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Does the Quality of Public Policies and Institutions Matter for Entrepreneurial Activity? Evidences from the European Union's Member States

Summary: By using data related to the 15 European Union "old" and "new" Member States, for a time span between 2001 and 2014, the present paper supports the thesis of a positive and significant correlation between the quality of governance and entrepreneurial activity. In order to test such correlation, the elements of Governance Quality reported by the World Bank's Worldwide Governance Indicators (WGI) project were considered. Some key aspects of entrepreneurial activity reflected by Total Early-Stage Entrepreneurial Activity, Perceived Opportunities and Perceived Capabilities were taken into account based on The Global Entrepreneurship Monitor (GEM) database. In addition, in order to reflect the structural rigidities and tensions from the labour market, the unemployment rate provided by the World Bank's World Development Indicators database was considered as a control variable. The effect of the inclusion of a country in a certain development group, according to the most recent World Bank classification ("low-income economies" to "high-income economies"), was also considered in a multi-level analytical framework with a two-level model. The results of this study clearly indicate that higher levels of public policies and institutions' credibility/effectiveness produce a positive and robust impact on entrepreneurial climate.

Key words: Governance, Entrepreneurial activity, Worldwide governance indicators, Generalized method of moments.

JEL: L26, O43.

Nowadays, achieving social objectives requires public authorities' efforts, involving a complex and pragmatic decision-making process. This paper explores the important connection between public policies, institutions and entrepreneurship. The rationale behind this approach is that entrepreneurship can represent a prosperity engine in the society. The starting point for this analysis is that the efficiency of regional public policies regarding the promotion and support of entrepreneurship is a trump card for local economic development and territorial competitiveness. Entrepreneurship is reflected in the general well-being and is correlated with technological progress and reduction of social inequities.

Nevertheless, in the European Union, the entrepreneurial activity takes place on a unified market, regulated by common standards, but presenting features depending on the national social, economic and political environments. This may lead to an unequal distribution of opportunities and outputs at the European Union's level, between states with entrepreneurial activity and poorly regulated states, which add burden to the business environment.

One of the channels through which European Union reshapes the economic governance, in order to ensure more efficient political answers to the current and future challenges, is the development of better policies in promoting entrepreneurship. Starting in 2008, the objective assumed by the European Union (Small Business Act for Europe 2008, 2011; European Commission 2010) relies on three strategies: development of education and information in the entrepreneurial field, creation of proper business environment, and models and involvement of some specific groups.

The overall quality of public policies and institutions can affect the dynamics of entrepreneurial activity since it influences the economic environment; it can support the development of the infrastructure and it can stimulate the R&D processes and enhance the labor mobility and individual economic initiative. However, in the analysis of the linkages between the micro-level entrepreneurial activity and the macro-level governance, there may exist a reverse causality, as the emergence of a dynamic entrepreneurial activity may provide a solid support for the implementation of public policies and it can support the development of the institutional architecture. Moreover, the possible existence of unobserved, country-specific effects should also be considered.

This paper consists of four sections: Section 1 addresses some relevant literature regarding correlation between entrepreneurial activities and specific quality of public policies and institutions; Section 2 describes the European Union panel data for "old" and "new" Member States; Section 3 discusses research methodology and empirical findings; and Section 4 concludes the findings in this study.

1. Literature Review

The approach of this study is based on the neo-institutional framework, focusing both on formal legal rules and informal social norms in order to underlie economic activity and further progress. Within such framework, several studies highlight the positive relationship between the quality of institutions, governance structures and economic growth; such studies are Stephen Knack and Philip Keefer (1995), Paolo Mauro (1995), Alberto Alesina (1997), Rafael La Porta et al. (1998), Daniel Kaufmann, Aart Kraay, and Pablo Zoido-Lobaton (2000), and Yi Feng (2003). More specifically, the good-governance approach to development assumes that institutions do matter for the development and policy. Even if there are multiple determinants of entrepreneurial activity, including perception opportunities, policies and business infrastructure, investment in higher education or demographics, the support for entrepreneurial activities remains institutions stability and public policies quality.

Additionally, there are studies that question the robustness of the causal link running from institutions to growth. Sebastian Avellaneda (2010) highlights that both degradation of institutional stability and poor growth were determinants for profound

politico-economic disequilibria. In efficiency-driven economies, government's focus is (or should be) ensuring smooth mechanisms, such as a proper functioning of the market, the higher education system, the goods and labor markets and technological readiness (see also Niels Bosma et al. 2012, p. 11).

The assumption that emerges from this paper is that economic performance is associated with a quantitative financial context in which institutions (economic, social, political) are the key to economic success and affect the structure of economic incentives in a society. However, transition or crisis raised a number of challenges, whose nature exceeds the strict economic argument, becoming a priority the legitimacy, property rights or ethics. Institutional factors that shape economic performance, in a particular archetype institutional as is the European integration and harmonization, are based on a comprehensive legislation and a tremendous bureaucratic-administrative system. For example, Guglielmo D'Amico, Giuseppe Di Biase, and Raimondo Manca (2013) consider that fiscal policy, as public policy, is a fundamental tool of macroeconomics, which can decrease income inequality by favoring the redistribution of the wealth. Therefore, fiscal policy may not only restrict the potential for entrepreneurship but can also be a source of competitiveness or regulation in order to stimulate entrepreneurial activity.

However, Avellaneda (2010), in an attempt to provide a critical survey of the expanding comparative literature on good governance and economic performance, argues that a positive relationship between good governance and economic performance can be challenged on the grounds of causality (Alberto Chong and César A. Calderón), unreliable measurements (Christiane Arndt and Charles Oman 2007), missing-variable considerations (Laura Langbein and Knack 2010) and conceptual vagueness (Thomas G. Weiss 2000).

Rafael Bianchini (2010) suggests that there is a strong relationship between quality of institutions and economic development. In support of this relationship are also other studies done by Paul D. Reynolds, Michael Hay, and S. Michael Camp (1999), Joel S. Hellman et al. (2000), Ingrid Verheul et al. (2001) and Daron Acemoglu, Simon Johnson, and James Robinson (2004). However, there are some studies regarding this relationship concluding that the causality seems to be ambiguous, as shown in Reynolds, Hay, and Camp (1999), Andrew L. Zacharakis, William D. Bygrave, and Dean A. Shepherd (2000) and Russell S. Sobel (2008).

Furthermore, William W. Beach et al. (2011) argue that policy-makers are focused on entrepreneurial innovation as a key to unlock higher levels of economic growth, hence the effects and the determinants of entrepreneurship must be addressed by taking into account skills, opportunities, economic environment and social norms. Kathy Fogel et al. (2006, pp. 8-9), focusing on institutional obstacles to entrepreneurship, classify the literature along with "functional" lines following the entrepreneurial process: information acquisition, economic foresight, risk tolerance, property rights, financing, and market entry and exploring how each relevant institutional feature affects the composite chain of entrepreneurial activity through: (i) rules, regulations, property rights, and the legal environment; (ii) regulatory burden; (iii) crowding out; (iv) economic stability; (v) financial development; (vi) concentrated corporate governance; (vii) culture and values; or (viii) other factors, such as education, diversity and openness.

José Ernesto Amorós (2009), in a study based on the panel data of 60 countries participating in the Global Entrepreneurship Monitor (GEM) project, highlights the quality of institutions as a relevant factor for the distribution and type of entrepreneurial activities. Also, a recent study of Alhaji Sani Abdullahi (2012, p. 456) reveals that entrepreneurship has a strong link to economic growth in terms of team enterprises that contribute more to employment generation, income earning and economic empowerment as well as overall economic growth, than sole enterprises.

The Global Entrepreneurship Monitor (GEM) is a project seeking to measure differences in entrepreneurial attitudes, activity and aspirations based on several assumptions: (a) necessity-driven entrepreneurship is particularly prevalent in less developed regions; (b) the overall tendency of the society to stimulate the ability and motivation to become entrepreneurial is, in general, supportive to entrepreneurship; and (c) high-aspiration types of entrepreneurship are particularly important to job creation and innovation in an economy (see also Reynolds et al. 2005 or Bosma et al. 2012). The original involved conceptual model is based on social, cultural and political environment and evolves by considering the degree of openness, the quality of public governance, the managerial knowledge and skills, the status of R&D, the infrastructure, the labor markets, the development of the financial sector, the entrepreneurship education and training, infrastructure, the access to physical infrastructure, the cultural and social norms and other variables. "For factor-driven economies, economic development is primarily driven by basic requirements: development of institutions, infrastructure, macroeconomic stability and health and primary education" (Bosma et al. 2012, p. 11).

Peter J. Boettke and Christopher J. Coyne (2009, pp. 139-140), in an attempt to clarify the concept of "institutions", reveal that institutions are both formal rules described through codified legal and political structures (as well as written rules such as constitutions) and informal rules governing human behavior, including culture and conventions. Hence, as Todd H. Chiles, Allen C. Bluedorn, and Vishal K. Gupta (2007) and Gupta et al. (2012) point out, the institutional environment in a country has proven to be an important foundation for exploring a wide variety of topics in entrepreneurship, since institutions, comprising of formal and informal norms, rules and values governing social and economic exchanges, have a major influence on the rate and nature of entrepreneurial activity in any society, including emerging economies. Olivier Charlot and Franck Malherbet (2013, pp. 3-23) show that "a laissez-faire economy with no regulation is inefficient as it is characterized by insufficient educational investments leading to excess job destruction and inadequate job creation".

The underlying argument for this extensive literature can be resumed by the view according to which, the quality of the public policies and the effects induced by these policies are susceptible to affect the entrepreneurial activities *via* the configuration of the social and economic environment (including norms, rules, market mechanisms, openness and social mobility) as well as *via* the social agents' initiatives, beliefs and attitudes.

Thus, this research hypothesis can be synthesized as follows: *The entrepreneurial activity and its components are intrinsically related the specific quality of public policies and institutions.*

The goal is to test this hypothesis in the case of the European Union's Member States.

2. European Union Data

Data represents a strongly balanced panel for 15 European Union "old" and "new" Member States (Belgium, Croatia, Denmark, Hungary, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Slovenia, Spain, Sweden, and United Kingdom) and cover a time span between 2001 and 2014.

The entrepreneurial activity is reflected by *Total Early-Stage Entrepreneurial Activity* (TEA) (percentage of 18-64 population who are either a nascent entrepreneur or owner-manager of a new business) as this is provided by *The Global Entrepreneurship Monitor* (GEM) database (http://www.gemconsortium.org). The selection of the included countries was influenced by full data availability as well as by the aim of considering several cases of entrepreneurship development.

The dimensions of governance quality are described by a total of six governance dimensions in the framework proposed by Kaufmann, Kraay, and Massimo Mastruzzi (2010) and reported by the World Bank's Worldwide Governance Indicators (WGI) project. These data are available at: http://info.worldbank.org/ governance/wgi/index.aspx#home: (1) *Government Effectiveness* (the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies); (2) *Regulatory Quality* (the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development); (3) *Rule of Law* (the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence); (4) *Voice and Accountability* (the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media); (5) *Political Stability and the Absence of Violence/Terrorism* (the likelihood of political instability and/or politically motivated violence, including terrorism); and (6) *Control of Corruption* (the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests). The data sources used in the computation of these index data sources reflect the perceptions of a very diverse group of respondents (individuals, domestic companies, country analysts, major multilateral development agencies, various non-governmental organizations, as well as commercial business information providers). In view of the criticism and advantages in the area of using Worldwide Governance Indicators data (Bogdan Dima, Stefana M. Dima, and Oana R. Lobont 2013), it is noted that from these variables, *Government Effectiveness* and *Regulatory Quality* reflect the quality of a nation's public policies, while *Rule of Law*, *Voice and Accountability* and *Political Stability and the Absence of Violence* are linked to a nation's political and social institutional framework. Finally, *Control of Corruption* is considered a complex problem with causes and consequences on development. Even corruption may coexist with strong economic performance, it is a

phenomenon that undermines democratic institutions, slows economic development and contributes to governmental instability.

Other two control variables are considered from GEM database: *Perceived Opportunities* (the percentage of 18-64 population: individuals involved in any stage of entrepreneurial activity excluding those who see good opportunities to start a firm in the area where they live) and *Perceived Capabilities* (the percentage of 18-64 population: individuals involved in any stage of entrepreneurial activity excluding those who believe they have the required skills and knowledge to start a business). Similarly, in order to reflect the structural rigidities and tensions from the labour market, the unemployment rate, as this is provided by World Bank's *World Development Indicators* database (available at: http://databank.worldbank.org), is considered as a control variable.

One should note that the policy and institutions WGI's indicators are aggregated based on unobserved component models. The aggregate measure is reported in standard normal units, ranging from around -2.5 to 2.5 with a zero mean and a unit standard deviation in each period (see Kaufmann, Kraay, and Mastruzzi 2007, 2010; Kaufmann and Kraay 2008, for more details).

Hence, in order to ensure the comparability of the results, all other explanatory variables, as well as the dependent ones, are rescaled according to:

$$X_{i,t}^{\ rescaled} = \frac{X_{i,t} - \bar{X}}{\sigma^2{}_x}. \tag{1}$$

Here, $\bar{X}$ and $\sigma^2{}_x$ stands for averages and variances across countries and time for the considered variable X.

Due to the involvement of this rescaling method, the estimated coefficients will not directly reflect the amplitude of corresponding effects. However, it allows a better judgment of the relative explanatory power of each individual variable.

The main statistics for TEA are reported in Table 1. The non-normal values of the distribution parameters and the standard deviations suggest important cross-section heterogeneity of data. Hence, the estimation methodology should account for such heterogeneity and for the potential induced biases.

Table 1 The Main Statistics of the Entrepreneurial Activity (Rescaled)

Total early-stage entrepreneurial activity (TEA)	Mean	Quantiles (computed for p = 0.5, using the rankit (Cleveland) definition)	Std. dev.	Skewness	Kurtosis	Observations
[-2, -1)	-1.129	-1.150	0.108	0.347	1.500	3
[-1, 0)	-0.341	-0.330	0.254	-0.511	2.228	113
[0, 1)	0.374	0.313	0.266	0.583	2.416	70
[1, 2)	1.216	1.161	0.214	0.847	2.462	13
All	0.000	-0.072	0.544	0.568	3.186	199
Overall Jarque-Bera test	9.478 (p = 0.009)					

Source: Authors' calculations.

3. Results and Comments

Table 2 reports the outcomes of the estimations with entrepreneurial activity as dependent variable and with the indicators for the quality of policies and institutions as well as with the overall quality of governance indicator as explanatory variable.

Table 2   Entrepreneurial Activity and Quality of Policies and Institutions

Variable	Fixed-effects (within) regression; full sample	Prais-Winsten regression, (correlated panels corrected standard errors); full sample	Hierarchical linear modelling (two-level); full sample	System GMM; full sample	System GMM; "new" member states sample
	(1)	(2)	(3)	(4)	(5)
Voice and accountability	-4.206*** (1.426)	-4.778*** (1.099)	-4.847*** (1.072)	-3.982** (1.561)	7.816*** (2.584)
Voice and accountability squares	1.442*** (0.551)	1.592*** (0.417)	1.531*** (0.430)	1.305** (0.604)	-5.100*** (1.524)
Political stability and absence of violence/terrorism	-0.309 (0.281)	-0.307*** (0.120)	-0.326* (0.202)	-0.612 (0.220)	-1.485 (2.311)
Political stability and absence of violence/terrorism squares	0.306* (0.173)	0.341*** (0.090)	0.268** (0.131)	0.310 (0.207)	-0.026 (1.243)
Rule of law	1.951** (0.814)	2.454*** (0.475)	2.276*** (0.544)	3.391*** (0.592)	4.885*** (1.385)
Rule of law squares	-0.128 (0.308)	-0.513*** (0.188)	-0.418*** (0.212)	-0.710*** (0.233)	-5.395*** (1.040)
Control of corruption	-0.137 (0.424)	-0.566** (0.239)	-0.854*** (0.317)	-0.797** (0.393)	1.889** (0.792)
Control of corruption squares	0.009 (0.137)	0.002 (0.088)	0.096 (0.101)	0.168 (0.147)	-2.169*** (0.675)
Government effectiveness	1.009 (0.778)	0.023 (0.500)	0.218 (0.666)	-0.115 (0.440)	0.139 (3.319)
Government effectiveness squares	-0.490** (0.245)	-0.182 (0.161)	-0.274 (0.217)	-0.219* (0.126)	1.258 (1.893)
Regulatory quality	-3.188*** (1.022)	-0.311 (0.683)	0.393 (0.692)	-2.930*** (1.095)	-5.622*** (1.948)
Regulatory quality squares	0.911*** (0.343)	0.289 (0.253)	0.142 (0.258)	0.943*** (0.337)	3.167*** (1.020)
Perceived capabilities	1.172*** (0.343)	1.162*** (0.262)	0.976*** (0.278)	0.794*** (0.281)	2.213*** (0.378)
Perceived opportunities	1.424* (0.725)	0.844 (0.614)	1.221* (0.625)	1.536*** (0.332)	-0.247 (0.869)
Unemployment rate	-0.783*** (0.250)	-0.567*** (0.132)	-0.420** (0.197)	-0.753*** (0.184)	-2.424*** (0.497)
Dummy for crisis period ("1" for 2007-2010 and "0" otherwise)	-0.177** (0.076)	-0.242*** (0.080)	-0.281*** (0.069)	-0.209*** (0.036)	-0.312*** (0.093)
Constant	2.915*** (0.849)	2.234*** (0.571)	1.944*** (0.622)	3.102*** (0.650)	-0.287 (2.193)
Hausman specification test (H_0: difference in coefficients is not systematic)	43.94 (p = 0.000)				
$F(16,168)$	5.95 (p = 0.000)				

R-squared	0.184	0.523		
Common AR(1) parameter (ρ)		0.361 (0.469)		
Random-effects parameters - standard deviation (residual)		0.154 (0.015)		
Log restricted-likelihood		-95.997		
LR test vs. linear regression		0.000 (p = 0.000)		
Hansen test of over-identified restrictions: (robust, but weakened by many instruments) (H₀: over-identifying restrictions are valid)			chi2(187) = 0.000 (p = 1.000)	chi2(50) = 0.000 (p = 1.000)
Number of instruments			204	67
I. GMM instruments for levels				
Hansen test excluding group			chi2(169) = 0.000 (p = 1.000)	chi2(32) = 0.000 (p = 1.000)
Difference (null H = exogenous)			chi2(18) = 0.000 (p = 1.000)	chi2(18) = 0.000 (p = 1.000)
II. instrumental variables (yr2001 yr2002 yr2003 yr2004 yr2005 yr2006 yr2007 yr2008 yr2009 yr2010 yr2011 yr2012 yr2013 yr2014) Hansen test excluding group Difference (null H = exogenous)			chi2(174) = 0.000 (p = 1.000) chi2(13) = 0.000 (p = 1.000)	chi2(37) = 0.000 (p = 1.000) chi2(13) = 0.000 (p = 1.000)
Arellano-Bond test for AR(2) in first differences			-1.790 (p = 0.073)	0.55 (p = 0.580)

Note: ***,**,* 1%, 5%, 10% significance levels. Standard errors in (). Dependent variable: Total Early-Stage Entrepreneurial Activity (TEA).

Source: Authors' estimations.

For Prais-Winsten regression, correlated panels corrected standard errors (PCSEs) are considered; in order to compute the autocorrelation parameter, the auto-correlation of residuals is considered. Errors are considered to be panel-level heteroscedastic and correlated across panels. Weight panel-specific autocorrelation by panel sizes (*Ti*).

In the Hierarchical Linear Modeling, the structure of the covariance matrix for the random effects is specified so that it allows for all variances and co-variances to be distinct (unstructured). The LR test is a comparison of the fitted mixed model to standard regression with no group-level random effects. This LR test assesses whether all random-effects parameters of the mixed model are simultaneously zero. LR is a conservative test; rejection of the null hypothesis based on the reported level would imply rejection on the basis of the actual level. For the two-level model, countries are "nested" (the random effects shared within lower-level subgroups are unique to the upper-level groups) in five groups based on their overall development level. For the System GMM, time dummies for all years are used as instrumental variables in level equation.

All instruments are collapsed based on David Roodman (2009) procedure implemented in STATA module xtabond2: one instrument for each variable and lag distance is used, rather than one for each time period, variable, and lag distance. All

available lags of the specified variables in levels dated t-1 or earlier as instruments for the transformed equation are used, as well as the contemporaneous first differences as instruments in the levels equation. Forward orthogonal deviations transform are considered instead of differencing. GNI *per capita* (PPP) and GNI *per capita* squares are supplementary used as GMM-style instruments.

The empirical assessment of entrepreneurial activity determinants is started with a *fixed effects* model as a baseline. The value of the Hausman test shows that this type of model should be preferred since the null that individual-level effects are adequately modeled by a random-effects model is clearly rejected. Several remarks can be done in respect to the estimates.

First, it appears that the democratic status is captured by the *Voice and Accountability* variable impact in a non-linear and statistical significant at 1% the entrepreneurial activity. Second, a certain positive effect on this activity is exercised by the *Rule of Law* variable. Third, it is interesting to note that there seems to be a significant inhibitory effect of *Government Effectiveness*. One may argue that a better quality of public and civil services, and the degree of its independence from political pressures, will actually increase the soundness of the public sector and, consequently, will reduce the attractiveness of entrepreneurship activity. For instance, Rahel Schomaker (2014) finds strong evidence that a significant positive relationship exists between the *Government Effectiveness* and the number of joint projects in the form of public-private partnerships. Fourth, there is a "U-shaped" effect exercised by the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. On the "short-run", significant changes in policies and regulations might affect the perceptions of entrepreneurs on future evolution paths of private sector. However, on the "long-run", the efficiency and soundness of these policies can act as an active support for the development of entrepreneurial activity. Fifth, the control of corruption does not appear to exercise a significant impact. Still, it is possible that the potential effects are actually "overwritten" by *Rule of Law* and broadly by the quality of public institutions. Sixth, a higher percent of individuals who see good opportunities to start a firm in the area where they live and who believe they have the required skills and knowledge to start a business, i.e., a cultural and behaviour paradigm pro-business oriented are contributing to an enhance in entrepreneurial activity. And lastly, a high level of unemployment is discouraging for such activity as well as the financial and economic turmoil.

It can be noticed that one possible source of biases in the estimations can be related to the fact that errors are not independent and identically distributed. Instead, these might appear to be auto-correlated within panel (with the autocorrelation parameter being the same or different for each panel) as well as heteroscedastic and contemporaneously correlated across panels. In order to check this, in Column 2 of Table 2, a *Prais-Winsten transformed regression* estimator, which is an alternative to feasible generalized least squares approach (see Sean Becketti 2013, for more details on this), is involved. In the specification of this model, Nathaniel Beck and Jonathan N. Katz (1995, p. 121) expressed their approval of using a single AR parameter for all panels instead of panel-specific AR parameters.

In this frame, there are some changes in respect to previous estimates. One of the most significant changes stated the fact that nowadays, the democratic stance and the political stability appear to clearly exercise a stronger impact on entrepreneurial activity. Also, more emphasis is placed in this frame on Rule of Law variable. Once again, the control of corruption displays an ambiguous negative effect while government effectiveness and regulatory quality plays no virtual role as explanatory variables. Here, one can retain the argument from Vito Tanzi and Hamid Davoodi (1997) accordingly to which higher level of corruption can be associated with greater amounts of public investments (especially in countries with a high public sector). Thus, a certain "trade-off" can be expected between control of corruption and the global investment climate. Only after the effectiveness of anti-corruption measures is reaching a certain level, the positive effects of lower corruption might occur. Still, a similar relative importance as in the previous estimates is maintained for all the other variables.

This study further considers a *multi-level analytical framework* with a two-level model. Such models are particularly appropriate for research designs, in which participants' data are organized at more than one level (i.e. nested data) (Barbara G. Tabachnick and Linda S. Fidell 2012). More exactly, the effect of the inclusion of a country is considered in a certain development group according to the most recent World Bank classification ("low-income economies" are defined as those with a GNI *per capita*, calculated using the World Bank Atlas method, of $1,045 or less in 2014; "middle-income economies" with a GNI *per capita* of more than $1,045 but less than $12,736; "high-income economies" are those with a GNI *per capita* of $12,736 or more while "lower-middle-income" and "upper-middle-income" economies are separated at a GNI *per capita* of $4,125). The results of applying the model are reported in Column 3 of Table 2. These results are relatively close to the ones provided by *Prais-Winsten* regression while the level of estimated coefficients is somehow lower. The most notable difference, which consists in a certain loss of statistical significance for the unemployment rate, are not anymore significant at 1% but at 5%.

Up to this point, there seems to be some pieces of evidence for both the quality of public policies and institutions, as well as for the perceived opportunities and capabilities associated to the entrepreneurship. But one can reason that the estimates can be biased by reverse causality issues. Indeed, there might be at least two sources of endogeneity. The first one is related to the potential impact of private sector development and soundness on the public institutions. As Schomaker (2014, p. 104) finds: "A stronger participation of private enterprises in public service provision and the introduction of public-private partnerships depends to a high degree on the institutional quality. This is even more relevant as the improvement of public services and of core infrastructures can be seen as crucial multipliers for future growth". The second one may be derived from the following argument: the perceived capabilities and opportunities for individuals to engage themselves in entrepreneurial activities can be enhanced by a *current* positive business environment: the today "success stories" may stimulate others to become the "entrepreneurs of tomorrow". Thus, an instrumental approach aiming to correct such sources of potential endogeneity might be considered.

From different instrumental approaches, the Generalized Method of Moments (GMM) method is considered. This involves some moment or orthogonality conditions and, supplementary, allows for heteroskedasticity in errors. Its main advantage is that it supplies a reach and flexible frame to deal with endogeneity, being particularly suitable for "small T / large N" (many panels and few periods) cases as is the case with this study's dataset (Alastair R. Hall 2005). Moreover, the system estimator version of GMM is also involved. This uses lagged differences as instruments for a level equation in addition to the moment conditions of lagged levels as instruments for a differenced equation (Richard Blundell and Stephen Bond 1998, 2000; Blundell, Bond, and Frank Windmeijer 2000; Bond 2002).

It should be mentioned that for the implementation of this method, it is of a paramount importance a proper choice of number of instruments. As Whitney K. Newey and Richard J. Smith (2004) argue, poor performances of instrumental variables estimators may be related to their biases increase with the number of moment conditions. Thus, a reduction of the instruments number can contribute to an increase in the robustness of the results. With this aim, the instruments are collapsed by applying the procedure described by Roodman (2009) and implemented in STATA xtabond2 module. The levels of Hansen test of over-identified restrictions (which is robust, but potentially weakened by "too many instruments"), as well as of the Arellano-Bond test for AR(2) in first differences, shows that overall there is a corresponding quality of the estimates.

The results from Column 4 of Table 2 show that the involvement of System GMM leads to some relevant changes. First, there is a substantial increase in the positive and significant at 1% "net" effect for *Rule of Law*. Second, the impact of *Regulatory Quality* gain statistical significance at 1% for both levels and squares. The *Perceived Opportunities* variable also becomes significant at 1% and clearly supports the development of entrepreneurial activities. In addition, the impact associated with a change in *Perceived Opportunities* for these estimates is almost two times larger comparing with the one for *Perceived Capabilities* even if findings from literature shows that knowledge and skills (and, broadly, the level of "human capital") contribute to an increase in owners' capability for performing the specific entrepreneurial tasks of discovering and exploiting business opportunities (see, as an example, Scott Shane and Sankaran Venkataraman 2000). But, as such results may suggest, there needs to be a business-supporting environment to provide the opportunities for "grasping the fruits of knowledge".

Finally, for a further robust assessment, a sub-set of data form by "new" Member States is considered. Several changes occur at the level of these states. For instance, there appears to be a reversion in the non-linear impact of *Voice and Accountability* variable. Also, the "net" effect for *Rule of Law* becomes negative while for *Control of Corruption* there is a reverted "U-shaped" influence. *Government Effectiveness* still does not play any statistical significant role and the significance of *Perceived Opportunities* is vanished with this variable displaying a "wrong" sign (although the *Perceived Capabilities* variable remains significant at 1%). The labour market unbalancements, as these are reflected by the unemployment rate, are showing a much larger impact comparing with previous estimates.

Despite the existence of some differences, it appears that the overall impact for the quality of public institutions and policies is quite robust across estimation methods and sampling. Hence, we might say that, in the light of such evidences, there is room for the (non-linear) impact of institutions and policies on the entrepreneurial activity.

4. Conclusions

In this study, the conceptual arguments it is empirically assessed according to which public governance is susceptible to impact the dynamics of the entrepreneurial activity at the level of the European Union's Member States. Although these effects appear to be quite different for the individual components of this activity by magnitude, the results clearly indicate that higher levels of public policies and institutions' credibility/effectiveness produce a positive and robust impact on entrepreneurial climate.

Overall, the social and political freedoms appear to matter for entrepreneurial activity and their non-linear influence is robust across various estimation methods. The same applies for the extent to which social agents have confidence in and abide by the rules of society (particularly, the quality of contract enforcement and property rights). Nevertheless, there are no significant pieces of evidence for an impact of *Government Effectiveness* on entrepreneurial activity while the role played by *Control of Corruption* is rather an ambiguous one. Hence, the most obvious policy recommendation that can be derived from these findings is that a democratic frame as well as a legal frame stables and socially fair, which is trusted by citizens, with proper protection of general business conditions, is a critical requirement for supporting the entrepreneur activity.

Both perceived opportunities and capabilities are strongly encouraging the development of the private sector reflecting the importance of human and intellectual capital. Still, the corresponding impact of opportunities appears to depend on the global economic development (and, possible, on the quality and efficiency of markets' mechanisms and institutions). The structural rigidities of labor markets inhibit the entrepreneurial activity as well as the financial and economic instability and crisis.

Thus, it is concluded that under certain conditions, improvements to the design of public institutions, well-conceived and implemented policies and increased accountability and credibility of public authorities can boost the individual economic initiative and enhance the innovation processes supporting sustainable economic growth.

However, the significance of this analysis depends on the relevance of the examined transmission channels, which have not been either completely or consistently described at a conceptual level or empirically tested in a perfectly robust manner. Nevertheless, the evidence, that this study has provided, indicates that a sounder institutional framework should be designed and that better policies should be implemented in order to enhance the European Union's capacity to address issues related to the recent economic turmoil and promotes long-term increases in the economic output of this region.

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