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## 5. Institutions, entrepreneurship, and regional growth in Indonesia (1994–2010)

**François Facchini and Subandono**

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### INTRODUCTION

The aim of this chapter is to explain the relationship between institutions, entrepreneurship, and economic growth. It contributes to the modern Austrian theory of economic development by developing an original theory of institutional flexibility. It suggests that the Schumpeterian figure of the innovator and the Kirznerian figure of the discoverer may only appear when the institutions of economic order are flexible. Its originality is in the definition of institutional flexibility. An institutional system is deemed flexible when it constructs an order that is neither contingent nor determinist. Private property rights, contracts, and money organize human behavior without determining it. By protecting economic freedom, people may believe that they can act to change the future to their advantage.

It describes two motivations, both empirical and theoretical. The empirical aim is to contribute to the debate on the role of entrepreneurship in developing and poor countries. Entrepreneurship is a vital force in the economics of developed countries (Audretsch and Keilbach, 2004). However, its role in developing and poor countries remains unclear. Empirically, van Stel et al. (2005) found that entrepreneurial activity has a positive effect on economic growth in developed countries, whereas the effect is negative for poor countries and remains unclear in developing countries. Thus, this study seeks to uncover empirically the role of entrepreneurship in Indonesia as a developing country. It considers not only the dichotomies in defining entrepreneurship (i.e. formal/informal, legal/illegal and necessity/opportunity), but also the existence of regional spatial dependency.

The theoretical motivation explains why economic freedom encourages the entrepreneur to act in a way conducive to economic development. Several studies have found a positive link between economic freedom and different measures of entrepreneurship (e.g., Bjornskov and Foss 2008;

Hall et al. 2012). How do we explain this positive relationship? Economic freedom is a particular institutional system.

Institutions are “rules of a game in a society or more formally are the humanly devised constraints that shape human interaction” (North, 1990, p.3). The classical contributions to entrepreneurial economics suggest several determinants of entrepreneurship, including: the degree to which a person is “venturesome”; the ambition and intelligence to exercise leadership; and the institutions themselves (Bjornskov and Foss, 2008). If economic growth is the goal, attention should be paid to achieve the institutional mix that encourages the entrepreneurial aspect of human action. In this perspective, two approaches are possible: the first defines institutions as an incentive structure that affects the allocation of talent (Baumol, 1990); the second defines institutions by knowledge.

The economic problem of society is “how to secure the best use of resources known to any of the members of society, for ends whose relative importance only these individuals know” (Hayek, 1945, p. 520).

Information institution enables individuals to use more knowledge than that acquired alone, and to cross the ignorance frontiers through the experiences of their group (Hayek, 1994). It also limits possibilities (Heiner, 1983), uncertainty and ignorance, and facilitates cooperation (Hayek, 1986) and agent coordination. Free market institution and market price have decisive roles in solving the knowledge-dispersal problem due to the possibility of economic calculation.

In the Kirznerian perspective, alertness to profit opportunities is the essence of entrepreneurship (Harper, 2003). The entrepreneur recognizes something that others have failed to recognize. It has a cognitive function. Institutions have an effect on economic growth, if they affect entrepreneurial alertness. What are the sources of human propensity to be alert? Harper (2003) uses social psychology to answer this. Instead, here we mobilize Thomas Aquinas’ philosophy of prudence. We define alertness as prudence and explain on this basis how economic institutions create a social order favorable for prudence and, *in fine*, favor entrepreneurial activity. This is our theoretical contribution to the literature about the relationship between institutions, entrepreneurship, and economic growth.

The rest of this chapter is organized as follows. Section 2 shows why entrepreneurship favors economic growth. Section three explains how the free market institution creates the natural condition of human freedom. Section four is theoretical application. Section five discusses the empirical results, and the last section concludes.

## ENTREPRENEURSHIP AND ECONOMIC GROWTH: KNOWLEDGE SPILLOVER ROLE

The driving forces of economic development are the innovation and coordination activity of the entrepreneurs who direct resources towards their most profitable uses. The effective causes of economic development lie not only in entrepreneurial innovative actions (Schumpeter, 1934) but also in the discovery of profit opportunities (Kirzner, 1973). Audretsch and Keilbach (2004) integrated these theoretical concepts and treated entrepreneurs as the drivers of the knowledge selection process that promotes economic growth. Not all innovation investment can be implemented as a new commercialized product/process, due to the existence of a knowledge filter which is a gap between potential and actual commercialized knowledge. The role of entrepreneurs is to select this potential knowledge by reducing its nature, which is characterized by uncertainty and information asymmetry, and which bears some transaction costs.

There are two major spillover channels. First, a firm engages in the research and development (RD) activities to create new innovation, and other firms adapt this innovation – hence spilling over knowledge (Audretsch and Keilbach, 2004 citing Cohen and Levinthal, 1989). The second channel refers to individuals rather than firms (Audretsch, 1995). Entrepreneurs transform potential economic knowledge into actual economic knowledge by starting up a firm. The selection process, which promotes knowledge spillover and increases the number of new startups, affects positively competition on new ideas and facilitates new entry bringing new innovation. Moreover, the increase of new-firm startups favors knowledge diversity due to the existence of various enterprises that may promote specialization, productivity, and growth. Knowledge exists, and entrepreneurs give value to this knowledge, after being alerted to its possible profitability. To explain economic development in this Misesian perspective, we must say why individuals change their posture *vis-à-vis* profit – why they are alert.

## INSTITUTIONAL PREREQUISITES OF ENTREPRENEURIAL ACTIVITY

As Harper (2003, p.35) writes, hypothesis about the principal determinants of entrepreneurship is “strongly conditioned by the particular set of disciplinary spectacles through which one looks” (see also Bjørnskov and Foss, 2008). If entrepreneurs are those persons endowed with alertness, an important line of enquiry is to explain the psychological determinants of

individual differences in entrepreneurial alertness. Considering “what are the sources of human propensity to be alert?”, Harper (2003, p. 35) argues that individuals’ beliefs are a major determinant of alertness. Thomas Aquinas’s theory of prudence is also a means to renew the answer to the question (Facchini, 2007).

### The Entrepreneur and Prudence

Say (1971 [1803], p. 379) already stated that “ceux qui manquent de *prudence et de lumières*, ne font pas longtemps concurrence à ceux qui en sont pourvus”. Aristotle also maintained that economy is the field of prudence (Ross, 1925). The prudent man is in moral philosophy a man like all the others (Aubenque, 1963). The prudent man is a man of action. He is not scientific and/or a philosopher. Prudence “is right reason applied to action” (Thomas d’Aquin, 1984, Q.47 art.8). A prudent man is one who is capable of taking good counsel (ibid., art.2). Counsel is about things that we must do in relation to some ends, and the reason that deals with things to be done for an end is a practical reason. The first act is “to take counsel”, which belongs to discovery. This is an act of inquiry. The second act is “to judge of what one has discovered”, and this is an act of speculative reason. But the practical reason, which is directed at action, goes further, and its third act is “to command”, which implements the things that have been counseled and judged.

These three steps of prudence correspond to the debates surrounding the notion of alertness and Kirzner’s defenses. Indeed, critics suggest that the essence of entrepreneurship can be sought in such qualities as imagination (White, 1976) or judgment (High, 1982). Kirzner (1994) attempted to meet some of these critics, and recognized that alertness in a world of uncertainty may call for good judgment and lively imagination.

Alertness is the prudence which leads individuals to know the consequence of their effort. We argue that only the institution that is neither contingent nor determinist serves the prudence posture. A determinist world is a world where the result of an action is determined *ex ante*. Individuals know that they will not have more than 100 Euros whichever way they act. Strict concrete rules frame an individual’s actions. They determine exactly with whom and under what conditions an individual can exchange. They thus produce a deterministic order in which the future is completely certain. In contrast, institutions can create a contingent world if they do not define clearly a distribution rule *ex ante*. Without rules, nobody is constrained to follow any known and accepted rules. Order exists only for the master who has the power to allocate the rights of wealth. The coordination of human action is difficult because individuals do not follow any

code of conduct to stabilize their behavior, facilitate cooperation, limit ignorance and reduce uncertainty.

Therefore, the implementation of rules that render the future completely certain atrophies the entrepreneurial spirit, which remains in a latent state. Institution can only create the required conditions for entrepreneurship to leave a pure contingent world. Economic development is thus conditioned by the more or less contingent nature of the institutional order. On this basis, we argue that economic freedom (i.e. private property rights, contracts, and money) creates an order that is neither determinist nor contingent, and respects the ontological conditions of human freedom.

### **Private Property Rights and Certainty about the Rules of the Game**

Private property rights encourage the entrepreneur to promote economic development because they give an inalienable right to products. The exclusivity and transferability of property rights promote individuals to act in the most advantageous way for them and their group because “One takes more troubles, when it comes to acquiring something which is belong to one than if it is belong to the community or to a group” and because “human activity is more orderly, if each individual is responsible for one particular object” (Thomas d’Aquin, 1984, Q.66 art.2).

Thus, private property rights ensure that each person bears the costs and enjoys the benefits of their actions. It gives individuals the authority over how to use their possessions and how to determine the distribution of benefits and losses with the decision makers. It thus determines with certainty the beneficiaries of actions without determining *ex ante* the *ex post* amount of benefits. There is certainty of distribution rules (contracts), but uncertainty about the results (Hayek, 1986).

Exclusivity guarantees that entrepreneurs will profit from their actions, which in turn stimulates productivity, investment, and development (Dawson, 1998). Investment is determined by the institutional conditions of human action (Besley, 1995). Growth is determined by the investment level. It is thus connected to the respect of private property rights. Entrepreneurs invest because the rules guarantee their ownership of the expected profits even if they do not consume them (saving). It thus encourages individuals to undertake long-term projects, to improve production plans, and to adapt to future demand. Uncertainty about results, on the other hand, introduces an undetermined aspect. It also contributes to the process of development because it incites individuals to modify the exchange terms when they consider the latter unfavorable (Witt, 1987).

### Private Property Rights Are the Foundation of Contractual Freedom

Property rights are a condition of contractual freedom. In the market, it is the contracts freely agreed between agents that determine *ex ante* what each one will gain *ex post*. Contracts of exchanges are a form of private constitutional contract. Individuals constrain themselves mutually to restrict their future options. Freedom to contract is, in this sense, freedom to impose and self-impose restrictions on future behavior. For this reason, a contract produces a determined order. It defines the transaction *ex ante* what each party will gain *ex post*. Therefore, the rules that are produced by the contracts fix with certainty what an individual can rely on.

However, it is enough to withdraw from contracts to reopen the undetermined future. Free withdrawal from contracts without conditions is identical to disorder. For this reason a non-deterministic and non-contingent order is an order which regulates withdrawal without completely forbidding it. The right to withdraw enables individuals to remain free without rendering order impossible. Contracts thus form the foundation of a non-deterministic and non-contingent order that encourages productive activities favoring economic development.

### Private Property Rights and Monetary Stability

Private property rights are also a condition of monetary stability by protecting each agent against inflation and currency risks (de Soto, 1998). It favors monetary stability for two reasons. First, it limits the generalization of fractional reserves. Second, it controls bankers through competition (Hayek, 1978). The right to choose a currency puts the creators of money (private banks in a free banking system) in competition with each other. Entrepreneurs can sanction bankers who exploit their currency value for political (in a central bank system) or economic reasons (in free banking and central bank systems). Thanks to the right to choose a currency, the currency creators are always under pressure from the users to secure their profits. It also prevents the currency creators from adopting inalienable rights over their share of the market – the discipline that forces bankers to guarantee price stability and development.

## APPLICATION

Indonesia is a mixed system that is neither a fully free market nor an absolutely socialist one. The mixed system socializes only a portion of profits and gives entrepreneurs the possibility of negotiating the amount that



must be allocated to society through a political process (democracy). First, we examine the hypothesis that entrepreneurs affect economic growth by spilling over knowledge. We complete Audretsch and Keilbach's (2004) model by the inclusion of public infrastructures for the case of developing countries. We argue that entrepreneurship increases the benefit value of infrastructures by mobilizing knowledge.

*Hypothesis 1: Entrepreneurship influences positively economic growth through the interaction between knowledge and public infrastructures.*

The effect of entrepreneurship on economic growth depends on the more or less contingent nature of the institutional order. So secondly, we test our proposition that economic freedom as a flexible institution has an effect on the entrepreneur's prudence posture. A freer economy allows individuals to view profit opportunities and promotes productive activities, whereas a less free economy encourages rent activities producing no wealth.

*Hypothesis 2: Government size, tax regulation, public enterprise intervention, labor market regulation, business and corruption perception affect negatively an individual's prudence vis-à-vis profit opportunities, hence allowing individuals to perceive rent opportunities.*

### Estimation Model and Variable Description

We test the first hypothesis using the following growth equation:

$$\log(y_{i,t0} / y_{i,t-1}) = \alpha - \beta_1 \log(y_{i,t-1}) + \beta_2 X_{i,t-1} + \beta_3 E_{i,t-1} + \varepsilon_{i,t} \quad (1)$$

Where  $t=1994-2010$ ,  $i=\text{region}$ ,  $y_i$  is labor productivity of region  $i$ ,  $X_i$  are neo-classical growth variables (investment and labor force growth), and  $E_i$  is entrepreneurial measures.

Productivity and entrepreneurship may depend on a third variable that is the regional industry structure. We therefore include R&D activities and public infrastructure, and consider entrepreneurship as a function of labor productivity and human capital ( $H_i$ ).

$$E_{i,t0} = f(y_{i,t-1}, H_{i,t-1}) \quad (2)$$

Next, we estimate the effect of economic freedom on entrepreneurship using the following equation:

$$E_{i,t} = \alpha_i + \beta_1 G_{i,t} + \beta_2 G^2_{i,t} + \beta_3 X_{i,t} + \beta_4 Z_{i,t} + \varepsilon_{i,t} \quad (3)$$

where  $E_i$  is entrepreneurial measures in region  $i$ ,  $G_i$  is government size,  $X_i$  is economic freedom measures, and  $Z_i$  the control variables. Table 5.1 describes the panel statistics.<sup>1</sup>

We consider the possibility of spatial dependence (Anselin and Hudak, 1992), as the entrepreneurial activities of a region may induce effects on entrepreneurial activities in adjacent regions. Thus, we estimate the spatially autoregressive dependent variable (SAR) to measure spatial dependency on regional entrepreneurship. Our spatial weight matrix is constructed using longitude and latitude data.<sup>2</sup>

## RESULTS

We estimate the relationship between entrepreneurship and economic growth by examining equations (1) and (2) as recursive models through three stages least squares. Table 5.2 reports the effect of self-employment (columns 1 and 2) and corporate density (columns 3 and 4) on productivity growth.

First, the coefficients of  $\log(y_{i,t-1})$  that refer to the initial productivity are negative, confirming the process of economic convergence. The investment and labor force growth coefficients have the expected sign according to predictions of neo-classical growth theory. The interactions between RD and public infrastructures have a positive impact on productivity growth, confirming that knowledge and infrastructure are the variables for which entrepreneurship and economic growth interact with one another. We distinguish entrepreneurship sector by general and manufacturing entrepreneurship. We argue that the manufacturing sector is more correlated to RD activities than the general sector to promote the knowledge selection process. The results show that the magnitudes of the effect of manufacturing entrepreneurship on productivity growth are positively greater than the general sector, confirming that entrepreneurship fosters the selection process of potential knowledge into commercialized knowledge. The bottom part of Table 5.2 shows that higher economic growth and human capital mean higher entrepreneurial capital.

Taking into account equation (3), we test the effect of economic freedom on entrepreneurship. Table 5.3 shows the estimation effect of economic freedom on self-employment and corporate density. Linear models (LM) and robust LM tests imply that the SAR estimations are more proper than OLS ones. They confirm the existence of spatial dependency on entrepreneurship between regions. Our control variables also have the expected effect as suggested by previous studies. We confirm that economic freedom as a flexible institution induces effects on entrepreneurship. Squared terms

Table 5.1 Panel descriptive statistics

Variables	Description	Mean	SD	Source
Regional entrepreneurship measures				
Self-employment Corporate density	Self-employed excluding agricultural sector over labor force Registered enterprises over labor force	1.53% 1.13%	0.52% 1.10%	BPS IMoF
Regional economic growth measures				
Productivity Investment Labor growth Human capital RD Infrastructures	GDRP over labor force (1983 price) Investment over GDRP Labor force growth Secondary school enrollment RD expenditures over labor force Gov. capital spending over GDRP	€182,58 21.47 2.37% 45.08% €1.06 0.034	€17.98 6.89 1.12% 10.01% €1.21 0.013	BPS     IMoF
Regional economic freedom measures				
Government size (excl. central government)  Taxes Public enterprises Labor market  Business quality Corruption	Gov. expenditure over GDRP Gov. consumption over total consumption Gov. investment over total investment Tax revenues over GDRP Gov. enterprise revenue over local budget Annual minimum wages over GDRP Gov. wages over GDRP Weighted average of perception on business permits delivery Weighted average of perception on corruption	26.39% 7.7% 11.12% 0.77% 0.55% 2.1e-04 4.41% 0.38 0.53	17.62% 3.7% 4.8% 0.129% 0.32% 2.0e-04 2.74% 0.19 0.14	IMoF     IMoWT IMoF IFLS-RAND

Notes: The Indonesian Central Bureau of Statistics (BPS) classifies self-employment by three categories: without help of workers; with help of temporary workers; with help of regular workers. Considering the dichotomies in defining entrepreneurship (i.e. formal/informal, legal/illegal, necessity/opportunity motif), we use only self-employed with help of regular workers (excluding the agricultural sector) as our measure of entrepreneurship. IFLS = Indonesia Family life Survey.

Table 5.2 Productivity growth and entrepreneurship

Labor productivity growth				
$\log(y_{i,t-1})$	-0.017*** (-3.31)	-0.016*** (-2.76)	-0.018*** (-3.41)	-0.019*** (-3.56)
Investment	0.0068*** (3.36)	0.0057** (2.33)	0.0061*** (3.62)	0.0063*** (3.66)
Labor growth	-0.053*** (-11.41)	-0.053*** (-10.10)	-0.053*** (-11.67)	-0.053*** (-11.57)
RD*infrastructure	0.0065*** (2.48)	0.0065** (2.49)	0.0039 (0.87)	0.0053* (1.68)
General SE	0.0064** (2.06)			
Manufacturing SE		1.413* (1.7)		
General corporate			0.283** (2.0)	
Manufacturing corp.				8.744** (2.34)
<i>F-stat</i>	7.04***	6.92***	7.18***	7.14***
Self-employment		Corporate density		
	<i>General</i>	<i>Manufacturing</i>	<i>General</i>	<i>Manufacturing</i>
$\log(y_{i,t-1})$	0.407*** (3.04)	0.0014 (1.09)	0.0143*** (3.54)	0.0005*** (3.81)
Secondary school	1.44*** (12.26)	0.007*** (6.07)	0.034*** (9.53)	0.0012*** (9.77)
<i>F-stat</i>	21.1***	9.37***	79.47***	269.23***

of local government consumption and investment have a negative effect on self-employment.<sup>3</sup> A more reasonable explanation is that private capital is not sufficient at the startup period to engage in the marketable sectors justifying public intervention. At times, government may nevertheless pass the threshold of *laissez-faire* when sufficient private capital already exists.

Local taxes, public enterprises, and public perceptions of business permit delivery have a negative effect on entrepreneurship. Local taxes and instability of taxation rules, which have changed four times between 1994 and 2010, are obstacles for startups. In addition, several private sector industries are still managed fully or partially by the government – for example some agricultural sectors, construction, and finance. Hence it is hindering individuals viewing profit opportunity. Results suggest that individuals still perceive administrative procedures as barriers to startups,

Table 5.3 *Economic freedom and entrepreneurship*

Variables	Self-Employment		Corporate Density	
	Coefficient	<i>t-stat</i>	Coefficient	<i>t-stat</i>
Gov. consumption	0.014	(1.086)	0.0382***	(3.692)
Gov. consumption <sup>2</sup>	-0.0032	(-0.148)	0.0192	(1.149)
Gov. investment	0.0036***	(2.510)	0.0013	(1.239)
Gov. investment <sup>2</sup>	-0.0005**	(-1.913)	-0.00008	(-0.358)
Tax revenue	-0.292***	(-2.739)	-0.291***	(-3.522)
Gov. enterprise rev.	-0.1186***	(-3.145)	-0.116***	(-3.982)
Minimum wage	-0.0117***	(-3.123)	0.0706**	(2.406)
Gov. wage spending	0.036	(1.514)	-0.0453***	(-2.463)
Business quality	-0.0062*	(-1.776)	-0.0179***	(-6.618)
Corruption	0.0004	(0.062)	-0.0235***	(-4.433)
Per capita GDRP	2e-06*	(1.827)	4e-06***	(4.989)
Unemployment	0.0079	(1.229)	-0.003	(-0.603)
Population density	4e-06**	(2.123)	1,5e-05***	(10.071)
Secondary enroll	0.0179***	(4.158)	0.0171***	(5.05)
Openness	0.0009	(0.642)	-0.0006	(-0.565)
Spatial auto	0.266***	(4.423)	0.202***	(3.699)
R-squared	0.6963		0.9323	
LM test	23.44***		11.81***	
Robust LM test	47.94***		5.75**	

and this can be linked to the cost and complexity of obtaining business permission.

A minimum wage has a negative impact on self-employment but a positive effect on corporate density, which may indicate a greater ability of firms to pay the minimum wage than self-employed individuals, mainly SMEs. In addition, the effect of government wages on corporate density is negative, indicating that individuals are more interested in working in the public than the private sector.

The effect of corruption is unclear. Self-employed individuals and mainly SMEs may perceive corruption as business complexity interchangeably. However, when the measure of entrepreneurship is corporate density, we find a clear negative effect of corruption on entrepreneurship. Firms might perceive the existence of a hostile environment for their business. In general, these results indicate that the existing institutional order does not allow Indonesia to enjoy more economic growth than it should.

## CONCLUSION

The essence of entrepreneurship is alertness to opportunities. Institutions will matter for economic growth if they have influence over the source of human propensity to be alert, i.e. prudence. Prudence that consists of imagination, judgment, and command is only served by the existence of flexible institutions, which are neither contingent nor determinist. On this basis, we believe that economic freedom (i.e. private property rights, contracts, and money) is a flexible institution that provides determinist rules *ex ante* without closing absolutely the future *ex post*. This proposition may renew the institutionalist theory of economic growth.

## NOTES

1. We also employ several control variables—per capita gross domestic regional product (GDRP), unemployment rates, human capital, population density, and degree of openness—that are suggested by previous studies.
2. Longitude and latitude data are from Maps of World: <http://www.mapsofworld.com/world-maps/world-map-with-latitude-and-longitude.html>, consulted in 2014.
3. We consider the possibility of a non-linear relationship between government size and economic growth (Armey, 1995; Facchini and Melki, 2013) to uncover the effect of government consumption (unproductive) and investment (productive expenditure) on entrepreneurship.

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