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Economic crisis and resilience: Resilient capacity and competitiveness of the enterprises☆

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ABSTRACT

This research analyzes the ability of resiliency of the enterprises starting from the analysis of the term "resiliency" in different interpretations. Nowadays the economic literature on resiliency is very wide. Nevertheless, the tools that scholars employ to measure resiliency at enterprise level are still imprecise and approximate. Using qualitative analysis, this research builds a rational model to understand the resiliency of the manufacturing enterprises, identifying some principal determinants. This research offers a logical scheme to measure entrepreneurs' resiliency to economic exogenous shocks, thus promoting a new managerial culture building on the principles of adaptability, flexibility, and innovation.

1. Introduction

The present crisis and the consequent economic recession are causing hard conditions of economic and social decline in Europe. The productive, economic, social, and urban conditions of the territories seem weaker than in the past. The most evident signs are the closing of enterprises, the financial and organizing difficulties, the increase of unemployment, and the social and urban degradation. However, why do some businesses and territories answer better than others during the current economic crisis? What are the determinants and the ability of this "resilience" to economic shocks?

The starting point of this study is the analysis of economic resilience, aiming to find the elements of vulnerability in the territory and in the enterprises, the opportunities of resilience, and their possible determinants. Starting from the financial and economic crisis of 2007, this study tries to identify the decisive factors of the territory and enterprise system, which are resilient. Some of the elements that make a territory and its productive system resilient to the continuous crisis are the presence of social capital, training and education, adaptability, knowledge, creativity, receptiveness internationalization, and flexibility in the organization.

Understanding the concept of resilience and the evaluation methods as well as the factors that make a territory and its productive system resilient to the risks is crucial to promote territorial and enterprise strategies to encourage the process of growth and develop new abilities to face future crises.

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2. The concept of resilience

The word "resilience" comes from the Latin verb *resilire*, which means to rebound. The term's first application is to engineering and ecology in the scientific field. Still today, neither a univocal definition of resilience, nor an only way to focus the decisive factors of resilience and its effects exists (Martin & Sunley, 2011). Resilience has three different interpretations.

The first definition is from engineering (Hotelling, 1973; Pimm, 1984; Walker et al., 2006). Resiliency is "how fast a system that has been displaced from equilibrium by a disturbance or shock returns to that equilibrium". For resiliency to exist, the system has to be able to reach an equilibrium itself: every shock leading to a situation of imbalance will start up a series of mechanisms to return to the equilibrium previous to the shock (Reggiani, De Graff, & Nijkampa, 2002).

The ecological resilience (Gunderson & Pritchard, 2002; Hotelling, 1996; Hotelling & Gunderson, 2002) is the ability of a system to absorb a disturbance without changing its structure, identity and functions. In this case, the focus is on the stability of the system and the size of the shock, which firms may face before the system moves to another state. As Walker et al. (2006) state: "The capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity and feedback".

Lastly, adaptive resilience is "the ability of the system to withstand either market or environmental shocks without losing the capacity to allocate resources efficiently" (Perrings, 2006). The concept of adaptive resiliency, within the evolutionary economic geography theory and regarding regional economy, is the ability of different regions to withstand the changes and the shocks in a competitive market, focusing on the dynamics of the process, and the movements developing through time.

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Therefore, adaptive resiliency may be the ability of recovering after a shock as well as the ability to re-set its growth (Hill, Wial, & Wolman, 2008).

The resilience of a region or territory is, therefore, the ability of a local or regional economy to modify its own industrial, technological, institutional structure according to the change. If the shock is strong enough, the shock may alter the behavior of the economic factors, change the economic system, and move the economic system to other directions (Pendall, Foster, & Cowell, 2007). The resilience is as high as the ability of the system to react to the shocks with creativity and flexibility (Peterson, 2000). Those situations depend on the innovative abilities of the enterprises: the ability of the enterprises to create new opportunities, the structure of the credit market, and the attitude of the institutions to be innovative, and finally, also on the ability of the individuals and community to react in a flexible and innovative way.

In the table below, Martin (2012) explains synthetically the passage, within the theory of the systems, from engineering interpretation of resilience and vulnerability to an ecological, and finally systemic, adaptive interpretation.

Finally, the concept of resilience today is applicable to a variety of discipline fields, even to unclear fields (Christopherson, Michie, & Tyler, 2010). However, this application does not inhibit but rather stimulate, a wider multidisciplinary scientific debate both as theoretic and empirical approaches regarding the measurement of the phenomena in the analyses.

3. Theoretical approaches to the economic resilience

Studies on the vulnerability and resilience are scarce in developing countries (Naudé, McGillivray, & Stephanié, 2008; Turvey, 2007). As a result of the economic crises starting in 2007–2008 and the strong input from globalization and international competitive processes, a new trend of studies both in regional economy and entrepreneurial and business systems allows to understand how a territory and its enterprises may react to the strong economic and social inputs.

The spatial variability and territorial differences in development processes, the local factors that deeply condition incomes, welfare, and individual opportunities need a local and territorial analysis (Turvey, 2007). Naudé et al. (2008) propose a method with a “local vulnerability index” applying the theoretical–conceptual framework with the following factors:

- *Opening degree of the economy*. Size of the home market, import-export level, availability of the resources.
- *Local economic structure*. The territorial systems with an economic basis and a structure consisting of one or few productive sectors are more vulnerable than territorial systems with diversified economies.
- *Export concentration*. The specialization in the export goods and services can favor the vulnerability of the territory linked to the degree of economic opening.
- *Territorial marginality*. The distance between the territory and the nearest market, increases the economic vulnerability.
- *Social development*. Market socio-economic difference that characterizes local systems are more vulnerable to the negative impacts of unforeseen events.
- *Income variability*. The inter-time variability in the growth rates means instability and riskiness of the economic systems.
- *Financial system*. The access to the financial system reduces the vulnerability and encourages the ability of reacting to possible economic shocks.
- *Population increase*. Encourages the resistance of the local system to negative impacts from exogenous shocks.
- *Health*. Healthy conditions encourage territorial resistance.
- *Governance*. An efficient allocation of financial resources from the local government encourages the territorial development.
- *Environmental and geographical features*. The environmental quality of the territory influences the ability of keeping and catching both individuals and enterprises.

Since Naudé's framework, the scientific contributions about the adaptation behaviors of the economic systems focus more on the role of local resources and their creative potential rather than on the factors of weaknesses of the territorial system.

Sheffi and Rice (2005) shows some cases of enterprises that reveal good capacities of adaptation to economic shocks because of anthropic, economic, and ecological events. Some results of these studies are applicable to the analysis of the characteristics of local enterprise systems, underlining, for example, the importance of vertical relationships in a chain.

Starting from the theory of the endogenous growth, Sotarauta (2005) identifies the resilient territorial systems with those able to self-renew and adapt. A resilient economic system may rely on economic social institutions and organizations that are able to (1) introduce innovations exploring new organizing processes and models, (2) use external information, (3) develop formal and informal network between people and institutions, and (4) pursue development strategies that the different participants share.

Analyzing urban systems with interests in the industry and dependent on a single economic sector, Sotarauta (2005) points out that the ability of re-defining the economic basic and territorial identity appears at the beginning of all methods of adaptation to the change owing to critical events. In addition, he points out how development policies, which aim at attracting creative abilities, at innovation, and at increasing knowledge, may have a crucial role in facing these transition processes.

The concepts of vulnerability and resilience are applicable to single enterprises to understand the link between resilient territories and entrepreneurial system. The resilient enterprises are able to develop the most appropriate strategies as an answer to the external challenges and consequently, to get positive and sound performances in a long time. Some enterprises, which are more clever and from a technical point of view and better than others, develop the ability of resilience to the shocks of the economic context. In this sense, understanding what are the factors that define and qualify an enterprise or a resilient enterprises system is crucial.

Some attempts exist of measuring and analyzing the characteristics of a resilient enterprise. Bohn (2010), builds up a scale ad hoc of the efficacy of the organizations and inserts some items of resilience linking to the sense of cooperation among the staff (collective capability), and a long-term vision (sense of mission). McCann, Selsky, and Lee (2009), develop a resiliency scale where the items focus on the characteristics of flexibility of the organizations besides a strong development of the identity and the organizing culture. Mallak (1998) identifies a series of resilience principles in the firms: a) They approach the experiences positively, b) they carry out adaptive behaviors, c) they succeed in finding adequate resources, d) they widen the decisional limits, e) they practice bricolage (joining separate elements together), f) they develop tolerance to the uncertainty, and g) they create a system of virtual roles. On these principles, Somers (2009) elaborates some items of measuring resiliency. They define how the resilience paths of the enterprises are the positive results of a reaction, the well-balanced abilities to answer some vulnerability factors because of particular external or internal forces of change.

After defining resilient enterprises, understanding what determines resiliency (the strategies) is important. In addition to the decisions the firm takes to be more or less resilient. Starting from some surveys about the organization resilience and competitiveness of the enterprises, that recent surveys of European Central Bank (2012), and IMF support, this study proposes a conceptual framework to define the behaviors, characteristics and abilities of the resilient enterprises.

According to the analysis by Lloret (2015), competitive success requires a constant awareness of the conditions under which the