

PUBLIC SELECTION BASED ON QUALIFICATIONS AND INTERVIEW FOR THE AWARDING OF NO. 8 EXPERIENCED GRANTS LASTING 36 MONTHS AND NO. 2 EARLY STAGE GRANTS LASTING 12 MONTHS FOR CONDUCTING RESEARCH PURSUANT TO ART. 22 OF LAW NO. 240/2010 AT THE DEPARTMENT WITHIN THE RESEARCH PROGRAMME CALLED "STARS SUPPORTING TALENTED RESEARCHER" - ACTION 1 FOR THE YEAR 2019-2021 - 1^a TRANCHE - TYPE A - (CUP: F56C18000670001)

announced with decree of the Chancellor Rep. no. 126/2019 of 28.02.2019 and posted on the official registry of the University on 28.02.2019

CODE N. 3

RESEARCH PROJECT

"Digital Transformation and Innovation Slowdown: a paradox or simply a delay in diffusion?"

Research structure: Department of Management, economics and quantitative methods

Duration of the grant: 36 months

Scientific Area: 13 - Economics and statistics

Academic recruitment field: 13/A2 - Economic policy

Academic discipline: SECS-P/02 - Economic policy

Scientific Director: Prof. CEFIS Elena

Research Project

The project intends to analyze the reasons for the apparent paradox that, as a result of all the digitization, digitalization and digital transformation phenomena of the economy, a slowdown can be observed in the data relating to the innovativeness of a country. The change of technological paradigm deriving from the introduction of new technologies related to digital transformation should lead to an increase in the levels of innovation: the availability of a mass of data unthinkable until a few decades ago and digital technologies for processing and exploitation efficiently such a data should facilitate innovation. Instead we observe a decreasing trend starting from 2000.

Three hypotheses have been advanced in the literature

- i) measurement problems related to digital technologies (Syverson 2017, Byrne et al 2016, Fernald 2014): adequate indicators and concepts have not yet been developed that capture the importance and effectiveness of these technologies
- ii) Gordon (2012, 2015) and others identify a centuries-old stagnation in which the highly exploited technological potentials that were at their maximum exploitation 30/40 years ago tend to run out and new potentials do not seem to develop
- iii) Brynjolfsson and McAfee (2014) suggest that new digital technologies have not yet fully deployed their potential and a delayed spread is observed

The project aims to understand why, in the face of the development and diffusion of digital technologies, the rate of innovation slows down. The analysis is carried out for Italy and for the Netherlands which have diametrically opposed industrial compositions striving to relate industrial structure and industrial dynamics with the innovation slowdown.

Three the main themes of interest:

1. The concentration of innovative activity

Loecker et al. 2012 show that the productivity of R&D in terms of creating new ideas declines and only large companies are able to invest and finance the increasingly costly creation of new ideas. Are large companies the only ones able to efficiently exploit digital transformation? Why do new companies seem

to prefer leaving the market through M & A even if they could potentially exploit the innovations they have developed?

2. Weak market selection

Italy, unlike the Netherlands, is characterized by a weak market selection that allows the survival of less innovative and efficient companies. The weak selection affects the mass of micro and small businesses that make up the majority of the Italian firms (among which the "Family Firms"). They are also known as not particularly prone to innovation (Duran et al., 2016). Why are micro and small non-efficient firms - be they Family Firms or not - not being wiped out by serious economic crises or by normal market selection?

3. More exploitation and less exploration?

In an environment characterized by increasing uncertainty due to frequent macroeconomic shocks, global competition and technological uncertainty due to the rapid introduction of new technologies (including digital ones), do companies prefer to opt for lower risk strategies and less uncertainty? Are they more inclined to exploit the innovations already obtained, compared to strategies for further exploration, thus slowing down innovation?

The research fellow will develop together with prof. Elena Cefis (responsible of the project) all the parts of the project, including the theoretical, methodological, and empirical analysis, policy and management implications, and the writing and presentation of the resulting papers.

Phases and times (T1 = May 2019; T36 = May 2022)

T1-T6: Bibliographic survey and positioning of the relevant research questions within the literature

T4-T8: Preparation of the databases

T9-T18: Development of the economic and econometric model, elaboration of the results, of the policies and management implications concerning theme 1

T19-T28: The same for theme 2

T29-T36: The same for the theme 3

T18-T36: Dissemination and discussion of results in international conferences

The major contributions of this project are to be identified:

i) in the micro-level analysis (that is, using company-level data) of a phenomenon that until now has been analyzed (scarcely, since the published articles are few and concerning only Germany, USA and Canada) at the macro level;

ii) in the comparative analysis between two Countries with very different industrial structures. Prof. E. Cefis has access to the data of the two Countries in order to carry out this analysis;

iii) in the development of empirical models for the study of the survival of companies deriving from bio-statistics and bio-medicine that have not yet been used in economics. These models offer the possibility of a better analysis of the survival of companies and the study of the dynamics of the phenomenon;

iv) identification of critical areas in the innovative process at the enterprise level and at the system-Country level;

v) in the implications of industrial economic policy to identify alternative forms of support for innovation, to improve the innovative capacity of companies in order to tackle the main obstacles that may contribute to the innovation slowdown;

vi) in the value of the implications of economic policy that derive from it. The project is linked to the issue of decreasing productivity that characterizes the economy of European countries (central research topic for the Horizon 2020 programs). After a decade from the global financial crisis and near-zero interest rates, economic growth in European countries is still low. One of the determinants of economic growth is productivity growth, which in turn sees innovation as a driving factor. In the literature there are few analyses (macro) that study the reasons that can be the basis of the innovation slowdown to be able to explain, at least in part, the slowdown in productivity.

