THE REGULATION OF ENTRY

Simeon Djankov
Rafael La Porta
Florencio Lopez-de-Silanes
Andrei Shleifer

The Regulation of Entry
Simeon Djankov, Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer
NBER Working Paper No. 7892
September 2000
JEL No. K20, L51, L5

ABSTRACT

We present new data on the regulation of entry of start-up firms in 75 countries. The data set contains information on the number of procedures, official time, and official cost that a start-up must bear before it can operate legally. The official costs of entry are extremely high in most countries. Countries with heavier regulation of entry have higher corruption and larger unofficial economies, but not better quality of public or private goods. Countries with more democratic and limited governments have fewer entry regulations. The evidence is inconsistent with Pigouvian (helping hand) theories of benevolent regulation, but support the (grabbing hand) view that entry regulation benefits politicians and bureaucrats.

Simeon Djankov
Financial Economist
World Bank, 1818 H Street, NW
Washington DC, 20433
sdjankov@worldbank.org

Rafael La Porta
Department of Economics
Harvard University
Cambridge, MA 02138
and NBER
rafael_laporta@harvard.edu

Florencio Lopez-de-Silanes
Kennedy School of Government
Harvard University
Cambridge, MA 02138
and NBER
f_lopezdesilanes@harvard.edu

Andrei Shleifer
Department of Economics
Harvard University
Cambridge, MA 02138
and NBER
ashleifer@harvard.edu

I. Introduction.

Countries differ significantly in the way in which they regulate the entry of new businesses. To meet government requirements for starting to operate a business in Austria, an entrepreneur must complete 12 procedures taking at least 154 business days and pay US$11,612 in government fees. To do the same, an entrepreneur in Bolivia needs to follow 20 different procedures, pay US$2,696 in fees to the government and wait at least 82 business days to acquire the necessary permits. In contrast, an entrepreneur in Canada can finish the process in roughly 2 days by paying US$280 in government fees and completing only 2 procedures.

In this paper, we describe the required procedures governing entry regulation, as well as the time and the cost of following these procedures, in seventy five countries. We focus on legal requirements that need to be met before a business can officially open its doors, the official cost of meeting these requirements, and the minimum time it takes to meet them if the government does not delay the process. We then use these data to evaluate three economic theories of regulation. Our work owes a great deal to De Soto's (1990) path-breaking study of entry regulation in Peru. Unlike De Soto, we look at the official requirements, official cost and official time -- and do not measure corruption and bureaucratic delays that further raise the cost of entry. Pigou's (1938) now standard theory of regulation has been recently called the *helping hand* view (Shleifer and Vishny 1998). It holds that unregulated markets exhibit frequent failures, ranging from monopoly power to externalities. A government that pursues social efficiency counters these failures and protects the public through regulation. As applied to entry, this view holds that the government screens new entrants so as to make sure that consumers buy high quality products from "desirable" sellers. Such regulation reduces market

1

failures such as low quality products from fly-by-night operators and externalities such as pollution. It is "done to ensure that new companies meet minimum standards to provide a good or service. By being registered, new companies acquire a type of official approval, which makes them reputable enough to engage in transactions with the general public and other businesses." (SRI 1999 -- p. 14) The helping hand theory predicts that stricter regulation of entry, as measured by a higher number of procedures in particular, should be associated with socially superior outcomes.

The *grabbing-hand* view sees the government as less benign and regulation as socially inefficient. It comes in two flavors. In Stigler's (1971) theory of regulatory capture, "regulation is acquired by the industry and is designed and operated primarily for its benefit." Industry incumbents are able to acquire regulations that create rents for themselves, since they typically face lower information and organization costs than do the dispersed consumers. In this theory, the regulation of entry keeps out the competitors and raises incumbents' profits. Because stricter regulation raises barriers to entry, it should lead to greater market power and profits rather than benefits to consumers.

A second strand of the *grabbing-hand* view, which we call the *tollbooth view*, holds that regulation is pursued for the benefit of politicians and bureaucrats (De Soto 1990). Politicians use regulation to favor friendly firms and other political constituencies, and thereby obtain campaign contributions and votes. In addition, "an important reason why many of these permits and regulations exist is probably to give officials the power to deny them and to collect bribes in return for providing the permits." (Shleifer and Vishny 1993, p. 601).

In principle, the collection of bribes in exchange for release from regulation can be efficient. In effect, the government can become an equity holder in a regulated firm. In practice, however, the

creation of rents for the bureaucrats and politicians through regulation is often inefficient, in part because the regulators are disorganized, and in part because the policies they pursue to increase the rents from corruption are distortionary. The analogy to tollbooths on a highway is useful. Efficient regulation may call for one toll for the use of a road, or even no tolls if the operation of the road is most efficiently financed through general tax revenues. In a political equilibrium, however, each town through which the road passes might be able to erect its own tollbooth. Toll collectors may also block alternative routes so as to force the traffic onto the toll road. For both of these reasons, political toll collection is inefficient.

In this theory, the regulation of entry enables the regulators to collect bribes from the potential entrants and serves no social purpose. "When someone has finally made the decision to invest, he then is subjected to some of the worst treatment imaginable...In a few cases this treatment consists of outright extortion: presenting the investor with insurmountable delays or repeated obstacles unless he makes a large payoff..." (World Bank 1999, Administrative Barriers to Investment in Africa: The Red Tape Analysis, p. 10). More extensive regulation should be associated with socially inferior outcomes, particularly corruption.

We assess the regulation of entry around the world from the perspective of these three theories by addressing two broad sets of questions. First, what are the consequences of the regulation of entry, and in particular, who gets the rents? On the helping hand view, stricter regulation is associated with higher quality of goods and fewer damaging externalities. On the capture theory, the regulation of entry is associated with higher profitability of the incumbents. On the tollbooth view, stricter regulation is most clearly associated with higher corruption.

A second question we examine to distinguish the alternative theories of regulation is which governments regulate entry? The helping hand model predicts that governments whose interests are more closely aligned with those of the consumers, which we think of as the more representative and more limited governments, should regulate better. If the regulation of entry serves consumers, then, other things equal, more representative and limited governments should regulate entry more strictly. In contrast, the grabbing hand model predicts that the governments least subject to popular oversight should pursue the strictest regulations, to benefit either the incumbent firms or the regulators themselves. The question of who regulates thus helps to discriminate among the theories.

Our analysis of exhaustive data on entry regulation in 75 countries leads to the following conclusions. The number of procedures required to start up a firm varies from the low of 2 in Canada to the high of 20 in Bolivia, with the world average of around 10. The minimum official time for such a startup varies from the low of 2 days to the high of 174 business days, assuming that there are no delays by either the applicant or the regulators, with the worldwide average of 63 business days. The official cost of following these procedures for a simple firm ranges from under 0.4 percent of per capita GDP to over 2.6 times per capita GDP, with the world-wide average of 34 percent of annual per capita income. For an entrepreneur, legal entry is extremely cumbersome, time-consuming, and expensive in most countries in the world.

In a cross-section of countries, we do not find that stricter regulation of entry is associated with higher quality products, better pollution records or health outcomes. Nor is it strongly associated with higher profitability of firms or survey measures of lack of competition. But stricter regulation of entry *is* associated with sharply higher levels of corruption, and a greater relative size of the unofficial economy.

On the face of it, the evidence on the consequences of entry regulation does not support the helping hand or the capture theories, and favors the tollbooth view of regulation.

In response, a helping hand theorist could perhaps argue that corruption and a large unofficial economy are inadvertent consequences of benevolent regulation, and hence cannot be used as evidence against the helping hand view. Such inadvertent consequences might obtain as a side effect of screening out bad entrants (Banerjee 1997, Acemoglu and Verdier 2000), or simply as a result of a well-intended but misguided transplant of rich-country regulations into poor countries. Because of this logic, the question of which countries regulate entry more heavily may be better suited conceptually to distinguish the alternative theories.

We find that the countries with more open access to political power, greater constraints on the executive, and greater political rights have fewer required procedures for entry regulation -- even controlling for per capita income -- than do the countries with less representative, less limited, and less free governments. The per capita income control is crucial for this analysis because it could be argued that richer countries have both better governments and a lower need for the regulation of entry, perhaps because they have fewer market failures or better alternative ways of dealing with them. The fact that better governments regulate entry less, along with the straightforward interpretation of the evidence on corruption and the unofficial economy, point to the tollbooth theory: entry is regulated because doing so benefits the regulators.

The next section describes the sample. Section 3 presents our basic results on the extent of entry regulation around the world. Section 4 asks who gets the rents from regulation. Section 5 presents the main results on which governments regulate. Section 6 concludes.

5

II. Data.

Construction of the Database

This paper is based on a new database describing the regulation of entry by start-up companies in 75 countries. We are interested in the steps that an entrepreneur needs to take to begin operating legally. We collected data using all available written information on start-up procedures from government publications, World Bank- and USAID-sponsored studies, and government web pages on the Internet. When written sources were unavailable, we directly contacted the relevant government agencies in each country. In addition, in seventy-three countries, we have doubled-checked the accuracy of our data by commissioning an independent report on start-up procedures, time, and cost from a local consulting company (most often, Price Waterhouse Coopers). For the remaining two countries (Georgia and Ukraine) we have double-checked the accuracy of the data through direct contacts with government agencies.

Our selection of countries was guided by the goal of spanning a wide range of income levels and political systems. The choice of countries was also dictated by the availability of reports on business registration procedures by consulting companies.[2] The sample includes nine African countries, nine East Asian countries including China and Vietnam, three South Asian countries (India, Pakistan, and Sri Lanka), all Central and Eastern European countries except for Albania and some of the former

---

[2] The major international consulting companies do not have representative offices in a number of African countries. Countries in which we were unable to identify local consulting companies to do an independent study were also excluded from the data set.

Yugoslav republics, seven former Soviet Union republics, ten Latin American countries, five Middle Eastern countries (Egypt, Israel, Jordan, Lebanon, and Tunisia), and all major developed countries.

To describe the patterns of regulation across countries and to understand their determinants, we record all the steps that are officially required for an entrepreneur to obtain all necessary permits and to notify and file with all requisite authorities. In some countries, entrepreneurs may not bother to follow official procedures or may bypass them by paying bribes or hiring the services of "facilitators". An entrepreneur in Georgia can start up a company after going through 12 procedures in 70 business days and paying $270 in fees, or he may hire a legal advisory company that will complete the start-up process for $450 in 3 business days (World Bank 1999, p. 16). In the analysis, we use the first set of numbers. We do so because we are primarily interested in understanding the structure of official regulation.

Regulations of start-up companies vary across regions within a country, across industries, and across firm sizes. For concreteness, we focus on a "standardized" firm that an entrepreneur may want to set up. It has the following characteristics: it operates in the capital city, it is exempt from industry-specific requirements (including environmental ones), it does not participate in foreign trade and does not trade in goods that are subject to excise taxes (e.g., liquor, tobacco, gas), it is a domestically-owned limited liability company,[3] its capital is subscribed in cash (not in-kind contributions), it rents (*i.e.*, does not own) land and business premises, and it does not qualify for investment incentives. Although different legal forms might be used in different countries to set up the simplest firm, to evaluate

---

[3] If the Company Law allows for more than one privately owned business form with limited liability, we choose the more popular business form among small companies in the country.

how regulators address the same problem in different countries, we need to look at the same form.

Our data almost surely underestimate the cost and complexity associated with entry.[4] Start-up procedures in the provinces are often slower than in the capital. Industry-specific requirements also add steps. Foreign ownership frequently involves additional verifications and procedures. Contributions in kind often require assessment of value, a complex procedure that depends on the quality of property registries. Finally, purchasing land can be quite difficult and even impossible in some of the countries of the sample (for example, in the Kyrgyz Republic).

Definitions of variables

We use three measures of entry regulation: the number of procedures that firms must go through, the official time required to complete the process, and its official cost. On the *helping-hand* theory, a more thorough screening process requires more procedures and demands more time. On the *grabbing-hand* view, more procedures and longer delays facilitate bribe extraction (*tollbooth view*) and/or make entry less attractive to potential competitors (*capture view).* Theoretical predictions regarding our measure of cost are ambiguous. A benevolent social planner who wants to spend significant resources on screening new entrants may choose to finance such activity with broad taxes rather than with the direct fees that we measure, leading to low costs as we measure them. A corrupt regulator may also want to set fees low in order to raise her own bribe income if, for example, fees are

---

[4]The World Competitiveness Report (1999) surveys business people on how important are administrative regulations as an obstacle to new business. Our three measures are strongly positively correlated with their subjective assessments.

verifiable and cannot be expropriated by the regulator.[5] In contrast, higher fees are unambiguously

desirable as a tool to deter entry under the *capture theory*. Because of these ambiguities, we present

statistics on cost mainly to describe an important attribute of regulation and not to discriminate among

theories.

We keep track of all the procedures that are required by law to start a business. A separate

step in the start-up process is a "procedure" only if it requires that the entrepreneur interacts with

outside entities: state and local government offices, lawyers, auditors, notaries, company seal

manufacturers, etc. For example, all limited liability companies need to hold an inaugural meeting of

shareholders to formally adopt the Company Articles and Bylaws. Since this step involves only the

entrepreneurs, we do not count it as a procedure. Similarly, most companies hire a lawyer to draft their

Articles of Association. However, we do not count that as a procedure unless the law requires that a

lawyer be involved in the process. In the same vein, we ignore procedures that the entrepreneur can

avoid altogether (*e.g.*, reserving exclusive rights over a proposed company name until registration is

completed) or that can be performed after business commences.

Each office that the entrepreneur visits counts as a separate procedure. To keep track of the

offices that an entrepreneur is required to visit, we use the "same building" criterion. That is, we

consider offices in different buildings distinct (although they may be part of the same bureaucratic

structure). For example, a Bulgarian entrepreneur receives her registration certificate from the Company

---

[5] Shleifer and Vishny (1993) distinguish corruption with theft from corruption without theft. In the latter case, the regulator must remit the official fee to the Treasury, and therefore has no interest in that fee being high.

Registry, and then has to pay the associated fee at an officially-designated bank. Even though both steps are essentially related to "obtaining the registration certificate", they count as 2 separate procedures. Visiting the same office counts as two procedures if there have to be other steps in between. An entrepreneur in Kazakhstan needs to get a preliminary registration certificate at the Ministry of Justice. She then goes to the Statistical Office to obtain a company code, which is used during her second visit to the Ministry of Justice in the issuance of the actual registration certificate. We count these as 3 separate procedures.

To measure time, we collect information on the sequence in which procedures are to be completed and rely on official figures as to how many business days it takes to complete each step. We adopt a "perfect efficiency" approach when estimating the length of the registration process. We ignore the time spent to gather information, and assume that all steps are known from the very beginning. We also assume that steps are taken simultaneously whenever possible. Since entrepreneurs may have trouble visiting several different institutions within the same day (especially if they come from out-of-town), we set the minimum time required to visit an institution to be one day. Another justification for this approach is that the relevant offices are sometimes open for business only briefly: both the Ministry of Economy and the Ministry of Justice in Cairo are open for business only between 11am and 2pm.

We estimate the cost of entry regulation based on all identifiable official expenses: fees, costs of procedures and forms, photocopies, fiscal stamps, legal and notary charges, etc. All cost figures are official and do not include bribes, which De Soto has shown to be significant for registration. Our cost estimates also ignore the opportunity cost of the entrepreneur's time and the foregone profits associated with bureaucratic delay. Setup fees often vary with the level of start-up capital. We report the costs associated

with setting up a firm with capital of ten times per capita GDP. We have experimented with other capital levels and found our results to be robust.

Table I presents a comprehensive list of all procedures associated with setting up a firm in our sample. The steps required by law before a company can legally start operations can broadly be divided into registration and post-registration requirements. Registration covers all steps necessary for a company to obtain a registration certificate. They range from 1-11 procedures, demand from 1 to 120 days, and cost from 0.25% to 210% of per capita GDP. Post-registration requirements refer to municipal procedures, industry-level or national-level approvals of the company, filing with the tax and labor authorities, environmental and zoning procedures, all required once a company has registered but before it can start operations. These procedures range from 1 to 12 in number, consume up to 138 days, and cost up to 81% of per capita GDP in fees.

The basic procedure in registration, present everywhere, is filing documentation in the Companies' Registry. This can take more than one step; sometimes there is a "preliminary license" and a "final" license. Combined with that step, or as a separate procedure, is the check for uniqueness of the proposed company name. Add-on procedures comprise the requirements to notarize the Company Deeds, to furnish proof of deposit of start-up capital, and to publish a notification of the company's establishment in an official or business paper. While there are no differences in the above procedures across countries, there is large variation in terms of the required time and cost. In the most efficient countries, the Companies Registry performs these procedures automatically, without involving the entrepreneur in any way. Additional procedures that require obtaining different certificates and filing with agencies other than the Registry may add up to 87 days in delays, as is the case in Germany.

The basic post-registration procedures, present in almost every country in the data set, are a local business license and filing with the tax and labor authorities. The latter two procedures per se do not take a lot of time in any country (up to a week at most), and are usually free of charge. Add-on procedures appear in three areas. The first area covers mandatory municipal procedures, registrations with statistical offices and with Chambers of Commerce and Industry (or respective Ministries). In Mexico, these procedures take up to 7 steps and 63 days. In this area, procedures that appear to be redundant show up frequently: "the permit to play music in public" is obligatory for every firm in Colombia, regardless of whether it contemplates playing music. The second area covers tax-related procedures, including the steps mentioned above. In Brazil, these procedures take up to 5 steps and 13 days. The final area is labor related procedures, which can take up to 7 steps and 17 days in the case of Bolivia.

Figures I and II describe the number of steps, time, and cost of following the procedures needed to begin operating legally in New Zealand and France, respectively. New Zealand's streamlined startup process takes only three steps and 17 days. The entrepreneur must first obtain approval for the company name from the website of the Registrar of Companies, and then apply online for registration with both the Registrar of Companies and the tax authorities.

In contrast, the process in France takes 66 days. To begin, the founder needs to check the chosen company name for uniqueness at the Institut National de la Propriété Industrielle (INPI). He then needs the mayor's permit to use his home as an office. If the office is to be rented, the founder needs to secure a notarized lease agreement. The following additional documents must be obtained, each from a different authority: proof of a clean criminal record, an original extract of the entrepreneur'

12

certificate of marital status from the City Hall, and a power of attorney. The start-up capital is then

deposited with a notary bank or the Deposit and Consignment Office (Caisse des Dépôt), and is

blocked there until proof of registration is provided. Notarization of the Articles of Association follows.

A notice stating the location of the headquarters office is published in a journal approved for legal

announcements and evidence of the publication is obtained. Next, the founder registers four copies of

the articles of association at the local tax collection office. He then files a request for registration with

the Centre de Formalités des Entreprises (CFE) which handles declarations of existence and other

registration related formalities. The CFE must process the documents or return them within 15 days in

case the request is incomplete. The CFE automatically enters the company information in the Registre

Nationale des Entreprises (RNE) and obtains from the RNE identification numbers: numero SIRENE

(Systéme Informatique pour le Répertoire des Entreprises), numero SIRET (Systéme Informatique

pour le Répertoire des Etablissements), and numero NAF (Nomenclature des Activitees Francaises).

The SIRET is used by, among others, the tax authorities. The RNE also publishes a notice of the

company formation in the official bulletin of civil and commercial announcements. Finally, the firm

obtains proof of registration form "K-bis," which is effectively its identify card. This form is then filed to

unblock the start-up capital. To start operations legally, the entrepreneur needs to undertake the

following five additional post-registration procedures: inform the post office of the new enterprise,

designate a bondsman or guarantee payment of taxes with a cash deposit, have the firm's ledgers and

registers initialed, and file for social security. The magazine L'Entreprise comments: "To be sure that the

file for the Company Registry is complete, many promoters check it with a counselor's service, which

costs FF200 in Paris (about $30). But there's always something missing, and most entrepreneurs end

up using a lawyer to complete the procedure."

III. Basic Results.

Table II describes all the variables used in this study. Table III presents the basic information

from our sample. Countries are ranked in the ascending order of the total number of entry procedures,

where the pre-registration and post-registration procedures are added up. We classify each procedure

as one of five types: safety and health, environmental, tax, labor, and a residual category which we label

"screening," whose purpose under the helping hand view is presumably to weed out the undesirable

entrepreneurs. We then compute and report the total number of procedures and their breakdown into

our five categories for each country. We also report the minimum number of business days that are

officially required to comply with entry regulations and the costs arising from the official fees (as a

fraction of GDP per capita). Finally, we take averages by income level and report t-tests comparing

the regulation of entry across income groups.

The data show enormous variation in entry regulation across countries. The total number of

procedures ranges from 2 in Canada to 20 in Bolivia and averages 10.17 for the whole sample. Very

few entry regulations cover tax and labor issues. The world-wide average number of each of labor and

tax procedures is roughly 1.5. Procedures involving environmental issues and safety and health matters

are even more rare (0.35 and 0.71 procedures on average, respectively). Instead, much of what

governments do to regulate entry falls into the category of screening procedures. The world-wide

average number of such procedures facing a new entrant is 6.

14

The number of procedures is highly correlated with both the time and cost variables (see Table VI). The correlation of the (log) number of procedures with (log) time is 0.75 and with (log) cost is 0.62. Translated into economic terms, this means that entrepreneurs pay a steep price in terms of fees and delays in countries that make intense use of ex-ante screening. For example, completing 17 procedures demands 55 business days and 12.4% of GDP per capita in Colombia and 174 business days and 116.4% of GDP per capita in Mozambique. In Italy, the completion of the 11 procedures takes up 121 business days and 24.7% of GDP per capita. Bolivia is in a class of its own: completing its 20 procedures requires 82 business days and fees of at least 2.6 times GDP per capita. These figures are admittedly extreme within the sample, yet meeting the official entry requirements in the average sample country requires roughly 63 days and fees of 34% of GDP per capita.

Table III also reports the1997 level of per capita GDP in U.S. dollars. Panel B reports averages of the total number of procedures and its components, time and cost by quartiles of per capita GDP in 1997. Two patterns emerge. First, the cost-to-per-capita-GDP ratio decreases uniformly with GDP per capita. The average cost-to-per-capita-GDP ratio for countries in the top quartile of per capita GDP ("rich countries") is 10% and rises to 65% in countries in the bottom quartile of per capita GDP. This pattern reflects the fact that the income elasticity of fees (in levels) is about 0.5 and does not have a deeper interpretation. Second, countries in the top quartile of per capita GDP require fewer procedures and their entrepreneurs face shorter delays in starting a legal business than those in the remaining countries.[6] The total number of procedures in an average rich country is 7 which is

---

[6] One objection to this finding is that entrepreneurs in rich countries might face more post-entry regulations than those in poor countries. We have collected data on one aspect of post-entry regulation

significantly lower than the sample average of 10 (t-stats are reported on Panel C). Rich countries also have fewer tax, labor and even environmental start-up procedures than the rest of the sample. Similarly, meeting government requirements requires approximately 43.2 business days in rich countries, statistically significantly lower than the rest-of-sample mean of 69.3 days. In contrast, countries in the other three quartiles of per capita income are not statistically different from each other in terms of the number of procedures and the time required to fulfill them.

To summarize, the regulation of entry varies enormously across countries. It often takes the form of screening procedures. Rich countries (*i.e.*, those in the top quartile of per capita GDP) regulate entry relatively less than do all the other countries. In principle, these findings are consistent with both the *helping- and grabbing-hand views*. Market failures might be more pervasive in countries with incomes just below the first quartile of GDP per capita, generating a greater demand for benign regulation in these countries. Alternatively, income levels may proxy for characteristics of political systems that allow politicians and/or incumbents to capture the regulatory process for their own benefit. In the next two sections, we try to relate these patterns in the data to the *helping-* and *grabbing-hand* theories of regulation.

IV. Who gets the rents from regulation?

---

around the world, namely the regulation of labor markets (see Djankov et al., 2000). The data show that the numbers of entry and of labor market regulations are positively correlated across countries, contrary to the substitutes hypothesis.

Theories of regulation differ in their predictions as to who gets its benefits. The *helping-hand* theory predicts that stricter entry regulation is associated with higher measured consumer welfare. In contrast, the *grabbing-hand* theory sees regulation as a tool to create rents for bureaucrats and/or incumbent firms. Stricter regulation should then be associated with higher corruption (*tollbooth* view) and/or profitability of incumbent firms (*capture* view).

Measuring rents is inherently extremely difficult, especially across countries. In this section, we present some measures that we have been able to find that might bear -- albeit quite imperfectly -- on the relevant theories. To begin, consider some variables bearing on the *helping hand* theory. Note that these variables reflect the activities of all firms in the country, and not just the entrants. The first is a measure of a country's compliance with international quality standards. It is a natural variable to focus on if the goal of regulation is to screen out entrants who might sell output of inferior quality. Second, we consider the level of water pollution, which should fall if entry regulation aims to control externalities and does so successfully[7]. Third, we consider two measures of health outcomes that entry regulation would guard against under the helping hand view: the number of deaths from accidental poisoning and the number of deaths from intestinal infections (due to reporting practices in poor countries, the second variable might better capture deaths from accidental poisoning in the poor countries, according to the World Health Organization.) Finally, we include two measures of the size of the unofficial economy: based on estimates of unofficial output and employment, respectively. Since firms operating unofficially avoid nearly all regulations, a large size of the unofficial economy in countries with more regulations

---

[7] We have tried measures of air pollution and obtained similar results.

would contradict the prediction of the helping hand theory that regulation effectively protects consumers.[8]

Table IV presents the results on these six measures of consequences of regulation using the number of procedures as dependent variables. For two reasons, we run each regression with and without the log of per capita GDP. First, some of the independent variables are correlated with income per capita and we want to make sure that we are not picking up the general effects of good governance associated with higher income. Second, we use GDP per capita as a rough proxy of the prevalence of market failures in a country. In a sense, including per capita income as a control is a crude way to keep the need for socially desirable regulation constant, which allows us to focus on the consequences (and later causes) of regulation separately from the need.

The results in Table IV do not support the *helping-hand* theory. Compliance with international quality standards declines as the number of procedures rises. Pollution levels do not fall with regulation levels. The two measures of accidental poisoning are not lower in countries with more regulations (if anything, the opposite seems to be true even controlling for per capita income.) More regulation is associated with a larger unofficial economy, and statistically significantly so if we use the unofficial employment variable. We have also run these regressions using cost and time as independent variables, and obtained generally insignificant results. While the data are noisy, none of the results support the predictions of the helping hand theory.

---

[8]There is a large literature detailing how regulation can drive firms into the unofficial economy, where they can avoid some or all of these regulations. See, for example, Johnson, Kaufmann, and Shleifer (1997) and Friedman, Johnson, Kaufmann and Zoido-Lobaton (2000).

18

To assess the capture theory, we have collected two variables: a measure of the return on assets for publicly-traded firms and a survey measure of "lack of product market competition." The capture hypothesis implies that the profitability of incumbents (proxied by return-on-assets) and the lack of market competition should be positively associated with the intensity of regulation. The results in Table V do not show that firms in countries with more entry regulation are more profitable.[9] Also, controlling for per capita income, competition in countries with more regulations is not perceived to be (statistically significantly) less intense. These results, while relying on crude measures and not contradicting the capture hypothesis, do not provide much support for it either.

A direct implication of the *tollbooth* hypothesis is that corruption levels and the intensity of entry regulation are positively correlated. In fact, since in many countries in our sample politicians run businesses, the regulation of entry produces the double benefit of corruption revenues and the increased profitability of the incumbent businesses already affiliated with the politicians. Figure III presents the relationship between corruption and the number of procedures without controlling for per capita GDP. Panel A of Table VI shows statistically that, consistent with the *tollbooth* view, more regulation is associated with worse corruption scores. The coefficients are statistically significant (with and without controlling for income) and large in economic terms. The results using the cost and the time of meeting the entry regulations as independent variables are also statistically significant, pointing further to the robustness of this evidence in favor of the tollbooth theory.

---

[9]These profitability numbers refer to public firms, and therefore are very imperfect. As an alternative, we measured profitability using the return on World Bank financed projects from the World Bank Operations Evaluation Department. Using these data, there is no evidence that more regulations are associated with greater returns, either.

A way to reconcile these findings on corruption with the helping hand theory is to argue that regulation may have unintended consequences. One version of this theory holds that benign politicians in emerging markets imitate the regulations of rich countries with best intentions in mind, but are stymied by corruption and other enforcement failures. This theory is not entirely consistent with our earlier finding that poorer countries in fact have more entry regulations than rich countries do. A further implication of this theory is that regulations should have a bigger impact on corruption in poorer countries. Panel B of Table VI addresses this hypothesis by examining separately the relationship between entry regulations and corruption in countries with above and below world median income. The results show that regulations actually have a stronger effect on corruption in the subsample of richer countries.

On the second version of the unintended consequences argument, it may be impossible for the benevolent government to screen bad entrants without facilitating corruption (Banerjee 1997, Acemoglu and Verdier 2000). In countries whose markets are fraught with failures, it might be better to have corrupt regulators than none at all. Corruption may be the price to pay for addressing market failures. We turn next to the evidence regarding the political attributes of countries that regulate to disentangle the competing theories of regulation.

V. Who Regulates Entry?

In this section we focus on the political attributes of countries that regulate entry. These attributes are intimately related to the competing hypotheses about regulation. In the helping hand view, regulation is a tool to remedy market failures. The implication is that countries whose political systems

20

are characterized by higher congruence between policy outcomes and social preferences should

regulate entry more strictly. In the empirical analysis that follows, we identify such countries with more

representative and limited governments. In contrast, despotic regimes generally pursue policies aimed

at maximizing the welfare of a few individuals and need not be concerned with market failure. The goal

of despotic rulers may well be to maximize bribes and profits of a few cronies rather than social welfare

(Olson 1991, DeLong and Shleifer 1993). On the grabbing hand theory, we expect more

representative and limited government to be associated with lighter regulation of entry.

We have collected data on a variety of characteristics of political systems, partly because we

want to be flexible regarding the meaning of "good government". Where possible, we use variables

from different sources to check the robustness of our results. Our political variables fall into four broad

groups. The first includes the de facto independence of the executive and an index of constraints on the

executive. The second group includes an index of the effectiveness of the legislature and a measure of

competition in the legislature's nominating process. The third group includes a measure of autocracy

and one of political rights.

An additional variable that we focus on, used in the earlier work by La Porta et al. (1998,

1999) is legal origin. We classify countries based on the origin of their commercial laws into five broad

groups: English, French, German, Scandinavian, and Socialist. Legal origin has been viewed as a proxy

for the government's proclivity to intervene in the economy and the stance of the law toward property

rights in a country (La Porta et al. 1999). Rather than capture the power of the government to

intervene, legal origin may capture its inclination to do so.

Correlations among the political variables are presented on Table VII. The political variables tend to be strongly correlated within blocks. For example, the measure of constraints on the executive power is highly correlated with de-facto independence of the executive (0.8523) and with the effectiveness of the legislature (0.8711). Yet, we report results on all three variables as each comes from a different source. Similarly, blocks of variables tend to be correlated with each other. In particular, democracy tends to be associated with competitive and limited executive and legislative branches. Legal origin, in contrast, tends to be insignificantly correlated with other political variables (the exception is Socialist legal origin which has obvious correlations with democracy and limited government). This particular result is consistent with our view that legal origin captures a different aspect of the political structure than do the other political variables. Note also that income levels are positively associated with various measures of democracy as well as with competitive and limited executive and legislative branches, but not with the legal origin. The fact that countries with severe market failures have more abusive governments by itself limits the normative usefulness of the Pigouvian model.

In Table VIII, we present the results of regressing our proxies for regulation on a constant and each of the political variables taken one at a time and the log of per capita income. In interpreting these regressions, we take the broad political measures of limited and representative government as being exogenous to the number, time, and cost of entry regulation. It is possible, of course, that both the political and the regulatory variables are simultaneously determined by some deeper historical factors. Even so, it is interesting to know what the correlation is: does the history that produces good government also produce a lot or a few regulations of entry? The control for the level of development is crucial (and in fact our results without this control are significantly stronger). Market failures are likely

22

to be both more pervasive and more severe in poor countries than in rich ones. Moreover, our measures of good government are uniformly higher in richer countries. Without income controls, our political variables may be just proxying for income levels. Imagine, for example, that the consumers in poor countries are exposed to a larger risk from bad firms entering their markets and selling goods of inferior quality. The Pigouvian planner would then need more tools to screen entrants in the poorer countries.

Holding per capita income constant, countries with more limited and representative governments have statistically significantly fewer procedures for entry regulation using 5 out of 6 measures of better government (Panel A). Using time (Panel B) and cost (Panel C) as dependent variables produces only somewhat weaker results. These results show that countries with more limited governments, governments more open to competition, and greater political rights have lighter regulation of entry even holding per capita income constant. Figure V plots the number of procedures against the autocracy score and shows that regulation is increasing in autocracy. Regulation is heavy in autocratic countries such as Vietnam and Mozambique and light in democratic countries such as Australia, Canada, New Zealand, and the US.

The log of per capita GDP tends to enter these regressions significantly. The interpretation of this result is clouded both because there are problems of multicollinearity with the political variables and because the direction of causation is unclear. Under the *grabbing-hand* hypothesis, burdensome regulation is a manifestation of transfers from entrepreneurs and/or consumers that are likely to be distortionary and, hence, associated with lower levels of income. Countries may be poor because regulation is hostile to new business formation.

Holding per capita income constant, countries of French, German and Socialist legal origin have more regulations than English legal origin countries, while countries of Scandinavian legal origin about the same. The results that civil law countries (with the exception of those in Scandinavia) regulate entry more heavily lends further support for the interpretation of the legal origin variables proposed by La Porta et al. (1999). Governments in civil law countries, especially the French civil law countries, tend to have a greater proclivity to intervene in economic life, and the evidence on the regulation of entry is further support of this interpretation. Note, however, that in itself this evidence does not discriminate among the alternative theories in the same way as the evidence on democracy does: the French origin countries might merely be more prepared to deal with market failures than the common law countries.

These results are broadly consistent with the *grabbing-hand* theory that sees regulation as a mechanism to create rents for bureaucrats and/or oligarchs. The *grabbing-hand* theory predicts that such rent extraction should be moderated by better government to the extent that outcomes in such regimes come closer to representing the preferences of the public. The grabbing hand theory also predicts that governments with a greater proclivity to intervene and lower security of private property will regulate entry more heavily. In contrast, these results are more difficult to reconcile social welfare maximization unless one identifies it with political systems of countries such as Bolivia, Mozambique, or Vietnam, where governments are unlimited and property rights insecure. Of course, these countries might be doing even worse in the absence of heavy regulation. Such a possibility strikes us as remote, especially since we keep the level of development constant in the analysis.

VI. Conclusion.

An analysis of the regulation of entry in 75 countries shows that, even aside from the costs associated with corruption and bureaucratic delay, legal entry is extremely expensive, especially in the countries outside the top quartile of the income distribution. We find that heavier regulation of entry is generally associated with greater corruption and a larger unofficial economy, but not with measures of better quality of private or public goods. We also find that countries with less limited, less democratic, and more interventionist governments regulate entry more heavily, even controlling for the level of economic development.

We interpret this evidence in light of the three broad approaches to regulation: the helping hand model, in which governments regulate entry to cure market failures, the capture model, in which governments regulate entry to protect the incumbent firms, and the tollbooth model, in which governments regulate entry to seek political benefits and bribes. We do not find convincing evidence to support the capture theory, although our data are probably least suited to test it. Our results are difficult to reconcile with the helping hand model, and even with the elaborate versions of this model which recognize that the generally benevolent regulation may have unintended consequences. On the other hand, all the evidence is naturally consistent with the tollbooth version of the grabbing hand model. Entry appears to be regulated more heavily by the less attractive governments, and such regulation leads to unattractive outcomes. The principal beneficiaries, if any, are the politicians and the bureaucrats themselves.

References

Acemoglu, Daron, and Thierry Verdier, 2000, "The Choice Between Market Failures and Corruption," American Economic Review 90, 194-211.

Ades, Alberto, and Rafael Di Tella, 1999, "Rents, Competition, and Corruption," American Economic Review 89, 982-993.

Banerjee, Abhijit, 1997, "A Theory of Misgovernance," Quarterly Journal of Economics 112, 1289-1332.

Central Intelligence Agency, *CIA World Factbook*, published online, various years.

Chidzero, Anne-Marie, "Senegal" in Webster, Leila, and Peter Fidler, Editors, 1996, "The Informal Sector and Microfinance Institutions in West Africa," The World Bank, Washington DC.

Claessens, Stijn, Simeon Djankov, and Daniela Klingebiel, 2000, "Stock Markets in Transition Economies," World Bank Financial Sector Discussion Paper no. 5.

DeLong, J. Bradford and Andrei Shleifer, 1993, "Princes and Merchants: European City Growth Before the Industrial Revolution," Journal of Law and Economics 36, 671-702.

Djankov, Simeon, Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer, 2000, "The Regulation of Labor," manuscript in preparation.

De Soto, Hernando, 1990, The Other Path, New York: Harper and Row.

Friedman, Eric, Simon Johnson, Daniel Kaufmann, and Pablo Zoido-Lobaton, 2000, "Dodging the Grabbing Hand: the Determinants of Unofficial Activity in 69 Countries," Journal of Public Economics 76, 459-494.

Johnson, Simon, Daniel Kaufmann, and Andrei Shleifer, 1997, "The Unofficial Economy in Transition,"
Brookings Papers on Economic Activity, Washington, D.C.

Kasnako–lu, Zehra, and Münür Yayla, "Unrecorded Economy in Turkey: A Monetary Approach",
1999. "Unrecorded Economy in Turkey (A Monetary Approach)" in Informal Sector in
Turkey (I), Tuncer Bulutay (ed.), SIS, Ankara, forthcoming.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny, 1998, "Law
and Finance," Journal of Political Economy 106, 1113-1155.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny, 1999, "The
Quality of Government," Journal of Law, Economics, and Organization 15, 222-279.

Olson, Mancur, 1991, "Autocracy, Democracy, and Prosperity," in Richard Zeckhauser, ed., Strategy
of Choice, Cambridge, MA: MIT Press.

Pigou, Arthur C., 1938, The Economics of Welfare, 4th ed., London:Macmillan and Co.

Pistor, Katharina, 2000, "Patterns of Legal Change: Shareholder and Creditor Rights in Transition
Economies," forthcoming in the European Business Organisation Law Review Vol. 1 Nr. 1.

Reynolds, Thomas H. and Arturo A. Flores, 1989, "Foreign law : current sources of codes and basic
legislation in jurisdictions of the world", Littleton, CO : F.B. Rothman.

Sananikone, Ousa, "Burkina Faso" in Webster, Leila, and Peter Fidler, Editors, 1996, "The Informal
Sector and Microfinance Institutions in West Africa," The World Bank, Washington DC.

Schneider, Friedrich, 2000, "The Value Added of Underground Activities: Size and Measurement of
Shadow Economies and Shadow Economy Labor Force All Over the World," Mimeo, July.

Schneider, Friedrich, and Dominik H. Enste, 2000, "Shadow Economies: Size, Causes, and

   Consequences," Journal of Economic Literature 38, 77-114.

Shleifer, Andrei , and Robert W. Vishny, 1993, "Corruption," Quarterly Journal of Economics   108,

599-617.

Shleifer, Andrei, and Robert W. Vishny, 1998, The Grabbing Hand: Government Pathologies and their

   Cures, Cambridge, MA: Harvard University Press.

SRI International, 1999, "International Practices and Experiences in Business Startup Procedures,"

   Arlington, VA: SRI.

Stigler, George J., 1971, "The Theory of Economic Regulation," Bell Journal of Economics and

   Management Science II, 3-21.

Turnham, David, Bernard Salome, and Antoine Schwartz, 1990, "The Informal Sector Revisitied,"

   OECD, Paris.

World Bank, 1998, "Constraints to Small Business Development in Georgia," Private Sector

   Assessment Study, Washington, D.C.

World Bank, 1999, "Administrative Barriers to Investment in Africa: The Red Tape Analysis," FIAS,

   Washinton, D.C.

World Economic Forum (1999), *The Global Competitiveness Report 1999*, Schwab, Klaus et al.,

   eds., New York: Oxford University Press.

Table I: List of Procedures for Starting-up a Company

This table provides an exhaustive list of all the procedures required to start-up a company in the seventy-five countries of the sample.

1. Registration requirements

S   Company checks the name for uniqueness

S   Company notarizes company deeds

S   obtains certificate of compliance with company law

S   obtains approval of draft version of company deeds

S   plain vanilla notarization

S   Company registers at the Companies Registry

S   pays registration fee at a separate institution

S   registers at a second institution

S   submits documents for the record to an institution linked to the Registry

S   plain vanilla registration (always present as a step - this is arguably the only truly necessary step for start-up)

S   Company publishes notice of company foundation

S   Company opens a bank account and deposits start-up capital

S   Company validates documents permitting the opening of a bank account with the start-up capital or files documents ex-post with the bank so the capital is released

S   Company closes capital account and opens a checking account

S   plain vanilla opening of a bank account

S   Company performs official audit at start-up

S   Company complies with additional requirements

S   seal and related certificates

S   clean criminal record

S   right to use business premises and/or office

S   certification of marital status

S   certificate of competence

S   financial plan

S   power of attorney when the law requires a professional to perform a given procedure

S   statutory authorization of officers

S   initial accounts (financial statements)

S   notarization of the registration certificate

S   registration with customs, even if the company does not export or import

S   registration of company bylaws with the tax Authorities, or an id number from the Tax Authorities for stamp duty purposes

S   a declaration regarding investments in kind even if the company has no investments in kind

2. Post -registration requirements

2.1 Municipal-level requirements

S   Business license (operations permit)

- S   Local levies
- S   Inspections (safety, building, fire, sanitation)
- S   Environmental declaration
- S   Zoning approval
- S   Notifications to local authorities
- S   Approvals by a second authority at the local level (e.g. local people's committee / residents' committee)
- S   Notifications to the post-office
- S   Permit to play music to the public (even if the line of business does not envision any such activity)

2.2 *National level or industry level requirements after registration*
- S   Membership in the Chamber of Commerce or Industry / Regional Trade Association
- S   Filing with the Statistical bureau / National Business Information Agency
- S   Filing with the Department/Ministry of Industry and Trade, Ministry of the Economy, or the respective ministries by line of business
- S   Signing up with the inter-company clearing mechanism
- S   Filing with the Ministry of Finance
- S   Obtaining approval from the Committee for Scrutiny of New Companies
- S   Miscellaneous government approvals

2.3 *Tax-related requirements*
- S   Registration for corporate income tax
- S   Separate registration for VAT
- S   Separate registration for state taxes (or other taxes that are neither national nor municipal)
- S   Sealing / validation / rubricating of accounting books
- S   Printing and approval of receipts
- S   Notice of start of activity to the Tax Authorities
- S   Visit to the bank related to the Tax Authorities
- S   Designating a bondsman (security) for tax purposes

2.4 *Labor-related requirements*
- S   Social security registration
- S   Separate registration for pensions, which is obligatory by law
- S   Separate pension registration, which is obligatory by law
- S   Separate health registration, which is obligatory by law
- S   Separate accident registration, which is obligatory by law
- S   Separate unemployment registration, which is obligatory by law
- S   Separate housing fund registration, which is obligatory by law
- S   Separate training fund registration, which is obligatory by law
- S   Inspections regarding work conditions / labor safety / labor standards
- S   Filing with the Ministry of labor / Employment center (labor exchange)
- S   Visit to the bank related to the Labor Authorities

§   Arranging automatic withdrawal of the employees' income tax from the company payroll funds

Table II: The Variables

This table describes the variables collected for the seventy five countries included in our study. The first column gives the name of the variable. The second column describes the variable and provides the sources from which it was collected.

Variable	Description
Number of procedures	The number of different steps that a start-up has to comply with in order to obtain a legal status, i.e. to start operating as a legal entity. Source: *Authors's own calculations.*
Safety & Health	The number of different safety and health procedures that a start-up has to comply with to start operating as a legal entity.
Environment	The number of different environmental procedures that a start-up has to comply with to start operating as a legal entity.
Taxes	The number of different tax procedures that a start-up has to comply with to start operating as a legal entity.
Labor	The number of different labor procedures that a start-up has to comply with to start operating as a legal entity.
Screening	The number of different steps that a start-up has to comply with in order to obtain a registration certificate that are not associated with safety and health issues, the environment, taxes, or labor.
Time	The time it takes to become operational, in business days. The figure is calculated by taking the time for registration, and adding the time for post-registration procedures. Time is measured in business days. Per definition, a week has five business days and a month has twenty two.
Cost	The cost of becoming operational as a share in GNP/capita. The start-up is assumed to have a start-up capital of ten times the GNP per capita level in 1997 in the country.
GDP_{1997} per capita	Gross domestic product per capita in current U.S. dollars in 1997. Source: *World Bank's World Development Indicators, 1999, Table 1.2. CD Rom 5/2000.*
Quality standards	Number of ISO 9000 certifications per thousand inhabitants issued by the International Organization for Standardization in 1998 to each country in the sample. "ISO standards represent an international consensus on the state of the art in the technology concerned....ISO 9000 is primarily concerned with quality management...ISO develops voluntary technical standards that contribute to making the development, manufacturing and supply of products and services more efficient, safer and cleaner....ISO standards also serve to safeguard consumers ....When an organization has a management system certified to an ISO 9000..., this means that the process influencing quality (ISO 9000) ....conforms to the relevant standard's requirements". Source: *International Organization for Standardization*
Water pollution	Emissions of organic water pollutants (kilograms per day per worker) for 1996. Measured in terms of biochemical oxygen demand, which refers to the amount of oxygen that bacteria in water will consume in breaking down waste. Emissions per worker are total emissions divided by the number of industrial workers. Source: *World Development Indicators 1999, Table 3.6, World Bank*.
Deaths from accidental poisoning	Log of the number of deaths caused by accidental poisonings (including by drugs, medications, bio-products, solid and liquid substances, gases and vapors) per million inhabitants. Average of the years 1981 through 1994 (the most recent available figure). Source: The number of accidental deaths from poisoning is taken from *Causes of Death and Life, Birth Statistics*, World Health Organization, Geneva, Switzerland, 1998. Population figures are taken from *World Bank's World Development Indicators.*
Deaths from intestinal	Log of the number of deaths caused by intestinal infections (including digestive disorders) per million inhabitants. Average of the years 1981 through 1994 (the most recent available figure).

Variable	Description
infections	Source: The number of deaths from intestinal infections is taken from *Causes of Death and Life, Birth Statistics*, World Health Organization, Geneva, Switzerland, 1998. Population figures are taken from *World Bank's World Development Indicators.*
Size of the unofficial economy	Size of the shadow economy as a percentage of GDP (varying time periods). Source: *Authors owns computations based on averaging over all estimates reported in Schneider and Enste (1999) for any given country as well as Sananikone (1996) for Burkina Faso, Chidzero (1996) for Senegal, Turnham and Schwartz (1990) for Indonesia and Pakistan, and Kasnako–lu and Yayla (2000) for Turkey.*
Employment in the unofficial economy	Share of the labor force employed in the unofficial economy in the capital city of each country as a percent of the official labor. Figures are based on surveys and, for some countries, on econometric estimates. Source: *Schneider (2000).*
Return on assets	Average of the five-year-mean-return-on-asset ratio for all publicly-traded non-financial firms (*i.e.*, excluding SICs 6000 through 6499) in a given country. Return on assets is defined as the ratio of gross income to total assets. Source: *WorldScope April 2000 (for all countries except Bulgaria, Croatia, Kazakhstan, Kyrgyz Rep.,Latvia and Slovenia) and, for countries not on WorldScope, Claessens, Djankov, and Klingebiel (2000).*
Product market competition	Survey measure of the extent to which respondents agree with the following statement: "Competition in the local market is intense and market shares fluctuate constantly". Scale from 1 (strongly agree) through 7 (strongly disagree). Source: *World Competitiveness Report*, 1999.
Corruption index	Corruption perception index for 1999. Corruption is defined broadly as "the misuse of public power for private benefits, e.g., bribing of public officials, kickbacks in public procurement, or embezzlement of public funds." The index averages the corruption scores given by the following sources: (1) Freedom House Nations in Transit (FH); (2) Gallup International (GI); (3) the Economist Intelligence Unit (EIU); (4) the Institute for Management Development, Lausanne (IMD); (5) the International Crime Victim Survey (ICVS); (6) the Political and Economic Risk Consultancy, Hong Kong (PERC); (7) The Wall Street Journal, Central European Economic Review (CEER); (8) the World Bank and University of Basel (WB/UB), (9) the World Economic Forum (WEF). Descending score from 1 (most corrupt) to 10 (least corrupt). Source: *Transparency International.*
Executive de facto independence	Index of "operation (de facto) independence of chief executive." Descending scale from 1 to 7 (1=pure individual; 2=intermediate category; 3=slight to moderate limitations; 4=intermediate category; 5=substantial limitations; 6=intermediate category; 7=executive parity or subordination). Average of the years 1945 through 1994. Source: *Polity III.*
Constraints on executive power	Index of constraints on the executive power based on the number of effective veto points in a country. Veto points include: (1) an effective legislature (represents two veto points in the case of bicameral systems); (2) an independent judiciary; and (3) a strong federal system. Source: *Polcon Database* available at <http://www.wharton.upenn.edu/faculty/henisz.html>.
Effectiveness of legislature	Index of the effectiveness of the legislature. Ascending scale from 1 to 4 (1=no legislature; 2=largely ineffective; 3=partly effective; 4=effective;). Average of the years 1945 through 1994. Source: *The Cross-National Time-Series Data Archive.*
Competition in the legislature's nominating process	Index of the competitiveness of the nominating process for seats in the legislature. Ascending scale from 1 to 4 (1=no legislature; 2=non-competitive; 3=partly competitive; 4=competitive). Average of the years 1945 through 1994. Source: *The Cross-National Time-Series Data Archive.*
Autocracy	Indicates the "general closedness of political institutions." Scale from 0 to 10 with 0 being high

Variable	Description
	in autocracy and 10 being low in autocracy. Average of the years 1945 through 1994. Source: *Polity III.*
Political rights	Index of political rights. Higher ratings indicate countries that come closer "to the ideals suggested by the checklist questions of: (1) free and fair elections; (2) those elected rule; (3) there are competitive parties or other competitive political groupings; (4) the opposition has an important role and power; and (5) the entities have self-determination or an extremely high degree of autonomy. Source: *Freedom of the World, 1996.*
Legal origin	Identifies the legal origin of each Company Law or Commercial Code of each country. There are five possible origins: (1) English Common Law; (2) French Commercial Code; (3) German Commercial Code; (4) Scandinavian Commercial Code; and (5) Socialist/Communist laws. Source: *La Porta et al. 1998, Reynolds and Flores 1989, CIA World Factbook 1996.*

Table III: The Data

The table reports the total number of procedures and their breakup in the following five categories: (1) safety and health; (2) environment; (3) taxes; (4) labor; and (5) screening. The table also reports the time and direct cost (as a fraction of GDP per capita in 1997) associated with meeting government requirements as well as the level of GDP per capita in dollars in 1997. Countries are sorted in ascending order on the basis of the total number of procedures. Table II describes the variables in detail.

	Number of Procedures	Safety & Health	Environment	Taxes	Labor	Screening	Time	Cost	GDP$_{1997}$ per Capita
Canada	2	0	0	1	0	1	2	0.0140	20,065
Australia	3	0	0	1	0	2	3	0.0209	21,555
New Zealand	3	0	0	1	0	2	17	0.0042	17,188
United States	4	0	0	1	0	3	7	0.0096	29,231
Sweden	4	0	0	1	1	2	17	0.0254	25,736
Ireland	4	0	0	1	1	2	25	0.1145	20,718
Finland	4	0	0	1	2	1	32	0.0119	23,315
Denmark	5	1	0	1	1	2	21	0.0136	32,372
Israel	5	0	0	2	1	2	32	0.2017	16,806
Norway	6	0	0	2	2	2	24	0.0249	34,822
Malaysia	6	0	1	1	1	3	41	0.1723	4,517
Hong Kong	6	1	0	1	1	3	41	0.2467	26,701
Zimbabwe	6	0	0	2	0	4	59	0.5849	731
United Kingdom	7	1	0	2	0	4	11	0.0056	21,748
Panama	7	0	0	1	1	5	14	0.3105	3,229
Latvia	7	0	0	2	0	5	20	0.2774	2,242
South Africa	7	1	0	2	1	3	30	0.3666	3,179
Nigeria	7	0	0	2	1	4	35	0.9927	338
Germany	7	0	0	0	1	6	90	0.0851	25,594
China	7	0	0	1	2	4	111	0.1068	735
Sri Lanka	8	0	0	2	1	5	31	0.0863	814
Lebanon	8	0	0	0	1	7	32	0.3893	3,609
Pakistan	8	0	0	1	2	5	32	0.5333	480
Belgium	8	1	0	1	1	5	42	0.1001	23,800
Taiwan	8	2	0	1	1	4	46	0.0072	13,073
Netherlands	8	0	1	1	0	6	68	0.1902	23,281
Kenya	8	1	0	1	1	5	77	0.3031	358
Kyrgyz Republic	9	0	0	1	1	7	23	0.1997	380
Slovenia	9	0	0	0	1	8	35	0.0709	9,165
Uruguay	9	0	1	1	3	4	105	0.0551	6,115

	Number of Procedures	Safety & Health	Environment	Taxes	Labor	Screening	Time	Cost	GDP$_{1997}$ per Capita
Poland	10	1	0	2	1	6	26	0.2795	3,510
Singapore	10	1	1	1	1	6	36	0.1239	31,036
Thailand	10	0	0	2	2	6	39	0.1025	2,540
Hungary	10	0	0	2	1	7	53	0.8101	4,503
India	10	1	0	2	2	5	61	0.1278	396
Bulgaria	11	0	1	2	0	8	20	0.1652	1,213
Ukraine	11	1	1	1	2	6	21	0.1970	980
Ghana	11	1	1	2	3	4	35	0.1489	383
Korea (South)	11	2	0	0	2	7	46	0.1563	9,622
Japan	11	2	0	2	1	6	50	0.1144	33,292
Senegal	11	0	0	2	3	6	50	0.9956	550
Turkey	11	0	0	2	1	8	55	0.0344	3,038
Romania	11	0	0	2	1	8	68	0.1137	1,545
Spain	11	0	0	2	2	7	83	0.1269	13,499
Czech Republic	11	1	0	1	1	8	97	0.2510	5,050
Italy	11	1	0	3	1	6	121	0.2474	19,912
Indonesia	11	0	1	2	1	7	142	0.2902	1,073
Kazakhstan	12	2	0	1	1	8	31	0.1248	1,403
Georgia	12	2	0	1	1	8	70	0.2797	966
Argentina	12	0	1	3	1	7	71	0.2323	9,110
Chile	12	2	1	4	0	5	78	0.1161	5,272
Switzerland	12	0	1	1	1	9	88	0.1336	36,014
Portugal	12	0	0	2	1	9	99	0.3129	10,185
Slovak Republic	12	1	0	2	2	7	110.5	0.1314	3,615
Ecuador	12	2	0	1	2	7	141	0.1553	1,656
Austria	12	2	1	1	1	7	154	0.4545	25,549
Greece	13	0	0	2	2	9	53	0.4799	11,360
Lithuania	13	3	0	2	2	6	66	0.0550	2,587
Tunisia	13	1	0	1	4	7	66	0.4241	2,055
Burkina Faso	13	0	0	2	2	9	77	1.3336	227
Jordan	13	0	2	2	2	7	81	0.4342	1,581
Croatia	14	1	1	1	3	8	58	0.3405	4,021
Tanzania	14	1	2	2	1	8	77	0.8675	226
Peru	14	1	1	1	4	7	171	0.2142	2,620
Philippines	15	2	1	2	2	8	59	0.1057	1,117

	Number of Procedures	Safety & Health	Environment	Taxes	Labor	Screening	Time	Cost	GDP$_{1997}$ per Capita
Brazil	15	1	0	5	4	5	67	0.6735	5,012
Mexico	15	2	2	2	3	6	112	0.5742	4,271
Venezuela	15	3	1	2	3	6	124	0.1107	3,841
Egypt	15	0	1	2	2	10	132	2.1608	1,253
Vietnam	15	1	1	1	2	10	171	1.5017	324
France	16	0	0	3	1	12	66	0.1970	23,754
Russia	16	0	0	2	2	12	69	0.3776	3,034
Colombia	17	3	1	1	2	10	55	0.1244	2,391
Mozambique	17	3	0	1	3	10	174	1.1640	90
Bolivia	20	1	1	1	6	11	82	2.6252	1,027
Sample Average	**10.17**	**0.71**	**0.35**	**1.55**	**1.51**	**6.07**	**63.05**	**0.34**	**9,448**
Panel B: Means by Quartiles of GDP per Capita in 1997									
1st Quartile	7.17	0.50	0.22	1.22	0.83	4.39	43.17	0.10	26,588
2nd Quartile	10.63	0.79	0.42	1.84	1.63	5.95	70.42	0.26	9,080
3rd Quartile	11.53	0.79	0.32	1.58	1.63	7.21	64.55	0.33	2,437
4th Quartile	11.21	0.74	0.42	1.53	1.89	6.63	73.00	0.65	589
Panel C: Test of Means (t-Statistics)									
1st vs 2nd Quartile	-2.95[a]	-1.03	-1.15	-1.87[c]	-2.67[b]	-1.82[c]	-2.34[b]	-2.61[b]	10.57[a]
1st vs 3rd Quartile	-3.94[a]	-0.99	-0.55	-1.73[c]	-2.77[a]	-3.38[a]	-1.55	-2.00[b]	20.71[a]
1st vs 4th Quartile	-3.28[a]	-0.90	-1.15	-1.59	-3.17[a]	-2.58[b]	-2.12[b]	-3.48[a]	22.56[a]
2nd vs 3rd Quartile	-0.87	0.00	0.55	0.82	0.00	-1.86[c]	0.46	-0.58	5.66[a]
2nd vs 4th Quartile	-0.50	0.18	0.00	1.01	-0.67	-0.95	-0.20	-2.46[b]	7.31[a]
3rd vs 4th Quartile	0.29	0.17	-0.55	0.29	-0.69	0.83	-0.57	-1.76[c]	9.10[a]

Table IV: Evidence on the Helping-hand Theory

The table presents the results of OLS regressions using the following six dependent variables: (1) Quality standards as proxied by the number of ISO9000 certifications; (2) Water pollution; (3) Deaths from accidental poisoning; (4) Deaths from intestinal infection; (5) Size of the unofficial economy as a fraction of GDP; (3) Water pollution; and (6) Employment in the unofficial economy. The independent variables are the number of procedures and the log of per capita GDP in dollars in 1997. Table II describes all variables in detail. Robust standard errors are shown below the coefficients.

Dependent Variable	Number of Procedures	Ln GDP/POP$_{97}$	Constant	R^2 N
Quality standards (ISO Certifications)	-0.2646[a]		0.7495[a]	0.2232
	(0.0600)		(0.1454)	75
	-0.1271[b]	0.0942[a]	-0.3345	0.4913
	(0.0614)	(0.0187)	(0.2370)	75
Water pollution	0.0108		0.1538[a]	0.0152
	(0.0089)		(0.0196)	68
	-0.0054	-0.0119[a]	0.2894[a]	0.1713
	(0.0090)	(0.0036)	(0.0447)	68
Deaths from accidental poisoning	0.6046[a]		1.7256[a]	0.0778
	(0.2303)		(0.4781)	55
	0.0364	-0.4040[a]	6.4584[a]	0.3118
	(0.2315)	(0.0941)	(1.1458)	55
Deaths from intestinal infection	2.3522[a]		-2.4771[a]	0.2924
	(0.3161)		(0.6548)	60
	1.2846[a]	-0.7455[a]	6.1875[a]	0.5205
	(0.3114)	(0.1412)	(1.6357)	60
Size of the unofficial economy [1]	13.6277[a]		-2.3438	0.1595
	(2.9920)		(6.4981)	66
	5.1184	-6.5696[a]	73.9952[a]	0.4087
	(3.2505)	(1.6090)	(20.2810)	66
Employment in the unofficial economy	19.8763[a]		-4.3097[a]	0.1758
	(6.2802)		(14.1459)	36
	14.9688[a]	-6.0749[a]	52.9568[b]	0.4914
	(5.5192)	(1.3639)	(20.5722)	36

[1]The regression on the size of the unofficial economy controls for the log of GDP per capita plus unofficial economy income (i.e., GDP per capita*(1+unofficial economy)), and not just by GDP per capita as all other regressions on the table do.

Note: [a] Significant at 1%; [b] Significant at 5%; [c] Significant at 10%.

Table V: Evidence on the Capture Theory

The table presents the results of OLS regressions using the following two dependent variables: (1) Return on assets; and (2) Product market competition. The independent variables are: (1) Number of procedures (Panel A); (2) Time (Panel B); and (C) Cost (Panel C). Each regression is run with and without controlling for the log of per capita GDP in dollars in 1997. Table II describes all variables in detail. Robust standard errors are shown below the coefficients.

Panel A: Number of Procedures as the Independent Variable

Dependent Variable	Number of Procedures	Ln GDP/POP$_{97}$	Constant	R^2 N
Return on assets	-0.0052		0.1832[a]	0.0011
	(0.0187)		(0.0438)	56
	0.0113	0.0166[a]	0.0024	0.0795
	(0.0180)	(0.0062)	(0.0699)	56
Product market competition	-0.4308[a]		5.9449[a]	0.1887
	(0.1035)		(0.2280)	54
	-0.1391	0.2324[a]	3.2677[a]	0.4852
	(0.1066)	(0.0515)	(0.6314)	54

Panel B: Time as the Independent Variable

Dependent Variable	Time	Log GDP/POP$_{97}$	Constant	R^2 N
Return on assets	-0.0052		0.1917[a]	0.0039
	(0.0124)		(0.0504)	56
	0.0002	0.0151[b]	0.0389	0.0747
	(0.0112)	(0.0060)	(0.0689)	56
Product market competition	-0.1758[a]		5.6806[a]	0.1045
	(0.0589)		(0.2388)	54
	-0.0337	0.2482[a]	2.9537	0.4732
	(0.0521)	(0.0484)	(0.5637)	54

Panel C: Cost as the Independent Variable

Dependent Variable	Cost	Log GDP/POP$_{97}$	Constant	R^2 N
Return on assets	-0.0089		0.1533[a]	0.0254
	(0.0086)		(0.0181)	56
	-0.0028	0.0139[c]	0.0444	0.0768
	(0.0098)	(0.0073)	(0.0540)	56
Product market competition	-0.1653[a]		4.6643[a]	0.2208
	(0.0283)		(0.0949)	54
	-0.0564	0.2265[a]	2.8993[a]	0.4890
	(0.0368)	(0.0516)	(0.4241)	54

Table VI: Evidence on the Toll-Booth Theory

The table presents the results of OLS regressions using corruption as the dependent variable. The independent variables are: (1) the number of procedures; (2) Time ; (3) Cost; and the log of per capita GDP in dollars in 1997. Panel A presents results for the 71 observations with available corruption data. Panel B reports results for both the sample of countries with GDP per capita in 1997 above and below the sample median. Table II describes all variables in detail. Robust standard errors are shown below the coefficients.

Panel A: Results for the whole sample

	(1)	(2)	(3)	(4)	(5)	(6)
Number of procedures	-3.2809[a]	-1.7249[a]				
	(0.3555)	(0.2726)				
Time			-1.2503[a]	-0.5524[a]		
			(0.2450)	(0.1556)		
Cost					-1.0757[a]	-0.3581[a]
					(0.1369)	(0.1324)
Ln GDP/POP$_{97}$		1.0796[a]		1.2072[a]		1.1246[a]
		(0.1259)		(0.1242)		(0.1316)
Constant	12.2803[a]	-0.1695	9.8176[a]	-2.9330[b]	2.9519[a]	-5.0634[a]
	(0.8462)	(1.3575)	(1.0262)	(1.2058)	(0.3095)	(1.0253)
R^2	0.3923	0.7749	0.1913	0.7204	0.3668	0.7145
N	71	71	71	71	71	71

Panel B: Results for Countries above and below the world median GDP per capita

	Countries Above Median GDP/POP$_{97}$			Countries Below Median GDP/POP$_{97}$		
	(1)	(2)	(3)	(4)	(5)	(6)
Number of procedures	-1.6508[a]			-0.1732		
	(0.3280)			(0.5423)		
Time		-0.6623[a]			0.1078	
		(0.1748)			(0.2132)	
Cost			-0.4580[a]			0.0628
			(0.1662)			(0.1245)
Ln GDP/POP$_{97}$	1.7664[a]	1.9926[a]	1.9139[a]	0.4645[b]	0.4721[b]	0.4938[b]
	(0.2878)	(0.3005)	(0.3341)	(0.1926)	(0.1766)	(0.2066)
Constant	-6.8486[b]	-10.1111	-12.7763[a]	0.3211	-0.5904	-0.2218
	(3.0867)	(3.1598)	(3.0221)	(1.6286)	(1.4239)	(1.3725)
R^2	0.7264	0.6656	0.6711	0.2251	0.2278	0.2260
N	37	37	37	34	34	34

Note: [a] Significant at 1%; [b] Significant at 5%; [c] Significant at 10%.

Table VII: Correlation Table for Political Attributes

The table reports correlations among the variables used in Table VIII. All variables are defined in Table II. Significance levels are Bonferroni-adjusted.

	Exec de-facto Independence	Constraints on Executive Power	Effectiveness Legislature	Competition Nominating	Autocracy	Political Rights	French LO	Socialist LO	German LO	Scandinavian LO	English LO	Ln GDP	Number	Time	Cost
Exec De-facto Indep.	1.0000														
Constraints Exec. Power	0.8523[a]	1.0000													
Effectiveness Legislature	0.9134[a]	0.8711[a]	1.0000												
Competition Nominating	0.8211[a]	0.7219[a]	0.8440[a]	1.0000											
Autocracy	0.8918[a]	0.8567[a]	0.8475[a]	0.7578[a]	1.0000										
Political Rights	0.5352[a]	0.6140[a]	0.5993[a]	0.4246[c]	0.4800[a]	1.0000									
French Legal Origin	-0.1899	-0.0230	-0.1963	-0.2204	0.0128	-0.0746	1.0000								
Socialist Legal Origin	-0.3946	-0.4586[a]	-0.3736	-0.3619	-0.5594[a]	-0.0754	-0.4179[b]	1.0000							
German Legal Origin	0.1832	0.2544	0.2579	0.1797	0.1510	0.2304	-0.2276	-0.1596	1.0000						
Scandinavian Legal Orig.	0.3353	0.3367	0.3399	0.2510	0.2979	0.2294	-0.1832	-0.1285	-0.0700	1.0000					
English Legal Origin	0.3027	0.1339	0.1520	0.2627	0.2760	-0.0942	-0.4654[a]	-0.3265	-0.1778	-0.1431	1.0000				
Ln GDP per cap in 1997	0.6453[a]	0.7619[a]	0.7506[a]	0.6323[a]	0.6296[a]	0.6749[a]	-0.0800	-0.2497	0.3316	0.3114	-0.0378	1.0000			
Number Procedures	-0.5743[a]	-0.4948[a]	-0.5699[a]	-0.4496[b]	-0.4718[a]	-0.2779	0.4680[a]	0.1881	0.0430	-0.3619	-0.5325[a]	-0.4285[b]	1.0000		
Time Procedures	-0.3580	-0.3150	-0.4061	-0.3479	-0.3099	-0.3116	0.4259[c]	0.0223	0.1365	-0.2108	-0.4635[a]	-0.3053	0.7531[a]	1.0000	
Cost Procedures	-0.5103[a]	-0.5419[a]	-0.6318[a]	-0.5233[a]	-0.4669[a]	-0.4303[c]	0.3280	0.1082	-0.1223	-0.3885[c]	-0.1887	-0.5695[a]	0.6229[a]	0.5490[a]	1.0000

Note: [a] Significant at 1%; [b] Significant at 5%; [c] Significant at 10%.

Table VIII: Evidence on Regulation and Political Attributes

The table presents the results of running regressions for three alternative measures of entry regulation: (1) Number of procedures in Panel A; (2) Time in Panel B; and (3) Cost in Panel C. For each dependent variable, we run seven regressions using various political indicators described on Table II and GDP per capita. Robust standard errors are shown below the coefficients.

Panel A: Number of Procedures as the Dependent Variable

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Executive De-facto Independence	-0.1278[a] (0.0265)						
Constraints on Executive Power		-0.5909[b] (0.2337)					
Effectiveness of Legislature			-0.3120[a] (0.0658)				
Competition Nominating				-0.2864[a] (0.1006)			
Autocracy					-0.0563[a] (0.0172)		
Political Rights						0.0045 (0.0264)	
French Legal Origin							0.6660[a] (0.0998)
Socialist Legal Origin							0.4869[a] (0.1024)
German Legal Origin							0.6715[a] (0.1561)
Scandinavian Legal Origin							-0.0510 (0.1621)
Ln GDP per capita in 1997	-0.0245 (0.0292)	-0.0296 (0.0358)	0.0020 (0.0341)	-0.0703[b] (0.0339)	-0.0596[b] (0.0297)	-0.1296[a] (0.0339)	-0.1129[a] (0.0291)
Constant	3.0035[a] (0.2259)	2.6684[a] (0.2639)	2.7804[a] (0.2518)	3.2373[a] (0.2650)	3.0971[a] (0.2307)	3.2776[a] (0.2406)	2.7534[a] (0.2115)
R^2	0.3339	0.2490	0.3247	0.2350	0.2473	0.1825	0.6098
N	74	74	64	64	74	74	75

Panel B: Time as the Dependent Variable

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Executive De-facto Independence	-0.1263[b] (0.0513)						
Constraints on Executive Power		-0.5488 (0.4772)					
Effectiveness of Legislature			-0.3274[b] (0.1375)				
Competition Nominating				-0.3848[b] (0.1735)			
Autocracy					-0.0594[c] (0.0331)		
Political Rights						-0.0848[c] (0.0509)	
French Legal Origin							1.1150[a] (0.2123)
Socialist Legal Origin							0.5808[b] (0.2359)
German Legal Origin							1.4043[a] (0.3438)
Scandinavian Legal Origin							0.3263 (0.3050)
Ln GDP per capita in 1997	-0.0703 (0.0524)	-0.0775 (0.0688)	-0.0593 (0.0592)	-0.1183[c] (0.0609)	-0.1007[c] (0.0548)	-0.0925 (0.0743)	-0.1924[a] (0.0606)
Constant	5.0125[a] (0.4592)	4.6831[a] (0.5060)	4.9921[a] (0.4511)	5.4594[a] (0.5119)	5.0945[a] (0.4594)	5.0691[a] (0.5092)	4.7791[a] (0.4137)
R^2	0.1376	0.1067	0.1691	0.1516	0.1162	0.1094	0.4304
N	74	74	64	64	74	74	75

Panel C: Cost as the Dependent Variable

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Executive De-facto Independence	-0.1710[c]						
	(0.0961)						
Constraints on Executive Power		-1.0027[c]					
		(0.6106)					
Effectiveness of Legislature			-0.6685[a]				
			(0.1950)				
Competition Nominating				-0.6756[b]			
				(0.2804)			
Autocracy					-0.0822		
					(0.0634)		
Political Rights						-0.0589	
						(0.0800)	
French Legal Origin							0.9698[a]
							(0.3306)
Socialist Legal Origin							0.4179
							(0.3324)
German Legal Origin							0.6839
							(0.7061)
Scandinavian Legal Origin							-0.8399[c]
							(0.4513)
Ln GDP per capita in 1997	-0.3835[a]	-0.3566[a]	-0.2459[a]	-0.3884[a]	-0.4228[a]	-0.4330[a]	-0.4495[a]
	(0.1009)	(0.1142)	(0.0808)	(0.0866)	(0.1066)	(0.0999)	(0.0886)
Constant	2.0911[a]	1.4327[a]	1.5079[a]	2.4780[a]	2.1974[a]	2.0978[a]	1.4291[b]
	(0.6417)	(0.8015)	(0.5810)	(0.6591)	(0.6666)	(0.6538)	(0.6400)
R^2	0.3693	0.3613	0.4335	0.3915	0.3548	0.3264	0.4565
N	74	74	64	64	74	74	75

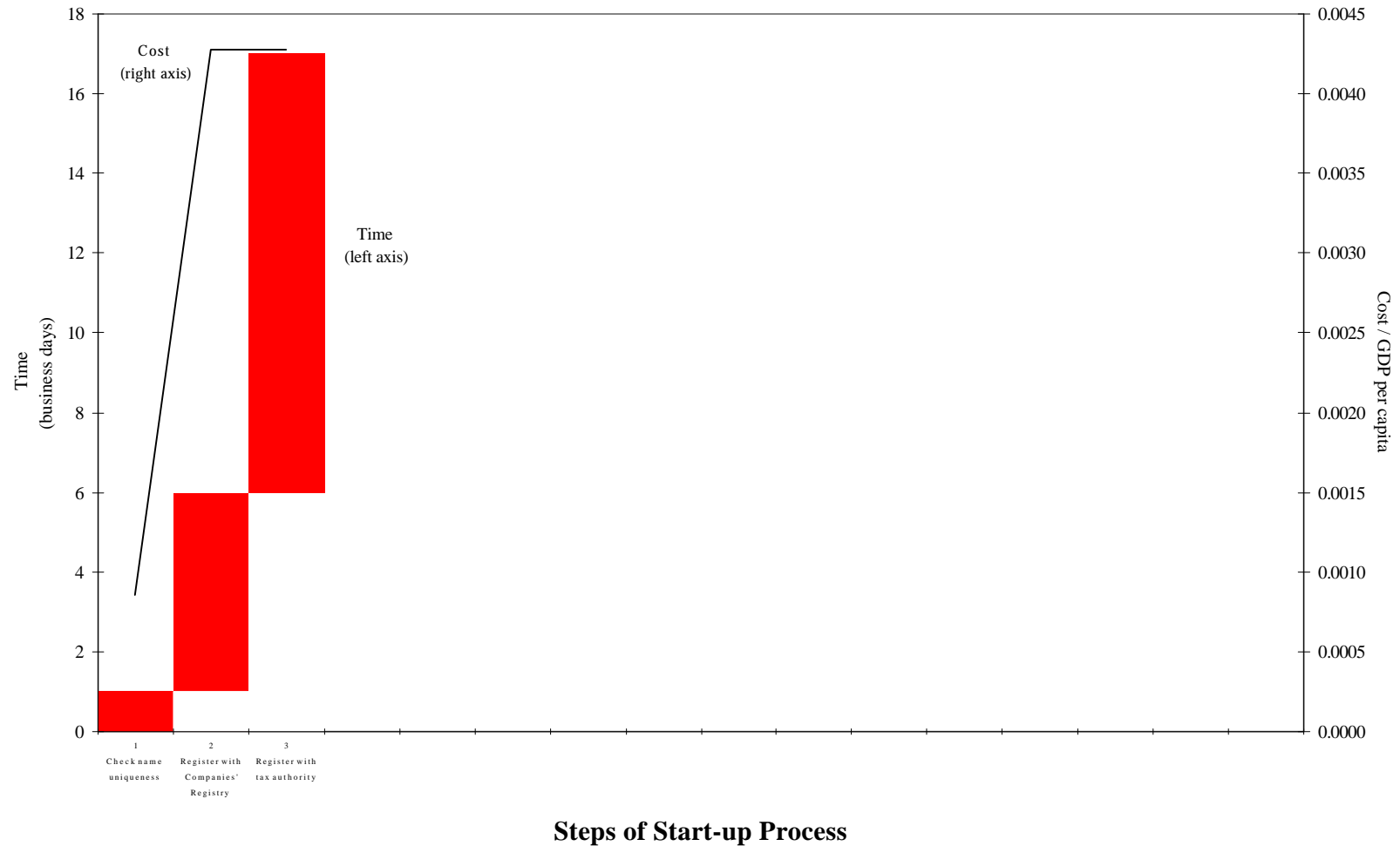**Note:** [a] Significant at 1%; [b] Significant at 5%; [c] Significant at 10%.

Figure I. Start-up procedure in New Zealand. Procedures are lined up sequentially on the horizontal axis. The time required to complete each procedure is described by the height of the bar and measured against the left scale. Cumulative costs are plotted using a line and measured against the right scale.
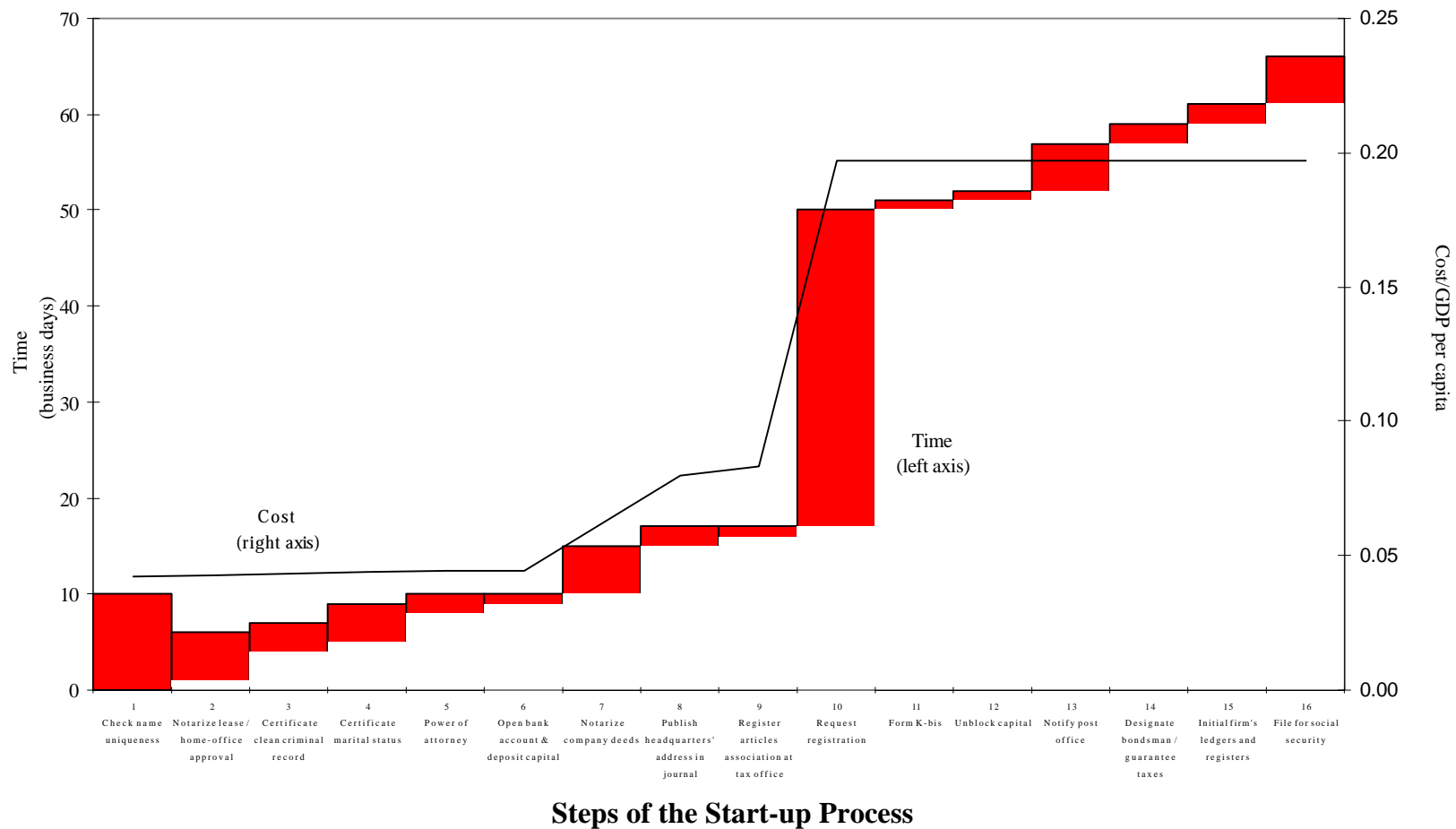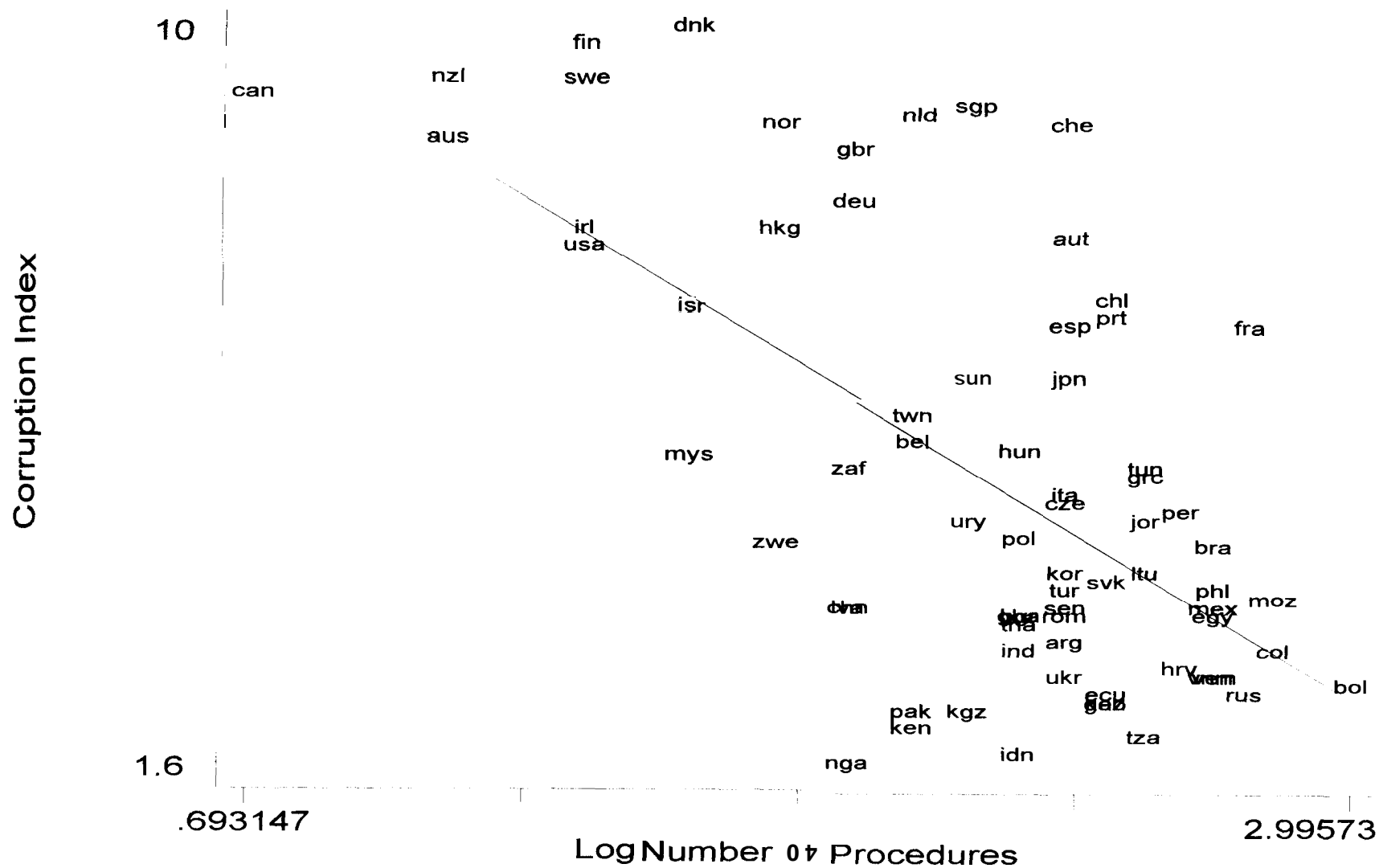
Figure II. Start-up procedure in France. Procedures are lined up sequentially on the horizontal axis. The time required to complete each procedure is described by the height of the bar and measured against the left scale. Cumulative costs are plotted using a line and measured against the right scale.
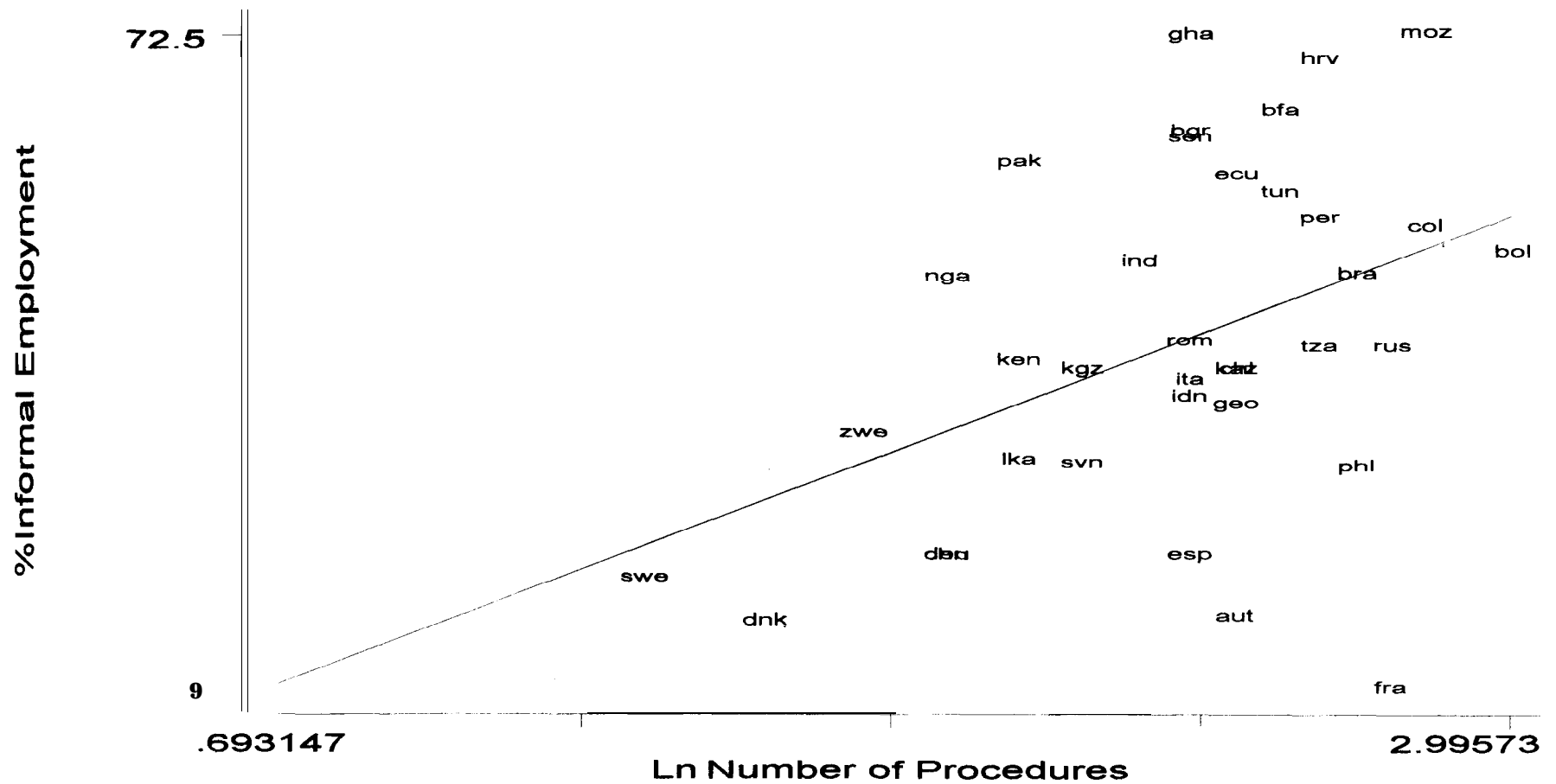
Figure III. Corruption and Number or procedures. The scatter plot shows the values of the corruption index against the (log) number of procedures for the 71 countries in our sample with non-missing data for corruption.

Figure IV. Unofficial employment and number of procedures. The scatter plot shows the values of the percentage of the labor force employed in the unofficial economy against the (log) number of procedures for the 36 countries in our sample with non-missing data for employment in the unofficial economy.
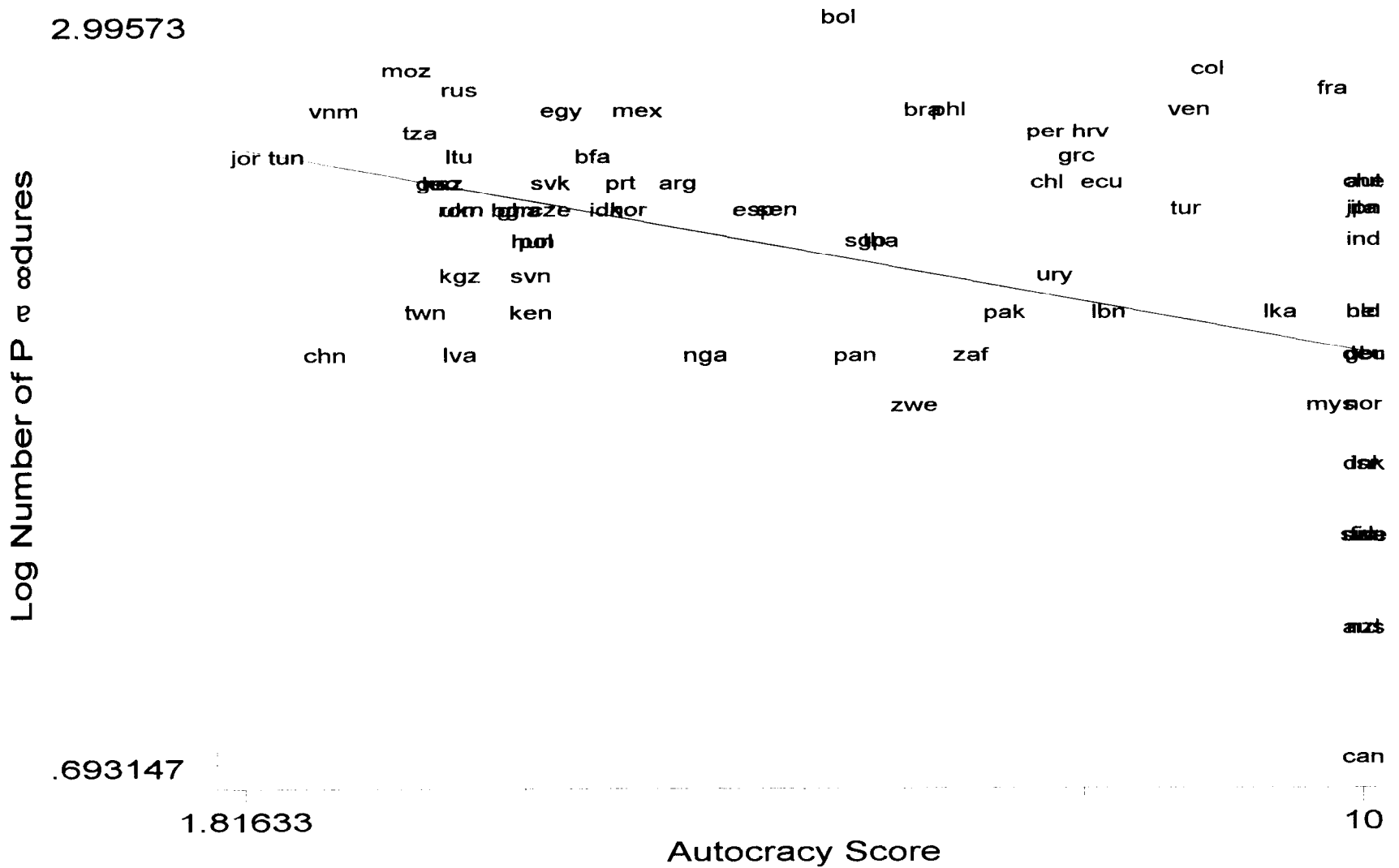
Figure V. Autocracy and number of procedures. The scatter plot shows the values of the (log) number of procedures against the autocracy score (higher values for more autocratic systems) for the 74 countries in our sample with non-missing data for the autocracy score.