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# INSTITUTIONAL CHANGE AND RATES OF ENTREPRENEURSHIP: A CROSS-COUNTRY PANEL STUDY



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## ABSTRACT

Recent research has sought to explain variation in rates of entrepreneurship as a function of “economic freedom,” but present non-cumulative, sometimes contradictory findings. These results stem from three issues. First, most studies use cross-sectional data, providing little insight on how the evolution of institutions impact entrepreneurial behavior. Second, many studies suffer from model specification error, using all institutional variables as direct predictors of entrepreneurship, thus eliminating path-dependent or moderating influences. Third, signaling theory suggests that changes in institutional conditions, rather than levels, can lead to changes in inclinations to engage in entrepreneurship. Drawing on economics and Austrian theory, this empirical study proposes a new model and addresses these three issues. We use entrepreneurship activity data from over 60 countries across a ten year time period. Our findings suggest that the better predictors of future entrepreneurial activity are changes in institutional conditions and the strength of influences resulting from confluence among strong institutions.

## INTRODUCTION

Differences in the rate and type of new entrepreneurship activity across countries are often investigated in the context of institutional conditions. These studies rely on published cross-country indices of economic freedom using variables that proxy institutions to measure dimensions such as the existence property rights and the rule of law, freedom to trade and investment freedom, as well as government programs and policy that either prescribe or proscribe economic activity.

But not all institutions have the same relationship to entrepreneurial aspirations or activity. Many institutions often epitomize the opposite of entrepreneurship. Where entrepreneurship is about creation and breaking new ground in one way or another, institutional forces – whether they be regulatory, normative, or cognitive (Scott, 2007) – are often concerned with how organizations secure position by “conforming to the rules and norms...and meanings that limit...beliefs and actions” (Bruton, Ahlstrom, & Li, 2010: p. 422). Where entrepreneurship is rooted in individuals constructing market-relevant coherence out of information search amidst unknowable uncertainty (Hayek, 1945; Kirzner, 1979; Knight, 1921), institutions are about efforts to channel behavior through humanly-devised constraints that reduce uncertainty through structure (North, 1990). But other institutions are occasionally viewed as enabling entrepreneurship. Particularly relevant are institutions that enable entrepreneurs to make credible commitments, such as those which protect property rights, enforce contracts, and reduce transactions costs (Ingram & Silverman, 2002; McMullen, Bagby, & Palich, 2008). Bruton et al. (2010) imply these institutions create the freedom to transact with less unanticipated volatility, and are especially important in emergent markets. Together, both constraining and enabling institutions affect entrepreneurial behavior in different ways.

Previous efforts which fail to distinguish between types of influences can, in fact, result in models that jeopardize the cause-effect understanding of entrepreneurship because they confound path-

dependent variables with other intervening and moderating variables. For example, the existence of property rights and the rule of law (Hayek, 1944; Locke, 1689) are “paramount” *ex ante* conditions that lead to the existence of a vibrant markets and exchange environment in which individuals are free to choose and act (Troilo, 2011). Similarly, government actions have a *moderating* influence on the extent to which an economic system characterized by freedom of action can generate economic activity and growth. Government itself does not directly create entrepreneurship, but instead affects the markets and exchange environment in which entrepreneurial activity can occur. Yet prior studies often combine institutional variables together as direct predictors of rates of entrepreneurship or rely upon composite measures, which eliminate the examination of such path-dependent or moderating influences. Not surprisingly, studies examining how freedom-related institutions affect the rates and types of entrepreneurial behavior across countries have reported quite different results, presenting non-cumulative, sometimes contradictory findings (e.g. see Bjornskov & Foss, 2008; McMullen et al., 2008; Nystrom, 2008).

It is for this reason that in the discussion of their own results McMullen et al. warn how “studies may wish to employ the economic freedom variables more judiciously” (2008: p. 889). Bruton et al. encourage scholars who investigate institutions to “do so in a theoretically sound manner” (2010: p. 433). In order to more accurately explain cross-country variation in rates of entrepreneurship, we propose and test a model which draws on both economics and Austrian theories. At the core is a focus on individual behavior in a markets and exchange environment, and especially on how prospective entrepreneurs respond to changes in institutional conditions.

### HYPOTHESES DEVELOPMENT

A system of markets and exchange is comprised of informal enabling institutions which allow for the flow of labor and capital to fill perceived voids within the market (Friedman, 1962; Hayek, 1944; Smith, 1776). In such a system there is an inherently greater opportunity for entrepreneurial ventures (Baumol, Litan, & Schramm, 2007; Knight, 1921; Phelps, 2006; Schumpeter, 1942). These enabling institutions are preceded by foundational legal institutions, and are moderated by constraining government regulative institutions. Our model is depicted in Figure 1.

Within the system man is free to choose how to use his facilities and property. The ability to choose within a market allows the flow of capital to productive endeavors of his own choosing. By choosing he embraces the uncertainty associated with any new productive enterprise, and bears the risk that accompanies such uncertainty (Knight, 1921; Schumpeter, 1934; Sobel, Clark, & Lee, 2007). The mobility of labor is characteristic of well-functioning free markets that encourages entrepreneurship because it allows workers to move freely to better utilize their knowledge and skills contemplating the prospect of greater reward. Previous research demonstrates that economies with labor mobility restrictions, such as through strong labor union and workplace protections in the European Union, experience lower rates of entrepreneurship (Acs, Arenius, Hay, & Minniti, 2005).

Working in concert with the choice and mobility is the ability to trade freely within and across markets and the freedom to invest. A markets and exchange environment also characterized by these freedoms can more easily accommodate flows of financial capital to entrepreneurs. It is no coincidence that the greater freedom in small business finance in the U.S., through such crowdsourcing programs as Kickstarter, have led to dramatic increases in fledgling startup activity.

In contrast to the above, actions taken by government institutions have a constraining influence on entrepreneurs in a markets and exchange environment. North (2005) argues that “the institutional

matrix imposes severe constraints on the choice set of entrepreneurs when they seek to innovate or... improve their economic positions.” This is because institutions, as the “scaffolds” of beliefs and culture, are designed to ensure conformity and reduce uncertainty (North, 1990). Rules and regulations come into being through the efforts of incumbent interests with power at high levels of government. This translates into corporatism which encourages large firms to favor licensing, production regulations, etc., closing entry into markets of which they are a part (Schumpeter, 1942).

Contradictory findings in previous research may be better understood by considering the relationship between institutional theory and Austrian theory of individual entrepreneurship. Institutions serve to reduce information and uncertainty and thus to create value through a reduction in transactions costs (North, 1990). Together with their regulative nature (Scott, 2007), institutions tend to encourage conformity, constrain behavior, and limit the range of acceptable actions. Furthermore, the rules that are embodied by institutions are “devised in the interests of private well-being” (North, 1990: p. 48), which serve to protect incumbents. These ideas are in contrast to the nature of entrepreneurship, which is about the creative destruction of incumbents. Whereas institutions are macro-level economic entities, entrepreneurship occurs at the micro level of the individual. Confronting unknowable uncertainty (Knight, 1921) due to the fragmentation of knowledge (Hayek, 1945), value is created by entrepreneurs through their alertness to the possibility of rents through innovations and new combinations (Kirzner, 1979; Schumpeter, 1934). Entrepreneurship flourishes where greater information possibilities exist because of higher uncertainty, as the fragmentation of knowledge expands the range of possible actions (West, 2003).

Previous research has examined the state of institutions as predictors of entrepreneurship, but in this study we draw upon signaling theory to examine changes in institutions. Signaling theory (Spence, 1973) has been applied previously in the study of entrepreneurship and institutions (Levie & Autio, 2011), but here we differ in its application. In this conceptualization signaling is at issue when information is received that can result in new behavior (Connelly, Certo, Ireland, & Reutzel, 2011). Since institutions are stable, slow and difficult to change (Kasper, Streit, & Boettke, 2012; North, 1990), when they do change a signal is sent to prospective entrepreneurs. A changed institution can produce new uncertainty and open up conduits for a wider breadth of acceptable behavior. Since uncertainty is the fountainhead of entrepreneurial opportunity (Knight, 1921), changes in constraining institutions will thus have an impact on entrepreneurship.

*Hypothesis 1: Changes in markets and exchange institutions in the direction of greater freedom will positively influence entrepreneurial activity.*

*Hypothesis 2: Changes in government institutions in the direction of greater freedom will have a positive moderating influence on the relationship between markets and exchange institutions and entrepreneurial activity.*

We also have the opportunity to gain insight on cross-country variation in entrepreneurship by considering the confluence of institutions (Batjargal et al., 2013). Confluence refers to the mutual reinforcement that may occur among a multiplicity of institutions in a system. Institutions interact with each other in ways that can either amplify or reduce other institutional effects. As a body, the impact of government institutions will be more pronounced if they are not mutually supportive of the constraints which each institution separately establishes.

*Hypothesis 3: Inconsistent levels of change among government institutions will positively influence entrepreneurial activity.*

## METHOD

A longitudinal database was created from the intersection of available data from the Index of Economic Freedom (IEF) (Heritage Foundation, 2009) and the Global Entrepreneurship Monitor (GEM) dataset. Our complete sample for analysis is unbalanced across years and includes a total of 380 observations of country by year.

GEM collects a variety of measures of entrepreneurial activity. Because this study is in part motivated by inconsistent results in prior studies about country-level rates of entrepreneurship, we use similar measures of such activity to those used in previous research. We collected measures of the rate of opportunity-based entrepreneurship (TEAO) and necessity-based entrepreneurship (TEAN) for each GEM country in each year. Each measure represents the number of adults per 100 in the population who are involved in a nascent firm or young firm reporting either opportunity or necessity as a major motive. Entrepreneurial attitude (Acs & Szerb, 2009) was measured using a scale variable created from seven GEM variables representing individuals' knowledge, awareness and intentions about opportunity (Cronbach alpha = 0.863). From the IEF we use 1) four of the ten sub-indices to serve as proxies for markets and exchange institutions, 2) four of the sub-indices as proxies for government institutions, and 3) two sub-indices as proxies for foundational institutions.

Consistent with the arguments above, we are interested in the effect on entrepreneurial behavior of uncertainty created by change. Therefore, both the entrepreneurial activity dependent variables and the IEF institutional predictor variables are operationalized as changes relative to levels three years earlier. This period recognizes that institutional change takes time to recognize, and any consequent new entrepreneurial activity will then take time to materialize. Inconsistency of institutions is measured as the standard deviation of changes in these variables. Control variables are GDP per capita, change in GDP, and a scale variable combining property rights and rule of law.

Because of the longitudinal nature of the data, panel data regression techniques were employed. The Hausman test determined that a random effects model is insignificant. Therefore, a fixed effects model was used. The fixed effects estimator evaluates the deviations of each country-year from the average over time within countries as the source of identifying variation for each of the parameters. Standard errors were clustered on the country-level identifier in order to avoid possible problems with heteroskedasticity and autocorrelation.

## RESULTS

Table 1 presents the results of our base analysis, showing only the significant relationships due to space constraints. Hypothesis 1 finds partial support. Increases in trade freedom leads to increases in both opportunity-based and necessity based entrepreneurship. However, increases in investment freedom lead to increases in opportunity entrepreneurship but declines in necessity entrepreneurship. Entrepreneurial attitude declines with increases in business freedom.

Hypothesis 2 also finds partial support. None of the interactions between government and markets institutions individually impact opportunity entrepreneurship, although collectively these interactions have a significant impact (F change  $p < .05$ ). For necessity entrepreneurship and attitude the results present a mixed picture, where both positive and negative effects are evident.

Hypothesis 3 also finds partial support. In separate regressions not shown in Table 1, inconsistency in changes across government institutions are significantly related to increases in opportunity entrepreneurship ( $p < .05$ ), but unrelated to necessity entrepreneurship or entrepreneurial attitude.

## DISCUSSION AND IMPLICATIONS

This research has examined the influence of institutional variables on entrepreneurial behavior and attitude, and adds new dimensions to this stream of research. First, while previous research has largely relied on institutional theory as the context for study, in formulating this model we draw upon Austrian theory ideas about the effects of information and uncertainty on entrepreneurial behavior. Second, because we differentiate among type of institutions the model in this research has a more complex specification, with direct, mediated and moderated effects at play. The specification of moderating variables, in particular, has significant implications for testing since it calls for analysis of interaction relationships. This has not previously been done in past research. Third, recent work in institutional theory has suggested that confluence is an important conceptual element to be accounted for. Not only might institutions individually influence outcomes, but their relationships to other institutions may also be important. This is the first study to incorporate the concept of confluence into the examination of entrepreneurship.

The first notable finding in this study is not completely evident in the data table. Because we ran panel data regression, we evaluated whether to use a fixed effects or random effects model. Random effects models are appropriate when changes over time introduce error variance that cannot be accounted for by a fixed within-country effect. In this case we rejected the random effects model because such temporal changes were not significant. This suggests that institutions are relatively stable over time. This determination may help explain why so many previous cross-sectional or pooled studies find non-significance for institutional variables, because their variance is low relative to the variance in rates of entrepreneurship.

The real influence of institutional variables appears to often come from the interactions of variables. This is a novel finding, and the implications may be quite important. The enabling markets and exchange environment is the province of free choice and independent behavior by individuals. Individual entrepreneurial behavior and transactions here are motivated by the breadth of possibilities presented by an information environment that is rich and fragmented. Institutions that represent this environment are informal because no one and no government can construct them. Often these types of institutions are referred to as “negative freedoms” because they do not have to be proactively provided to citizens. While constraining government institutions do not have a direct effect on entrepreneurship, we find that many of these constraining institutions have a compelling effect on entrepreneurship through their interaction with the enabling institutions. This is what governments do through policy: they impact individual behavior.

This finding presents an opportunity for future research. In this study we have examined the interactions among summary measures of institutional variables. Each IEF factor is composed of several facets. Future research may focus on sub-index dimensions for further clarification. We note, for example, that fiscal policy interacts with enabling institutional dimensions in different ways. It may well be that sub-dimensions of the fiscal policy index are worth exploring further to better understand these differences. Unexpectedly, we also note that the interactions with monetary and financial institutions often have opposing effects. Why would more active financial or monetary policy have such contrasting impact? Evidence suggests that expansionary financial and monetary policy, such as we have recently witnessed in the U.S. and Europe, has not led to greater access to finance for small businesses or prospective entrepreneurs. This relationship, because it is so consistent in this study, deserves further attention.

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**Table 1**

**Results of Panel Regression (unstandardized betas and significance reported)**

Dependent Variable	TEAO	TEAN	ATTITUDE
<b>Markets &amp; Exchange Variables</b>			
Business Freedom	-0.090	2.314	-0.355 *
Labor Freedom	0.314	-3.874	0.237
Trade Freedom	1.492 ***	4.772 **	-0.440
Investment Freedom	0.378 *	-3.600 **	0.082
<b>Moderating Interactions</b>			
Bus x Govt	0.049	0.313 *	0.014
Bus x Fiscal	-0.121	-1.190 ***	-0.058
Bus x Monetary	0.103	1.047 ***	0.103 ***
Bus x Financial	-0.042	-0.301 **	-0.086 ***
Labor x Financial	-0.017	-0.540 **	0.007
Trade x Fiscal	0.028	0.876 **	-0.037
Trade x Monetary	-0.048	-1.314 ***	-0.014
Trade x Financial	0.016	0.677 ***	0.113 ****
Investment x Fiscal	0.028	0.102	0.122 ****
Investment x Monetary	-0.045	-0.150	-0.091 **
F	696.61 ****	28.74 ****	15.17 ****

\* < .10, \*\* < .05, \*\*\* < .01, \*\*\*\* < .001

**Figure 1**

**Model of Institutions and Entrepreneurship**

