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Entrepreneurship, Economic Development and Institutional Environment: Evidence from OECD countries

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Abstract:

The purpose of this article is to establish a typology of entrepreneurship for OECD countries over the 1999-2012 period. Our aim is to make a distinction between managerial and entrepreneurial economies, to identify groups of countries with similar economic and entrepreneurial activity variables and to determine the economic and institutional drivers of entrepreneurial activities in each group. We show that the level of development, sectoral specialization, and institutional variables related to entrepreneurship, functioning of the labor market and openness of the country are decisive to understand differences in entrepreneurship activity across countries. Results show that the pre-crisis period, from 1999 to 2008, is a period of growth favorable to entrepreneurship. The financial crisis involved a break in entrepreneurial dynamism with agricultural economies withstanding the financial crisis better. The 2010-2012 period of recovery is a period of a sharp slowdown in entrepreneurial activity, during which the countries that are less dependent on the financial sector proved to be the most resilient in terms of entrepreneurial activity. Nevertheless, it is the advanced economies of knowledge with developed financial markets, fewer institutional regulatory constraints and qualitative entrepreneurship that show the weaker unemployment rates. These findings have important implications for the implementation of public policy in order to promote entrepreneurial activity and reduce unemployment.

Résumé :

L'objectif de cet article est d'élaborer une typologie des activités entrepreneuriales des pays de l'OCDE durant la période 1999-2012. Notre intention est d'établir une distinction entre les économies managériales et entrepreneuriales, d'identifier des groupes de pays ayant des comportements économiques et entrepreneuriaux similaires et d'identifier les déterminants économiques et institutionnels des activités entrepreneuriales dans chaque groupe. Nous montrons que le niveau de développement, la spécialisation sectorielle ainsi que les variables institutionnelles liées à l'entrepreneuriat, au fonctionnement du marché du travail et à l'ouverture du pays sont déterminants pour appréhender les différences nationales en matière d'activité entrepreneuriale. Les résultats

montrent que la période antérieure à la crise, 1999-2008, est une période de croissance favorable à l'entrepreneuriat. La crise financière a provoqué une rupture du dynamisme entrepreneurial ; ce sont les économies agricoles qui ont le mieux résisté à la crise financière. La période de reprise 2010-2012 est une période de fort ralentissement de l'activité entrepreneuriale, durant laquelle les économies dépendant largement du secteur financier sont les plus affectées par la crise en terme d'activité entrepreneuriale. Néanmoins ce sont les économies avancées de la connaissance caractérisées par des marchés financiers développés, peu de contraintes institutionnelles de régulation et un l'entrepreneuriat de qualité qui affichent les taux de chômage les plus faibles. Ces résultats ont des implications importantes pour la mise en œuvre des politiques publiques visant à promouvoir l'entrepreneuriat et à réduire le chômage.

Keywords :

Entrepreneurship, Data analysis methods, Entrepreneurial/Managerial economies

JEL codes : L26, C38, O1

1. Introduction

Audretsch and Thurik (2000, 2001) and Thurik (2011) distinguish two models of polar economies according to which economic stylized facts can be reinterpreted and reordered. The managerial model articulates economic growth around mass production, specialization, certainty, predictability and homogeneity, allowing the full play of economies of scale. The model of the entrepreneurial economy articulates economic growth around a variety of needs, novelty, turbulence, innovation and networking, allowing the full play of entrepreneurial flexibility. The entrepreneur is thus becoming an essential vector of growth. Entrepreneurial firms (young and innovative firms) are an integral part of the transition process from an industrial-based economy to an entrepreneurial-based economy and have been the engine of economic growth for over a decade (Bonnet et al., 2010). Many of the new entrepreneurial firms are the creators and leaders of new industries. Most job-creating firms are new and fast-growing and evidence indicates that the trend toward an entrepreneurial society is accelerating. Aghion (2014) points out that innovation involves a creation/destruction process as described for the Schumpeterian entrepreneur and that some countries are better able to "surf" on new waves of innovations, such as information technology and communication, "cloud computing" and renewable energy. In most countries the real contribution of entrepreneurship to economic development is emphasized by the statement that "Entrepreneurship is considered to be an important mechanism for economic development through employment, innovation and welfare effects" (Acs and Amoros, 2008, p. 121). Entrepreneurial activity varies greatly from one country to another over time. Economic development and the institutional environment are major factors that can drive and shape entrepreneurial activity. When one wishes to analyze entrepreneurship from a perspective of international comparisons between countries, one must take into account that countries differ both in the level of development and regulation of the economy.

The level of development explains that the level of entrepreneurial activity is structurally different among countries; the less developed ones showing a higher entrepreneurial activity (Lucas, 1978), it is the development and the concomitant rise of actual wages that will lead to the shift to a society more wage orientated. Naudé (2010) notes that entrepreneurship is also essential for structural change. It contributes to the transformation of agricultural economies into knowledge and service economies. The weight of the primary sector and the functioning of the informal economy explain the high rate of entrepreneurial activity in developing countries. With the development and the increase in interesting wage opportunities (the level of actual wages increases), we observe a diminution of the entrepreneurial activity but also a revival for the innovation-driven economies (GEM, 2009, 9)¹.

Based on institutional theory, which states that institutions drive the behavior of firms and individuals (North, 1990, Scott, 1995), a number of studies highlight the importance of the institutional environment to explain differences in entrepreneurial activity between countries. Indeed, institutional factors such as national culture (Mueller and Thomas, 2000, Mitchell and al., 2002) and government regulation (Storey, 1991, Verheul and Van Stel, 2007, Acs et al., 2014) can promote or deter entrepreneurship in a society. Institutions regulate both the behavior of firms and individuals in an institutional

¹“The Global Entrepreneurship Monitor (GEM) project is an annual assessment of the entrepreneurial activity, aspirations and attitudes of individuals across a wide range of countries. Initiated in 1999 as a partnership between London Business School and Babson College, the first study covered 10 countries; since then nearly 100 ‘National Teams’ from every corner of the globe have participated in the project, which continues to grow annually” <http://www.gemconsortium.org/What-is-GEM>

setting and provide an environment in which they can operate. Thus, the regulatory framework and economic policies not only create rules for organizations and individuals, but also determine the difficulty and incentives to start a business (Bruton and Ahlstrom, 2003, Valdez and Richardson, 2013).

The aim of this paper is to analyze entrepreneurial activity in OECD countries² over the 1999-2012 period in order to propose a typology of entrepreneurship within these countries. Our intention is to make a distinction between managerial and entrepreneurial economies, to identify groups of countries with similar entrepreneurship behavior and to determine the economic and institutional drivers of entrepreneurial activities in each group. We postulate, according to the assumptions of Audretsch and Thurik (2000, 2001), that entrepreneurial economies are more able to deal with a high rate of growth and a low rate of unemployment, so we combine these variables with the level of development to build a conceptual model of development. Then we test its relevance empirically. The approach adopted rests on a combined use of multidimensional evolutive data analysis that take into account the characteristics of the countries in terms of four variables: the GDP growth, the unemployment rate, the share of entrepreneurial activity and the growth of this share. According to the similarity of these four variables, we can establish a classification of OECD countries. Then we illustrate the different types of development with a set of variables related to economic development and institutional environment, these latter focusing on the regulatory framework.

Our study contributes to explaining complex relationships between level of development, entrepreneurial dynamics, growth and unemployment. It differs from the existing literature on several points. First, thanks to the length of the period being considered and the original methods being used, we are able to propose a dynamic analysis of entrepreneurship. Moreover, as our data period ends in 2012, we can study the impact of the financial crisis on entrepreneurial activity. Second, we consider a wide range of variables both characteristic of economic development and institutional regulation to consolidate and enrich our typology of OECD entrepreneurship.

Several important outcomes emerge from this study. First, the financial crisis involved a break in entrepreneurial dynamism. The effects of the financial crisis are noticeable in 2009 after a delay. Second, we show evidence that the pre-crisis period, from 1999 to 2008, was a period of growth favorable to entrepreneurship. Over this period, we distinguish different kinds of entrepreneurial and managerial economies. Third, our results show that the variables representative of economic development, and in particular those relating to the development level and to the sectoral specialization, are important to enrich the typology. Moreover, the institutional variables linked to entrepreneurship, functioning of the labor market and openness of the country also help to sharpen the description of the classes. Finally, mainly because of the financial crisis, the entrepreneurial dynamics vary greatly across countries over the 1999-2012 period. We are able to establish common trajectories for a number of them.

²The Organization for Economic Cooperation and Development (OECD) is an international economic organization of 35 countries founded in 1961 to stimulate economic progress and world trade. It is a forum of countries committed to democracy and the market economy, providing a platform to compare policy experiences, seek answers to common problems, identify good practices and coordinate domestic and international policies of its members. The following listed countries belong to OECD –in bold the 26 countries that are taken into account in the study due to data availability-: **Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom and United States.**

In the following section, we present a brief review of the literature. In section 3, we describe the data and highlight a break in the dynamics of entrepreneurship since the global financial crisis. Section 4 presents typologies of regional development in OECD countries over three periods: before, during and after the financial crisis. Section 5 concludes and presents policy implications.

2. Literature review and conceptual model

Many macroeconomic and institutional causes can explain the differences in entrepreneurial intensity between countries and areas. They refer to what W. J. Baumol names in an important 1990 paper “*the rules of the game*”, i.e. the structure of reward in the economy. He notes that certain societies historically furthered rather unfavorable structures of reward in the development of entrepreneurship. These structures divert the national or local elites from the exercise of the entrepreneurial function and prove indirectly harmful to the diffusion of technical progress (ancient Rome with the valorization of the political office, medieval China with the Mandarin system...). If small and new businesses are usually important to economy vibrancy, employment growth, and wealth creation for almost all world economies (Craig et al, 2003), one may notice that some differences may still be at work regarding the potentiality of growth of the new firms according to the different “rules of the game”. The level of development is also important regarding the entrepreneurial intensity. GEM studies gather countries according to their main engine for growth: factor-driven economies for the less developed ones, efficiency-driven economies for the middle class and innovation-driven economies for the more developed ones. Observations, collected by the Global Entrepreneurship Monitor consortium, have been translated into a U shape curve linking countries’ GDP per capita and rate of entrepreneurial activity (Carree et al., 2007). But is it a U or a mirrored-J? The latter appears more relevant with regards to the most recent publications of GEM. “Total Entrepreneurial Activity rates³ (TEA) tend to be highest in the factor-driven group, decreasing with higher levels of economic development”, GEM (2015-2016, p. 18).

2.1. Institutional environment

For economic institutionalists and following North (1990), “the relevant framework is a set of political, social, and legal ground rules that fixes a basis for production, exchange, and distribution in a system or society”, (Bruton and Ahlstrom, 2003). Scott (1995) distinguishes three institutional categories: regulatory, normative and cognitive. North (1990) proposes to split institutions into formal and informal. The most formal institutions are the regulatory institutions representing standards provided by laws and other sanctions (Bruton and Ahlstrom, 2003). Normative institutions are less formal or codified and define the roles or actions that are expected of individuals. Cognitive institutions relate more to the cultural, behavioural and role models shared in society. Recent research (Acs et al., 2014) proposes a systemic approach to entrepreneurship with the definition of different national systems of entrepreneurship: “A National System of Entrepreneurship is the dynamic, institutionally embedded interaction between entrepreneurial attitudes, ability, and aspirations, by individuals, which drives the allocation of resources through the creation and operation of new ventures”. Regarding entrepreneurship the “rules of the game” include the development and the operation of the financial system, the intensity of the administrative barriers, the legislation regulating the

³ The Total Entrepreneurial Activity rate is defined as the percentage of individuals aged 18-64 who are either actively involved in creating a business or running a business for less than 42 months.

labor market relations, the fiscal rules, the social security system, legal consequences of the failure of the firm, the entrepreneurial spirit and the collective perception of the failure of the firm as well as the perception of success as an entrepreneur, (Bonnet et al., 2011). A number of recent studies have explored the impact of institutional environment on entrepreneurship activity but they differ not only in the choice of institutions they focus on but also in which institutional variables seem to be the most salient ones. Bosma and Schutjens (2011) point out the importance of institutional factors in explaining variations in regional entrepreneurial attitude and activity. Considering different components of entrepreneurial attitudes, i.e. fear of failure in starting a business, perceptions on start-up opportunities and self-assessment of personal capabilities to start a firm, they argue that institutional conditions influence entrepreneurial behavior not directly, but indirectly, firstly by affecting entrepreneurial attitudes. Nissan et al. (2011) find that “institutions affect economic growth, specifically formal institutions, such as procedures or time needed to create a new business, indicating that regulation can influence the context in which entrepreneurship affects economic growth”. Van Stel et al. (2007) examine the relationship between regulation and entrepreneurship in 39 countries and show that the minimum capital requirement for starting a business does seem to lower entrepreneurship rates across countries, while administrative procedures such as time, the cost or the number of procedures needed to start a business do not. Valdez and Richardson (2013), using GEM aggregated survey data of individuals at national level, show that normative and cultural-cognitive institutions are the main drivers of entrepreneurship. Simón-Moya et al. (2014) suggest that both formal and informal institutions matter: countries with high levels of economic freedom and education tend to have more opportunity entrepreneurship. Sambharya and Musteen (2014), using cross-sectional data on 42 countries over the 2000-2005 period, show that market openness, regulatory quality (for example time and funds consumed by complying with complex regulatory requirements to set-up a firm) and some elements of entrepreneurial culture (uncertainty avoidance, institutional collectivism and power distance) explain the level of opportunity-versus necessity-driven entrepreneurial activity. Their findings suggest that the impact of institutional factors varies depending on the type of entrepreneurship activity. Aparicio et al. (2016) find that informal institutions, namely control of corruption, confidence in one’s skills, have a higher impact on opportunity-driven entrepreneurship than formal institutions such as number of procedures to start a new business and private coverage needed to get credit.

2.2. Economic development

GEM reports (2002, 2004, 2006, 2009, 2011, and 2013) highlight a high rate of entrepreneurship in countries whose economic development is relatively low. The weight of the primary sector and the functioning of the informal economy explain the high level of entrepreneurial activity in developing countries. Nevertheless there is also an impact of entrepreneurship on economic growth that depends on the nature of the entrepreneurial activities and especially on the motives to set up a firm (opportunity/necessity-driven). According to Szerb et al., 2013, p. 22, “(A)s an economy matures and its wealth increases, the emphasis of industrial activity shifts towards an expanding services sector (...). The industrial sector evolves and experiences improvements in variety and sophistication. Such a development would be typically associated with increasing research and development and knowledge intensity, as knowledge-generating institutions in the economy gain momentum. This change opens the way for development of entrepreneurial activity with high aspirations.” Wennekers et al. (2010) “argue that the reemergence of independent entrepreneurship is based on at least two ‘revolutions’ ”: the solo self-employment

(Bögenhold and Fachinger, 2008, Bögenhold et al., 2017, Fachinger and Frankus, 2017) which is important for societal and flexibility reasons and the ambitious and/or innovative entrepreneurs (Acs et al., 1999, Van Stel and Carree, 2004, Audretsch, 2007). Simón-Moya et al. (2014) argue that necessity-driven entrepreneurship plays a more relevant role in countries whose economic development is relatively low and inequality prevails. Conversely, in more developed countries with relatively low income inequality and low level of unemployment, rates of entrepreneurial activity are significantly lower, necessity-driven entrepreneurship is less prevalent, opportunity-driven entrepreneurship is dominant. According to Sambharya and Musteen (2014), “the opportunity-driven entrepreneurship often involves more intensive creative processes while necessity entrepreneurship often relies on imitation of well-known business models”. Both are necessary when considering emerging and developing countries. Yet in the case of advanced economies a high ratio of opportunity/necessity-driven entrepreneurship is better, reflecting a flexible economy more prone to enhance growth. According to Van Stel and al. (2005), the Total Entrepreneurial Activity rate for the 1999-2003 period in 36 countries has a positive and significant impact on economic growth. Nevertheless, this impact is to be differentiated according to the level of development and the development process of the countries. It is less important in transition economies (for example, in Hungary, Poland and Slovenia) and it may even have a negative impact on economic growth in some developing countries (for example in Mexico). The absence of large companies in these countries and a low actual wage may explain that the choice to become an entrepreneur is in favor as it is sometimes the only possibility to earn a living.

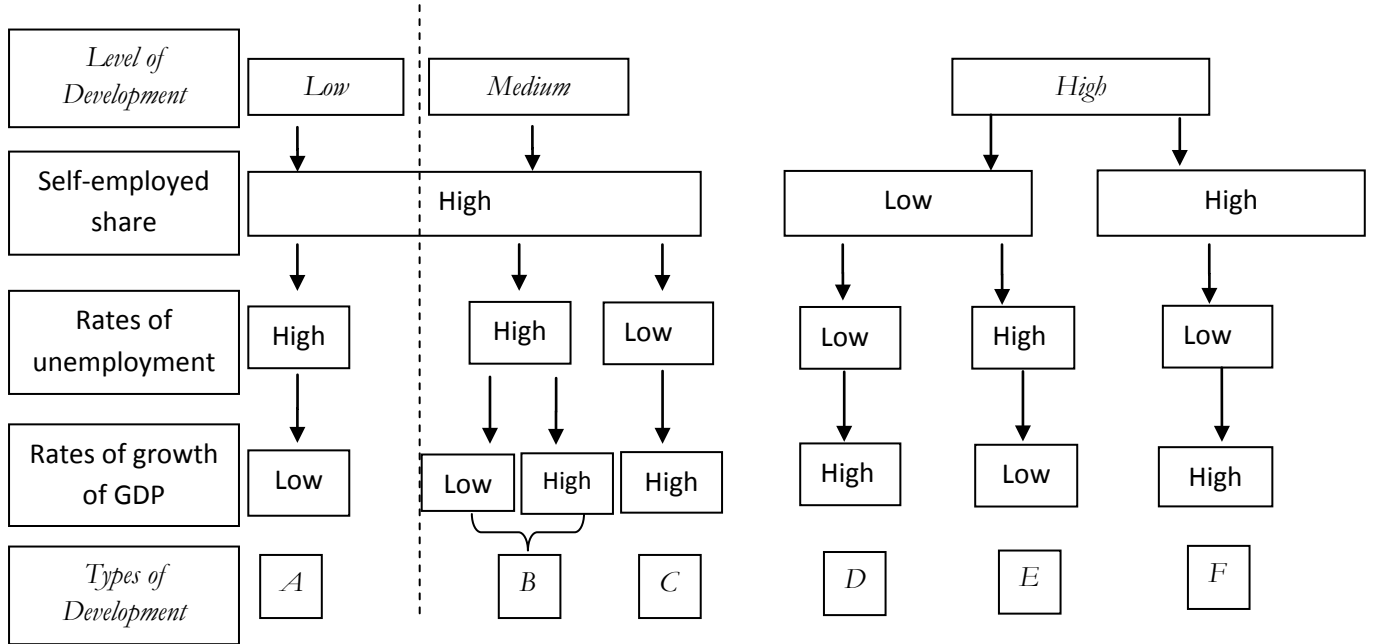
2.3. The conceptual model

This paper seeks to throw more light on the combination of the structural type of an economy and some institutional dimensions to explain complex relationships between level of development, entrepreneurial dynamics, growth and unemployment. We propose a conceptual model taking into account the level of development of the country, the share of self-employment (as a measure of the entrepreneurial activity), the level of unemployment and the rate of growth of GDP (as measures of performance of an economy) (figure 1). We take into account the structural effect of the development in considering low, medium and high levels of development. Then the combination of the share of the self-employed in the workforce with rates of unemployment and rates of GDP growth allows us to identify six theoretical types of development.

The last variable, the growth of the self-employed share, does not directly intervene in the typology of the theoretical types of development presented below because it is a cyclical variable. However, it is an important variable in our study. It helps to identify the reactions to macroeconomic fluctuations in terms of entrepreneurial characteristics, especially in times of crisis, and it sheds light on the entrepreneurial environment of different economies and its role in overcoming difficulties. Moreover, this variable also makes it possible to identify the *refugee/Schumpeter* effects in different classes. It is indeed relevant to conceptualize the entrepreneurial choice to start a new venture with the well-known *refugee/Schumpeter* effects (Thurik et al., 2008; Abdesselam et al., 2014). According to the *refugee* effect, unemployment may induce new-firms startups. Increasing unemployment reduces the opportunity cost of entrepreneurship and consequently stimulates entrepreneurship. The *refugee* effect is sometimes called the *shopkeeper* effect. Contrastingly, the *Schumpeter* effect conveys the fact that new-firm startups, launched for opportunity motives, may contribute to the reduction of unemployment (Thurik et al., 2008; Koellinger and Thurik, 2012). So, motives related to the startup of firms stand for

different potentiality in terms of growth and employment creation. For example Wong et al. (2005), using cross-sectional data on the 37 countries participating in GEM 2002, show that, among different types of entrepreneurial activities, only high-growth potential entrepreneurship is found to have a significant impact on economic growth.

Figure 1: Types of development relatively to the three variables and levels of development



Acs (2006) describes different stages of development. The first is “marked by high rates of non-agricultural self-employment. Sole proprietorships -i.e. the self-employed- probably account for most small manufacturing firms and service firms. Almost all economies experience this stage”. In terms of the share of self-employment, we consider that this share is rather high for low- and medium-developed countries, and this for two main reasons: the sectoral specialization -transition from agricultural to industrial and service economies is at work (Kuznets, 1966, Syrquin, 1998)- and the lack of/or the insufficient development of firms that offer wage work (Lucas, 1978). The second stage is marked by decreasing rates of self-employment with the development of the average firm size: “marginal managers find they can earn more money while being employed by somebody else”, (Acs, 2006). Yet the impact of entrepreneurship on economic growth also depends on the nature of the entrepreneurial activities and refers to the difference which exists between an entrepreneurial society which develops private initiative and a wage-based society which increases the opportunity cost to undertake new ventures. For example for high-developed countries a “rather” low share of self-employment may be translated into low level of unemployment and high growth if the firms are opportunity-driven while it is the contrary in case of necessity-driven motives. In the third stage, Acs (2006) explains the revival of entrepreneurship in the most developed countries (while service firms are smaller, they are numerous and take a great importance in GDP and employment share; information and communication technologies increase the returns to entrepreneurship for all firms) and finally justifies the U-shaped relationship between entrepreneurial activity and economic development in the global economy. By definition, for highly-developed countries with a high share of self-employment, rates of unemployment are rather low

because self-employment supersedes unemployment, Acs (2006). We can then describe our typology:

Path *A* corresponds to developing countries that are still waiting for take-off. The high share of self-employment is mainly related to low opportunities for a wage job. A theoretical explanation based on managerial skills and the level of actual wage can be found in Lucas (1978). This path has not to be retained because countries belonging to OECD cannot be regarded as low-developed countries.

Path *B* sheds a light on developing countries in transition towards becoming developed countries. Naudé (2010) notices that in some developing countries there also exists entrepreneurship for opportunity motives -there is so much to do in these countries in order to catch up with the more developed ones-; there is room for imitative entrepreneurship (Koellinger, 2008).

Path *C* comprises entrepreneurial economies issued from medium development economies that are at the end of the transition phase towards becoming developed countries.

Path *D* relates to advanced knowledge and service economies where the relatively low level of the share of self-employment is indicative of a mature economy and so the unemployment rate is rather low. In these countries innovation accounts for 30% of economic activity and very often small and innovative entrepreneurial firms operate as ‘agents of creative destruction’. Nevertheless, the growth in the self-employed share of the workforce is rather weak because the more mature economies undergo development that is more based on qualitative entrepreneurship. In these countries *Schumpeter* effects are more prone to be assessed.

Path *E* corresponds to managerial economies where a low level of entrepreneurship is associated with a high level of unemployment and a low level of growth. It illustrates the reverse version of the *Schumpeter* effect. For example, in the case of France, several explanations may be put forward for the low intensity in entrepreneurship and the factors deterring “pull” motives: an education inadequate for furthering creativity and entrepreneurship (Retis, 2007), a slow development of incubators and an under-development of seed money and private financing networks (Aernoudt, 2004), a lack of entrepreneurial spirit (CGPME, 2005), the existence of sunk costs for elites (Bonnet and Cussy, 2010) and a high unemployment rate that mainly induces entrepreneurship for “push” motives (Abdesselam et al., 2014, Aubry et al., 2014a, 2014b). Obviously, one of the conditions for risk-taking is to be able to find a job again quickly in case of failure, and/or to give value to one’s experience. This implies that unconstrained entrepreneurship is favored in economies characterized by a low rate of unemployment even if an unemployed position generates a low opportunity cost for new entrepreneurs. Empirically, Wennekers (2006) has established a negative relation between the unemployment rate and the rate of entrepreneurial activity in the European case. This result corroborates the fact that the fluidity of the labor market encourages entrepreneurship for opportunity motives while rigidities in the labor market generate entrepreneurship for necessity motives but globally decrease total entrepreneurship.

Path *F* identifies entrepreneurial economies in highly-developed countries with more extensive development based on competitiveness and attractiveness of production factors.

3. Data and preliminary analysis

In this section, we describe the data. Next, we show evidence of a break in the dynamics of entrepreneurship following the global financial crisis.

3.1. The data

Our proposal aims to establish a classification of OECD countries thanks to variables related to economic and entrepreneurial activity, namely GDP rate of growth (GDP), unemployment rate (UNEMPL), the self-employed share as a percentage of the working age population (SEMPLShare) and the rate of growth in the self-employed share of the workforce (SEMPLGrowth). According to the OECD, “The number of self-employed is the number of individuals who report their status as “self-employed” in population in labor surveys. Self-employment jobs are those jobs where the remuneration is directly dependent upon the profits (or the potential for profits). The incumbents make the operational decisions affecting the enterprise, or delegate such decisions while retaining responsibility for the welfare of the enterprise⁴.” Faggio and Silva (2012) show, in the case of UK, that in urban areas self-employment is strongly and positively linked to other measures of entrepreneurship like business start-ups and innovative firms which are salient aspects of entrepreneurship. It is not the case in rural areas where “push” entrepreneurs are more numerous. Nevertheless self-employment is often used as a proxy for entrepreneurship, especially for international comparison, even if there is a comparability issue across OECD countries related to the classification of the incorporated self-employed workers. While in official statistics for most OECD countries the self-employed workers who incorporate their businesses are counted as self-employed, in some countries they are counted as employees (for example, Japan, New Zealand and Norway).

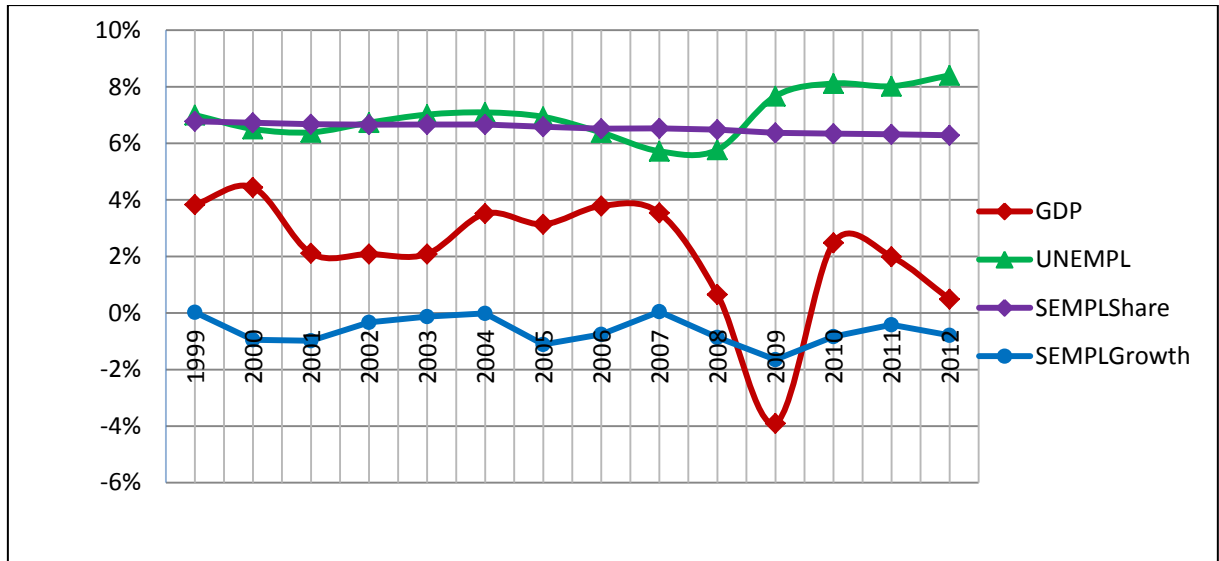
To better understand entrepreneurship, we retain two variables on self-employment which represent both structural (SEMPLShare) and situational components (SEMPLGrowth). In addition, using the growth rate of the self-employed share of the workforce partially overcomes the problem of comparability of self-employed shares series. We use an annual data basis over the 1999-2012 period.

These countries may be considered to be relatively homogeneous, i.e. countries driven by market economies and mostly belonging to *innovation-driven* economies⁵. In order to study the dynamics of entrepreneurship in OECD over the 1999-2012 period, we only consider countries for which active variables are available over the whole period. For reasons of data availability and incomplete data, we retain 26 of the 35 countries currently members of the OECD, excluding Latvia, Estonia, Greece, Iceland, Israel, Korea, the Slovak Republic, Switzerland and Turkey. The data are extracted from OECD databases. In figure 2, the average evolution of the UNEMPL, GDP, SEMPLShare and SEMPLGrowth variables is represented for the 26 OECD countries under study for the whole period.

⁴ The definition therefore includes both unincorporated and incorporated businesses and as such differs from the definition used in the System of National Accounts which classifies self-employed owners of incorporated businesses and quasi-corporation as employees. It should be noted that not all self-employed workers are “entrepreneurs”. Self-employment statistics include craft-workers and farmers.

⁵ In the 2009 GEM (p. 5) report, Chile and Hungary –belonging to the group of *efficiency-driven* economies– are considered to be in transition towards the group of *innovation-driven* economies.

Figure 2: Average evolution of active variables over the 1999-2012 period



The number of self-employed as a percentage of the population is slightly decreasing with a steady curve during the period while the rate of growth of the self-employed share is of course more volatile -and always negative- with a decrease from 1999 to 2001, followed by an increase during the 2001-2004 period -a less important decrease- and again a decrease in the year 2005, followed by an increase till 2007 and a decrease in 2008 and 2009, with a final increase till 2011 and decrease in the last year of observation. The rate of GDP growth sharply decreases from 2007 onwards with a very negative level in 2009. There is a recovery in 2010 but a decrease again in 2011 and 2012. After the crisis of 2008-2009, we can observe a sizeable increase in the unemployment rate.

Moreover, in order to better characterize classes, we use a wide set of illustrative variables relevant for characterizing the context of entrepreneurship in the different countries. These variables are likely to depict different types of developments, so they were positioned as supplementary variables in the multidimensional analysis. They do not affect the calculations based upon the four UNEMPL, GDP, SEMPLShare and SEMPLGrowth variables: they are not used to determine the principal component factors but are, *a posteriori*, positioned in order to assess their degree of similarity with the active variables. These variables bring useful information to consolidate and enrich the interpretation of the classes of countries. We consider three categories of variables, representative of national economic development and institutional environment as well as variables specific to the entrepreneurial population. The level of development is usually evaluated by GDP/capita. Due to the imperfection of this measure, it is more appropriate to evaluate it as a combination of a set of variables representing the level of development of the economy, such as the weight of finance in the economic system, the importance of innovation, the quality of the labor force (by proxy with education and health expenditures) or the proportion of the urban population. Combined with the sectoral specialization it allows us to enrich the different kinds of development. Institutional environment is taken into account by way of variables relative to regulatory requirements (Sambharya and Musteen, 2014). We choose to consider only institutional regulatory variables. These variables are particularly interesting for the implementation of public policies because they can be more easily controlled in the short run to promote entrepreneurial activities. In this set of variables we distinguish requirements to set-up a firm (Time, Cost, Procedures and Barriers), labor market regulations (Employment protection, Minimum wage, Inflows of

foreign population) and market openness indicators (FDI-In/Out-, Net barter terms of trade, Trade). In addition, we consider variables specific to the entrepreneurial population: for each class we identify the relative importance of necessity/opportunity motives (OEAI), the Nascent Entrepreneurial Activity Index (NEAI) and the Young Firm Entrepreneurial Activity Index (YFEAI), ratios obtained through the Global Entrepreneurship Monitor (GEM) and that are supposed to differ according to the different classes of countries obtained. These variables and their availability period are described in Table 1.

Table 1: Supplementary variables

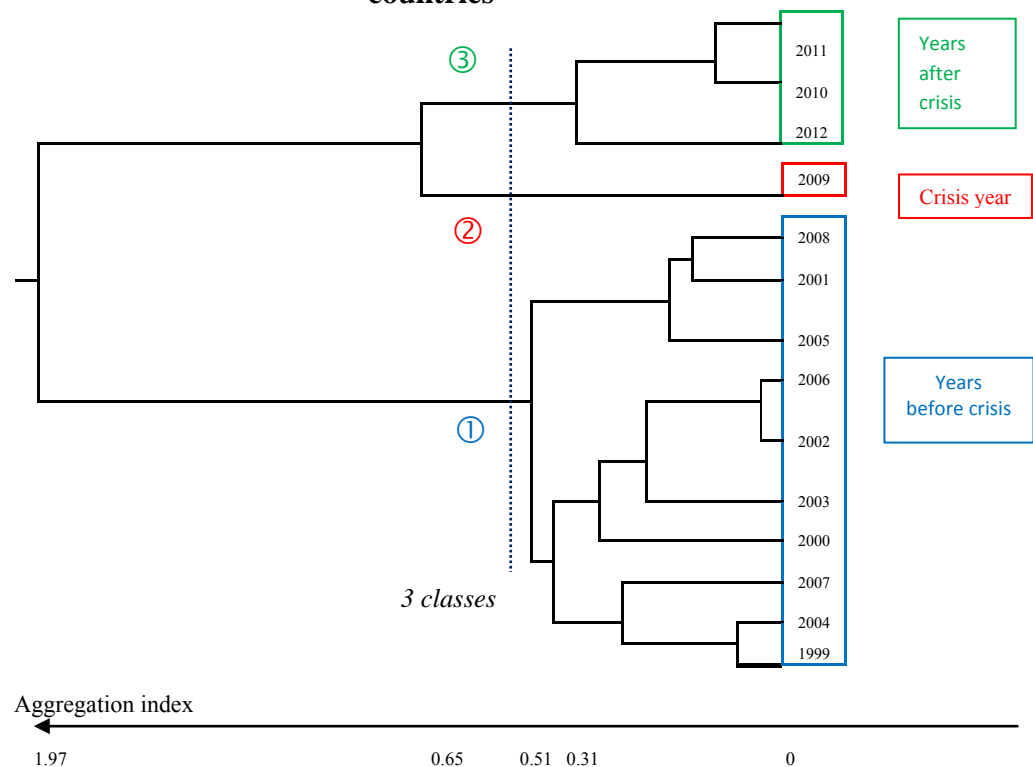
Name	Description	Period	Source
Economic Development			
- relative to the level			
DCR	Domestic credit provided by the financial sector (% of GDP)	1999-2012	World Bank
GDERD	Gross Domestic Expenditure on R&D (GDERD) (% of GDP)	1999-2012	OECD
PATENTS	Patents (numbers per capita) ⁶	1999-2011	OECD
EDU	Public spending on education, total (% of GDP)	1999-2010	World Bank
HEALTH	Health expenditure, total (% of GDP)	1999-2012	World Bank
URBAN	Urban population (% of total population)	1999-2012	World Bank
- relative to sectoral specialization			
AGRI	Agriculture, value added (% of GDP)	1999-2012	World Bank
INDUS	Industry, value added (% of GDP)	1999-2012	World Bank
SER	Services, etc., value added (% of GDP)	1999-2012	World Bank
AGRIEMPL	Employment in agriculture (% of total employment)	1999-2012	World Bank
INDUSEMPL	Employment in industry (% of total employment)	1999-2012	World Bank
SEREMPL	Employment in services (% of total employment)	1999-2012	World Bank
IPROD	Industrial production, seasonally adjusted (Growth previous period)	1999-2012	World Bank
Institutional environment			
- relative to entrepreneurship			
TIME	Time required to start a business (days)	2003-2012	World Bank
COST	Cost of business start-up procedures (% of GNI per capita)	2003-2012	World Bank
PROC	Procedures required to start a business (number)	2003-2012	World Bank
BTE	Barriers to entrepreneurship	1998,2003,2008,2013	OECD
-relative to functioning of the labor market			
STRICT	Strictness of employment protection	1999-2012	OECD
RMINW	Real minimum wages (hourly, US\$PPP)	1999-2012	OECD
IMM	Inflows of foreign population by nationality as a % of total population	1999-2011	OECD
-relative to openness of the country			
OutFDI	Foreign Direct Investment (FDI) Outward position at year end as a % of GDP	1999-2012	OECD
InFDI	Foreign Direct Investment (FDI) Inward position at year end as a % of GDP	1999-2012	OECD
TRADE	Trade (% of GDP)	1999-2012	World Bank
ECH	Net barter terms of trade index (2000 = 100)	2001-2012	World Bank
Entrepreneurial variables			
YFEAI	Measures the number of people owning/managing a business that has existed for up to 3.5 years; relative to the adult population 18-64	2002-2012	GEM
NEAI	Nascent Entrepreneurial Activity Index: Measures the number of people who are actively trying to start a new business; relative to the adult population 18-64 years.	2002-2012	GEM
OEAI	% of people of 15-64 years involved in entrepreneurial activity (TEA) out of opportunity	2005-2012	GEM

⁶ Fractional counts are applied for patents with multiple inventors/applicants : When a patent was invented by several inventors from different countries, the respective contributions of each country are taken into account. This is done in order to eliminate multiple counting of such patents.

3.2. A break in the dynamics of entrepreneurship: the global financial crisis

To analyze the dynamic development over the 1999-2012 period, we study the annual average evolution of the variables relative to the economic and entrepreneurial activity -UNEMPL, GDP, SEMPLShare and SEMPLGrowth- for the 26 OECD countries. In this analysis, years play the role of “individuals” and average annual rates the role of variables. A cluster analysis was applied to group the years of the 1999-2012 period into homogeneous classes or sub-periods. More precisely, a Hierarchical Ascendant Classification (HAC) was used on the significant factors of the Principal Component Analysis (PCA) of average annual rates of the four variables of dynamic development. This methodological linking of factorial and clustering methods constitutes an instrument for statistical observation and structural analysis of data. The dendrogram in figure 3 represents the hierarchical tree of the years. Table 2 summarizes the main results characterizing the chosen partition into three periods, obtained from the cut of the hierarchical tree of the figure 3.

Figure 3: Cluster dendrogram of years over the period 1999 to 2012 of the 26 OECD countries⁷



⁷ The Hierarchical Cluster Analysis (HCA) is employed. An explanatory technical note on this method is proposed in the Appendix.

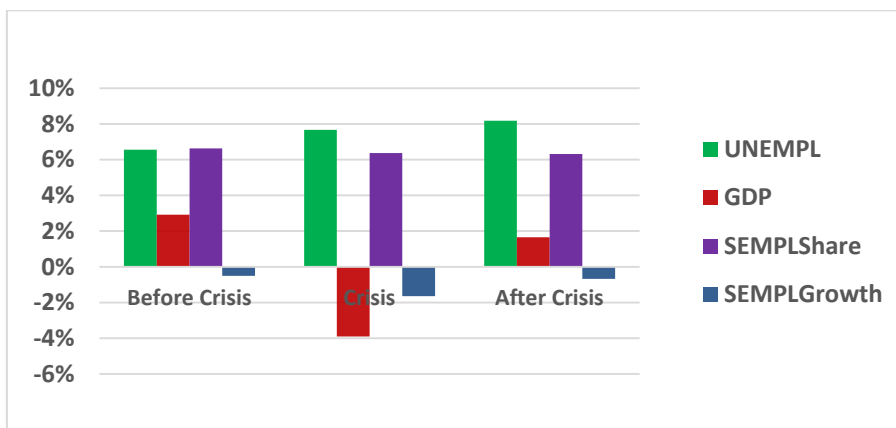
Table 2: Means of active variables and synthetic partition into three sub-periods

	Class1 Before Crisis	Class 2 Crisis	Class 3 After Crisis
Duration	10 years	1 year	3 years
Years	1999 to 2008	2009	2010 to 2012
Profile (+)	+ SEMPLShare + GDP		+ UNEMPL
Anti-Profile (-)	- UNEMPL	- GDP - SEMPLGrowth	- SEMPLShare

Note: Variables are significant at the level of 5%.

Clearly the effect of the crisis is noticeable in 2009 with a rate of GDP growth and a rate of growth in the self-employed share of the workforce significantly lower than those registered on the overall period. “The recent crisis, characterized by tighter credit restrictions, has arguably hampered new start-ups and impeded growth in existing start-ups as well as their ability to survive in tough market conditions” (OECD, 2013, p.7). Although the crisis started in 2007, the decline in rates of GDP and self-employed growth are significantly lower than those registered on the overall period only in 2009. Using panel data on the number of new firm registrations in 95 countries to study the impact of the 2008 financial crisis on new firm creation, Klapper and Love (2011) also show that the impact of the crisis was much more pronounced in 2009.

The first period, comprising the years before the crisis, is characterized by high GDP growth; a high level of self-employment and a low unemployment rate. It is a period of growth favorable to entrepreneurship. However, the crisis significantly impacted the dynamics of entrepreneurship: we can observe in the sub-period after the crisis that the unemployment rate is significantly higher than average on the whole period and the share of the self-employment is significantly lower. The financial crisis seems to have broken the dynamics of entrepreneurship. It clearly appears (figure 4) that the rate of growth doesn’t recover its initial level after the crisis: it stands at 1.65% over the 2010-2012 period against 2.92% before the crisis. Consequently the level of unemployment is still increasing in the last period (but with a lower slope). The self-employment share is steadily decreasing during all the period (figure 2) with an acceleration in 2009 -see self-employment growth- due to the closure of numerous firms during the crisis.

Figure 4: Average rates of active variables over the sub-periods

According to the OECD (2009), it is important to note that SMEs and therefore self-employed workers are generally more vulnerable in times of crisis for several reasons, including the fact that: " it is more difficult for them to downsize as they are already small; they are individually less diversified in their economic activities; they have a weaker financial structure (i.e. lower capitalization); they have a lower or no credit rating; they are heavily dependent on credit and they have fewer financing options". In addition, they are more vulnerable because they often bear the brunt of the difficulties of large companies.

The International Labor Organization (ILO) has described this crisis as a global job crisis. It has resulted in an increase in the unemployment rate as well as the failure of many businesses, leading to a decrease in levels of self-employment over the 2010-2012 period.

When unemployment increases, there is a very short lag before we observe an increase in the setting-up of new-firms, i.e. the *refugee* effect, (Abdesselam et al., 2014). In fact, unemployment acts as a trigger factor for entrepreneurial involvement for some people. Being unemployed is one of the displacement factors (breaks in the life of individuals) that can lead to entrepreneurship (Shapero, 1975). The lag in the reduction of the unemployment rate due to new-firm startups (*Schumpeter* effect) is greater because usually new firms do not create a lot of jobs at the beginning of their activity. Indeed, jobs can be considered as quasi-fixed costs in countries where labor market regulation is rigid and it is worth waiting until demand becomes sufficiently constant before hiring employees.

4. Dynamic regional development and typologies of OECD countries

To better understand the dynamics of the development of entrepreneurship over the period and to take into account the effects of the financial crisis, we carried out an analysis over the three sub-periods: before, during and after the crisis. The approach adopted relies on a combined use of multidimensional evolutive data analyses that take into account the characteristics of the countries in terms of GDP growth, unemployment rates, the number of self-employed as a percentage of the population and the rate of self-employment growth as well as their evolution over the 1999-2012 period. According to the similarity of these four rates, we can establish a typology of the 26 OECD countries. The usual analyses of annual data do not allow for a global analysis of the countries and their characteristics because these analyses are carried out separately (year by year) and do not take into account the possibility of their having a common structure across time. The total evolution of the countries is thus studied by a Multiple Factor Analysis (MFA) (Escofier and Pagès, 1985, 1998), based on a weighted analysis of the principal components of all the data.

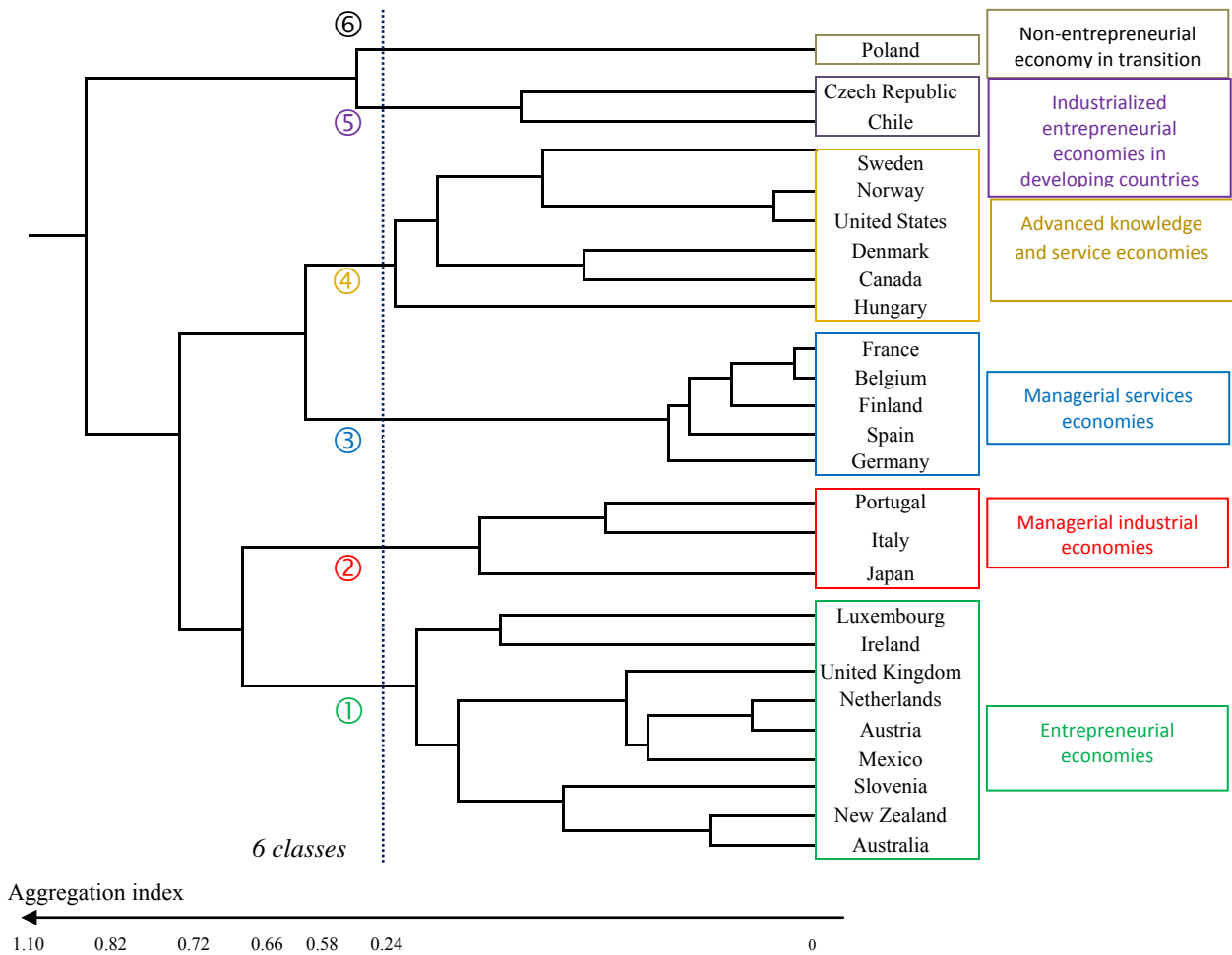
This analysis is especially designed to study individuals -namely the countries- characterized by a certain number of groups of the same variables measured at each different moment in time. The MFA highlights the common structure of a set of groups of variables observed for the same 26 countries. The first interest this method offers is to carry out a factor analysis in which the influence of the different groups of variables is equilibrated a priori. This balance is necessary because the groups of variables always differ according to the structure of the variables, namely with their interrelationships. It provides representations of countries and variables that can be interpreted according to a usual Principal Component Analysis (PCA). A Hierarchical Ascendant Classification (HAC) was then used on the significant factors of the MFA in order to characterize the classes of countries relative to the evolution of the four chosen variables. The dendrogram

in figure 5 represents the hierarchical tree of the countries obtained by using an HAC with the Ward criterion⁸.

4.1. The pre-crisis financial period: towards more entrepreneurial economies

The dendrogram in figure 5 represents the hierarchical tree of the countries according to the active variables over the 1999 to 2008 period. Table A1 shown in the appendix summarizes the main results of the characterization of the chosen partition into six classes, obtained from the cut of the hierarchical tree in figure 5.

Figure 5: Hierarchical tree over the 1999 to 2008 period for the 26 OECD countries



⁸ Generalised Ward's Criteria, i.e. aggregation based on the criterion of the loss of minimal inertia.

Class 1, Entrepreneurial economies:

The first class contains 9 countries, including Australia, Austria, Ireland, Luxembourg, Mexico, the Netherlands, New Zealand, Slovenia and the United Kingdom. It is characterized by an unemployment rate significantly lower than the average of the 26 countries considered and shows a high growth in self-employment at the end of the period. Barriers to entrepreneurship are significantly lower in 2003 and 2008⁹. These countries have an institutional environment in terms of the functioning of labor market and the openness of the country favorable to entrepreneurship. Their development is based on competitiveness and attractiveness of production factors, including labor-inflows of foreign populations that are significantly higher than average. This class is also attractive for FDI in 2002 and 2003 and displays a high level of trade during the 1999-2002 period. It shows the willingness to be competitive with the attractiveness of production factors. These results are in line with those of Simón-Moya et al. (2014) that show that business freedom, trade freedom and labor market freedom are favorable to opportunity entrepreneurship.

Class2, Managerial industrial economies:

The second class contains three countries: Italy, Japan and Portugal. These countries have a high level of self-employment relative to all countries of our sample during almost the whole period - 1999 to 2006 - and weak GDP growth for the years 1999 and 2002 to 2006. They are also characterized by an institutional environment relative to the functioning of the labor market unfavorable to entrepreneurship, namely a high strictness of employment protection on the whole period; they have rather high levels of employment in industry but a low performance in industry growth that could denote some problems in maintaining their market share. In these countries, domestic credit provided by the financial sector as a percentage of GDP is significantly higher than average. These results are in line with those of Klapper and Love (2011), who demonstrated that company creation is higher in countries with greater financial sector development, as measured by bank credit ratio to GDP. The level of expenditure on education is rather low. The Nascent Entrepreneurial Activity Index is also weak in 2004 and 2006, which denotes an insufficient renewal of entrepreneurs.

Class3, Managerial service economies:

The third class comprises five countries: Belgium, Finland, France, Germany and Spain. They present high rates of unemployment and a high level of self-employment growth in 2005 and 2006. We can identify the presence of a refugee effect: unemployment leads to new-firm creation and increased self-employment¹⁰. These economies are characterized by a rather low proportion of people owning/managing a business that has existed for up to 3.5 years and some institutional restrictions on entrepreneurship. Barriers to entrepreneurship are significantly higher in 1998 and 2003. Clearly these economies are not conducive to opportunity-driven entrepreneurship¹¹. Yet during the whole period they attempt to develop entrepreneurship¹².

⁹ Remember that this variable is observed only in 1998, 2003 and 2008 in this period.

¹⁰ This effect is clearly identified in the case of France (Aubry et al., 2014, Abdesselam et al., 2014).

¹¹ Remember that this variable is observed only in 2005, 2006, 2007 and 2008 for the period.

¹² In the case of France, entrepreneurship started to be dynamic in the early 2000s, supported by the implementation of public policies aiming to encourage entrepreneurship. In particular the law for the economic initiative -August 2003-, called Dutreil's law, aims at making France one of Europe's most favorable countries for new-firm startups: extension of the possibility to domicile the new firm in one's house for a while (from 2 to 5 years), progressive capitalization of the social capital, simplification of administrative formalities, implementation of community finance institutions etc.

Class 4, Advanced knowledge and service economies:

The fourth class consists of six countries: Canada, Denmark, Hungary, Norway, Sweden and the United States. These economies are characterized by a weak self-employment growth compared to the average population on the whole period. They recorded a significantly lower GDP growth rate in 2007, suggesting they were affected by the crisis earlier. This class is composed of highly-developed countries with a high proportion of service sector jobs, and a high level of education and health expenditures. Jobs in the agricultural sector are significantly lower than the average for all countries.

Class 5, Industrialized entrepreneurial economies in developing countries:

The fifth class contains 2 countries, Chile and the Czech Republic. These economies are characterized by a high level of self-employment from 2003 to 2008 and a high growth in self-employment in 2002 and 2003. They are also characterized by an industrial specialization with a high level of added value in industry (as a percentage) for all the periods and jobs in this sector from 2006 to 2008. The evolution of industrial production growth and the terms of trade over the 2004-2008 period are rather better than for all the countries considered. Health expenditure is rather low. The share of the service sector in the added value is also significantly lower in this class over the whole period. The institutional environment relative to the functioning of the labor market also helps to characterize this class, namely the minimum wage appears to be significantly lower than average.

Class 6, Non-entrepreneurial economy in transition:

The last class contains one country, Poland. This class is characterized by both a high level of unemployment and a high level of self-employment during the whole period, as well as a high level of self-employment growth for the years 2000, 2001 and 2008. We label this class on account of its characteristics linked to major institutional environment constraints relative to entrepreneurship: the procedures for entrepreneurship are fairly numerous during the whole period and the cost of becoming an entrepreneur is high in 2008, finally the barriers to entrepreneurship are rather high in 1998 and 2008. This result is consistent with those of Aparicio et al. (2016), who highlight that this type of regulation generates entry barriers, discouraging entrepreneurship behavior. These specificities show the occurrence of a refugee effect in Poland for this period -the proportion of people aged 15-64 involved in entrepreneurial activity (TEA) out of opportunity is quite low in 2005-. Nevertheless since it joined the EU in May 2004, one may notice that Poland has become one of the most dynamic economies of Europe with an average GDP growth rate of 4.3% over the 2004-2012 period.

4.2. The financial crisis: 2009

The dendrogram of the figure 6 represents the hierarchical tree of the 26 countries according to the active variables for the year 2009.

Figure 6: Hierarchical tree in 2009 for the 26 OECD countries

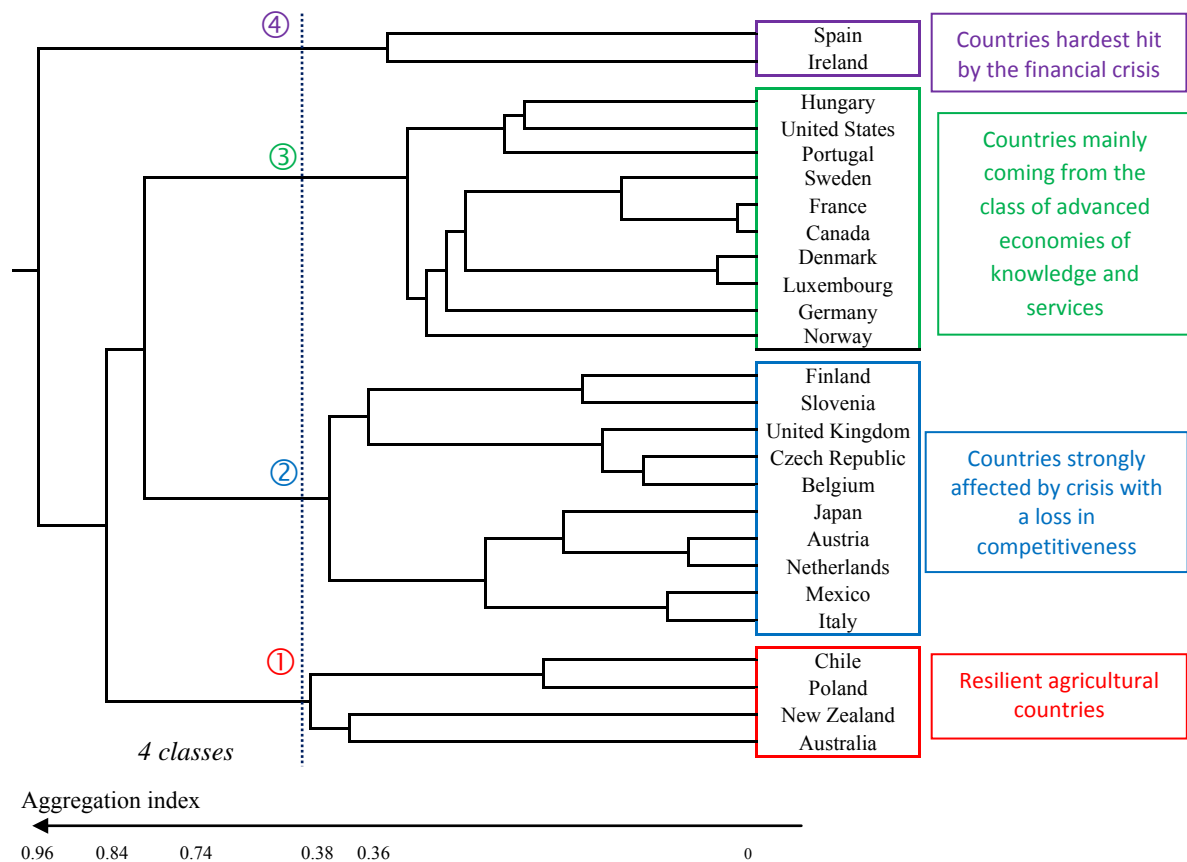


Table A2 shown in the appendix presents results of the characterization of the chosen partition into four classes for the year 2009. Note that the MFA does not allow us to analyze the evolution of variables at an absolute level but it does allow for a comparison between countries. For example, a low unemployment rate in a class does not mean that the countries in this class have not been impacted by the crisis in terms of employment; it only means that these countries were less severely affected than the average of the countries under study. Parker (2009) points out the effect of falling wages in recessions, which may lower the opportunity costs for starting a business and encourage marginal types of new-firm startups (Koellinger and Thurik, 2012).

Class 1, Resilient agricultural countries:

The first class contains the countries more resilient to the crisis: Australia, Chile, New Zealand and Poland. These countries recorded high GDP growth and a high proportion of self-employment relative to all countries of our sample in 2009. These countries are also characterized by a high sectoral specialization and an institutional environment favorable to entrepreneurship. They exhibit a high contribution of agriculture and industry and a low contribution of services in the added value. They also present a high number of jobs in agriculture, favorable net barter terms of trade, a low strictness of employment and low expenditure on R&D. So these agricultural economies are the ones that best withstood the crisis in 2009. The effect of the crisis on Australia was considerably lower than in many other countries for several reasons: Australia's economy was buoyed by China's growing demand for resources; the Australian financial system was markedly more resilient. Notably, Australian banks continued to be profitable and did not require any

capital injections from the government. Hill (2012) also highlights other factors that could explain the relatively good performance of the Australian economy during the crisis; these factors include monetary and fiscal policy; structures and legal reform; regulation of financial markets; banking history; and corporate governance. The economy of New Zealand is very closely related to that of Australia, most major banks operating in New Zealand being Australian. In addition, Australia is the largest trading partner of New Zealand. In 2009, Chile and Poland appeared to be protected against the financial crisis. These countries were little affected by the crisis due to their limited role in trade and international finance, among other things (Sholman et al., 2013).

Class 2, Countries strongly affected by crisis with a loss in competitiveness:

The second class includes countries which fell deeply into recession: Austria, Belgium, Czech Republic, Finland, Italy, Japan, Mexico, Netherlands, Slovenia and the United Kingdom. These countries were more affected by the crisis because we observe that the GDP growth rate is significantly lower than the sample's average. However, it seems that the crisis did not stop the dynamics of entrepreneurship, as we find that in 2009 the level of self-employment is above average and the rate of unemployment is significantly lower. Probably a percentage of those people laid off set up their own firms and are characteristic of "push" entrepreneurs. These countries also present unfavorable net barter terms of trade. These are economies with a loss of competitiveness in 2009.

Class 3, Countries mainly coming from the class of advanced knowledge and service economies:

The countries of the third class (Canada, Denmark, France, Germany, Hungary, Luxembourg, Norway, Portugal, Sweden and the United States) are characterized by a rather low level of self-employment. One possible explanation for the low level of self-employment could be the closure of numerous firms, even if, due to the mix of structural and situational effects, it is difficult to assess whether the low level of self-employment has only a situational component. Furthermore, we showed that countries belonging to the class of advanced knowledge and service economies were affected by the crisis earlier. The weak level of GDP growth in 2007 might have led with some delay to a decline in the level of self-employment. We note that although the cost of business start-up procedures is significantly lower than average, it has not made it possible to boost entrepreneurship during the crisis period.

Class 4, Countries hardest hit by the financial crisis:

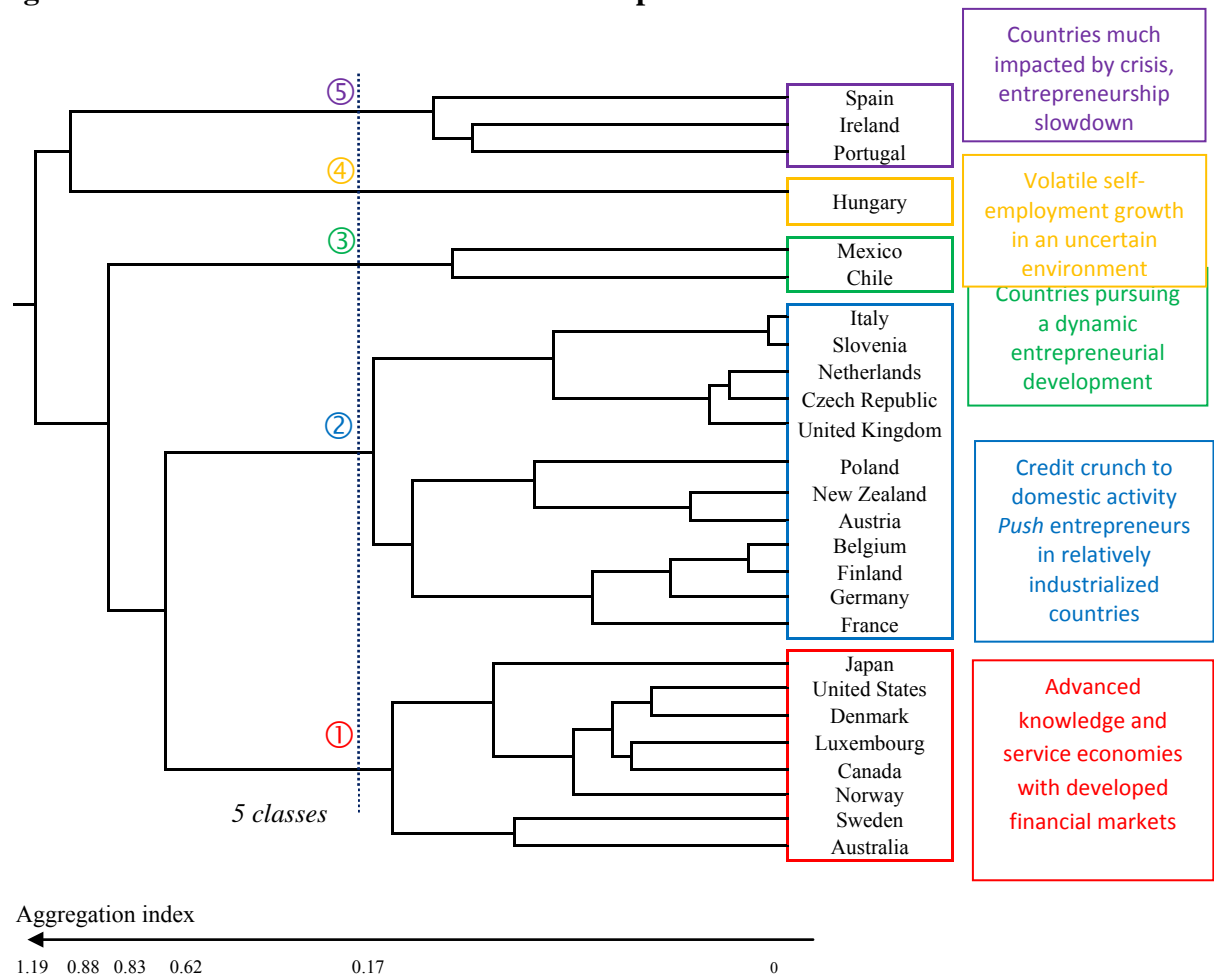
These countries, Ireland and Spain, combine high unemployment rates and a low level of growth in self-employment. In these countries, unemployment rose significantly from 2008 onwards, as a result of a sharp fall in house building leading to major job losses. Construction is among the worst affected sectors in these countries, where there had been a large boom in residential construction in response to sharply rising housing prices. The crisis reversed the trend of increasing new-company creation.

4.3. The 2010-2012 period: a sharp slowdown in entrepreneurial activity

The crisis persisted after 2009, with widespread consequences on economic performance, labor productivity and employment in all countries around the world. Hysteresis effects are indeed likely to push up structural unemployment as workers who remain unemployed for a long period become less attractive to employers as a result of declining human capital, or as they reduce the intensity of their job search. In 2012, the OECD identified 48 million unemployed people in the OECD countries, about 15 million more than at the beginning of the crisis in 2007. As we underlined in 3.2, the sub-period

after the crisis (2010-2012) is characterized by an unemployment rate significantly higher than the average over the whole period and a level of self-employment significantly lower.

Figure 7: Hierarchical tree over the 2010-2012 period for the 26 OECD countries



The dendrogram in figure 7 represents the hierarchical tree of the countries according to the active variables over the period 2010 to 2012. Table A3 in the appendix presents the results of the characterization of the chosen partition into five classes of countries for the post-crisis period. So now let us look at what has happened since the crisis. The aim of the analysis over this period is to study the dynamics of entrepreneurship after the crisis and identify whether recovery processes are under way in some countries which are more or less resilient to the crisis and in which entrepreneurial behaviors remain dynamic.

Class 1, Advanced knowledge and service economies with developed financial markets:

The countries belonging to the first class (Australia, Canada, Denmark, Japan, Luxembourg, Norway, Sweden and United States) show a significantly low level of self-employment relative to all countries of our sample over the 2010-2012 period. This shows that the dynamics of entrepreneurship was deeply affected by the crisis. However, these countries recorded an unemployment rate lower than average; which could be a sign of recovery. It is confirmed by data on the evolution of growth rates that show for the year 2013 higher than average growth rates for high-income countries –except for Denmark and Norway- (World Bank, 2014). For Canada and the US, a probable explanation is their

higher sensibility to cycles, with a huge depressed level in the recession phase but also a quick and strong recovery in the growth phase (Aghion, 2014). Yet it is also recognized that the recent recovery in the US was not going so fast (Dwyer and Lothian, 2011). According to Solomon (2014) financial crises cause permanent damage that lead to huge losses in output levels from initial trends. In addition, Siemer (2014) shows for the US that the number of firms less than one year old -that we can identify as business startups- declined by more than 25% in 2007-2010, leading to a “missing generation” of new firms. The class includes highly-developed countries with high sectoral specialization, belonging to advanced knowledge and service economies. We observe that although the functioning of the labor market is favorable to entrepreneurship, namely with the attractiveness of production factors and low employment protection, these countries have a level of self-employment that is significantly lower than the average employment level of the population¹³. The OECD (2013) underlines that in Australia, Japan, and the United States, "self-employment levels remain significantly below their pre-crisis level, reflecting in part a shift towards contractual employment, where employment levels were less adversely affected by the crisis". This situation can be explained by the evolution towards more qualitative entrepreneurship leading to a structural decrease in the self-employment share. In general these countries show a high level of opportunity-driven entrepreneurship, and it is the case for 2010 and 2011. These results are in line with recent reports of GEM (2014, 2015-2016, 2013, 2011). Moreover, these countries are also characterized by a significantly high level of domestic credit provided by financial sector as a percentage of GDP.

Class 2, Credit crunch to domestic activity: Push entrepreneurs in relatively industrialized countries:

The second class consists of Austria, Belgium, Czech Republic, Finland, France, Germany, Italy, Netherlands, New Zealand, Poland, Slovenia, and United Kingdom. The characteristics of this class relative to the unemployment rate and the GDP growth rate are similar to those of the sample's mean. These countries registered a significantly high level of self-employment over the period, and a high rate of growth in this level in 2012. Probably part of the people laid off set-up their firms and became self-employed to earn a living. In these countries, employment in industry is significantly higher than the average over the 2010-2012 period. We also notice that the share of domestic credit provided by the financial sector as a percentage of GDP is lower than the average in 2010 and 2011.

Class 3, Countries pursuing a dynamic entrepreneurial development:

It is clear that the two South American countries (Chile and Mexico) in class 3 are the countries least affected by the crisis: they show significantly higher levels of GDP growth with higher levels of self-employment over the period. They also feature a high number of people currently setting up a business as well as a significant number of people owning or managing a business that has existed for up to 3.5 years. These characteristics reflect a dynamic form of entrepreneurship. The industry and agriculture sectors contribute significantly to the value added, while the service sector is under-represented. Institutional environment features, especially net barter terms of trade and lower wages, are more favorable to entrepreneurship in these countries over the period. Globally, this class consists of countries with an economic performance superior to the one of the average of the entire sample. These countries are developing countries with health expenditure

¹³ Luxembourg which is a financial country was recorded in the grey list of fiscal havens (very low fiscality, non transparent tax system, non cooperation with other states on tax information) some years ago. It has evolved and has been removed from this list. Nevertheless some characteristics are still at work.

significantly below the average of OECD countries. The share of domestic credit provided by the financial sector as a percentage of GDP is lower than the average in 2010 and 2011. In these countries, where financial markets are less developed and play a limited role in the national economy, the financial crisis did not severely affect the dynamics of entrepreneurship. The global financial crisis had a relatively limited impact on Latin American economies. The financial systems of these countries did not suffer a ripple effect because they are not very sophisticated and globally less integrated.

Class 4, Volatile self-employment growth in an uncertain environment:

The class consists only of Hungary, which registered variations in the level of self-employment growth with a rather high growth in 2011 but a low one in 2012. We could thus infer for this country a kind of volatility in self-employment as a means of adjustment. Hungary was initially considered as the front-runner of market reforms in Central and Eastern Europe, but by the end of the 2000s its economy was facing major structural problems. According to the IMF, "Hungary has been plagued by low growth and high debt for much of the last decade". Real GDP has remained broadly flat over the recent period due to weak domestic demand moderated by net exports which remain the only source of growth. Investment in the country has reached its lowest level in 10 years. Hungary's public sector is highly dependent on foreign financing: almost two-thirds of Hungary's public sector debt, which stands at about 80 percent of GDP, is held by foreigners. Growth prospects are largely unfavorable due to the low real wage growth, rising debt servicing, unemployment, and a credit crunch. Importantly, confidence has suffered in a policy environment that is perceived by many investors and consumers as unpredictable and discriminatory. "It seems that in Hungary, in spite of its head-start as the most entrepreneurial country amongst the socialist countries in 1970s and 1980s, lags in its cultural attitudes and lack of political recognition of entrepreneurship and entrepreneurs", (Szerb and al., 2013, p. 47).

Class 5, Countries much impacted by crisis, entrepreneurship slowdown:

This class includes Ireland, Portugal and Spain, where the unemployment rate is significantly higher and the rate of growth significantly lower than the average of the entire sample over the period. The rate of self-employment growth is also significantly lower than the average in 2010 and 2011. This class includes sparsely urbanized countries with high levels of domestic credit provided by the financial sector as a percentage of GDP. In these countries, new firms are strongly dependent on bank financing. The situations of these three countries are somewhat different. In Spain, the ailing banking sector had lent heavily to the construction sector before the housing bubble burst. In Ireland, the property bubble was funded by banks which went bust and were taken over by the state, causing a government debt crisis. Portugal suffers from moderately high indebtedness of the private and public sectors, low competitiveness and anemic growth. The crisis has severely impacted the countries of this class leading to many bankruptcies and a slowdown in entrepreneurship dynamics in 2010 and 2011. The proportion of people aged 15-64 involved in entrepreneurial activity (TEA) out of opportunity is quite low in 2010 and 2011.

Our results point out that classes 2 and 3 which have been the most resilient to the crisis in terms of self employment -both share and growth- are characterized by a low level of domestic credit provided by the financial sector whereas countries of classes 1 and 5 which are strongly dependent on bank loans have recorded lower self employment growth and share than average. These findings are corroborated by Klapper and Love (2011), who observe that "One feature of the crisis was its severe impact on the functioning of financial

markets, which resulted in a credit crunch and credit rationing. It is not surprising that countries in which financial markets played a larger role in the domestic economy would experience sharper contractions in new firm creation during the crisis". Nevertheless class 1 of advanced knowledge economies with developed financial markets with fewer regulatory institutional constraints and qualitative entrepreneurship have the lower unemployment rate.

4.4. Trajectories of the 26 OECD countries over the period:

The methods of joint analysis of several data tables -evolutive data- also make it possible to study and represent the evolution of the trajectories of countries to explain the similarities and differences of active variables between sub-periods. If we follow the trajectories of the 26 OECD countries (Table A4 in appendix) we can see that some countries are still grouped together and this regardless of the sub-period. That is the case for Canada, Denmark, Sweden, Norway and the United States. These countries were classified in the class of advanced knowledge and service economies and show globally more opportunity-driven entrepreneurship. Aghion (2014) underlines the fact that innovation implies creative destruction and that some countries are more able to surf on the new waves of innovation like ICT, Cloud technology, and renewable energies. According to him, the United States, Sweden and Canada are more likely to benefit from these technologies due to reforms in the labor market to make it more dynamic, the concentration of resources on knowledge economies, support of new innovative firms, support for salaried people who leave their jobs and increased competition on the market of goods and services¹⁴.

Slovenia, Austria, The Netherlands and the United Kingdom follow the same pattern throughout the period -belonging to entrepreneurial economies they have been severely impacted by the crisis due to their loss of competitiveness- and suffer in the third period of credit crunch and entrepreneurship mainly motivated by *push* motives. These countries showed a rather high level of immigration during all the pre-crisis period and were oriented towards exports and attractiveness of foreign investments.

Belgium and Finland which come from managerial services economies follow the same trajectory as the four previous countries.

While France and Germany are often seen as brother enemies at the European scale for their policies -with a German country leader of the northern part more inclined to a strict obedience regarding debt and France leader of the southern part more inclined to a less severe control of debt-, they both belong to managerial economies with rather few opportunity-driven entrepreneurship and finally follow the same trajectory. Coming from the class of managerial services economies they have been less affected by the crisis in 2009¹⁵ but they also suffer in the third period from credit crunch.

¹⁴ He also added Germany. We can note that these five countries also share low energy dependence, Norway being self-sufficient. It has developed a form of "state capitalism" that is responsible for managing the abundant natural resources -minerals, fjords, forests, waterfalls-, (The Economist, February, 2-2013). The accumulated wealth allows Norway to operate a "fiscal policy rule" which releases oil wealth into the economy in a measured way in cyclical downturns and reduces the release when GDP growth is good.

¹⁵ Reforms launched by the government of Chancellor Gerhard Schroeder (1998-2005) to enhance growth and reduce unemployment, as well as a government subsidized, reduced working hour scheme, help explain the relatively modest increase in unemployment during the 2008-09 recession. In France, thanks to a deep rising of budget deficit from 3.3% of GDP in 2008 to 7.5% of GDP in 2009, the activity is maintained but at the cost of public debt rising from 68% of GDP to nearly 94% in 2013. The Franco-German trade contributes also to this result with nearly 16,5% of French exports towards Germany (the first client), a weight more than 2 times higher than countries that follow in the rankings. Even if French trade is structurally in deficit with Germany there exists strong links between these two countries.

5. Conclusion

The present paper aims at proposing a classification of OECD entrepreneurship relative to GDP growth, unemployment rates, self-employment levels and the rate of growth in self-employment using a database over the 1999-2012 period. In order to characterize classes and the different kinds of development focusing on entrepreneurial activity (managerial/entrepreneurial), we consider variables representative of economic development and institutional regulatory environment. A multivariate and evolutive data analysis has been implemented. The results underline the great impact of the financial crisis on entrepreneurial dynamics and lead us to distinguish three sub-periods to study entrepreneurial behavior: the pre-crisis period (1999-2008), the crisis (2009) and the post-crisis period (2010-2012). The first period is characterized by high GDP growth, high levels of self-employment and a low unemployment rate. It is a period of growth favorable to entrepreneurship. The effects of the financial crisis are noticeable after a delay in 2009; this year is characterized by a rate of GDP growth and a rate of self-employment growth significantly lower than those registered on the overall period. The 2010-2012 period shows a sharp slowdown in entrepreneurial activity; the crisis seems to have significantly broken the dynamics of entrepreneurship. We can observe in the sub-period after the crisis that the unemployment rate is significantly higher than the average of the whole period and the level of self-employment is significantly lower.

We identified based on the pre-crisis period six types of development: entrepreneurial economies, managerial industrialized economies, managerial service economies, advanced knowledge and services economies, industrialized entrepreneurial economies in developing countries and a non-entrepreneurial economy in transition. Managerial economies are characterized by high strictness of employment protection and some restrictions to entrepreneurship like time and number of procedures required to start a business and barriers to entrepreneurship that also lead to a low level of opportunity-driven entrepreneurship. Entrepreneurial economies are characterized by strong competitiveness and attractiveness of factors of production in highly-developed countries, while they exhibit low actual wages in developing countries. We find that, regardless of the type of development, this period is characterized by strong entrepreneurial activity. This result corroborates those of Klapper and Love (2011) who observed a steady increase in new business registrations prior to the crisis in all groups of countries.

In 2009, it appears that the agricultural economies (Australia, Chile, New Zealand and Poland) best withstood the financial crisis. The analysis of the post-crisis period (2010-2012) shows that the development of entrepreneurship has been severely impacted by the crisis in countries widely dependent on the financial sector: such is the case for Ireland, Portugal and Spain, and to a lesser extent Australia, Canada, Denmark, Japan, Luxembourg, Norway, Sweden and the United States. However, it appears that entrepreneurship is particularly dynamic over the 2010-2012 period in countries where the level of domestic credit provided by the financial sector as a percentage of GDP is lower (classes 2 and 3). Nevertheless class 1 - made up of advanced knowledge economies with developed financial markets, fewer regulatory institutional constraints and qualitative entrepreneurship - have lower unemployment rate.

Finally, we establish common trajectories over the whole period for a number of countries, mainly explained by institutional characteristics defining entrepreneurial/managerial economies. In particular, we find that France and Germany have very similar profiles in terms of economic and entrepreneurial activity, and that they follow the same trajectory. Globally managerial economies (except Germany and France -

see above-) which are characterized by a rather low proportion of people owning/managing a business, some restrictions on entrepreneurship and some rigidity in the labor market, have been sensitive to the crisis. Some entrepreneurial economies have been resilient –new developing countries, the Asian area- but some have also been impacted by the crisis, especially Ireland. So it is difficult to find a unique trajectory based upon our initial classes. This demonstrates the difficulties to take into account all the diversity present in development. Yet the recovery seems to favor, more than entrepreneurial economies, the class of advanced knowledge and services economies that gather countries that register a level of self-employment but also an unemployment rate that are significantly lower than the average in this last period. The most developed countries with lower self-employment share showing flexibility in labor market and attractiveness of foreign population are more able to surf on the new waves of innovation -they incur a low rate of unemployment thanks to qualitative entrepreneurship-. The two South American developing countries with low wages and improvements of their net barter terms of trade are more able to increase their growth thanks to dynamic entrepreneurial activity.

Our study contributes to the empirical and theoretical understanding of the determinants of entrepreneurial activity. The results match those of existing literature and extend them by considering a wider range of variables related to economic development and institutional regulation in order to characterize different types of entrepreneurial activity. To our knowledge, no study analyzing the drivers of entrepreneurship considers such an important set of variables. In addition, employing multidimensional evolutive data analyses allows for a dynamic approach to entrepreneurship.

From a theoretical perspective, we propose a conceptual model taking into account the level of development of the country, the entrepreneurship intensity, the level of unemployment and the rate of growth of GDP. Furthermore, this research demonstrates that both economic development and institutional regulation environment are able to stimulate and inhibit not only entrepreneurial activity, but also the type of entrepreneurial activity. This study provides a better understanding of the components of the national environment and contributes to explaining the differences in entrepreneurship between countries.

From a practical perspective, our results have important implications for the implementation of public policy. In order to promote policy that encourages entrepreneurship and reduces unemployment, policymakers need to better understand interactions between entrepreneurship, economic development and institutional environment. Appropriate institutional incentives are essential to stimulate entrepreneurship directly and effectively and decision-makers must adapt their entrepreneurship policy to national specificities. Our results suggest that policymakers have to alleviate some constraints on entrepreneurship and the functioning of the labor market and foster the country's openness. It is also crucial to adopt measures strengthening the national competitiveness and attractiveness of factors of production to promote entrepreneurship. Besides, our findings highlight the need for financial regulation to support entrepreneurial activities in countries widely dependent on the financial sector. Bank credit plays an important role in the capital structure of small businesses both at the startup time and as the small business matures. The financial crisis had a negative effect on bank lending, which largely affected small businesses that are the most vulnerable. According to OECD (2009) "Credit sources tend to dry up more rapidly for small firms than for large companies during economic downturns". The crisis has shown that it is

necessary to broaden the range of financing instruments available to SMEs and entrepreneurs to improve their financing¹⁶.

This study does have some limitations regarding the variables considered. Future research should broaden the set of institutional variables to include informal institutional variables in order to deepen the characterization of the classes. Recent papers (Aparicio et al., 2016, Pinho, 2016, and Simón-Moya et al., 2014) show the relevance of informal institutions like control of corruption, confidence in one's skills, business freedom, property rights..., as determinants of entrepreneurship at a macro-level. It would also be interesting to extend the period under study so as to know whether the entrepreneurial dynamics broken by the crisis has been restored. This might also allow us to better analyze trajectories of the 26 OECD countries over a long period. Indeed, the consequences of the crisis are still evolving over the 2010-2012 period and considerably affect the entrepreneurial dynamics of the countries.

A promising direction for a future research would be to analyze interactions between entrepreneurship, economic development and institutional environment in an econometric framework using panel data techniques. The use of recent development of econometrics of non stationary panel data would make it possible to analyze both short-and long-run relationships (Abdesselam et al., 2014). In such a paper, we could distinguish different behaviors depending on the nature of the economies using the typology that we established. The results could enrich our conclusions even further.

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¹⁶ OECD (2009) distinguishes three kinds of accompanying measures to address the financial constraints of SMEs: (a) measures supporting sales, cash flows, and working capital; (b) measures to enhance SME's access to liquidity, mainly to bank lending; (c) measures aimed at helping SMEs to maintain their investment level and more generally to build their capacity to respond in the near future to a possible surge in demand.

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Appendix

The Hierarchical Cluster Analysis (HCA)

The HCA according to Ward's method consists of gathering classes for which the loss of inertia between classes ΔI_B is the lowest. In this case, the distance between two classes is measured by the loss of inertia that one undergoes in the gathering, called cluster index or index level of the clustering. A high loss of inertia means that the two classes k and k_1 that have been grouped are quite distant from each other. Then a "good" partition is a partition that precedes a significant loss of inertia. It is this test that is commonly used to select the number of classes of HCA.

The choice of the number of classes is usually accomplished from the diagram of aggregate indices. This is a crucial aspect of the evaluation of the proposed solutions when analyzing a hierarchical classification; one is faced with the problem of getting too many or too few classes. However, while there is no single index to determine the optimal number of classes, many criteria can be used to facilitate this decision. First, it is possible to take a decision based on the characterization of classes by the active variables with $\alpha = 0.05$, a classic level of significance. If the profiles and/or anti-profiles of the obtained classes differ significantly on these variables for the classification, the proposed solution is probably relevant. Second, the ease of interpretation is also a criterion that tells us the required number of classes. It is important to question the relevance of the theoretical profiles and/or anti-profiles obtained. Finally, the size of the sample must also be taken into consideration: the larger the sample, the higher the number of classes.

Statistical criteria can be also used to decide how many classes to choose, such as the Semi- Partial R-Squared (SPR^2) or the R-Squared (R^2).

- The $SPR^2 = \Delta I_B / I_T$ measures the loss of inertia between classes or cluster index ΔI_B as a percentage of total inertia I_T caused by grouping two classes. The goal is to have a maximum within-classes inertia, then we look for a low SPR^2 followed by a strong SPR^2 at the following aggregation: a hollow for k classes and a peak for $k-1$ classes, indicates a good classification in k_1 classes. This means that we must cut the hierarchical tree before heavy loss of inertia: a low value of SPR^2 means the fusion of two homogeneous classes.

- The $R^2 = I_B / I_T$ is the proportion of variance explained by classes; it measures the quality of the classification. Its value should be as close as possible to one without too many classes; the ideal is to stop after the last big jump.

To assess the stability of obtained classes of HCA, we have consolidated all the classes, using a non-hierarchical cluster analysis, more robust, with mobile centers (k-means). The interpretation of a class is a qualitative description of their profile and/or anti-profile created from the active variables -those on which we wanted to differentiate the classes; but also with other additional (illustrative) variables selected. A generic name has been assigned to each class of HCA.

Table A1: Synthesis of the partition into 6 classes of the 26 OECD countries over the period 1999-2008

	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
Frequency	9	3	5	6	2	1
Countries	Australia Austria Ireland Luxembourg Mexico Netherlands New Zealand Slovenia United Kingdom	Italy Japan Portugal	Belgium Finland France Germany Spain	Canada Denmark Hungary Norway Sweden United States	Chile Czech Republic	Poland
Profile (+)	+ GDP 1999, 2002 and 2007 + SEMPLShare 2008 + SEMPLGrowth 2007, 2008	+ SEMPLShare 1999 to 2006	+ UNEMPL 1999 to 2008 (-2001) + SEMPLGrowth 2005, 2006		+ SEMPLShare 2003 to 2008 + SEMPLGrowth 2002, 2003	+ UNEMPL 1999 to 2008 + SEMPLShare 1999 to 2008 + GDP 2008
Anti-Profile (-)	-UNEMPL 1999 to 2008	- GDP 1999, 2002 to 2006		- SEMPLGrowth 1999 to 2008 - GDP 2007	- GDP 1999	
Illustrative variables	Economic Development	+ IPRO 2002 - HEALTH 1999 - EDU 2000	+ DCR 1999 to 2007 + INDUSEMPL 1999, 2000, 2003 - EDU 2003 to 2005, 2007, 2008 - IPRO 2002, 2004, 2005, 2008	+ GERD 2000	+ EDU 1999 to 2008 + HEALTH 1999 to 2008 + PATENTS 2007 + SEREMPL 1999 to 2008 - AGRIEMPL 2001 to 2008 (-2002) - DCR 2007 - HEALTH 2004 to 2008 - SER 1999 to 2008 - SEREMPL 2006, 2007	+ IPRO 2003
	Institutional Environment	+ IMM 1999 to 2008 + RMINW 2007 + TRADE 1999 to 2002 + InFDI 2002, 2003 -BTE 2003, 2008	+ STRICT 1999 to 2008 - InFDI 1999	+ TIME 2003 + OutFDI 2001 + BTE 1998, 2003	+ ECH 2004 to 2008 + PROC 2006 to 2008 + BTE 2008 - RMINW 1999 to 2008 - ECH 2001	+ PROC 2003 to 2008 + COST 2008 +BTE 1998, 2008
	Entrepreneurial variables	+ YFEAI 2004	- NEAI 2004, 2006	- NEAI 2002 - YFEAI 2002, 2003, 2008 - OEAI 2005, 2006	- OEAI 2006	+ NEAI 2006 - OEAI 2005

Note: Table A1 summarizes the main results of characterization of the chosen partition into six classes of countries, obtained from the cut of the hierarchical tree of the figure 5. Division is carried out according to the positions of the countries, on the factorial axes of the MFA. All the active and illustrative variables mentioned in this table are significant at the level of 5%.

Table A2: Synthesis of the partition into 4 classes of the 26 OECD countries in 2009

		Class 1	Class 2	Class 3	Class 4
Frequency		4	10	10	2
Countries		Australia Chile New Zealand Poland	Austria Belgium Czech Republic Finland Italy Japan Mexico Netherlands Slovenia United Kingdom	Canada Denmark France Germany Hungary Luxembourg Norway Portugal Sweden United States	Ireland Spain
Profile (+)		+ GDP + SEMPLShare	+ SEMPLShare		+ UNEMPL
Anti-Profile (-)			- UNEMPL - GDP	- SEMPLShare	- SEMPLGrowth
Illustrative variables	Economic Development	+ IPRO + AGRI + AGRIEMPL - SER - GDERD		+ HEALTH + PATENTS + SEREMPL + SER	
	Institutional Environment	+ ECH - STRICT	- ECH	- COST	
	Entrepreneurial variables				

Note: Table A2 summarizes the main results of characterization of the chosen partition into four classes of countries, obtained from the cut of the hierarchical tree of the figure 6. Division is carried out according to the positions of the countries, on the factorial axes of the MFA. All the active and illustrative variables mentioned in this table are significant at the level of 5%.

Table A3: Synthesis of the partition into 5 classes of the 26 OECD countries over the period 2010-2012

		Class 1	Class 2	Class 3	Class 4	Class 5
Frequency		8	12	2	1	3
Countries		Australia Canada Denmark Japan Luxembourg Norway Sweden United States	Austria Belgium Czech Republic Finland France Germany Italy Netherlands New Zealand Poland Slovenia United Kingdom	Chile Mexico	Hungary	Ireland Portugal Spain
Profile (+)			+ SEMPLShare 2010 to 2012 + SEMPLGrowth 2012	+ SEMPLShare 2010 to 2012 + GDP 2010 to 2012 + SEMPLGrowth 2010	+ SEMPLGrowth 2011	+ UNEMPL 2010 to 2012
Anti-Profile (-)		- SEMPLShare 2010 to 2012 - SEMPLGrowth 2011 - UNEMPL 2010 to 2012			- SEMPLGrowth 2012	- GDP 2010 to 2012 - SEMPLGrowth 2010, 2011
Illustrative variables	Economic Development	+ PATENTS 2010, 2011 + URBAN 2010 to 2012 + GDERD 2010 to 2012 + DCR 2010 to 2012 + SEREMPL 2010 to 2012 - INDUSEMPL 2010 to 2012 - AGRIEMPL 2010 to 2012 - IPRO 2011 - AGRI 2010	+INDUSEMPL 2010 to 2012 - DCR 2010, 2011 - SEREMPL 2012	+ AGRI 2010 to 2012 + AGRIEMPL 2010, 2011 + INDUS 2010 to 2012 + IPRO 2012 - SER 2010 to 2012 - HEALTH 2010 to 2012 - GDERD 2010 - DCR 2010, 2011	- SEREMPL 2010 - PATENTS 2010	+ DCR 2010 to 2012 - GDERD 2012 - URBAN 2010 to 2012 - IPRO 2012
	Institutional Environment	+ IMM 2010, 2011 - STRICT 2010 to 2012		+ ECH 2010 to 2012 - RMINW 2010 to 2012		
	Entrepreneurial variables	+ OEAI 2010, 2011		+ NEAI 2010 to 2012 + YFEAI 2011,2012		- OEAI 2010, 2011

Note: Table A3 summarizes the main results of characterization of the chosen partition into five classes of countries, obtained from the cut of the hierarchical tree of the figure 7. Division is carried out according to the positions of the countries, on the factorial axes of the MFA. All the active and illustrative variables mentioned in this table are significant at the level of 5%.

Table A4: Trajectories and resemblances in development for the 26 countries of the OECD

Class	Before Crisis: 1999-2008	Crisis: 2009	After Crisis: 2010-2012
1	<p><i>Entrepreneurial economies</i></p> <p>Australia Ireland Luxembourg New Zealand Mexico</p> <p>Slovenia United Kingdom Austria Netherlands</p>	<p><i>Resilient countries</i></p> <p>Australia New Zealand Chile Poland</p>	<p>Self-employment shares are lower after the crisis</p> <p>Canada Denmark United States Sweden Norway</p> <p>Australia Luxembourg Japan</p>
2	<p><i>Managerial industrialized economies</i></p> <p>Italy Japan Portugal</p>	<p>Countries strongly affected by crisis with a loss in competitiveness</p> <p>Mexico</p> <p>Slovenia United Kingdom Austria Netherlands</p> <p>Italy Japan</p> <p>Belgium Finland</p> <p>Czech Republic</p>	<p>Credit crunch to domestic activity Push entrepreneurs</p> <p>Belgium Finland</p> <p>Germany France</p> <p>New Zealand</p> <p>Slovenia United Kingdom Austria Netherlands</p> <p>Poland Czech Republic Italy</p>
3	<p><i>Managerial service economies</i></p> <p>Belgium Finland</p> <p>Spain</p> <p>Germany France</p>	<p>Countries mainly coming from the class Advanced knowledge and service economies</p> <p>Germany France</p> <p>Canada Denmark United States Sweden Norway</p> <p>Hungary</p> <p>Luxembourg Portugal</p>	<p>Pursuing a dynamic entrepreneurial development</p> <p>Chile Mexico</p>
4	<p><i>Advanced knowledge and service economies</i></p> <p>Canada Denmark United States Sweden Norway</p> <p>Hungary</p>	<p>Countries hardest hit by the financial crisis</p> <p>Ireland Spain</p>	<p>Flexible self-employment growth in an uncertain environment</p> <p>Hungary</p>
5	<p><i>Industrialized entrepreneurial economies in developing countries</i></p> <p>Chile Czech Republic</p>		<p>Countries much impacted by crisis, entrepreneurship slowdown</p> <p>Ireland Portugal Spain</p>
6	<p><i>Non-entrepreneurial economy in transition</i></p> <p>Poland</p>		

