Regulations and Entrepreneurship: Evidence from Developed and Developing Countries

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ABSTRACT: This paper uses an institutional approach to examine the effect of regulations on entrepreneurial activity, comparing developed and developing countries. Through an unbalanced panel data set of 49 countries over the period 2001-2010 and using a combination of international databases we find a positive influence of government spending and entrepreneurship legislation on entrepreneurial activity. It was also found that regulations may have different impacts on entrepreneurship according to the country’s economic development. Thus, in developed economies unemployment legislation is positively related to entrepreneurship, while this relationship is negative in other cases. This paper offers new insights both from a conceptual perspective (advancing theory concerning the factors that influence entrepreneurial activity) and a practical viewpoint (for the design of government policies to foster entrepreneurship).

KEYWORDS: Entrepreneurship, entrepreneurial activity, regulations, institutional economies, developed and developing economies.

Introduction

Although economic growth has generally been associated with the dynamism of large companies, since the early 1980s small and medium-sized enterprises have been recognized as key elements in economic and social development (Bowen & De Clercq, 2008; Grilo & Thurik, 2005; van Stel, Storey & Thurik, 2007). In this context, entrepreneurship as the engine of economic and social growth is related to a combination of several determinants such as education levels, business climate and legal and political conditions. Some of these macro-level factors can explain entrepreneurship rates as well as the types of entrepreneurial activities carried out.

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out across countries and regions (Acs & Amorós, 2008b; Bowen & De Clercq, 2008). Many researchers have proposed frameworks to explain some of the macro and micro determinants of entrepreneurship activities or entrepreneurial processes (Reynolds, Hay & Camp, 1999; Reynolds et al., 2005; Sobel, 2008; Verheul, Wennekers, Audretsch, & Thurik, 2002; Wennekers & Thurik, 1999). However, few studies have analyzed the factors that condition entrepreneurial activity from the institutional perspective, specifically the relevance of regulations in this process (Branstetter, Lima, Taylor & Venâncio, 2013; Calcagno & Thurik, 2002; Wennekers & Thurik, 1999). However, this paper examines the effect of regulations on entrepreneurial activity, comparing developed and developing countries. Institutional economics (North, 1990, 2005) is used as the theoretical framework for the research. Concretely, we consider regulations (covering government spending, investment freedom, financial freedom, entrepreneurship legislation, labor regulations and unemployment legislation) as formal institutions or “the rules of the game” (Baumol, 1990) that affect entrepreneurial activity.

The empirical analysis is based on an unbalanced panel data set of 49 countries over the period 2001-2010 using the following databases: The Global Entrepreneurship Monitor (GEM), the Heritage Foundation’s Economic Freedom Index, IMD World Competitiveness, and the United Nations Development Programme (UNDP)’s Human Development Index (HDI). We consider the total early stage entrepreneurial activity rates (TEA), derived from GEM data, to be the dependent variable. The data on independent variables, specifically on government spending and investment and financial freedom, were obtained from the Economic Freedom Index, which measures 10 components of economic freedom. Entrepreneurship legislation, labor regulations and unemployment legislation were obtained from the IMD World Competitiveness database.

According to the literature (Doing Business, 2012), regulations have been applied to business activities under the criterion “less is more” (i.e. less regulation means more entrepreneurial activity), without considering the development level of countries. However, in this paper we empirically demonstrate that in emerging and developing countries, and specifically in the case of Latin America, improvements in regulations covering new firm creation have a lower impact on entrepreneurial activity, probably because of the high percentage of “shadow” economic activities in these countries. Concretely, the main findings of the current research indicate a positive influence of government spending and entrepreneurship legislation on entrepreneurial activity. Our results also show that regulations may have a different impact on entrepreneurial activity according to a country’s economic development. This line of argument suggests that the unemployment legislation variable is positively related to entrepreneurship in advanced economies. By contrast, this relationship is negative in other countries.

The remainder of this paper is structured as follows. In section 2, the conceptual framework of the research is presented. Section 3 summarizes the methodological details of the empirical part. In section 4, the main findings of the study are discussed, and finally in section 5, conclusions and future lines of research are presented.

**Conceptual Framework**

As mentioned before, in recent years scholars have paid increased attention to the analysis of variations in entrepreneurial activity and the reasons behind this phenomenon (Busenitz & Lau, 1996; Busenitz, Gómez & Spencer, 2000; Mueller & Thomas, 2001; Reynolds, Camp, Bygrave, Autio & Hay, 2001; Shane & Kolvereid, 1995). Preliminary evidence suggests that part of the answer lies in the institutional environment, which defines, creates and limits entrepreneurial opportunities and thus affects entrepreneurial activity rates (Aldrich, 1990; Aldrich & Fiol, 1994; Gnyawali & Fogel, 1994; Hwang & Powell, 2005; Manolova, Eunni, & Gyosev, 2008; Mueller & Thomas, 2001; Reynolds et al., 1999, 2000, 2001; Valdez & Richardson, 2013; Welter, 2011; Welter & Smallbone, 2011).

A key question arising from the finding that the environmental context influences entrepreneurship is how institutions relate to entrepreneurial activity and which institutions are most important in explaining entrepreneurship rates. The institutional approach provides a useful theoretical framework for understanding such effects. Specifically, institutional economics suggests that human behavior is influenced by the institutional environment (North, 1990, 2005); hence, the decision to start up a business is also determined by the institutions in which it occurs (Aidis, Estrin & Mickiewicz, 2008; Álvarez, Urbano, Coduras & Ruiz-Navarro, 2011; Urbano, Toledano & Ribeiro-Soriano, 2011; Welter, 2005, 2011; Welter & Smallbone, 2011).

According to North (1990, p. 3), “institutions are the rules of the game in a society, or more formally, institutions are the constraints that shape human interaction”. The main function of institutions in a society is to reduce uncertainty by establishing a stable structure for human interaction. In general terms, North (1990, 2005) explained how institutions and the institutional framework affect economic
and social development. These institutions can be either formal, such as constitutions, regulations and contracts, or informal, such as attitudes, values, behavioral norms, conventions or the culture of a given society. Formal and informal institutions are interdependent and tend to interact; thus, informal institutions affect the nature of formal institutions and vice versa.

Although many authors have used the institutional approach in the field of entrepreneurship (see Davidsson, 1995; Gartner, 1985; Gnyawali & Fogel, 1994), few scholars have explicitly linked institutional economics and entrepreneurial activity (Aidis et al., 2008; Álvarez & Urbano, 2011; Bruton, Ahlstrom & Li, 2010; Guerrero & Urbano, 2012; Thornton, Ribeiro-Soriano & Urbano, 2011; Veciana & Urbano, 2008; Welter & Smallbone, 2011). Furthermore, even fewer have focused on formal institutions as a determinant of entrepreneurship (Amorós, 2011; Bjørnskov & Foss, 2008; Desai, Gompers & Lerner, 2003; Klapper, Laeven & Rajan, 2006; Nyström, 2008; Stephen et al., 2005, 2009; van Stel et al., 2007; Wennekers, Thurik, van Stel & Noorderhaven, 2007). As previously stated, this research is based on formal factors, specifically the impact of regulations (government spending, investment freedom, financial freedom, entrepreneurship legislation, labor regulations and unemployment legislation) on entrepreneurial activity.

In general terms, the literature shows that potential entrepreneurs perceive regulations as negative (Gnyawali & Fogel, 1994). In fact, entrepreneurs may be discouraged from starting a business if they feel they have to follow too many rules and procedures (Begley, Tan & Schoch, 2005). Under these assumptions, the World Bank's Doing Business Project promotes the reduction of regulations in the belief that providing simple procedures can stimulate the creation of new businesses. Thus, according to information from this project, in 2011 125 economies implemented 245 reforms that made it easier to do business, 13% more than in the previous year.

Authors such as Desai et al. (2003) used data from the World Bank to analyze the country-specific effect of regulations on entrepreneurship, finding that entry regulations have a negative impact on firm entry. In this regard, Klapper et al. (2006) found that costly regulations are an
obstacle to the creation of new firms, especially in industries that should naturally have high entry. Later, van Stel et al. (2007), using the same data from the World Bank, investigated the link between business regulation and new firm formation in 39 countries. They observed that the minimum capital required to start a business decreased entrepreneurship rates across countries, as do labor market regulations.

Bjørnskov and Foss (2008) analyzed the impact of several variables (economic freedom as a measure of government size, legal quality, sound money, international trade and regulatory quality) on entrepreneurial activity. Their findings indicated that the size of government is negatively correlated and sound money positively correlated with entrepreneurial activity. Nyström (2008), using the same measure of economic freedom it was observed that a smaller government sector, better legal structure and security of property rights, as well as less regulation of credit, labor and business, tend to increase entrepreneurship. Amorós (2011) used GEM data to show that control of corruption and political stability are related to opportunity-driven entrepreneurship. By contrast, Stephen et al. (2009) demonstrated that labor regulations, whatever their content, seem to have little effect on the decision to start up a firm in highly formalist countries, while Wennekers et al. (2007) suggested that high unemployment benefits seem to reduce entrepreneurial activity.

Methodology

In the empirical part of the research we use the following four databases: The Global Entrepreneurship Monitor (GEM), the Heritage Foundation’s Economic Freedom Index, the IMD World Competitiveness database, and the UNDP’s HDI (see Table 1). We take the total early stage entrepreneurial activity rate (TEA) as the dependent variable of the study. TEA is the best-known indicator of the GEM project, which produces an annual assessment of the entrepreneurial activity, aspirations and attitudes of individuals across a wide range of countries. GEM defines entrepreneurs as adults in the process of setting up a business they will own or co-own and/or those currently owning/managing and operating a young business (up to 3.5 years old).

The data on independent variables, specifically on government spending and investment and financial freedom, were obtained from the Heritage Foundation, which measures 10 components of economic freedom and assigns a grade to each using a scale from 0 to 100, where 100 represents maximum freedom. Information on entrepreneurship legislation, labor regulations and unemployment legislation were obtained from the IMD World Competitiveness database, based on an index that runs from 0 to 10. The IMD World Competitiveness Center (WCC) was created in 1989, and has been a pioneer in the field of Competitiveness of Nations and World Economy Ranking.

| Variable                      | Description                                                                 | Source                  |
|-------------------------------|-----------------------------------------------------------------------------|-------------------------|
| Total Early Stage Entrepreneurial Activity (TEA) | Percentage of adults aged 18–64 setting up a business or owning–managing a young firm (up to 3.5 years old), including self-employment (Reynolds et al., 2005). | GEM 2001-2010 |
| Government spending          | This component considers the level of government expenditure as a percentage of GDP. Government expenditure, including consumption and transfers, account for the entire score. Natural logarithm. | Heritage Foundation 2001-2010 |
| Investment freedom           | In an economically free country, there would be no constraints on the flow of investment capital. Individuals and firms would be allowed to move their resources into and out of specific activities, both internally and across the country’s borders, without restriction. Natural logarithm. |            |
| Financial freedom            | Financial freedom is a measure of banking efficiency as well as independence from government control and interference in the financial sector. Natural logarithm. | IMD World Competitiveness 2001-2010 |
| Entrepreneurship legislation | Creation of firms is supported by legislation. Natural logarithm. |            |
| Labor regulations            | Labor regulations (hiring/firing practices, minimum wages, etc.) do not hinder business activities. Natural logarithm. | IMD World Competitiveness 2001-2010 |
| Unemployment legislation     | Unemployment legislation provides an incentive to look for work. Natural logarithm. |            |
| Human Development Index (HDI) | Measurement of social and economic development which combines indicators of life expectancy, educational attainment and income (measured as GDP per capita). | Human Development Report 2001-2010 |

Source: Own elaboration.
Although Gross Domestic Product (GDP) per capita has traditionally been used as a control variable, income per capita might be a misleading indicator for development (Rocha, 2004). We therefore use the HDI, which has been validated by several authors (Dakhli & De Clercq, 2004; Rocha, 2004), as an adequate measurement of development because it combines indicators on life expectancy, educational attainment and income (measured as GDP per capita) into a composite index. The HDI is a frame of reference for both social and economic development. Finally, we include a binary variable to group countries into a) developed economies, b) emerging and developing economies, according to the country classification developed by the World Economic Outlook, and c) Latin American and non-Latin American countries.

As mentioned in the introduction, the empirical analysis is based on an unbalanced panel data set of 49 countries over the period 2001–2010. Firstly, we started with a pooled regression, which omits the dimensions of space and time from the data, in order to calculate an ordinary least squares regression. Secondly, we estimated random and fixed effects models using the Hausman specification test in order to verify the choice of models. Finally, we discarded the problems of autocorrelation of the dependent variable by controlling for group heteroskedasticity and estimating the fixed effects model using panel-corrected standard errors.

Results and Discussion

Table 2 reports the descriptive statistics, such as the means and standard deviations. In this table it may be observed that the highest rates of entrepreneurship are in Latin American countries. In addition, government spending is higher in Latin America. By contrast, other formal institutions such as investment and financial freedom, entrepreneurship legislation and labor regulations are higher in advanced economies. Surprisingly, there are few differences in average unemployment legislation between Latin America and advanced economies.

In addition, Table 2 shows the correlation coefficients of the variables used in this study. Negative and significant correlations are observed between investment and financial freedom, entrepreneurship legislation and labor regulations.

In Table 3, the results of the linear regressions using panel-corrected standard errors are presented. Model 1 includes all the countries considered in the sample, Model 2
includes the developed economies, Model 3 considers the emerging and developing economies and Model 4 includes Latin American countries. All models are highly significant (p < 0.001) and have high explanatory power.

The principal results show that government spending, including consumption and transfers, have a positive and significant influence on entrepreneurial activity in developed economies, and especially in emerging and developing economies, while it is not significant in Latin America. This finding differs from those obtained by Bjørnskov and Foss (2008) and Nyström (2008), who found that government size is negatively correlated with entrepreneurial activity. However, Bjørnskov and Foss (2008) and Nyström (2008) did not classify countries as developed economies or Latin American (using instead cross-sectional data on the 29 countries participating in GEM 2001, and panel data for the period 1972-2002 covering 23 OECD countries).

Similarly, investment freedom has a negative and significant influence on entrepreneurship in all countries, except in Latin America, where it is not significant. Thus, both in developed economies and in emerging and developing economies, less freedom in the flow of investment capital and higher restrictions on individuals and firms moving their resources are positively correlated with entrepreneurship rates.

Furthermore, financial freedom is positive and significant for entrepreneurship in developed economies, but not significant in other countries. This result could be related to the availability of credit for entrepreneurial activity, which is provided primarily from the banking sector in developed economies but from the informal sector in emerging and developing economies and Latin American countries.

As expected, entrepreneurship legislation is positively and significantly related to entrepreneurship in all countries, but the coefficient is particularly high in emerging and developing economies. In addition, there is a negative and significant relationship between labor regulations (hiring/firing practices, minimum wages, etc.) and entrepreneurial activity in developed economies, while the coefficient is not significant in other cases. These findings are similar to the results of Stephen et al. (2009), who found that labor regulations seem to have little effect on the decision to start up a firm in highly formalist countries (basically in Latin America and the Iberian Peninsula). In fact, they argued that as formalism increases (enforcing mechanisms are inefficient), entrepreneurs are less concerned with the content of laws on the books. Stephen et al. (2009) suggested multiple factors to explain why entrepreneurs are less responsive to working time regulations in Latin America: Lack of resources, the reduced powers

| TABLE 3. Regression Analysis Explaining Entrepreneurial Activity (TEA) |
|---------------------------------------------------------------|
| Model 1 All Countries | Model 2 Developed Economies | Model 3 Emerging and Developing Economies | Model 4 Latin American Countries |
|----------------------------|----------------------------|---------------------------------|--------------------------------|
| **Government spending**   | 1.735 (0.375)***          | 1.196 (0.266)***                | 6.564 (2.823)**               |
| **Investment freedom**    | -5.771 (1.335)***         | -3.842 (1.003)***               | -8.054 (3.661)**              |
| **Financial freedom**     | 1.943 (1.216)             | 3.627 (1.109)***                | 1.161 (3.366)                 |
| **Entrepreneurship legislation** | 5.723 (1.170)***   | 4.066 (1.140)***                | 18.949 (4.178)***             |
| **Labor regulations**     | 0.723 (1.030)             | -2.066 (0.965)***               | -1.709 (3.651)                |
| **Unemployment legislation** | -2.513 (0.989)**          | 1.500 (0.817)*                  | -11.901 (3.375)**             |
| **Formal institutions**   |                            |                                |                                |
| HDI                       | -15.738 (4.612)***        | 3.387 (5.456)                   | -3.160 (11.044)               |
| **Advanced economies**    | 2.381 (1.101)**           |                                | -52.488 (15.201)***           |
| **Latin American countries** | 10.116 (1.100)***   |                                |                                |
| Constant                  | 20.870 (5.183)***         | -6.460 (6.736)                  | 9.241 (4.746)*                |
| R2                       | 0.5781                    | 0.3045                         | 0.460                         |
| **Control variable**      |                            |                                |                                |
| Observations              | 262                       | 174                            | 47                            |
| Countries                 | 49                        | 29                             | 13                            |

*** p < 0.01; ** p < 0.05; * p < 0.1.
Note: Heteroskedastic corrected standard errors in parentheses.
Source: Own elaboration.
Finally, unemployment legislation has a negative and significant influence on entrepreneurship, except in developed economies. These results are in line with those of Wennekers et al. (2007), who proposed that high unemployment benefits reduce entrepreneurial activity. The positive relationship in developed economies could be related to specific policies to implement unemployment benefits as seed capital for new ventures.

Conclusions

In this paper, longitudinal panel data for the period 2001 to 2010 were used to investigate empirically the relationship between regulations and entrepreneurship. By applying an institutional approach (North, 1990, 2005) to the field of entrepreneurship, we analyzed the influence of regulations as formal institutions (government spending, investment and financial freedom, entrepreneurship legislation, labor regulations and unemployment legislation) on entrepreneurial activity, comparing developed and developing countries.

The main findings of the research indicate a positive relationship between government spending and entrepreneurial activity. This relationship is statistically significant for all countries, except Latin America. Furthermore, we find that entrepreneurship legislation has a positive and significant influence on entrepreneurship in all countries.

Our results also show that regulations may have a different impact on entrepreneurial activity according to a country’s economic development. In this sense, the unemployment legislation variable is positively related to entrepreneurship in developed countries. As has been seen, this result could be related to specific policies to implement unemployment benefits as seed capital for new ventures. By contrast, this relationship is negative in developing countries, in line with the results of Wennekers et al. (2007). Finally, formal institutions such as financial freedom have a significant influence on entrepreneurial activity only in developed economies.

This paper offers new insights that are applicable both to theoretical and empirical research. From a theoretical point of view, although work on regulations as key elements of entrepreneurship is increasing, little research is still explicitly based on institutional economics and specifically on formal factors. This study contributes to advances in the application of the theoretical framework to the analysis of conditioning factors for entrepreneurial activity (Álvarez & Urbano, 2012). From a practical perspective, the results could be useful for the design of government policies and strategies to foster entrepreneurial activity in society, distinguishing between the different levels of economic development of countries. We also highlight the specific case of Latin America, which corroborates the argument that a formal institutional framework is an indispensable but not sufficient condition to enhance entrepreneurship dynamics. Our results confirm that developing economies should rationally organize their formal institutions in order to remove unnecessary barriers and controls that obstruct entrepreneurship activities (Amorós, 2011).

Regarding future lines of research, it is proposed to carry out an in-depth analysis of opportunity (starting up a business by taking advantage of an entrepreneurial opportunity) versus necessity (starting a business because other employment options are either absent or unsatisfactory). This distinction is even more relevant in the comparison between entrepreneurship in developed and developing countries (Bowen & De Clercq, 2008; Acs & Amorós, 2008a). In addition, further research could improve the operationalization of regulations as formal factors, in order to better analyze their impact on entrepreneurial dynamics.

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