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“Cosi fan tutte”? Linking Levels of Development and Competition Law Regimes

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I. Introduction

The expansion of competition law to more than 100 jurisdictions worldwide presenting different degrees of economic, social and institutional development raises important questions as to the appropriate design of competition law regimes. We have identified elsewhere, theoretically, the set of factors that limit the effectiveness of a competition law regime.[1] This chapter extends that analysis in an empirical exploration of these factors. We consider that the following factors restrict the effectiveness of a competition enforcement regime: (i) vested interests that dominate economic policy making, either through legal means (party financing, lobbying, influence in the nomination of the government, senior officials or the council of the national competition authority (NCA)), or illegal means (corruption, abuse of public service power, or cronyism); (ii) inefficient public administration and regulatory systems that limit the capacity and effectiveness of public bodies, including the NCA, and (iii) inefficient judicial systems that preclude the sanctioning of violations of the competition law.

Section 2 of this paper discusses the linkage between growth and competition law. There is a considerable literature documenting the effect of a vigorous competition policy on growth. We consider that competition policy includes a number of public policies promoting competition on the market, some of which are less technology or resources intensive than others. Trade policies and market liberalization usually require the opening of the market and the erosion of trade and regulatory barriers, while the adoption of a competition law regime requires the establishment of enforcement institutions that should operate in the existing institutional environment of the country, sometimes at considerable costs and risk. We argue that different instruments should be used according to the level of institutional development of each country. Our study thus links the adoption of antitrust law (competition law regimes) with the development and growth stage of a particular jurisdiction. For developing countries with weak institutions, we argue that priority should be given to building the market economy and using the entire panoply of economic policies to promote competition. If a competition authority is set up, priority should be given to competition advocacy and to push the role of competition policy in external trade, privatization, and industrial policies rather than on pursuing complex antitrust cases with little effect.

Section 3 provides the theoretical foundation of the chapter. We create a law and economics enforcement model, based on the regulation theory of Glaeser and Shleifer[2]. We argue that competition law regimes should be designed according to the institutional level of development of the country. Below a certain level of

development there is little support for a competition law regime because the implementation of the regulatory system requires a high level of information and a high level of enforcement capacity by the judicial system. It also requires a certain balance of power among economic agents. Once those pre-requisites are satisfied, the model specifies at least two regimes of enforcement that are distinguished by the level of institutional capacity, one which is rules based, and the upper level quite similar to the regime found in the most developed jurisdictions, such as the United States or the European Union.

The most difficult part of the theory is to provide more content and detail to the model. Section 4 uses a "revealed preference" approach in conjunction with a model of an efficient competition law regime to characterize empirically different regimes. In fact, the approach taken is to look around the world and see which countries have established a competition enforcement regime and then to try to characterize each of the regimes. This methodology uses the premise that the real world is the best laboratory to test what is required for an efficient competition law regime. Thus, section 4 defines a model of different efficiency levels in an enforcement regime.

Section 5 characterizes the efficiency of the enforcement regimes using three types of indicators: competition authority capabilities in terms of the competition act, personnel, and financial resources. The Section then uses these indicators to study the properties of their statistical distributions. Section 6 analyzes the factors that influence competition law enforcement using statistical and econometric analysis. Section 7 tries to identify the pre-requisites for the different policy regimes of competition law enforcement, based on the empirical analysis. Section 8 specifies the policy implications from the theoretical and empirical models, section 9 addresses the role of international organizations and the following section concludes.

II. Growth, development and competition law regimes

There are important empirical indications that more competition enhances the development potential of an economy. The starting point is that the basis of a market economy is the operation of the markets and the process of rivalry that sets markets in motion (competition). The new microeconomics of development has shown the central role of the mechanism discovered by Adam Smith regarding the link between the division of labor and market dimension. The process of development is characterized by specialization and productivity increases associated with the division of labour that is only possible with market expansion and multiplication[3]. A different strand in the literature focuses on the dynamics of firms, their turnover of firms, entry and exit strategies, or their growth and success in successive waves of technological growth. This is, to some extent, the Schumpeterian process of "destructive creation." There are thus two processes operating at the micro level—the shift of resources from less productive to more productive firms, and the expansion of the more productive firms by technological improvements. These two mechanisms: (1) the division of labor with market expansion, and (2) the dynamics

of firms that lead to productivity increase are largely driven by competition. The main link in today's Industrial Organization models is between competition and dynamic efficiency.[4]

There is important empirical evidence that competition is linked to growth in developed countries. Disney et al.[5] conclude that competition increases productivity levels and the rate of growth of productivity. Recently, Bloom and van Reenen[6] show that good management practices are strongly associated with productivity and those are better when product market competition is higher. Finally, an efficient market for corporate control with open rules for takeovers reinforces the impact of competition on productivity[7]. Other studies by Blundell et al.[8] and Aghion and Griffith[9] also confirm the above results. A study about Australia shows that competition enhancing reforms in the 1990s contributed to an increase in GDP.[10]

There has also been some research linking competition and growth with regard to developing countries. Dutz and Hairy[11] find that competition policy has a positive impact on growth, even after taking into consideration the contribution of trade and institutional policies. Reviewing a large number of studies in the 1990s, Tybout[12] concludes that there is evidence that protection increases price-cost margins and reduces efficiency at the margin, and that exporters (firms that succeed in the international market) are more efficient than non-exporters. Using a new data set for Latin America, Haltiwanger et al.[13] confirm that trade liberalization and competition lead to higher levels of efficiency at the firm level and also to reallocation of resources to more productive sectors. Using data for Colombia, Eslava et al.[14] observed that the trade and financial reforms of the 1990s were associated with productivity increases resulting of reallocation from low to high productivity firms. Similar evidence has been produced for Chile[15] and Brazil[16] due to trade liberalization and for India due to the elimination of the Raj licensing scheme.[17] Aghion et al.[18] produced evidence that increasing competition in South Africa manufacturing should have "large productivity effects." Aghion and Schenkerman[19] even found situations where countries can find themselves in a competition trap that blocks growth. Those most vulnerable situations are when the initial level of competition is low, the initial degree of cost asymmetry among firms is low, and politicians are less driven by social welfare concerns.

It is also widely accepted that competition can also promote institutional innovation and the emergence of efficient institutions that support economic growth. This becomes clear if one focuses on Olson's[20] theory of collective action and the concept of distributional coalition, which is a group whose collective action can secure a larger share of the resources generated by the economy to its members, at the expense of the population at large, to explain why some countries grow and others stagnate. In a stable society distributional coalitions gradually find way to solve their collective action problems. Once they are formed and established they prefer the status quo and are likely to oppose innovations that would increase the growth rate of the economy. Thus, coalitions can trap a society into a stagnant economic state. Competition becomes thus a key factor for efficient institutional

change[21]. This conclusion is supported by a wealth of literature. Parente and Prescott[22] presented a formal model that captures the idea that insider groups that operate with a given technology may oppose the introduction of innovations and thus block economic growth. Grossman and Helpman[23] built a simpler, but very insightful model, to explain why there are different protection rates in external trade by industries and sectors.[24] In their model special-interest groups, organized in lobbies, make contributions in order to bias the government choice of trade policy in their favour. Politicians maximize a two-part welfare function that depends on those contributions collected and the welfare of voters at large, because they need them for re-election. The need for party financing and particularly campaign financing in a democratic state leads politicians to put "protection for sale". The model generates a set of protection rates that obey a Ramsey modified rule. This is a type of common agency problem where an agent (the government or political party) acts in the name of several principals (interest groups), while bearing a cost for the implementation of the policy in terms of welfare costs of protection.[25] Mitra[26] extended the work of Grossman and Helpman to show that greater inequality in income or wealth distribution leads to a higher rate of rent extraction from lobbies and thus lowers social welfare. He also demonstrated that industries with higher capital intensity, which are more concentrated and have inelastic demand have stronger lobbies.[27] A test of the "protection for sale" model by Gawande and Bandyopadhyay[28] for the US gives high marks to that theory. Acemoglu, Aghion and Zilibotti[29] also tackled an issue in the line of Parente-Prescott: a change in policy by the government against vested interests would increase the level of development, because societies can be trapped with the "inappropriate institutions" and relatively backward technologies. They showed in their model the existence of a dynamic equilibrium and the possible occurrence of a political economy trap where capitalists bribe the government in order to maintain a regime of monopoly rents with low competition that ends up blocking growth over the long-term. Such trap is more likely in societies with weak (more corruptible) institutions.

An additional strand of the literature links competition, rents and corruption. Andes and di Tela[30] built a model of compensation and corruption for government agencies.[31] They claim that when the principal (the people) pursues multiple and diffuse objectives, state contingent contracts with the agent (government) are hard to write and rents have to be allocated to enhance performance. A similar agency problem may occur between another principal (government) and the agent being the bureaucracy. The authors use an efficiency wage theory to determine the optimal level of corruption. When a firm under the influence of a bureaucrat enjoys rents, the value of his control rights is high. Bureaucrats can trade part of this control in exchange for bribes. Then, in a regime of monopolies, with higher rents, there would be higher level of corruption compared with a more competitive world. In fact, their empirical analysis corroborates this view. The problem is particularly acute in an oligarchy and when those vested interests represent small groups, like traditionally powerful family groups.

In the absence of competition policy, the economy will suffer from distortions with static and dynamic effects, the increased rents provided to vested interests would deepen inequality and may decrease the productivity of the economy by deviating resources from more productive to less productive sectors or industries, blocking the entry of new firms and preventing the process of creative destruction to take place. As a consequence, the economic production would be limited inside the Production Possibility Frontier due to the misallocation of resources. The first empirical work that tried to measure these effects directly around the world has been undertaken at the World Bank by Kaufman and others under the umbrella of "governance and capture". Kaufman calls this type of behavior "legal corruption", in the sense that corporations can lobby or obtain certain policy measures that may not be illegal but increase their rents at the cost of social welfare. Transparency International that collects data on corruption does not cover this type of behavior, and has proposed the concept of "misuse of entrusted power for private gains".[32]

One of the pioneering works on state capture by firms and its implications was carried out by the World Bank on Transition economies at the end of the 1990s.[33] According to the authors, the "leviathan" state is being replaced by the oligarchs who "capture the state", the policy and law environment is moulded to the captor firm's advantage, at considerable social cost. Based on the Business Environment and Enterprise Performance Survey they study three potential interactions between the firms and the state in 21 transition countries: (i) administrative corruption: when firms make illicit and non-transparent private payments to public officials to alter administrative regulations; (ii) state capture: when firms make illicit and non-transparent private payments to public officials in order to influence the formation of laws, rules, regulations or decrees by state institutions, including the courts; and (iii) influence: extent to which firms influence the formation of those laws or decrees without recourse to payments. The private gains to capture are quite substantial. They find that captor firms grew about four times more than other firms in high captured countries, but in the regression results it seems that capture does not lead to higher levels of investment.[34] It is not only incumbent firms that engage in capture. There is a sample of new entrants that also engages in capturing in order to get more secure property rights and contractual advantages.

This brief literature review highlights that the main challenge for reformers is to structure institutions that limit the influence of vested interests in policy formulation, reduce their rent extraction and give a major voice to the interests that embody social welfare. Most of the literature in competition policy takes, however, for granted that the existing socio-political institutions may control excess economic and political power as well as the role of vested interests and does not integrate institutions in the analysis. The fact that competition policy seems to promote growth, in general, does not, however, mean that each country, whatever its institutional or economic development, should adopt a competition law regime.

A distinction should be established here between competition law regimes and competition policies. Competition policies give the framework for markets and

thus largely influence resource allocation required for economic development. In fact, a discussion of competition policies and other policies that are related with the functioning of the market should precede any discussion of competition law regimes. They are the context in which competition law enforcement takes place. For instance, can we discuss, in a small developing country, abuses of dominance if there are high barriers to external trade or if large parts of the economy are monopolized? Or, what is the purpose of having a competition authority if government favours the formation of national champions? These policies that are more directly related with the functioning of the market and that can promote more competitive outcomes are market infrastructure policies, external trade policies, entry and exit of firms policies, licensing, privatization, investment policies, procurement, regulation and innovation policies. Some of them are more technology and resource intensive than others. In developing countries structural policies regarding the formation and functioning of markets are more important and are the pre-condition for any competition law regime. These are all policies that have to be taken into account when defining a competition law regime. They constitute the foundation in which a competition law regime operates.

Based on this distinction, we argue that the link between competition and development is not uni-dimensional, that is competition promotes growth, but it should also be accepted that the level of development of a country is a factor that determines the type of competition law regime that will be adopted, or not, and, more generally, the design of a competition policy strategy. A one size competition law does not fit all levels of development. It follows that for competition policy to become optimal, there is a need to integrate to the usual welfare economics and IO models employed by competition lawyers and economists the insights of development economics.

One could establish a parallelism with the debate that opposed in the late 1950s and early 1960s the proponents of “mono-economics”, that is the claim that economics consists of principles of universal validity, with the proponents of the view that developing countries have particularities that require a different kind of economics[35]. The concept of “underdeveloped country” that emerged was instrumental in the flourishing of the separate discipline of development economics[36]. The rejection of the mono-economics claim presupposed that underdeveloped countries shared a set of specific socio-economic and institutional conditions that set them apart from the developed world, thus requiring the adoption of new economic strategies to promote development and growth[37]. The essence of their claim was that institutional differences between developed and underdeveloped nations did not only affect the speed of economic development but also the path of economic development.

The opposition between these two approaches may now look simplistic. First, the proponents of monoeconomics recognized that there are different stages in the growth pattern of economies. Most notably, Rostow proposed a theory of growth based on five stages that any society must undergo for achieving the higher levels of

economic development: (1) the stage of the traditional society, (2) the precondition for take-off, (3) the drive to maturity, (4) the age of mass consumption and (5) beyond mass consumption[38]. According to Easterly, Rostow recognized the existence of a financing gap for developing economies and suggested methods to calculate the necessary investments and financial aid needed from developed countries in order to achieve the stage of "take off"[39]. Second, development economics emphasis on the specific characteristics of "underdeveloped countries" ignored a number of important micro-economic factors, such as the role of the price mechanism[40]. Third, growth remains an important concern for "developed" economies as well, in particular as they are confronted to extended periods of economic stagnation and massive unemployment.

There is a consensus that strong institutions are a prerequisite for the success of a growth strategy[41]. These can be acquired through technology transfer, for example the transplantation of a successful reform (e.g. the adoption of a competition law statute and the creation of a competition agency), as one can learn from the institutional arrangements prevailing elsewhere without incurring the costs of building institutions from scratch, or by employing an experimental approach that will give space to local knowledge, in case the requisite technology should be highly specific to local conditions[42]. Our position is that whichever option is chosen, it is unavoidable that the local conditions and, more specifically, the local institutional environment will play an important role in the implementation of the reforms, either at the policy level or the meta-level of social norms. This explains the wide variety of enforcement of newly adopted competition law statutes in several parts of the world, even if they were inspired by the same competition law models. As we will explain, in some circumstances, adopting a competition law regime might produce social costs. Transplanting a competition law statute or establishing an agency is not the whole part of the story. The establishment of a regime of competition law requires thus some form of social infrastructure and should fit to the institutional capabilities of each jurisdiction. We employ a law and economics model of competition law enforcement to derive useful conclusions as to the different stages of competition law regimes.

III. A Law and Economics Model of Competition Law Enforcement

We will focus only on the antitrust law regime, i.e., the competition law and its enforcement. We argue that for each level of institutional development there is an optimal degree of differentiation in the competition rules that minimizes costs of information and transaction. But these rules also vary with the level of institutional development. Individual fines imposed by the law and actually enforced have to be higher than the per case subversion costs (legal costs, bribing, lobbying costs plus political costs). Moreover, the probability of being detected times unit costs of subversion has to be higher than the opportunity cost to the firm which is restricting competition. Thus, if the level of capture of the government is high and the costs of

subversion are rather low, it is doubtful that any competition statute would ever be enforced effectively. In fact, antitrust law might be even used for favoring interest groups and extortion.

We define three regimes based on Glaeser and Shleifer's regulatory state theory.[43] In Regime I there is an environment of weak law and order. Introducing a competition law enforcement is difficult because it would elicit extortion at a higher social cost.[44] Due to the importance of vested interests in the economic policy, the main role of competition law is in advocacy to influence the formulation of external trade and industrial policies.

In less developed countries, there are a large number of markets which are either inexistent or inefficient. There might be a serious lack of physical infrastructure. Furthermore, there is a lack of information and legal networks for the operation of markets, which enhances informal arrangements. In this case, the primary role of competition policy should be to concentrate on building a market economy. By reducing tariffs and quantitative restrictions, external competition penetrates into the country, eliminating inefficient industries and firms, and reallocating resources towards the sectors where the country has competitive advantages. However, since a large number of these developing countries are major commodity exporters to the world market, issues of monopoly in the domestic and international markets may cause restrictions in production and affect incentives for farmers. For the nontradable sectors, naturally protected from competition, privatization policies are usually major determinants of market concentration in telecom, energy, transport and other service sectors. Equally relevant are the influence of procurement and licensing policies for shaping market competition levels. Regulatory barriers to entering and exiting markets as well as other business policies also may condition competition by restricting entry and thus promoting monopolization.

Regime II corresponds to a lower intermediate level of institutional development where the country already has a minimum level of democracy (see *infra*). In this regime, the country already has surpassed a minimum level of education, mainly at the secondary level, that reflects on the maturity and efficiency of the operation of its institutions. More specifically for a competition law regime, the country needs to have an administrative and judicial system with a minimum of efficiency. In this case the country may adopt a simplified system of law enforcement, where rules, as opposed to standards, play a major role.

Once the country has climbed up in the institutional development ladder to an upper middle level, it enters into the first window of Regime III where it can attempt to resolve disputes based on negligence and private litigation. As we will see below, only developed countries (in the sense of the World Bank) should enter this regime. The country already needs to have a well-developed institutional system in terms of law and order. These attributes include: administrative and judicial capabilities that reflect the independence of the regulators and courts from the influence of executive branch and major businesses. Empirical observations suggest a two tiered system in Regime III, with two levels of fines and important requirements of information in the

procedural aspects of competition law. However, only a case by case analysis will dictate in which of these tiers a country should be.

In the last window of Regime III, the country has strengthened institutions in such a way that the political, administrative, and judicial systems are subject to checks and balances and are largely immune to capture by vested interests. In this case, the country can introduce strict liability as the rule with private litigation functioning as the main instrument of law enforcement. High fines have a high dissuasive effect. In this regime, societies can reap of all the benefits of modern competition law enforcement.

IV. What Characterizes an Effective Competition Law Regime?

Like in so many fields of economics, we are going to take a "revealed preference approach" in characterizing competition law regimes. That is, let us look around the world and see how different competition law regimes operate and then infer what characterizes them.

The first element of a competition law regime is the introduction of the competition law itself. However, there are no two competition laws exactly alike. They differ in both substantive and process matters. We classify competition laws according to the following criteria:

- Coverage. Does the law apply to all sectors of economic activity, including public enterprises and public entities, when performing commercial activities?
- Substantive law. Does it explicitly prohibit cartels and coordinating practices? Does it prohibit abuses of dominant position, and in particular predatory practices and maintains an open access to essential facilities? Does it control mergers that may lessen substantially competition?
- Procedural law. Does it safeguard the rights of defence and due process? Is the process transparent, does it protect commercial secrets and allow the parties to access information? Is there judicial control of the National Competition Authority's (NCA) decisions? Does it sanction violations of the law, does it establish fines, and are they significant?

The classification is from 1=weak competition law to 5=strong competition law. To get the maximum points the competition law has to fulfill all the above criteria.

The second element is the creation of a national competition agency. The starting point to assess a regime is simply to measure the capabilities of the agency and its resources. The legal, human and financial capabilities of the agency are the most important. The competition law and its statutes establish the legal capabilities of the agency. The human capabilities are given by the number of professionals (economists and lawyers or sector experts). Ideally we should also consider their qualifications in terms of academic curriculum and experience, and the leadership and independence of the executive council, but we reserve such analysis for a later stage of this project. The financial resources are given by the annual budget of the NCA. All the indicators for resources and performance, as discussed below, refer to the activities of an NCA with regard to competition enforcement. We exclude from

our analysis state aid control, consumer protection, or any other regulatory function that the NCA may perform.

Our index of NCA capacity is given by a weighted average of professionals and financial resources divided by the population of the country in thousands. We can also examine if there are economies of scale in NCAs or if there is a minimum number of professionals to become effective.

Thus far we have examined the institutional infrastructure of competition law. The next step is to measure its effectiveness. The measure of effectiveness has to be taken in relation to the aims of NCAs. The roles of competition authorities usually comprise investigatory and sanctioning functions relative to the administrative enforcement of the competition law, supervisory and regulatory functions, and advocacy and advising functions.

The most important role of a NCA is undoubtedly to investigate unlawful behavior or practices and to sanction undertakings to dissuade market participants from engaging in anti-competitive behavior or practices. Our first focus would thus be on restrictive practice cases. We started by collecting the number of competition cases decided by the NCAs in a given year. We should be careful not to confuse with the number of cases pending or reported, as well as the number of complaints, which usually exceeds largely the number of cases opened by the NCAs. However, there is a large differentiation in the importance, coverage and complexity of cases. For computing our index of enforcement, we considered only the number of cases that had a substantial impact on the economy, measured by national impact and relevance of the industry and only cases that implied some sanction. We recognize the difficulty in measuring this variable that should also reflect the quality of the case, but this is an area for further research. Cases are then classified according to the type of restrictive practice.

Most of the NCAs with modern statutes control mergers that have an impact on the domestic economy. We do not consider that indicators of number of mergers analyzed have a special meaning for enforcement, since they depend very much on thresholds and merger activity in the country and for a given year. We considered as most relevant the number of mergers that were either prohibited or where major remedies were imposed.[45]

It is well accepted that the level of dissuasiveness of a legal regime depends on the expected losses to the violator of the law. One of the variables is related to the number of cases decided by the NCA,[46] the other is the amount of fines imposed. We collected this data from the reports of the NCAs. We measure the level of enforcement of the NCA by an average of the three above indicators divided by the population (in thousands): number of restrictive practices cases, number of mergers prohibited or where major remedies were imposed and the amount of the fines in millions of USD.

However, it is not enough to have a measure of the level of enforcement related to the activity of the NCA. All competition authorities are subject to judicial control. What effectively counts for undertakings is the final decision of the court. In

fact, even in relatively developed countries a non negligible number of decisions of NCAs are either annulled or sometimes fines are substantially reduced by courts. In developing countries and with younger authorities, NCAs face many difficulties in having their decisions upheld by courts. We try to measure first how effective in general the judicial system is by using several indicators available in databases, such as the World Bank Governance Database.[47] We then use information regarding the number of decisions that have been upheld by courts and available in the annual reports of the NCAs to compute an indicator on how effective are courts in deciding on competition matters. This indicator varies from 1=worst to 5=best system. By using an average of the previous indicator (which has been normalized) and the judicial control indicator, we have a final indicator of the effectiveness of the competition law regime.

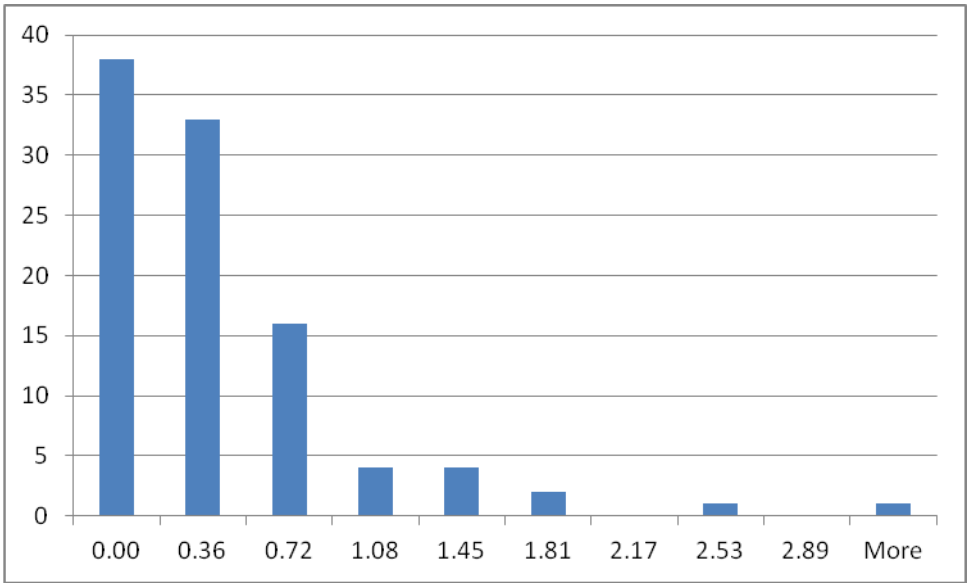
V. How Have Competition Law Regimes Spread Around the World

We have studied 101 countries. The data collected for each country centers in 2006, and when data was available, our estimate is the average for three or four years. The data was collected from the annual reports of activities published in the sites of the NCAs and from OECD and UNCTAD peer reviews. In our sample, there are 80 countries with a competition law and 67 countries with an active competition law regime, i.e., having instituted a NCA. The indices for each country are in the Annex.

We started by studying the NCA capabilities which measure the human and financial resources of the authorities. A country without a NCA with a minimum level of resources can hardly be considered as having a competition law enforcement regime. Figure 1 plots the Index of NCA capabilities against the GDP income per capita (GNI, Atlas method, for 2005, from the World Bank databases).

As we can see from Figure 1 there are 38 countries either without a NCA or with an NCA with extremely limited resources in our sample of 101 countries. Of the remainder 63 countries, there are 33 countries with NCAs with very limited resources, as well as in some highly developed countries.

Figure 1: Distribution of NCAs by their capabilities



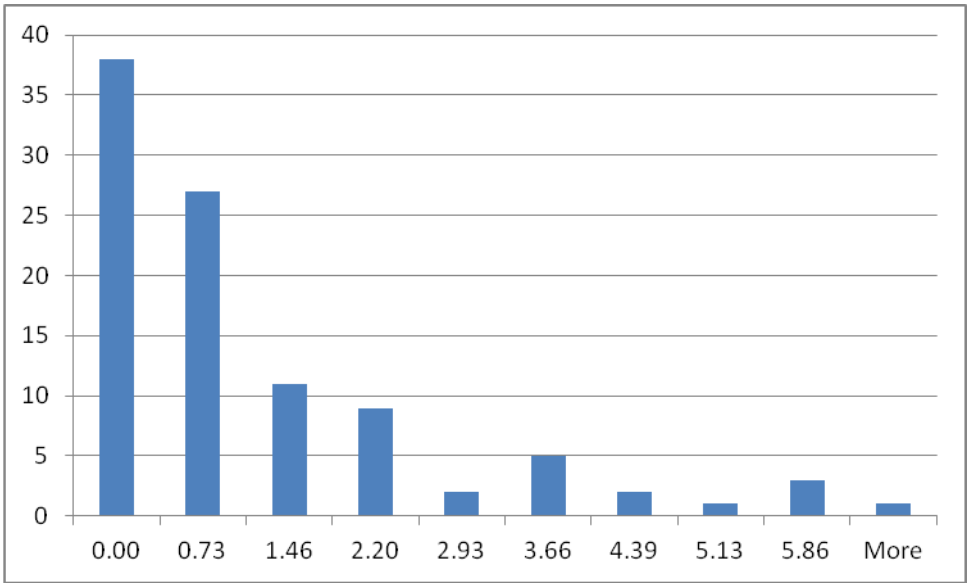
According to our experience, there is a rule of thumb for the capabilities of a NCA to be considered effective. The rule is that it should have about 5 to 7 professionals (economists and lawyers, mostly case handlers) for each 1 million population.[48] For small economies there may be a minimum scale of an office of no less than 8 to 10 professionals, otherwise it would be difficult to fulfill all the functions normally given to a NCA. Obviously, the financial resources depend on the wages of public servants in the country. However, the required qualifications of the lawyers and economists of an NCA are among the highest in the country, since they are confronting the best lawyers and economists that would be hired by the most powerful firms in the country. This benchmarking would give an Index of capabilities of around 1. Only 12 NCAs satisfy these criteria.

Among EU countries, and given their populations, Belgium,[49] Germany, Austria, Spain, and Slovenia were seriously understaffed and under resourced for the period under analysis.[50] The countries with the best endowed NCAs are New Zealand, Australia, Denmark, and Norway.

There are only 12 countries with a NCA placed in the upper 70 percent of the range of the distribution. Thus, a major conclusion of this chapter is that governments around the world have not placed competition law enforcement among their highest priorities, and have generally not endowed their NCAs with sufficient resources for effective enforcement.[51] No country with a GDP per capita below 13,570 USD has a Competition Authority that is well resourced.

Next we looked at the level of NCA competition enforcement. Figure 2 gives the histogram of the NCAs by enforcement level according to the methodology described above.

Figure 2: Distribution of NCAs by enforcement level



The first 38 Authorities were not active, as we saw above. However, there are some Authorities that with rather limited resources are able to achieve a substantial level of enforcement. Germany, Ireland, Netherlands, Hungary, and Slovenia were the jurisdictions with the authorities with the highest level of enforcement per resource available.

Figure A.2 plots the Competition Enforcement Index against GDP per capita.[52] The first comment is that the level of enforcement increases with the level of GDP per capita. The second is that below the GDP level of 7,800 USD, which corresponds to Turkey, there are only 21 countries with a competition law regime out of 44, the average index being 0.4. No country below that threshold has an Index above 1.6. This seems to be our first threshold, in terms of GDP, that a country has to cross in order to have a regime of competition law. Using the terminology of the World Bank, only countries in the high end of upper middle income (well above 3,000 USD) have the capability to maintain an effective competition law regime.

On the opposite side of the scale, all the countries with an income per capita above 13,570 USD have an Enforcement Index above 1.6, with an average of 3.[53] This seems to be a threshold for a Type III Regime. However, as we shall see, other indicators of institutional infrastructure are also required. Notice that these are countries well above the threshold of high income used by the World Bank (above 9,200 USD).

The figures below show the histograms of the overall level of competition enforcement around the world (Figures 3 and 4) and only for the countries that have a GDP per capita above 13,570 USD. The first shows a 2 peaked distribution, excluding the zero observations, which may be due to the fact that countries with low level of resources dedicated to competition enforcement are able already to make an impression in terms of enforcement, and countries with higher level of resources may do a better job in terms of enforcement. By comparing distributions of NCA competition enforcement with overall competition enforcement in Figure 4 we see that for low levels of NCA enforcement, courts in general contribute to an even lower

level of enforcement, the opposite holding in high levels of NCA enforcement. This is related with two factors. First, in countries with weak NCAs the overall institutional environment is rather weak, including judicial control, which further undermines the work of NCAs.[54] The second is that weak NCAs may commit more errors in cases either in terms of procedure or substantive errors, contributing to a lower level of enforcement.

Figure 3: Distribution of Overall Competition Enforcement by Level of Enforcement

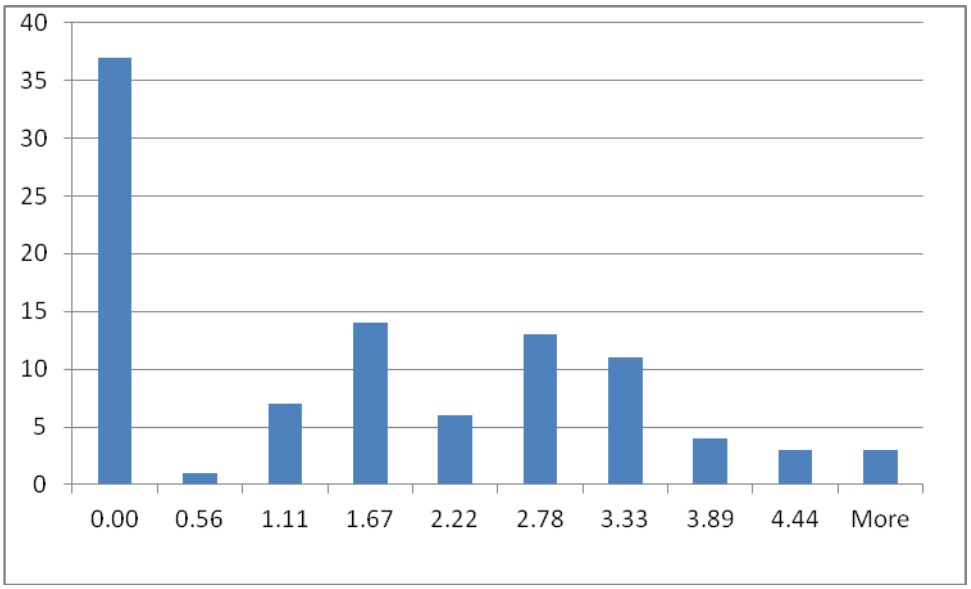
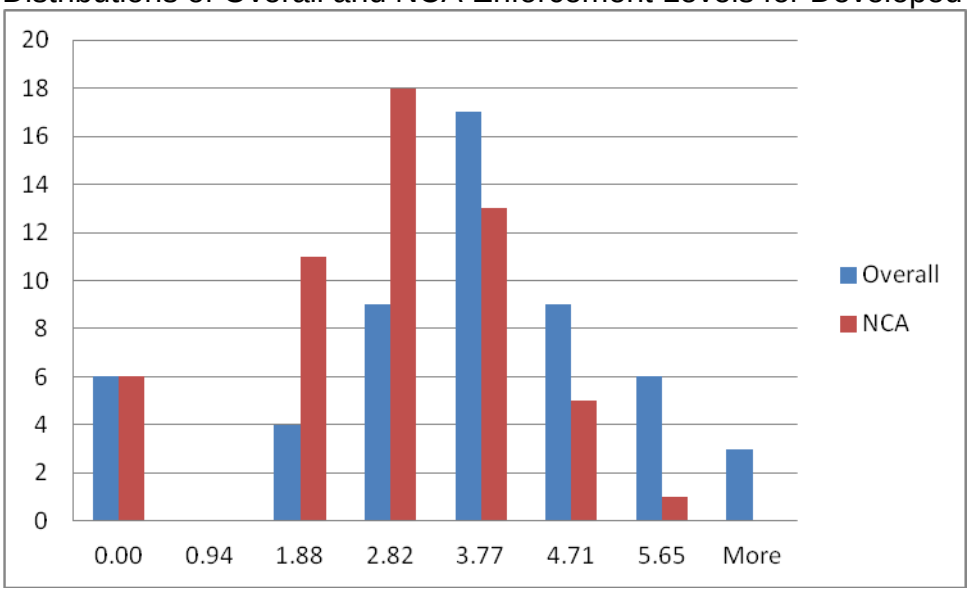
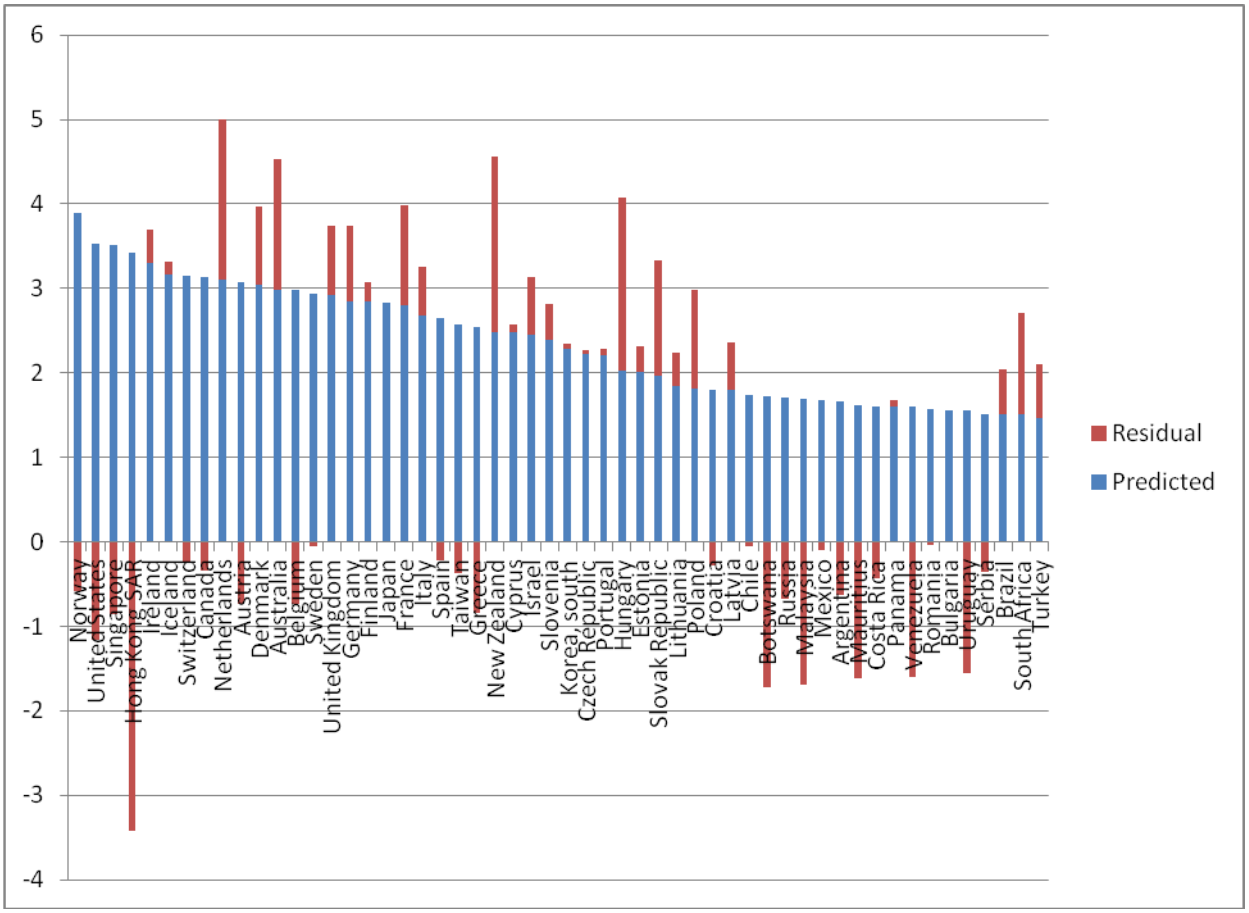


Figure 4
Distributions of Overall and NCA Enforcement Levels for Developed Countries



We started the econometric analysis by regressing the Overall Level of Enforcement, for countries with a competition regime, with GDP per capita. The following Figure shows the estimated values and the residuals of the regression.

Figure 5: Overall Level of Enforcement by GDP per capita



The highest positive residuals, meaning that countries are doing more than would be expected, giving its GDP per capita, are found for: the Netherlands, Denmark, Australia, New Zealand, Hungary, Slovak Republic, France, and Poland. At the end of the scale of GDP per capita three notable contributions: Brazil, South Africa, and Turkey. If we include private enforcement, the United States jumps to number one by far in terms of level of enforcement.

The highest negative residuals are for Hong Kong, Botswana, Malaysia, Mauritius (where a competition regime was recently introduced), Venezuela and Uruguay, which have no *de facto* competition law regime. Among the higher income levels the largest residuals are for the United States, Austria, Belgium and Greece. The case of the United States should be seen with some reservation because it is the country with the most important private enforcement system, which has not been included in the statistics. Thus, both capability and enforcement levels are clearly understated for this country. We also did not include the European Commission in

our data base because of difficulties in assigning cases to each Member State, which is our unity of analysis.

VI. Factors That Contribute to a Successful Competition Law Regime: a Quantitative Analysis

What is the social infrastructure required to have a competition law regime? We have to take as given that the constitutional infrastructure is a market economy. If the dominant economic ideology of the government is socialist or corporatist, it is not even possible to discuss the introduction of competition policy.

The social infrastructure required to have a regime of competition law involves the following dimensions:

- State and political system with a minimum functioning democratic regime, with a separation of powers and checks and balances among the three branches of the state, periodic general elections with political parties representing the spectrum of society and government with minimum quality, with a minimum of political stability, and peace.
- Public administration and a regulatory system with a minimum of efficiency, control (non-discretionary) and not with a high level of corruption. This is required for the business environment to operate in terms of licensing, taxes, and subsidies. Bureaucratic interferences and control of business activity should be fair and in the public interest.
- Rule of law establishing the following institutions:
    i. Protection of property rights. This is required for a firm to operate in a market economy
    ii. Contractual enforcement. All transactions in the market are based on formal or informal contracts.
    iii. Judicial system with a minimum level of efficiency. The system must be able to enforce i) and ii) with a minimum of predictability and in a timely manner, respecting due process.

The first dimension of the social infrastructure is a general requisite for the functioning of a society and the basic system for the economy. A stable and peaceful environment is essential for the functioning of the economy. Although a democratic regime may not be a sine qua non for development, we think that the exceptions only confirm the rule that a democracy with the three branches of government, and checks and balances among them, are the basis of a well-functioning market economy with rule of law.

Since antitrust law enforcement is only a part, and sometimes a small part, of economic law, and also embedded in the regulatory framework, it requires a minimum of efficiency of public administration and regulatory quality. One part of the law is usually enforced through administrative bodies and law, so it is intrinsically part of the public administration. The other major role is played by courts that control

decisions of these administrative bodies and also by private litigation. The judicial system plays a major part in law enforcement.

In short, and as has been developed in a seminal work by Mateus[55] which offers the conceptual background of this paper, besides (i) democracy, law and order and a market-oriented economy; the following factors restrict the effectiveness of a competition enforcement regime: (ii) vested interests that dominate economic policy making, either through legal means (party financing, lobbying, influence in the nomination of the government, senior officials or the council of the NCA), or illegal means (corruption, abuse of the public service power, or cronyism); (iii) inefficient public administration and regulatory systems that limit the capacity and effectiveness of public bodies, including the NCA, and (iv) an inefficient judicial system that precludes the sanctioning of violations of the competition law.

The law and economics model we want to test is a linear combination of these factors:

$$ENF = \alpha_0 + \alpha_1 DEM + \alpha_2 CEI + \alpha_3 ADM + \alpha_4 JLEI + \varepsilon$$

Where *ENF* refers to the level of competition enforcement, *DEM* the level of democracy, *CEI* is the Index of Corporate Governance that measures the legal capture index plus the illegal corruption level in the country, *ADM* is the level of efficiency of public administration and *JLEI* the quality of the judicial system. Other variables that could be additionally tested are the level of education, EDU, since the efficiency of institutions is higher if the human resources have a higher level of education, and GCR, an indicator measuring the business environment or the quality of the market economy.

We used several databases for our research. First, we used the database assembled by Kaufman[56] and in the World Bank Governance data. Second, we used the database on institutions and policy from the Inter-American Development Bank. Third, we included the World Bank Doing Business database. Fourth, we used the data published in the Global Competitiveness Report of the World Economic Report for 2010-2011. Finally, we used data from the World Bank for GDP per capita, population and level of education.

There are a number of indicators available to measure the democratic regime (Freedom House, Economist Intelligence Unit, Polity IV). We took the Economist Index of Democracy for 2008[57] because it has reasonable variance and seems more appropriate for our analysis.

Figure 6: Level of Democracy

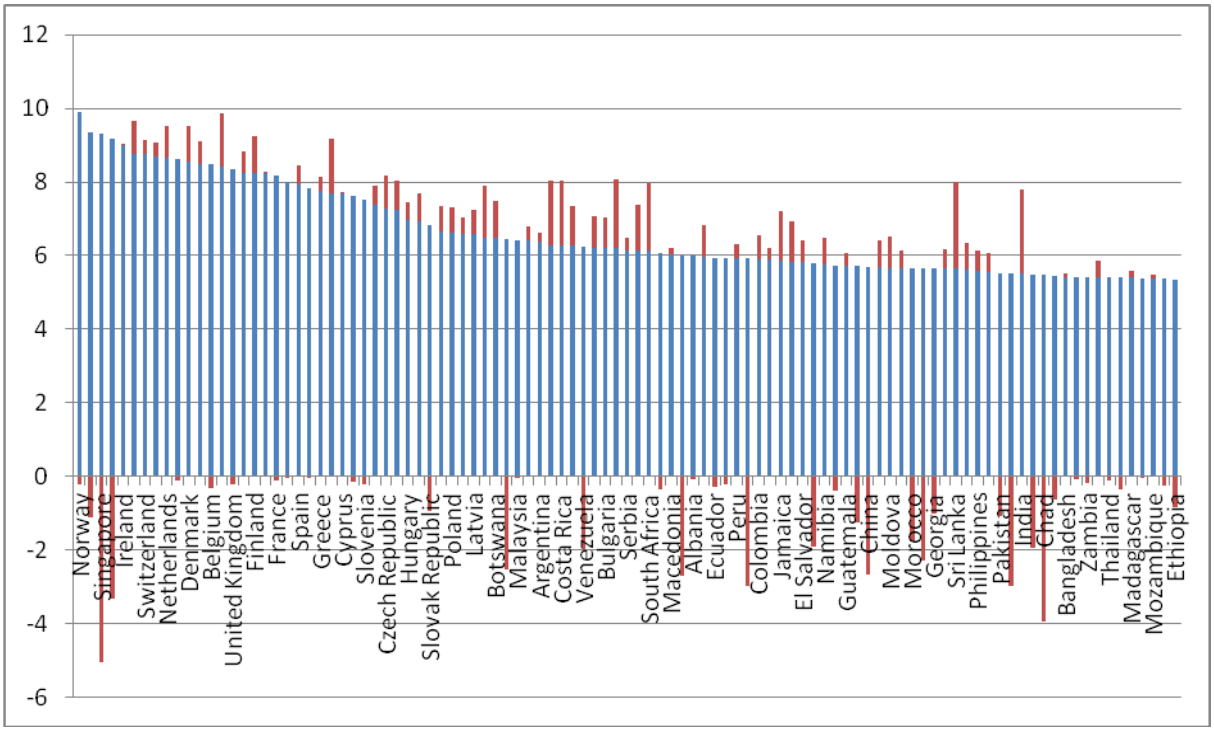


Figure 6 plots the Democracy Index against GDP per capita. By combining this Index with the results for enforcement, we conclude that no country has a Democracy Index below 7.3, with the exception of Singapore and Slovakia for a Regime III type. Turkey, which is the borderline case for a Regime II type, has a Democracy Index of 5.7. If we take the estimated values, which are a better cut-off point, since they are based on the overall estimation, we obtain the same thresholds.

We carried out the same exercise for the following variables: Education level=Percentage of active population with at least secondary education; Business environment=Global Competition Report Index of Competitiveness, which measures quality of infrastructure, credit availability, extent of taxation, distortion by subsides, burden of regulation, efforts to improve competitiveness and informal sector; Institutional level=average of several institutional variables; Corporate Governance= legal and illegal capture plus corruption index; Quality of Public Administration and Quality of Judicial System are indices collected from the Governance site of the World Bank.

Figure 7: Thresholds by competition regime

Variable	Regime III	Regime II
Democracy	7.3	5.7
Education level	23.9	17.9
Business environment	40.8	30.7
Institutional level	47.4	39.0
Corporate Governance	41.0	33.4
Quality Public	39.5	30.0

Administration		
Quality Judicial System	45.1	35.6

In general, a country has to cross the lower 43 percentile of the cumulative distribution of institutional and educational levels, worldwide, in order to be able to have an enforceable competition law regime (Regime II). And only when it reaches the top 20 percent class of the distribution it is ready to have a developed competition law enforcement system (Regime III).

Figures A.3, A.4 and A.5 illustrate the application of the above criteria in classifying the different regimes among our sample of countries. Figure A.6 gives the sample of countries by enforcement regime, showing the estimated values and the residuals.

We then proceeded to estimate the factors that contribute to a successful competition law enforcement using econometric models. Because part of the sample has no competition law, we have to use a censored data model of estimation, also known as a Tobit model. We tried several variables, but because of multicolliniarity only a few variables explain most of the variance of the enforcement level (ENF).

Model 1 (Figure 8) explains the Level of Enforcement of the competition law regime by the Corporate Governance Indicator (CORP), Educational Level (EDU) and Level of Democracy (DEM). All variables are significant and the overall estimators of the equation have a good adherence. Model 2 is not very different from the first one, where the enforcement level is explained again by the Level of Education and Level of Democracy, and the third factor is an overall Institutional Indicator (INST) that includes Corporate Governance and the quality of Public Administration (ADM) and the Level of the Judicial System.

A variable representing the efficiency of the Judicial System (JLEI) has always a negative sign. Our interpretation is that in most of the countries of our sample the judicial system acts on enforcement by reducing its impact, either by annulling decisions or reducing fines, usually curtailing its dissuasive power. We rarely see legal systems where courts increase fines or take on themselves the power of enforcing competition law. There are two reasons for this. The first is the lack of competition law and economics knowledge by judges on these matters. The second factor is the lack of competition culture and the dominance of vested interests, as violation of economic laws is not regarded as particularly serious.[58]A variant of the model with a Censored Logistic instead of a Censured Normal improves very marginally the results. Model 3 includes ADM and JLEI separately.

Figure 8: Models explaining the level of enforcement

	Model 1	Model 2	Model 3
CORP	0.012676 (.007233)		
EDU	5.939956 (1.15617)	5.5716 (1.1219)	
DEM	.30637 (.09578)	.2610 (.0957)	.4920 (.0957)
INST		.01742 (.00677)	
ADM			.0732 (.0154)
JLEI			-.0394 (.0136)
Log likelihhod	-120.35	-118.71	-123.76
Left censored obs	38	38	38
Uncensored obs	63	63	63

It is interesting that accessing to the European Union is no more a certification for entering into Regime III. The accession of Romania and Bulgaria, and even some of the institutionally weaker Eastern European countries, have brought into the EU countries that on a substantial number of dimensions are not yet able to fully enforce a competition law regime. These countries need special support and a broader approach to institutional building than just introducing the "acquis communautaire." Even the OECD has now expanded its membership to countries that are not yet ready for Regime III, requiring broader support for their institutional building and reinforcing law and order within the context of democratic institutions.

VII. Policy Regimes for Competition Law and Institutional Pre-requisites: a More Detailed Analysis

The previous empirical analysis explained what broad characteristics should be met to have an enforceable competition regime. However, further work will need to be carried out to find out the finer details of the pre-conditions for each regime. One of the types of data we need is more refined and detailed information about institutions. Another problem is that the sample of countries with efficient competition law regimes is rather limited to test statistically the impact of a multitude of factors.[59]

To determine the factors that are important in characterizing the pre-conditions for each competition law regime, we have to rely on country case studies and their experiences through time around the world.[60]

The Annex on Criteria for designing competition law regimes specifies each of the items of the social infrastructure that in our view should be examined closely.

This is the metric broadly suggested by the empirical work and countries´ experiences.

VIII. Policy Implications

Regime I is characterized by an environment of weak law and order. Imposing a heavy legal and regulatory system would elicit a high social cost.[61] Competition policy should concentrate on building a market economy. First, emphasis should be put in building institutions for law and order, and there is no easy substitute for this requirement. A crucial part of competition policy relates to external trade policies. Reduction of tariffs and in particular Quantitative Restrictions (QRs) can increase competition in the tradable sector, by subjecting exportables and importables to a higher level of competition from international trade. Another important policy is to eliminate export and import monopolies that sometimes control the most important commodities in developing countries and extract rents from farmers. In fact, a large number of these developing countries are major commodity exporters to the world market, and issues of abusing market power, sometimes on the buying side, are important.

Regime II corresponds to a lower intermediate level of institutional development where the country may adopt a simplified system of law enforcement. The country should enact a simple competition law and establish an independent Competition Authority. High powered incentives (rules based) should be the basis of market regulation. Competition law should use simple *per se* rules covering the following core areas: (a) prohibition of cartels, and (b) prohibition of refusals to supply by large firms. Such regimes should establish "bright lines" for merger control. These include: high levels of turnover for merger notification and prohibition of mergers above a set of simple criteria. The country should also establish a competitive system for procurement with clear rules, supervised by a National Auditing Court. Also, based on the historical experience of the US in the Progressive Era, the following systems are important: the introduction of regulation of inputs, basic labor and social laws, safety regulations in work, buildings construction, sanitary, medicines, transportation. More important than antitrust and probably easier to implement is regulation of natural monopolies with high powered incentives (e.g., a price cap is preferable to cost based systems) and interoperability and access to basic infrastructure: telecommunications, electricity, gas, water, and transportation. It also is very important to introduce some regulation of the financial sector to avoid systemic problems like supervision of depository institutions, insurance, and capital markets.

Once the country has climbed up in the institutional development ladder to an upper middle level, it enters into the first window of Regime III, where it can attempt to resolve disputes based on negligence and private litigation. This would mean in terms of antitrust, first of all, rising the amount of the fines for an intermediate level. Second, it would entail the introduction of the "rule of reason" in a number of areas of competition law and the introduction of a merger control regime based on the

principle of “lessening competition.” However, the legal regime would retain some “bright lines” like *per se* prohibition in extreme cases of concentration.

Finally, we arrive at the last window of Regime III, where the country has strengthened institutions in such a way that the political, administrative, and judicial systems are almost immune to extortion. In this case, the country can introduce strict liability as the rule with private litigation functioning as the main instrument of law enforcement, combined with public enforcement providing the possibility of high fines. In this regime, the Government should reap all the benefits of modern competition law enforcement. The Competition Authority should be entrusted with prosecuting violations under public interest (administrative body). The government should entrust the Authority with sufficient investigative powers. The Authority should set high fines in the law and also apply high fines in real cases. The model of law to follow is the standard antitrust law of the United States and the EU, which is economically sophisticated to a variable degree. The country is also ready to apply leniency programs to detect cartels.[62]

The best regime, for countries with this higher level of rule of law, is to combine an administrative with a private litigation system. Private enforcement is essential to redress damages between parties, to make antitrust more “democratic” and understood by citizens.

From the above it follows that narrowing advice on competition policy to competition law and the work of competition authorities is really misguided, even for developed countries. A competition law regime will be efficient only if the institutional infrastructure enables it.

For developing countries below Regime II, policy advice should concentrate on building the bases of the market economy, the rule of law, external trade, procurement, eliminating monopolies using structural measures and reinforcing institutions and public administration. The role of international organizations should be to support these policies and protect developing countries from international cartels and maintain an open trade system for exports of developing countries. This does not mean that competition law and a competition authority should not be created, but that its role should be geared mainly to create its own capabilities, in advocacy supporting those policies and in creating the bases of a market economy and competition culture. In general, the largest problem is the sanctioning power of the authority which is largely restricted by the institutional framework.

If the developing country has reached a GDP per capita of 7,500 to 8,500 USD (PPP), institutional infrastructure that puts it above the 40th percentile, or an index of competition law enforcement clearly above 1.2, the country is ready to enter in Regime II, i.e., to have a competition law and competition authority with a minimum level of requirements. However, due to the weaknesses of the institutional infrastructure, competition law should be biased towards establishing “bright lines” and “dark zones” for the anti-competitive behavior. Competition policy should also give high priority to regulating natural monopolies and creating conditions for provision of infrastructure services at competitive prices. Moreover, we have

identified that the judicial system may be one of the major constraints for the success of the competition regime, so it needs to be strengthened. International organizations can play a major role in supporting and nurturing NCAs that are still in their infancy and may confront challenges such as hostile media controlled by large business groups.

Once the country crosses the threshold of about 13,000 to 14,000 USD of GDP per capita, in PPP, or the last 20 percent of the cumulative distribution of institutional indicators, it is ready to have a fully-fledged competition law regime, with high fines and progressively criminal sanctions. Priority should be given to endow the NCA with enough legal, human, and financial resources to fulfill all of its obligations. However, the institutional framework also should be continuously strengthened. One of the main problems is to build an independent competition authority. Policy, even in highly developed economies is still prone to manipulation.

A significant number of cases of competition law regimes below our proposed threshold for Regime II are in countries that are either candidate countries for accession to the European Union that have or are in the process of acquiring an association status or under the European Neighbored Program. Presently, the first are Croatia, Turkey and the Former Yugoslav Republic of Macedonia. Potential candidates are the Western Balkan countries: Serbia, Montenegro, Albania, Bosnia and Herzegovina and Kosovo. The European Neighborhood Policy was developed in 2004, with the following sixteen countries—Algeria, Armenia, Azerbaijan, Belarus, Egypt, Georgia, Israel, Jordan, Lebanon, Libya, Moldova, Morocco, Occupied Palestinian Territory, Syria, Tunisia, and Ukraine. Building a competition law regime and approaching their institutions and laws to the “acquis communutaire” is part of all the agreements established between the EU and these countries. However, as the empirical work shows, they are at different stages of economic and institutional development, with countries like Croatia, Turkey and Serbia at a higher stage, and countries like Armenia, Albania and Moldova at substantially lower institutional development levels. The implication of our analysis is that the approach to these countries by the European Commission has to take into consideration their level of institutional development in order to establish priorities and the type of competition law regime.

IX. Conclusions

We have identified theoretically a set of factors that limit the effectiveness of a competition law regime. This study is mainly an empirical exploration of these factors. The following factors restrict the effectiveness of a competition enforcement regime: (i) the level of democracy, which is an overall indicator of the institutional level, (ii) vested interests that dominate economic policy making, either through legal means (party financing, lobbying, influence in the nomination of the government, senior officials or the council of the NCA), or illegal means (corruption, abuse of public service power, or cronyism); (iii) inefficient public administration and regulatory

systems that limit the capacity and effectiveness of public bodies, including the NCA, and (iv) inefficient judicial system that precludes the sanctioning of violations of the competition law.

The first conclusion is that countries around the world, including a substantial number of developed countries, have not provided enough resources for their NCAs to fulfill their basic duties (only 12 countries have met or surpassed our proposed benchmark). Second, a GDP per capita above 3,500 USD[63] is in general required to have a competition law enforcement regime. And only countries with a GDP per capita above 13,500 USD have an effective competition law enforcement regime (our Regime III). Countries with a weak competition law regime are especially affected in their performance by the judicial system. Improving the judicial system and in particular in the competition area is a priority strategy for these countries.

We studied several institutional development indicators and their correlation with GDP per capita and the thresholds required for a Regime type II and Regime type III. The indicators used were the level of democracy, general institutional development, completion of secondary education, corporate governance, quality of public administration and quality of the judicial system. All were highly correlated with GDP per capita, and thus highly correlated with the competition enforcement level.

In general, only a country which has crossed the lower 40th percentile of the cumulative distribution of institutional and educational levels, worldwide, is able to have an enforceable competition law regime (Regime II). And only when it crosses the top 20 percent class of the distribution is it ready to have a developed competition law enforcement system (Regime III).

Finally, our econometric results confirm to a large extent the theoretical model. They show that the most important factors for explaining the level of enforcement of a competition law regime are the overall level of democracy, the control of vested interests and corruption and the overall level of education of the population.

ANNEX

Criteria for designing Competition Law Regimes

Before any Competition Law Regime is introduced the country should have the following questions satisfactorily answered:

(i) Does the country have a minimum level of democracy with checks and balances working?

(ii) Does the Political System allow a minimum level of autonomy of the Government vis-a-vis the major interest groups?

(iii) Does the rule of law have a clear protection of property rights and allow its enforcement?

(iv) Does the rule of law allow a minimum level of enforcement of contracts?

(v) Does the country has embraced explicitly a market economy regime, embodied in the constitutional laws?

1. Criteria for Regime I: Introduction of a Minimum Standard Law

After we have answered satisfactorily to the questions above that are a prerequisite for the introduction of any system of Competition Law, the country would be ready for introducing any Competition Law if the following criteria is satisfied:

(i) Does the country have a reasonable history of control of corruption at public administration level?

(ii) Does the country have a reasonable level of public administration efficiency?

(iii) Is the judicial system relatively independent form the other branches of government and with a minimum level of efficiency (justice and timely decisions)?

(iv) Does it have already a fully functioning market economy?

a. Is a market economy system incorporated in the Constitution?
b. Are a significant number of the private goods and services traded in markets without price controls or major competition restraints?
c. Are a significant number of private goods and services produced by private firms?
d. Are the infrastructure sectors either in the state sector or in the private sector with some type of control or regulation by the state?

(v) Has it implemented a serious competition policy?

a. Is the external trade regime relatively free of quotas and other QTRs?
b. Is the average level of protection below a reasonable threshold (e.g. 40%)?
c. Is the government committed to a system of competitive domestic markets?

(vi) Does it have already capital markets working with a minimum level of efficiency?

(vii) Is there already a reasonable level of economic regulation in the following sectors:

(a) Financial services (banking and insurance)

(b) Capital markets

(c) Other infrastructure sectors

And regarding the Competition Law and the National Competition Authority:

(viii) Is the Government ready to enact a Competition Law with the minimum content specified here?

(ix) Is the primary purpose of the Government when enacting the law to build competitive markets and improve the efficiency of the market economy?

(x) Is the Government ready to control the power of oligopolies and in particular of the most powerful economic groups in the country?

(xi) Is the Government serious about the law and ready to let the NCA enforce it?

(xii) Are there already any sectoral regulators working with a minimum level of efficiency?

(xiii) Is the Government willing to set up an NCA with a minimum level of autonomy, headed by competent officials and appropriately financed and staffed?

2. Criteria for Regime II: Introduction of a Lower-level Intermediate Standard Law

Once the country has a reasonable history of implementation of competition law (e.g. 10 years) at the introductory stage, it may be ready to introduce a Lower-level Intermediate Standard Law. In order to aced at this stage it needs to satisfy at least the following criteria:

(i) Does the country have the institutions to control corruption and other economic crimes at higher state level

(ii) Are there precedents or strong signals of corruption at the higher level of state?

(iii) Has anybody ever been successfully prosecuted for economic crimes?

(iv) Does it have already a fully functioning market economy?

a. Is the majority of the private goods and services traded in markets without price controls or major competition restraints?

b. Is the majority of private goods and services produced by private firms?

c. Are public enterprises treated the same way as private enterprises for violations of economic law?

(xiv) Has it implemented a serious competition policy?

a. Is the external trade completely free of quotas and other QTRs?

b. Is the country a member of WTO?
c. Is the average level of protection below a reasonable threshold (e.g. 30%)?

(v) Does the country have already a minimum level of culture of competition?

(vi) Is there any teaching of economic laws and are judges aware of those laws?

And regarding the Competition Law and the National Competition Authority:

(i) Is the Government ready to enact a Competition Law with the minimum content specified here and to provide the NCA with expanded resources and powers of investigation and adjudication?

(ii) Has the Government shown already that it supports the NCA in cases against the abuse of power of oligopolies and in particular of the most powerful economic groups in the country?

(iii) Does the Government have an history of being serious about the law and ready to let the NCA enforce it?

(iv) Do sectoral regulators have already a reasonable history (e.g. 5 years) of decision making and intervention in the sectors?

(v) Does the NCA have a competent board (economists and lawyers with at least 15 years of experience)?

(vi) Does the NCA have a minimum level of competent staff (15 economists and 15 lawyers per 10 million population)?

(vii) Is the NCA appropriately financed (2 million USD per 10 million population)?

(viii) Has the NCA shown a reasonable history of cases of prosecution of cartels (2 successful decisions per year per 10 million population), abuses of dominance (1 successful decision per year per 10 million population) and merger control (blocking 1 major merger per 2 years per 10 million population)?

And regarding private litigation:

(ix) Is there a legal regime that allows enterprises to sue other enterprises for obtaining compensation for damages or stopping actions related with restraints to competition

(x) Do the courts have a minimum level of efficiency in dealing with these cases?

3. Criteria for Regime III: Introduction of a Higher-Level Intermediate Standard Law

Once the country has a reasonable history of implementation of competition law (e.g. 5 years) at the previous stage, it may be ready to introduce a higher-level Intermediate Standard Law, which is the pre-camera for the fully blown regime of advanced countries. It would need to answer satisfactorily to the following points:

(i) Does it have already a fully functioning market economy?

d. Does it have a tradition of policy as a market economy of at least 15 years?
e. Has the privatization and liberalization process been completed for at least 5 years?
f. Are public enterprises ever favored or used instrumentally for pursuing other than the strict commercial objectives they were formed for?

(ii) Has it implemented a serious competition policy?

g. Are the subsidy and tax systems relatively neutral according to economic activity?
h. Is the licensing system concerned with competition issues?
i. Is the procurement system relatively competitive and based on international standards?

(iii) Does the country have any experience in formulating and implementing regulatory statutes, e.g. in the financial markets, telecom or energy sectors?

(iv) Does the country have any tradition in giving economic law matters any importance? Do courts recognize their importance?

(v) Are there a reasonable number of cases of prosecution, sentencing with high penalties of violators of economic law, and in particular corruption of high level?

And regarding the Competition Law and the National Competition Authority:

(i) Is the Government ready to enact a Competition Law with the minimum content specified here and to provide the NCA with expanded resources and powers of investigation and adjudication?

(ii) Has the Government shown already that it will refrain from intervening in cases against the abuse of power of oligopolies and in particular of the most powerful economic groups in the country?

(iii) Is the Government serious about the law and ready to let the NCA enforce it?

(iv) Do sectoral regulators have already a reasonable history (e.g. 10 years) of decision making and intervention in the sectors?

(v) Does the NCA have a competent board of a minimum of 5 members (economists and lawyers with at least 15 years of experience)?

(vi) Does the NCA have a minimum level of competent staff (25 economists and 25 lawyers per 10 million population)?

(vii) Is the NCA appropriately financed (4 million USD per 10 million population)?

(viii) Has the NCA shown a reasonable history of cases of prosecution of cartels (3 successful decisions per year per 10 million population), abuses of dominance (2 successful decision per year per 10 million population) and merger control (blocking 1 major merger, and

imposition of major structural remedies in 3 cases, per 2 years per 10 million population)?

And regarding private litigation:

(ix) Do the courts have a minimum level of efficiency in dealing with these cases (e.g. 5 major cases per year)?

(x) Are there specialized sections in courts or specialized courts and trained judges for competition law violations?

(xi) Has the country introduced a class action regime for redressing damages to consumers due to violations of competition law?

COMPETITION LAW ENFORCEMENT						
Data-base on NCA enforcement						
					NCA	Overall
		Has an NCA?	Capacity of NCA		Level	Level
		Yes=1,No=0	Resorces	Total	Enforcem	Enforcement
1	Netherlands	1	1.2	2.2	6.6	5.0
2	New Zealand	1	3.3	4.3	5.4	4.6
3	Australia	1	2.5	3.5	5.4	4.5
4	Hungary	1	0.8	1.8	5.5	4.1
5	France	1	1.0	2.0	3.9	4.0
6	Denmark	1	1.8	2.8	3.9	4.0
7	Germany	1	0.3	1.3	3.3	3.7
8	United Kingdom	1	1.3	2.3	3.3	3.7
9	Ireland	1	0.6	1.6	4.5	3.7
10	Slovak Republic	1	0.6	1.6	3.5	3.3
11	Norway	1	1.6	2.6	2.1	3.3
12	Italy	1	0.6	1.6	3.3	3.3
13	Iceland	1	0.9	1.9	3.5	3.3
14	Israel	1	0.5	1.5	1.7	3.1
15	Finland	1	1.3	2.3	1.5	3.1
16	Poland	1	0.5	1.5	2.6	3.0
17	Switzerland	1	0.6	1.6	1.1	2.9
18	Sweden	1	1.1	2.1	2.3	2.9
19	Japan	1	0.5	1.4	2.2	2.8
20	Slovenia	1	0.3	1.3	2.2	2.8
21	Canada	1	0.7	1.6	0.8	2.8
22	South Africa	1	0.1	0.9	0.5	2.7
23	Singapore	1	0.2	0.9	0.4	2.7
24	Cyprus	1	0.8	1.8	1.5	2.6
25	Spain	1	0.2	1.2	1.1	2.4
26	United States	1	0.5	1.5	1.0	2.4
27	Latvia	1	0.2	1.2	0.9	2.4
28	Korea, south	1	0.5	1.3	0.9	2.3
29	Austria	1	0.3	1.3	0.9	2.3
30	Estonia	1	0.2	1.2	0.8	2.3
31	Portugal	1	0.6	1.6	2.1	2.3
32	Czech Republic	1	0.7	1.7	0.7	2.3
33	Belgium	1	0.1	1.1	0.7	2.3
34	Lithuania	1	0.1	1.1	0.6	2.2
35	Taiwan	1	0.6	1.4	0.6	2.2
36	Turkey	1	0.2	1.0	0.3	2.1
37	Brazil	1	0.1	0.9	0.1	2.0
38	Greece	1	0.5	1.3	0.6	1.7
39	Chile	1	0.1	0.9	0.5	1.7
40	Panama	1	0.3	0.9	1.8	1.7
41	Macedonia	1	0.4	1.0	1.7	1.6
42	Mexico	1	0.1	1.1	0.2	1.6
43	Bulgaria	1	0.1	0.9	0.1	1.6
44	Kenya	1	0.0	0.6	0.1	1.5
45	Romania	1	0.2	1.0	0.1	1.5
46	Croatia	1	0.3	0.9	1.4	1.5
47	Indonesia	1	0.0	0.6	0.0	1.5
48	India	1	0.0	0.5	0.0	1.5
49	Moldova	1	0.4	0.8	1.0	1.4
50	El Salvador	1	0.1	0.7	0.7	1.3
51	Armenia	1	0.5	0.9	0.6	1.2
52	Albania	1	0.3	0.9	0.5	1.2
53	Costa Rica	1	0.0	0.6	0.4	1.2
54	Serbia	1	0.6	1.2	0.4	1.2
55	Zambia	1	0.0	0.8	0.3	1.1
56	Tunisia	1	0.1	0.7	0.2	1.1
57	Peru	1	0.0	0.6	0.1	1.0
58	Russia	1	0.2	0.8	0.1	1.0
59	Argentina	1	0.0	0.6	0.1	1.0
60	Ukraine	1	0.0	0.4	0.1	1.0
61	China	1	0.0	0.8	0.0	1.0
62	Thailand	1	0.0	0.6	0.0	1.0

COMPETITION LAW ENFORCEMENT							
Data-base on NCA enforcement							
					NCA	Overall	
		Has an NCA?	Capacity of NCA		Level	Level	
		Yes=1,No=0	Resorces	Total	Enforcem	Enforcement	
63	Algeria	1	0.0	0.6	0.1	0.0	
64	Malaw i	1	0.0	0.8	0.0	0.0	
65	Nigeria	0	0.0	0.0	0.0	0.0	
66	Botsw ana	0	0.0	0.0	0.0	0.0	
67	Hong Kong SAR	0	0.0	0.0	0.0	0.0	
68	Malaysia	1	0.0	0.4	0.0	0.0	
69	Ghana	1	0.0	0.4	0.0	0.0	
70	Namibia	0	0.0	0.0	0.0	0.0	
71	Egypt	1	0.0	0.4	0.0	0.0	
72	Philippines	1	0.0	0.4	0.0	0.0	
73	Jamaica	1	0.0	0.6	0.0	0.0	
74	Sri Lanka	0	0.0	0.0	0.0	0.0	
75	Morocco	1	0.0	0.6	0.0	0.0	
76	Colombia	1	0.0	0.4	0.0	0.0	
77	Mauritius	1	0.0	1.0	0.0	0.0	
78	Jordan	1	0.0	0.6	0.0	0.0	
79	Vietnam	1	0.0	0.0	0.0	0.0	
80	Uganda	0	0.0	0.0	0.0	0.0	
81	Tanzania	1	0.0	0.4	0.0	0.0	
82	Madagascar	0	0.0	0.0	0.0	0.0	
83	Mali	0	0.0	0.0	0.0	0.0	
84	Ethiopia	1	0.0	0.2	0.0	0.0	
85	Pakistan	1	0.0	0.4	0.0	0.0	
86	Georgia	0	0.0	0.0	0.0	0.0	
87	Mozambique	0	0.0	0.0	0.0	0.0	
88	Venezuela	1	0.0	0.0	0.0	0.0	
89	Dominican Republic	0	0.0	0.0	0.0	0.0	
90	Bangladesh	0	0.0	0.0	0.0	0.0	
91	Uruguay	0	0.0	0.0	0.0	0.0	
92	Guatemala	0	0.0	0.0	0.0	0.0	
93	Bosnia-Herzegovina	1	0.1	0.5	0.0	0.0	
94	Ecuador	0	0.0	0.0	0.0	0.0	
95	Chad	0	0.0	0.0	0.0	0.0	
96	Nicaragua	0	0.0	0.0	0.0	0.0	
97	Honduras	0	0.0	0.0	0.0	0.0	
98	Angola	0	0.0	0.0	0.0	0.0	
99	Bolivia	0	0.0	0.0	0.0	0.0	
100	Paraguay	0	0.0	0.0	0.0	0.0	
101	Senegal (WAEMU)	1	0.0	0.4	0.0	0.0	

Figure A.1

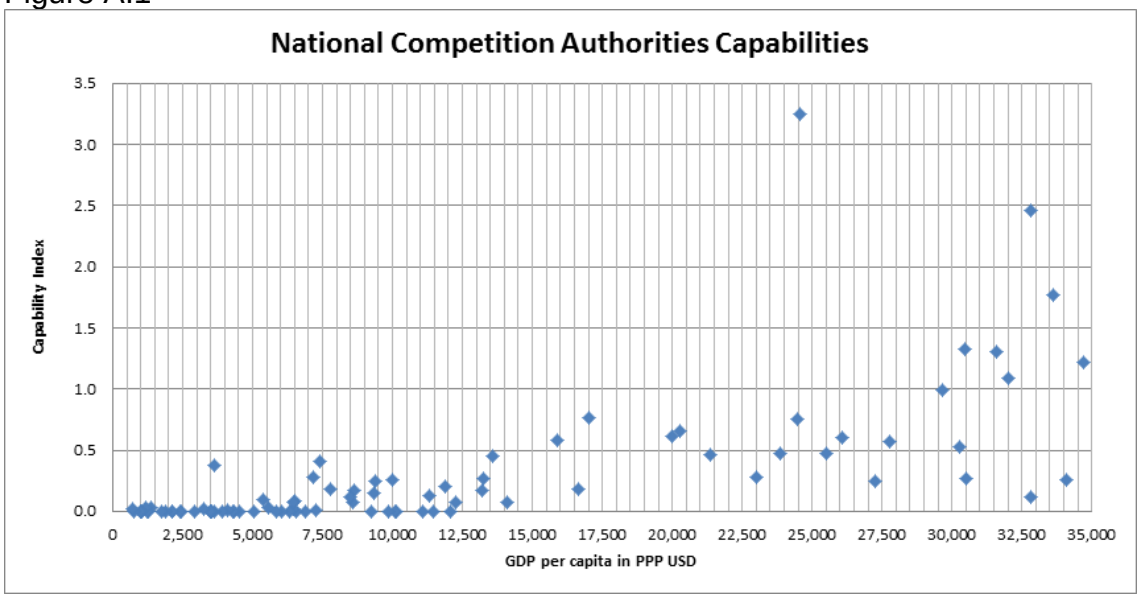


Figure A.2

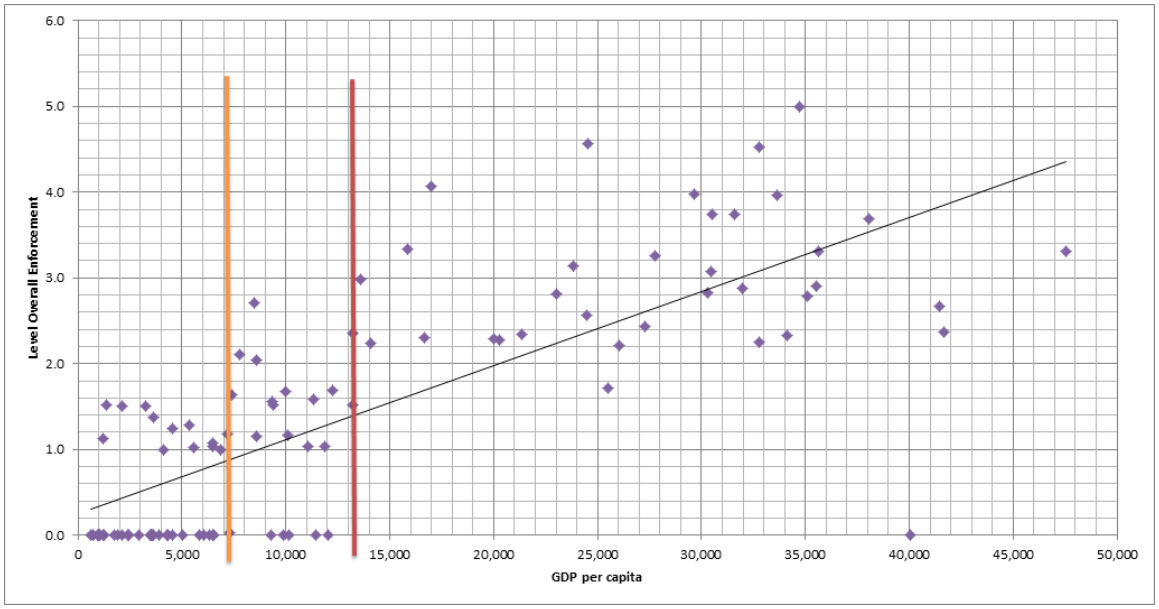


Figure A.3

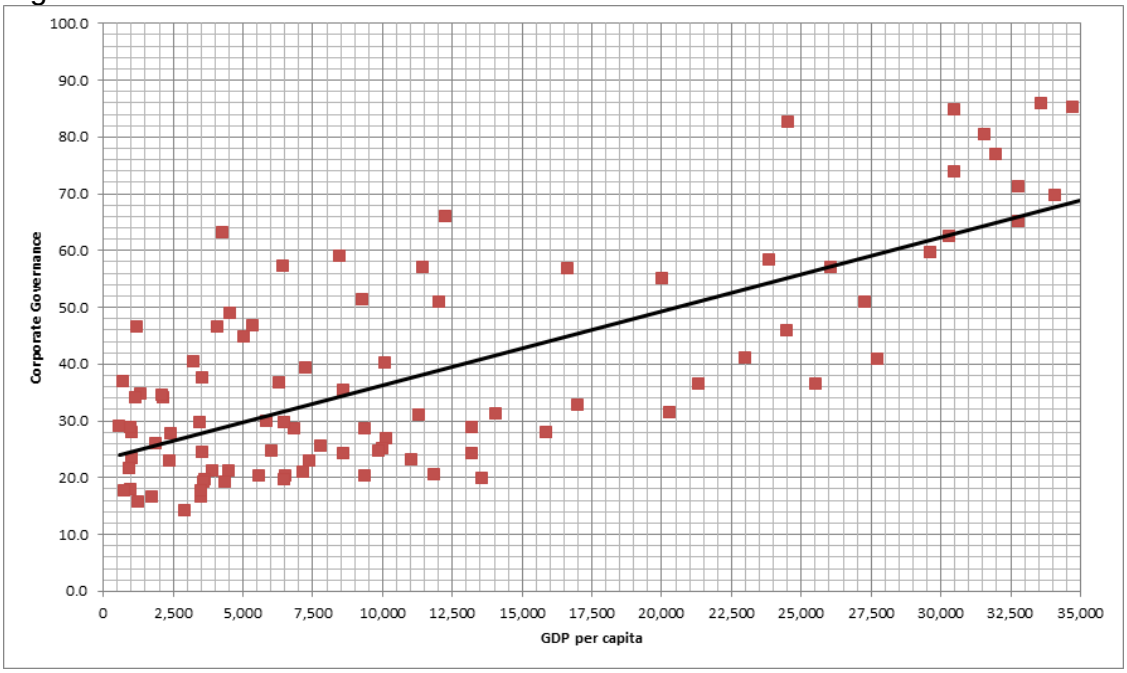


Figure A.4

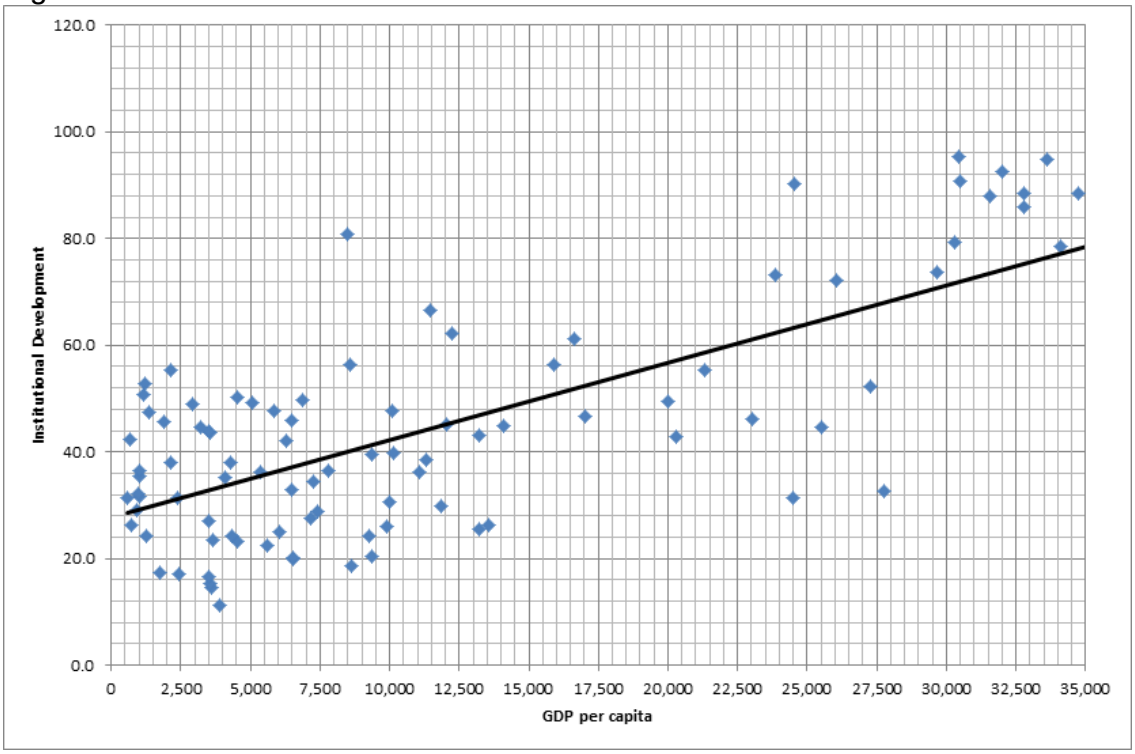


Figure A.5

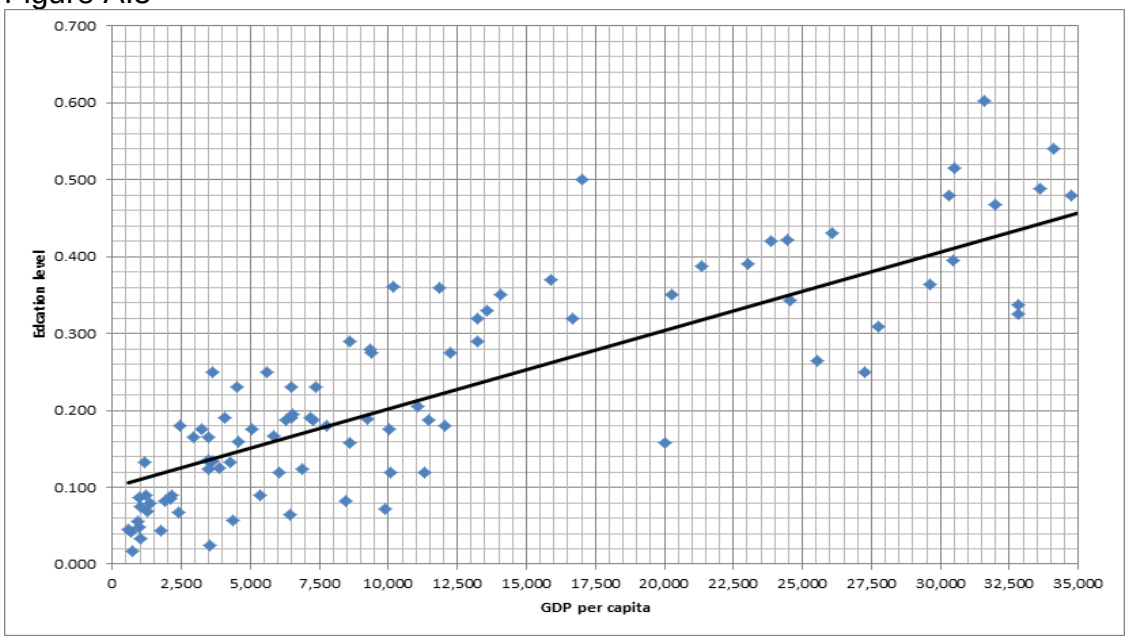
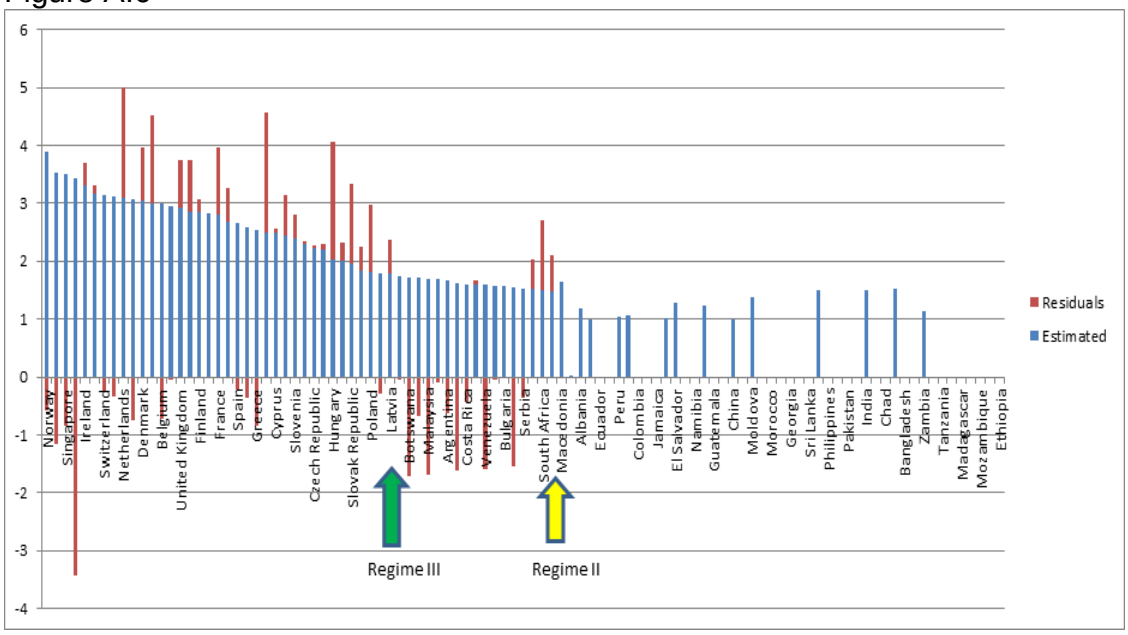


Figure A.6



[*] Universidade Nova de Lisboa and University College London. We thank participants in Seminars at UCL and in New Delhi for comments

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[25] These are largely consumer surplus costs and may also be producer surplus in industries that have to pay a higher price for their inputs. These costs may translate in lower votes to the government.
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[31] There is a large literature on corruption and non-directly-productive activities that deal with "petty" corruption in public administration and bureaucracies and which is only lateral to our analysis. Unless corruption at all levels of administration is rampant, this type of corruption is dwarfed by capture of governments by vested interests.
[32] See http://www.transparency.org/news_room/faq/corruption_faq
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[34] This would be consistent with the hypothesis that the additional rents are not always used productively.
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[41] See, Commission on Growth and Development , *The Growth Report – Strategies for Sustained Growth and Inclusive Development*, 2008, available at http://www.growthcommission.org/index.php , noting the importance of institutions for the operation of markets and adding that "(t)hese institutions and capabilities may not be fully formed in a developing economy. Indeed, the immaturity of these institutions is synonymous with underdevelopment. That makes it harder to predict how an economy will respond to, say, the removal of a tariff or the sale of a public asset" ; Dani Rodrik, *One Economics Many Recipes*, Princeton University Press, 2007, pp. 161-162.
[42] Dani Rodrik, *One Economics Many Recipes*, Princeton University Press, 2007, pp. 163-166.
[43] Edward L. Glaeser & Andrei Shleifer, *The Rise of the Regulatory State*, 41 J. Econ. Literature 401 (2003).
[44] By extortion we mean, like Glaeser and Schleifer, the costs of legal fees to lawyers, waiting time of decisions, normal in developed countries, plus in less developed countries costs of bribes and other types of side payments. In a more general sense it may mean also the payments required under the "protection for sale" theories.
[45] In fact, if an Authority approves all the mergers proposed, it may be due to the fact that undertakings have already fully interiorized competition law and do not present to the Authority problematic mergers; or the criteria used by the Authority is too permissive. The first hypothesis is not coherent with an environment where competition law is violated, as even in the institutionally most advanced countries happens. Another possibility is that undertakings carry out unlawful mergers and do not submit them to the Authority which in our measure will weight in terms of no prohibitions.
[46] Relative to the number of violations, but this is a variable that is very hard to collect. There have been some surveys, but we do not have data covering enough countries to introduce it in our data base.
[47] Daniel Kaufmann, Corruption, Governance and Security: Challenges for the Rich Countries and the World, Global Competitiveness Report 2004/2005, available at <www.worldbank.org/wbi/governance/pubs/gcr2004.html>, September 2004.
[48] There might be some economies of scale for countries, e.g., above 30 to 40 million persons. These might translate on 4 to 5 professionals for 1 million of population and even further down to about 3 to 4 professionals above 100 million. Another factor to take into consideration is the fact that some sector regulatory agencies may also enforce competition law in their own sector, which decreases the number of personnel required at the NCA.
[49] Belgium has the lowest score, perhaps because it considers itself a very open economy and not needing closer scrutiny in competition matters.
[50] We have no data regarding the qualifications of the personnel of NCAs.
[51] This position should be contrasted with one of the most important regulators around the world: Central Banks.
[52] Data for 2005 based on World Bank Atlas.
[53] Except Hong Kong in our sample which does not have a competition law regime.
[54] The fact that in institutionally weak countries courts strike down a large percentage of NCA decisions or reduce substantially sanctions is worrisome. In most of developing countries decisions are annulled based on procedural issues. It would be better for courts to assume a more justice oriented outcome, by trying to remedy some of those perceived errors during the course of the trial.
[55] Mateus, n.1 above.
[56]
[57] L. Kekic, "The Economist Intelligence Unit´s Index of Democracy", available at http://www.economist.com/media/pdf/democracy_index_2007_v3.pdf.
[58] In a number of countries with lower level of institutional development very few persons are in jail for corruption, except for individuals who commit crimes of petty corruption or opponents of the political regime.
[59] Contrast this with models of firm bankruptcy or credit defaults, where there are thousands of observations each year.
[60] This is another dimension that will only be available in two or three decades: the evolution of the regime in each country through time. This will give us a panel data across countries. Presently, most

of the competition regimes are rather young and it is difficult to identify policy changes in a given country. The country with the longest experience is undoubtedly the USA and tells us a very interesting story. The era of trusts from 1860s up to 1890s, the first enforcement regime up to the 1930s, the second started around 1960s and afterwards there were fluctuations between more or less liberal periods. Several works on the history of antitrust in the US are available. The theory of Glaeser and Shleifer used in our model was exactly developed to capture the change in regimes from the 1860s through the middle of the 20th century.

[61] However, we do not agree with Glaeser and Schleifer that laissez faire reduces extortion.

[62] It is easy to show, using game theory, that leniency programs will not work within the other regimes, since the benefit that firms obtain largely surpasses the probability of detection times the fines they probability get.

[63] All prices refer to 2005.