:

- There was a lack of financial products able to meet the financing needs of RDI projects that PON R&I aims to support, and in particular, there was:
  - insufficient bank lending dedicated to RDI to adequately meet the financing needs of the sector, for example in terms of duration, interest rates and requirements for guarantees and collateral; and
  - a scarcity of risk market operators in the target sector and regions;
- the identified gap between demand and supply of resources dedicated to target interventions amounts to approximately EUR 5.1 billion; and
- eligible RDI projects in target regions can be quantified as approximately EUR 700 million of investments (for the 2015–2018 period).

Financial instruments were the preferred option to address the market failures highlighted by the ex-ante assessment for the following reasons:

- they directly address a market gap, enabling the financing of projects that would not be supported under traditional financing arrangements;
- the instrument contributes to a more efficient and sustainable use of public resources, by virtue of its revolving nature;
- the financial instruments mobilise additional resources to support the sector through the leverage effect generated through co-financing by financial intermediaries and private investors co-investing alongside the financial instrument; and
- finance through financial instruments has a lower aid intensity and therefore provides greater flexibility under the EU State aid rules. In the RDI sector in particular, the timing of the disbursement offered by a financial instrument, which can in normal circumstances be faster than the disbursement of grants, is also an important benefit.

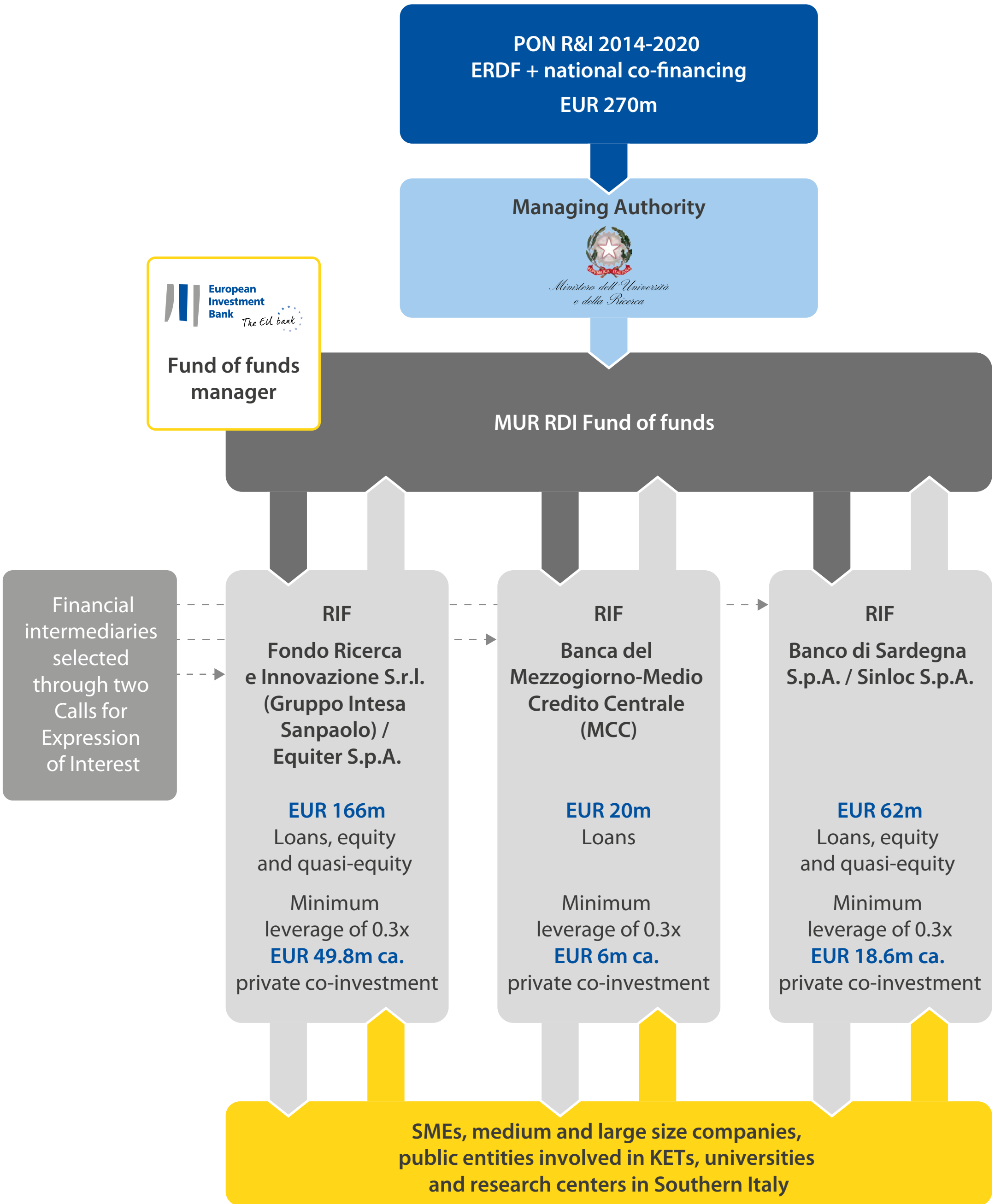
In light of the above, the ex-ante assessment recommended the development of a financial instrument with medium-long term debt and equity and quasi-equity components at better than market conditions, suited to the needs of RDI investments. In particular, the study recommended that a FoF vehicle is set up to manage the financial instruments.

2.4. The Research and Innovation Fund of Funds structure

The managing authority took the decision, based on the recommendation of the ex-ante assessment, to establish a FoF to implement the financial instruments under PON R&I. The adoption of the fund of funds implementation structure was considered to provide the managing authority with greater flexibility to coordinate the financial instruments to ensure complementarity. The FoF also provides a forum to ensure the participation of all relevant actors involved in the implementation including the managing authority, FoF manager, financial intermediaries and final recipients. Figure 1 shows the structure of the Research and Innovation Fund of Funds[9].

9 As at 31 August 2022

Figure 1. The Research and Innovation Fund of Funds



The European Investment Bank was entrusted to act as the FoF manager in accordance with Article 38(4)(b)(i) of the Common Provisions Regulation[10] . The managing authority committed to the FoF, EUR 270 million of ERDF programme resources (including national co-financing). The appointment of EIB to act as the FoF manager, reflects its previous successful experience in managing financial instruments for national managing authorities. In particular, at the time, the EIB has over EUR 500 million under management in Italy, targeting cohesion regions of the South in the domains of sustainable urban development (JESSICA programmes, 2007–2013) and RDI (MUR programme 2014–2020).

10 Regulation (EU) no 1303/2013 of the European Parliament and of the Council of 17 December 2013

Under the FoF's Investment Strategy, the financial instruments targeted SMEs, Mid-Caps, large enterprises[11], universities and research institutions and other public-private research and technology entities to finance projects in target regions that include activities of prevailing industrial research and/or experimental development, developed within one or more of the areas of specialisation of the NRP 2015–2020.

Leverage through contributions from other public and/or private co-financiers is estimated to be up to 30% of the managing authority's commitment to the FoF. As the amount of additional co-financing to eligible final recipients contributing to the leverage effect was expected to vary from project to project, based on factors including their risk profile, nature of promoter and intrinsic type of RDI carried out, the managing authority and the EIB agreed to evaluate such target at the level of the total portfolio to be created by selected financial intermediaries through their Research and Innovation Funds (RIFs).

During the implementation of the financial instruments, the demand for equity investment was particularly high. As a result, the Fund of Funds, following approval by the FoFs Investment Board, amended its Investment Strategy to allow funds to be moved from the loan instruments into the equity funds. As a result, a total of approximately 62% of the RIFs' investments by value[12] have been made way of an equity investment. This may in part reflect how such financing is well adapted to finance innovation. It may also be, in part, due to the impact of the COVID-19 pandemic on the capacity of companies to borrow for investment.

2.5. The Research and Innovation financial instruments

The FoF has implemented three financial instruments (or Research and Innovation Funds (RIFs)) to support RDI in Southern Italy as follows:

No.	Financial intermediary	Products	ERDF prog. commitment EUR million	Min. leverage EUR million
1	Fondo Ricerca e Innovazione S.r.l. (Gruppo Intesa Sanpaolo of which Equiter S.p.A. is the exclusive advisor)	Loans, equity and quasi-equity	166 million	49.8 million
2	Mediocredito Centrale - Banca del Mezzogiorno (MCC)	Loans	20 million	6 million
3	Banco di Sardegna S.p.A. / Sinloc S.p.A.	Loans, equity and quasi-equity	62 million	18.6 million

The financial intermediaries were selected by the EIB in its role of FoF manager following two Calls for Expression of Interest to identify suitable debt, equity and quasi-equity providers with expertise in investing in RDI in Southern Italy. The bodies selected to act as financial intermediaries were as follows.

11 Commission Recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises (Text with EEA relevance) (notified under document number C(2003) 1422)

12 As at 30 June 2022

Fondo Ricerca e Innovazione S.r.l. (Intesa Sanpaolo Group of which Equiter S.p.A is the exclusive advisor)

Equiter S.p.A and the Intesa Sanpaolo Group established a special purpose vehicle, Fondo Ricerca e Innovazione S.r.l. to act as financial intermediary of the RIF.

Equiter S.p.A. is an equity investor and financial advisory firm specialized in PPP projects, infrastructure and urban regeneration investments, and SMEs with a strong growth and innovation potential. Owned by Compagnia di San Paolo, Fondazione CRT, Fondazione CRC and Intesa Sanpaolo, Equiter identifies, structures, implements and manages investments aimed at the socio-economic development of local areas.

Equiter's mission is to identify, implement and manage mission-related direct and indirect investments in risk capital with a long-term impact on regional socio-economic development. Over the last fifteen years, Equiter has developed a strong expertise in project finance, as evidenced by its role of advisor and investor of the Fondo PPP Italia and of the Fondo Equiter Infrastructure II. It has also developed its expertise in EU financial instruments management, as evidenced by its appointment as advisor and manager within the Urban Development and Energy Efficiency programme 'JESSICA' in Sicily, Sardinia, and Campania, and Urban regeneration programmes.

The Intesa Sanpaolo Group is one of the leading banking groups in Europe (over EUR 30 billion in market capitalization) with a strong ESG commitment, a global positioning for its social impact and strong focus on climate.

Gelesis

Sector(s): ***Biotechnology/healthcare***

Intermediary: Fondo Ricerca e Innovazione S.r.l. / Equiter S.p.A

Equity investment: : EUR 25 million

Gelesis is a biotechnology company that was formed by scientists from the University of Salento based in Lecce in Italy's southern Apulia region in partnership with technology experts from the USA.

The company has successfully developed and brought to market the treatment known as Plenity, a tablet that acts as an aid to weight management in overweight adults.

In 2020 the MUR financial intermediary supported the acceleration phase of the company with an equity/quasi-equity investment of EUR 25 million. This enabled the company to fund research and development activities and clinical studies to expand the potential applications of superabsorbent hydrogel.

In January 2020 the company made a successful debut on the New York Stock Exchange through a Special Purchase Acquisition Company (SPAC) deal which valued the company at EUR 610 million. The company continues to have its scientific research base in Lecce, employing up to 74 people in high quality science-based jobs.

Mediocredito Centrale - Banca del Mezzogiorno S.p.A. (MCC)

The institutional mission of Mediocredito Centrale - Banca del Mezzogiorno S.p.A. (MCC), part of the Invitalia Group, is to foster Italy's competitiveness, particularly that of Southern Regions, by means of three key policy actions, namely:

- Implementing and consolidating public policies supporting productivity by financing regional SMEs, promoting structural interventions, and complementary funding to public incentives for companies;
- Fostering new business opportunities for small and medium-sized enterprises in target regions, especially via strategic partnerships with major national credit institutions;
- Promoting integrated public financial instruments for businesses and access to funding for SMEs.

Since the start of the 2007–2013 programming period, the Public Funds Management Department of Mediocredito Centrale has developed an extensive experience in implementing financial instruments and managing EU and national funds. This expertise is complemented by a deep knowledge of the economic and business environment of target regions and an extended track-record in working on research and innovation investments. As evidence of this, MCC currently acts as the manager of the Fund for Sustainable Development (Fondo per la crescita sostenibile) on behalf of the Italian Ministry for Economic Development (Ministero dello sviluppo economico, MISE), allowing them to have a privileged and up-to-date overview on national RDI sector dynamics.

Banco di Sardegna S.p.A. / Sinloc S.p.A

Banco di Sardegna is a commercial bank deeply linked to the local area it belongs to. It is part of the BPER Group, a group of five commercial banks led by the parent company BPER Banca. In addition to the banks themselves, the Group also incorporates several investment and management companies (asset management, personal credit, leasing and factoring, etc.).

Since 1999, Banco di Sardegna has been operating a department dedicated to corporate finance and special credits (Ufficio Finanza d'Impresa e Crediti Speciali), who deals with, among other activities, the management of subsidies for RDI projects. The team employs consultants who are experts in the evaluation and analysis of projects throughout their life cycle and is a reliable and trustworthy reference point for entities wishing to invest in RDI and participate in regional, national and European calls for proposals.

Within this context, Banco di Sardegna, along with other national banks led by MCC, was awarded the management of projects under the Fund for Sustainable Development (Fondo per la crescita sostenibile) by the Ministry for Economic Development, with the mandate to finance programmes and actions positively impacting on the competitiveness of the Italian production system. Moreover, since 1999, the bank has been managing RDI projects both under a direct agreement with the managing authority and in grouping with other banks.

Sinloc s.p.a is a consulting and investment firm with operations throughout Italy. The company promote development of local infrastructure, provides advisory services, feasibility studies and direct investments in Public-Private Partnerships (concessions, project financing, etc.). They provide consultancy services to different types of operators and accompany them in territorial development paths, supporting them in complex procedures. Sinloc also facilitates access to EU funds and their efficient and sustainable use. After a significant growth process focusing on its core business, today Sinloc seeks to become a leading company in: local development planning; impact assessment of investments of public administrations and non-profit institutions; attracting, managing and monitoring European tenders and funds; promoting, restructuring and managing new local Public-Private Partnership infrastructure projects.

2.6. Timetable for set-up and implementation

Table 2 below provides the timeline of the key set-up and implementation steps of the MUR RDI fund of funds in target regions.

Table 2. Set-up and implementation timeline of MUR RDI fund of funds

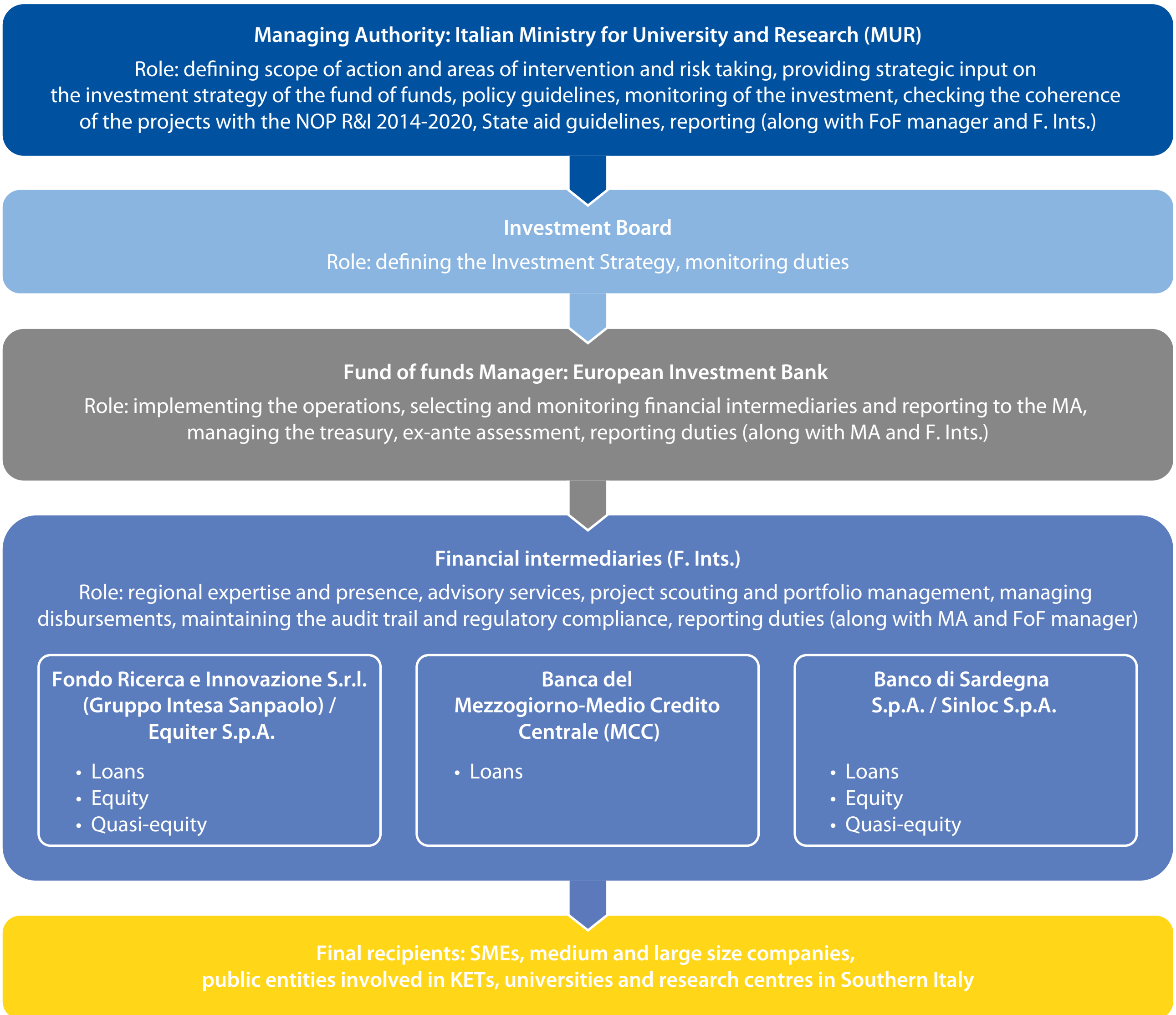
Time period	Actions taken
July 2016	Ex-ante assessment completed
December 2016	Funding agreement between MUR and the EIB signed
June 2017	1st Call for Expression of Interest to select financial intermediaries published
July 2017	Deadline for 1st Expression of Interest and submission of proposals
December 2017	Selection of financial intermediaries: Fondo Ricerca e Innovazione S.r.l. (Gruppo Intesa Sanpaolo) / Equiter S.p.A. and Banca del Mezzogiorno-Mediocredito Centrale (MCC)
February 2018	Amendment of the funding agreement signed on 15/12/2016 between MUR and the EIB: allocation of additional EUR 70 million to initial budget (EUR 200 million)
March 2018	2nd Call for Expression of Interest to select financial intermediaries published Deadline for 2nd Expression of Interest and submission of proposals
September 2018	Selection of financial intermediaries: Banco di Sardegna S.p.A. / Sinloc S.p.A.
December 2022	Deadline for submission of RDI investment project proposals - the final date for disbursement to final recipient is expected to be extended during the course of 2023
2023	Final date for disbursement to final recipients – the final date for disbursement to final recipient is expected to be extended to 2023. At the time of writing this report, this extension is being evaluated between the FoF Manager and the Managing Authority

3. Set–up of the MUR RDI fund of funds

3.1. Governance structure

The overall governance of the MUR RDI Fund of funds is shown in Figure 2 below.

Figure 2. Governance of the MUR RDI fund of funds



The FoF is supervised by the managing authority, the contractual counterpart of the FoF Manager that contributed its resources to the Fund of Funds. The managing authority also retains some responsibility for key decisions concerning the contractual relationship with the EIB, the workflow of the financial instruments and checking coherence of selected final recipients and projects with the PON R&I. The managing authority also supports financial intermediaries on the State aid guidelines, as well as the reporting, and monitoring of the implementation of the investment strategy, in cooperation with the Investment Board.

The Investment Board, which consists of up to five independent members appointed by the managing authority after consultation with the EIB, is responsible for monitoring and supervising the implementation of the Investment Strategy and Business Plan. In particular, the Investment Board has decision-making powers to approve or reject recommendations from the EIB and is responsible *inter* alia to the following matters:

- communicating, setting and amending, if deemed necessary, national rules and requirements relating to the FoF Activity, in consultation with EIB;
- providing conclusive rulings on matters relating to applicable national laws and regulations and on compliance with State Aid rules, in connection with the eligibility of financing to final recipients, the operation of the FoF, financial instruments and Operational Agreements;
- upon proposal by EIB, approving any amendments to the Investment Strategy and Business Plan; and
- approving the selection of Financial Intermediaries following a public tender process and the key terms and conditions of each proposed Operational Agreement with the selected intermediaries.

The EIB was entrusted to manage the FoF under a single Funding Agreement governing the management of the operation. Under the agreement, the EIB is responsible for the selection of financial intermediaries. Following the appointment of the financial intermediaries, the FoF manager continues to monitor on an ongoing basis the operations with the selected financial intermediaries and orchestrates the reporting of the Fund operations, to be presented semi-annually to the Investment Board.

Financial intermediaries assume full management and responsibility of the financing and/or investment agreements with final recipients, and shall perform due diligence on the proposed investments, including credit risk and investment evaluation and structuring. In addition to ensuring that RDI investments are economically and financially viable, financial intermediaries must ensure that these projects meet the eligibility criteria set out in the RIF's Investment Strategy which is aligned with the NRP, PON R&I, national and EU regulations, and guidelines detailed in the abovementioned Calls for Expressions of Interest.

A key feature of the MUR RDI vehicle's governance framework is that the assessment and selection of RDI projects (i.e. the final recipients of RIF's funding) is mainly under the responsibility of the three financial intermediaries, who were selected precisely because of their multidisciplinary teams specifically set up for the initiative.

3.2. Selection of financial intermediaries

The Research and Innovation Fund of Funds' financial intermediaries were selected via two Calls for Expressions of Interest prepared by the EIB, acting as FoF manager, the first in June 2017 and the second in March 2018. This followed the decision by the managing authority to allocate additional ERDF resources from the PON R&I operational programme to the FoF to further close the market gap and help achieve the operational programme's policy objectives.

The main objectives of the calls were to select financial operators with local expertise and reach who could attract additional private and public funds and provide technical and scientific advisory expertise to validate the quality of the final beneficiaries and their compliance with the investment policy. More precisely, the selection procedure aimed to assess financial intermediaries on the basis of, inter alia:

- Relevant experience with the implementation of the financial instruments, managing allocated funds, and selecting and investing in RDI projects;
- Investment strategy;
- Provisional financial forecast, projects pipeline and operations budget of the RIF;
- Selection process and methodology for the identification and assessment of RDI investments, taking into account the criteria set by the EIB; and
- Amount and calculation mechanism of the relevant management fees.

Through the selection process, potential financial intermediaries were able to bid for lots of investment of EUR 62 million. In the first round, three lots were offered to the market. A further lot was offered in the second call for expression of interest. Parties were able to submit proposals to manage more than one lot, subject to them being able to demonstrate the capacity and resources to meet the management and co-financing requirements specified in the Call.

Following the conclusion of the selection process carried out by the EIB, three financial intermediaries were appointed. The selection of three financial intermediaries to operate in the same territory and offering financial products at similar conditions was designed to create a 'healthy competition' among the RIFs to avoid reliance on a single operator. This has stimulated the supply of finance to allow an effective and efficient management of the FoF resources according to the logic of a competitive market.

Each selected financial intermediary signed operational agreements with the EIB, under which the resources are committed. Within the mandate entrusted to them, financial intermediaries must establish separate financing blocks within independent financial institutions or legal entities, in accordance with national and EU rules.

3.3. State aid

The MUR RIFs are setup to provide loan and equity investments on market conforming terms. As a result the support does not constitute State aid.

Market conformity is demonstrated for the loan instruments through the reference rate published by the European Commission from time to time in accordance with the Reference Rate Communication. This provides a framework, reproduced at Table 3 for calculating the applicable reference market rate for a loan based on the risk and collateral available from the borrower.

Table 3. Calculation of the reference rate under the Reference Rate Communication

Loan margins in basis points			
Rating category	Collateralisation		
	High	Normal	Low
Strong (AAA–A)	60	75	100
Good (BBB)	75	100	220
Satisfactory (BB)	100	220	400
Weak (B)	220	400	650
Bad/Financial difficulties (CCC and below)	400	650	1 000 [13]

13 Subject to the application of the specific provisions for rescue and restructuring aid, as currently laiddown ni the Community guidelines on State aid for rescuingandrestructuring firms ni difficulty (OJ C244, 1.10.2004, p.2) and ni particularpoint 25(a), which refers to a' rate at least comparable with the rates observed for loans to healthy companies, and ni particularatthe reference rates adopted by the Commission'. Hence, for rescue aid cases, the 1-year IBOR increased with at least 100 basis points shall be applied.

The financial intermediaries assess the risks on a project by project basis in accordance with their normal banking practice. The proposed interest rate is then validated using the Reference Rate Communication to ensure the proposed rate is equal to or greater than the minimum market rate. Although loans are provided at a market rate, the products nevertheless address the market failure identified in the ex-ante assessment relating to the availability of bank lending to the R&I sector in the regions.

Equity investments, on the other hand, are always made alongside other market–based investors on a pari–passu basis. By investing on substantially the same terms alongside other investors, the financial intermediary can demonstrate that the support is being provided in a way that conforms with the market.

3.4. Monitoring and control

The instrument provides for multiple levels of monitoring and reporting, implemented by different actors along the governance structure. These are described in Figure 3 below.

Figure 3. Monitoring and reporting

Financial intermediaries

Quarterly reports

- Include output indicators for ERDF and all standard quantitative information that the EIB requires.
- The Operational Agreement between the fund of funds manager and the financial intermediaries provided a template as annex.

Semi-annual qualitative reports

- Include a description of the trend of operation.
- The scope of these reports follow a similar structure employed by the EIB for other FIs under its management.

Fund of funds Manager (EIB)

Semi-annual reports

- Prepared on 1st Sept for H1 of the calendar year.

Annual progress reports

- Provided to the MA by end March for the last calendar year.
- Qualitative analysis of the previous year: information on the engagement of f.int., trend of operations, systemic changes in the economic scenario, etc.;
- Quantitative assessment: cash flow analysis of accounts at EIB level, baseline details for monitoring, etc.

Managing Authority (MUR)

The financial intermediaries provide quarterly reports to the FoF manager in a standard format developed by the EIB and set out as a template in an annex to each financial intermediary's funding agreement with the EIB. This describes the performance of the fund measured against the programme's output indicators, together with quantitative data regarding the commitment/disbursement of resources under management. In addition, every six months, the financial intermediary provides the FoF manager with a written narrative on the progress of the financial instrument. This includes a description of the underlying trends affecting the financial instrument, providing a look ahead as well as an account of recent activities.

The FoF manager provides an annual report to the managing authority three months following the end of each calendar year. The reports synthesise the data provided by the financial intermediaries to provide a single report describing the financial and non-financial performance of each financial instrument. The reports include an analysis of the underlying trends in the market to forecast expected levels of performance and inform the ongoing development of the FoF's Investment Strategy. In addition, a mid-year report is provided in September of each year with a summary of performance in the first half of the annual period.

4. Implementation of the Research and Innovation Funds

4.1. Investing in RDI – assessing the Technology Readiness Level

Under the FoF's investment strategy, eligible final recipients are promoters of innovative projects in Southern Italy which comply with the NRP 2015–2020. In addition, the Investment Strategy is aligned with the Technology Readiness Levels (TRLs) as specified under the Horizon 2020 programme. This system provides a common understanding of the maturity of emerging technology across the entire innovation chain. There are nine technology readiness levels; TRL 1 being the lowest and TRL 9 the highest. Investments under the RIFs target projects rated between TRL 2 and TRL 8.

Technology Readiness Levels (Annex G H2020 work programme 2014–2015)
TRL 1 – basic principles observed
TRL 2 – technology concept formulated
TRL 3 – experimental proof of concept
TRL 4 – technology validated in lab
TRL 5 – technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies)
TRL 6 – technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies)
TRL 7 – system prototype demonstration in operational environment
TRL 8 – system complete and qualified
TRL 9 – actual system proven in operational environment (competitive manufacturing in the case of key enabling technologies; or in space)

To ensure proposed investments meet the technical requirements of the Investment Strategy, all applications for financing are subject to a technical-scientific consistency evaluation or assessment of the project proposal. This is carried out by the financial intermediary using technical-scientific experts competent in the sector and technological field. This evaluation or assessment concerns:

- The level of technological maturity;
- The scientific-technical coherence with the NRP 2015–2020; and
- The quality and intensity of the innovative impact of the project proposal.

In order to perform this task, the financial intermediaries are required to include in their team suitably qualified experts, independent from the financing team. This is achieved through a mix of the use of professional consultants and the recruitment by some financial intermediaries of in-house RDI experts.

Once the TRL has been assessed by the financial intermediary's expert team, the decision is referred to the managing authority's own technology experts for review. Although the final decision rests with the financial intermediary, the involvement of the managing authority (which is said to 'bless' the financial intermediary's expert analyses) is considered to be essential in ensuring that investments remain aligned with the technology orientated Investment Strategy. In practice this has become a requirement of the RIF's investment approval process as it provides financial intermediaries with additional assurance regarding the eligibility of investments.

4.2. Products to support RDI investments

The financial products envisaged by the FoF, provided through the selected financial intermediaries, are medium-long term loans, equity and quasi-equity investments. The business plan included in the Expression of Interest submitted by applicant financial intermediaries was required to include a section presenting the indicative maximum amounts to be financed via each financial product. The investment strategy does not prescribe an upper or lower limit for the share of equity or loan investment in a single project. The same applies to the number of projects eligible for funding, for which there is no minimum or maximum ceiling. On an RDI project basis, financial intermediaries shall identify the best financial product or combination thereof to be granted, taking into account, inter alia, State aid rules.

4.2.1 Medium–long term debt financing

Debt financing products within the Research and Innovation FoF initiative are medium/long-term loans, issued with resources from the FoF.

The ERDF resources committed to the financial instruments are expected to generate, at the level of the portfolio, a leverage effect of up to 30% of the MA's contribution to the FoF, through a contribution from other public and/or private co-financiers. This means that various forms of additional co-investment via financial intermediaries' own resources must be identified and secured to ensure the achievement of the expected co-investment target. Some flexibility is retained at a project level meaning that the financial intermediaries must use best efforts to secure co-financing of at least 30% for each project but can agree a lower co-financing rate for a single project as long as the aggregate portfolio rate is at least 30%. Co-financing by financial intermediaries shall have the same maturity period, repayment schedule and guarantee terms as FoF financing, while the interest rate, set on the basis of relevant rating, may be fixed or variable according to final recipients' needs and features.

All applications are subject to a preliminary financial sustainability analysis and to a technical-scientific consistency assessment aimed at verifying compliance with the requirements set in the call for proposals. The terms of the financing shall be defined on an ad-hoc basis based on recipients' creditworthiness of and in accordance with administrative, technical-scientific and strategic planning consistency checks.

Loans may be disbursed in one or more instalments, upon presentation of project implementation reports. Their duration varies depending on the final recipient and the underlying project, as does the interest rate – fixed for the share of loan financing from the MUR RDI fund of funds, fixed or variable for the share of loan financing from financial intermediaries' own funds - of the repayment plan.

In the first case, both the interest rate and the amount of individual instalments remain fixed for the duration of the loan. The main disadvantage of this approach is that the final recipient is not able to take advantage of any reductions in market rates. The fixed rate is, thus, best suited to those borrowers who want to be sure, from the moment they sign the contract, of the level of the rate, the amounts of the individual instalments and the total amount of debt to be repaid, regardless of changes in market conditions.

In the case of a variable-rate loan, the interest rate may vary from the initial rate at predetermined intervals, depending on the trend of the indexation parameter set out in the contract. The main risk is the unpredictable and potential substantial increase in the amount of the instalments. The variable rate is advisable for those who want a rate that is always in line with market trends and can sustain any increases in the amount of instalments.

4.2.2 Equity and quasi-equity

Equity and quasi-equity investments are made by the financial intermediaries to support innovative high growth companies in the region. Typically, the RIFs will acquire an equity stake in the target company and, at the same time, provide a shareholder (subordinated) loan to the company. This mix of equity and quasi-equity investments are provided to support specific technology-based investment projects such as the development of a new service or product in sectors including healthcare, aerospace and digitalisation.

A quasi-equity investment is typically made in the form of a shareholder loan subordinated to the senior loans the company have in place. It usually has a duration longer than a senior loan, with the possibility to pay interest and capital at maturity, in some cases with the option to convert part of the investment into shares of the company.[14] This enables the final recipient to access additional financing, without impacting its cash-flow and, at the same time, preserving its ownership structure. This type of financing has proved to be well adapted to support the RDI sector where significant investment is required before a company can bring a commercial product to market.

In line with the debt products, the financial intermediaries are required to achieve a minimum leverage rate of 30% at portfolio level through investment of their own funds and/or additional private sector investment into the final recipients alongside the investment of the FoF's contribution. The same best efforts obligation applies in relation to single projects allowing lower co-financing rates to be agreed for individual investments, subject to the overall portfolio level being maintained at or above 30%.

In addition to providing financing, the managers of the RIFs provide support to the management of the final recipient companies, helping promote the development of the business and the technology it is promoting. Support can include participation in board meetings, recruitment of talent and use of existing networks to promote the success of the final recipient.

As well as supporting SMEs and larger enterprises, the MUR equity financial instruments have financed a number of spin-off ventures which have been created to enable the development of new technological solutions.

14 For more information about quasi-equity investments please see the recent fi-compass publication, [Quasi-equity finance for SMEs - A fi-compass model financial instrument]

Spin-off / de-merging of highly innovative companies

The value proposition of a spin-off can be quite compelling for companies seeking to increase shareholder value, funding and business opportunities, while decreasing the risk profile inherent in highly innovative projects. Splitting a single diversified business into two or more individually marketed companies – the so-called 'RemainCo' and 'NewCo' – offers several potential benefits, including:

- Increasing the strategic, operational and financial flexibility of each entity, maximising the overall value of a company's portfolio;
- Enabling greater management focus on investment trends and opportunities in the fast-paced innovation market;
- Enabling more efficient allocation of capital for product development or market expansion;
- Accessing targeted financial products (*e.g.* venture capital, grant and incentive schemes for young companies / companies with a high innovation potential, etc.). and reduce a company's tax burden due to the potentially tax-advantageous status of a spin-off;
- Unlocking the potential trapped or hidden in both companies, providing a long-term platform for growth and value;
- Allowing a company to operate simultaneously under an existing business model (in RemainCo) and a new one (in NewCo);
- Enhancing the capital markets profile with a more refined corporate positioning;
- Offering existing and new shareholders clear investment profiles in distinct growth markets;
- Facilitating compliance with market or product specific regulations.

In contrast to a business sale, a spin-off emphasises both the NewCo and RemainCo businesses. The new corporate structure allows each respective entity to potentially leverage better aligned organisational efficiencies, leadership focus and learning curves, economies of scope and scale, and capital investment.

Many boards and executives recognise that building the next innovative software or hardware in-house is too time-consuming and uncertain, especially in large organisations where divisional managers can lose focus and motivation, and competition for capital can become fierce. However, by spinning off a 'high tech' portion of the business to form two smaller, independent organisations, and following this up with one or more strategic acquisitions, a company may be able to quickly 'build' the capabilities and/or product sets needed to increase revenue and market share. In short, separating parts of a large business through a spin-off can lead to improvements that can result in a better, more focused strategy.

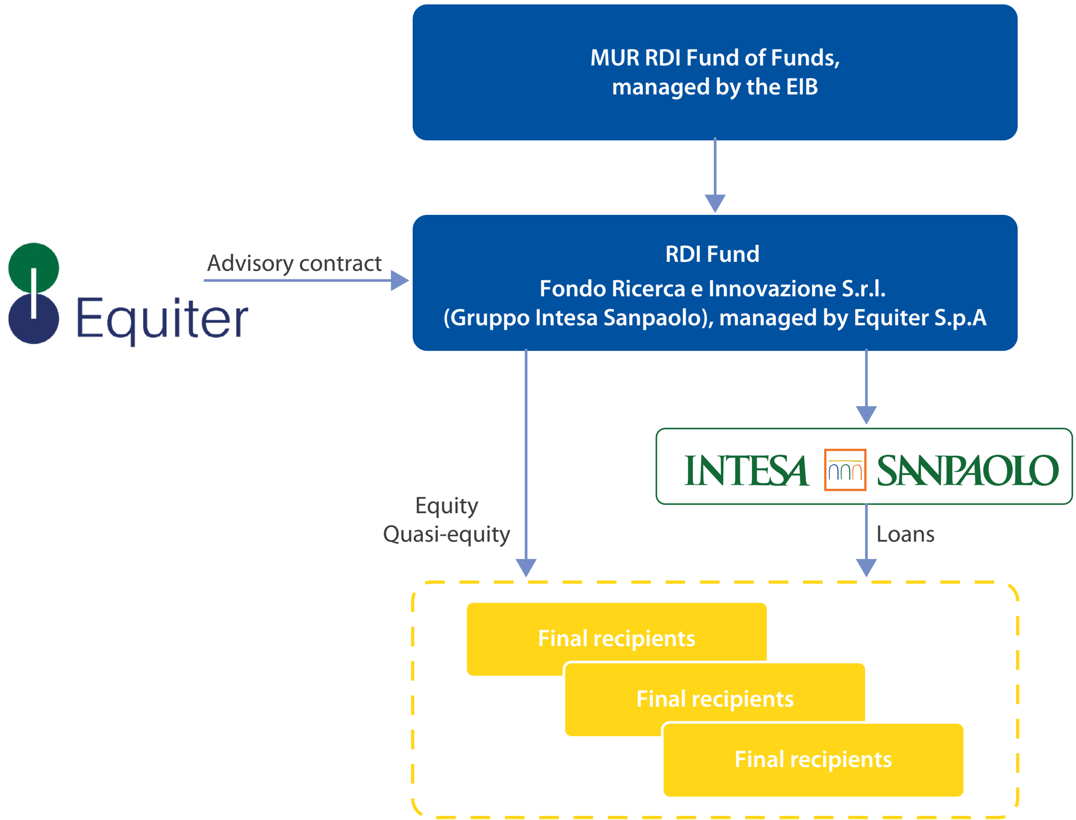
4.3. Structure of the Research and Innovation Funds

4.3.1 Fondo Ricerca e Innovazione S.r.l. (Intesa Sanpaolo Group of which Equiter S.p.A is the exclusive advisor)

Equiter was awarded the maximum amount available to a single applicant to set-up a EUR 124 million financial instrument under the Research and Innovation FoF. Such amount has been increased to EUR 141 million in 2021 and further increased to EUR 166 million in 2022. The legal structure retained for the fund is an investment company (the RIF) managed by Equiter under an advisory contract, modelled on the agreement already used for JESSICA Urban Development Funds. The financial instrument supports innovative projects through equity and quasi-equity investment (shareholder loan, mezzanine financing, equity partnership), together with additional medium/ long-term financing through the bank (and partner in the financial instrument) Intesa Sanpaolo. Financing may be requested by a wide range of potential final beneficiaries, whose RDI project proposals have not yet been completed.

The structure of the RIF is shown in Figure 4.

Figure 4. Structure of Equiter's Research and Innovation Fund



The procedure for the identification and selection of final beneficiaries involves a two-step procedure performed by Equiter's dedicated team. The initial screening is performed by Equiter of all applications made on the RIF's online platform[15] , while the second combines a more in-depth analysis of the technical-scientific feasibility and economic and financial sustainability of the proposals. Shortlisted projects are then submitted for a final decision by the Research & Innovation Fund and/or by Intesa Sanpaolo (in the event of loan financing).

The RIF originates investments through a number of different channels. These include the network of business relationships, of Equiter and its shareholders (Compagnia di San Paolo, Fondazione CRT, Fondazione CRC) and through the Intesa Sanpaolo Group Network, taking advantage of its in-depth industries knowledge and strong customer relationships. In addition, potential final recipients access the financial instrument through a dedicated website[16], a unique information point specifically designed for the initiative, which also constitutes the access point of the online registration/ pre-selection procedure for all potential final recipients. Finally, the fund manager maintains strong links with business incubators, co-investors and accelerators of high-tech innovative start-ups.

In order to offer an efficient mix of financial advisory and RDI projects assessment expertise, Equiter set up an ad-hoc advisory team, comprising two Innovation Managers and a Key Financial Manager supported by a Financial Team. The technical-scientific evaluation of projects is undertaken by the Innovation Managers, supported by external evaluators – at least two for each project - with adequate skills and specialist expertise, appointed through dedicated evaluation agreements.

15 https://fondoricercainnovazione.equiterspa.com/login/
16 https://fondoricercainnovazione.equiterspa.com

With respect to the project proposal of the potential final recipient, the Experts assign a score to the project, along with the adequate rationale, based on:

- the estimate TRL related to the project (initial and final),
- the suitability and the consistency of the allocated resources and of the costs indicated separately for phases and for expenditure areas,
- the consistency with the Specialization Areas,
- the existence of key enabling technologies (KETs) and their application to the project.

ERDF programme resources committed by the FoF to the financial instrument are used to finance both equity/quasi-equity investments and loans, with the latter being made through Intesa Sanpaolo, allowing the financial instrument to benefit from the bank's lending systems and processes. Co-investment of at least 30% (at the level of the financial instrument's portfolio) is contributed by third parties. Table 4 shows the features of the loans offered by the financial intermediary through its banking partner Intesa Sanpaolo.

Table 4. Fondo Ricerca e Innovazione S.r.l. – features of loan product

Interest rate	The range of the fixed interest rate, applied in executed loan agreements is between 0.55% and 2.09% p.a. depending on: • the borrower's rating; • the loan's collateral level; and • the base rate level, in force at the time of the signing of the on-lending agreement[17].
Collateral guarantees	For several borrowers with good credit standing, loans are unsecured. In some specific cases the on-lending agreement provides for specific collateral (e.g. shareholders' collateral, debt service reserve account).
Typical loan amount	The loan amount range is wide: between EUR 675 000 and EUR 12 050 000. The average loan amount is about EUR 3.5 million euros.
Maturity period of the loans	The maturity period of the loans is in the range 5.5 – 15 years; with an average maturity period of around 10 years. Usually, the on-lending agreement provides for a grace period (one or two years, during which the borrower will pay only the interests and not the principal).
State Aid	Each on-lending agreement provides for an interest rate complying with the guidelines set out in the Reference Rate Communication (Communication from the Commission on the revision of the method for setting the reference and discount rates OJ C 14 of 19.1.2008).

The equity/quasi-equity financing may be provided by the RIF to eligible companies on a pari-passu basis with other private sector investors. In addition, Equiter provides non-financial support to the final recipients to support the growth and development of their businesses and products. The typical terms of an equity investment are shown in Table 5.

17 Calculated in accordance with the Communication from the Commission on the revision of the method for setting the reference and discount rates (2008/C 14/02)

Table 5. Fondo Ricerca e Innovazione S.r.l. – features of equity product

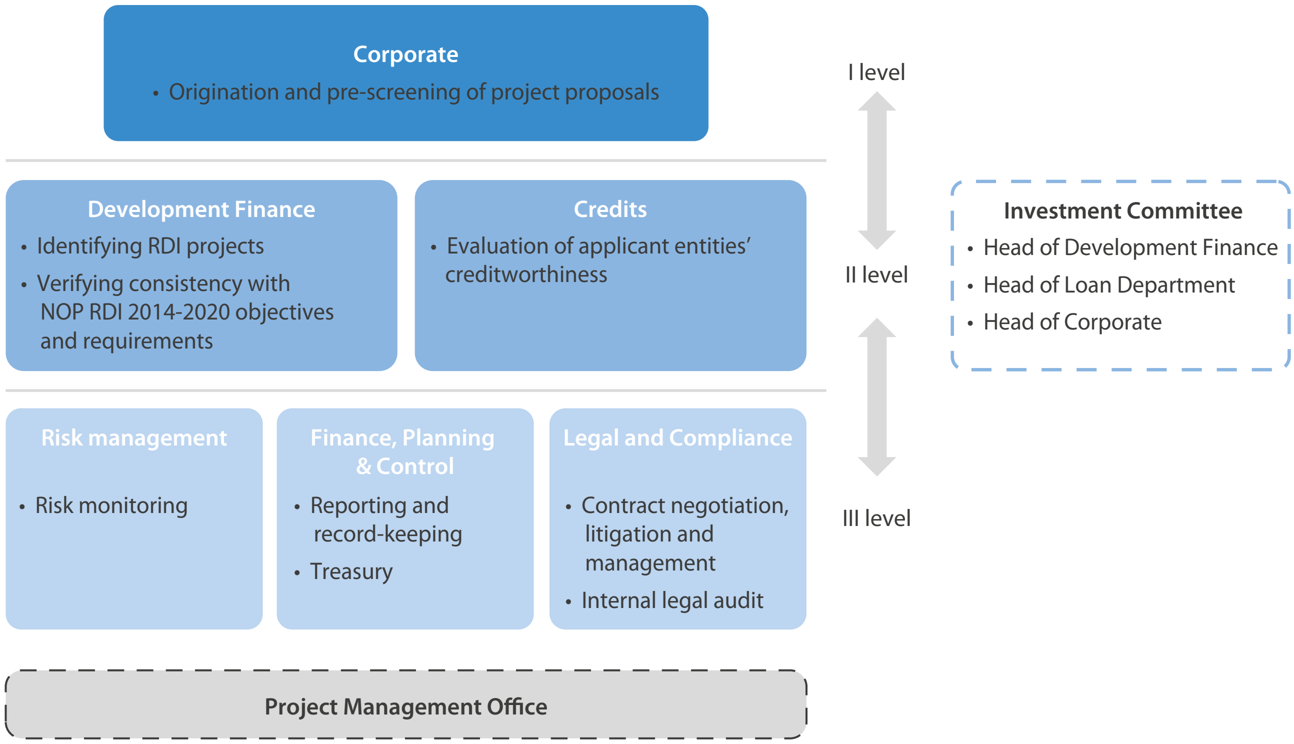
Target businesses	The main target sectors are health, aerospace and smart manufacturing.
Typical investment size	The size of equity investments is particularly wide: it ranges between EUR 800 000 – EUR 25 million with an average size of around EUR 10.8 million. The size of equity investment depends on: • the type of beneficiary (e.g. startup, large enterprise or spin-off) and • the sector (e.g. RDI health project, usually, requires a larger amount of investments).
Maximum investment amounts	EUR 25 million
Investment period	If the RDI project is successful, an exit starting from 5–8 years the disbursement date is foreseen.
Exit mechanism	The investment agreements provide for market standard exit procedures: put/call option, IPO, trade sale, drag/tag along right. Each investment agreement provides for a specific set of exit clauses, according to the financial operation features (in terms of risk, role of the investor etc.)
State aid	The FI's investments are in line with the Market Economy Operator test: • pari passu between public and private investors or • the methodology that has led the FI to the investment decision adheres to market conditions established on the basis of benchmarking or other parametric valuation methods.

4.3.2 Mediocredito Centrale - Banca del Mezzogiorno S.p.A. (MCC)

Following the first Call for Expression of Interest published by the EIB, MCC was awarded EUR 62 million within the MUR RDI initiative, which was reduced by agreement to EUR 45 million in 2021 and EUR 20 million in 2022. The FoF commitment has allowed the bank to pursue its mission and provide medium/long-term financing to selected final recipients. MCC also agreed to co-finance at least 30% of the amount allocated with its own and/or third party resources.

The RIF managed by MCC markets investment loans with a maturity period between 24 and 120 months, targeting significant-sized projects and only for amounts exceeding EUR 500 000. These loans may be disbursed in one or more instalments, subject to the submission of project implementation reports, and a fixed or variable rate repayment plan.

Figure 5. The structure of Mediocredito Centrale's RDI Management Team



To access this product, applicants shall pass a preliminary financial sustainability analysis, followed by a technical-scientific consistency assessment to verify compliance with the requirements of the RIF's Investment Strategy[18]. Financing conditions are then defined by the RDI fund's Management Team according to the creditworthiness of the beneficiary and in accordance with the administrative, technical-scientific and strategic-programme consistency checks. Selected final recipients are required to provide information on the project on a six-monthly basis and on the conclusion of the project within 30 days of its completion. The key terms of medium/long-term debt products by MCC are set out in Table 6.

Table 6. Finanziamento per Ricera e Innovazione – unsecured or mortgage medium/long term loan by MCC

Interest rate	• Share of loan financing from MUR RDI FoF: base rate calculated in accordance with the Commission Communication[19] + spread (4% max) • Fixed or variable for the share of loan financing from MCC's own funds
Collateral guarantees	• InnovFin SME Guarantee • Mortgage guarantee • Specific financial guarantee ('fidejussione specifica')
Total loan amount	EUR 550 000 – EUR 5 900 000 NB: should co-investment via Mediocredito Centrale's own capital apply, the loan amount can increase up to 100% of investment project cost (excluding VAT)
Maturity period of the loans	24–120 months (including a grace period related to the duration of the investment, not exceeding 30 months)

18 Avviso pubblico per l'erogazione di finanziamenti nell'ambito del fondo di fondi del Programma Operativo Nazionale Ricerca e Innovazione 2014-2020 (PON R&I), http://www.ponricerca.gov.it/media/395357/versionevigentedecreto372–2018-prot-16563–2018–10–11.pdf

19 Communication from the Commission on the revision of the method for setting the reference and discount rates, OJ C 14, 19.1.2008, p. 6–9, https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A52008XC0119%2801%29

Proposal forms may be downloaded from the dedicated webpage on https://www.mcc.it/agevolazione/finanziamenti-per-ricerca-e-innovazione/, and once duly compiled and digitally signed, may be submitted via certified email (PEC) to fondoricercainnovazione@postacertificata.mcc.it.

Tecno Tessile Adler Srl

Sector(s): ***Sustainable mobility***

Intermediary: Banca del Mezzogiorno-Mediocredito Centrale S.p.A.

Investment: EUR 550 000 loan

Adler is a well established company in the sustainable mobility sector, based in Southern Italy. It has benefited from a loan from MCC under the MUR Fund of Funds to develop its Hydro product.

Hydro aims to identify, develop and build innovative solutions for hybrid vehicles with zero environmental impact. A demonstrator will be built by installing all the necessary components into a standard production vehicle, taking into account the constraints related to its layout and installation into the vehicle system and of the functional requirements of the newly installed components.

This research project falls within the Smart Specialization area 'Sustainable Mobility' and within the enabling technologies 'Advanced Materials' and 'Advanced Manufacturing Systems'. Through this work, Adler aims to face the strong competition in the sector with the technological innovation of products and to take a position in the high-end sector of the market.

4.3.3 Banco di Sardegna S.p.A.

Banco di Sardegna has established a successful collaboration with Sinloc S.p.A, a consultancy providing, inter alia, advisory services in the access to EU funds and their efficient and sustainable use. The joint team led by Banco di Sardegna was selected to manage a RIF following the second Call for Expression of Interest, responsible for management of resources amounting to EUR 62 million.

Banco di Sardegna, in partnership with Sinloc S.p.A. and with the support of several Italian universities with which it signed memoranda of understanding, is in charge of project scouting and selection activities, given its core financial skills and local experience. The technical and scientific evaluation of project proposals is entrusted to academics and researchers working for partner universities, selected on the basis of their expertise in the NRP areas targeted by the RDI fund. A total of nine Italian universities were selected to allow Banco di Sardegna to cover all the fields listed in the Priority Themes. The universities involved have different size and are organized by departments which have different specialisations. For each project, Banco di Sardegna selects the appropriate university with a department in the subject matter, which then identifies a suitably qualified scientific expert to undertake the analysis.

Potential beneficiaries can apply for RDI funding through Banco di Sardegna, which offers both:

- Medium/long-term debt financing in senior or junior tranches, whose conditions are defined according to the creditworthiness of the RDI project proposal/beneficiary and potential collateral assets acting as guarantees; and
- Equity and quasi-equity in established entities or start-ups, acquiring shareholdings or interests with other investors (primarily industrial entities) in specific eligible projects.

Funding must fall between EUR 250 000 and EUR 6.2 million per eligible final beneficiary for a single project, although investments outside this range may be approved on an exceptional basis by EIB acting as FoF manager.

Table 7. 'Finanziamento chirografario Fondo MUR BEI per Ricerca e Innovazione' – Unsecured medium/long-term loan by Banco di Sardegna

Interest rate	The interest rate is calculated according to the rules established in the Communication of the European Commission[20]. Starting from the table provided by the Commission, Banco di Sardegna (BdS) created a bridging table between rating category of the table and its internal rating in order to be able to determinate the right spread to be applied to the financing. To sum up, BdS applies the methodology set in the communication: Interbank Offered Rate (IBOR) + Spread.
Collateral guarantees	BdS assesses the need for appropriate collateral in the credit assessment of the Final Recipient. In general, the guarantees provided are limited sureties of shareholders.
Typical loan amount	The loan amounts range from EUR 70 000 to EUR 4.4 million. Out of 12 loans four are of around EUR 600 000.
Maturity period of the loans	The average maturity period is around 10 years. The amortization is equal to eight years for almost all the loans, while the grace period, corresponding to the investment period, is generally equal to 24 months.
State aid	BdS evaluates the compliance with State Aid regulations of the projects according to the coherence of the project with the NOP requirements and the compliance with the rules established in the Communication of the European Commission OJ C 14, 19.01.2008.

Banco di Sardegna is responsible for identifying additional co-financing: since leverage effect expected from the ERDF component of the RDI fund is targeted at 30% of the managing authority's contribution to the FoF. Co-financing is typically secured in the form of equity (from Private Equity funds), bank financing from other institutions, or through Banco di Sardegna's own funds.

In 2021, Banco di Sardegna reached agreement with the Holding Fund manager EIB to vary the Operational Agreement which will enable them to develop equity investment products. At the time of preparation of the case study, work is underway to develop its capacity to develop future equity investments that will enable the financial instrument to invest in more complex projects, which requires a high equity investment need.

20 Communication from the Commission on the revision of the method for setting the reference and discount rates (2008/C 14/02)

4.4. Visibility and communication

A communication strategy for the MUR RDI fund of funds was developed by the managing authority as part of its PON R&I, which can be found in Italian on MUR's website: http://www.ponricerca.gov.it/pon-ricerca/informazione-e-comunicazione/.

Figure 6. Homepage of the PON RDI section dedicated to its communication strategy

Because of its regional coverage and public nature, as well as its innovative nature, the MUR RDI Fund of funds has been the subject of numerous articles in national newspapers, both generalist (*e.g.* Corriere della Sera) and specialist (*e.g.* Sole 24 Ore). This has certainly contributed to the great resonance that this instrument has had not only at the level of target regions, but also throughout Italy.

The managing authority emphasises that communication activities promoted under the operational programme are first and foremost a legal requirement in terms of information and disclosure, as well as a means of facilitating the involvement and commitment of all stakeholders in the implementation of the programme, with a view to transparency and participation. It is then underlined how this communication campaign is developed starting from the definition of a multiannual strategy, updated annually, whose aim is to give the widest media coverage to the PON R&I.

Concerning the objectives of the sub-campaign targeting the FoF, they can be summarised as raising awareness of the existence of the financial instrument and communicating the benefits at both macro-level (i.e. RDI sector development in target regions) and micro-level (i.e. funding opportunities for final recipients), in an attempt to foster maximum participation.

Communication activities undertaken included also the participation to national and international events, such as 'Forum PA' in Rome in 2019 and the 'FI Campus 2018' event in Brussels, where the PON R&I 2014–2020 was presented focusing on 'best practice' operations financed, the accountable and transparent use of resources, and first results achieved.

The financial intermediaries have embarked on separate series of promotional actions to help build a robust pipeline of investment and financing opportunities. This has been done by setting up ad-hoc websites or website sections and creating publication materials targeting potential final recipients in target regions. In addition, being physically present through local branches throughout the target territory, financial intermediaries were also able to advertise their products off-line as part of their portfolio of services. Thus, the financial intermediaries are using the promotional measures to build a pipeline as large as possible.

In addition, the financial intermediaries have promoted the financial instruments through hosting and attending events targeting potential final recipients. This activity, in addition to physical presence in local branches, was interrupted by the COVID-19 pandemic, during which the events were moved online, through both zoom calls and regular updates to the website and the contact with potential final recipients became more difficult.

Magaldi Power S.p.A. - 'FOAK STEM'

Sector(s): ***Renewable energy***

Intermediary: Banco di Sardegna S.p.A.

Investment: EUR 4.4 million loan

The final recipient Magaldi Power SpA received a EUR 4.4 million loan investment from Banco di Sardegna under the MUR Fund of Funds. This enabled then to finance a new configuration of an existing prototype that produces energy from solar radiation through a concentrated solar power system, thermal energy storage, steam production and subsequent conversion of the thermal energy into electricity.

This innovative process, which is based on innovative STEM (Solar Thermo-Electric Magaldi) technology has strong potential for exports to overseas markets, generating new employment opportunities and the company's knowledge and innovation capacity.

5. Achievements

The managing authority's central objective for the RIF financial instruments was to boost investment in RDI in Southern Italy. The implementation of the MUR financial instruments has, through the successful disbursement of resources to projects in the regions, demonstrated how this sector can be supported through loan, equity and quasi-equity investments, supporting a number of innovative enterprises working in sectors including aviation, medical science and technology.

In the period ending 30 June 2022, the performance of the financial instruments are as follows

Measure	Performance
No. of investments	31
Amount signed	EUR 140 million
Amount disbursed to projects	EUR 131 million
Amount signed private co-financing	EUR 37.4 million approx
Amount disbursed co-financing	EUR 22 million approx
Employment growth in supported enterprises	828 FTEs

The performance of the financial instruments has shown how equity support has proved to be better adapted to meet the financing needs of innovative enterprises seeking to invest in RDI activities. This may reflect the long-term financial commitment needed to develop new products and services during which time little if any income will be generated. In addition, the impact of the COVID-19 pandemic and related national supportive measures may well have reduced the capacity of final recipients to access additional loan financing for investments as they may have had to increase borrowings to meet their working capital requirements.

In Southern Italy, the COVID-19 pandemic severely impacted the economy during the 2020 and the first half of 2021. This was followed by a rebound in domestic demand and export mainly driven by the containment of the pandemic through a sustained vaccination campaign and by the gradual lifting of COVID business and mobility restrictions, which started in April 2021. Overall, as a result of the above rebound, the Italian economy registered a partial recovery in 2021 compared with the previous year and the GDP grew by 6.5%, compared to a contraction of 8.9% in 2020 caused by the pandemic disruption.

Notwithstanding the progressive recovery of the Italian economy, the deployment of the Fund resources was negatively affected by the adverse economic environment observed in 2020 and part of 2021. Factors affecting the implementation of the financial instruments during this period included the extended mobility and business restrictions in place until at least April 2021 and continuing on and off until end 2021 and the concurrent financial support and subsidised facilities measures (*e.g.* 'Decreto Liquidità' - Law Decree no. 23 of 8 April 2020) implemented by the Italian Government to support the economy and the occupation levels during the COVID-19 crisis. This financial support under the State-aid measure deployed during the COVID-19 crisis led to a 'crowding-out' effect especially against the market-based debt financing provided by the FoF, while equity products proved to be better adaptable to the crisis scenario.

However, further progress in the FoF implementation is expected to continue in 2022, based upon the reported pipelines of certain intermediaries (deploying in particular equity investments) and the positive post-COVID economic recovery indicators for 2022, while other potentially systemic crisis scenarios are likely to impact the global economic recovery in 2022, including, notably, the impact of the Russian invasion of Ukraine.

The MIUR Student Support Fund of Funds

In November 2018, the managing authority committed EUR 100 million of ESF resources to a new Fund of Funds to support students the eight regions of Southern Italy, who will attend university and master programs in Italy or in other countries. Up to 25% of the resources may be allocated to students from other regions. Students can receive loans to cover both tuition fees and up to EUR 10 000 per year for living expenses. Loans have a duration of up to 25 years and a grace period of up to 30 months.

The financial intermediaries Gruppo Bancario Cooperativo Iccrea and Intesa San Paolo have actively promoted the student loan instrument to eligible groups through both their branch networks and online. Partnerships have been developed with Universities, which are helping to promote the scheme.

Since the sector is currently expected to recover in 2022, current projections suggest that the financial instruments will have committed their ERDF resources by the end of the investment period (December 2023), despite the negative impact of the COVID-19 pandemic. As well as the direct benefits of the investments in innovative enterprises, from an EU funds programming perspective, the RIF financial instruments have significantly enhanced the capacity within the managing authority to use financial instruments to support their wider policy objectives. In particular, in 2018, the managing authority committed EUR 100 million of ESF resources to a new financial instrument to support students from the Southern regions. Working with the EIB as FoF manager, an instrument was designed to provide low-cost, long-term loans to help meet students' living expenses.

In the next programming period, responsibility for promotion of RDI will pass to the Ministry of Economic Development and the MUR will operate as second level entity within the NOP of the Ministry of Economic Development. The scope of the next programme to support innovative enterprises and research and development is currently under consideration. In view of the success of the equity products, it cannot be excluded that the focus of the next programme will be on the development of more equity financial instruments to support RDI activities.

6. Lessons learned

6.1. Main success factors

The Holding Fund/Fund of Funds structure has allowed the resources to be deployed flexibly during the implementation of the financial instruments

During the implementation period, partly as a result of the COVID-19 crisis, demand for equity finance has increased whilst loan finance has proved less well adapted to support RDI investment. As a result the balance between the different products in the FoF's investment strategy has shifted to increase the proportion of resources committed to equity funds, granting additional flexibility to financial intermediaries in terms of allocation between loan and equity products. The FoF (or Holding Fund) structure has facilitated the development of the Investment Strategy in consultation with the managing authority and Investment Board to respond to the changing demand. In addition, as one of the financial intermediaries was unable to manage equity investment funds, the FoF structure allowed resources to be redistributed among the intermediaries based on their capacity to deploy the resources including through equity and quasi-equity investments.

Equity and quasi-equity finance have proved to be well adapted to support RDI investment

The demand for equity and associated quasi-equity investment in the form of shareholder loans has been stronger than that for loan finance. This experience reflected the specific needs of the companies in the region, including the spin-off of new innovative companies, which require long term patient capital to support the development of new products, during a period where little or no income is being generated. In addition, the COVID-19 pandemic may have contributed to an increased demand for equity and quasi-equity finance as companies have increased their borrowings to meet their working capital requirements during the crisis rather than to finance investments.

Roboze

Sector(s): ***advanced manufacturing/3D printing***

Intermediary: Fondo Ricerca e Innovazione S.r.l. (Gruppo Intesa Sanpaolo) / Equiter S.p.A

Investment: EUR 3 million equity/quasi-equity investment

Founded in 2013, in the city of Bari in Southern Italy, the company Roboze has developed advanced 3D printer technology. This allows it to produce precision parts for advanced manufacturing industries including aviation, technology and electric vehicle sectors.

The 2018 equity investment by the MUR RIF managed by Equiter helped finance the development of a new line of 3D printers called ARGO. These printers, which are now fully operational have enabled the company to open new business channels and develop a dedicated line of proprietary materials.

The company continues to base its EMEA (Europe, the Middle East and Africa) operations from its headquarters in Bari, alongside its successful US based sister company. It employs 60 people in its Italian base in disciplines including materials science, mechanical engineering and computer programming. Approximately 60% of the company's Italian-based workforce is focused on RDI.

Financial intermediaries have successfully developed their capacity to assess technical-scientific feasibility of their projects.

The inclusion in the financial instruments' Investment Strategy of the eligibility requirements under the NRP and Horizon 2020 Technology Readiness Levels, required the financial intermediaries to develop the capacity to assess these non-financial criteria as part of the investment appraisal process. The financial intermediaries have been able to perform the technical-scientific feasibility assessment through a combination of means. In some cases, internal experts have been recruited and/or retained within the organisational structure of the financial intermediary (or one of its consortium members). In other cases, specialist consultants have been secured to undertake the technical-scientific feasibility check of the project based on the requirements of the Investment Strategy. In addition, the managing authority has supported this process by providing its own review (and 'blessing') of the assessments undertaken by the financial intermediaries' experts. This process, whilst not being a formal approval by the managing authority has helped to give the financial intermediaries assurance that their application of the criteria is aligned with that of the national authorities.

The requirement for projects to demonstrate alignment with the National Research Plan has helped develop a pipeline of high quality innovative products

The adoption of these standards by the RIF financial instruments has helped ensure that the projects supported are of a high quality in terms of both technology and financial viability. Further, by making finance available through a financial instrument aligned to the NRP, the managing authority has incentivised entrepreneurs and innovative companies to bring forward eligible projects which in the long term may have a significant impact in the region.

6.2. Main challenges

Given the novel nature of the RIF financial instruments, which focused on a sector that was recognized as being under-developed in the target regions of Southern Italy, it was necessary to tackle several challenges during implementation. Previous positive experience with financial instruments through the JESSICA and JEREMIE programme meant that there was a pool of potential financial intermediaries interested in the management of the funds and this was reflected in the success of the initial Calls for Expressions of Interest.

Once established, financial intermediaries had to develop a pipeline of potential investments and this was one of the areas of greatest challenge in the operation. The historic absence of investment in the region for RDI had had the effect of reducing demand as entrepreneurs either went elsewhere to develop their ideas or chose to work in other sectors where finance was more readily available. In order to address this, it was necessary to promote a change in culture within RDI institutions and enterprises, highlighting the opportunities and supporting the development of links between the science and business worlds. Some successful early investments were achieved through existing contacts within the financial intermediaries. The promotion of these early successes helped spread the world and initiate the culture change needed in the region.

The experience of implementing the financial instruments have highlighted the importance of aligning the investment strategy with the public support to scientific and technical research institutions and companies. A significant amount of public grant support is generally available for RDI projects and this support was further boosted during the COVID-19 pandemic. As a result, in some cases RIF investments were 'crowded out' by grant with an adverse impact on the financial instruments investment targets. Taking account of this a key lesson learned is that it is essential that in the future, the RIFs' products and investment strategy are aligned with the public grant schemes. In order to facilitate the alignment of these activities, a clear set of rules or guidelines could be developed to make it easier to combine, grants and loan and equity investments by ERDF financial instrument disbursed at market conditions[21].

Finally, the demand for loan products was significantly lower than expected, possibly due in part to the challenges of the COVID-19 pandemic. Thanks to the flexibility of the Holding Fund/Fund of Funds structure, it was possible to adapt the Investment Strategy to reduce the level of commitment to loan instruments, allowing additional funds to be provided to the equity and quasi-equity recipients.

6.3. Outlook

The operation is due to complete its programme of investments by the end of the programming period in 2023. In order to ensure maximum utilisation of the ERDF programme resources, the FoF Manager is currently actively monitoring the financial intermediaries' disbursements, deal flow and future pipeline, in consultation with the managing authority. A number of measures may be deployed in the event that it is considered necessary to ensure all the resources are disbursed within the eligibility period. This may include the use of flexibility within the FoF structure to reallocate resources to fund managers or products with the greatest demand, subject to the approval of the Investment Board.

Under the National Plan "Innovation, research and competitiveness for the digital and green transition", involving the Ministry of Economic Development, along with MUR, Italy is currently developing its strategy for financing research and development with EU shared management funds in the 2021–2027 programming period. In light of the experience of the RIF equity financial instruments it could be expected that further resources will be committed to enable similar financing to be made available in the next period.

In addition, the ongoing development and growth of industry districts (*e.g.*, aerospace in Campania and Apulia Regions) will help to foster the development of new RDI projects in the region. The growth of incubators and/or business angels will also enhance the entrepreneurial attitude of potential founders of the start-ups, helping integrate people with financial or business skills with the founders.

21 The new flexibilities to combine grants with financial instruments in a single operation under Article 58(4) to (7) are described in the fi-compass publication, Combination of financial instruments and grants under shared management funds in the 2021–2027 programming period

Notes

Notes

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