Discrepancies in Entrepreneurship Ratings: A Search for Answers in Costa Rica, Dominican Republic, and Panama

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Number of new firms per working-age population is an entrepreneurship measure used by the World Bank. This rating varies between Central American and Caribbean economies; Panama is rated low, Dominican Republic medium, and Costa Rica high. This study examines country competitive advantages in an effort to determine causes of this discrepancy. Regression analysis is performed using Global Competitiveness Report data to compare Central American and Caribbean countries to 34 other nations. We find entrepreneurship is related to (1) foreign direct investment, (2) legal rights, (3) property rights, and (4) strength of the education system. Surprisingly, ease of access to financing is not found to be significant.

INTRODUCTION

Panama, Costa Rica, and the Dominican Republic have a great deal in common. All three are considered Latin American, and in terms of population, geography and GDP they are comparatively small, with limited population and land area, and comparable 2011 estimated GDPs per capita at purchasing power parity. According to the Central Intelligence Agency (CIA), the Dominican Republic has a GDP per capita at purchasing power parity of $9,300 (Dominican Republic, 2012), while Panama's number is $13,600 (Panama, 2012) and Costa Rica's is $11,500 (Costa Rica, 2012). The three countries' 2011 estimated populations are reasonably similar, with the Dominican Republic at approximately 10 million people, Panama at 3.5 million, and Costa Rica at 4.6 million (CIA, 2012). These three countries have been deemed by the Global Competitiveness Index to be in the same stages of development (efficiency driven), and they all share an upper-middle income level class distinction given by the World Bank (Porter & Schwab, 2009). They also have recently signed trade agreements with the USA.

One thing that these nations do not have in common is an entrepreneurship rating (i.e. entry-density rating). This number, given by the World Bank, is the number of new limited liability firms per working age population normalized by 1,000 (The World Bank, 2011). The entrepreneurship ratings of these three countries are divergent. Panama is ranked at a meager .26, the level of a low-income country; the Dominican Republic is rated at 2.13, the level of a middle-income country and a level that is within the

range of expectations; Costa Rica, at 8.78, has an impressive entrepreneurship rating even for a high-income country (The World Bank, 2011). Why is there such a discrepancy in these three countries' entrepreneurship ratings, and why, especially, is there such a noticeable difference in ratings between the two neighbors: Costa Rica and Panama?

The goal of this study is to answer the question of why such large discrepancies exist in the entrepreneurship ratings of these Latin American countries. With the help of the *2008 World Bank Entrepreneurship Survey* (Klapper, Delgado, & Lewin, 2008) and the *2008-2009 Global Competitiveness Report* (Porter & Schwab, 2009) we examine the state of entrepreneurship in these three nations, and address the most problematic factors for doing business, as well as analyze the twelve pillars of competitiveness as identified in the *Global Competitiveness Report* (Porter & Schwab, 2009). The report breaks these pillars into three main categories. The first category, Basic Requirements, examines the role of institutions, infrastructure, macroeconomic stability, health, and primary education (Porter & Schwab, 2009). The second, Efficiency Enhancers, looks at higher education and training, goods market efficiency, labor market efficiency, financial market sophistication, technological readiness, and market size (Porter & Schwab, 2009). The third category, Innovation and Sophistication factors, observes business sophistication and innovation (Porter & Schwab, 2009).

Also included in our research is a regression analysis of thirty-four randomly selected nations from multiple continents. The regression includes the following nine predictor variables: the presence of local suppliers, the level of sophistication of financial markets in the host country, the ability to acquire a bank loan, the strength of legal rights, foreign direct investment as a source of new technology, competition in the local marketplace, property rights including over financial assets in the host country, the educational system, and infrastructure. The dependent variable is the entrepreneurship rating given by the World Bank (The World Bank, 2011).This number represents new limited liability firms per working age population (normalized by 1,000). Due to our focus on the predictor variables mentioned above throughout this study, it is important to take a close look at how these variables are actually measured. With the exception of the legal rights variable, which was obtained from the publication *Doing Business: 2008* (The World Bank, 2007), the remaining eight variables come from *The Executive Opinion Survey* within the *Global Competitiveness Report* (Porter & Schwab, 2009). Partner institutes such as recognized economics departments at national universities, independent research institutions, or business organizations conduct the survey at the national level. Participants are asked to rate each individual factor on a scale of 1 to 7. Those ratings are then compiled to calculate a numerical value for each factor.

Much of this research is meant to build upon the existing work done by Lenora Klapper, Raphael Amit, Mauro F. Guillen, and Juan Manuel Quesada in *Entrepreneurship and Firm Formation Across Countries* (2007). They argue that business entry and density rates are highly correlated with country-level indicators of economic development and growth, the quality of the legal and regulatory environment, ease of access to finance, and prevalence of informality.

When looking at a topic such as entrepreneurship across national borders, it is useful to have a consistent definition. We use Klapper et al.'s (2007, p-3) definition of entrepreneurship as "the activities of an individual or a group aimed at initiating economic activities in the formal sector under a legal form of business." Additionally, we use Klapper et al.'s (2007, p-4) definition of the unit of measurement of entrepreneurship: "Any economic unit of the formal sector incorporated as a legal entity and registered in a public registry, which is capable, in its own right, of incurring liabilities and of engaging in economic activities and transactions with other entities."

It should be pointed out that this study focuses only on activities conducted in the formal sector. For obvious reasons it is very difficult to quantify activities conducted in the informal sector; also known as the "shadow economy" or the "black market." The informal sector must be left out even though it plays a significant role in many countries. It ranges from 10% of GDP in the United States all the way to 75% of GDP in Nigeria (Schneider and Enste, 2000).

All three nations in this study fall within the stage of development known as "efficiency driven" (Porter & Schwab, 2009). *The Global Competitiveness Report* assigns a country to one of three stages of development: factor-driven, efficiency-driven, and innovation-driven. This assignment is based on two

criteria; the first being the level of GDP per capita at market exchange rates. The second criterion measures the extent to which countries are factor driven. A proxy for this is the share of exports of primary goods in total exports (goods and services) and assumes that countries that export more than seventy percent primary products are to a large extent factor driven (Porter & Schwab, 2009).

Because the determinants of competitiveness are numerous and complex, the report (Porter & Schwab, 2009) divides the many variables measured into twelve pillars of economic competitiveness. These twelve pillars are then divided into three groups: Basic Requirements, Efficiency Enhancers, and Innovation and Sophistication Factors. Weights of the three main groups of pillars vary within each of the three stages of development; factor-driven, efficiency-driven, and innovation-driven. The efficiency-driven stage is weighted as follows: basic requirements: forty percent, efficiency enhancers: fifty percent, and innovation and sophistication factors: ten percent (Porter & Schwab, 2009). Because basic requirements and efficiency enhancers make up a total of ninety percent of the weighted score for competitiveness in efficiency driven development stages, these will be the main groups focused on in this research.

Identification of the most problematic factors for doing business in the relevant nations is a great way to find some of the major roadblocks or potential threats to entrepreneurship and economic growth. The results presented come from the 2008 edition of the World Economic Forum's Executive Opinion Survey (Porter & Schwab, 2009). From a list of fifteen factors, respondents were asked to select the five most problematic ones, and to rank those from 1 to 5. The results were then counted and weighted according to the ranking assigned by the respondents. The fifteen factors included government instability/coups, foreign currency regulations, policy instability, poor work ethic in the national labor force, poor public health, tax regulations, corruption, crime and theft, access to financing, tax rates, restrictive labor regulations, inflation, inadequately educated workforce, inefficient government bureaucracy, and inadequate supply of infrastructure (Porter & Schwab, 2009).

RELEVANT ENTREPRENEURSHIP THEORIES AND STUDIES

Our research is strongly influenced by the study *Entrepreneurship and Firm Formation Across Countries* (Klapper et al., 2007), conducted by the World Bank. This publication states that:

> *Business entry and density rates are significantly related to country-level indicators of economic development and growth, the quality of the legal and regulatory environment, ease of access to finance, and prevalence of informality. . . . We also find significantly higher entry rates in countries with better governance* (p. 2).

Another primary work related to our research is *The Global Competitiveness Report* (Porter & Schwab, 2009). This report uses surveys and data from the World Bank and many other credible sources to produce annually a report for the purpose of providing insight and stimulating "discussion among all stakeholders on the best strategies and policies to overcome the obstacles to improved competitiveness" (World Economic Forum, 2011).

Though the government's role in entrepreneurship is ever changing and difficult to define and measure, its influence is nonetheless relevant to this research. Douglass North and William Baumol have contributed to understanding the entrepreneurship-government relationship. Baumol (1990) hypothesized that while the supply of entrepreneurs varies from country to country, the actual productivity varies even more due to the allocation of these entrepreneurs between productive activities such as innovation, and unproductive activities such as organized crime. He states that this allocation is heavily influenced by the comparative payoffs society provides for each activity. According to Baumol (1990), this implies that by implementing the correct institutions, government policy can more effectively influence the allocation of entrepreneurs than it can the supply. Along the same line, Douglass North's (1990) framework integrates the emergence of institutions with the development of entrepreneurship. Maria Minniti (2008) summarizes North's contributions as:

> *The institutional environment determines the formal and informal rules of the game, places constrains on human action, and, possibly reduces uncertainty. Thus, institutions (and the policies that shape them) are crucial in determining entrepreneurial behavior. Entrepreneurship is the mechanism through which economic growth takes place, but institutions (such as the policy environment) are what allocate entrepreneurial efforts toward productive or unproductive activities by influencing the relative incentives and payoffs offered by the economy to such activities. Government policies mold institutional structures for entrepreneurial action, encouraging some activities and discouraging others. It is therefore clear that government policy has the power to influence entrepreneurial activity* (p. 781).

Another theory related to this research is Dependency Theory. Simeon Hein (1992) analyzes this theory in great detail in his research. According to Hein:

> *Dependency Theory, a neo-Marxist predecessor of world-systems research, claims that First World nations become wealthy by extracting surplus labor and resources from the Third World. Capitalism perpetuates a global division of labor- which causes the distortion of developing countries' domestic economies, declining growth, and increased income inequality* (p.495).

R. W. Jackman (1982) acknowledged that a gap exists between rich and the poor countries due to high rates of economic growth in industrial countries and low rates in underdeveloped countries. By analyzing dependency theory and examining the way in which foreign investment influences economic growth in these underdeveloped countries, he concluded that growth of foreign investment has a positive effect on economic growth; particularly on the initially wealthier Third World countries. While there are no direct links between dependency theory and the research conducted here on entrepreneurship, an understanding of it and other perspectives may help when considering the situations in Costa Rica, Panama, and The Dominican Republic.

LATIN AMERICA AND THE CARIBBEAN

Entrepreneurship is viewed as beneficial in Latin America and other parts of the world because it reduces dependency and creates jobs, innovation, and economic growth. The overall average entrepreneurship rating for the Latin America and Caribbean region is 1.3 (The World Bank, 2011). Out of the 134 countries studied in the Global Competitiveness report, Panama was ranked 58th, Costa Rica 59th, and the Dominican Republic 98th. The highest ranked nation in the region is Chile at 28th (Porter & Schwab, 2009). Its success has much to do with its priority on macroeconomic management, its timely market liberalization and opening to trade, and a transparent and predictable regulatory environment (Porter & Schwab, 2009). The only other two nations in the region ranking above Panama and Costa Rica in competitiveness are Puerto Rico (41st) and Barbados (47th) (Porter & Schwab, 2009). Panama and Costa Rica hold the title as the two most competitive countries in Central America. Costa Rica in particular has been highlighted as a Central American success story. The country's primary competitive advantages are its fairly efficient institutions (50th), relatively good primary (36th) and higher (49th) educational systems, flexible labor markets (35th), and impressive sophistication (42nd) and capacity for innovation (38th) (Porter & Schwab, 2009). Other notable countries from the region include Mexico and Brazil. These nations ranked 60th and 64th respectively, the only other nations from the region ranked in the top half (Porter & Schwab, 2009).

Costa Rica

Costa Rica has become a success story economically for Central America. This is evident from its high entrepreneurship rating of 8.78 (The World Bank, 2011) as well as its continued improvement in the

Global Competitiveness Index ranking (Porter & Schwab, 2009). Costa Rica has succeeded in part because of its rich natural resources and political stability (Porter & Schwab, 2009). Its competitive strengths include education, public governance, as well as product and export diversification; Costa Rica's policy agenda has placed a large emphasis on diversifying its economy away from commodities and toward more value-added products. This is evidenced by Costa Rica's focus on improving its high-tech sector. The sector realized a 13 percent increase from 2001-2005 (Porter & Schwab, 2009). In 2006, high-tech exports accounted for 30 percent of total exports and 40 percent of industrial exports (Porter & Schwab, 2009). This focus on technology, along with an FDI promotion strategy has been extremely successful since the 1990s and continues to influence development in Costa Rica. Intel has invested around 700 million dollars in the country and as of 2009 employed around 3,500 people in Costa Rica (Porter & Schwab, 2009). This investment by Intel has led to a simplification of FDI regulations and the creation of specialized degrees in national universities. This chain effect has led to further FDI into Costa Rica by companies such as DSC Communications Corp., Remec, Sawtec Inc., Merrimac Industries, Proctor & Gamble, Western Union, and Sykes (Porter & Schwab, 2009).

Perhaps the more known and popular competitive advantage that Costa Rica holds is its incredible leverage of its natural resources into its eco-tourism industry. With 1.725 million tourist arrivals in 2007 bringing in an average of $940 dollars per visitor (Porter & Schwab, 2009), it is easy to see why it is the second highest ranked country in the Latin American and Caribbean region in the *World Economic Forum's Travel & Tourism Competiveness Report of 2009* (Blanke & Chiesa, 2009). Costa Rica was ranked 42nd, the only country ranked ahead was Barbados at 30th (Blanke & Chiesa, 2009).

Although Costa Rica has done extremely well, it is not without weakness. *The Executive Opinion Survey* within the *Global Competitiveness Report* (Porter & Schwab, 2009) conveys some potential areas of improvement. The top five most problematic factors for doing business include: an inefficient government bureaucracy (21%), an inadequate supply of infrastructure (20.5%), inflation (12.1%), an inadequately educated workforce (7.3%), and restrictive labor regulations (6.8%). The remaining 30.3% is distributed amongst the other ten problematic factors.

Notable basic requirements and efficiency enhancers that can be seen as competitive advantages (top 37% of all nations in The Global Competitiveness Report) for Costa Rica include the following: diversion of public funds (46th), public trust of politicians (40th), judicial independence (31st), lack of favoritism in decisions of government officials (38th), lack of wasteful government spending (41st), efficient legal framework (45th), highly ethical behavior amongst firms (38th), efficacy of corporate boards (41st), quality of electricity supply and telephone lines (40th), low tuberculosis incidence (29th), high life expectancy (29th), high primary education enrollment (11th-98.8%), overall quality of the education system (32nd), quality of management schools (20th), local availability of research and training services (40th), extent of staff training (25th), high intensity of local competition (48th), extent of market dominance (25th), extent and effect of taxation (46th), low agricultural policy costs (42nd), low trade-weighted tariff rate (37th), prevalence of foreign ownership (10th), business impact of rules on FDI (17th), degree of customer orientation (38th), buyer sophistication (35th), cooperation in labor-employer relations (8th), hiring and firing practices (15th), pay and productivity (38th), reliance on professional management (41st), lack of a "brain drain" (15th), soundness of banks (47th), regulation of securities and exchanges (42nd), FDI and technology transfer (8th), internet users (49th), and personal computer ownership (39th) (Porter & Schwab, 2009).

The list is a long one. As mentioned before Costa Rica has become a model for success for all Central American nations. All of the aforementioned indicators are considered to be competitive advantages for Costa Rica, and may contribute to its success achieving a high entrepreneurship rating.

Panama

Panama holds some very unique features as a Latin American nation. It is one of three economies in the area to use the USA dollar as its currency (Panama, 2011), along with Ecuador and El Salvador, which have "dollarized" their economies more recently. Panama is home of the largest free trade zone in the Western Hemisphere, the Colon Free Trade Zone, which in 2005 accounted for ninety-two percent of

Panama's exports and sixty-five percent of its imports (Panama, 2011). Perhaps most notable for Panama is the Panama Canal, which the Panamanians have controlled since December 31, 1999 as a result of the Torrijos-Carter treaty signed in 1977. Banking, tourism, trade and commerce are important drivers of Panama's economy, and services dominate industry, though there is some industry in Panama. It comes as a surprise, therefore, that the entry density rate of new firms in Panama (.26) is so low when one considers Panama's relatively favorable overall economic conditions. Although it is one of the wealthiest countries in Central America, Panama suffers from one of the worst levels of income inequality in the continent (Panama, 2011). Another possible factor contributing to weak entrepreneurship is the high level of political instability that Panama has faced throughout its history.

The Executive Opinion Survey within the *Global Competitiveness Report* (Porter & Schwab, 2009) provides a closer look at some of the most problematic factors for doing business. The top five in order from one to five include: corruption (19.3%), inefficient government bureaucracy (17.7%), restrictive labor regulations (15.7%), an inadequately educated workforce (11.3%), and policy instability (5.5%). The remaining ten factors comprise 30.5%.

It is interesting to consider that Panama is right behind Costa Rica in the overall competitiveness index of 2008-09 (Porter & Schwab, 2009). Both countries are doing many things well (thanks in large part to a sophisticated banking sector and the lucrative Panama Canal); unfortunately Panama has been hindered by a history of political turmoil and government corruption, most notably Manuel Noriega (Panama, 2011).

A closer look at the competitive advantages that Panama holds shows rankings as follows: property rights (47th), intellectual property protection (48th), low burden of government regulation (37th), strength of auditing and reporting standards (47th), efficacy of corporate boards (48th), high quality port infrastructure (15th), high quality transport infrastructure (30th), high government surplus (39th), favorable interest rate spread (35th), low business impact of tuberculosis (36th), high life expectancy (40th), high primary education enrollment (15th), high tertiary education enrollment (47th), effective anti-monopoly policy (49th), favorable number of procedures required to start a business (34th), favorable amount of time to start a business (41st), low "brain drain" (21st), sophisticated financial market (27th), favorable financing through the local equity market (28th), relative ease of access to loans (21st), venture capital availability (28th), favorable restrictions on capital flows rules (22nd), overall soundness of banks (27th), favorable regulation of securities and exchanges (17th), strong legal rights index (29th), favorable laws relating to ICT (50th), and favorable FDI and technology transfer (19th) (Porter & Schwab, 2009).

Dominican Republic

Due to steady growth in telecommunications, tourism and free trade zones, the service sector has overtaken agriculture as the Dominican Republic's largest employer (Dominican Republic, 2012). The country exports about sixty percent of its products to the United States. This coupled with the fact that remittances account for about one-tenth of total GDP makes the Dominican Republic very dependent on the United States (Dominican Republic, 2012). Long-term challenges for the Dominican Republic include high unemployment (about 15%), underemployment, and high income inequality.

The most problematic factors for doing business the Dominican Republic according to *The Executive Opinion Survey* within the *Global Competitiveness Report* (Porter & Schwab, 2009) are: corruption (19.7%), tax rates (14.8%), inadequately educated workforce (10.3%), tax regulations (10.3%), and an inefficient government bureaucracy (10%). Ten other factors account for the remaining 34.9%.

Competitive advantages held by the Dominican Republic are fewer than those of Costa Rica or Panama, and the Dominican Republic is ranked 99th in the overall Global Competitiveness Index (Porter & Schwab, 2009). Nonetheless, its competitive advantages are listed as follows (top 37%): relatively low business costs of terrorism (49th), high quality of air transport infrastructure (37th), low government debt (30th), relatively short amount of time to start a business (47th), cooperation in labor-employer relations (31st), flexibility of wage determination (37th), pay and productivity (50th), and favorable FDI and technology transfer (49th) (Porter & Schwab, 2009).

REGRESSION ANALYSIS

To gain an appreciation of which factors best explain entrepreneurial activity in relation to Costa Rica, the Dominican Republic and Panama, we conducted regression analysis on the three countries plus thirty-four randomly selected nations (shown in the appendix). Backward step-wise regression was run at a significance level of .05. At each step in the regression the variable with the lowest t-stat (assuming it had an absolute value less than one) was deleted and the regression was re-run. This resulted in a final regression model minimizing the standard error of the estimate. In other words, it shows how strongly and whether or not the variables are correlated with the dependent variable.

In this regression analysis nine predictor variables were chosen from data compiled by the Global Competitiveness Report (Porter & Schwab, 2009). These predictor variables were compared to the dependent variable, which was the entry density rate (entrepreneurship rating by the World Bank). The predictor variables were as follows: local suppliers in the host country range between 1 (largely non-existent) and 7 (numerous and include the most important materials, components, equipment, and services), the level of sophistication of financial markets in the host country range between 1 (poor by international standards) and 7 (excellent by international standards), the ease with which one can get a bank loan in the host country with only a good business plan and no collateral ranges between 1 (impossible) and 7 (very easy), the strength of legal rights index on a 1 to 10 scale, foreign direct investment in the host country ranges between 1 (brings new technology) and 7 (is an important source of new technology), competition in the local market ranges between 1 (limited in most industries) and 7 (intense in most industries), property rights in the host country (including over financial assets) range between 1 (poorly defined and not protected by law) and 7 (clearly defined and well protected by law), the educational system in the host country ranges from 1 (does not meet the needs of a competitive economy) and 7 (meets the needs of a competitive economy), and general infrastructure in the host country ranges between 1 (underdeveloped) and 7 (extensive and efficient by international standards). These variables were tested based on the availability of data, existing scholarly theory and findings, and our own thoughts and experience from spending time in Central America.

Surprisingly, the relative ease with which one receives a bank loan was the first variable to be deleted from the regression model. The next variable to be deleted from the model was the level of competition in the local marketplace. This was followed by the presence of local suppliers and then the general infrastructure. The last variable to be deleted from the regression model was the level of sophistication of financial markets in the host nation. This resulted in a final regression model minimizing the standard error of the estimate:

Y-hat = -11.18 + .46 (legal rights) + 2.61 (FDI as a source of technology) -1.2 (property rights) + 1.17 (education)

The results of this regression analysis may be surprising for many. The findings indicate a strong correlation between using foreign direct investment as a source of new technology for nations as critical to the promotion of entrepreneurship, and thus economic growth. The fact that property rights and legal rights are included in the final regression model is consistent with previous research that supports a positive relationship between a strong legal framework and the successful promotion of entrepreneurship. The presence of education in the final regression model may seem to be an obvious one, but it should not be ignored. Perhaps most surprising in the research is not what was included in the model but what was dismissed. Most notably: the dismissal of the ability to get bank loans and the level of sophistication of financial markets. These results contradict earlier research conducted by the World Bank that concluded that business entry and density rates are highly correlated with ease of access to finance (Klapper et al., 2007; The World Bank, 2007).

LIMITATIONS ON REGRESSION ANALYSIS AND FUTURE RESEARCH

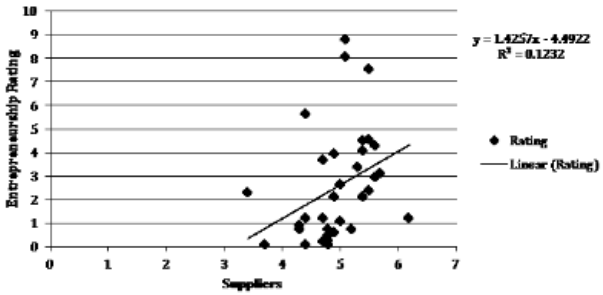
As mentioned before, eight of the predictor variables in the regression analysis represent a compilation of executive opinions within each country. This makes the variables quantitative representations of qualitative opinions. Because the *Executive Opinion Survey* (Porter & Schwab, 2009) yields numerical values for these variables we were able to include them in the regression analysis. These numerical values were used because of the difficulty of collecting data for these predictor variables. The qualitative nature of these variables should be taken into account when considering our findings. For a different perspective than our regression analysis, we also looked at the x-y scatter plots for each predictor variable; these plots lead to conclusions similar to our regression findings, but they are quite interesting to examine visually, and are presented Figure 1.

To completely account for all of the relevant factors involved in the successful promotion of entrepreneurship within a nation is extremely difficult or impossible. The cultural differences from one nation to another make it very difficult to measure and quantify, and will always play a part in the entrepreneurial activity in a given nation. Nonetheless, the importance of collecting data on a global scale is high, and data collection appears to be increasing, which should yield ongoing findings about entrepreneurship in Latin America.

The analysis conducted in this research is relatively small in scope with only 34 nations included and nine predictor variables. Future research we hope will include additional variables and nations with the goal of better understanding factors that are related to the promotion of entrepreneurship in Latin America and beyond.

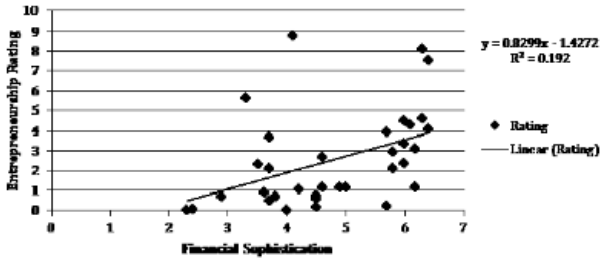
FIGURE 1
SCATTER PLOTS WITH LINEAR REGRESSIONS

1. Suppliers to Ent. Rating



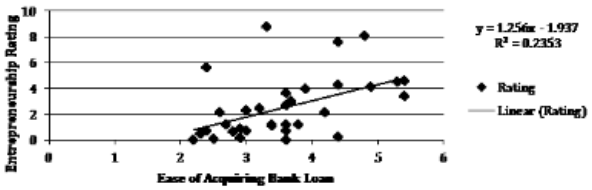
Supplier Correlation = 0.351010852
Data Source: Suppliers (Porter & Schwab, 2009); Entrepreneurship Rating (The World Bank, 2011)

2. Financial Sophistication to Ent. Rating



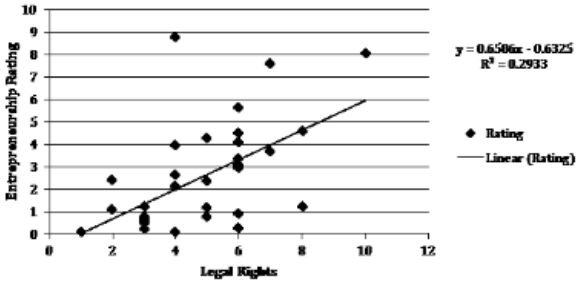
Financial Sophistication Correlation = 0.43823124
Data Source: Financial Sophistication (Porter & Schwab, 2009); Entrepreneurship Rating (The World Bank, 2011)

3. Ease of Acquiring Bank Loan to Ent. Rating



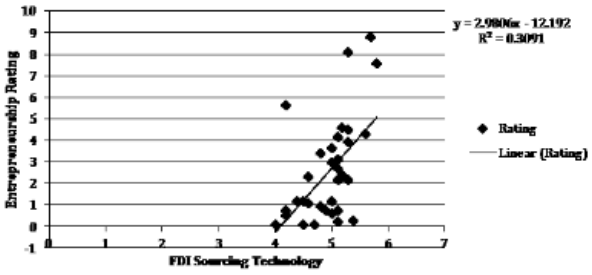
Ease of Acquiring Bank Loan Correlation = 0.485112815
Data Source: Ease of Acquiring Bank Loan (Porter & Schwab, 2009); Entrepreneurship Rating (The World Bank, 2011)

4. Legal Rights to Ent. Rating



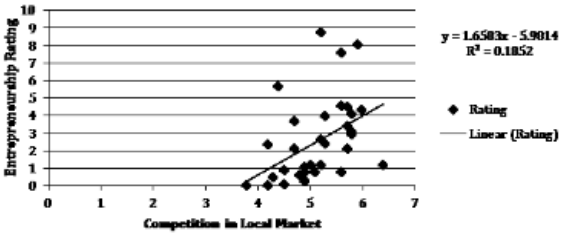
Legal Rights Correlation = 0.541613539
Data Source: Legal Rights (The World Bank, 2007); Entrepreneurship Rating (The World Bank, 2011)

5. FDI Sourcing Technology to Ent. Rating



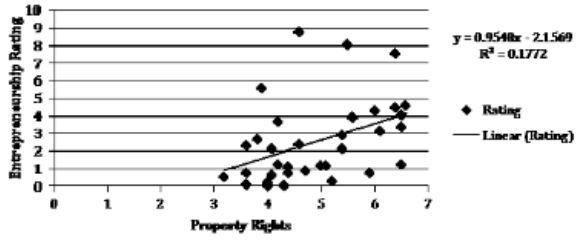
FDI as a Source of New Technology Correlation = 0.555951402
Data Source: FDI as a Source of New Technology (Porter & Schwab, 2009); Entrepreneurship Rating (The World Bank, 2011)

6. Comp. in Local Market to Ent. Rating



Level of Competition in the Local Marketplace Correlation = 0.430360565
Data Source: Level of Competition in the Local Marketplace (Porter & Schwab, 2009); Entrepreneurship Rating (The World Bank, 2011)

7. Property Rights to Ent. Rating



Property Rights Correlation = 0.420894298
Data Source: Property Rights (Porter & Schwab, 2009); Entrepreneurship Rating (The World Bank, 2011)

CONCLUSION

Costa Rica serves as an example for Central America in the area of entrepreneurship and economic growth, with an outstanding entrepreneurship rating of 8.78 (The World Bank, 2011). As Foreign Direct Investment as a source of new technology was deemed to be significantly related to the successful promotion of entrepreneurship, recent successes in that area can be specifically pointed out. Costa Rica has seen an impressive increase particularly in its high tech sector.

It appears that government policy does play an important role in entrepreneurship growth, as Douglass North and William Baumol noted in 1990. An FDI promotion strategy in Costa Rica beginning in the nineties would appear to have paid dividends for Costa Rica. Beginning with Intel's investment of about 700 million dollars in the country and employing 3,500 people. Costa Rica has witnessed a chain effect of further FDI and new firms established thanks to a simplification of FDI regulations and the creation of specialized degrees in its national universities. Companies including DSC Communications Corp., Remec, Sawtec Inc., Merrimac Industries, Proctor & Gamble, Western Union, and Sykes have joined the ranks with Intel and have significantly boosted the entry rates of limited liability firms in Costa Rica (Porter & Schwab, 2009). Our findings indicate that the education system is also significantly related to entrepreneurial ratings. Costa Rica has performed well in this area also. It has a very high primary education enrollment (98.8%), and ranks 11th in the Global Competitiveness Index, and an overall high quality education system where it ranks 32nd (Porter & Schwab, 2009).

We have found less information regarding Panama actively pursuing and realizing entrepreneurial ventures. Panama's low .26 entrepreneurship rating is notably lower than and different from the Dominican Republic and Costa Rica. In contrast to Costa Rica, Panama does not appear to emphasize or realize entrepreneurship with an equal intensity. This may be because Panama has its Canal to manage and prioritize. The Canal has proved to be very lucrative for Panama, and with this asset Panama may not feel compelled to plan for long-term growth through entrepreneurship, but through the Canal itself. Like Costa Rica, Panama is strong in education and it is also highly ranked in FDI as a source of new technology. Other reasons for the drastic disparity in entrepreneurship ratings may include corruption or Panama's history of an unstable government. Corruption was rated the most problematic factor for doing business in Panama (Porter & Schwab, 2009); this may discourage firms from entering the country. While Panama has little recent history of political instability post-Noriega, its proximity to Colombia and its turbulent past (at least compared to Costa Rica) may contribute to firms' hesitancy in the region.

Similar to Panama, corruption is also rated as the most problematic factor for doing business in the Dominican Republic (Porter & Schwab, 2009). Also, like Panama and Costa Rica, the Dominican Republic has FDI as a source of new technology for a competitive advantage. With an entrepreneurship rating of 2.13, the Dominican Republic is well above the average (1.3) for Latin America and the Caribbean (Porter & Schwab, 2009). For this reason along with its extensive free trade zone it appears that the government of the Dominican Republic is actively promoting entrepreneurship. Other possible factors involved that may contribute to the ratings include: proximity to the United States (its location makes it more desirable for firms based out of the United States) and inclusion in the Central American-Dominican Republic Free Trade Agreement with the United States.

In this complex and interconnected world it is challenging to definitively point to a few factors that conclusively determine entrepreneurship ratings. Many factors contribute to the rating and countries have unique qualities, circumstances, and histories that are not fully captured in data measures. Nonetheless, it appears that government policy is significantly related to the effective promotion of entrepreneurship within a nation and is a prerequisite for high entry rates. Once an effective policy is in place other factors also contribute to high ratings including: sourcing new technology through foreign direct investment, property rights, legal rights, and a quality education system. Additionally, while financial sophistication and the ability to acquire a bank loan do not define ease of access by themselves, it is worth noting that ease of access to finance may not be as significant a factor to high entrepreneurship ratings as previously thought.

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APPENDIX

The nations selected randomly and included in the regressions were: Norway, France, Belgium, Sweden, Spain, Portugal, Zambia, Uganda, United Kingdom, Peru, Romania, Denmark, Jamaica, Greece, Georgia, Germany, Colombia, El Salvador, Finland, Madagascar, Macedonia, The Philippines, Jordan, Pakistan, Chile, Argentina, Ethiopia, Ghana, Brazil, Canada, Mexico, Costa Rica, The Dominican Republic, and Panama.