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Technological Change and Sustainability: an Explorative Study on the Role of The Foundations of Banking Origin

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ABSTRACT

Since their establishment, the Italian Foundations of Banking Origin (FBOs) have proved to play a fundamental role in the development of the local territory, not only in the social but also in the economic sphere. Therefore, it seems appropriate to investigate the role of FBOs in an economic environment increasingly characterized by technological change, in which firms remain competitive if they are dynamic, ready to meet new market challenges, and still operating sustainably. This paper seeks to understand precisely whether the Foundations of Banking Origin are ready for these new challenges and proactive in supporting the entire category of stakeholders through the technological transition initiated by Revolution 4.0 in a way that is as sustainable as possible. Starting from the analysis of *status quaestionis* on technological innovation and sustainability, the work continues with the analysis of the FBOs intervention areas focused on technological progress, to assess both the current role played and the new prospects for development.

Fin dalla loro istituzione, le Fondazioni di Origine Bancaria (FOB) italiane hanno dimostrato di svolgere un ruolo fondamentale per lo sviluppo economico e sociale del territorio. Appare pertanto opportuno indagare il ruolo delle FOB in un contesto economico sempre più caratterizzato dal cambiamento tecnologico, in cui le imprese restano competitive se sono dinamiche, pronte ad affrontare le nuove sfide del mercato ed ancora operando in modo sostenibile. Questo lavoro cerca di comprendere se le Fondazioni di Origine Bancaria siano pronte a queste nuove sfide e proattive nel supportare l'intera categoria di stakeholder attraverso la transizione tecnologica avviata dalla Rivoluzione 4.0 in modo sostenibile. Partendo dallo *status quaestionis* in tema di innovazione tecnologica e sostenibilità, il lavoro prosegue con l'analisi degli ambiti di intervento delle FOB focalizzati sul progresso tecnologico, per valutare sia il ruolo attuale svolto sia le nuove prospettive di sviluppo.

Keywords: Foundations of banking origin, Innovation, Sustainability, Economic development, Techno-corporate gap.

1 – Introduction

There is no doubt that humanity is experiencing a very important stage in its existence. This historical moment is so revolutionary that it has been defined by numerous scholars (Schwab, 2019; Philbeck & Davis, 2018; Xu *et al*., 2018; Lambert, 2017; Morrar *et al*., 2017; Peters, 2017; Song, 2017; Tan & Shang-su, 2017; Davies, 2015) the "4th Industrial Revolution". Every technological revolution primarily involves the creation of something new. This determines the introduction of a new environment or infrastructure necessary for the innovation that characterizes that particular industrial revolution to be widespread and, consequently, lead back to an economic revolution, with significant repercussions on individual behavior and social relations.

The "4th Industrial Revolution" is characterized by an impressive amount of data available, corroborated by a renewed ability to analyze, catalog, and interpret them (Skilton & Hovsepian, 2018). This process induces and will increasingly induce a consequent and radical change in the business models of companies (Cornelis de Man & Strandhagen, 2017) - whether they are operating in the agricultural, industrial, or service provision fields - and in the very way of approaching and implementing education and research (Kozak *et al.*, 2018). However, at present, some aspects of this technological change still require further investigation (Kraus *et al.*, 2022). Just by way of an example, while contributing extraordinarily to the lengthening of life expectancy with a greater possibility of affecting both physical and mental health, biotechnologies could question the very concept of being human as we have conceived it for millennia until to date (Karamanou *et al*., 2017).

Even neurotechnologies can influence human consciousness and thought and transfer them to other beings or devices (Blackford & Broderick, 2014), while having extraordinary applications in the medical field and allowing us to read and communicate with the brain. A more than substantial awareness of the transformation has long since spread worldwide. Therefore, we must ask ourselves about the situation in Italy and which actors can play a key role in developing sustainable technological projects.

From this point of view, Foundations of banking origin - increasingly dedicated to operating rather than grant-making activities - can provide an enormous contribution to change in an ethical key, given the propensity for social purposes and their anchoring to the territory (Rangone, 2017; Boesso *et al.*, 2015).

To clarify this important aspect concerning the Foundations of Banking Origin (also FBOs), the present work has been structured as follows. *The first section*, which also includes these introductory notes, defines aspects related to the relationship between companies and technological innovation. From this point of view, the ethical perspective of the investigation is considered according to a "systemic" analytical framework. In *the second chapter*, Foundations of Banking Origin are identified as specific players to facilitate change from an ethical point of view. Their figure is analyzed in the context of the relationship with the stakeholders and the reference territory. *The third chapter* analyzes the data relating to the interventions of the FBOs in the field of technology and innovation. This is the sections that demonstrate the current contribution of the Foundations to the purposes of the analysis. Concluding remarks end the work.

As far as the methodology is concerned, the author has deemed it appropriate to use data relating to the institutional activity of FBOs, drawing from official sources such as ACRI. the

Italian Association of the Savings Banks and the Foundations of Banking Origin, a voluntary, non-profit, and apolitical association established in 1912.

1.1 – *Technological innovation and the ethical perspective of the analysis*

The starting point of this work is linked to the following questions: how much and what is known about the technology under development? Are our companies aware of the *techno-corporate gap* – a term first introduced in 2020 and describes a firm's propensity to innovation (Rangone, 2020) – which distances them from the international best in class? Will companies and citizens be able to wisely ride the prodigious technological wave that characterizes the so-called "4th Industrial Revolution? The issue relating to the "4th Industrial Revolution" is by no means obvious.

There are many and such technologies to be concerned with, just as many and such are the implications that they can have on the way of thinking and producing or on the way of being of the human race which, in addition to knowledge of each of the technologies, that a systemic approach (Senge, 2006, 1990; Senge & Lannon-Kim, 1991) is of indisputable advantage to study and this further stage of the industrial revolution especially in a context of sustainable development.

The systemic approach, obviously born in a context of an eminently scientific nature, was then also used in the human and social sciences (Mella, 2021). It allows us to acknowledge that, to identify complex phenomena, it is important to look at the relationships between the individual elements of the phenomenon, framing the latter in the context in which its manifestation takes place (Rangone & Mella, 2019).

In light of these observations, therefore, we can further specify that we do not agree on considering individual innovative technologies as such. They must be inserted in an eminently multifaceted systemic context of an economic, political, and social nature in which they can bring greater well-being. These innovative technologies find full legitimacy and their *raison d'être* if all the actors who act in this context play their role. More explicitly, these technologies will not bring greater well-being to man by creating more efficient complex systems if the political, social, corporate, and financial worlds do not play their part (Rangone, 2022).

Creating a system that takes into consideration man's ability to make even crucial decisions is the preparatory premise for avoiding the potential contraindications that derive from the simple application of some, if not all, of the technologies today available. What has just been stated is all the more likely since some of the technologies that are emerging will be able to decide without requiring a prior human "placet", realizing in practice sensitive contraindications that could potentially manifest themselves as uncontrollable.

Trying to understand is therefore necessarily assumed as an indisputable preparatory duty, to better act in a revolutionary context which certainly has innovative connotations from a scientific-technological point of view but which could lead to irreversible human implications if not governed *ab initio* in the due ways. But from what perspective is it possible to observe the change taking place? A fundamental contribution in this regard is provided by the perspective of value (Kang *et al*., 2017; Porter & Kramer, 2011; Porter, 1985) and by business management conducted in an ethical key (Caselli, 2015). For several years now, the topic of corporate social responsibility (Gillan *et al*., 2021; Li *et al*., 2021) and stakeholder satisfaction (Gazzola & Mella, 2006) has been dealt with in the corporate and managerial economic fields.

However, the open question is to bring about not "a change" but "the change". This means creating value in light of the most current managerial and business management concepts, thus finding a synthesis among the innumerable doctrines capable of satisfying not just one perspective but the multiple perspectives that involve human beings and the environment in which the company operates.

But value is not the only interpretation. Ethics and respect for man require particular attention, especially in a corporate and social context increasingly conditioned by technological intervention. Italian Masters of "economia aziendale" have already passed on important lessons to us (Rangone, 2022). Both in the period before the adoption of *economia aziendale* as a science and in the continuation of the doctrines disseminated by Gino Zappa, considerations of a purely technical nature have always been corroborated by analyses and contents aimed at preserving the integrity and respect for man (Zappa, 1927; Massa, 1913; Cerboni, 1886; Besta, 1880). So, the fathers of *economia aziendale* tried in every way to achieve a real protagonism of man in the economic context (Rangone, 2022). They foresaw with wise foresight the importance of spreading a principle of morality as if to ward off dark times which, despite us, are increasingly looming in our socio-economic context.

It is, therefore, necessary to raise the fundamental question of who will be the real protagonist of this "industrial revolution" and who will award the ultimate benefits: will it be the technology or the human being? Posterity will judge!

2 – Foundations of banking origin: key players for sustainable development of the territory

2.1 – *The indissoluble bond between FBO and stakeholders*

After defining the context and perspectives through which the evolution dictated by the 4th Industrial Revolution should be considered, we will focus on one of the actors who, in our humble opinion, can play a key role in supporting the innovative development of the territory: the Foundations of Banking Origin. The question is: why banking foundations?

For a more complete economic and social development, the most modern doctrines on the subject of CSR (Gillan *et al*., 2021; Li *et al*., 2021) have for some time now been pushing toward a company policy that respects ethical and sustainable principles. This is mandated in every aspect relating to governance, the environment, and society. From this, the acronym of ESG has emerged more recently, understood as an ethical system aimed at regulating the *modus operandi* of companies (Gillan *et al*., 2021). Taking note of this, what better example can be found in the current economic context of grant-making/operating organizations, endowed with substantial assets and carefully concentrated on supporting the territory and all stakeholders? Much has already been said on the subject of FBOs, their nature and legal framework (Minguzzi *et al*., 2019; Rangone, 2017; Sargiacomo and Rangone, 2016; Boesso *et al*., 2015; Faravelli and Clerici, 2014; Corsico and Messa, 2011; Pastori and Zagrebelsky, 2011). Therefore, in this work, we do not retrace already known aspects related to their origins and evolution.

The Foundations of banking origin face challenges concerning internal governance as well as challenges coming from the local economic and legal context in which they operate. They are, infact, primarily focused on the granting activity with charitable purposes or on the implementation of their projects with a social character (Rangone, 2017). Therefore, a correct

and constant relationship with the various actors working in the local economic scenario is essential.

The Foundations of banking origin are not-for-profit organizations, so consequently, the decisions provided in the multi-year program by the Steering Committee and those taken by the Board of Directors will inevitably have repercussions on future asset consistency. However, these are not the only factors affecting FBOs' trends and their forms of governance.

The various internal organizational structures can greatly influence managerial decisions and asset management, helping the various bodies in the accomplishment of operational functions.

Furthermore, a great influence comes from the exogenous players around the FBOs. The stakeholders' role is essential for the proper conduct of the FBOs' institutional activities as their influence is equally relevant to asset management. Then, it is important to identify the heterogeneous members constituting the large group of stakeholders. According to the traditional definition given by Freeman (2010), and Freeman and Evans (1990) – within the stakeholders' group we should consider everyone who has a role and a specific weight in corporate life. In this regard, it is also detected the common interest in the company's profits. But the profit is the main purpose of a for-profit organization. Therefore, how to understand the group of stakeholders in the case of a non-profit organization? Even in the case of our investigation, stakeholders are identified in those figures that have a relation with the administrative or institutional management of the FBOs. For governance, we can distinguish different degrees of influence by various groups of Stakeholders such as expressed in Figure 1 exposed.

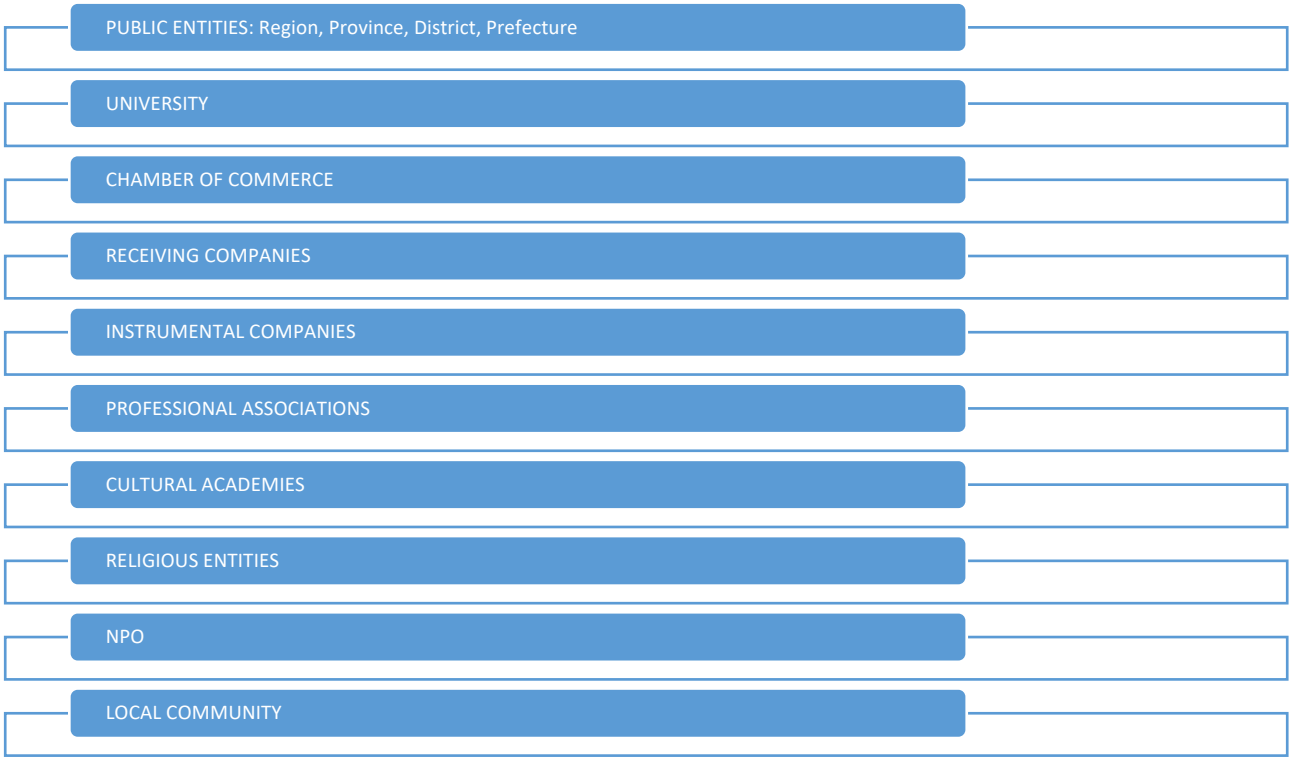

Fig. 1 – Stakeholders class of FBOs (Source: author's elaboration

Within the 1st degree are included the bodies or the institutions that are by law an active part during the selection of the steering programs. Among them, we can distinguish the regions,

the provinces, the districts, the prefectures, the chambers of commerce, professional associations, cultural academies, universities, and religious entities. They are proactive, targeting distinct members with requirements and undisputed professionalism to be involved in the steering body. Therefore, the influence that these entities may exercise occurs directly in the steering activity. By identifying specific social needs, they may propose special social and philanthropic objectives in which the Foundations engage their funds or financial investment in the local community and support the territory – through the drafting of the multi-year program.

Within the 2nd degree are included all the figures who do have not an active role during the adoption of internal decisions. They suffer the effects arising from effective management, although they have a direct relationship with foundations. In this sense are mostly mentioned the non-profit organizations, the instrumental companies, and the receiving companies. A mere title of specification: non-profit organizations (NPO) are the direct intermediaries between the FBO and the local community. These organizations are the beneficiaries of the institutional activities by receiving the grants as regarded by the FBOs' statute.

Specific considerations can be realized about the instrumental companies that are organisms closely linked with the Foundation and essential for specific activities' success. Sometimes the ancillary service undertakings are created *ad hoc* so that they can help the foundations to carry out their operational function. Due to this essential and tight relationship with the FBOs – which usually hold the majority interest – the management effects fall into both the Foundations and ancillary service undertakings. The receiving companies, instead, formed up to now the stronger partner due to the interests that the FBOs had and still have in them, albeit less consistent. Although the Foundations have no more active role in the governance structure of the receiving banks, however, statutory changes and daily vicissitudes of receiving companies are still experienced with particular apprehension by FBOs due to the good income coming from the interests. Several legislators over time have tried repeatedly to slacken the link characterizing the relationship between the FBOs and the receiving bank. We can still add that the need to make the Italian banking system freer and more independent is the direct consequence of the doubt concerning the possible disturbance of the FBOs in the receiving banks' management.

The 3rd degree includes the local community. It is considered a stakeholder since it is inevitably involved both in the case of FBOs' granting projects to non-profit organizations (*grant-making* process) and also in the case of directly managed projects (then *operating*).

The community is the beneficiary of the Foundations' activities even if often indirectly.

By these considerations, we should add that in the FBOs with Partner's Meeting, the Stakeholders' role is even more relevant during the identification of steering policy (Rangone, 2017). Therefore, the greater the importance of stakeholders greater will be the necessity to implement adequate transparency and accountability plans. For this reason, the FBOs live and work consistently within a system that could be considered "extremely controlled" and strictly linked to the local territory.

2.2 – *The granting activity: beneficiary sectors and criteria*

The Foundations of banking origin have a very important social role. The philanthropic role considered in the statutory purposes lays the foundations in close connection with the local economic, social, and political context in which they operate.

It is not easy to continue the heritage of the Savings Banks, although only about social and philanthropic activities. FBOs are singular and extraordinary organizations that had to fight through the many laws characterizing them in their form and function (Pastori and Zagrebelsky, 2011; Corsico and Messa, 2011). They are all great social utility tools thanks to substantial inherited assets and as grant-making organizations; for this reason, FBOs have to manage different areas affecting both purely institutional activity and non-institutional activity.

Regarding institutional questions, every foundation must deal with requests for grants from the various stakeholders, it must be able to handle events related to public activities and the information about them and it must eventually organize all the activities for its projects.

About the granting activity linked to external projects, every FBO must take account of:

- *Beneficiary sector*. Refers to the macro-thematic scope of the intervention supported by the Foundation;
- *Beneficiary entity*. Concerns the type of entity receiving the aid, identified according to the legal nature or the activity carried out (non-profit organizations, public and private);
- *Type of intervention*. Refers to the specific operating mode of the grants (goods and/or services purchased with the contribution provided by the Foundation);
- *Territorial value*. Indicates the extent to which the effects of the intervention occur;
- *Origin of the project*. Consists of the source of the initiative (realized by the Foundation or by external actors);
- *Project management*. Describe the form and organizational model in which the Foundation's contribution achieves its objectives;
- *Collaborations with other parties*. Identify the involvement of other bodies in the design or management phases of the operations;
- *Cofinancing*. Consider the involvement of other entities in the financial support of the project.

The institutional and non-institutional activities, therefore, require complex management models (Bodega *et al.*, 2009: 50) as well as precise governance frameworks (Rangone, 2017) to oversee and carry out efficiently every function. Above all, from the criteria mentioned above emerges the potential impact in terms of sustainability. More specifically, the "*territorial value*" index involves the capability of the project to spread value for the local area in economic and social terms. In the same way, the "*collaboration with other parties*" index determines the capability to engage important economic actors - public and private - to improve the value creation.

3 – The FBOs' activities and their impact on the spread of sustainable innovation

3.1 – *The asset management*

The comprehension of the assets and how they are managed is pivotal to having a vision of the economic impact of the Foundations of banking origin. In this regard, it is appropriate to refer to the official data provided by ACRI.

According to the 29th Annual Report on Foundations of banking origin (ACRI, 2024), "the assets of the Foundations of banking origin as of December 31, 2023 amounted to just over 48.5 billion euros, up (+2%) compared to the amount recorded at the end of 2022 (it was equal to 47.6 billion).

The general structure of the assets is similar to that of previous years: in fact, tangible assets account for 4.6%, while financial assets, financial receivables and liquid assets amount to 95.4% of total assets, data that reflect those of 2022. Total financial assets grew by approximately 981.5 million euros, and these amounted, including fixed and non-fixed assets, to 44.6 billion euros (they were 43.7 billion in 2022). In the 2022 financial statements, investments related to the mission amount to a total of 4,645 million euros and represent approximately 9.8% of total assets and approximately 11.4% of equity (incidences that remain almost unchanged compared to 2021)." (ACRI, 2024:10).

3.2 – *Analysis of the granting activity in the R&D sector*

To understand the role of the Foundations in the innovative development of the territory, it is advisable to understand the status of the activities and interventions carried out. More than half of the Foundations show a high degree of sectoral specialization. According to the data released by ACRI (2024), those where most of the Foundations are involved are Volunteering, Philanthropy and Charity (85 Foundations), Art, Activities and Cultural Heritage (84) and Education, Instruction and Training (81). The number of Foundations active in the fields of Public Health, Research and Development, Local Development and Social Welfare is high as well.

However, in this work, attention has been focused on the research and development sector, an area in which innovation and technological progress express their potential. As shown in Table 1, the interventions in the Research and Development sector have been numerous.

The FBOs intervene through the financing of scholarships and doctorates, through loans for the purchase or endowment of specialist instruments, installations and equipment, supporting conferences, conventions and seminars, as well as promoting the development of higher education study (ACRI, 2022: 161).

Furthermore, the FBOs also resort to the creation of networks and partnerships at the national level (with both public and private subjects), to participate in international projects, as well as to promote forms of cooperation between several Foundations that herald system initiatives that have become, over the years, a national reference.

According to the ACRI report 2024, 55.4% of the projects carried out in this sector involved private entities, while 44.6% involved public entities.
In 2023, R&D projects intended for foundations (39.5%), public schools and universities (37.8%), other private individuals (15.1%), local authorities (3.4%), public hospitals and institutions (2.3%), other public bodies (1.1%), while social cooperatives (0.4%) (ACRI, 2024: 188).

In light of what we have previously considered regarding the relationship with stakeholders and the nature of FBOs, these data demonstrate two fundamental aspects:

– the commitment to transfer value to the territory through the lever of the research and development sector, and therefore,

– a powerful chance to intervene as champions for technological progress.

In this regard, some dutiful reflections are to be made.

Table 1 – The sectors of intervention of the FBOs (values in millions of euros number) (Source: Adapted from ACRI, 2024, p. 117)

Interventions in the Research and Development sector	2023				2022			
	Amount approved	%	No. of interventions	%	Amount approved	%	No. of interventions	%
Volunteering, philanthropy and charity	273.7	26.1	3,663	16,7	275,9	28.7	3,792	17.8
Art, activities and cultural heritage	251.2	24.0	8,088	36.8	246.9	25.7	7,849	36.8
Education, instruction and training	181.0	17.3	3,158	14.4	110.6	11.5	3,199	15.0
Scientific and technological research	101.3	9,7	906	4.1	123.4	12.8	883	4.1
Local development and local public housing	83.1	7.9	1,846	8.4	86.6	9.0	1,931	9.1
Public health, preventive and rehabilitative medicine	48.4	4.6	824	3.7	36.7	3.8	873	4.1
Youth growth and education	32.6	3.1	1,246	5.7	18.0	1.9	882	4.1
Environmental protection and quality	29.1	2.8	655	3.0	30.1	3.1	435	2.0
Assistance for the elderly	14.4	1.4	161	0.7	9.2	1.0	193	0.9
Realization of public works or public utility works	7.5	0.7	157	0.7	6.1	0.6	113	0.5
Sports activities	6.9	0.7	874	4.0	7.3	0.8	778	3.7
Pathologies - psychological and mental disorders	5.8	0.6	46	0.2	0.6	0.1	40	0.2
Family and related values	5.2	0.5	157	0.7	6.9	0.7	183	0.9
Civil Protection	3.9	0.4	117	0.5	2.4	0.3	92	0.4
Food safety and quality agriculture	2.5	0.2	34	0.2	0.8	0.1	21	0.1
Crime Prevention and Public Safety	0.6	0.1	26	0.1	0.0	0.0	7	0.0
Civil rights	0.2	0.0	14	0.1	0.4	0.0	14	0.1
Prevention and recovery of drug addictions	0.1	0.0	2	0.0	0.1	0.0	6	0.0
Religion and spiritual development	0.0	0.0	7	0.0	0.0	0.0	6	0.0
Consumer Protection	-	-	-	-	0.1	0.0	4	0.0
Grand total	**1,047.5**	**100.0**	**21,981**	**100.0**	**962.2**	**100.0**	**21,301**	**100.0**

The fundamental Macro areas and value transferred in the Research and development are shown in Table 2.

Table 2 –- Macro areas and value transferred in the R&D field (Source: adapted by ACRI, 2024)

Macro areas	Weight on tot.	Value (€ millions)
Technological transfer	30.6%	31.0
R&D in medicine	22.1%	22.4
R&D in mathematics, physics and natural sciences	17.5%	17.7
R&D in human and social sciences	16.1%	16.3
R&D in engineering	13.6%	13.7
Various	0.1%	0.1

As shown in Figure 2, the trend in the R&D sector has increased in the last years. Compared with previous years, 2023 marked a year of a particular commitment to the sector, reaching an extraordinary peak. Surely the Covid-19 pandemic has not facilitated the interventions in previous years.

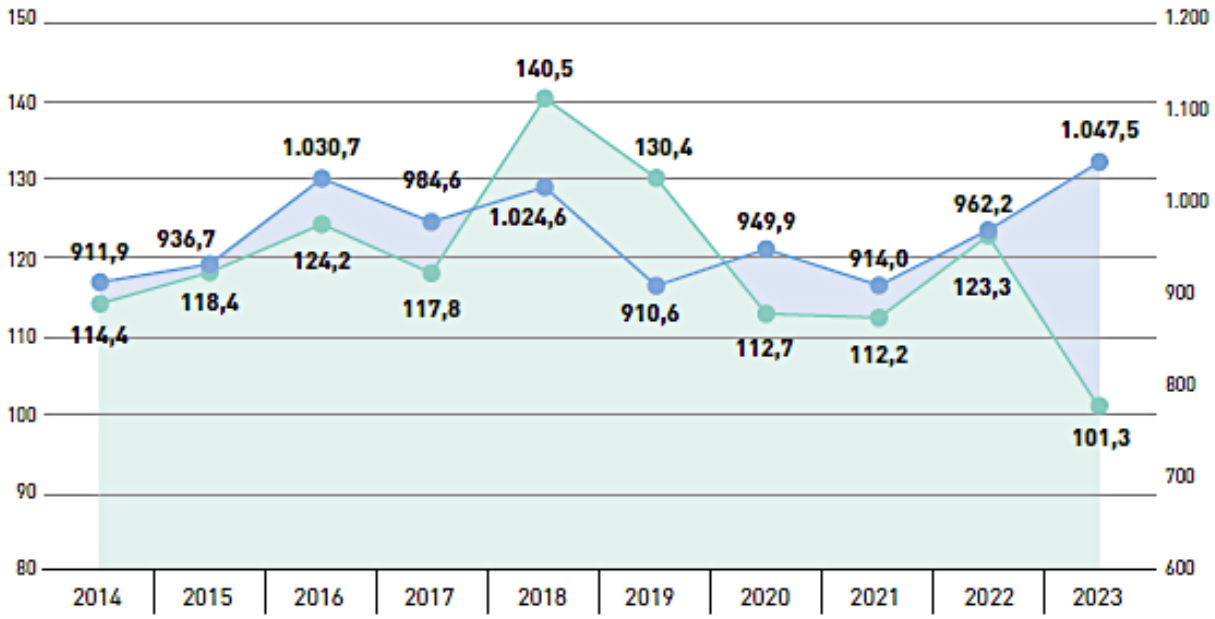

Fig. 2 – Comparison of total grants (green) and R&D grants (blue) (Source: ACRI, 2024)

In our opinion, this can be particularly interesting concerning two aspects:

1) the type of interventions that the technology entails. The technological sector infact requires interventions for the development of new skills, know-how, and the acquisition of instruments.

2) the little awareness of companies, bodies, or other organizations on the role that FBOs can play in developing research and application projects; just as there is little awareness of the Foundations themselves on the role they can play as promoters in an Open Innovation context (Baban *et al.*, 2022; Baban *et al.*, 2021; Rangone, 2017).

The current commitment in the specific area of "Technological Innovation and Digitization" infact represents only 1.5% of the total granting activity of the sector R&D (ACRI, 2024: 189). In this regard, the work carried out by the Digital Republic Fund is particularly interesting.

3.3 – FBOs as key players in innovation

3.3.1 – The Digital Republic Fund

The year 2023 saw the continuation of the activity of the Digital Republic Fund or, also "the Fund" (translation from Italian "*Fondo per la Repubblica Digitale*"), launched in 2022 and operationally managed by the single-member Impresa Sociale Srl, 100% owned by ACRI. It supports 23 projects dedicated to NEETs and young women, for a total of 12.8 million euros and publishes two additional calls for proposals: one called *Prospettive*, aimed at the unemployed and inactive, and a second called *In Progresso*, aimed at workers at risk of demotion due to technological and digital innovation.

The Fund was also recognized with a contribution of 2.5 million euros by Google.org, a philanthropic entity of the international group of the same name for the management of the CrescerAI call for proposals, dedicated to supporting the application developments of artificial intelligence to be promoted and disseminated free of charge within small and medium-sized enterprises, including social ones, operating in the Made in Italy sectors. In 2023, 72 Foundations joined the Fund, for a total of 83.7 million euros in resources paid, with a tax credit of approximately 54.4 million, thus collecting a total amount of 98.9 million euros, supported by a tax credit. Overall, it represents the 8% of the total granting activities (ACRI, 2024: 13).

3.3.2 – The value creation through the investee companies

The analyses expressed above, therefore, testify not only to a necessity but also to a great opportunity. Foundations can play a key role in the technical progress and local economic development brought about by this technological transformation. This is not only to achieve an economic evolution but also a social transformation in light of the type of interventions that would take place in a sustainable key.

Although FBOs do have not a for-profit aim, the chance to find a specific and distinctive dimension in the economic context is not to be disregarded. To relaunch the Italian economy, Foundations of Banking Origin should have a role in the companies' efforts in the technological sector, sustaining innovation and development in the private and public services.

A specific case of the key role of the Foundations comes precisely from investee companies. By way of example, the investment of the FBOs in CDP and the subsidiary CDP51 Reti S.p.A. is particularly significant not only for the number of resources used but above all for its purpose and the nature of the intermediary. The relationship between Foundations and CDP goes beyond that typical of the shareholder. In fact, following an agreement signed in 2019, in May 2021 the CDP and ACRI signed a new protocol aimed at renewing the collaboration and also extending it to the CDP Foundation.

The agreement aims to further strengthen the cooperation between Cassa Depositi e Prestiti and FBOs for the development of joint projects for the benefit of local communities (CDP, 2021). The protocol defines the national reference framework aimed at promoting specific territorial collaboration agreements for the establishment of information points at the headquarters of the Foundations. Furthermore, the collaboration between CDP and ACRI may concern artistic-

cultural initiatives, projects in the sector of sustainable living for families, students and the elderly, as well as the identification and support of joint venture capital initiatives.

In particular, the agreement provides:

- valorization of the artistic heritage of the CDP Group and the territory of reference of the Foundations;
- enhancement of human capital;
- support for start-ups;
- promotion of young artists;
- urban regeneration projects with infrastructures supporting the quality of life, neighborhood services, and social cohesion;
- promotion of territorial excellence, with a focus on innovation, research and sustainability (CDP, 2021).

This demonstrates the need to implement synergistic interventions to support technological innovation not only in large companies but equally in micro-small companies that make up the main Italian entrepreneurial fabric.

It is therefore desirable that similar collaborative initiatives are greatly expanded. Going on in this direction, the Foundations of Banking Origin should identify scientific research, innovative technology, and development as extremely important factors affecting future managerial and governance choices. Specifically, to improve FBOs' integration within the development context, the increase of *operating* interventions toward companies working in these fields could be an interesting solution. In this last case, Foundations of Banking Origin would obtain a double result:

a) helping the investee company in the activity designed for innovation and technological development;

b) to increase the fund reserved to the statutory objectives through dividends. To satisfy all these opportunities, we consider helpful the improvement of the governance models as well as the organizational and managerial structures.

4 – Conclusions

The international crisis – first only financial and then extended to the real economy – and more recently the Covid-19 pandemic had very important consequences both on the enterprises and the Foundation of Banking Origin's strategies. The FBOs are going towards a future where the financial market will be a big conditioning factor for their social activity.

The Foundations of Banking Origin are an admirable means of social utility. In light of this certainty, we should preserve them from some pressing regulatory restrictions. Thanks to the FBOs' investments, the rebalancing of the economy at the local level is possible in a sustainable way. As analyzed in this work, the interests in local enterprises as well as in technological evolution can be an extremely valid strategy for supporting development ethically and sustainably.

Because of the difficulties related to the updating and reengineering processes in the technological and innovative sectors that enterprises face, the Foundation of Banking Origin can be a leader in the field of the research and development of alternative systems.

In this way, they would support both the local and non-local economy sustainable development. However, this presupposes a careful reassessment of governance criteria and investment objectives together with a reassessment of priorities in terms of areas in which to invest. As already widely proposed previously (Rangone, 2017), the Foundations of Banking Origin should reformulate their system of intervention increasing the operating approach and reducing the grant-making one as far as possible. Only in this way, the potential role of the FBOs can be fully expressed as a tool to facilitate development in a context of technological innovation that makes Italian companies increasingly less competitive than the rest of the world.

4.1 – *Data availability*

The datasets analyzed during the current study are publicly available at:
https://www.acri.it/rapporto_annuale/ventinovesimo-rapporto-sulle-fondazioni-di-origine-bancaria-anno-2023/

5 – References

ACRI. (2024) Foundations of banking origin. 29th Annual Report. Year 2023 [original: Fondazioni di Origine Bancaria. XXIX Rapporto Annuale. Anno 2023]. Online at: https://www.acri.it/rapporto_annuale/ventinovesimo-rapporto-sulle-fondazioni-di-origine-bancaria-anno-2023/

ACRI. (2022). Foundations of banking origin. 27th Annual Report. Year 2021 [original: Fondazioni di Origine Bancaria. XXVII Rapporto Annuale. Anno 2021]. Online at: https://www.acri.it/2022/07/20/online-il-27-rapporto-annuale-fondazioni-sui-i-dati-aggregati-dai-bilanci-2021/

Baban, C. F., Baban, M., & Rangone, A. (2022). Outcomes of Industry–University Collaboration in Open Innovation: An Exploratory Investigation of Their Antecedents' Impact Based on a PLS-SEM and Soft Computing Approach. *Mathematics*, *10*, 931. DOI: https://doi.org/10.3390/math10060931

Baban, C. F., Baban, M., & Rangone, A. (2021). Investigating Determinants of Industry–University Collaboration in an Open Innovation Context: Comparative Evidence from an Exploratory Study. *Science, Technology & Society*. DOI: 10.1177/09717218211020475

Besta, F. (1880). *Ragioneria. Prolusion read at the solemn opening of the studies for the scholastic year 1880-1881 at the R. Higher School of Commerce in Venice* [original: *La Ragioneria. Prolusione letta nella solenne apertura degli studi per l'anno scolastico 1880-1881 alla R. Scuola superiore di Commercio in Venezia]*. Venezia Tipografia dell'istituto Coletti 1880, in Biblioteca Storica di Economia Aziendale, Cacucci, Bari, 1987, tiratura limitata copia n° 0436.

Bodega, D., Denicolai, S., Cioccarelli, G., Vello, P.M. (2009). *Foundations of banking origin: innovation and evolution* [original: *Fondazioni di origine bancaria: innovazione ed evoluzione]*. Franco Angeli, Milano.

Boesso, G., Cerbioni, F., Menini, A., & Parbonetti, A. (2015). Philanthropy by Decree. Exploring the Governance and Philanthropic Strategies of Foundations of Banking Origins. *Nonprofit Management & Governance*, *25*(3),197-213.

Caselli, L. (2015). *Rethinking the firm starting from ethics* [original: *A partire dall'etica ripensare l'impresa*]. In Guatri L. (a cura di), Economia aziendale. Com'era e com'è. Egea, Milano.

CDP. (2021) CDP and Acri renew their collaboration to support the territory [original: CDP e Acri rinnovano la collaborazione a supporto del territorio]. CDP, available online: https://www.cdp.it/sitointernet/page/it/cdp_e_acri_rinnovano_la_collaborazione_a_supporto_del_territorio?contentId=CSA35207.

Cerboni, G. (1886). Scientific Ragioneria and its relations with Administrative and Social disciplines [original: La Ragioneria Scientifica e le sue relazioni con le discipline Amministrative e Sociali]. Ermanno Loescher, Roma.

Cornelis de Man, J., & Strandhagen, J. O. (2017). An Industry 4.0 Research Agenda for Sustainable Business Models. *Procedia CIRP*, Vol. 63, 2017, 721-726.

Corsico, F., Messa, P. (2011). *From Frankenstein to Prince Charming: Banking Foundations Between Past and Future* [original: *Da Frankenstein a principe azzurro. Le fondazioni bancarie fra passato e futuro*]. Marsilio, Venezia.

Davies, R. (2015). Industry 4.0: digitalisation for productivity and growth. *European Parliamentary Research Service*, Briefing.

Faravelli, M. L., & Clerici, M. A. (2014). *Economic crisis and new challenges for banking foundations*. In "A Geographical Approach to the European Financial Crisis" (pp. 143-160). Aracne, Roma.

Freeman, R.E. (2010). *Strategic Management: a stakeholder approach*. Pitman, Boston.

Freeman, R. E., & Evan, W. M. (1990). Corporate governance: A stakeholder interpretation. *Journal of behavioral economics*, *19*(4), 337-359

Gazzola, P., & Mella, P. (2006). Corporate Performance and Corporate Social Responsibility (CSR). A necessary choice? *Economia Aziendale Online*, 3, 1-22.

Gillan, S. L., Koch, A., & Starks, L. T. (2021). Firms and social responsibility: A review of ESG and CSR research in corporate finance. *Journal of Corporate Finance*, *66*, 101889.https://www.sciencedirect.com/science/article/abs/pii/S0929119921000092.

Kang, H. C., Anderson, R. M., Eom, K. S., & Kang, S. K. (2017). Controlling shareholders' value, long-run firm value and short-term performance. *J. Corp. Finan.*, *43*, 340-353.

Karamanou, M., Papaioannou, T. G., Soulis, D., & Tousoulis, D. (2017). Engineering 'Posthumans': To Be or Not to Be? *Trends in Biotechnology*, 35(8): 677-679.
DOI: https://doi.org/10.1016/j.tibtech.2017.04.011.

Kelton S., Lambert, L. (2017). The Four Challenges of the Fourth Industrial Revolution. *Market Mogul*, Online at:: https://themarketmogul.com/industry-4-0-challenges/?hvid=2Gt2CE.

Kraus S., Durst S., Ferreira J. J., Veiga P., Kailer N., Weinmann A. (2022). Digital transformation in business and management research: An overview of the current status quo. *International Journal of Information Management*, *63*, 102466. https://doi.org/10.1016/j.ijinfomgt.2021.102466.

Kozák, Š., Ružický, E., Štefanovič, J., & Schindler, F. (2018). Research and education for industry 4.0: Present development. *Cybernetics & Informatics* (K&I), Lazy pod Makytou, Slovakia, 2018, 1-8. DOI: 10.1109/CYBERI.2018.8337556.

Li, T.-T., Wang, K., Sueyoshi, T., & Wang, D. D. (2021). ESG: Research Progress and Future Prospects. *Sustainability*, *13*, 11663. DOI: https://doi.org/10.3390/su132111663.

Massa, G. (1913). *Complete Treatise on Ragioneria* [original: *Trattato completo di Ragioneria*]. Vol. III, Ragioneria Teoretica, Amministrazione del Monitore dei Ragionieri, Milano.

Mella, P. (2021). *The Magic Ring: Systems Thinking Approach to Control Systems*. (Second ed.) Springer, New York, London.

Minguzzi, A., & Modina, M., & Gallucci, C. (2019). Foundations of banking origin and social rating philosophy—a new proposal for an evaluation system. *Sustainability*, *11*(13), 3518.

Morrar, R., Arman, H., & Mousa, S. (2017). The Fourth Industrial Revolution (Industry 4.0): A Social Innovation Perspective. *Technology Innovation Management Review*, *7*(11), 12-20.

Pastori, G. (edited by), Zagrebelsky, G. (2011). *Banking Foundations: A Major Reform to Consolidate* [original: *Fondazioni bancarie: una grande riforma da consolidare*]. Il Mulino, Bologna.

Peters, M. A. (2017). Technological Unemployment: Educating for the Fourth Industrial Revolution. *Journal of Self-Governance and Management Economics*, *5*(1), 25-33.

Philbeck, T., & Davis, N. (2018). The fourth industrial revolution: shaping a new era. *Journal of International Affairs*, *72*(1), 17-22.

Porter, M. E., & Kramer, M. R. (2011). *Creating Shared Value*. *Harvard Business Review* (January-February), 62-77.

Porter, M. E. (1985). *Competitive Advantage: Creating and Sustaining Superior Performance*. Free Press, NY.

Rangone, A. (2022). *Understanding and Governing the IV Industrial Revolution. Value, Ethics and Centrality of Man in the Economia Aziendale Doctrine* [original: *Comprendere e Governare la IV Rivoluzione Industriale. Valore, Etica e Centralità dell'Uomo nella Dottrina Economico Aziendale*]. Giappichelli Editore, Torino. ISBN: 978-88-921-3977-0.

Rangone, A. (2020). *Managing Corporate Innovation. Determinants, Critical Issues and Success Factors*. Springer International Publishing (Refereed Series: Contributions to Management Science) Cham (2020). ISBN: 978-3-030-31767-6.

Rangone A. (2017). *International Perspectives on Corporate Governance: Doctrines, Models and Empirical Investigation concerning the Foundations of Banking Origin*. RIREA (Refereed Series: Aziende) Roma (2017). ISBN: 978-88-6659-135-1.

Rangone, A., & Mella, P. (2019). Obstacles to Managing Dynamic Systems. The Systems Thinking Approach. *International Journal of Business and Social Science 10*(8), 24-41.

Sargiacomo, M., & Rangone A., (2016). External auditing, Governance & Control in Italian Saving Banks. In: *Doing Banking in Italy: Governance, Risk, Accounting and Auditing issues*, Carretta A., & Sargiacomo M. (Eds), McGraw-Hill, London.

Schwab, K. (2019). *Governing the Fourth Industrial Revolution* [original: *Governare la quarta rivoluzione industriale*]. Franco Angeli, Milano.

Senge, P. (2006, 2nd Ed.). *The fifth discipline: the art and practice of the learning organization*. Last and enlarged edition. Doubleday Currency, New York.

Senge, P. (1990, 1st Ed.). *The fifth discipline: the art and practice of the learning organization*, 1st edn. Doubleday Currency, New York.

Senge, P., & Lannon-Kim, C. (1991). The system thinking approach. *Syst Think News, 12*(5), 24–27.

Skilton, M., Hovsepian, F. (2018). *The 4th Industrial Revolution. Responding to the Impact of Artificial Intelligence on Business*. Palgrave Macmillan, Cham.

Song, S. (2017). Historical Development of Industrial Revolutions and the Place of So called "the Fourth Industrial Revolution". *Journal of Science and Technology Studies*, *17*(2), 5-40.

Tan, T. B., & Wu, S. S. (2017). *Public policy implications of the fourth industrial revolution for Singapore*. S. Rajaratnam School of International Studies, 5-7.

Transparency International Italy. (2014). *Lobbying and Democracy, Representing interests in Italy*. Online: https://www.tran-sparency.it/wp-content/uploads/2014/11/LLL-NationalReport_EN_DEF.pdf.

Vendrame, G. (1973). Technological debate between Europe and America [original: Dibattito tecnologico tra Europa e America]. *Riv Polit Econ*, Parte II, July 1973.

Wasson, C. S. (2006). *System analysis, design, and development*. Wiley, New York.

Xu, M., David, J. M., & Hi Kim, S. (2018). The Fourth Industrial Revolution: Opportunities and Challenges. *International Journal of Financial Research*, *9*(2), 90-95.

Zappa, G. (1927). *New Trends in Ragioneria Studies* [original: *Tendenze Nuove negli Studi di Ragioneria*]. Ediz. Istituto Editoriale Scientifico, Milano.