

What drives the effectiveness of competition policy

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Abstract

Effectiveness of antitrust policy across varies strongly across countries. This paper shows what distinct institutional and policy characteristics drive the effectiveness of antitrust. It concludes that antitrust cannot be effective in a vacuum. Competition policy is only effective in countries in which markets are already locally competitive. And more importantly, countries will have effective enforcement of antitrust if they also have effective devices against corruption. The paper also shows that there is not a unique way to make the competition authorities more effective: we have not found clear rules regarding independence and procedures that might eventually promote effectiveness. Fashioning competition restrains using the per se illegality rule or the rule of reason do not appear to be driving effectiveness, but it appears to be good for effectiveness to have guides regarding the evaluation of mergers and cartels. By contrast, fashioning cartels as criminal felonies increase antitrust effectiveness strongly.

Keywords: Antitrust; Policy Effectiveness; Political economy.

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1. Introduction

There is a growing literature of empirical papers that test the well-known theory finding that there should be a macro link between proper competition policy and productivity, growth and price stability (Dutz and Hayri 2000, Przybyla and Roma 2005, Borrell and Tolosa 2006).

While these papers quantify the overall impact of competition policy, it is lacking an assessment to identify the distinct features of competition policy which are crucial for the overall outcome. Voigt (2006) tries to overcome this problem by analyzing the effect of some distinctive characteristics of competition policy across countries on total factor productivity. He got information for about 57 countries regarding the objectives of competition laws (basis), the legal regimes and economic approach (per se rules versus rule of reason), the structure of competition authorities (*de jure* and *de facto* independence). Voigt (2006) estimated the effect of those indicators regarding the quality of competition policy on total factor productivity.

Although Voigt (2006) shows correlations between some available subjective measures of effectiveness of competition policy and a set of institutional characteristics of competition enforcement, he has not fully exploited the information that can be inferred from the cross-country pattern of those two types of measures. He shows that correlation between the subjective indicators of effectiveness and his objective indicators range from as low as 1% to as high as 62%. Therefore, it might be useful to compare which are the key objective characteristics of competition law and institutions that drive subjective competition policy effectiveness.

Apart from the aspects outlined by Voigt (2006), there is much more variety on enforcement of antitrust and merger control that could be analyzed. A much richer set of aspects that should be studied with respect competition law enforcement such as if private and public enforcement of antitrust laws is simultaneous or sequential, if there have been published guidelines for applying antitrust and merger rules, if leniency programs are used to enforce laws, if antitrust prohibitions qualify as criminal violations of the law, and so on.

This paper has compiled information regarding objective and subjective measures of effectiveness of competition policy. It then gets a comprehensive insight into what

drives the effectiveness of competition policy from cross-country variation, and also from variations across policy domains.

The paper is organized as follows. After this introductory section, section 2 turn into describing the data and methodology, and section 3 show the results. Section 4 concludes.

2. Empirical Strategy and Data

2.1. Empirical Strategy

Competition policy is the core of a set of policies designed to foster product competition in the markets for goods and services. Promoting competition appears to have become an intermediate objective of government policy which is enforced to pursue the ultimate goal of improve economic performance.

Policy-makers claim that having a competition legislation and antitrust institutions that effectively promote and protect competition in the product markets improves welfare. Designing and enforcing antitrust is claimed to render welfare gains.

According to Aghion and Schankerman (2004), there are three channels through which competition-enhancing policies, reforms and certain types of physical infrastructure facilitate welfare gains: cost reduction (*restructuring*), market selection of more efficient firms and entry.

- 1) **Cost reduction** (*restructuring*): greater competition changes the incentives for firms to reduce their production cost. Static efficiency gains could be realized through the reduction of slack in the use of inputs and improved resource allocation in response to higher competitive pressures.
- 1) **Market selection** of more efficient firms: increasing competition moves market shares from high-cost to low-cost firms, and this reduces the industry average production costs.
- 2) **Entry**: intensifying post-entry competition reduces the incentives for new high-cost firms to enter the market, and it encourages entry by low-cost potential entrants.

Additionally, competition might render other dynamic gains such as fostering innovation. Dynamic efficiency gains are expected due to higher efforts to innovate and a faster diffusion of innovations and adoption of new technologies; see Aghion and Howitt (1996). These effects can boost productivity over long periods of time, as innovation involves complementarities, positive feedbacks, and the non-rivalry of ideas. There is consistent evidence of high social rates of innovation, far above the private ones, see Jones and Williams (1998).

It is far from settled how to measure the effectiveness of competition policy across countries. There are two main avenues of research. On one hand, some papers such as Dutz and Hayri (2000) and Borrell and Tolosa (2006) rely most on subjective indicators that try to assess the effectiveness of competition policy across countries. Those measure the perceived effectiveness of policy using surveys, mostly to business people. We have two measures of perceived effectiveness of competition policy. The one compiled in the World Business Survey that it is used by the World Economic Forum (WEF) to construct the Global Competitiveness Report. The other is the indicator compiled by the International Institute for Management Development (IMD) for producing the World Competitiveness Yearbook.

On the other hand, synthetic indexes are used to obtain a comprehensive picture of the strength of competition policy (see Serebrisky 2004 or Voigt 2006). The composite indicator comprises information from different policy fields, like the absence or presence of certain legal provisions, severity of penalties, resources available to the competition authority or its autonomy.

Both measures have strengths and weaknesses. The subjective measures depend strongly in the expectations of the business people surveyed regarding how competition policy turns to be effective. Objective measures depend strongly on how they are constructed. A stronger value of the index can be achieved by optimizing only certain areas, while the really important elements have been replaced by less decisive or incomplete components. This can blur the robustness of the whole policy in the evaluation exercise. For example, the pure existence of a competition law or the number of cases investigated by courts can contribute to a high index, but other features might be even more important. Furthermore, interactions between different policy fields have to be taken into account.

Subjective indicators measure the perceived effectiveness of policy using surveys, mostly to business people. We have two measures of perceived effectiveness of

competition policy. The one compiled in the Executive Opinion Survey that it is used by the World Economic Forum (WEF) to construct the Global Competitiveness Report. It asks executives to rank their country according to the following statement: "Antimonopoly policy in your country is 1 = lax and not effective at promoting competition, 7 = effective and promotes competition." The other is the indicator compiled by the International Institute for Management Development (IMD) for producing the World Competitiveness Yearbook. IMD asks "do anti-trust laws prevent unfair competition in your country?"

Those measures are being widely used: see Dutz and Hayri (2000), Borrell and Tolosa (2006) and Voigt (2006). According to Voigt (2006), these two subjective measures of perceived competition policy effectiveness are highly correlated (correlation coefficient larger than 80%). All these three papers found additionally a high correlation of competition policy effectiveness and macroeconomic performance measured in terms of growth (Dutz and Hayri 2000), or the level of total factor productivity (Borrell and Tolosa 2006, and Voigt 2006).

Neither the WEF nor the IMD indicator of competition policy effectiveness offer data separating out the effect of national competition policy from the EU competition policy. Therefore, the data offers an indicator of the overall effect of both policies for the EU member states. However, the Executive Opinion Survey offers some other indicators related to the intensity of local competition and the quality of institutions.

Objective measures of competition policy effectiveness rely mostly on reviewing the content of competition law and the way the law is enforced in different jurisdictions. Nicholson (2004) reviews the different efforts undertaken to quantify antitrust regimes. There have been different efforts to compare in a systematic way competition rules and institutions across countries. *CUTS international* has reviewed around 100 jurisdictions in the world. *Global Competition Review* publishes reviews of specific legal and enforcement aspects of competition policy in different domains such as cartels, abuses of dominant position and mergers. Each review focuses on a much restricted sample of countries.

Voigt (2006) has undertaken the most comprehensive survey comparing competition laws. He got information for about 57 countries regarding the objectives of competition laws (basis), the legal regimes and economic approach (per se rules versus rule of reason), the structure of competition authorities (*de jure* and *de facto* independence). He constructed indicators regarding these aspects of competition policy, and making some assumptions on how these elements made competition policy effective. Voigt (2006) then

estimated the effect of those indicators regarding the quality of competition policy on total factor productivity. It turned out that objective indicators of competition policy quality explain differences in total factor productivity, although the impact is not robust to the inclusion of indicators for the general quality of institutions. Voigt (2006) do not show whether the results are robust to changes in the way the indices of objective measures have been constructed and weighted.

When studying the effectiveness of competition policy, we should control for a set of conditions under which antitrust operates such as the degree of local competition in the countries, the openness to foreign competition, and so on. Again, indicators of competition intensity can rely upon objective or not subjective indicators. As outlined before, the Executive Opinion Survey of the WEF offers information regarding domestic competition. It includes not only the opinion regarding the competitive stance of domestic markets, but also on how markets are exposed to international competition.

On the other hand, Borrell and Tolosa (2006) found that open countries had in average less effective competition policies. These findings suggest that international competition might weaken the case in favour of enforcing competition policy. Therefore, openness should be taken into account when studying antitrust effectiveness.

With respect to corruption and antitrust, Aghion and Schankerman (2004) show that economies can fall in a low-competition enforcement trap when political institutions do not effectively discipline the behavior of politicians and losers from antitrust successfully bribe them. Glaeser and Shleifer (2003) show also theoretically that most of regulations, and by analogy antitrust regulations, are only optimal policies to be in place in countries that can eventually enforce that regulations. This is only the case in countries that enjoy low levels of corruption and relatively strong institutions.

Borrell (2005) also offers a law and economics model in which it is shown that it is better for different countries to choose different antitrust regimes (American or European) or not having antitrust at all depending on the corruption of its public enforcers. For countries with high corruption, it is better not to have antitrust at all, or to have an antitrust regime of ex-ante authorizations of restrictive practices (a register of anti-competitive practices) such as the one United Kingdom passed in 1956 and Spain passed in 1964. By contrast, countries with stronger institutions can effectively enforce an antitrust regime such as the one in Europe or the US in which restrictive practices are evaluated ex-post and deterred using different legal rules.

Additionally, Borrell (2007) shows using the same model of law enforcement that there is not a legal rule that fits all countries and policy domains: in some countries the rule of reason is better than per se illegality rule, and in others it is better to have practices that qualify as per se illegal. We should then control for corruption when studying antitrust effectiveness.

The subjective measures of competition policy effectiveness and competition intensity will be compiled from WEF database, and from the World Bank database. The objective measures of competition effectiveness will come from Voigt (2006) and from the information gathered from *CUTS international*, *Global Competition Review*, the *International Competition Network*, the annual reports of the OECD, the national government agencies webpages and statistics.

2.2. Data

For the general objective to measure what drives competition policy and its effectiveness, a cross-section data base, including 65 countries around the world, have been elaborated. Countries included are both developed and developing ones, with or without competition laws.

Competition policy has been introduced across countries in the world very gradually. Canada passed the first antitrust statute in 1889. The US has an antitrust policy that dates back to the Sherman Act of 1890, although according to ABA Section of Antitrust Law (2003), by the time of the adoption of the first federal antitrust law, 13 states had enacted some form of antitrust statute. Kansas enacted in 1889 the first state antitrust law of general application. Even senator Sherman described the federal law he was promoting as supplementary to state antitrust statutes.

Most European countries have antitrust policies only since the mid twentieth century. The EU has antitrust statutes since the Rome Treaty in 1958. Other countries have only adopted an antitrust regime much more recently as part of their convergence towards more market oriented policies (South Eastern Asia and Latin America), or towards regional agreements (such as the countries of Eastern Europe towards the EU), or towards multilateral agreements (such as those embraced by the members of the WTO after the Uruguay Round). Currently, around 100 countries in the world have competition laws. Merger policy was set in the US in 1914, but prior notifications of mergers are only

compulsory since 1976. In the EU, merger control with a prior notification system was established by a Council regulation in 1990.

Almost all the data is for 2004 but depending on the variable analyzed if 2004 data is not available the last available one has been taken (2002 or 2003). Estimates will use the cross-section variation on the data, and therefore as most variables are not expected to vary considerably from one year to another (for example, political stability, private perception of competition policy, etc.), we can make inferences using data around 2004.

Three sources of data have been used: World Economic Forum (WEF), World Bank Institute and finally data gathered from original sources (see the Annex: the data for a better explanation of the variables used). The first source above mentioned, currently, features more than 125 countries, using a questionnaire among business leaders to quantify institutional, economic and company aspects in their respective countries. The second one, are derived from several surveys, basically for the paper of Kaufmann *et al* (2005), where these authors analyzed six governance indicators covering 209 countries from 1996 to 2004³. And finally, the third one are data gathered from original sources which have been collected from competition authority sites, national laws on competition policy, from the Global Competitiveness Report edited by the World Economic Forum, and also using qualitative information by CUTS International.

In general, four groups of variables are considered (each variable in the Annex: the data is marked with a number, according to group it owns, 1, 2, 3 or 4). The first group encloses the political and institutional aspects of the country. We look for variables helpful to explain the political instability, accountability, governance and general levels of corruption, among others, which can influence on general outcomes of the countries and, particularly, in competition ones.

The second group of variables is related to firms. Taking into account that the general environment of companies is not equal on each country, the openness of customs regimes or decentralization of corporate activity can be mentioned as an example of this kind of data.

³ The data has been aggregated using an unobserved components model, described by Kaufmann *et al* (1999).

The third one includes macroeconomic data. In this group, population, gross domestic product and all dummies for countries for European Union-25, EMU, etc. are included. These variables explain the economic importance of each country, and gather some identical patterns depending on which group of countries it belongs.

And the last and most important group used to evaluate our main objective, are these data referring to competition policy. Competition laws and competition policy in general, include merger laws, antitrust laws and the like. For this reason, not only the organizational structure of competition policy in each country, but also the contents of competition laws and its enforcement are taking into account. Using this scheme, we include data for some country specific institutional aspects; and then we divide the indicators into three different groups: cartels, abuse of dominant position and mergers. For each one we focused on how competition law applies on it: *per se* or rule of reason application, legal objective, etc; how competition law have been applied on it (for example, threshold used on dominant position) and finally, what signal and information is given to firms, by means of using of guides.

Although each variable is described in the Annex: the data, it is important to stand out how the effectiveness of competition policy is going to be explained. And before that, how can be measured its effectiveness? To do that, we use the variable from WEF named "effectiveness of antitrust policy". WEF asked interviewed persons whether antimonopoly policy in their country was lax and not effective at promoting competition. Using that, WEF works out a perception index for the effectiveness of antitrust policy, ranged between 1 and 7.

This endogenous variable is explained by other exogenous variables included in the analysis, which has been included gradually and by groups by estimating the model. This is the followed sequence:

- 1.- General economic situation: Local competition, openness of economy and level of corruption are considered.

- 2.- Using the equation estimated in the previous issue, institutional aspects of competition policy, as independence of competition authority from Government are included.

3.- Using the best variables regressed before, we include how cartels are prosecuted and considered in each country: guides, penal, *per se* or rule of reason.

4.- On the other hand, we take estimation from 2.- and analyze merger control and dominant position variables.

5.- Regional dummies are included in estimations derived from 3.- and 4.- and the best variables are considered in a grouped model.

All the regressions have been estimated using Least Squares with robust standard errors, robust to heteroskedasticity. Table 1 shows the descriptive statistics of the data we use in the regression analysis.

3. Results

Table 2 shows the results of the regression analysis. In the first column, we show how there are some country specific characteristics that explain most of the variation in the effectiveness of competition policy (more than 86% of the variance of antitrust effectiveness). In the second and following columns, we allow some characteristics of antitrust institutions, law and enforcement to enter the regression for explaining the variance of antitrust effectiveness across countries. We finally check the robustness of the results regarding the explanatory power of the different covariates in a specification that contains almost all the country characteristics and policy characteristics.

With respect to country characteristics, it seems that antitrust effectiveness is mostly driven by the degree of local competition and by the public commitment to control corruption. Those two covariates are statistically significant at the 1% or 5% level in all specifications. The importance of local competition suggests that antitrust cannot be a policy in the vacuum. By contrast, it seems to be a policy that can only be enforced if there is already enough local competition in the local markets. We have not checked whether there might be simultaneity issue regarding antitrust and local competition.⁴ If this were the case, our estimates might overestimate the impact of local competition on effectiveness

⁴ The causal link from competition policy to the intensity of local competition is analysed by Krakowsky (2005).

(the coefficient would include a selection bias, those countries in which local competition is high might be more prone to have effective antitrust enforced).

The strength of the effect of the variable that measures the control of corruption on antitrust effectiveness appears to confirm the theoretical perspectives on the issue of how corruption needs to be under severe control to make antitrust policy effective as highlighted by Aghion and Schankerman (2004) and Borrell (2007).

Openness and the degree of business decentralization appear to be correlated with antitrust effectiveness (although the estimated coefficient is only significant at 10% in some specifications).

With respect the institutional characteristics of antitrust policy across countries, we do not find any significant effect of having an independent antitrust authority (*indcart*), of allowing the authority to investigate and prepare the decisions (*minist*), nor having judges deciding on the cases (*resoladm*) on antitrust effectiveness. It should be taken into account that data availability constrains our analysis to the set of best antitrust performers. Almost all have independent antitrust authorities (all but Bolivia, Colombia, Costa Rica, El Salvador, Georgia, Guatemala, Republic of Macedonia, Ukraine, Venezuela). Almost all allow the independent authority to fully investigate the cases in which they decide (all but Belgium, Spain, France, India, Latvia, Luxemburg, Malta), and almost none do not allow authorities to decide on cases, but force them to go always to court (Austria, Georgia). These minor differences in enforcement are not relevant for antitrust effectiveness.

With respect the way cartels are prosecuted, it appears that it is not important whether cartels are prohibited using the rule of reason or the *per se* illegality rule. This results suggests that there is not a legal rule that fits all countries as Borrell (2007) highlights. By contrast, antitrust effectiveness is boosted when cartels are criminally prosecuted. We have found that the 20 jurisdictions (36% of the sample) in which a cartel is a criminal offence have on average better antitrust effectiveness: Canada, Slovak Republic, Slovenia, USA, Estonia, France, Guatemala, India, Ireland, Island, Israel, Jamaica, Japan, Kenya, Korea, Mexico, Norway, United Kingdom, Czech Republic, Taiwan. Making cartels a criminal offence allows countries to have on average around 7.1% and 7.6% larger antitrust effectiveness

Having a cartel guide is also a good signal for antitrust enforcement. In some specifications (not shown but available from the authors), having a leniency program appears also to be good for antitrust enforcement. Surprisingly, we found that punitive damages are bad for antitrust effectiveness, although estimates are never statistically significant.

With respect to merger control, almost all jurisdictions have merger control. Therefore, we focus on the question of whether it is the government or the antitrust agency who holds the last decision on merger authorisations, and the question of whether the legal mandate of merger control is to protect competition or to protect a broader public interest. We find that this last question is the relevant issue for effectively enforcing antitrust. Having a narrower mandate of protecting competition allows countries to have on average around 7.8% larger antitrust effectiveness. However, this effect might be capturing other relevant drivers that are correlated with such mandate because the estimate of the mandate covariate is no longer statistically significant when we add other covariates in the equation.

Finally, the way abuse of dominant position is prosecuted is not showing up as a driver in explaining cross-country antitrust effectiveness.

4. Concluding remarks

Effectiveness of antitrust policy across varies strongly across countries. This paper shows what distinct institutional and policy characteristics drive the effectiveness of antitrust. It concludes that antitrust cannot be effective in a vacuum. Competition policy is only effective in countries in which markets are open to foreign competition and locally competitive. And more importantly, countries will have effective enforcement of antitrust if they also have effective devices against corruption.

The paper also shows that there is not a unique way to make the competition authorities more effective: we have not found clear rules regarding independence and procedures that might eventually promote effectiveness. By contrast, fashioning cartels as criminal felonies increase antitrust effectiveness strongly. Fashioning competition restrains using the *per se* illegality rule or the rule of reason do not appear to be driving effectiveness, but it appears to be good for effectiveness to have guides regarding the

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evaluation of mergers and cartels. Countries that have legal mandates for merger decisions that state clearly that the objective is to avoid mergers that substantially lessen competition have more effective antitrust than others that use broader public interest formulae to set the merger policy objective.

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Table 1: Descriptive statistics

Variable	Obs	Mean	Standard Deviation	Min (continuous variables only)	Max (continuous variables only)
Logeffec	65	-0.5071	0.2412	-1.030	-0.137
Openness	65	4.0800	0.9817	2.0000	6.0000
Localcomp	65	4.9753	0.6334	3.2000	6.3000
Decentfirm	65	4.1292	0.9799	2.4000	6.2000
Contcorrup	65	0.6317	1.079	-0.9987	2.4642
Indcart	59	0.8474	0.3626		
Mininst	59	0.1186	0.3261		
Resantcomp					
Cartperse	56	0.3036	0.4640		
Cartelguide	57	0.2281	0.4233		
Penalcart	58	0.36207	0.4847		
Danoscart	57	0.2281	0.4233		
Leniency	58	0.3965	0.4934		
Merger	57	0.9474	0.2253		
Findecmerg	54	0.4259	0.4991		
Merguide	57	0.5263	0.5037		
Objectimerg	54	0.8889	0.3172		
Dompos	56	0.3214	0.4712		
Domguide	57	0.1403	0.3504		
Levthresd	53	27.6981	21.462		
Thresdom	53	0.6792	0.4712		

Table 2: Estimates of the Effectiveness of competition policy

Endogenous variable: LOGEFFEC	Estimated coefficients using groups of variables					
	Basic especification (I)	Institutional variables (II)	Cartels prosecution (III)	Merger control (IV)	Dominant position (V)	All variables (VI)
Openness	0.0320935 (0.261)	0.0416079 (0.140)	0.0542464 (0.055)*	0.0501294 (0.073)*	0.0273121 (0.415)	0.0620438 (0.066)*
Localcomp	0.1628613 (0.000)***	0.1321155 (0.000)***	0.1116588 (0.001)***	0.128307 (0.001)***	0.1324236 (0.000)***	0.1442806 (0.002)***
Decentfirm	0.0368032 (0.082)*	0.0376517 (0.064)*	0.0315694 (0.122)	0.038731 (0.073)*	0.0418144 (0.066)*	0.0015759 (0.951)
Contcorrup	0.063055 (0.042)**	0.0586603 (0.017)***	0.0582854 (0.044)**	0.0549661 (0.025)**	0.0712246 (0.018)**	0.0630201 (0.053)*
Indcart		0.0267653 (0.666)				-0.0063671 (0.925)
Mininst		-0.0109940 (0.683)				-0.0437323 (0.315)
Resanticomp		-0.0260956 (0.482)				
Cartperse			0.0323462 (0.223)			-0.0057707 (0.878)
Cartelguide			-0.0176161 (0.457)			-0.0774682 (0.011)**
Penalcart			0.0715483 (0.005)***			0.0769912 (0.021)***
Danoscart			-0.0468135 (0.167)			-0.0622815 (0.117)
Leniency			0.0430307 (0.150)			0.0428554 (0.156)
Findecmerg				0.0132384 (0.582)		0.0074726 (0.840)
Merguide						0.0631748 (0.119)
Objectimerg				0.0782112 (0.027)**		0.0789979 (0.194)
Dompos					0.0149963 (0.640)	0.0162754 (0.679)
Domguide						0.0255094 (0.484)
Levthresd					0.0014708 (0.289)	
Thresdom					-0.0692874 (0.286)	
Eu27	-0.0612962 (0.312)					
Eu25						-0.0333196 (0.420)
OCDE	0.001165 (0.972)					-0.0274433 (0.446)
Ece	0.0553639 (0.380)					
Duem	0.0499826 (0.035)**					0.0756687 (0.116)
Intercept	-1.650795 (0.000)***	-1.506854 (0.000)***	-1.472282 (0.000)***	-1.606585 (0.000)***	-1.480398 (0.000)***	-1.617964 (0.000)***
R ²	0.8693	0.8345	0.8646	0.8480	0.8197	0.8976
F-statistic	56.30 (0.000)	41.90 (0.000)	32.63 (0.000)	72.25 (0.000)	28.30 (0.000)	26.47 (0.00)

Note: *p-value* in parenthesis. *, **, *** statistically significant at 10%, 5% or 1% respectively.

Annex: the data

Name	Acronym	Source	Description
Effectiveness of anti-trust policy (4)	efectiv logeffec	WEF	Anti-monopoly policy in your country (1=is lax and not effective at promoting competition, 7=effectively promotes competition). LOGEFFEC is the logarithm of efectiv.
Openness of customs regime (2)	openness	WEF	The customs regime in your country (1= is highly unfavorable to import and export activities; 7 = is among the world's most liberal toward import and export activities)
Company Spending on Research and Development (2)	rdfirm	WEF	Companies' spending on research and development in your country (1=is non-existent, 7=is heavy relative to international peers)
Public Trust of Politicians (1)	trustpolitic	WEF	Public trust in the honesty of politicians is (1=very low, 7=very high)
Intensity of Local Competition (4)	localcomp	WEF	In most industries, competition in the local market is (1=limited and price-cutting is rare, 7=intense and market leadership changes over time)
Decentralization of Corporate Activity (1)	decentfirm	WEF	Corporate activity in your country is (1=dominated by a few business groups, 7=spread among many firms)
Voice and accountability (1)	voiceaccount	World Bank	Measuring political, civil and human rights. It lies between -2.5 and 2.5, with higher scores corresponding to better outcomes.
Political stability and violence (1)	polstability	World Bank	Measuring the likelihood of violent threats to, or changes in, government, including terrorism. It lies between -2.5 and 2.5, with higher scores corresponding to better outcomes.
Government effectiveness (1)	goveffectiv	World Bank	Measuring the competence of the bureaucracy and the quality of public service delivery. It lies between -2.5 and 2.5, with higher scores corresponding to better outcomes.
Regulatory burden (1)	regquality	World Bank	Measuring the incidence of market-unfriendly policies. It lies between -2.5 and 2.5, with higher scores corresponding to better outcomes.
Rule of Law (1)	rulelaw	World Bank	Measuring the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence. It lies between -2.5 and 2.5, with higher scores corresponding to better outcomes.
Control of corruption (1)	contcorrup	World Bank	Measuring the exercise of public power for private gain, including both petty and grand corruption and state capture. It lies between -2.5 and 2.5, with higher scores corresponding to better outcomes.
Leniency Program (4)	leniency	OS	1= It exists a leniency program in your country; 0 = In other case.
Independent administrative authority (4)	indcart	OS	1= There is independent competition authority; 0 = In other case.
Ratification legislative (4)	nomej	OS	1= appointment administrative authority does not require ratification by the legislative one; 0= In other case.
Ratification federal status (4)	nomef	OS	1= appointment administrative authority require ratification by Federal States; 0= In other case.

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Dependence (4)	mininst	OS	1= a dependent ministry of the executive instructs; 0= In other case.
Cartel <i>per se</i> (4)	cartperse	OS	1= <i>Per se</i> cartels analysis in your country ; 0= Rule of reason analysis
Cartel guide (4)	cartelguide	OS	1= It exists a cartel guide; 0= In other case.
Dominant position guide (4)	domguide	OS	1= It exists a dominant position guide; 0= In other case.
Mergers guide (4)	merguide	OS	1= It exists a merger guide; 0= In other case.
Penal (4)	penalcart	OS	1= It exists penal crime in cartels; 0=In other case.
Damages (4)	danoscart	OS	1=It is possible to demand punitive damages
Competition Law (4)	cplaw	OS	1= It exists a competition law in your country; 0= In other case.
Private Competition Law (4)	privappli	OS	1= Agents can go directly to the judge, soliciting damages; 0= In other case.
Decentralization (4)	decentcp	OS	1= Competition policy is decentralized in your country; 0= In other case.
Dominant position (4)	dompos	OS	1= <i>Per se</i> for dominant position; 0: Rule of Reason for dominant position.
Resolution anticompetitive practices (4)	resanticomp	OS	0= Administrative decisions are not up for the competition agency, it is on the judiciary; 1= In other case.
Merger control (4)	merger	OS	1= Mergers are analyzed in your country; 0= In other case.
Final decision in mergers (4)	findecmerg	OS	1= Government makes the last decision on mergers; 0= Competition policy authority makes the last decision on mergers.
Objective mergers (4)	objectimerg	OS	1= Final objective in mergers is competition; 0= Legal mandate for merger control is not protecting competition but the public interest in general.
Threshold dominant position (4)	thresdom	GCR	1= It exists any threshold dominant position; 0= In other case.
Level of threshold dominant position (4)	levthresd	GCR	1= If it exists, level of threshold dominant position; 0= In other case.
Year (4)	Year	OS	Year of the first competition law in your country.
Consumer Protection (3)	consprot	CUTS International	1= It exists legislation on consumer protection; 0= In other case.
Gross Domestic Product 2004 (3)	gdp	World Bank	GDP (current US dollars), 2004
Population 2004 (3)	pop	World Bank	Population, 2004.

Dummy Economic and Monetary Union (3)	duem	OS	1=EMU country; 0= In other case
Dummy European Union 27 (3)	eu27	OS	1= EU-27 country; 0= In other case.
Dummy Europe (3)	eu25	OS	1= EU-25 country; 0= In other case.
European Common Space (3)	ece	OS	1= ECS country; 0= In other case.

Note: WEF: World Economic Forum database.

OS: Own Source.

GCR: Global Competition Review

Country groupings for some binary variables (OECD countries are underlined, EU-27 countries are **bolded**)

Indcart = 0 (There is not an independent competition authority) Bolivia, Colombia, Costa Rica, El Salvador, Georgia, Guatemala, Republic of Macedonia, Ukraine, Venezuela
Privattapli = 1 (Simultaneous government and judicial enforcement) <u>Australia</u> , Austria , Belgium , <u>USA</u> , Greece , Israel, Latvia , <u>Norway</u>
Minist = 1 Belgium, Spain, France, India, Latvia, Luxemburg, Malta
Resanticomp= 0 (administrative decisions are not up for the competition agency, it is on the judiciary) Austria , Georgia

Cartel per se illegal = 1 <u>Australia</u> , Austria , Chile, Costa Rica, Slovenia, <u>USA</u> , France , Greece , Hungary , Italy , Jamaica, <u>Korea</u> , Latvia, Mexico, Rumania , South Africa, Venezuela
Cartel guide = 1 <u>Canada</u> , <u>USA</u> , Greece , Netherlands , Ireland , Jamaica, <u>Japan</u> , <u>Korea</u> , Malta , <u>New Zealand</u> , United Kingdom , Sweden , Ukraine
Cartel is a criminal offence = 1 <u>Canada</u> , Slovak Republic , Slovenia , <u>USA</u> , Estonia , France , Guatemala, India, Ireland , <u>Island</u> , Israel, Jamaica, <u>Japan</u> , Kenya, <u>Korea</u> , <u>Mexico</u> , <u>Norway</u> , United Kingdom , Czech Republic , Taiwan
Punitive damages = 1 <u>Canada</u> , Croatia, Slovak Republic , Slovenia , <u>USA</u> , Hungary , Jamaica, <u>Norway</u> , <u>New Zealand</u> , Panama, Czech Republic , Taiwan
Leniency = 1 <u>Canada</u> , Cyprus , Slovak Republic , <u>USA</u> , Finland , France , Netherlands , Hungary , Ireland , <u>Island</u> , <u>Korea</u> , <u>Norway</u> , <u>New Zealand</u> , Poland , United Kingdom , Czech Republic , Rumania , South Africa, Sweden

Merger = 0 Jamaica, Luxemburg, Peru
Merger guide = 1 Germany , <u>Australia</u> , Austria , Belgium , Brazil, <u>Canada</u> , Slovak Republic , Spain , <u>USA</u> , Finland , Greece , Netherlands , Ireland , <u>Japan</u> , <u>Korea</u> , <u>Latvia</u> , <u>Lithuania</u> , <u>Malta</u> , <u>Norway</u> , <u>New Zealand</u> , Poland , United Kingdom , Czech Republic , Rumania , South Africa, Sweden , <u>Switzerland</u> , Taiwan, Ukraine, Venezuela
Legal mandate for merger control is not protecting competition but the public interest in general (objectimerg = 0) Argentina, Poland , Portugal , Sri Lanka, Taiwan, Ukraine
Government has the final decision on mergers or can overturn the decision taken by the competition authority (findemerg= 1) Germany , Argentina, Belgium , Cyprus , Colombia, Costa Rica, Spain , Finland , France , Georgia, Greece , India, Israel, Italy , Kenya, Malta , <u>Norway</u> , <u>New Zealand</u> , Poland , Portugal , Rumania , Taiwan, Ukraine

Abuse of dominant position is per se illegal = 1 Costa Rica, Croatia, Denmark , France , Greece , Hungary , India, Ireland , Italy , Jamaica, Latvia , <u>Mexico</u> , Panama, Czech Republic , Rumania , South Africa, Ukraine, Venezuela
Explicit threshold for qualifying a dominant position = 0 <u>Australia</u> , Belgium , Chile, Cyprus , Colombia, Costa Rica, Spain , Finland , <u>Japan</u> , Kenya, Luxemburg , <u>Mexico</u> , <u>New Zealand</u> , Peru, Portugal , Rumania , Venezuela
There is a guide for evaluating abuses of dominant position = 1 <u>Canada</u> , <u>USA</u> , Greece , Jamaica, <u>Japan</u> , <u>Lithuania</u> , United Kingdom , Ukraine