

EVALUATION OF THE ESIF CONTRIBUTION FOR THE KNOWLEDGE TRANSFER AND VALORISATION DYNAMICS IN PORTUGAL

Executive Summary

14 December 2018

Co-financed by:



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About this Study

Title

Evaluation of the ESIF Contribution for the Knowledge Transfer and Valorisation Dynamics in Portugal [Executive Summary]

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Evaluation Objectives

The **Evaluation of the ESIF Contribution for the Knowledge Transfer and Valorisation Dynamics in Portugal** had as main objective to identify and to explain the impacts of the European Structural and Investment Funds (ESIF) in the promotion of the knowledge transfer and valorisation (KTV) in the Portuguese economy, describing the causal mechanisms of production of these impacts and explaining the processes of change originated.

KTV encompasses a set of practices and mechanisms of collaboration between different entities of the business sector and the public Research & Innovation (R&I) system. KTV has had a late entry in the context of public policies in Portugal. Despite growing attention in the last decade, this is a process that is not yet adequately institutionalized or structured among the main innovation actors.

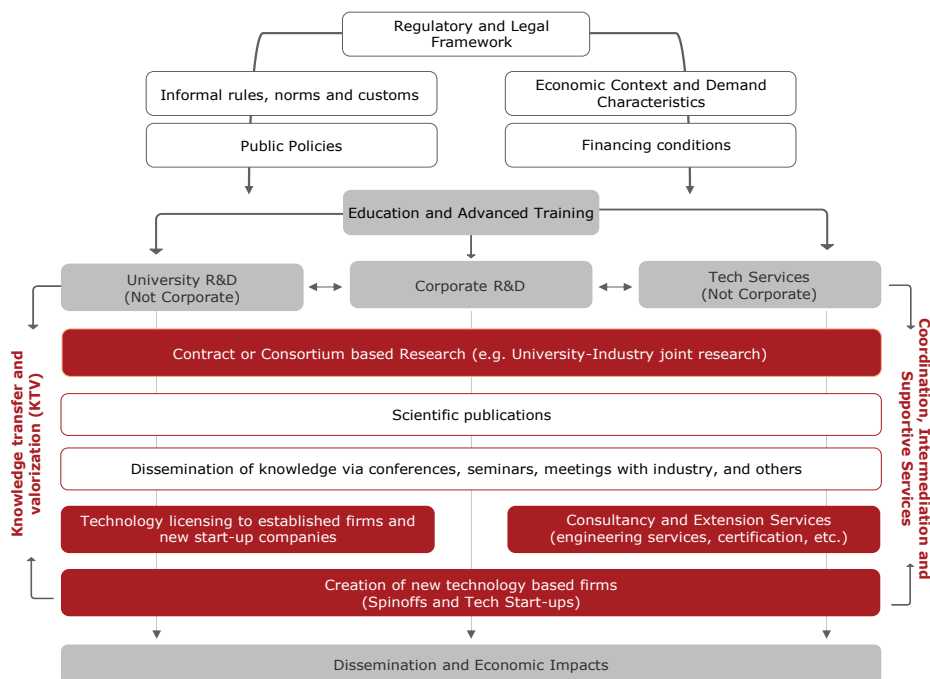
In the context of the **National Strategic Reference Framework (NSRF)**, which was implemented in the period 2007-2013, several instruments were used to directly and indirectly stimulate KTV in the country. The evaluation summarized here focused on the analysis of the effects generated by these instruments, considering a number of dimensions relating to relevance, coherence, effectiveness, efficiency, impact, sustainability and European added value through the response to ten evaluation questions. In this analysis, attention was also paid to the implementation of **PORTUGAL 2020** (ESIF 2014-2020).

Object and Scope of the Evaluation

KTV is an essential process in the generation and dissemination of innovation, emerging from the interaction between entities producing scientific knowledge and beneficiaries or users of this knowledge in the productive processes. By involving different types of actors, KTV faces recurrent barriers, which makes relevant the support of public policies to stimulate or reinforce collaboration between them.

KTV is characterized by a set of basic conditions, linked to the legal and regulatory framework, informal rules, the economic and demand environment, financing conditions and public policies. Although the linear model of innovation is increasingly criticized, there are elements that need to be taken into account, in particular the relative distance from the market and the beneficiaries of some activities.

Figure 1. Systemic framework of knowledge transfer and valorisation process



Source: adapted from OECD and World Bank (*The Innovation Policy Platform*)

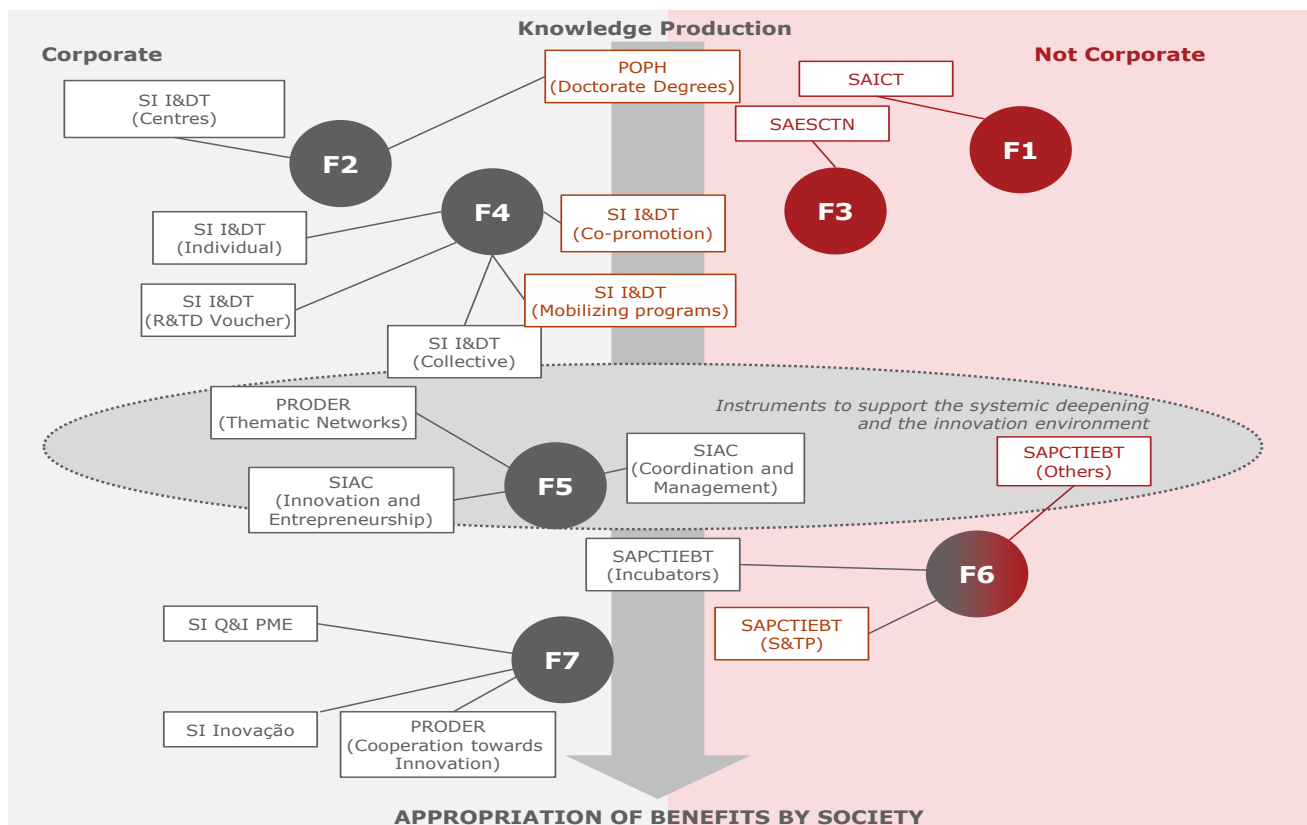
It is relatively consensual to accept that advanced education and training activities (contributing to the capacitation of human resources) and the different types of R&D (stimulating the production of knowledge) are central elements for KTV, but are still far from being effectively valued. On the other hand, industrial property, consulting, extension services and new knowledge-based firms are more explicit forms of commercialization and of obtaining direct economic benefits. Thus, **KTV is normally associated with certain mechanisms such as the protection and licensing of industrial property, contracted R&D or the creation of academic spin-offs**, but other channels of a more informal and diffuse nature are also crucial. This variety of channels for KTV complicates the analysis of this phenomenon. A relatively broad KTV concept is conceptually more realistic, but it is also significantly more difficult to understand and evaluate.

In the more general framework of support to the competitiveness and internationalization of the Portuguese economy, the Competitiveness Factors Agenda (through COMPETE - Competitiveness Factors Operational Program and ROPs - Regional Operational Programs) has created instruments aimed at supporting the different phases of the innovation process – from the production of knowledge to its economic valorisation – and the KTV process itself, working with the non-business entities of the R&I system and the knowledge recipients, but also promoting cooperation between actors and supporting tangible and intangible elements for facilitating the process. This was also the case in the scope of the Human Potential Thematic Agenda (POPH) of the NSRF and the Rural Development Program (PRODER), where tools were also created that contributed to the strategic objectives of KTV.

Evaluation Methodology

The approach used is theory-based, starting from the literature on innovation systems, systemic failures and inducing factors of university-business relations. Inspired by the theory of change and contribution analysis, the evaluation defined and grouped the different instruments identified in the NSRF and PRODER as relevant for the KTV in families of instruments focusing on common mechanisms or objectives.

Figure 2. Areas of intervention of the NSRF KTV instruments



SAESCTN - System to support entities of the entities of the national scientific and technological system; SI I&DT - System of incentives to research and technological development; SIAC - System to support collective actions; SAICT - Support system for scientific and technological infrastructures; SAPCTEBT - Support system for science and technology parks and technology-based incubators; PhD scholarships in business context (POPH); Cooperation for innovation (PRODER); Thematic Information and Disclosure Networks (PRODER); SI Inovação - Innovation Incentive system; SI Q&I PME - Incentive system for the qualification and internationalization of SMEs.

Source: AM&A

In order to make the interpretation of the impact of the support granted more evident, the different instruments were clustered into **seven families** with homogeneous objectives, which are at different stages of the innovation cycle:

- **F1 - Instruments to support the creation, expansion, qualification and consolidation of scientific and technological infrastructures**, carried out by the SAICT, aiming to create the basic conditions for the production of knowledge in the national system and in regional innovation systems that are indispensable to the subsequent transfer and valorisation of knowledge;
- **F2 - Supporting instruments for building capacity of companies for the absorption, production and transfer of knowledge**, including support for the creation of R&D centres within the companies, based on the economic potential of R&D and the added value of the creation of internal competences to capture progress in external contexts. By stimulating the companies, it is possible to strengthen the R&I system as a whole, favouring the circulation of knowledge and stimulating the efficiency of knowledge transfer and valorisation;
- **F3 - Direct support instruments for the production and transfer of knowledge promoted or led by S&T¹ system entities**, materialized by SAESCTN, which aimed to intensify the national R&D effort and the creation of new knowledge in the country, given the positioning of Portugal as a follow-up country on innovation;
- **F4 - Direct support instruments for the production and transfer of knowledge promoted or led by business entities**, which grouped several types of R&D incentive schemes (individual, R&TD, collective, co-promotion and mobilizers) and focused on strengthening and/or creating knowledge transfer channels, in order to guide the research carried out to the needs of companies and society, with a view to increasing competitiveness and cohesion, and to this end it is particularly important to promote the link between companies and the different types of non-business entities in the R&I system;
- **F5 - Instruments to support the systemic deepening of knowledge transfer and valorisation processes in regional systems, the national system and the European innovation system**, including SIAC and PRODER (thematic networks), which seek to create and improve framework conditions, with particular emphasis on those aspects associated with intangible factors of competitiveness, related to the availability of public goods and the generation of positive externalities that induce spill-over effects on the economy;
- **F6 - Support instruments for the capacitation and qualification of actors for the valorisation of knowledge**, which was carried out by SAPCTIEBT, focusing on supporting the creation, promotion, consolidation or expansion of science and technology parks and technology-based incubators and the economic and social valorisation of these activities and R&D results, stimulating institutional relations between companies, R&D units and higher education institutions, bringing together centres for the creation and diffusion of knowledge of the different institutional sectors;
- **F7 - Direct support instruments for the valorisation of knowledge**, grouping SI Q&I PME (in specific typologies), SI Innovation and PRODER (cooperation for innovation), based on the premise that it is fundamental to promote innovation in the business fabric by the production of new goods, services and processes that support the progression of economic activities in the global value chains and the strengthening of orientation towards international markets, as well as the introduction of technological improvements, the creation of production units and the stimulation of qualified entrepreneurship and structuring investment in new areas with growth potential.

The 12 policy instruments which comprise the seven families in question - managed by seven OPs², supported by three Structural Funds and which are divided into about 30 typologies with different objectives and beneficiaries - are not all geared solely to KTV. A detailed delimitation of the instruments considered was carried out, to exclude from the analysis projects which, supported by instruments of a relatively broad nature, had little or no incorporation of KTV aspects (Figure 2).

Table 1. Segmentation of projects supported by families and instruments

Family	Instruments	Number of Projects		Total Investment		Approved ESIF Co-Financing	
		Number	%	(M€)	%	(M€)	%
F1	SAICT	179	2,2%	307	3,7%	240	6,6%
F2	SI I&DT (centers)	84	1,0%	26	0,3%	9	0,2%
F3	SAESCTN	2.643	32,8%	415	5,0%	348	9,5%
F4	SI I&DT	1.615	20,1%	1.225	14,8%	525	14,4%
F5	SIAC	80	1,0%	34	0,4%	25	0,7%
	PRODER	156	1,9%	20	0,2%	12	0,3%
	Total F5	236	2,9%	54	0,6%	37	1,0%
F6	SAPCTIEBT	39	0,5%	160	1,9%	119	3,3%
F7	SI Inovação	1.848	23,0%	5.970	72,0%	2.317	63,4%
	SI QPME	1.292	16,1%	117	1,4%	52	1,4%
	PRODER	111	1,4%	22	0,3%	9	0,2%
	Total F7	3.251	40,5%	6.108	73,6%	2.377	65,0%
Total		8.047	100%	8.296	100%	3.655	100%

Source: AD&C and PRODER

¹ S&T – Science & Technology

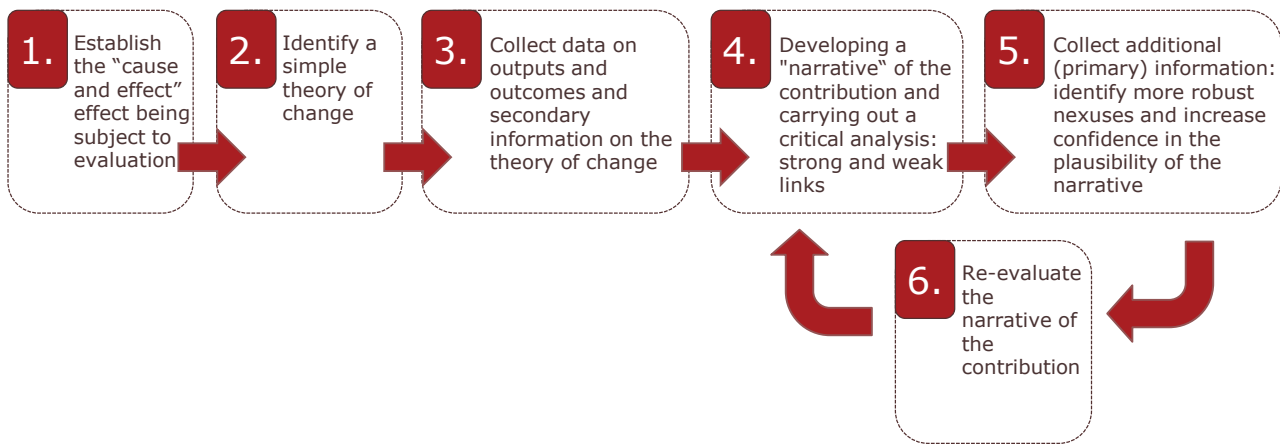
² OPs – Operational Programs

In the NSRF period, 8,047 projects were supported under the instruments targeted by this evaluation, with a total associated investment of 8.3 billion euros and an approved incentive of 3.7 billion euros (Table 2). Most of the supports were concentrated in families F3, F4 and F7.

The Theory of Change (ToC) and Contribution Analysis were used as tools for understanding the impacts. The implementation of the ToC implies that a causal chain is structured for each initiative under analysis. This causal chain illustrates how a given initiative produced behavioural changes in the actors and/or in the more general context, impacting on the object of evaluation. However, this approach has limitations, notably its inability to produce quantified estimates of the impacts or cost-effectiveness of interventions and the greater susceptibility to biases inherent to analysis that are mainly of a qualitative nature. The preparation of each causal chain included the identification of long-term objectives of each intervention, the conditions and requirements to achieve those objectives, the overall context of the intervention, and indicators to evaluate the intervention. In the end, each causal chain corresponded to a logical narrative that sought to explain the success or failure of the intervention.

Taking into account that the goal of identifying and explaining the impact of the ESIF in the promotion of KTV, theories of change associated with each of the seven instrument families were discussed and validated with the relevant stakeholders.

Figure 3. Contribution analysis: a methodological roadmap



Source: AM&A based in Mayne, J. *The Institutional Learning and Change (ILAC) Initiative, (2008). Contribution analysis: An approach to exploring cause and effect.*

The evaluation relied on a wide range of methods and techniques for collecting empirical material. In addition to data on the information systems of the operational programs and supported projects, and statistical information from various sources, three surveys were carried out on the beneficiaries of the KTV support instruments, including universities, R&D units, innovation intermediaries, incubators, technology parks, science parks, and firms. The information gathered was complemented by interviews with managers of thematic and regional operational programs, case studies of successful projects and the implementation of focus groups in all NUTS II regions in Portugal.

Figure 4. Details on information collection



Source: AM&A

Conclusions on the Evaluation Questions

1. To what extent do the public policy objectives that frame the instruments of support for knowledge transfer and economic exploitation of knowledge financed by the Funds meet the needs of the target groups to which they are directed and the specific features of the regions? To what extent do these support instruments meet the defined policy objectives? What is the rationale for mobilizing these support instruments under the Community Funds in pursuit of these objectives?

The analysis of the specific support instruments included in the public policies aimed at boosting the NSRF's KTV (and, to a large extent, in the PT2020) shows that, overall, there was a good alignment of the instruments with the policy objectives and their ability to address market and systemic failures in R&D+I³. However, this general reality was coupled with a lack of specific instruments to promote KTV as well as thematic and regionally differentiated approaches, making it more difficult to respond to market and systemic failures associated with some target groups and some territories.

2. How do the support instruments within the Community Funds articulate/complement each other and with the other policy instruments in order to promote knowledge transfer and valorisation?

The instruments directed to KTV, supported by the ESIF (first by the NSRF and currently by the PT2020), sought to stimulate the qualification of the fundamental pillars of the linear model of innovation, making a clear bet on improving the capacity of the "academic world", the "business world" and the "world of innovation intermediaries", but also of the interactive model of innovation, through instruments of a more systemic nature, in a way that guarantees a reasonable articulation and complementarity. However, there are still relevant gaps in the innovation cycle links that limit the more integrated and complementary use of the instruments mobilized and create constraints on KTV, especially in critical phases of potential valorisation of scientific knowledge and technologies developed by S&T entities (e.g. proof of concept) or of economic validation by the companies of the technology developed prior to the decision of its industrialization.

3. Is there evidence of strengthening the dynamics of knowledge transfer and economic valorisation of knowledge? What is the contribution of different instruments of support for this change (if it occurred)?

Considering the evidence gathered in this evaluation, it is unequivocal that the projects supported by the structural funds in the NSRF period allowed to reinforce the dynamics of knowledge transfer and valorisation throughout the innovation cycle, contributing to densify and intensify the relational networks between their actors, and thus consolidate innovation systems. However, this evidence still lacks echo in the more general reality of the Portuguese economy, illustrated by statistics on the business fabric in the field of innovation. The effects of support from the NSRF will not have been sufficiently pervasive in the economy in terms of stimulating cooperation for the transfer of knowledge and in the economic valorisation of knowledge.

4. What are the critical factors that have strengthened the effectiveness of the support instruments in this area (and which have proved to be expendable)? What elements of context have conditioned or enhanced policy outcomes?

The effectiveness of the stimuli to KTV was influenced decisively by the characteristics of the territory and initial conditions of its innovation systems. In areas with less dense innovation systems, support was focused on strengthening the capacity of the few existing infrastructures, while in the Norte and Centro regions, investments of a more structuring nature (larger dimension) proved to be a good bet. Factors related to human and technological qualification, the life cycle and the export intensity of enterprises clearly emerged as factors that enhance the effectiveness of interventions. On the other hand, funding constraints and the recessive macroeconomic climate materialise as major constraints.

5. Have the specificities of the territories been covered and the target groups also been met by the instruments or do they explain different levels of success?

The instruments to support KTV were, in fact, limited by regional specificities and differences between target groups. From the regional point of view, budgetary allocations and the organization of programs, as well as the previously existing regional dynamics of innovation, anchored in economic specialization and density of innovation actors, have affected (positively or negatively) the success of the interventions.

³ R&D+I - Research & Development + Innovation

It was mainly in the Alentejo and Algarve regions where these issues were most acutely posed. Greater attention in the design of the instruments to the specificities of the territories is therefore necessary in order to maximize the strengthening of KTV dynamics in all regions and avoid lock-in situations. Regarding the target groups, companies showed a significant heterogeneity in the successful use of the instruments, with emphasis on factors related to size, life cycle and export intensity as elements that enhance this success.

6. Were the financial dimension and the different forms of financing adopted adequate and sufficient to make a difference in terms of public policy objectives?

The financial dimension and the form of financing that were inherent to the instruments of support to the KTV in the NSRF were adequate to mitigate the market failures in this area, evidencing, however, the necessity of greater adherence to the needs and, especially, to the level of development of different innovation systems in the territory. The applied ESIF had a catalytic effect of the investments in KTV, as well as complementary effects of amplification and acceleration of investments, justifying the need to support projects where technological and/or market risks are most evident, throughout the innovation cycle.

7. Was the intervention of the support instruments economically rewarding, taking into account possible alternatives for the application of the available resources?

The evidence gathered in the evaluation shows that the application of the ESIF in the NSRF was economically rewarding in general terms, given the initial deficiencies in the innovation systems. Nevertheless, and although the instruments implemented follow international best practices, it is considered that in some types of support there are potentially more economically adequate alternatives to promote the same policy objectives. Increasing the importance of financial instruments in supporting the implementation of innovation (closer to the market), for example, is a possibility to be seriously considered in the future to increase the economic gain of interventions.

8. To what extent did the stimulation of the dynamics of production, transfer and economic valorisation of knowledge translate into an effective change in the pattern of national productive specialization? And the pattern of productive specialization of the regions? Are there any productivity gains, international competitiveness gains or skilled employment gains, identified at regional and national level, associated with these dynamics? What other impacts (positive or negative) can be seen as a result of this policy?

The analysis of the national and regional context between the pre-NSRF period and the post-NSRF period show that ESIF instruments aiming to promote KTV during NSRF period did not significantly change the productive specialization of the country. Nevertheless, the ESIF included in the NSRF contributed in a relevant way to improve the infrastructural aspects of innovation systems, enhancing the increase of scientific excellence and the emergence of innovation dynamics located in the territories (clusters). They have also contributed to putting a large number of national and multinational firms in the technological frontier, creating the ability to compete internationally in fields that are intensive in technology and knowledge. In the sectors of more traditional specialization of the Portuguese economy, there is still a growing orientation towards innovation and internationalization, indicating the capitalization of effects resulting from relevant R&D-supported investments and their economic valorisation.

9. To what extent have the different effects produced or induced by the various instruments of support lasted beyond the duration of the support?

There is a positive perception of the impact of the projects supported under the NSRF and the additionality that resulted from them. In the case of business entities, the relevant impacts observed at the level of the evolution of the turnover, the establishment of new and more sophisticated contracts for services, the new R&D project development intention in the medium term and the creation of jobs. Investments in S&T infrastructure will tend to be more sustainable if investments in technology assume a regular basis and there continues to be a strong focus on advanced training. The same is true of systemic support, of enhancing the innovation ecosystem capacity. However, cooperation between the business fabric and the S&T system remains an unresolved problem. There is also some evidence regarding the positive role of supported projects in increasing the participation of their promoters in new European consortium projects.

10. What is the European added value of the interventions supported in the transfer and economic valorisation of knowledge?

Interventions supported by ESIF in the field of KTV contributed to European added value by supporting the creation and development of scientific and technological infrastructures that have become an international benchmark for excellence of the knowledge they produce, by increasing integration in European research networks and strengthening orientation to innovation of Portuguese firms, which are increasingly being integrated into European industry value chains. The participation of Portuguese firms in EU funding programs witnessed an upward trend, to which it contributed the development of more complex R&D projects supported by national programs and the greater capacity for cooperation between companies and public research entities in the scope of the SI I&DT.

Recommendations

Next, we identify recommendations for public policies, organized by the dimensions of the evaluation, which can have a significant impact on the dynamics of KTV in Portugal.

RELEVANCE AND COHERENCE

- Designing a roadmap for the promotion of KTV, duly inserted in a National Innovation Strategy, which defines a set of structuring initiatives for the national territory and its regions, as well as the instruments and means necessary for their implementation.
- Recovery of discontinued instruments, especially in the S&T system (and in particular those targeting the Higher Education Institutions) that promote the creation and/or consolidation of the OTIC⁴ and GAPI⁵, ensuring their integration into a support system similar to the current SAICT (creation of economic valorisation "nuclei").
- Supplementary actions aimed at professionalizing the career of the so-called "S&T managers", as well as supporting the creation of a national network of OTIC, which will foster synergies and share best practices.
- Allocation by the FCT of multi-annual baseline funding to ensure the safeguarding of minimum services in these structures, subject, naturally, to a demanding regular assessment based on incisive outcome and impact indicators.
- Effective operation of the proof of concept instrument provided for in the PT2020 SAICT, aiming at the technical and/or economic validation of innovative ideas resulting from previous projects.
- Extension of the types of eligible expenses in the (current) SAICT in order to allow, in R&D projects, the integration of the proof of concept component.
- Encouraging researchers and research groups from non-business entities in the R&I system (namely from universities and research centres) to focus on KTV processes, either by sharing the results from it (e.g. awards, allocation of part of the funds to existing needs in the research units) or through evaluation criteria and progression of their careers.
- Effective implementation of multi-annual ITC⁶ funding provided through the Innovation, Technology and Circular Economy Fund (FITEC).
- Creation of a national ITC network, which fosters synergies and sharing best practices, capitalizing lessons on successful international experiences in this area
- Introduce a mark-up in the merit score of R&D projects that present a plan to disseminate results to ITC or other interface entities.
- Greater orientation of the current SAICT towards investment of technological nature (scientific and technological equipment) rather than infrastructure (mainly construction of new buildings), both in R&D units and technological infrastructures.
- Consolidation of the path followed in PT2020 to create a specific tool for stimulating scientific employment (continuously) mobilized by the ROP or ANI (National Innovation Agency), making it more accessible to the business community, in particular to SMEs.
- Redesign of the Doctoral Scholarships in Firms, positively valuing the work programs in which the articulation with potential beneficiaries of the produced knowledge, companies or other organizations is evidenced.

⁴ OTIC – Technology and Knowledge Transfer Offices (Oficinas de Transferência de Tecnologia e de Conhecimento)

⁵ GAPI – Support Offices for the Promotion of Intellectual Property (Gabinetes de Apoio à Promoção da Propriedade Intelectual)

⁶ ITC – Technological Interface Centres

- Bet on Clusters as relevant entities in the creation and improvement of innovation networks in Portugal and smart specialization strategies, recovering as much as possible the support rules implemented in the NSRF.
- Creation of integrated instruments for the entrepreneurial valorisation of knowledge, in SI I&DT (phase 1 and 2) and in SI Innovation (phase 3) or, autonomous, in an own incentive system similar to the SME Instrument.
- Simplified projects, within the ROP, should be retained in the future, reinforcing their role in stimulating early collaboration processes between companies and R&D entities.
- Design of FDI attraction plans supported by investments in R&D and innovation with multinationals located in Portugal or multinationals with a strategic role in value chains of activities with prominence in Portugal, under the leadership of the main national knowledge centres and in strong articulation with the competitiveness clusters.
- Creation of strategic R&D programs aimed at companies to finance research agendas, pipeline planning of R&D projects in the medium and long term, and partnerships with other players in the innovation system.

EFFECTIVENESS

- Simple and predictable application processes.
- Provide ROP greater strategic and operational autonomy in the implementation of KTV promotion policy, making more flexible the specific regulations of the instruments to be mobilized and reinforcing the role of Regional Strategies for Smart Specialization (EREI) in the definition of investment priorities in the area of R&D+I.
- Review the National Strategy for Smart Specialization (ENEI) to highlight the national investment strategy in this area, with thematic OPs being responsible for supporting structuring and multiregional projects.
- Maintain or intensify individual and consortium projects in SI I&DT, with flexibility of the limits imposed on the contracting of services with entities of the S&T system as a way to promote a higher density of KTV relations.
- Promote the reconversion of existing science and technology parks and tech based incubators with lower occupation rates. Simultaneously, promote the expansion or creation of infrastructures that have a defined thematic strategy and a strong potential to attract competence centres from relevant multinationals.
- Adopt some of the features of the calls of support instruments like Horizon 2020, through multiannual planning, opening of continuous tenders with periodic cut-offs.
- To address the shortcomings in the production of relevant data on KTV in the information systems of the Operational Programs / Intermediate Organizations and to encourage INE to achieve a level of information on KTV dynamics in Portugal similar to that available in countries, such as Ireland, through a questionnaire dedicated to the topic.

EFFICIENCY

- Mobilize more leveraged forms of incentive, in particular through financial instruments, in support of innovation and entrepreneurship, thus freeing resources for the mobilization of other instruments, including specific instruments to promote KTV.
- Reinforce the orientation of support for projects of a more structural nature, capitalizing whenever possible on the main anchors of innovation systems.
- Request companies and other entities to consolidate R&D investments by means of strategic plans and medium and long-term research agendas required as a condition of eligibility in specific SAICT and SI I&DT calls.
- Differentiate SAESCTN projects (integrated in the current SAICT) in "excellence" R&D projects, dedicated to the production of wider scope knowledge and evaluated by international juries, and projects of regional scale, dedicated to research aimed at the central aspects identified in the RIS3.

IMPACT / SUSTAINABILITY

- Adopt a renewed concern with the generation of systemic externalities and with transversal impacts on the economy.
- Favour a greater selectivity in the interventions to be supported, which will lead to more impactful results of the operations to be selected.
- Strengthen the focus on results, emphasising eligibility and selection (merit) criteria and objective credentials that attest to the capacity and critical mass of the promoters.

- Give greater emphasis to the national and regional priorities evidenced in the National and Regional Strategies for Smart Specialization (and their future updates).

EUROPEAN ADDED VALUE

- Deepen stakeholder empowerment processes for greater participation in European programs by awarding "seals of excellence" to high quality national candidate projects that have not been approved in European calls.
- Maintain and extend networks of excellence as a result of partnerships and international agreements with entities of recognized international relevance.

Of course, the recommendations here have benefited greatly from the extensive listening processes that were carried out, inherent in the evaluation methodology that was followed: a theory-based approach. They also benefited from the contextualisation of the competitiveness challenges the country was facing in the context of a changing world and Europe.

This last issue is very important, since innovation promotion policies (and more specifically KTV) in Portugal cannot fail to consider that:

- The Portuguese economy is in the midst of a timid and limited economic recovery in the economic context, and "in the middle" of a relatively long transition to a new competitive paradigm imposed by increased competition born of the acceleration of globalization, EU enlargement and of the macroeconomic regime of the Economic and Monetary Union, in structural terms, being important to consolidate any of these transitions with the possible success.
- The limited recovery of the Portuguese economy is a double mismatch as Portugal falls short of the European growth pattern in an EU that has been losing speed in the context of the world economy.
- Global competition is increasingly taking place in a context dominated by global value chains ruled by large multinationals whose performance is based on a strong outsourcing of functions based on research chains and supply chains structured around target markets and clusters knowledge assets in various geographies.
- Innovation plays a crucial role in the success of companies and economies, increasingly being fought at the level of the great historical geographical blocks of the triad and the new Asian space led by China in a kind of titan struggle.
- Increased R&D efforts and investments in most countries and geographical blocks have led governments and funding agencies to increase efficiency in the use of support, by establishing priority areas and stimulating results and impacts.
- The future allocation of ESIF available to support cohesion in the EU will be progressively reduced given the effects of phenomena such as BREXIT on the overall European budget and given the priority given to the European Research Area (ERA) in EU competitiveness policy.

**COMPETE
2020**

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