

# How do institutions affect entrepreneurship?

## Indonesian evidences.

Julien Hanoteau, Frédéric Prévot, Virginie Vial,  
Euromed Management School, Marseille, France  
Corresponding author: [julien.hanoteau@euromed-management.com](mailto:julien.hanoteau@euromed-management.com)

### Abstract

This paper analyzes the incidence of corruption on entrepreneurship and on the relation between institutions and entrepreneurship. It extends Baumol's (1990) theory of productive and unproductive entrepreneurship by assuming that talented agents can choose to become productive entrepreneurs offering bribes.

We test this framework in the case of Indonesia, over a panel of micro level data on manufacturing plants and households' and communities characteristics, and we show that the quality and features of formal and informal institutions impact the allocation of talent, but unevenly, depending on whether new ventures are bribing or not. In particular, we evidence a grease-the-wheel effect for entrepreneurship in presence of corruption.

### Introduction

There is an abundant and growing literature on the effect of institutions on entrepreneurship. See Desai and Acs [1] and Freytag and Thurig [2] for more detailed reviews of this literature. In this field, the seminal works by Baumol [3] and by Murphy et al. [4] have posited that institutions influence agents' choice between starting a productive business and undertaking alternative activities such as rent-seeking. Baumol's [3] famous theory of productive and unproductive entrepreneurship underlines how the rules of the game are influencing the allocation of talent between productive activities that are wealth creative, such as starting a business, unproductive activities that are redistributive, such as rent-seeking, and destructive activities such as criminality.<sup>1</sup>

Baumol [3] suggests that this influence is 'indirect', as the features and the quality of institutions shape the structure of incentives and of rewards that individuals can get from productive entrepreneurial activities and from non-productive ones.

Murphy et al. [4] formalize and test a similar idea, based on the model of talent allocation. They assume that in the choice between entrepreneurship and rent seeking activities, "talent goes into the activities that offer the highest private returns, which need not have the highest social return" [4, p. 506]. In particular, they show that this allocation is distorted by a high level of the red tape, and by a poor specification of contracts such as the unclear definition and lack in enforcement of property rights, a failing patent protection regime etc.

Following these two contributions, Acemoglu and Verdier [5] Mehlum et al. [6] and Sanders and Weitzel [7] have developed further theoretically the relationship between institutions and agents' choice between productive entrepreneurship and rent-seeking or destructive entrepreneurship.

All these works, including those of Baumol [3] and of Murphy et al. [4], have in common to make a clear distinction between the alternative activities available to a talented

agent. He can either start a business or become an unproductive entrepreneur who participates in corruption and rent seeking. This misses the fact that generally, and especially in least developed, developing and emerging countries characterized by high degree of corruption, business-level bribing can't be consider only as a temptation, but rather as a constraint that is hardly avoidable. Firms are forced into bribing if they want to start and continue their business there.

It is well admitted that corruption is negative for the macroeconomic performance of countries as it is detrimental to growth, to investment ([8]) and to entrepreneurship. This idea has however been challenged, in particular from a micro-level perspective, recognizing that corruption is in general detrimental to firms, but positing, following Leff [9] that bribing can benefit some firms if it enable them to jump over excessive red tape, such as long and unnecessary administrative procedures and delays. This so called "grease-the-wheel" assumption admits that the relation is more complex as the red tape is often a product of the corruption system, with corrupt bureaucrats raising the red tape in order to racket firms (see Méon and Sekkat [10] for a detailed review of this literature). It has been evidenced empirically by Vial and Hanoteau [11] in the high corruption context of Indonesia during the Suharto presidency. They show that in average, plants offering more bribes, enjoyed higher output and labor productivity growth.

In this paper, we propose to extend Baumol's [3] theory of entrepreneurship by integrating the grease-the-wheel assumption. We assume that some productive entrepreneurs participate into the corruption system and coexist with non-bribing entrepreneurs. The choice of a talented agent is not just productive or unproductive entrepreneurship, but can be somewhere in between.<sup>2</sup> We then offer new perspectives on the effect of corruption on entrepreneurship, but also on how briberies impact the complex relation between formal and informal institutions, and entrepreneurship, which has important policy implications.

Several studies have investigated empirically the relation between institutions and entrepreneurship, but those testing Baumol's [3] and Murphy et al. [4] framework are seldom. An exception is Sobel [12] who tests Baumol's [3] theory in the case of the USA. He shows that the poor quality of local institutions favors unproductive entrepreneurship, as measured by local lobbying activity, and a negative impact on various indicators of productive entrepreneurship. However Sobel [12] does not consider the fact that productive entrepreneurs exert financial and/or informational lobbying. Our approach extends Sobel's contribution on this aspect as we consider the mix between productive and unproductive activities as an option for potential entrepreneurs. Another difference is that we take the case of Indonesia, a developing country characterized by a high level of rent seeking.

The contributions by Mitchell and Campbell [13] and by Tonoyan et al. [14] are related to our study, although they do not envision explicitly the same framework. Mitchell and Campbell [13] investigate, in the case of the USA, the effect of corruption and income on business venturing, considering reverse causalities between these three variables. This allows them to envision business venturing in the theoretical frame of individuals choice between becoming productive entrepreneur or employee in private company or in corrupt bureaucracy.

Tonoyan et al. [14] investigate the micro-level determinants, mainly formal and informal institutions, of business corruption in European transition and Western industrialized economies. They admit that in highly corrupt countries, the widespread presence of illegal business activities provides entrepreneurs with a certain rational justification to engage also in corruption activities. This is positing, like us, that entrepreneurs undertake a mix of productive and unproductive activities.

In the next section, we present our theoretical assumptions that are derived from the relevant literatures at the cross section of entrepreneurship and institutions on the one hand and corruption and the grease-the-wheel assumption on the other. In addition, we present the

context of corruption in Indonesia in the 2000s. In the third section, we present our empirical model which uses panel data Instrumental Variable (IV) regression techniques. We also present our panel data set which gathers subsector-level and local-level data on industry, business venturing, corruption and institutions in Indonesia for the years 2000 and 2007. The fourth section presents the results. They show that corruption impact entrepreneurship. In particular, we evidence a grease-the-wheel effect in entrepreneurship as a higher level of average bribes explains significantly a higher rate of new entry of bribing ventures in a subsector in a particular district, whereas the result is opposite in the case of non-bribing new ventures. In addition, we show that formal and informal institutions impact differently entry depending on whether new ventures are bribing or not. This supports our extension of Baumol's [3] theory of productive and unproductive entrepreneurship. The last section concludes and offers a discussion on the policy implications of these results.

### **Discussion and hypotheses**

The theory of productive and unproductive entrepreneurship that we have discussed rests on the assumption that talent is allocated to the activity that offer the highest private return [3; 4]. This means that a change in the structure of activities' relative payoffs, will change the talent allocation. In particular, higher wages offered to employees in private companies will reduce incentive to entrepreneurship [7]. Mitchell and Campbell [13] support this negative relation arguing that this will be the case if business venturing is "a survival behavior", and entrepreneurship, as a source of self employment, is an answer to the scarcity of alternative employment options.

**Hypothesis 1a:** *Higher wages offered by private companies reduce incentive to entrepreneurship.*

Mitchell and Campbell [13] consider that there is a reverse causality in this relation and that its sign is ambiguous as it can be positive as well. An explanation is that the entry of new firms increases the demand for labor and in the limit, may push up salaries. In addition, higher wages mean more purchasing power and higher consumption, larger markets and more profits opportunities that raise incentive to entrepreneurship.

**Hypothesis 1b:** *there is a reverse causality in the relationship between private salaries and entrepreneurship.*

The argument of a "survival behavior" could also justify that higher salaries in the public sector attract talented persons that would normally fit to private entrepreneurship. Nonetheless, Acemoglu and Verdier [5] show that in a context of a corrupt bureaucracy and of failure in the enforcement of contracts, a higher public sector pay has a positive impact on the allocation of talent toward entrepreneurship (less misallocation toward public sector). This is because higher pays reduce bureaucrats' temptation to corruption (illegal and risky), and this improves the enforcement of contracts. This in turn makes private investments more profitable which lowers incentive to apply for jobs in the public sector.

**Hypothesis 2:** *In a context of corrupt bureaucracy, higher public wages reduce the temptation to corruption and this has a positive impact on entrepreneurship.*

Corruption is likely to harm entrepreneurship, due to its detrimental effect on financial resources available for new ventures, and as it often comes along with an over-development of the red tape. On the one hand, it is well known since Schumpeter [15] that the availability of financial resources is essential for the development of new ventures. On the other hand,

corruption discourages foreign direct investment ([8]) and harms the development of a country's financial infrastructures ([16]).

Desai and Acs [1] and Dreher and Gassebner [17] show that an overwhelming red tape (e.g. number of procedures and minimum size of capital required to start a business) is a barrier to the entry of firms. As an example, Desai and Acs [1] quote the prohibitive costs required from entrepreneurs for obtaining license to start a business in Angola, Sierra Leone and Rwanda. Shleifer and Vishny [18] explain that an excessive red tape can be the outcome of corruption. They argue that corrupt bureaucrats, willing to extort bribes from firms, use their discretionary power in order to customize the red tape, according to firms' ability to pay, and so as to pressure and racket them. This seems to fit to the context of corruption in Indonesia as we shall explain at the end of this section.

**Hypothesis 3a:** *Corruption has a negative impact on the entry of new ventures.*

**Hypothesis 3b:** *excessive bureaucratic burden and red tape are detrimental to productive entrepreneurship.*

As we have explained earlier, the negative effect of corruption has been challenged by a grease-the-wheel assumption posited by Leff [9] and who explains that bribe payments can permit to reduce long administrative delays and excessive regulations.

Dreher and Gassebner [17] support empirically this grease-the-wheel effect on entrepreneurship. In a cross countries study, they show that corruption is beneficial to entrepreneurial activity in the countries with the highest level of the red tape regulation.

**Hypothesis 4:** *In presence of rent extortion and overwhelming red tape, bribing facilitates the entry of a new business venture. This is a grease-the-wheel effect for entrepreneurship.*

Estrin and Prevezer [19] and Tonoyan et al. [14] consider that informal institutions are also relevant determinants of the entry of new ventures. Vial [22] brings similar conclusion in the case of family business venturing in Indonesia. Tonoyan et al. [14] explain that on the one hand, *Closed social networks* have positive effects on business and on firms' performances, thanks to lower transaction and search costs, lower risk and more trust. But on the other hand, and following Putnam et al. [21], they admit that the effect can be negative as well. Indeed, Tanzi [20] asserts that "social intimacy creates the environment that promotes corruption". Tonoyan et al. [14] conclude that when entrepreneurs practice their business transactions within closed social networks, characterized by kinship, friendship or ethnicity, the inclination to corruption increases. In the particular case of Indonesia, Pal [23] classifies communities as having a "traditional collectivist culture" if they strictly adhere to 'Adat' traditional laws and to the Islamic religion.<sup>3</sup>

**Hypothesis 5:** *we expect that closed social networks, characterized by religion, ethnicity and the respect of 'Adat' traditional rules, increases the inclination to corruption and be detrimental to entry.*

## Data and methodology

We use data from two panel datasets. The first is the *Statistik Industri* which is a census of Indonesian industrial plants, with an average of 22,000 plant-year observations per year over the period 1993-2007. It covers 371 5-digits subsectors of the manufacturing industry, located in 430 districts of 33 provinces of Indonesia. The data originates from an annual survey, anonymous, conducted by the Indonesian bureau of public statistics (BPS), covering establishments with 20 employees and more. Data include detailed plants' characteristics such as age, output, inputs use, expenditures, ownership, etc. One item, titled

“gifts, charities and donation”, is admitted as a proxy indicator of bribe payments by Indonesian plants [24; 11]. The second panel dataset is the Indonesia Family Life Survey [25; 26]. It gathers the answers of thousands of households who underwent four rounds of comprehensive interviews between 1993 and 2007, in provinces accounting for 83% of the total Indonesian population. Our analysis used ordinary least square regressions as well as instrumental variable techniques to account for potential circular causalities. We are able to use a panel dataset covering two periods (2000, 2007), the 371 manufacturing subsectors, in 261 districts from 22 provinces, with different institutional quality data.

### Econometric model

In order to verify our empirical assumptions, we test the following model:

$$\begin{aligned}
 \text{Entry rate}_{i,k,t}^{A,NB,B} = & \\
 & a_0 + a_1 \text{Av. private wage}_{k,t} + a_2 \text{Av. public wage}_{k,t} + a_3 \text{Av. bribes}_{i,k,t} \\
 & + a_4 \text{Market size}_{i,k,t} + a_5 \text{Av. plant size}_{i,k,t} + a_6 \text{Industry concentration}_{i,k,t} \\
 & + a_7 \text{Underprovision of public infrastructures}_{r,t} + a_8 \text{Av. education}_{r,t} + a_9 \text{Urbanization}_{r,t} \\
 & + a_{10} \text{Public ownership}_{i,k,t} + a_{11} \text{Av. indirect taxes}_{i,k,t} + a_{12} \text{Business permits delivery}_{r,t} \\
 & + a_{13} \text{Ethnic fragmentation}_{k,t} + a_{14} \text{Islamic religion}_{k,t} + a_{15} \text{Traditional rules}_{r,t} + \mu_{i,k,t}
 \end{aligned}$$

Variables with indices  $i$  and  $k$  are measured at the 5-digits industry level  $i$  and at the district (kabupaten) level  $k$ . Variables with the indices  $r$  are taken at the province level. All variables have the indices  $t$  which denote the measurement year 2000 or 2007.  $\mu_{i,k,t}$  is an error term.

The exponent  $A$ ,  $NB$  and  $B$  on the dependent variable *Entry rate* denote that we use three alternative dependent variables in three series of regressions. The exponent  $NB$  indicates the rate of entry of non-bribing plants over the population of plants. The exponent  $B$  is for the rate of entry of bribing plants over the all population of plants. The exponent  $A$  is for the rate of entry of all plants, bribing and non-bribing. The next table presents in detail the construction of the variables and their sources. The fact that the BPS database covers only plants with 20 employees or more might have been a problem for the computation of the entry rate. In fact, checking with plants’ age reveals that new entrants in the database are new-born plants, except for a very little number of exceptions.

We take the average bribes paid by the plants of a sub-sector (5-digits) of a regional district, as an indicator of the level of corruption and rent-seeking in that district-subsector. So as to avoid circular causality, the average bribes are calculated excluding the bribes paid by the new entrants of that year.

We take the average indirect taxes paid by plants of a subsector in a district and the quality of *Business permits delivery* as perceived in a province, as indicators of bureaucratic burdens and of the red tape. In the BPS dataset, the variable ‘indirect taxes payment’ encompass sales taxes, establishment licenses, building and land taxes, annual motor vehicle taxes, import duties, as well as custom fees.

*Ethnic fragmentation*, religion fragmentation (*Islamic religion*) and the respect of ‘Adat’ *Traditional rules* are indicators of closed social networks.

Following the literature on the determinants of entry of new ventures, we add a series of variables of control. We first include the *Market size*. According to Murphy et al. [4], being a talented entrepreneur pays more in a larger market than in a smaller one, and therefore, large markets attract more talent, which raises entry.

The level of *Industry concentration* should have a negative effect on entry, as in more concentrated industries, markets are less contestable, with dominant incumbent eventually acting strategically so as to deter new entry. In addition, this situation can be the outcome of the corruption system, with incumbent firms benefiting from the ‘protection’ of corrupt top officials.

On the one hand, the *Average size of plants* should have a positive effect on entry. Indeed, large firms can better resist to corruption (extortion) thanks to lobbying and political connections, whereas small ones are more vulnerable to corruption and more likely to suffer from it [14]. Furthermore, Murphy et al. [4] explain that the red tape restricts the freedom to expand firm size, and therefore this lowers the average size of firms as the ablest people have lower incentive to become entrepreneurs. On the other hand, a smaller average size may reveal, like *Industry concentration*, a more competitive and contestable market, beneficial to entrants.

We expect that *Firm ownership* has a positive effect on entrepreneurship. Assuming that state-owned plants, or plants with a public participation, are treated better by state agencies and that this benefits their entire subsector, this should raise entrepreneurs’ incentive. The economic geography literature explains that infrastructures and services such as transportation, communication and health are determinants of the location of investment. Therefore, we expect that the *Under-provision of public infrastructures, facilities and services* (health, transportation, sanitation, public lighting, clean water, road and education) has a negative impact on entrepreneurship. Freytag and Thurik [2] explain that the structural characteristics of the population impact entrepreneurship. We expect that a higher level of *Average education* has a positive effect [12] and the same for *Urbanization* rate of the population.

The matrix of correlations, not shown here, reveals collinearity between *Public* and *Private wages* measures. Instrumenting *Private wages* for the reverse causality mentioned earlier, is likely to turn this problem. We instrument the variable *Average private wages* using a measure of the average income (of households) at the district level, and the average ratio of white collar employees to total employees in the manufacturing sector (district level). We use panel data estimation techniques, and following the results of Hausman test, not shown here, we choose a fixed effect model specified at the 5-digit sector level.

## Results

The results of OLS regressions (not shown here) of the model are very similar to those obtained with IV regressions, and we comment these last results that are presented on Table 1. They confirm that the structure of rewards impacts entrepreneurship. The positive and significant coefficient for *Average public wages* (columns 1 and 3) supports Acemoglu and Verdier [5] assumption that higher salaries reduce civil servants’ temptation to corruption and is therefore beneficial to entrepreneurship. The fact that the relation holds for bribing new ventures and not for non-bribing ones, reinforces further this idea. Kuncoro [27] explains that corrupt bureaucrats target and extort bribes from firms that have the highest ability to pay. In order to extort bribes, they develop the red tape. Therefore, the bribing plants that are racketed because of their relatively higher “ability to pay bribes”, are likely to be the ones suffering the most from the corruption system. And, a reduction in the burden of corruption, due to higher civil servants’ pay, may benefit more the bribing plants that are racketed, and improve relatively more entrepreneurship in this cohort.

The sign of the estimated parameters for *Average private wages* is negative and significant in column 1 and 3. This confirms the survival behavior, that lower pays in the private sector may encourage entrepreneurship as a source of alternative employment, but mainly for bribing new ventures according to our results.

The bribes paid in average by plants of a subsector in a district, can be considered as an indicator of the magnitude of corruption and of rent seeking in that district for that subsector. The negative and significant coefficient for non-bribing new ventures (column 1) suggests that a higher magnitude of the corruption system is a barrier to entry, thus confirming the hypothesis 3a.

However, the positive coefficient in column (3) suggests that the opposite effect holds for the class of bribing new ventures. In presence of a higher level of corruption, the entry rate of bribing plants is higher. This suggests the positive effect (on entry) of bribe payments by new ventures, in a context of corruption. Bribes enable plants to fasten the delivery of administrative permits (building, business operations), to avoid (abusive) taxations and delays, to reduce time spent with bureaucrats, thus validating the hypothesis 4 of a grease-the-wheel effect for the entry of new ventures.

The negative and significant estimated coefficients for the variables *Business permits delivery* and *Average indirect tax* reveal that a lower quality in the delivery of permits (more barriers and delays) and higher indirect taxes are detrimental to the entry of firms, supporting the hypothesis 3b. However, the coefficient for *Business permits delivery* is not significant in the case of non-bribing new ventures (column 2), suggesting that they are less exposed than bribing ones. An explanation may rest on Shleifer and Vishny [18] theoretical assumption, and on Henderson and Kuncoro [28] description in the case of Indonesia, that predatory bureaucrats exploit their discretionary power over the red tape so as to extort bribes, and that they customize it according to firms' ability to pay. Kuncoro [27, p.336] suggests such a differentiated treatment between firms by stating that: "the more profitable the firm, the higher the bribes it will pay". In our case, the more profitable new ventures face more difficulties to obtain business permits and they pay bribes so as to avoid these difficulties.

*Ethnic fragmentation*, which is another variable characterizing informal institution, also has a differentiated effect on the two cohorts of new ventures. It has a positive effect on entry rate, but only significant in the case of bribing plants (column 3). This is consistent with the view that social intimacy created by closed social networks (here, thanks to homogenous ethnicity) may increase the inclination to corruption [20; 21; 14] and bring negative effects such as impediment to new firms entry. This supports the assumption 5. It is also supported with the variable *Islamic religion*. Its estimated coefficient is always negative and significant, suggesting the detrimental effect of closed social networks and collectivist culture on entry.

The respect of traditional 'Adat' rules has always a positive and significant impact on entry rate. This is contrary to our hypothesis 5 and may reveals that in the case of traditional laws, the main effect of bonding networks is a high level of trust that is ensured by the respect of these laws. And trust is known to have of positive impact on entrepreneurship [14]. In addition, trust is necessary even in the relation of corruption, which is a particular form of contract.

Among the control variables, *Urbanization* has always a positive and significant impact on entry, as expected. The estimated parameter for *average plant size* is always negative and significant, suggesting that competition and contestability favor entry. This is confirmed with the variable *Industry concentration*. It has a negative and significant effect on entry for the cohort of non-bribing entrants (column 2), but null and not significant in the case of bribing ones (column 3). This suggests that bribing, and the favors granted in return, compensate a lack of competition. This lack can also be the outcome of bribing by an entrant willing to get a dominant position, for example, by obtaining a license of exclusivity. This result highlights how bribing and corruption distort the effect of institutions on entry. We observe it further with the variable *Under-provision of public infrastructures*. It has a negative and significant effect on the entry of non-bribing entrants, as expected, but positive on bribing ones. This suggests that briberies and their accompanying favors, compensate the paying

entrants for the under-provision of public infrastructures, in the form of a privileged access for example.

**Table 1: Results, IV regressions**

<i>explanatory</i>	<i>dependent</i>	(1)	(2)	(3)	(4)	(5)	(6)
		Entry rate all sample	Entry rate non-bribing plants	Entry rate bribing plants	Entry rate all sample	Entry rate non-bribing plants	Entry rate bribing plants
Average public wage (log)		0.012*** (0.001)	0.000 (0.874)	0.012*** (0.000)	0.013*** (0.001)	0.001 (0.592)	0.011*** (0.000)
Average private wage (log)		-0.022** (0.022)	0.005 (0.385)	-0.027*** (0.001)	-0.015* (0.084)	0.001 (0.895)	-0.016** (0.029)
Average bribes (log)		0.000 (0.609)	-0.003*** (0.000)	0.002*** (0.000)			
District government corruption (log)					0.004 (0.698)	-0.011* (0.051)	0.014* (0.063)
Market size (log)		0.003 (0.146)	0.003*** (0.004)	0.000 (0.834)	0.002 (0.152)	0.003*** (0.005)	0.000 (0.861)
Average plant size (log)		-0.009*** (0.001)	-0.006*** (0.001)	-0.004* (0.093)	-0.009*** (0.001)	-0.005*** (0.001)	-0.004* (0.074)
Industry concentration (log)		-0.003 (0.314)	-0.003* (0.059)	0.000 (0.999)	-0.004 (0.195)	-0.002 (0.323)	-0.002 (0.358)
Under-provision of public infrastructures		0.002 (0.530)	-0.005*** (0.001)	0.006** (0.017)			
Average education (log)		-0.007 (0.548)	0.004 (0.456)	-0.010 (0.277)	0.000 (0.998)	0.009* (0.070)	-0.009 (0.342)
Urbanization (%)		0.093*** (0.000)	0.027** (0.023)	0.066*** (0.002)			
Public ownership (%)		0.010 (0.190)	0.005 (0.194)	0.005 (0.458)	0.011 (0.121)	0.001 (0.729)	0.0101 (0.107)
Average indirect taxes (log)		-0.002*** (0.000)	-0.001*** (0.001)	-0.001* (0.090)	-0.002*** (0.000)	-0.002*** (0.000)	0.000 (0.221)
Business permits delivery (log)		-0.043*** (0.000)	-0.003 (0.493)	-0.040*** (0.000)	-0.034*** (0.005)	-0.010** (0.039)	-0.024** (0.032)
Ethnic fragmentation (log)		0.003 (0.132)	0.000 (0.929)	0.003** (0.049)			
Islamic religion (%)		-0.068*** (0.004)	-0.032** (0.029)	-0.035* (0.053)	-0.075*** (0.001)	-0.034** (0.011)	-0.041** (0.020)
Traditional rules (log)		0.0166*** (0.000)	0.007*** (0.000)	0.010*** (0.000)	0.012*** (0.000)	0.003 (0.113)	0.009*** (0.001)
Constant		0.238** (0.043)	-0.022 (0.757)	0.260*** (0.005)	0.208 (0.271)	0.013 (0.849)	0.195** (0.034)
Observations		8944	8944	8944	8944	8944	8944
Kleibergen-Paap Wald <i>F</i> -statistic (weak identification test of the excluded instruments)		774.82	774.82	774.82	806.53	806.53	806.53
Hansen <i>J</i> test of overidentifying restriction, <i>p</i> -value		(0.829)	(0.617)	(0.617)	(0.758)	(0.490)	(0.428)
Anderson-Rubin Wald <i>F</i> -statistic (test of joint significance of endogenous regressors)		5.25	0.43	5.81	1.50	0.24	2.58
Kleibergen-Paap <i>LM</i> -statistic (underidentification test)		856.75 (0.000)	856.75 (0.000)	856.75 (0.000)	857.70 (0.000)	857.70 (0.000)	857.70 (0.000)

Robust standard errors. Regressions include an industry fixed effect. *p*-values in parentheses  
excluded instruments are average income (district level) and white-collar-ratio (5-digit industry/district level)  
\* significant at 10%. \*\* significant at 5%. \*\*\* significant at 1%

The *Market size* has a positive and significant impact on entry, as expected, but only in the case of non-bribing plants, underlining further the dichotomy between bribing and non-bribing new ventures. *Public ownership* is of the expected positive sign but not significant, and the *Average education* level is never significant.

As a robustness check, we use an alternative measure of corruption taken from the Rand IFLS community survey database. It is the village heads' perception of corruption at the level of district governments. Given similar origin and construction, this variable is quite correlated with *Under-provision of public infrastructures*, with *Urbanization*, and with *Ethnic fragmentation*. This is why we omit these last three variables in the regressions. The columns 4, 5 and 6 show that the results remain robust.

## Conclusion

Testing the Baumol's [3] extended theory, we evidence a grease-the-wheel effect in entrepreneurship as a higher level of average bribes explains significantly a higher rate of new entry of bribing ventures. On the other hand, non-bribing ventures suffer from the existence of a higher level of corruption in their sector and district. This result does not infirm that corruption is costly for societies, as a source of inefficiencies and wasting resources. But it underlines the 'second-best' properties of bribes, from the perspective of a single entrepreneur, who faces even more costly distortions such as overwhelming red tape and inefficient bureaucracy.

We find that in presence of corruption in a sector/district, higher pays in the public sector in that district have a positive impact on entrepreneurship, which confirms earlier recommendations to increase civil servants' salaries so as to reduce inclination to corruption. In addition, we show that formal and informal institutions impact differently entry depending on whether new ventures are bribing or not. This supports the relevance of our extension of Baumol's theory. We find that the strict respect of Adat traditional rules has a positive impact on entrepreneurship, even in the case of bribing new ventures. This underlines at least one success, in terms of its effect on corruption, of the decentralization reform implemented since 2001. Indeed, it has re-authorized the use of these Adat traditional laws [23].

This study offers important practical implications for policies targeting development through the fostering of entrepreneurship. It reaffirms the importance of good quality institutions and of carefully designing the characteristics of local governance, regulation and tax system, so as to offer fair and motivating rewards to productive entrepreneurial activities. By shedding light on the complex interactions between institutional features, bribe payment and productive entrepreneurship, this study also reaffirms that these three aspects have to be the integrated objectives of a same development policy.

## References

- [1] Desai, S. and Z. Acs (2007), "A Theory of Destructive Entrepreneurship", Jena economic Research Papers N°085.
- [2] Freytag, A. and R. Thurig (2007), "Entrepreneurship and its determinants in a cross-country setting", *Journal of Evolutionary Economics* 17, 117-131.
- [3] Baumol, W. (1990) Entrepreneurship: productive, unproductive and destructive. *Journal of Political Economy*, 98, 893–921
- [4] Murphy, K., Shleifer, A., Vishny, R., 1991. The allocation of talent: Implications for growth. *Quarterly Journal of Economics* 106, 503–530.
- [5] Acemoglu, D. and Verdier, T. (1998) "Property Rights, Corruption and the Allocation of Talent: A General Equilibrium Approach," *The Economic Journal*, 108(45): 1381-1403.
- [6] Mehlum, H., K. Moene, and R. Torvik (2003). Predator or prey? Parasitic enterprises in economic development. *European Economic Review* 47, 275–294.
- [7] Sanders, M., and U. Weitzel (2010), "The Allocation of Entrepreneurial Talent and Destructive Entrepreneurship", UNU-WIDER WP 2010/46
- [8] Wei, S. (2000). How taxing is corruption on international investors. *Review of Economics and Statistics*, 82(1), 1-11.
- [9] Leff, N. (1964). Economic development through bureaucratic corruption. *The American Behavioural Scientist*, 8(2), 8–14.

- [10] Méon, P-G., & Sekkat, K. (2005) Does corruption grease or sand-the-wheels of growth? *Public Choice*, 122(1-2), 69–97.
- [11] Vial, V., & Hanoteau, J. (2010) Corruption, manufacturing plant growth and the Asian paradox: Indonesian evidence. *World Development*, 38(5), 693–705.
- [12] Sobel, R., (2008), Testing Baumol: Institutional quality and the productivity of entrepreneurship. *Journal of Business Venturing*, 23, 641-655
- [13] Mitchell, D. and D. Campbell (2010), “Corruption’s effect on business venturing within the United States”, *The American Journal of Economics and Sociology* 68(5), 1135-1152.
- [14] Tonoyan, V., Strohmeier, R., Habib, M., & Perlitiz, M., (2010) Corruption and entrepreneurship: How formal and informal institutions shape small firm behavior in transition and mature market economies. *Entrepreneurship: Theory and Practice*, 803-832.
- [15] Schumpeter, J.A., 1911/1934, *The Theory of Economic Development*, Cambridge, MA: Harvard University Press.
- [16] La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. 1999. Corporate ownership around the World. *Journal of Finance*, 54(2), 471–517.
- [17] Dreher, A., & Gassebner, M. (2007). Greasing the wheels of entrepreneurship? The impact of regulations and corruption on firm entry. Cesifo Working Paper no. 2013.
- [18] Shleifer, A., & Vishny, R. W. (1993). Corruption. *Quarterly Journal of Economics*, 108, 599–617.
- [19] Estrin and Prevezer (2010) “A survey on institutions and new firm entry: How and why do entry rates differ in emerging markets?”, *Economic Systems* 34, 289-310.
- [20] Tanzi, V. (1998). Corruption around the world: Causes, consequences, scopes, and cures. *International Monetary Fund Staff Papers*, 45(4), 559–594.
- [21] Putnam, R.D., Leonardi, R., & Nanetti, R.Y. (2000). *Making democracy work: Civic traditions in modern Italy*. Princeton, NJ: Princeton University Press.
- [22] Vial, V. (2012), “Households’ financial, human and social capital effect on micro-entrepreneurship in a hostile environment: Evidence from Indonesian family life survey data 1993-2007”, *Bulletin of Indonesian Economic Studies*, forthcoming.
- [23] Pal, S. (2010), “Norms, Culture and Local Infrastructure: Evidence from a Decentralized Economy”, IZA Discussion Paper N°5281.
- [24] Behrman, J.R., & Deolalikar, A.B. (1989) Of the fittest? Duration of survival of manufacturing establishments in a developing country. *Journal of Industrial Economics*, 38(2), 215–226.
- [25] Frankenberg, E. and D. Thomas, (2000), "The Indonesia Family Life Survey (IFLS): Study Design and Results from Waves 1 and 2." March 2000. RAND, Santa Monica, CA. DRU-2238/1-NIA/NICHD.
- [26] Strauss, J., K. Beegle, B. Sikoki, A. Dwiyanto, Y. Herawati and F. Witoelar,(2004). "The Third Wave of the Indonesia Family Life Survey (IFLS): Overview and Field Report", March 2004. WR-144/1-NIA/NICHD.
- [27] Kuncoro, A. (2004). Bribery in Indonesia: Some evidences from micro-level data. *Bulletin of Indonesian Economic Studies*, 40(3), 329-354.
- [28] Henderson J.V., and A., Kuncoro (2011), “Corruption and local democratization in Indonesia: The role of Islamic parties”, *Journal of Development Economics* 94, 164-180.

## Endnotes

<sup>1</sup> Murphy et al. [4] define talent as the ability to run an activity and they assume increasing returns in ability.

<sup>2</sup> Similarly, under-paid civil servants can be forced into corruption. This was the case during Suharto presidency. Public wages were maintained at a low level voluntarily in order to encourage corruption at all level of the bureaucracy, as an instrument to maintain the system in place.

<sup>3</sup> Pal [23] explains that Adat communities refer to autonomous groups of indigenous people who are able to manage their lives with their own regulations and social control. Adat laws are a set of local and traditional norms which lays the foundation for a collectivist culture [23, p.3]