

Briefing Notes in Economics

'Helping to de-mystify economics since 1992'

Indexed with the Journal of Economic Literature

Issue No. 71, December 2006 / January 2007 <http://www.richmond.ac.uk/bne> ISSN 0968-7017

The Effects of Institutional Corruption and National Economic Freedom on Entrepreneurs*

Mark Gius*

Department of Economics, Quinnipiac University, Hamden, CT 06518, USA

First version received on 6th June 2005

Final version received on 6th July 2006

The present study attempts to determine if corruption and economic freedom had any statistically significant impact on the decision to be an entrepreneur or the decision to be an owner. Using the GEM database for the year 2000, results suggest that corrupt societies actually encourage entrepreneurial activity while economic freedom encourages business ownership. In addition, males who don't fear failure are more likely to be both entrepreneurs and owners, while young people are more likely to be entrepreneurs and older persons are more likely to be business owners. The present study is the only study, to my knowledge, that combines the GEM database with a corruption index and an economic freedom index in order to capture the effect of the institutional structure of a society on both entrepreneurship and business ownership. **JEL: L2, L5**

Other material in this Issue:

- 1. A listing of useful and interesting websites.**
- 2. Brief suggestions for useful readings.**
- 3. Conference listings.**

1. Introduction

The impact of entrepreneurial talent on national economic growth is well documented; entrepreneurs generate substantial portions of a nation's GDP, invest heavily in research and development, and are instrumental in bringing new products and services to market in a timely and efficient manner. In order to accomplish these tasks, entrepreneurs take on enormous amounts of risk, the hope being that their economic gambles will pay off and that they will achieve great financial wealth and independence.

Although there have been numerous studies regarding various aspects of entrepreneurial talent, few have focused on the individual choice to become an entrepreneur. The present study attempts to determine the factors that affect individual decisions regarding entrepreneurship, including two variables that have not been examined before: an economic freedom index and a corruption index. These two macro variables are important since they set the institutional stage upon which entrepreneurs must make their decisions regarding the creation of a business.

Utilizing data from the Global Entrepreneurship Monitor of 2000 (GEM), results of the present study suggest that economic freedom has no statistically significant role to play in the decision of whether or not to start a business; however, the more corrupt the society is, the more likely individuals will engage in start-up activities. In a related regression looking at firm ownership, corruption has no statistically-significant effect on firm

ownership, but, at the 10% level of significance, the more economic freedom there is, the more likely that individuals will be owners of firms.

2. Literature Review

Although there have been numerous studies regarding the determinants of entrepreneurship, the present study will only focus on the most pertinent of those studies. In Evans and Leighton (1989), an attempt is made to ascertain the determinants of entrepreneurial activity at the individual level using the National Longitudinal Survey. This survey, which only examines individuals in the U.S., contains socioeconomic and demographic data on thousands of persons over almost a 30 year period. The authors, using several questions from the survey, constructed a variable that shows whether or not an individual has entered self-employment. They regressed this self-employment variable against such explanatory variables as marital status, education, and income. Results suggested that individuals with high net worth, low wages, short job tenures, and previous self-employment experience are more likely to be entrepreneurs. In addition, the decision to become an entrepreneur was independent of age or experience, especially for the first 20 years of employment.

In a Tinbergen Institute Discussion Paper, Verheul, et al, (2001) surveyed many prior studies of the determinants of entrepreneurship. The following findings were made in these previous studies. First, any factor that made a person less risk averse also makes that person more likely to become an entrepreneur. These

characteristics can be environmental in nature (such as institutional constraints) or individual (such as personality). Second, prior research found that when the relative, expected reward from self-employment exceeds that from wage employment, more people will choose to become entrepreneurs. Hence, institutional factors such as universal health coverage may increase entrepreneurship. In addition, high interest rates impede self-employment since high interest rates increase the cost of debt financing. Finally, many individual level characteristics, such as having a risk-seeking personality, are difficult to capture in a statistical framework.

In Davidsson and Henrekson (2002), the authors attempted to determine if institutional factors affect firm emergence and growth. Using data from Sweden, results suggested that many government programs in that nation, such as taxation of entrepreneurial income and labor market regulations, restrict business development.

In “Education and Entrepreneurship in Industrialized Countries: A Meta Analysis,” the authors examined the effect of educational attainment on entrepreneurship (van der Sluis, et al, (2004)). Using a meta-analysis, or statistically synthesizing previous research findings, it was found that education had no statistically-significant effect on selection into entrepreneurship, but education had a positive and significant effect on business performance.

Finally, Verheul, et al, (2004) used the national GEM data of 2002 in order to explain male and female participation in

entrepreneurial activities in a cross-country comparison. Using only national level data, the authors looked at macro level determinants of entrepreneurship. Using ordinary least squares, and estimating various equations for both men and women, the authors found that female entrepreneurial activity was influenced by the same factors as male entrepreneurial activity.

The present study will differ from this prior research in several ways. First, this study will be one of the few studies that focus on the individual determinants of entrepreneurship. As noted above, while many prior studies looked at the determinants of entrepreneurship, most only examined the macro-level determinants. Second, this is only the second study, to my knowledge, that utilizes the GEM database, and, in fact, the only other study to use this database did not use the individual-level data but rather used the macro-level data. Third, this is only study that uses an economic freedom index and a corruption index as explanatory variables in the individual-level regressions. This is noteworthy since these variables are excellent proxies for the institutional nature of the environment in which the entrepreneur is attempting to establish a business enterprise.

3. Empirical Model

The decision about whether or not to start up a business depends heavily upon risk. As noted in Verheul, et al, (2001), any factor that makes a person less risk averse increases the probability that a person will engage in entrepreneurial activities. These factors may include not only individual personality attributes, but may also include institutional

variables, such as low-interest small business loans. In addition, if the expected rewards from entrepreneurship exceed the expected rewards from wage employment, then the probability that a person will become an entrepreneur also increases. Hence, the decision about whether or not to become an entrepreneur depends upon an individual's perception of risk versus reward and an individual's preference for risk.

In order to model entrepreneurship at the individual level, it is necessary to look at the decision of whether or not to start a business as a binary choice. In other words, a person either starts a business or doesn't. This binary choice is dependent upon various measures of risk, both at the individual level and at the institutional level. Hence, the entrepreneurial decision at the individual level may be modeled as follows:

$$E = f(P_s, R, I_r) \quad (1)$$

where E denotes the decision of whether or not to start a business, P_s denotes the probability that the business succeeds, R denotes the reward from starting the business, and I_r denotes the individual's preference for risk. R may be modeled as the following:

$$R = E_s - E_w \quad (2)$$

where E_s denotes earnings from self-employment and E_w denotes earnings from wage employment. Theory and anecdotal evidence suggest that the higher is the probability of business success, the greater the rewards from starting a business, and the more risk seeking an individual is, then the greater the likelihood that a person will start a business.

In order to estimate equation (1), the following logit regression is employed:

$$\text{Prob}(E=1) = \{e^{B'X}\} / \{1 + e^{B'X}\} \quad (3)$$

where E is the dependent variable that equals one if a person starts a business and zero otherwise, X is a vector of explanatory variables, and B is a vector of parameters.

The explanatory variables used in the present study must act as proxies for the three determinants of entrepreneurship exhibited in equation (1). Those variables are as follows: age of the entrepreneur at time of start up (AGE); level of education of entrepreneur (HS, SCOLL, COLL, GRAD); sex of entrepreneur (MALE); variable that equals one if individual believes starting a business is a respected activity and zero otherwise (RESPECT); variable that equals one if individual believes that community resents wealthy persons and zero otherwise (RESENT); variable that equals one if individual has a fear of failure and zero otherwise (FEAR); variable that equals one if individual believes that people in their nation prefer a uniform standard of living and zero otherwise (UNIFORM); an international corruption perception index (CPI); and, lastly, an index of economic freedom (IEF). Variable names are listed in parentheses.

Education was recorded as level attained; hence HS equals one if person graduated from high school and zero otherwise; SCOLL equals one person attended some college but did not graduate and zero otherwise; COLL equals one if person graduated from college and zero otherwise; and GRAD equals one if person has graduate degree and zero otherwise.

The first three explanatory variables are demographic indicators of risk. Theory and anecdotal evidence suggest that younger, better educated males may be more risk seeking than others. The next four variables are dummy variables and indicate preferences regarding business ownership and wealth. If wealthy persons are resented and people prefer uniform standards of living, then entrepreneurs may be resented, which would increase the risk of being an entrepreneur, both at the individual and institutional level. In addition, if a person has a fear of failure, then that person is risk averse and hence much less likely to start a business.

Finally, the last two variables are measures of the institutional environment in which the entrepreneur operates. If a society is very corrupt, then it may be that rewards from self-employment are much greater than the rewards from wage employment; hence the probability of starting a business is greater. If a nation has more economic freedom, then it may be easier to start up a business and hence the probability of starting up a business increases.

The GEM database used in the present study has a few limitations. First, GEM does not allow for the determination of when a person entered self-employment. Hence, equation (3) is estimated with not only E as a dependent variable, but with also a dependent variable that denotes business ownership. The two dependent variables used in the present study are as follows: E which equals one if the person started a business and zero otherwise; and O which equals one if person owns a business and zero otherwise. The percentage of individuals who are owners may differ from the

percentage of individuals who started a business since some owners may have obtained their businesses in other ways. The second limitation regards the ownership variable; the GEM database does not indicate the form of firm structure (sole proprietorship, partnership, or corporation).

4. Data and Results

The data used in the present study came from three sources: the Babson College-London Business School Global Entrepreneurship Monitor, Adult Population Survey; the Heritage Foundation; and the Internet Center for Corruption Research. The Babson College-London Business School Global Entrepreneurship Monitor, Adult Population Survey (GEM) is a survey of the adult population of 21 countries; this survey encompasses both demographic data as well as data on preferences on a variety of business topics. Approximately 2000 individuals were surveyed in each of the 21 countries. However, after rejecting data with missing observations, the final data set used in the present study consists of 15,206 individuals from fourteen countries; those fourteen countries are as follows: U.S., France, Italy, U.K., Denmark, Sweden, Norway, Germany, Argentina, Brazil, Japan, South Korea, India, and Finland. All data is for the year 2000.

The second source of data is the Heritage Foundation. Since 1995, the Heritage Foundation has published an Index of Economic Freedom. This index measures 161 countries against a list of fifty variables. The lower the score, the more economic freedom exists in a country. The fifty variables are grouped

in the following categories: trade policy, fiscal burden of government, government intervention in the economy, monetary policy, capital flows and foreign investment, banking and finance, wages and prices, property rights, regulation, and informal market activity. Although it is acknowledged that this index is somewhat subjective and is produced by an organization that has right-wing political tendencies, it is one of the few indexes available that measures whether or not a nation has pro-business policies. It is assumed that nations with pro-business policies will be more likely to foster entrepreneurship.

The last source of data is the Internet Center for Corruption Research. This organization compiles the Corruptions Perception Index. This index ranks ninety nations in terms of the level of corruption in that nation as perceived by public officials. The Corruptions Perception Index is a composite index based on sixteen surveys that are conducted by eight independent organizations. In this index, corruption is defined as the abuse of public office for private gain. The higher the score, the less corruption exists in the nation. Once again, data is for the year 2000. On Table 1, all fourteen countries are listed with their corresponding Index of Economic Freedom and Corruptions Perception Index.

Results for the Entrepreneurship Regression are presented on Table 2. Results for the Ownership Regression are presented on Table 3. Regarding the Entrepreneurship results, it appears as if economic freedom has no statistically-significant impact on the decision about whether or not to start a business.

However, the corruption index is significant with a negative sign, which indicates that people living in countries with more corrupt public officials are more likely to start their own businesses, holding all other factors constant. A reasonable explanation for this result is that it may be more difficult to earn substantial income through wage employment in more corrupt societies. Hence, individuals in these corrupt nations may view the reward deriving from self-employment as being much greater than in societies that are less corrupt. It is important to note too that those nations that are typically viewed as being less corrupt also are nations that have substantial public welfare systems; hence, in those nations, prolonged unemployment is not much of an incentive for a person to start a business enterprise. Hence, the reward for self-employment is much less in those states with these extensive welfare programs.

Concerning the other variables in this regression, education has no effect on entrepreneurial behavior, but age and sex do. Young males are much more likely to start businesses than older females. In addition, individuals who fear failure are much less likely to start a business, while those who respect entrepreneurs are, of course, much more likely to start a business.

Regarding the Ownership regression, the corruption index has no statistically-significant effect on business ownership. However, economic freedom is statistically significant and negative, but only at the 10% level of significance. Hence, nations that have more economic freedom are more likely to have individuals who are business owners. This result may indicate that those

societies with less economic freedom also have large, state-owned enterprises or have economies that are controlled by large corporations that typically have the tacit support of the state. In addition, owners of business are more likely to be older, male, and holders of graduate degrees. They are also less likely to fear failure and more likely to respect entrepreneurs.

5. Conclusion

The present study attempted to determine if corruption and economic freedom had any statistically significant impact on the decision to be an entrepreneur or the decision to be an owner. Using the GEM database for the year 2000, results suggest that corrupt societies actually encourage entrepreneurial activity while economic freedom encourages business ownership. In addition, males who don't fear failure are more likely to be both entrepreneurs and owners, while young people are more likely to be entrepreneurs and older persons are more likely to be business owners. The present study is unique because it is one of the few studies that examine the determinants of entrepreneurship at the individual level and is the only study, to my knowledge, that combines the GEM database with a corruption index and an economic freedom index in order to capture the effect of the institutional structure of a society on both entrepreneurship and business ownership.

Country	Index of Economic Freedom	Corruption Perception Index
Argentina	2.95	3.5
Brazil	3	3.9
Denmark	1.8	9.8
Finland	1.9	10
France	2.55	6.7
Germany	2.1	7.6
India	3.5	2.8
Italy	2.35	4.6
Japan	2.5	6.4
Norway	2.3	9.1
South Korea	2.7	4
Sweden	1.9	9.4
United Kingdom	1.85	8.7
United States	1.8	7.8

Variable	Coefficient	Test Statistic
Constant	-1.5	-3.397
AGE	-0.021	-11.66
HS	-0.032	-0.505
SCOLL	-0.006	-0.08
COLL	0.128	1.161
GRAD	0.31	1.553
MALE	0.647	12.154
RESPECT	0.388	5.743
RESENT	0.542	9.291
FEAR	-0.263	-4.77
UNIFORM	0.03	0.548
CPI	-0.067	-2.695
IEF	-0.011	-0.097

Table 3		
Variable	Coefficient	Test Statistic
Constant	-2.48	-6.045
AGE	0.003	2.043
HS	0.265	4.386
SCOLL	0.136	1.871
COLL	0.128	1.177
GRAD	0.736	4.564
MALE	0.787	15.794
RESPECT	0.494	7.707
RESENT	0.472	8.353
FEAR	-0.3	-5.785
UNIFORM	-0.036	-0.704
CPI	0.0031	0.139
IEF	-0.194	-1.851

References

Davidsson, P. and M. Henrekson, “Determinants of the Prevalence of Start-Ups and High-Growth Firms,” *Small Business Economics*, 19(2): 81-100, 2002.

Evans, D. and L. Leighton, “Some Empirical Aspects of Entrepreneurship,” *The American Economic Review*, 79(3): 519-535, 1989.

Van der Sluis, J., M. van Praag, W. Vijverberg, “Education and Entrepreneurship in Industrialized Countries: A Meta-Analysis,” Tinbergen Institute Discussion Paper, Amsterdam, The Netherlands, 2004.

Verheul, I., S. Wennekers, D. Audretsch, and R. Thurik, “An Eclectic Theory of Entrepreneurship,” Tinbergen Institute Discussion Paper, Amsterdam, The Netherlands, 2001.

Verheul, I., A. van Stel, and R. Thurik, “Explaining Female and Male Entrepreneurship Across 29 Countries,” EIM Business and Policy Research, Scientific Analysis of Entrepreneurship and SME’s (SCALES), Zoetermeer, The Netherlands, 2004.

* **Dr. Mark P. Gius** is a Professor of Economics at Quinnipiac University in Hamden, CT, USA. Dr. Gius’ main area of research interest is applied microeconomics. He has published articles on market definition issues, advertising and brand quality, advertising and liquor consumption, baseball salaries, and health economics.

* *The views expressed here are personal to the author and do not necessarily reflect those of the other staff, faculty or students of this or any other institution.*

Useful and interesting websites to visit¹:

World Economic Forum

<http://www.weforum.org>

This is the global benchmark for competitiveness, even if the methodology for calculating the rankings has changed. Now based on work by Professor Xavier Sala-i-Martin the new Global Competitiveness Index presents a more sophisticated and nuanced approach to ranking countries by their level of development, this will surely be the broadest and most comprehensive indicator for international comparisons across countries and over time.

World Bank - Doing Business

<http://rru.worldbank.org/doingbusiness/default.aspx>

The Doing Business indicators are comparable across 175 economies. They indicate the regulatory costs of business and can be used to analyze specific regulations that enhance or constrain investment, productivity, and growth. A user-friendly and very accessible data set.

¹ Thanks to Martin Crisney for supplying this list.

Investment Climate Survey Online

<http://www.enterprisesurveys.org/>

This site contains data on the investment climate in 77 countries, based on surveys of almost 41,000 firms. Enterprise surveys measure business perceptions of the investment climate, and can be used to analyze the link to job creation and productivity growth.

Mckinsey Global Institute

<http://www.mckinsey.com/mgi/rp/csproductivity/>

An expanding set of research on 15 countries and 30 sectors that provides state-of-the-art micro-analysis of the factors that affect productivity.

Brief suggestions for further reading:

The Summer 2006 issue of the **Journal of Economic Perspectives** (Volume 20, Number 3), includes a Symposia on American Employment. The papers include:

Chinhui Juhn and Simon Potter: Changes in Labour Force Participation in the United States.

David Autor and Mark Duggan: The Growth in the Social Security Disability Rolls: A Fiscal Crisis Unfolding.

Amongst the other articles see:

David Cutler, Angus Deaton and Adriana Lleras-Muney's: The Determinants of Mortality.

Valerie Smeets, Frederic Warzynski and Tom Coupe: Does the Academic Labour Market Initially Allocate New Graduates Efficiently?

The September 2006 issue of the **Journal of Economic Literature** (Volume XLIV, Number 3), has a Review Essay on *Advances in Behavioural Economics* by Wolfgang Pesendorfer.

The same issue of this journal includes a paper by Elhanan Helpman on *Trade, FDI and the Organization of Firms*.

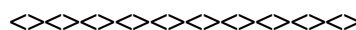
The November 2006 issue of the **Economic Journal** (Volume 116, Number 515), presents a

series of papers and case studies on the question of profiling. Some of these include:

Charles F. Manski: Search Profiling with Partial Knowledge of Deterrence.

Steven N. Durlauf: Assessing Racial Profiling.

William A. Brock: Profiling Problems with Partially Identified Structure.



The BNE is celebrating the electronic age by disbanding its print copy distribution list. This process began some time ago but is reaching its final stages now. All former print-copy readers are invited to join the electronic mailing alert service by contacting the editor at dabirp@richmond.ac.uk

* * * * *

ABOUT The Briefing Notes in Economics:

The current series of the **Briefing Notes in Economics** has been published regularly since November 1992. The series continues to publish quality peer-reviewed papers. As with recent issues, some of those that are forthcoming will include conference listings and other information for anyone with an interest in economics.

As always information on joining the mailing list, submitting a paper for publication consideration and much else besides, appears on the web-site. Should you need more information on any of the above matters please write to **Dr. Parviz Dabir-Alai**, Editor – Briefing Notes in Economics, Department of Business & Economics, Richmond – The American International University in London, Queens Road, Richmond, Surrey TW10 6JP, UK. Fax: 44-20-8332 3050. Alternatively, please send your e-mail to him at: [**dabirp@richmond.ac.uk**](mailto:dabirp@richmond.ac.uk)

Briefing Notes in Economics

* Call for Papers *

<http://www.richmond.ac.uk/bne/>

The BNE is always keen to hear from prospective authors willing to write a short, self-contained, and preferably applied, piece for publication as a future issue. The series prides itself on giving the well-motivated author a rapid decision on his submission. The **Briefing Notes in Economics** attracts high quality contributions from authors around the world. This widely circulated research bulletin assures its authors a broad-based and influential readership. The **Briefing Notes in Economics** is indexed with the *Journal of Economic Literature*.

For further information please visit the BNE website at the following address:
www.richmond.ac.uk/bne/

Previous authors have included:

Mak Arvin (Trent), Mark Baimbridge (Bradford), Alexandre Barros (Oxford), Amitrajeet Batabyal (Utah), William Boyes (Arizona State), Frank Chaloupka (Illinois), E. Ray Canterbury (Florida), Roger Clarke (Cardiff), William DiPietro (Daemen), Jean Drèze (LSE, Delhi), James Gapinski (Florida), Andrew Henley (Aberystwyth), Greg Hill (City of Seattle), Prabhat Jha (World Bank), Geeta Gandhi Kingdon (Oxford), Carmen Li (Essex), Robert Jones (Skidmore), Mehmet Odekon (Skidmore), Hans Singer (Sussex), Bob Wearing (Essex), and many others.

Forthcoming Conferences:

April 2-4, 2007: The annual conference of the Scottish Economics Society is nearing. Further information available from Anne Gasteen at a.gasteen@gcal.ac.uk and via the conference website at www.scotecsoc.org/

April 11-13, 2007: The annual conference of the Royal Economic Society to be held at the University of Warwick. Further details available from www.res.org.uk

July 9-11, 2007: The annual conference of the Work, Pensions and Labour Economics Study Group (WPEG) to be held at the University of Manchester, in Manchester, UK. Papers are due by February 28th and need to be sent to Andy Dickerson at wpeg@shef.ac.uk. Further details available from <http://wpeg.shef.ac.uk/callforpapers.htm>