The Impact of Institutions on Entrepreneurial Activity

Frank H. Stephen
University of Strathclyde, Glasgow
David Urbano and Stefan van Hemmen
Autonomous University of Barcelona

This paper presents an empirical analysis of the factors which promote entrepreneurial activity across a number of transition, developing and developed countries. It produces results which highlight the importance of institutions in promoting entrepreneurial activity. This work is part of an on-going research project on the relationship between the legal system and factors which influence economic development. In particular, it has been shown that legal rules protecting creditors and investors influence the size of financial markets which in turn influence economic development Our paper thus extends the analysis of the impact of institutions beyond that previously established to demonstrate its influence on another driver of economic development.

Economic Impact of Institutions

In recent years there have been a number of strands in economic literature that have related economic growth and development to aspects of the institutional environment, both directly and indirectly. At the most general level authors have examined the influence of colonial origins and early institutions on the level of development of a sample of former colonies (Acemoglu et al. 2003). They argue that colonial origins and the nature of colonisation are the key determinants of development because they heavily influence current institutions. The nature of colonisation and institutions was, in turn, determined by settler mortality rates during the colonisation period. In this analysis current institutions are proxied by an index of the risk of appropriation of assets by government.

A second strand in the literature develops measures of creditor protection laws, investor protection laws and law enforcement to investigate a variety of issues. A major theme of this work is the consistent influence of legal families (common law, French civil code, German civil code, Scandinavian) on aspects of the financial and corporate systems of countries (La Porta et al. 1997.a, 1997.b, 1998, 1999.a; 1999.b, 2000.a; 2000.b; 2002.a; 2002.b; La Porta, Lopez-de-Silanes and Shleifer, 1999). The investor and creditor protection variables developed in this work allow the influence of differences in such laws on various aspects of the financial and corporate sectors to be analysed. The findings of this literature can be seen as relating aspects of corporate governance to industrial structure and economic development.

A third approach relates development to the existence of a healthy financial sector which is in turn a function of legal institutions. This is the 'Law and Finance' literature (Beck et al. 1999; 2001.a,b; 2003.a,b; Beck and Levine, 2003; 2004; Levine, 1998; 1999; 2002; 2003.a,b; Levine at al. 2000). Contributors to this literature have demonstrated the relationship between growth and various measures of the financial sector's size and composition. This has been extended to show that the measures of financial sector development are themselves functions of creditor protection laws, risk of government contract modification and accounting regulations. In much of this literature the latter are, however, seen primarily as instrumental variables to overcome the endogeneity of the financial sector variables. This work has been extended to an analysis of stock-market development and shareholders' rights. A recent contribution to this literature by two of the present authors has examined the interaction of investor protection laws and the extent to which laws are enforced (Stephen and van Hemmen, 2003). Legal rules (particularly those that protect investors) and enforcement are necessary for fostering finance, which in turn has been shown to be a major source of economic development. However, in countries with low levels of enforcement, investor protection laws seem to be ineffective. Policymakers need, therefore, to be aware of the sensitivity of legal rules to the enforcement context in which they are applied.

Entrepreneurship and Economic Development

Much research has been undertaken on the factors which stimulate entrepreneurial activity and also on the contribution which entrepreneurial activity makes to economic development across regions within a country. However, there has only been limited research on the contibution of entrepreneurial activity to differences in economic development across countries.[1]

Entrepreneurial activity includes all attempts made by individuals to start a new company (which frequently entails self-employment); it also includes firms deciding to invest additional resources in new business opportunities. The existence of entrepreneurial activity, it is argued, contributes to future economic growth. However, there appears to have been limited empirical research which tests the hypothesis that entrepreneurial activity contributes to economic growth and development.

Scholars in the entrepreneurship field have facilitated cross-country research recently through the development of an index of entrepreneurial activity. This is the *Total Entrepreneurial Activity* Index (*TEA*). The index has been developed through the collaborative-research programme *Global Entrepreneurship Monitor* (GEM).[2] The index is generated from large-scale population surveys and is common across a large number of countries, 37 countries in 2002. GEM shows clear variations in the level of entrepreneurial activity across countries. Recent research shows that entrepreneurial activity as measured by *TEA* does influence economic growth (van Stel et al, 2004). However, there appears to be little on the formal institutional (including legal) environment.

Much entrepreneurship research has focussed on the psychological and social factors which stimulate entrepreneurial activity and on public policies to stimulate and support entrepreneurship. An important factor in promoting entrepreneurship has been the existence of the 'role models' of entrepreneurship. In particular, it has been argued (van Stel et al., 2003) that the more incumbent business owners there are the more likely entrepreneurship will be seen as an option. However, there appears to be little on the formal institutional (including legal) environment.

[1] A survey on the impact of entrepreneurship on economic growth can be found in Carree and Thurik (2003).

[2] See the Executive Report produced by Reynolds et al (2002)

Entrepreneurship scholars have recently focussed their attention on the connection between institutional factors and entrepreneurial activity. Following North's (1990) framework, the contribution by institutions (interpreted as "rules of the game") to firm creation and, in turn, to long term economic development has been studied (Bruno and Tyebjee, 1982; Gartner, 1985; Gibb and Manu, 1990; Cooper and Gimeno, 1992; Van de Ven, 1993; Chrisman and McMullan, 2002) but has been tested empirically only recently (Carree et al., 2002; Van Stel, et al. 2003; Verheul et al. 2004). The issue is of relevance to policymakers, who need to understand which formal and informal factors are relevant to the promotion of entrepreneurship (that is, to put entrepreneurial projects into action). Formal institutions have been considered as a critical exogenous factor in explaining entrepreneurial activity (see for instance the general model proposed by Gnyawali and Fogel, 1994). Among environmental formal variables, legal rules, government support measures and procedures (number and complexity) have widely been described as critical in the decision to start a firm

The Determinants of Entrepreneurship by Opportunity

The present paper brings together insights from the two literatures discussed above to examine how the availability of role models and the characteristics of legal systems influence the variation in entrepreneurial activity across a sample of developed, developing and transition economies.

The underlying premise of the present paper and the overall work of which it is a part is that formal institutions matter. In particular, bureaucratic and enforcement institutions matter. On this basis we explore the impact that the nature of a countries' legal system has on entrepreneurial activity.

We draw on the expanding literature discussed above on legal rules and economic development which has shown that variations in countries' legal systems and how they operate are strongly imprinted by the legal family from which they have evolved. Five broad legal "families" have been identified in the literature: English Common Law, French Civil Law, German Civil Law, Scandinavian Civil Law and Socialist Legal Systems (La Porta et al. 1998). A key distinction between these legal families which has been emphasised in this literature is the extent to which they protect property rights in general and shareholder and creditor rights in particular. The identification of the Common Law as providing a high level of protection for shareholders' rights has been criticised by Roe (2003) who points out that much of the protection offered to shareholders in the United States has resulted from legislation which was necessary because Common Law courts had conspicuously failed to protect shareholder rights. Notwithstanding this, Anglo-Saxon legal systems do appear to provide stronger protection for property rights (Coffee 2000, 2001).

In this paper we focus our investigation on the determinants of entrepreneurship by opportunity in the GEM project. This is one of the components of the Total Entrepreneurship Index. The other is entrepreneurship by necessity. The latter is likely to be influenced by cyclical factors which differ across countries and in particular the use of self-employment by the unemployed. When the entrepreneur pursues an attractive business opportunity, entrepreneurship is one of several possible career options , a decision which is voluntary. This decision is likely to be influenced by the institutional environment.

We begin our investigation of the determinants of entrepreneurship by combining the idea that role models may have an influence with the view that the legal system represents a significant determinant of private economic activity.

The data set used to test whether these factors affect entrepreneurship is largely determined by the number of countries participating in the GEM project. For 2002 data is available which allows us to run regressions covering 34 countries. These include OECD countries, developing countries and some transition countries. It seems reasonable, at least initially, to allow the factors which determine entrepreneurship to vary in their influence across countries at different levels of development. The countries covered in this analysis are given in Table 1 which also shows the allocation of countries to the developing country (Tworld) and transition groups (Eutran). The remaining countries are largely OECD and developed East Asian countries.

The dependent variable in the regressions discussed below (Opportunity Entrepreneurship Index) is taken from the GEM database. We also take one of our explanatory variables from the GEM database. Busown measures the stock of incumbent businesses as the sum of 'new businesses' and 'established business' as a percentage of the adult population. Van Stel et al. (2004, p. 15) regard it as a 'cultural' variable, a proxy for the stock of entrepreneurial values and role models. In particular, an increase in the presence of incumbent business owners increases the availability of entrepreneurial role models, which is hypothesized to positively affect the decision to become an entrepreneur[3]. The legal origin explanatory variables used are taken from World Bank (2004).

We begin by looking at the influence of legal "family" on entrepreneurship by opportunity. The first column in Table 2 shows the results of such a regression in which French Civil law is the omitted legal "family". It can be seen that legal "family" explains 24% of the variation across countries in entrepreneurship by opportunity. However, these results suggest that countries from the English legal "family" have characteristics which are more favourable to entrepreneurship than those of other legal "families". The regression reported in column 1 of Table 2, however, take no account of differences in the level of development between the countries in the dataset, a factor which might be thought to influence levels of entrepreneurship. Column 2 of Table 2 presents the result of adding dummy variables for third world - TWORLD – and European Transition – EUTRAN - countries to the explanatory variables. The addition of these two variables raises the proportion of the variation of the dependent variable explained to 43%. However, the only explanatory variables with significant coefficients are those for the English legal family and third world countries. In both cases the estimated coefficient is positive.

The hypothesis that the existence of role models measured by the proportion of the population involved in business ownership (BUSOWN) is explored in column three of

[3] Busown is taken from the GEM, 2002, survey. In some respects it might be more appropriate to use a measure for 2001. However, this variable does not appear in the 2001 data set available to us.

Table 2, together with control variables for the country's level of development.[4] These three explanatory variables account for 59% of the variation across countries of entrepreneurship by opportunity. However it is clear that the dummy variable for third world countries which was statistically significant in the regression reported in column 2 (Table 2), is not significant in this regression. The reason for this is that there is a significant degree of correlation [corr. coeff. = 0.4346] between business ownership (BUSOWN) and the third world variable (TWORLD).[5] The two sources of support for entrepreneurship are combined in the regression reported in column 4 of Table 2. Here we see almost 72% of the variation in entrepreneurship by opportunity across countries in 2002 is explained by the legal family dummies, the level of development dummies and the business ownership variable. English legal family and business ownership are significant and are positively related to entrepreneurship. German and socialist legal origin have negative but insignificant coefficients while the third world transition and Nordic legal origin variables have positive but insignificant coefficients. The two development dummies (TWORLD and EUTRAN) have positive but statistically insignificant coefficients also. A likelihood ratio test for the omission of the insignificant variables suggests that they can be omitted [$\chi^2_5 = 4.88$].

Column 5 in Table 2 reports the results of regressing entrepreneurship by opportunity (OPP02) on the proportion of the population engaged in business ownership (BUSOWN) and the English legal family dummy variable (ENGLISH). These two variables alone explain 67.4% of the variation in the dependent variable. The influence of both variables on entrepreneurship is positive. The regression results reported in Table 2, taken together, suggest that our two explanatory variables are complementary in nature rather than substitutes for each other. The estimated coefficients of the two remaining variables in column 5 differ little from those in the regressions in which only one of them appears (cf. columns 1 – 3).

Conclusions

The present paper adds some insights on the role that institutions can play in the context of entrepreneurship. The investigation of the determinants of entrepreneurship by opportunity across a sample of 34 countries at different levels of development suggests that two important factors have a strong influence on levels of entrepreneurship. First, the greater is the existing level of business ownership in an economy the greater is the likely level of entrepreneurship. This has been interpreted within the entrepreneurship

[4] Extensive econometric analysis has been performed testing other explanatory variables which have previously been used by other scholars in the field of entrepreneurship (see van Stel et al. 2004). However, no other variable contributed significantly to improve the fitness of the model.

[5] Van Stel et al (2004) suggest a U shape relationship between total *nascent entrepreneurship* and the level of development. When only the opportunity component of nascent entrepreneurship is analysed, the authors find a positive and quadratic relationship: development offers new opportunities for entrepreneurs. While our findings are generally consistent with theirs, we focus on all opportunity entrepreneurs.

literature as signalling the importance of ‘role models’ in the encouragement of entrepreneurship.

Secondly, it appears that differences in legal institutions (proxied by legal family) have an impact on entrepreneurship. In particular, we have found that countries within the English legal family generate higher levels of entrepreneurship, ceteris paribus, than countries from other legal families. Legal families have been used as explanatory variables in the context of ‘law and finance’ literature. In this literature legal families have been seen to influence economic development via their influence on external financial development (Levine, 1998, 1999, 2000). The results of this paper, we suggest there is a second path through which institutions could influence long term economic development: by creating a favourable climate for entrepreneurship to flourish.

A limitation of the present paper is that, whilst it clearly shows the importance of role models and institutions for the promotion of entrepreneurship, it does not provide policymakers who desire to stimulate it with any detailed advice on which particular institutional characteristics (such as legal rules or enforcement mechanisms) of the English legal family have most impact on the promotion of entrepreneurship. This is the subject of ongoing research by the authors.

Table 1

Country	Tworld	Eutran
Argentina	1	0
Australia	0	0
Belgium	0	0
Brazil	1	0
Canada	0	0
Chile	1	0
China	1	0
Denmark	0	0
Finland	0	0
France	0	0
Germany	0	0
HongKong	0	0
Hungary	0	1
India	1	0
Ireland	0	0
Italy	0	0
Japan	0	0
Korea	0	0
Mexico	1	0
Netherlands	0	0
NewZealand	0	0
Norway	0	0
Poland	0	1
Russia	0	1
Singapore	0	0
Slovenia	0	1
SouthAfrica	0	0
Spain	0	0
Sweden	0	0
Switzerland	0	0
Taiwan	0	0
Thailand	1	0
UnitedKingdom	0	0
United States	0	0

Table 2: Determinants of Opportunity Entrepreneurship

Dependent variable	Opportunity Entrepreneurship Index	Opportunity Entrepreneurship Index	Opportunity Entrepreneurship Index	Opportunity Entrepreneurship Index	Opportunity Entrepreneurship Index
Explanatory variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
ENGLISH	2.7386 (0.051)	3.3294 (0.011)		1.9058 (0.049)	2.2809 (0.003)
GERMAN	-0.6889 (0.629)	0.7379 (0.615)		-1.2852 (0.260)	
NORDIC	0.1347 (0.941)	1.6639 (0.334)		0.1972 (0.876)	
SOCIALIST	-3.0978 (0.334)	-0.7287 (0.833)		-1.1375 (0.648)	
TWOLRD		3.4406 (0.007)	1.1637 (0.242)	1.0427 (0.290)	
EUTRAN		- 0.8399 (0.663)	-0.7311 (0.550)	0.9567 (0.505)	
BUSOWN			0.3982 (0.000)	0.3990 (0.000)	0.4160 (0.000)
Constant	4.9978 (0.000)	3.4686 (0.002)	1.4674 (0.103)	1.0236 (0.258)	0.7401 (0.302)
N obs.	34	34	34	34	34
R-squared	0.2420	0.4344	0.5914	0.7178	0.6743
Adjusted R-squared	0.1374	0.3087	0.5505	0.6419	0.6533

P-values reported in brackets

References

Acemoglu, D., S. Johnson, J. Robinson and Y. Thaicharoen (2003) "Institutional causes, macroeconomic symptoms: volatility, crises and growth" *Journal of Monetary Economics*, 50, pp. 49-123

Beck, T., A. Demirgüç-Kunt, and R. Levine (1999) "A New Database on Financial Development and Structure" *World Bank Policy Research Working Paper* no. 2146

Beck, T., A. Demirgüç-Kunt, and R. Levine (2001.a) "Law, politics and finance", *World Bank Policy Research Working Paper* 2585

Beck, T., A. Demirgüç-Kunt, and R. Levine (2001.b) "Legal Theories of Financial Development" *Oxford Review of Economic Policy*, 17 (4), pp. 438-501

Beck, T. A. Demirgüç-Kunt, and R. Levine (2003a) "Law and Finance: Why Does Legal Origin Matter?" *Journal of Comparative Economics* Vol. 31, Issue 4, pp. 653-675.

Beck, T. A. Demirgüç-Kunt, and R. Levine (2003b) "Law, Endowments and Finance", *Journal of Financial Economics*, Volume 70, Issue 2, pp. 137-181

Beck, T and R. Levine (2004) "Stock Markets, Banks, and Growth: Panel Evidence" *Journal of Banking and Finance ,* Vol. 28, Issue 3, pp. 423-442

Beck, T and R. Levine (2003) "Legal Institutions and Financial Development" forthcoming in M Shirley and C Menard (eds.), *Handbook of New Institutional Economics*, North Holland, 2005

Bruno, A.V. and Tyebjee, T.T. (1982): "The Environment for Entrepreneurship". In C.A. Kent; D.L. Sexton and K.H. Vesper (eds.), *Encyclopedia of Entrepreneurship*, 288-315, Prentice-Hall, Inc.: Englewood Cliffs, NJ.

Carree, A., van Stel, Thurik and S. Wennekers (2002): Economic development and business ownership: an analysis using data of 23 OECD countries in the period 1976-1996, *Small Business Economics*, Vol. 19, no. 3, 271-290.

Carree, A and A.R. Thurik (2003) "The Impact of Entrepreneurship on Economic Growth", in D.B. Audretsch and Z.J. Acs (eds) *Handbook of Entrepreneurship Research*, Boston/Dordrecht: Kluwer Academic Publishers

Chrisman, J.J. and McMullan, W. E. (2002): "Some Additional Comments on the Sources and Measurement of the Benefits of Small Business Assistance Programs". *Journal of Small Business Management*, vol.40, no.1, 43-50.

Coffee, J.C. (2000) “Convergence and its Critics: What are the Preconditions to the Separation of Ownership and Control? *Columbia Law and Economics Working Paper* No. 179

Coffee, J.C. (2001) “Do Norms Matter? A Cross-Country Evaluation” *University of Pennsylvania Law Review*, 149, p. 2151

Cooper, C.C. and Gimeno, F.J. (1992): “Entrepreneurs, Processes of Founding, and New-Firm Performance”. In D.L. Sexton and J.D. Kasarda (eds.), *The State of the Art of Entrepreneurship*, Ch..12, 301-340, Boston, PWS-KENT Publishing Company: Massachusetts.

Gartner, W.B. (1985): “A Conceptual Framework for Describing the Phenomenon of New Venture Creation”. *The Academy of Management Review*, vol.10, no.4, 696-706.

Gibb, A. and Manu, G. (1990): “The Design of Extension and Related Support Services for Small-scale Enterprise Development”. *International Small Business Journal*, vol.8, no.3, 10-26.

Gnyawali, D.R. and Fogel, D.S. (1994): “Environments for Entrepreneurship Development: Key Dimensions and Research Implications”. *Entrepreneurship Theory and Practice*, June, 43-62.

La Porta, R., F. Lopez-de-Silanes and A. Shleifer, (1999) “Corporate Ownership Around the World” *Journal of Finance*, 54, pp. 471-517

La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R. W. (1997.a) "Legal Determinants of External Finance", *Journal of Finance*, Vol. 52, 1131 - 50.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R. W. (1997.b) “Trust in large organizations”·*American Economic Review Paper and Proceedings*, 87, pp. 333-338

La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R. W. (1998) "Law and Finance", *Journal of Political Economy*, Vol. 106, 1113 - 54.

La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and W. Vishny (1999.a) “Investor protection: origins, consequences, reform” mimeo

La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and W. Vishny (1999.b) “The quality of government” *Journal of Law, Economics and Organization*, 15 (1), pp. 222-279

La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and W. Vishny (2000.a) “Investor Protection and Corporate Governance” *Journal of Financial Economics*, 58, pp. 3-27

La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and W. Vishny (2000.b) “Agency Problems and Dividend Policies around the World” *Journal of Finance*, LV (1), pp. 1-33

La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and W. Vishny (2002) “Investor Protection and Corporate Valuation” *Journal of Finance*, LVII (3), pp. 1147-1170

La Porta, R., F. Lopez-de-Silanes, and A. Shleifer (2002) "Government Ownership of Banks" *Journal of Finance*, LVII, pp. 265-301

Levine, R. (1998) "The legal environment, banks, and long run economic growth" *Journal of Money, Credit, and Banking*, 30 (3), pp. 596-613

Levine, R. (1999) "Law, Finance and Economic Growth", *Journal of Financial Intermediation*, Vol 8, 89 - 35.

Levine, R. (2002) "Bank-Based or Market-Based Financial Systems: Which Is Better?" *Journal of Financial Intermediation*, 11, pp. 398-428

Levine, R. (2003.a) "Napoleon, Bourses, and Growth, with a Focus on Latin America" in O. Azfar and C. A. Cadwell (eds) *Market-Augmenting Government: The Institutional Foundations of Prosperity*, Ann Arbor: University of Michigan Press.

Levine, R. (2003.b) "More on Finance and Growth: More Finance More Growth?" *Federal Reserve Bank of Saint Louis Review*; Jul / Aug, vol. 85, Issue 4, p. 31-46

Levine, R., N. Loayza and T. Beck (2000) "Financial intermediation and growth: Causality and causes" *Journal of Monetary Economics*, 46, 31-77

North, D.C. (1990): Institutions, Institutional Change and Economic Performance. Cambridge University Press: Cambridge.

Reynolds, P.D.., W.D. Bygrave, E. Autio, L.W. Cox and M. Hay (2002) *Global Entrepreneurship Monitor, 2002 Executive Monitor*, Babson College, Wellesley, MA

Roe, M.J. (2003) "Institutional Foundations for Securities Markets in the West", Keynote lecture given at *European Association of Law and Economics (EALE) Annual Conference*, Nancy, September 2003

Stephen, F and S van Hemmen (2004**)** **"**Market Mobilised Capital, Legal Rules and Enforcement" *Strathclyde Discussion Paper No. 04-03*

Van de Ven, A.H. (1993): "The Development of an Infrastructure for Entrepreneurship". *Journal of Business Venturing*, vol.8, no.3, 211-230.

Van Stel, A, M. Caree and R. Thurik (2004) "The effect of entrepreneurship[on national economic growth: An analysis using the GEM database, SCALES-paper N200320

Van Stel, A.J., Wennekers, A.R.M., Thurik, A.R. and P.D. Reynolds (2004) Explaining nascent entrepreneurship across countries" SCALES-paper N200301 Zoetemeer: EIM Business and Policy Research.

Verheul, I, A. Van Stel and R. Thurik (2004) "Explaining female and male entrepreneurship across 29 countries" Paper provided by Max Planck Institute for Research into Economic Systems, Group for Entrepreneurship, Growth and Public Policy. Papers on Entrepreneurship, Growth and Public Policy. # 2004-08.

World Bank (2004) *Doing Business in 2004. Understanding Regulation*. The International Bank for Reconstruction and Development / The World Bank, Washington