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Michael Crum Thomas E. Nelson

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Stabilizing institutions for new venture investment decisions

Michael Crum

*College of Business, Northern Michigan University, Marquette,
Michigan, USA, and*

Thomas E. Nelson

*Department of Business Administration, West Virginia State University,
Institute, West Virginia, USA*

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Abstract

Purpose – This paper aims to examine the relationship between aspects of a country's institutional environment and entrepreneurial investors' overall rate of return.

Design/methodology/approach – Specifically, monetary stability and property rights are tested against both entrepreneurs' and angel investors' expected financial returns and payback periods, respectively. Data from the Global Entrepreneurship Monitor survey including years 2004 through 2006 and encompassing 50 countries are aggregated and examined using random coefficient multilevel modeling.

Findings – We find that strong property rights encourage both angel investors and entrepreneurs to invest in new ventures with longer payback periods and encourage angel investors to invest in ventures with lower expected financial returns.

Practical implications – This suggests that one key to increasing entrepreneurial investment in a country is to guarantee strong property rights. Therefore, both entrepreneurs seeking funding and countries seeking entrepreneurs should incorporate property rights issues into their decision-making.

Originality/value – This finding moves the “attracting entrepreneurs” conversation beyond the typical tax-abatement, infrastructure building, business cluster recommendations prevalent in academic and professional literature and points to one of the more fundamental reasons entrepreneurial “cultures” develop some places, but not others.

Keywords Property rights, Angel investment, Infrastructural stability, New ventures

Paper type Research paper

Introduction

Entrepreneurs start businesses for many reasons, a common one being to generate wealth. Among the many factors that impact the wealth-generating potential of any business (entrepreneur's skill, market demand, innovativeness of product, etc.) the institutional environment in which the entrepreneur and his or her business are embedded stands out. Previous research has shown that the institutional environment has a significant effect on investment decisions (Besley, 1995; Mauro, 1995; Johnson *et al.*, 2002). However, no matter how oppressive the institutional environment is, entrepreneurial activity is never eliminated (Ayadurai and Sohail, 2006; Baumol, 1990). Institutions set the “rules of the game” in an economy by determining incentives, reducing uncertainty and influencing transaction costs (North, 1987). Both formal institutions such as statutory law and informal institutions such as culture can vary greatly among countries (North, 1990; Williamson, 2000), and both influence the



environment in which entrepreneurs operate. Countries vary to the degree to which property rights are protected and to the extent to which their currency is sound (Miles *et al.*, 2005). When these factors are unfavorable for business, such as when inflation is high and property rights are weak, firms face increased uncertainty when making business decisions. Therefore, these factors are likely to influence the plans of businesses, especially regarding new investment.

What is less understood is what these institutional factors' effects are, specifically in the *entrepreneurial* context. The safe assumption would be that these effects are the same in both entrepreneurial and non-entrepreneurial contexts. Therefore, monetary instability and weak property rights should reduce and eventually eliminate entrepreneurial activity. However, this does not appear to be the case. Whatever the reason, entrepreneurship seems to thrive, even in harsh environments (Covin and Slevin, 2006; Tan, 2002). Although these factors may not eliminate entrepreneurial investment totally, they may make it more difficult for it to occur, by limiting investment to new ventures with high expected returns and short payback periods. Therefore, the question is, does monetary stability and the strength of property rights in a country influence the return that investors in entrepreneurial ventures require and the length of the payback period that they demand?

In this study, we examine whether monetary stability and property rights have any effect upon two specific entrepreneurial decisions, made by two different classes of entrepreneurial stakeholders. First, what level of expected financial return will the entrepreneur or angel investor accept? Second, how long will the entrepreneur or angel investor wait for said return? We first examine the relationship between the country's monetary stability and property rights and the entrepreneur's (and angel investor's) expected ten-year return from the new venture. Second, we examine the relationship between the country's monetary stability and property rights and the entrepreneur's (and angel investor's) expected time to recover his or her investment. While the influence of these factors on investment decisions has been explored (Besley, 1995; Mauro, 1995; Johnson *et al.*, 2002), examining the investment decisions of entrepreneurs and angel investors in light of them is useful for two reasons. First, as those starting new firms are often undiversified, they may be particularly sensitive to the risk caused by monetary instability and weak property rights. Second, because entrepreneurs have been shown to be more risk seeking (Brockhaus, 1980), or at least less risk averse (Cramer *et al.*, 2002) than managers and firm employees, the results could be substantially different.

Theory and hypotheses

Risk and required returns

One difficulty entrepreneur's face in determining whether to undertake a new venture is that the threshold return required to start a new venture cannot be easily determined. Models like the capital asset pricing model can be used to determine the required rate of return for a project based upon the risk-free rate, market risk premium and exposure to market risk (Sharpe, 1964). However, this model neglects the total risk of the project, and, thus, may be inappropriate for poorly diversified entrepreneurs (Smith *et al.*, 2011). As entrepreneurs are often not well-diversified, they are likely to be concerned about the total risk associated with undertaking an entrepreneurial venture. Thus, they may require fairly high returns and short payback periods to undertake a risky entrepreneurial venture. Financial returns can be either nominal or real, with real

returns being adjusted for inflation, while nominal returns do not account for the effect of inflation. We will be referring to nominal rates of return unless otherwise noted.

Angel investors provide risk capital, so they, like entrepreneurs, are often exposed to substantial amounts of risk in their investments. However, angel investors are likely to be more diversified than entrepreneurs. This diversification typically comes from having a substantial amount of personal wealth that is not invested in start-ups and having money invested in several new ventures, either through financing multiple deals individually or syndicating with other angel investors (Jensen, 2002; Shane, 2012; Wiltbank and Boeker, 2007). On the other hand, angel investors may be more likely to accurately consider risk when deciding to invest in a new venture than entrepreneurs. The growing literature on angel investors finds that angels use fairly complex screening mechanisms before deciding to invest in a new venture (Payne and Macarty, 2002; Sohl, 2006; Wiltbank and Boeker, 2007). Angel investors, at least in the USA, tend to be relatively wealthy and have past business experience (Morrissette, 2007). Thus, they may actually be better at selecting true entrepreneurial opportunities than entrepreneurs themselves. Thus, although angels may be more diversified and, hence, less exposed to business risk, they may be more likely to accurately assess their exposure to market and business risks compared to entrepreneurs. Thus, angels will likely demand to be compensated (with higher returns) when their investment is exposed to larger degrees of risk.

Monetary stability

An economy is said to have stable (or sound) money when the inflation rate is low and has little volatility (Gwartney and Lawson, 2003). Although distinct, inflation volatility and high inflation often occur together in an economy (Holland, 1984).

It is important for future inflation rates to be known with some degree of certainty in an economy, because it allows individual actors to have clear expectations about what to expect in the future. This is fairly straightforward to see in the example of a loan contract. Usually when a contract is written between two parties, the expected inflation is inferred in the terms of the contract (Holland, 1984). One common example of this is the mortgage contract between a bank and a borrower. For example, although the interest rate charged by a mortgage lender may be 7 percent in nominal terms, the lending bank may only require a real 4 percent return, but includes a 3 percent premium for expected inflation. If such a contract is agreed to between parties, but then actual inflation is higher than what was expected when the contract was written, those making payments (the borrower) receive a gain, while those receiving payments (the lending bank) receive a loss (Holland, 1984).

Excessive volatility in the inflation rate complicates investment planning and decision-making because the net present value of projects will be difficult to determine (Huizinga, 1993). While the exact discount rate that one should use in discounting cash flows from an entrepreneurial venture varies based upon a number of factors, inflation is certainly an important factor, at least indirectly. Thus, a high or volatile inflation rate will make it difficult to determine the proper discount rate and may prevent a potential entrepreneur from starting a business, especially if the entrepreneurial project generates cash flows many years into the future. However, entrepreneurs may be willing to invest in businesses with relatively short payback periods, as their cash flows will spend less time subject to such conditions. Likewise, projecting inflation over a short time span,

such as a couple of years, can be done with more accuracy than predicting it over a longer span of time, such as 10 or 20 years. This explains why if inflation uncertainty is high, firms and individuals are likely to be hesitant to enter into contracts and contracts that are entered into will likely be more short-term in nature (Rich and Tracy, 2004):

H1. In countries with high levels of monetary stability, entrepreneurs will invest in new ventures with longer payback periods than will entrepreneurs in countries with low levels of monetary stability.

It is certainly likely that angel investors also will consider the monetary stability when making investment decisions and will likely turn away from investing when monetary instability is substantial:

H2. In countries with high levels of monetary stability, angel investors will invest in new ventures with longer payback periods than will angel investors in countries with low levels of monetary stability.

Although uncertain inflation rates can lead to problems in making investment decisions, consistently high inflation rates are also problematic. High levels of inflation have been found to lead to a number of negative economic outcomes. Excessive inflation raises the rate of return required for business investments (Nelson, 1976), thus making starting or operating a business less attractive. Therefore, individuals will only start new firms when the expected return on investment is sufficiently high. Conversely, entrepreneurs will be more willing to invest in lower return entrepreneurial projects when inflation is low. This is because the discount rate of new entrepreneurial projects will be lower when the level of inflation is low:

H3. In countries with high levels of monetary stability, entrepreneurs will invest in new ventures with lower expected rates of return than entrepreneurs in countries with low levels of monetary stability.

H4. In countries with high levels of monetary stability, angel investors will invest in new ventures with lower expected rates of return than will angel investors in countries with low levels of monetary stability.

Property rights

According to Demsetz (1967, p. 347), “an owner of property rights possesses the consent of fellow men to allow him to act in a particular way”. Property rights are important for the functioning of an economy because they structure the incentives in a manner that help internalize externalities. Demsetz (1967) provides an example of the internalization of externalities with the Native Americans around Quebec who established property rights, as the fur trade became more profitable. By establishing property rights through exclusive hunting and trapping territories, they were able to internalize the externality of excessive hunting and trapping of beaver which would likely occur in the absence of any property rights. In modern economies, property rights are protected by court systems that enforce contracts, laws that protect intellectual property and legal limits to expropriation of private property by governments (Miles *et al.*, 2005).

From an individual’s perspective, well-defined property rights reduce the uncertainty regarding the use of property (Demsetz, 1967; Barzel, 1997). For example, if a government seizes private property and fails to compensate the owner for it, such

action will affect the level of risk that property owners face and will influence their behavior. As a result, property owners will tend to underinvest in improving their property when property rights are not protected (Besley, 1995; Johnson *et al.*, 2002). The decision of whether to start a business is a decision of how an individual should invest his or her time and resources, including property. This decision will likely be influenced by how strong property rights are in the location where the individual resides. When an individual starts a venture, he or she must invest capital in the new business. A lack of formal property rights may limit the ability of individuals to obtain capital to start or expand a business (de Soto, 2003). When property is not formally titled and registered, lenders are less willing to use property as collateral for loans. Thus, assets such as homes or land cannot be used as collateral to provide financing for a business, and this capital remains locked and unavailable for use in the business. Also, when property rights are weak, investment is deterred as those who are considering investing in a new venture do not know whether they will be able to keep any profits they may obtain or property that they improve (Johnson *et al.*, 2002). Research examining the entrepreneurial context finds that when property rights are strong, individuals are more willing to invest in new ventures than when property rights are weak. Nystrom (2008) finds that secure property rights are positively related to the rate of self-employment, and McMullen *et al.* (2008) find that strong property rights are associated with higher levels of opportunity-motivated entrepreneurship. This line of reasoning indicates that both entrepreneurs and angel investors will be more likely to accept longer payback periods and lower financial returns when property rights are relatively strong and demand shorter payback periods and higher financial returns when property rights are relatively weak:

- H5.* In countries with strong property rights, entrepreneurs will invest in new ventures with longer payback periods than entrepreneurs in countries with weak property rights.
- H6.* In countries with strong property rights, angel investors will invest in new ventures with longer payback periods than angel investors in countries with weak property rights.
- H7.* In countries with strong property rights, entrepreneurs will invest in new ventures with lower expected financial returns than entrepreneurs in countries with weak property rights.
- H8.* In countries with strong property rights, angel investors will invest in new ventures with lower expected financial returns than angel investors in countries with weak property rights.

Method

Data

We obtain our data from the Global Entrepreneurship Monitor (GEM) survey for the years 2004, 2005 and 2006. A total of 50 countries are included in our sample. The GEM survey is a cross-country survey of individuals in which respondents are asked about their engagement (or lack of engagement) in entrepreneurial activities (Reynolds *et al.*, 2005). A random sample is taken each year; the same respondents are unlikely to be surveyed in multiple years. The GEM data are collected using both phone and

face-to-face interviews, using either random digit dialing or random selection of geographical clusters (Reynolds *et al.*, 2005). Random digit dialing is used in countries in which a large proportion of adults have a landline phone and the interview is conducted over the phone. Geographic stratified sampling is used in areas in which landline phones are not owned by a large number of people in the population, and actual interviews are conducted face-to-face. The GEM data contain responses from business owners, nascent entrepreneurs, angel investors, as well as those not currently engaged in any entrepreneurship-related activities.

To test our proposed hypotheses, we examine two different types of respondents from the GEM survey: nascent entrepreneurs; and angel (informal) investors. Nascent entrepreneurs are those that affirm in the GEM survey that they are currently trying to start a new business. Unlike those entrepreneurs currently operating a business, nascent entrepreneurs are asked questions in the GEM survey concerning what they expect the payback of their new venture to be, as well as how long they expect the payback period to be. We only included those nascent entrepreneurs who stated that they were going into business to “to exploit an opportunity”, while those starting a business “out of necessity” were excluded from the sample. This is because those starting a business solely out of necessity are likely to accept low returns (and perhaps long payback periods) regardless of the instability of the environment. Our sample of angel (informal) investors includes those who stated that in the past three years, they had “personally provided funds for a new business started by someone else, excluding any purchases of stocks or mutual funds”.

Dependent variables

Long payback period. Those starting new ventures were asked the following question in the GEM survey:

- Q1. How long do you think it will be before you get back the full amount of your contribution to this new firm?

Response categories include: not expecting any payback/probably never, 6 months, 1 year, 2 years, 5 years, 10 years and 20+ years. Similarly, angel investors were asked:

- Q2. How long do you think it will be before you get back the full amount of your contribution to this new firm?

Response categories include: not expecting any payback/probably never, 6 months, 1 year, 2 years, 5 years, 10 years and 20+ years. We simplified these responses by creating a dummy variable (long payback period) indicating an expected payback period of five years or more.

Expected financial return. Those starting new ventures were asked the following question:

- Q3. In the next ten years, what payback do you expect to get on the money you put into this start-up?

Angel investors were asked:

- Q4. In the next ten years, what payback do you expect to get on the money you put into this start-up?

Possible responses to both questions include “none”, “half”, “about as much”, “twice”, “five times”, “ten times” and “twenty times”. The survey question does not explicitly ask the respondent to take inflation rates into consideration when estimating the expected return. Thus, the responses presumably reflect nominal returns.

Independent variables

Individual-level. A number of individual-level attributes are controlled for that may influence an individual’s risk preferences, including: gender, age, entrepreneurial skills and educational attainment. We include both a variable for age as well as one for age squared to account for any nonlinear effects. Entrepreneurial skills are a self-reported measure of whether the individual affirms that he or she has the skills to start a business. Specifically, the GEM survey asks respondents if they “have the knowledge, skill and experience required to start a new business?” Educational attainment is measured using a series of dummy variables representing secondary education, post-secondary education and graduate education (referent category is less than secondary education). For the sample of angel investors, it is important to note that these control variables are measuring attributes of the angel investors themselves, not attributes of the entrepreneurs whose ventures they are investing in.

Country-level. Differences in economic conditions between countries may influence the expected returns and the length of the payback period for new firms. We use the unemployment rate in each country to control for these differences ([International Labour Organization, 2010](#)). This measure is used because previous research has shown a link between high unemployment and entry into self-employment, even within developed countries ([Thurik et al., 2008](#)). This indicates that high unemployment may decrease opportunity costs and push individuals into self-employment. When unemployment rates are high in a country, individuals may enter self-employment even if the returns are low and the payback period is lengthy, simply because they lack other options. Other measure of economic conditions, such as GDP growth in a country, may not influence individual opportunity costs as much as the unemployment rate. GDP growth may be relatively high in less-developed countries due to economic convergence ([Barro, 1991](#)), even when unemployment rates are high and individual opportunity costs are generally low. Measures of sound money and property rights are taken from the Index of Economic Freedom ([Miles et al., 2005](#)). The measure of monetary stability is the “monetary freedom” measure for the Index of Economic Freedom. This measure is an index determined by the weighted average inflation rate over the most recent three years adjusted for price controls. The property rights measure is determined by raters who rate the property rights of each country on a scale of 0-100 with predetermined criteria for each ten-point increment ([Miles et al., 2005](#)).

Analysis

We use random coefficient multilevel modeling to perform this analysis. Although in a purely country-level analysis, individual-level variables can be aggregated to the country-level, such aggregation may lead to inflated relationships and misinterpretation of effects if interpreted at the individual level ([Luke, 2004](#); [Tabachnick and Fidell, 2006](#)). In the analysis, we use country-level measures of property rights and monetary stability to predict individual-level outcomes. The slopes (coefficients of individual-level variables) are assumed constant across countries, although the intercepts are allowed to

vary based upon country. The need for using random coefficient modeling can be further assessed empirically by calculating intraclass correlations (ICCs). ICCs are calculated to see how variance in the dependent variable can be explained by the different levels of analysis in the proposed multilevel model. With the continuous dependent variables, the ICC is calculated by dividing the variance in the dependent variable at level-2 by the total variance of the dependent variable (which is the sum of the level-2 and level-1 variances). For dependent variables with a binary outcome, we calculate a pseudo-ICC by dividing the variance at level-2 by the sum of the level-2 variance and the variance of the logistic distribution (Hox, 2010). The intraclass correlations and pseudo-ICCs can be seen in Table I for both the expected return variables and long payback period variables, respectively. The ICCs are substantial enough that failure to account for this clustering could inflate the standard errors of the parameter estimates (Kreft and de Leeuw, 1998), indicating that random coefficient multilevel modeling is an appropriate analysis technique in this circumstance.

To examine the hypothesized fixed effects, we run the analysis on the several models using the glmmPQL procedure from the MASS package in R. Because the variable long payback period (in both the nascent entrepreneur and angel investor samples) is a dichotomous variable (1 representing a long payback period), we use a binomial link function for these analyses.

Results

The correlation and descriptive statistics can be seen in Table II for the nascent entrepreneur sample and in Table III for the angel investor sample.

The results of the main analysis are displayed in Tables IV-V. Table IV contains both the control and full models for the long payback period dependent variable for both the samples of nascent entrepreneurs and angel investors. Table V contains both the control and full models for the payback amount dependent variable for the both the samples of nascent entrepreneurs and angel investors.

For the nascent entrepreneur sample, monetary stability is not significantly (0.0249; $p = 0.0940$) related to a long payback period. Likewise, the relationship between monetary stability and a long payback period is insignificant (0.0221; $p = 0.1090$) for the angel investor sample. Thus, neither $H1$ nor $H2$ are supported. Looking at the relationship between monetary stability and the expected return, we find no significant relationship (0.0014; $p = 0.9718$) in the nascent entrepreneurs sample, thus no support is found for $H3$. Although a significant relationship was observed between monetary stability and the expected return for angels (0.0787; $p = 0.0056$), the relationship was positive, while a negative relationship was hypothesized. $H4$ is not supported.

For the nascent entrepreneur sample, strong property rights were positively related to a long payback period (0.0131; $p = 0.0152$). Likewise, a positive

Dependent variables	Country-level variance	Residual variance	ICC (%)
Long payback (entrepreneurs)	0.65	3.29	16.50
Long payback (angels)	0.75	3.29	18.56
Expected return (entrepreneurs)	1.29	20.12	6.03
Expected return (angels)	4.12	39.42	9.46

Table I.
Intraclass correlations

Table II.
Correlation and
descriptive statistics
for nascent
entrepreneur sample

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Expected return	1.00													
2. Long payback	-0.21*	1.00												
3. Age	0.05*	0.05*	1.00											
4. Age squared	-0.03**	0.08*	0.02	1.00										
5. Gender	-0.03*	0.07*	0.02	0.98*	1.00									
6. Entrepreneurial skills	0.03*	0.00	0.06*	0.05*	0.04*	1.00								
7. Secondary education	0.01	0.01	0.04*	-0.07*	-0.06*	-0.01	1.00							
8. Post-secondary education	0.01	0.03**	0.01	-0.02**	-0.03**	-0.02	-0.26*	1.00						
9. Graduate education	0.09*	-0.01	0.01	0.10*	0.09*	0.05*	-0.35*	-0.30*	1.00					
10. Unemployment %	-0.07*	0.01	-0.01	-0.04*	-0.03*	0.03**	-0.02	0.03**	-0.15*	1.00				
11. Property rights	0.09*	0.14*	0.08*	0.19*	0.17*	0.01	0.02	0.01	0.18*	-0.34*	1.00			
12. Sound money	0.05*	0.10*	0.05*	0.07*	0.07*	0.00	-0.01	-0.02**	0.13*	-0.33*	0.57*	1.00		
13. Year 2004	0.02**	0.04*	0.05*	-0.04*	-0.03*	-0.02**	-0.01	-0.02	-0.02	0.12*	0.15*	0.19*	1.00	
14. Year 2005	-0.05*	0.04*	-0.02**	0.04*	0.03*	0.02	-0.05*	-0.04*	0.06*	-0.02	0.09*	-0.08*	-0.39*	1.00
Mean	6.84	0.26	37.28	1.534	0.63	0.90	0.24	0.19	0.29	7.53	67.19	82.34	0.32	0.28
SD	6.66	0.44	12.01	1.015	0.48	0.31	0.43	0.39	0.45	3.66	23.66	7.43	0.47	0.45

Notes: *Significant at $p < 0.01$; **Significant at $p < 0.05$

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Expected return	1.00													
2. Long payback	-0.15*	1.00												
3. Age	0.07*	0.00	1.00											
4. Age squared	-0.09*	0.21*	-0.01	1.00										
5. Gender	-0.08*	0.21*	0.00	0.98*	1.00									
6. Entrepreneurial skills	0.09*	-0.03**	0.13*	-0.01	-0.02	1.00								
7. Secondary education	0.01	0.00	0.01	-0.04*	-0.03**	0.01	1.00							
8. Post-secondary education	0.03**	-0.02	-0.02	-0.04*	-0.05*	0.03**	-0.26*	1.00						
9. Graduate education	0.03**	0.04*	0.04*	0.08*	0.07*	0.08*	-0.35*	-0.30*	1.00					
10. Unemployment rate	-0.03*	-0.05*	0.00	-0.07*	-0.08*	0.02	-0.03**	0.04*	-0.10*	1.00				
11. Property rights	-0.05*	0.26*	0.03*	0.21*	0.20*	-0.05*	0.00	0.01	0.15*	-0.35*	1.00			
12. Monetary stability	-0.02	0.15*	0.01	0.11*	0.10*	-0.01	-0.06*	-0.01	0.12*	-0.29*	0.56*	1.00		
13. Year 2004	-0.04*	0.08*	0.01	-0.02**	-0.02	-0.04*	0.00	0.01	-0.08*	0.21*	0.12*	0.17*	1.00	
14. Year 2005	-0.03*	0.10*	-0.01	0.06*	0.05*	-0.01	-0.04*	-0.08*	0.08*	-0.06*	0.10*	-0.03*	-0.44*	1.00
Mean	2.60	0.44	41.32	1.896	0.61	0.75	0.24	0.17	0.28	7.51	69.38	83.27	0.32	0.28
SD	4.62	0.50	13.76	1.263	0.49	0.43	0.43	0.38	0.45	3.62	22.13	6.26	0.47	0.45

Notes: *Significant at $p < 0.01$; **Significant at $p < 0.05$

Table IV.
Results for long
payback period
dependent variable

Variables	Model 1-Entrepreneurs		Model 2-Entrepreneurs		Model 1-Angels		Model 2-Angels	
	Estimate	Standard error	Estimate	Standard error	Estimate	Standard error	Estimate	Standard error
Intercept	-2.2821*	0.3209	-5.3836*	1.1658	-1.9062*	0.2866	-5.1919*	1.0767
Age	0.0429*	0.0110	0.0424*	0.0110	0.0471*	0.0092	0.0469*	0.0092
Age squared	-0.0003*	0.0001	-0.0003*	0.0001	-0.0002**	0.0001	-0.0002**	0.0001
Gender	0.1007	0.0560	0.0997	0.0561	-0.0751	0.0526	-0.0749	0.0527
Entrepreneurial skills	-0.0103	0.0890	-0.0089	0.0891	-0.0246	0.0593	-0.0227	0.0594
Secondary education	0.0059	0.0783	-0.0073	0.0785	-0.1329	0.0735	-0.1284	0.0736
Post-secondary education	0.0189	0.0859	0.0176	0.0859	-0.1465	0.0817	-0.1522	0.0817
Graduate education	-0.1599**	0.0757	-0.1649**	0.0758	-0.0519	0.0705	-0.0595	0.0705
Unemployment rate	0.0047	0.0245	0.0371	0.0236	-0.0219	0.0231	0.0207	0.0214
Monetary stability			0.0249	0.0149			0.0221	0.0138
Property rights			0.0131**	0.0054			0.0181*	0.0048
Year 2004	0.0965	0.0756	0.0480	0.0762	0.6245*	0.0751	0.5555*	0.0751
Year 2005	0.0665	0.0721	0.0393	0.0722	0.4666*	0.0695	0.4395*	0.0694
N (countries)	50		50		50		50	
n (individuals)	8,101		8,101		7,751		7,751	

Notes: *Significant at $p < 0.01$; **Significant at $p < 0.05$

Variables	Model 1–Entrepreneurs		Model 2–Entrepreneurs		Model 1–Angels		Model 2–Angels	
	Estimate	Standard error	Estimate	Standard error	Estimate	Standard error	Estimate	Standard error
Intercept	6.9346*	0.8669	5.4436	3.2076	2.9294*	0.5206	-1.7174	2.0903
Age	-0.0307	0.0298	-0.0311	0.0298	-0.0243	0.0179	-0.0246	0.0179
Age squared	0.0000	0.0003	0.0000	0.0004	-0.0000	0.0002	-0.0000	0.0002
Gender	0.7270*	0.1561	0.7226*	0.1562	0.5574*	0.1071	0.5611*	0.1071
Entrepreneurial skills	0.5081**	0.2492	0.5095**	0.2493	0.6172*	0.1213	0.6089*	0.1212
Secondary education	0.0454	0.2183	0.0392	0.2188	0.1270	0.1491	0.1622	0.1494
Post-secondary education	-0.0023	0.2425	-0.0094	0.2431	0.2711	0.1645	0.2979	0.1647
Graduate education	1.0291*	0.2124	1.0196*	0.2128	0.4012*	0.1438	0.4292*	0.1440
Unemployment rate	-0.0275	0.0663	0.0078	0.0705	0.0147	0.0379	-0.0007	0.0412
Monetary stability			0.0014	0.0408			0.0787*	0.0270
Property rights			0.0177	0.0159			-0.0261*	0.0094
Year 2004	-0.3840	0.2128	-0.4426**	0.2175	-0.1811	0.1473	-0.1436	0.1511
Year 2005	-0.5974*	0.2053	-0.6307**	0.2067	-0.1652	0.1404	-0.1381	0.1415
N (countries)	50		50		50		50	
n (individuals)	7,320		7,320		7,617		7,617	

Notes: *Significant at $p < 0.01$; **Significant at $p < 0.05$

Table V.
Results for expected
financial return
dependent variable

relationship between property rights and a long payback period was found in the sample of angel investors as well (0.0181; $p = 0.0002$). These findings give support for *H5* and *H6*. However, the relationship between property rights and expected return was not significant (0.0177; $p = 0.2653$) in the sample of nascent entrepreneurs. *H7* is not supported. However, we did find the expected negative relationship between property rights and expected return (-0.0261 ; $p = 0.0056$) in the sample of angel investors. Thus, *H8* is supported.

Discussion

Three out of the four hypotheses concerning property rights are supported. This indicates that property rights may play a role in influencing how quickly entrepreneurs and angel investors will demand that their investment be paid back, as well as the expected return that angel investors require. It has been said that institutions set the “rules of the game” in an economy, determining incentives and the amount of uncertainty that exists (North, 1987). This study provides some support that investors in new ventures, both nascent entrepreneurs and angel investors, may be more willing to invest in ventures that require a long span of time to return their investment when property rights are strong. Therefore, if governments wish to engender an environment that facilitates entrepreneurial startups, they should make the protection and enforcement of property rights a priority. The acquisition and use of real, personal and intellectual property are all instrumental in the creation and growth of new ventures, and, in turn, the assurance of the continued ownership of property promotes entrepreneurship.

Also of interest in the results was the fact that monetary stability did not influence the either of the dependent variables in the hypothesized manner. This could be because entrepreneurs perceive risk differently (Weber and Hsee, 1998), are not risk averse (Cramer *et al.*, 2002) or manage risk through processes not often used by traditional business managers, such as effectuation (Sarasvathy, 2001; McMullen and Shepherd, 2006). However, given our findings with regards to property rights, perhaps a better explanation is that entrepreneurs can effectively hedge against or protect themselves from monetary instability, but have a hard time protecting themselves from weak property rights. Another explanation for these findings is that our sample simply did not include many countries with a high degree of monetary instability, as can be seen by the high mean and low standard deviation of the monetary stability variable. Perhaps, a sample including countries with high and/or unpredictable inflation would allow a better examination on how this influences the payback period and expected returns that entrepreneurs and angel investors require.

Limitations and future research

One limitation of this study is that individual-level data are self-reported. We know that entrepreneurs are overconfident about their chances of success (Busenitz and Barney, 1997; Forbes, 2005) and thus are likely to overstate expected returns and understate the expected payback period. If overconfidence varies among entrepreneurs by country, this could confound the results. Furthermore, with any cross-country sample, it is difficult to ask questions consistently across cultures while maintaining equivalent meaning. Thus, different cultural contexts could lead to inconsistent interpretations of the GEM survey questions by the respondents. Finally, when examining the expected returns of new

ventures, it is very difficult to control for a number of country-level variables that influence the expected returns. For example, more developed countries may have more lucrative opportunities, as entrepreneurs have access to education, technology and markets not available in less-developed countries. Although we attempt to control for how lucrative entrepreneurial opportunities are in a country by controlling for the unemployment rate and by including only nascent entrepreneurs who were starting a business to exploit an opportunity (as opposed to due out of necessity), these are imperfect controls.

Future research could examine the roles that property rights and monetary stability play in determining required returns and payback period in various contexts. One interesting context would be that of venture capitalists and growth-oriented angel investors. Perhaps, these more professional investors more accurately assess the riskiness of the institutional environment. They may also be better at protecting themselves from such risks.

Conclusion

We examine how two institutional variables, monetary stability and property rights, are related to the expected financial returns and payback periods of both entrepreneurs and angel investors. We find no evidence that monetary stability is associated with the acceptance of lower financial returns or longer payback periods in either the entrepreneur or the angel investor sample. However, we do find support for the idea that strong property rights encourage both angel investors and entrepreneurs to invest in new ventures with longer payback periods. We also find that strong property rights in a country are associated with angel investors investing in new ventures with lower expected financial returns.

It is clear that entrepreneurs, businesses and investors can (and do) seek out locations with strong property rights. Further, some attention should be given to countries with currently weaker property rights. While institutional factors are slow to change, there are at least two forces which instigate institutional reform, exogenous shocks (Acemoglu and Robinson, 2008) and private financing (Kose *et al.*, 2006). Astute attention to these potential events could give alert businesses first-mover advantages into countries with newly strengthened property rights. Conversely, governments seeking to promote entrepreneurship could legislatively (or arbitrarily) firm up their property rights.

As educators, one important takeaway that is easily transferrable to the classroom is that it will be easier for the entrepreneur to finance a business in a location with strong property rights. Interest rates will likely be lower, and payback periods will likely be longer than for similar businesses in a location with weaker property rights. Further, although monetary instability was not found to negatively affect entrepreneurs or investors, practical education in currency exchange, hedging and even alternate currencies and barter would certainly be useful skills to teach.

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Corresponding author

Michael Crum can be contacted at: mcrum02@gmail.com