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Regulatory bottlenecks, transaction costs and corruption: a cross-country investigation

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Rajeev K. Goel

Regulatory bottlenecks, transaction costs and corruption: A cross-country investigation

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Helsinki 2008

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All opinions expressed are those of the authors and do not necessarily reflect the views of the Bank of Finland.

Rajeev K. Goel

Regulatory bottlenecks, transaction costs and corruption: A cross-country investigation

Abstract

This paper uses recent data on a large cross-section of countries to study the determinants of corrupt activity. The main contribution is to examine the effects of different types and severities of government regulations on corrupt activities. The results show that greater prosperity and democracy lead to less corrupt activity. Variables representing the degree of fractionalization across three dimensions and least developed nations are statistically insignificant. Having more regulation, including number of procedures and time involved across four categories (business startup, licensing, property registration, and taxation), leads to greater corruption. More regulatory procedures, especially for business startups and property registrations, have the most corruption-enhancing effect. Whereas lengthier procedures also generally spur corruption, there are important differences. Finally, higher regulatory transactions costs do not seem to significantly impact corruption. Policy implications are discussed.

Keywords: Corruption, Business startup, Licenses, Property, Taxes, Fractionalization, Democracy, Prosperity
JEL Classification: H26; H87; K42.

Useful input from Iikka Korhonen and research assistance of Robert Stanford are appreciated.

Rajeev K. Goel

Regulatory bottlenecks, transaction costs and corruption: A cross-country investigation

Tiivistelmä

Tässä paperissa tutkitaan monia maita kattavan tilastoaineiston avulla korruptioon vaikuttavia tekijöitä. Pääpaino on erilaisissa julkisen sektorin säännöksissä sekä siinä, mikä on näiden säännösten ankaruuden vaikutus korruptioon. Korkeampi elintaso ja demokratia vähentävät korruptiota. Yhteiskunnan fraktionaalisuutta edustavat muuttujat eivät ole tilastollisesti merkitseviä. Taloudellisen sääntelyn ja erilaisten lupien määrä lisää korruptiota ainakin neljällä eri mittarilla (yrityksen perustaminen, lisenssit, kiinteistöomaisuuden rekisteröinti ja verotus) mitattuna. Etenkin yrityksen perustaminen ja rekisteröinti näyttävät altistavan korruptiolle. Mitä pitempi aika erilaisiin viranomaisten toimenpiteisiin kuluu, sitä enemmän korruptiota toimet näyttävät synnyttävän, vaikka erilaiset toimenpiteet ovatkin tässä suhteessa hieman eri asemassa. Sääntelyn kustannusten nousu ei näytä vaikuttavan korruptioon. Työn lopussa tarkastellaan tulosten politiikkaimplikaatioita.

Asiasanat: Korruptio, yritysten perustaminen, lisenssit, omaisuus, verot, fraktionaalisuus, demokratia, hyvinvointi.

1 Introduction

In recent years researchers have devoted considerable effort to understanding the causes and effects of corruption in response to heightened general interest and advances in research production technologies. The result is that the literature is beginning to come to some agreement on a few aspects. For instance, among the umpteen different determinants of corruption, a few have been identified as relatively more significant (see Lambsdorff (2006), Serra (2006)). Yet, the commonplace secrecy of corrupt deals and the quest for better measures of institutional complexity warrant continued efforts to improve our understanding of corruption.

This study represents a small attempt to further our understanding of the causes of corruption. Specifically, using a large cross-section of about 150 countries, we examine the effects of different types of regulatory bottlenecks and the associated transactions costs on the incidence of corruption. Greater regulation is generally believed to increase corruption (see Johnson et al. (1998)). In this regard, four key sets of regulations are identified: (i) regulations associated with starting a business; (ii) regulations pertaining to obtaining government licenses; (iii) regulatory obligations for registering property; and (iv) regulations surrounding (business) taxation. In each category, three types of country-specific bottlenecks are considered: number of regulatory procedures involved, average time involved in completing a procedure, and the costs of each procedure. Thus, the level of detail captures the monetary and non-monetary severity of regulatory interventions. A large number of potential regulatory hurdles and high costs of each hurdle (both in terms of time and money) induce the offering of bribes to avoid or reduce these bottlenecks.

In the context of the extant literature, most studies of corruption suggest that greater economic freedom reduces corruption. Based mainly on aggregate indices of competitiveness, there is empirical support in the literature for the proposition that greater competitiveness reduces corruption (Goel and Nelson (2005)). The present paper provides greater insight into the matter by using disaggregated measures of economic freedom. Which types of regulatory bottlenecks contribute the most to corruption? An understanding of this would support the claim that not all regulation is alike and might even indicate that some types of regulation actually reduce corruption. The present study can also be seen as adding to the broader literature on the quality of government (La Porta et al. (1999), Rose-

Ackerman (1999)). A relatively minor contribution of this study is the large number of countries in the sample. Most related corruption studies cover about 100 nations – our recent sample is larger by almost fifty percent.

Greater red tape induces some firms/individuals to offer bribes to circumvent or expedite the process. Figures 1 and 2, respectively, illustrate the variations across nations in number of procedures and average duration of a procedure across the four regulation types: startup of a business, obtaining licenses, registering property and paying taxes (see Table 1 for details).[1] The wide variations in these bottlenecks among nations are evident. Their relative impact on corruption, however, is less clear. How these varying regulations impact the level of corrupt activity is formally considered in the next section.

2 Model, estimation and data

The theoretical background for the present research may be seen as tied to the general literature on illegal behavior (Becker (1968)), the industrial economics of corruption (Shleifer and Vishny (1993, 1999)), and the theories surrounding the optimal level of red tape (Guriev (2004) and Mendez and Sepulveda (2006)). In a nutshell, the main point of the thinking on the economics of illegal behavior is that "rational" bribe-takers and bribe-givers weigh the relative costs and benefits of their illegal acts. An industrial economics interpretation would focus on the strategic interactions between bribe givers (suppliers of bribes) and bribe takers (demanders of bribes). Such interactions influence the size of bribes and determine whether long term relations between the two parties develop. Finally, the strand of the literature focusing on the nexus between corruption and degree of red tape considers the socially optimal level of red tape and, while generally stressing the corruption-enhancing effects of red tape, allows for the possibility that some degree of red tape may be socially beneficial.

All these considerations may be seen as forming the theoretical foundations of our empirical setup. In general, we postulate that the level of corrupt activity in a nation (denoted by subscript i) is influenced by economic, social, institutional and regulatory factors.

[1] Note that the TAXtime duration from Table 1 was converted into days in Figure 2 to facilitate comparison with other categories.

The formal estimated equation takes the following general form:

$$\text{Corruption}_i = f\,(\text{Prosperity}_i, \text{Democracy}_i, \text{Fractionalization}_{ij}, \text{DEV}, \text{Startup bottlenecks}_i, \text{Licensing bottlenecks}_i, \text{Property bottlenecks}_i, \text{Taxation bottlenecks}_i, \text{Transactions costs}_{ik}) \tag{1}$$

$i = 1,\ldots, 147$

j = ETHNIC, LANG, RELG

k = startup, licensing, property, taxation

The dependent variable is the corruption perceptions index (CPI in Table 1) from Transparency International. This index has been widely used in corruption studies in the extant literature and provides fairly good cross-country comparisons of levels of corrupt activity – an activity that is inherently secretive due to the moral hazard issues involved (see Jain (2001), Lambsdorff (2006)). Since the index is bounded between zero and ten, with higher numbers denoting more "clean" nations, we performed a log transformation (*ln* ((10-CPI)/CPI)) that extends the index from minus infinity to plus infinity and (for ease of interpretation) assigns higher values to the more corrupt nations.

Economic prosperity (GDPpc) and democracy (DEM) are included in nearly every study of corruption determinants and both are seen to reduce corruption (Serra (2006)). Greater economic prosperity raises the opportunity cost of being caught, for both bribe givers and bribe takers. Prosperity may also be seen as a proxy for a country's level of literacy. A more educated populace is better aware of its rights and is thus less likely to be misguided by government officials into offering bribes. It is also more likely to expose corrupt acts of others. In our estimation, the GDPpc is used for 2005 (as opposed to most other variables for 2007), to make it somewhat pre-determined. The civil liberties and free press in a democratic society raise the possibility of exposure of corrupt officials and are likely to act as checks against corruption. Moreover, corrupt public officials in democracies face the threat of not being reelected. The DEM variable is constructed by adding the widely used Freedom House indices of free press and civil liberties.[2]

[2] Note that the DEM variable is constructed so that higher values imply less democracy (Table 1). This should be kept in mind in interpreting the positive sign on the resulting coefficient in Table 2.

A lack of homogeneity of a country's population can affect the formation of trust and may influence the incidence of corruption (see Fisman and Gatti (2002), Lambsdorff (2006), Paldam (2002)). Monetary inducements (bribes) may be necessary when oral communications between parties in an exchange cannot be trusted. To account for this, we include measures of fractionalization across three dimensions: ethnic fractionalization (ETHNIC); linguistic fractionalization (LANG); and religious fractionalization (RELG), (see Alesina et al. (2003) for details on constructing these variables). Here the three fractionalization indices capture more detail than the composite ethno-linguistic fractionalization indices used elsewhere.

Ceteris paribus, less developed nations would likely have underdeveloped institutions, and the differences are not easily quantifiable (Graeff and Mehlkop (2003), Knack and Keefer (1995)). Yet, these differences could significantly influence the prevalence of corruption. To account for this, we include a dummy variable, DEV, which identifies the least developed nations in our sample, as per the United Nations.

The literature has largely considered the influence of aggregate government size on corruption, and the findings are mixed. Specifically, cross-country studies have generally found a larger government to be associated with less corruption (Goel and Nelson (2005)) - consistent with the notion of a benevolent government (Shleifer and Vishny (1999)). On the other hand, country-specific studies of corruption find support for the grabbing hand of the government (Shleifer and Vishny (1999)): larger governments indulge in more corrupt activity (Goel and Nelson (1998)). The present study provides additional insights into government activity by using a disaggregated approach that is able to qualitatively distinguish among the types and severities of government interventions. The related regulation data are from the World Bank and the four categories of regulation (business startup regulations, licensing requirements, property registration procedures and taxation) considered here do not merely count the number of different regulations; they possess subtle qualitative differences that can crucially impact the bribe-offering and bribe-generating propensities. For instance, businesses at the startup stage do not have much sunk investment and some may be dissuaded from starting a business if the initial government formalities are highly drawn out (see Djankov et al. (2002)). In addition, formalities associated with business startup, property registration and licensing are generally rather sporadic; so that many business people rarely have to confront them. On the other hand, tax payments are regular

and predictable. There is also some learning (for both bribe takers and bribe givers) when a type of interaction is repeated, as is the case between tax payers and tax collectors. This difference might determine whether corrupt relational contracts develop between bribe takers and bribe givers (Lambsdorff and Teksoz (2004)). Finally, some procedures, such as licensing requirements, tax rates, and property registration guidelines, are predetermined and are generally not at the disposal of a (front-line) bureaucrat (and potential bribe taker) to arbitrarily change in a short time period. However, a government official can drag her feet to induce a larger bribe by lengthening the time it takes to meet some formalities. We consider this possible reverse causality later in the paper.

Two bottlenecks under each intervention category are included, to see whether greater red tape increases corruption. These are the number of procedures involved and the average number of days it takes to complete a procedure.[3] One may view the two as sequential stages of the regulatory process. The number of procedures might be due to cross-oversights by various government agencies, and the time associated with each procedure might have to do with country-specific institutional norms. In our sample, the number of procedures in starting a business (STARTp) ranged from 2 (Australia, New Zealand) to 20 (Equatorial Guinea), while the range for the number of tax payments (TAXpay) was from 1 (Maldives) to 124 (Belarus). Further, the average time for a licensing procedure (LICNd) was about 228 days, and it took on average 332 hours for businesses to pay (also including tax preparation time) all taxes (TAXtime).

Finally, regulatory costs are included as the average costs of different procedures and the overall tax rate. These costs are alternately associated with business startup, obtaining licenses, registering property or tax payments. Higher costs, ceteris paribus, make the payment of bribes more attractive, especially if the bribes enable the lowering of overall costs for the bribe-giver (see Shleifer and Vishny (1999)). In our sample, the average cost of registering property was 6.5 percent of property value and the average corporate tax rate was about fifty percent.

The data employed are for the year 2007, or the closest year available. The variable definitions, summary statistics and data sources are provided in Table 1. We turn next to a discussion of the estimation results.

[3] In the case of taxation, the corresponding measures are the number of tax payments and the time (in hours) it takes to pay taxes.

3 Results and discussion

Five different variations of the general model in (1) were estimated. All equations were estimated by OLS using STATA, and the t-statistics based on robust standard errors are reported in Table 2. The overall fit of all the models is quite good, as signified by the statistically significant F-value and an $R^2 \geq 0.80$ in all cases. The following additional points may be noted regarding the estimation results.

- Greater economic prosperity consistently lowers corruption in all cases in Table 2. The resulting coefficient is negative and statistically significant. This reinforces the finding in the extant literature that as a nation becomes more prosperous the level of corrupt activity declines.[4]
- Greater democracy is also associated with less corruption across the board, suggesting that democratic institutions act as a check against corrupt activities. Again, this finding supports the general finding in the literature - with a larger sample of countries here.
- The three fractionalization measures capturing intra-country socio-economic differences in ethnicity, religion and language fail to attain statistical significance at any meaningful level. Interestingly, however, ethnic and religious fractionalization have opposite signs - the sign of the latter suggesting lower corruption. The effect of ethnic fractionalization on corruption has also been found to be insignificant elsewhere (Fisman and Gatti (2002)).
- The estimated coefficient on DEV is statistically insignificant in all cases. Any significant differences in the prevalence of corruption in the least developed nations, if they exist, do not become evident with the inclusion of a dichotomous variable. Alternately, the other control variables employed might adequately capture these differences.
- A greater number of regulatory procedures lead to more corruption. In other words, the coefficients on STARTp, LICNp, PROPp and TAXpay are all positive, and statistically significant in most cases. This finding is consistent with the notion

[4] It could, however, be the case that the very nature of corruption (i.e., grand versus petty corruption) might be different in wealthy and poor nations. Unfortunately, the quality of the available data does not permit us to focus on this aspect.

that more regulatory hurdles present more opportunities to collect rents and with the "tollbooth theory" of Djankov et al. (2002).

- Due to the implicit costs involved, a longer average duration of each procedure also contributes positively to corruption. Drawn out procedures prompt agents with higher discount rates to offer bribes. However, the coefficients on STARTd are statistically insignificant, and are positive and significant in one of the three instances in regard to TAXtime. The statistical insignificance of STARTd is plausible if one considers the fact that at the startup stage a drawn-out procedure induces some startups to withdraw and, in the absence of substantial sunk costs, undermines the ability of bribe takers to garner bribes.
- Higher transactions costs associated with startups, licensing, property registrations and taxes do not seem to appreciably affect corruption, as the coefficients of cost variables (STARTc, LICNc, PROPc and TAXrate) are generally insignificant. This result seems plausible if one considers that higher procedure costs might not directly lead to corruption, but indirectly might induce bribes, so that the overall payment by the bribe giver is smaller. For instance, our measure of PROPc is the property registration cost as a percent of property value. It could be the case that a prior bribe payment induces the bureaucrat to undervalue the property, so that the percentage cost of property value is (artificially) rather low. Shleifer and Vishny (1999) have alluded to this possibility, but this indirect channel might be difficult to separate in a quantitative analysis.

Overall, our analysis of determinants of corruption using recent data for a fairly large number of countries provides largely intuitive, but new, findings. The results regarding the effects of prosperity and democracy accord with the literature. The degree of fractionalization across three dimensions and the least-developed-nations variables are statistically insignificant. More regulatory procedures lead to greater corruption across different interventions. Whereas lengthier procedures also generally spur corruption, important differences exist in this regard, which are plausible given the qualitative dissimilarities across regulation types.[5] Finally, higher transactions costs do not seem to significantly impact

[5] In interpreting the coefficients on taxation variables, one should bear in mind that, of the four categories of intervention considered, taxes are most unlikely to be uniformly applicable to all of the population, since

corruption, which suggests measurement issues or the possibility that bribe givers are somehow able to circumvent/dilute this stage.

Finally, to account for the possible two-way causality between some regulation forms and corruption, we focus on this aspect. In other words, some regulation might be endogenous to the generation of more bribes (Guriev (2004), Johnson et al. (1998)). However, Lambsdorff (2006, p. 8) cautions that the causality between regulation and corruption "may be difficult to ascertain". Among the four categories of regulation considered here, one can envision that while the number of procedures and tax rates might be predetermined at a point in time for both (corrupt) parties, the length or duration of execution of some of the formalities may be somewhat endogenous.[6] A government official might drag her feet to solicit bribes and/or to increase the size of payments.[7] Therefore, we consider four separate variations with STARd, LICNd, PROPd, and TAXtime, alternately used as endogenous variables. In these two-stage least squares regressions, the instruments were literacy rate (LIT), country population (POP), and a dummy variable identifying transition countries (TRAN).[8] While the results for economic prosperity and democracy reinforced our earlier findings in Table 2, the coefficients on STARd, LICNd, PROPd, and TAXtime were all statistically insignificant. The corresponding results are not reported here, but are available upon request. The concluding section follows.

certain segments are tax exempt or tax officials might have some leeway in deciding the assessed value. On the other hand, property registration, licensing requirements, and business startup procedures are generally implemented across the board with few exceptions.

[6] Some governments have recognized this aspect and have even tried to make the duration exogenous. For instance, the Indian government has placed maximum limits on the time taken to issue passports and other identification documents.

[7] From an industrial organization perspective, one can imagine some upper bound on how long a government official can procrastinate. Excessively lengthy delays in completing regulatory formalities would spur some agents to operate outside the law without permits or permissions. In the event of apprehension, these agents would seek to bribe someone to reduce or avoid punishment. And that someone is unlikely to be the same (original) government official. This threat of losing some "customers" places some constraints on the rent-seeking behavior.

[8] See Table 1 for details about these variables.

4 Concluding remarks

This paper uses recent data on a large cross-section of countries to examine the determinants of corrupt activity. The main contribution is to examine the effects of different types and severities of government regulations on corrupt activities. The three fractionalization indices capture more detail than the composite ethno-linguistic fractionalization indices used elsewhere. Using a well-known index of corruption perceptions across nations, our analysis of determinants of corruption provides generally intuitive, but new, findings. The results regarding the effects of prosperity and democracy show that both these factors lead to reduced corrupt activity. The degree of fractionalization across the three dimensions considered and the least-developed-nations variables are statistically insignificant.

Turning to the main focus of this study, more regulatory bottlenecks, including the number of procedures and the time involved across four categories (business startup, licensing, property registration, and taxation), lead to greater corruption across different interventions. Addressing the question posed in the introduction, it seems that a larger number of procedures, especially for business startup and property registrations, has the greatest corruption-enhancing effect. Whereas lengthier regulatory procedures also generally spur corruption, important differences exist in this regard which are plausible given the qualitative dissimilarities across regulatory modes. Finally, higher regulatory transactions costs do not seem to significantly impact corruption, which suggests measurement issues or the possibility that bribe givers are somehow able to circumvent this stage.

From a policy perspective, we find support for the notion that corruption declines as a nation achieves greater prosperity and as democratic institutions take root. Any governmental efforts aimed at homogenization of the population across ethnic, linguistic or religious dimensions do not appear to generate payoffs on the corruption front. Nor do uniquely underdeveloped institutions in the least developed nations appear to have a major impact on corruption in these instances. It seems that non-monetary costs of regulation, including the number and length of regulatory procedures, are relatively more damaging vis-à-vis corruption than are the direct costs of regulation. This finding is interesting in light of the fact that, whereas taxation has received a fair bit of attention in terms of its link with corruption (see Jain (2001)), our research shows that non-tax regulations have a more pronounced impact on corrupt activity. This supports the view that not all regulation is

alike, even in terms of its impact on corruption. Finally, whereas various governments are trying to streamline some procedures, technology, especially the Internet, might turn out to be a useful ally in the fight against corruption, by eliminating/reducing direct contact between bribe takers and bribe givers and by reducing the number of tollbooths. This is an issue worthy of future investigation.

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Appendix

Table 1 Variable Definitions, Summary Statistics and Data Sources

Variable	Definition (mean; std. dev)	Source
CPI	Corruption Perceptions Index, 2007 (10 highly clean, 0 highly corrupt) (3.98; 2.09)	I
GDPpc	GDP per capita (PPP 2000 international $), 2005 (9649.41; 10498.98)	II
STARTp	Number of procedures required to register a firm, 2007 (9.15; 3.35)	III
STARTd	Average time spent on a procedure (days), 2007 (44.09; 61.75)	III
STARTc	Official cost of each procedure (% of GNI per capita), 2007 (61.35; 112.80)	III
LICNp	Number of procedures to build a warehouse, 2007 (18.47; 7.16)	IV
LICNd	Average time of a (warehouse) procedure (days), 2007 (228.37; 149.49)	IV
LICNc	Official cost of a (warehouse) procedure (% of per capita income), 2007 (1061.65; 5087.52)	IV
PROPp	Number of procedures to legally register property, 2007 (6.23; 2.56)	V
PROPd	Time spent in completing (property) procedures (days), 2007 (81.6; 93.03)	V
PROPc	The costs of property registry, notaries, public agencies or lawyers (% of property value), 2007 (6.50; 5.50)	V
TAXpay	Number of tax payments per year, 2007 (34.14; 21.83)	VI
TAXtime	Time to prepare, file and pay (or withhold) the corporate income tax, the value added tax and social security contributions (hours), 2007 (331.96; 328.25)	VI
TAXrate	Total taxes and mandatory contributions payable by businesses, 2007 (% of profits) (50.82; 39.24)	VI
ETHNIC	Ethnic fractionalization (0.44; 0.26)	VII
LANG	Language fractionalization (0.40; 0.28)	VII
RELG	Religious fractionalization (0.43; 0.23)	VII
POP	Population, 2005 (3.59E+07; 1.32E+08)	II

LIT	Literacy rate 2006 (% of literate population above age 15) (79.10; 20.75)	II
TRAN	Dummy variable = 1 if a country is a transition economy, 0 otherwise (0.15; 0.36)	VIII
DEV	Dummy variable = 1 if a country is consider least developed, 0 other-wise (0.26; 0.44)	VIII
DEM	Sum of a country's political rights and civil liberties scores, 2007 (higher score means less democratic) (6.71; 3.83)	IX
Note: All data are by country		

Data Sources:

I	http://www.transparency.org/policy_research/surveys_indices/cpi/2007
II	2007 World Development Indicators CDROM
III	http://www.doingbusiness.org/ExploreTopics/StartingBusiness/
IV	http://www.doingbusiness.org/ExploreTopics/DealingLicenses/
V	http://www.doingbusiness.org/ExploreTopics/RegisteringProperty/
VI	http://www.doingbusiness.org/ExploreTopics/PayingTaxes/
VII	Alesina et al. (2003)
VIII	http://www.unpan1.un.org
IX	http://www.freedomhouse.org/uploads/fiw08launch/FIW08Tables.pdf

Table 2 Regulatory Bottlenecks, Transactions Costs and Corruption
(Dependent variable: ln((10-CPI)/CPI)

	A	B	C	D	E
GDPpc	-0.0001** (7.7)	-0.0001** (8.3)	-0.0001** (8.3)	-0.0001** (7.6)	-0.0001** (7.4)
DEM	0.045** (3.1)	0.053** (3.7)	0.056** (3.9)	0.043** (2.8)	0.043** (2.8)
ETHNIC	0.068 (0.3)	0.181 (0.7)	0.188 (0.7)	0.075 (0.3)	0.054 (0.2)
LANG	0.043 (0.2)	0.058 (0.3)	-0.005 (0.02)	0.062 (0.3)	0.062 (0.3)
RELG	-0.139 (0.8)	-0.298 (1.4)	-0.217 (1.0)	-0.170 (0.9)	-0.131 (0.7)
DEV	0.015 (0.2)	-0.114 (1.4)	-0.093 (1.3)	-0.073 (0.8)	-0.063 (0.7)
STARTp	0.036** (2.8)			0.036** (2.4)	0.038** (2.4)
STARTd		0.0004 (0.9)		0.0001 (0.2)	0.0001 (0.2)
LICNp	0.013** (2.3)			0.009* (1.8)	0.010* (1.7)
LICNd		0.001** (2.4)		0.0006** (2.3)	0.001** (2.3)
PROPp	0.033** (2.3)			0.030** (2.1)	0.031** (2.0)
PROPd		0.001** (3.1)		0.001** (2.5)	0.001** (2.4)
TAXpay	0.003** (2.0)			0.003 (1.6)	0.002 (1.3)
TAXtime		0.0002* (1.9)		-0.00001 (0.1)	-0.00005 (0.5)
STARTc			0.00004 (0.2)		-0.0003 (1.0)
LICNc			-3.37E-06 (0.2)		-0.00003* (1.7)
PROPc			0.002 (0.4)		0.004 (0.7)
TAXrate			0.001 (1.2)		0.001 (1.0)
N	147	146	147	146	146
F-value	45.9**	37.3**	39.5**	36.1**	33.6**
R^2	0.83	0.82	0.80	0.84	0.84

Note: Details on variables are provided in Table 1. Absolute values of (robust) t-statistics are in parentheses. A constant term was included in all models, but to save space corresponding results are not presented. Note that higher values of DEM mean less democracy.
** denotes statistically significant at 5% level and * at 10% level.

Figure 1 Number of Regulatory Procedures

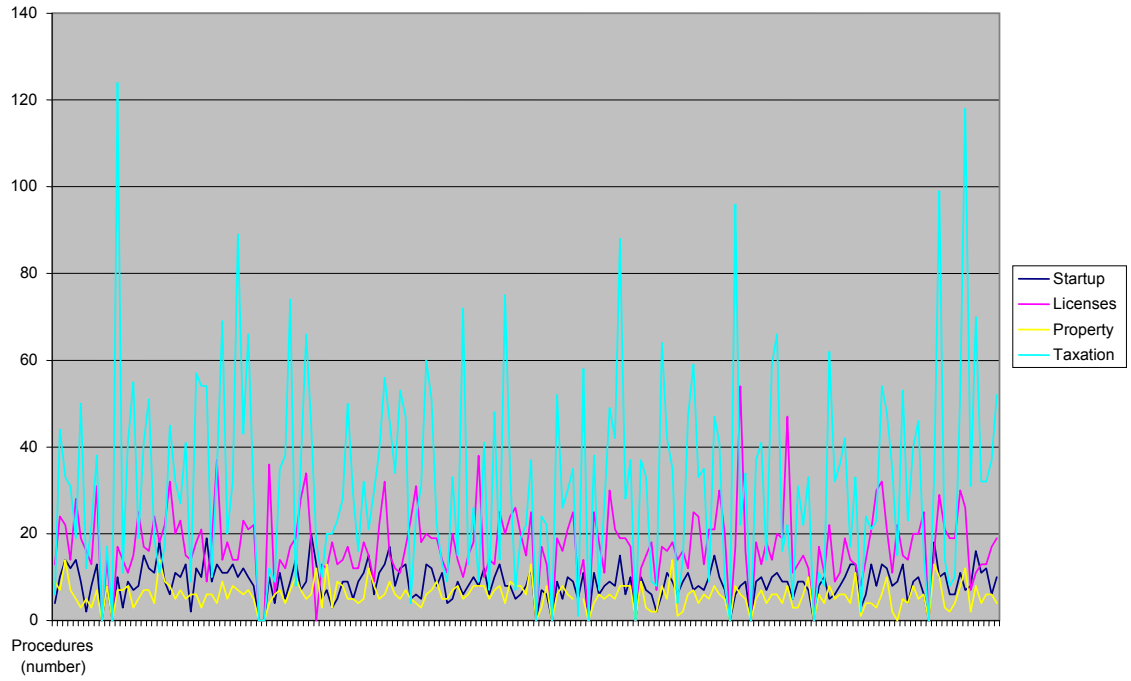
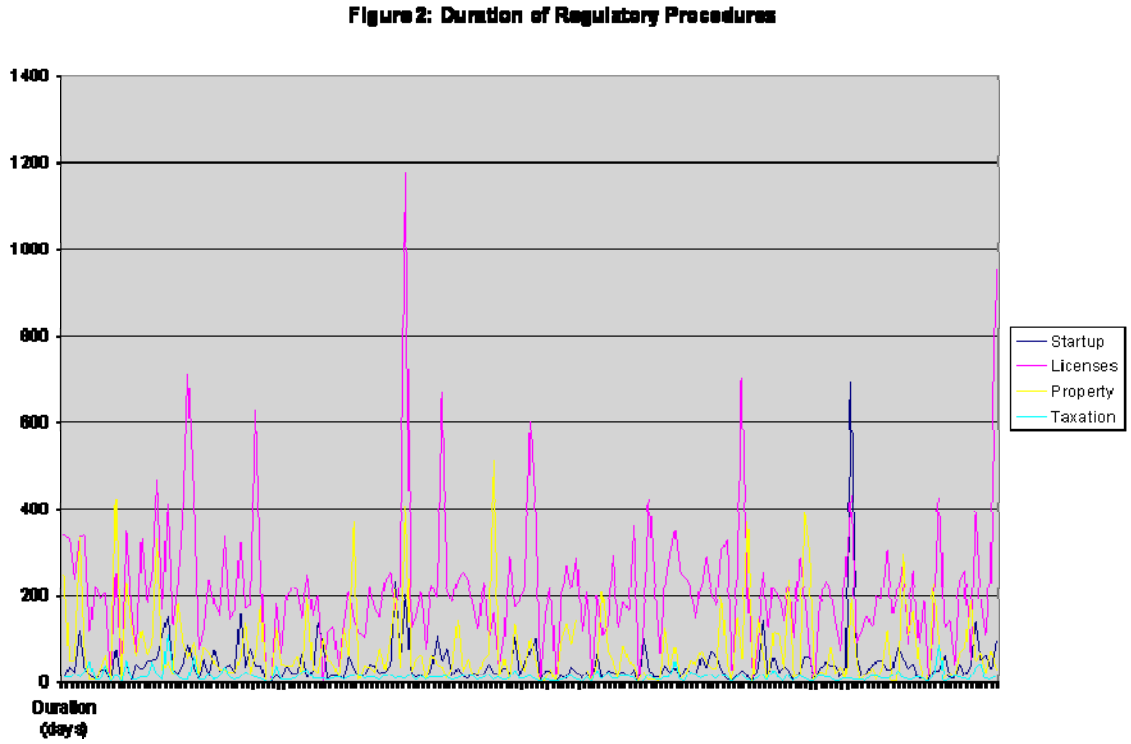


Figure 2 Duration of Regulatory Procedures



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