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Is Competition Policy Useful for Emerging Countries? An Empirical Analysis

Roberto Pardolesi and Danilo Samà

Abstract

The ultimate objective of the paper is to empirically investigate the effectiveness of competition policy in emerging countries, focusing on broader indicators of market performance in order to understand whether the presence of an antitrust authority has a significant impact, hence an effective utility, on the level of competition of a developing country. From a policy perspective, the aim of the paper is also to assess whether the enforcement of a competition policy regime in a developing country has the same beneficial effects on the intensity of competition usually claimed to take place in the most developed countries. Relying upon a dataset and the connected econometric model developed by one of the authors, we provisionally conclude that in developing countries the institutional quality of the competition authorities matters more than the mere existence or the degree of competence for the effectiveness of a competition policy regime.

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1 Introduction

The ultimate objective of the present paper is to empirically investigate the effectiveness of competition policy in emerging countries. Although its importance is continuously increasing, the effectiveness of competition policy still seems to lack the attention that it would deserve. At the present state of art, the number of academic contributions that attempts to estimate its impact on relevant economic variables appears very limited, in particular for the less developed countries. However, an empirical literature aimed at measuring in objective terms the effect of competition policy on economic growth is emerging, starting from narrow variables of interest, such as Gross Domestic Product (GDP) and Total Factor Productivity (TFP).

As a result, the current work intends to contribute to this branch of research, focusing on broader indicators of market performance, to understand whether the presence of an antitrust authority has a significant impact, thus an effective utility, on the level of competition of a developing country. In other terms, the research question behind the current work is rather straightforward: is a competition authority active in an emerging country able to implement effectively its primary role? If not, which are the institutional functions and powers that should be strengthened?

From a policy perspective, the aim of the present paper is also to comprehend whether the enforcement of a competition policy regime in a developing country has the same beneficial effects on the intensity of competition usually claimed to take place in the most developed countries. At the same time, it may also be understood whether industrial and institutional differences jeopardize the effectiveness of such a tool of political economy, so much that in emerging countries it would be worthier to assign funds and priority to other tools for economic development.

2 Literature Review

According to the mainstream economic school of thought, competition is the critical process for a market economy to ensure the optimal allocation of resources and the highest level of social welfare. As it is common knowledge, competitive markets enable consumers to purchase better products at lower prices and incentivize firms to improve the quality of the goods and services offered. However, the functioning of competition is not automatic but must be sustained through an intervention by the state, which normally occurs with the adoption of a competition legislation and the creation of a competition authority predisposed to the role of promoter of market democracy. Nevertheless, despite the general consensus, at least from a theoretical standpoint, on the necessity of fostering competition in order to support economic efficiency and fairness on the markets, what appears extremely surprising is the *quasi* absence of academic contributions trying to assess empirically the

effectiveness of competition policy. In the present section, therefore, we provide an exhaustive overview of the results obtained in the empirical literature.

Dutz and Vagliasindi (2000) are the first authors to overcome the traditional approach of the literature, based upon subjective indicators limited to an evaluation of the competition legislations as “in the books”. The authors, in fact, exploiting cross-sectional data and looking at the actual practice in 18 transition countries, measure the effectiveness of the different competition policy regimes according to three criteria (i.e. 1. enforcement; 2. competition advocacy; 3. institutional effectiveness). The main result is a positive impact of competition policy on the intensity of competition, the latter as captured by an indicator of economy-wide enterprise mobility. However, the essential drawback of the study remains the low number of countries for which data are available.

Krakowski (2005), after a regression analysis over a sample of 101 countries, reaches two main conclusions: firstly, the experience of the competition authority and the institutional quality of the government explain a substantial part of the perception of the effectiveness of competition policy; secondly, the perceived effectiveness of competition policy and the size of the economy have a significant influence on the perceived intensity of local competition, while the presence of a protectionist trade policy seems to not have any impact.

Kee and Hoekman (2007), analyzing a dataset of 42 countries and 18 industries from 1981 to 1998 and controlling for the number of firms and for imports, study the effect of competition policy on a derived industry mark-up function of price over marginal cost, which is taken as a proxy for the intensity of competition. Although no significant impact is found, the authors observe that market entry is facilitated by the existence of a competition legislation, thus such a legislation has an indirect and positive effect on the level of domestic competition. The main drawback of the contribution is that it simply employs a binary variable indicating whether a competition policy regime is in force.

Waked (2012) focuses on the public enforcement of competition policy in developing countries, building an original dataset of 50 nations and exploiting 20 antitrust variables over a period of 10 years. The input variables present in the dataset include information on budget and staffing levels, while the output variables reflect data such as number of investigations initiated, cases decided, convictions obtained, sanctions imposed, settlements reached and case appealed for abuse of dominance, cartel and merger cases. The remarkable merit of the work is the successful attempt to collect statistical data on the actual enforcement of competition policy in emerging countries, despite the common belief according to which it would be an impossible task. The only drawback is the adoption of a resource-based methodology for the input variables, as well as the employment of descriptive statistics for the output variables which count the number of interventions by antitrust authorities. In fact, endowments and resources of competition authorities are a measure of potential enforcement intensity, while the number of interventions is not a measure able to judge if the enforcement is efficient or not. Both elements could be used by developing countries merely to assure and signal compliance to

international standards. Nevertheless, the main conclusion of the paper still remains, that is the fact that emerging countries which have adopted a competition policy regime show an increasing degree of enforcement intensity.

Petersen (2013), using a dataset of 154 countries from 1960 to 2005, finds that competition policy has a strong effect on the level of GDP after ten years, whilst there is no relevant impact on the quality of democracy. Thus, market fragmentation seems neither to favor the transition to a democratic regime nor to strengthen the stability of an established democracy. The most plausible reason for this might be that competition policy is not designed to prevent economic concentration at conglomerate and national level (which, in turn, could promote democracy), but only in particular and specific sectors. Also here, the main weakness of the study is that the effect of competition policy is merely controlled for by a dummy variable.

Finally, Buccirossi et al. (2013) estimate the impact of competition policy on productivity growth, analyzing a sample of 22 industries in 12 OECD countries from 1995 to 2005. In order to measure the effectiveness of the different competition policy regimes, the authors construct, principally on the base of a tailored questionnaire, a set of Competition Policy Indicators (CPIs), assessing, for each country and each year, the antitrust infringements (the Antitrust CPI), the merger control process (the Mergers CPI), the institutional features (the Institutional CPI), the enforcement features (the Enforcement CPI) and all the information on the competition policy regime in a jurisdiction (the Aggregate CPI). The main conclusion consists in a positive and significant relationship between competition policy and TFP. Although the only drawback of the contribution is the small size of the sample, exclusively restricted to a part of the OECD countries, the methodology adopted as well as the indicators built are certainly very useful for further in-depth analyses and refinements.

3 Dataset Description

In Samà (2014), the empirical assessment has been divided into two main parts. The first part analyzes developed and developing countries together, to obtain a general overview of the phenomenon studied. The second part examines exclusively developing countries, to understand whether the adoption of a competition policy regime should be among the priorities in the political agenda of an emerging country. The main reason for this distinction is to disentangle the effect of competition policy in such different contexts. This comparison may provide a better picture of the impact, also because in developing countries competition policy has been introduced only recently in comparison to developed countries.

Accordingly, the first group includes the majority of OECD countries (i.e. 28 nations), whilst the second group includes all the developing countries for which data are available (i.e. 51 nations). Hence, the total number of countries present in the sample is 79 (by 2008, 111 countries had enacted a competition legislation

(Papadopoulos 2010). The result is a cross-sectional dataset, created ad hoc merging several existing datasets, with 2008 as common reference year. For definitional sake, the term competition policy should be intended as any national law which promotes market fairness by regulating anti-competitive conducts undertaken by firms. With competition authority it is meant any institution which is set up for enforcing competition policy and is not sector specific.

The independent variables of the dataset, i.e. the set of input variables to be tested in order to verify if they are the cause of the phenomenon object of study, results from a questionnaire submitted to competition agencies worldwide in 2007 and from which four indicators relative to the institutional quality of competition policy of each country are derived and used in Voigt (2009). In particular, the survey, whose response rate is around 63 %, was sent to 140 agencies belonging to the International Competition Network or participating to the Intergovernmental Group of Experts on Competition Law and Policy. The questionnaire was constructed so that respondents would not have to express personal perceptions but to provide factual information about the national competition policies.

The dependent variables of the dataset, i.e. the set of output variables to be tested in order to verify if they are instead the effect of the phenomenon object of study, results from the Global Competitiveness Report, annually published by the World Economic Forum (2013). It assesses the class of factors, institutions and policies that influence the current and medium-term levels of economic prosperity of 144 different countries. Since 2004, the report proposes a wide range of data, based on 110 variables across 12 pillars, about areas such as competition, education, finance, health, infrastructure, institutions, labour and technology. Data are collected through over 15,000 surveys with leading business executives who are asked to rank the determinants of competitiveness of their respective countries. This corresponds to an average of 100 respondents per country. In particular, the study offers the Global Competitiveness Indexes (GCI) (World Economic Forum 2013) measuring the microeconomic and macroeconomic foundations of national competitiveness worldwide.

In this regard, it is necessary to notice that, at least at the present state of art, there is a practical impossibility to find objective data about the intensity of market power, a solution that would represent of course a first best scenario. The basic reason for this limitation is that data such as level of concentration, mark-up on prices or number of market entries are available only for specific sectors of certain nations and in any case would remain rather insignificant if computed with respect to an entire economy. Thus, it is necessary to proceed to a second best scenario, that is to resort to indicators of market performance obtained from evaluations expressed by business respondents about a country competition intensity. Despite the unavoidable drawbacks that this solution entails, being data extracted from surveys not perfectly objective, the present paper still intends to investigate at a macro-economic level whether the presence of a competition authority affects the degree of competition of a developing country. Future research, having at its disposal more rigorous and significant data, could certainly provide further answers to the research question at issue.

4 Econometric Model

The econometric model developed in Samà (2014) aims at estimating the effect on market performance of competition policy in developing countries, the latter evaluated according to four institutional indicators. These indicators, built in Voigt (2009) and originally used to assess empirically the impact of competition policy on TFP, measure: 1. the substantive content of the competition law; 2. the degree to which the competition law incorporates an economic approach; 3. the formal independence of the competition authority; 4. the factual independence of the competition authority. In particular, as mentioned in the previous section, this set of indicators has been constructed as a result of a questionnaire formed of 30 questions and submitted to 140 competition authorities worldwide.

As a result, the four institutional indicators, which evaluate the degree of competition orientation and authority independence, are investigated with respect to the impact on five indicators of market performance. These five indicators of market performance, built by the World Economic Forum (2013), measure: 1. the intensity of local competition; 2. the extent of market dominance; 3. the effectiveness of anti-monopoly policy; 4. the intensity of national competition; 5. the goods market efficiency. In particular, as mentioned in the previous section, this set of indicators has been extracted from the 6th pillar (i.e. Goods Market Efficiency) of the Global Competitiveness Indexes (GCI).

Accordingly, in the econometric model, the four institutional indicators are employed as explanatory and independent variables, whilst the five performance indicators are used as explained and dependent variables. Nevertheless, all the variables that may affect the relationship between the variables of primary interest must be monitored, even though they may not be the focus of the study. Control variables, in fact, allow the econometrician to strictly measure the effect under examination, avoiding the so-called omitted-variables bias and improving the goodness of fit of the econometric model. Therefore, along the lines of Voigt (2009), four standard economic control variables are employed, such as government consumption, trade openness, rate of inflation (Aten et al. 2002) and patents protection (U.S. Department of Commerce 2005), under the reasonable assumption that they are all factors which influence, positively or negatively, the establishment of a competitive environment. Moreover, two other control variables must be considered, that are an EU dummy, as the dataset includes countries members of the European Union, which are thus subject not only to the respective national competition authorities but also to the vigilance exercised by the Directorate-General for Competition (DG COMP) of the European Commission, and an OECD dummy, given the higher level of social welfare of OECD countries. The five control variables are the same regardless of the dependent variable used, since the performance indicators are likely to be affected by similar dynamics.

The high intensity of competition typical of developed countries, as well as the high extent of market dominance typical of developing countries, might facilitate the establishment and the effectiveness of a competition authority. This mechanism

raises the question of endogeneity, as reverse causality (i.e. the effect precedes the cause, contrary to normal causation) might emerge between the dependent and independent variables of the econometric model. In order to deal with this issue, a further category of variables is employed, that are the instrumental variables. In particular, in the econometric model, the same three instrumental variables are used for each of the four independent variables. Actually, endogeneity problems may still remain due to omitted variables. However, to address the omitted variable bias, several controls are employed as mentioned above.

The first instrument is a dummy variable for former British colonies (Aten et al. 2002). As proved by historical evidence, a common law legal system, typical of countries that in the past belonged to the British Empire, is more likely to adopt a competition policy regime compare to a civil law legal system, so that the legal origin influences the enforcement of an institution such as a competition authority. The second instrument is the age of democratic regime (Beck et al. 2001), under the assumption that a country with a longer democratic tradition is in more suitable conditions to establish and enforce a competition policy regime. The third instrument is the ethnic and linguistic fractionalization (Alesina et al. 2003), element that traduces the difficulty of implementing valuable institutions.

We can now proceed with the discussion of the estimation phase. At a first step, the Ordinary Least Squares (OLS) method, without and with control variables, is employed as estimation technique in order to carry out a preliminary assessment. At a second step, after evaluating the validity of the instruments chosen through the Sargan test, the Two-Stage Least Square (2SLS) and the Generalized Method of Moments (GMM) are employed as estimation techniques, being able to improve the prediction quality of the econometric model exploiting the information provided by the instruments.

5 Estimation Results

In order to obtain a general overview of the phenomenon object of the study, firstly developed and developing countries are analyzed together. Table 1 contains the OLS regression estimates without and with the standard economic control variables. It can be observed that all the institutional indicators present the expected sign, that is competition policy has a positive impact on all the performance indicators, although rather marginal but more significant when control variables are considered. This means that competition authorities, even if to a limited extent, are usually able to implement effectively the role of promoters of fair competition. From Table 2, which contains instead the OLS regression estimates over developing countries only, we can observe that only the formal independence of the competition authorities impacts positively on the performance indicators, while the degree to which the competition law incorporates an economic approach and the formal independence of the competition authority present a significant impact in a limited

Table 1 OLS estimation of performance indicators on competition policy indicators without/with control variables (developed and developing countries)

Variables	PERF local	PERF local	PERF dominance	PERF dominance	PERF antitrust	PERF antitrust	PERF competition	PERF competition	PERF efficiency	PERF efficiency
Technique	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS
<i>COMP_{low}</i>	1.331*** (0.316)	0.431 (0.330)	1.594*** (0.454)	0.245 (0.404)	1.785*** (0.448)	0.457 (0.427)	0.858** (0.299)	0.066 (0.263)	1.123*** (0.309)	0.234 (0.273)
R ²	0.189	0.458	0.140	0.622	0.173	0.585	0.098	0.589	0.148	0.608
SER	0.675	0.550	0.968	0.671	0.955	0.711	0.638	0.438	0.659	0.455
N	78	69	78	69	78	69	78	69	78	69
<i>COMP_{economics}</i>	1.068*** (0.235)	0.604* (0.287)	1.483*** (0.321)	0.825* (0.331)	1.725*** (0.299)	1.176*** (0.322)	0.820*** (0.217)	0.536* (0.210)	0.988*** (0.225)	0.657** (0.218)
R ²	0.228	0.492	0.233	0.671	0.322	0.685	0.170	0.666	0.216	0.686
SER	0.677	0.549	0.925	0.634	0.862	0.617	0.625	0.403	0.647	0.418
N	72	63	72	63	72	63	72	63	72	63
<i>COMP_{dejure}</i>	1.452*** (0.309)	1.017** (0.314)	1.907*** (0.434)	1.264** (0.375)	2.334*** (0.400)	1.806*** (0.360)	1.092*** (0.289)	0.856*** (0.240)	1.324*** (0.298)	1.009*** (0.244)
R ²	0.234	0.526	0.212	0.679	0.321	0.702	0.166	0.667	0.215	0.697
SER	0.665	0.521	0.932	0.622	0.860	0.597	0.620	0.626	0.640	0.405
N	74	65	74	65	74	65	74	65	74	65
<i>COMP_{defacto}</i>	1.163*** (0.206)	0.848*** (0.226)	1.568*** (0.288)	0.960*** (0.272)	1.818*** (0.259)	1.376*** (0.267)	0.870*** (0.2)	0.614** (0.182)	1.060*** (0.203)	0.764*** (0.181)
R ²	0.329	0.574	0.313	0.698	0.431	0.706	0.225	0.665	0.295	0.708
SER	0.629	0.512	0.880	0.615	0.791	0.604	0.612	0.413	0.620	0.411
N	67	59	67	59	67	59	67	59	67	59

*p < 0.05, **p < 0.01, ***p < 0.001 (standard errors in parentheses)

Control Variables: Government Consumption, Openness, Inflation, Patents, OECD, EU

Table 2 OLS estimation of performance indicators on competition policy indicators without/with control variables (developed and developing countries)

Variables	PERF local	PERF local	PERF dominance	PERF dominance	PERF antitrust	PERF antitrust	PERF antitrust	PERF competition	PERF competition	PERF efficiency	PERF efficiency
Technique	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS
<i>COMP_{law}</i>	0.538 (0.390)	0.389 (0.416)	0.006 (0.464)	0.074 (0.489)	0.273 (0.453)	0.341 (0.516)	-0.168 (0.341)	-0.236 (0.314)	0.174 (0.352)	0.120 (0.334)	
R ²	0.038	0.299	0.000	0.370	0.008	0.295	0.005	0.495	0.005	0.469	
SER	0.641	0.573	0.762	0.673	0.745	0.711	0.561	0.433	0.579	0.461	
N	50	42	50	42	50	42	50	42	50	42	
<i>COMP_{economics}</i>	0.321 (0.319)	0.382 (0.392)	0.320 (0.370)	0.758 (0.422)	0.677* (0.329)	1.108** (0.384)	0.094 (0.274)	0.405 (0.259)	0.279 (0.281)	0.583* (0.274)	
R ²	0.024	0.329	0.018	0.477	0.092	0.510	0.003	0.619	0.023	0.610	
SER	0.673	0.599	0.780	0.645	0.693	0.587	0.578	0.396	0.593	0.419	
N	44	36	44	36	44	36	44	36	44	36	
<i>COMP_{dejure}</i>	0.708 (0.357)	0.818 (0.384)	0.774 (0.418)	1.116 (0.429)	1.236** (0.376)	1.664 (0.396)	0.347 (0.315)	0.649 (0.278)	0.580 (0.319)	0.839** (0.285)	
R ²	0.082	0.378	0.072	0.488	0.197	0.547	0.027	0.583	0.07	0.597	
SER	0.645	0.564	0.755	0.630	0.678	0.582	0.569	0.409	0.576	0.418	
N	46	38	46	38	46	38	46	38	46	38	
<i>COMP_{defacto}</i>	0.601* (0.274)	0.641* (0.298)	0.648 (0.337)	0.843* (0.355)	1.076*** (0.294)	1.362*** (0.318)	0.277 (0.257)	0.483* (0.228)	0.474 (0.257)	0.664** (0.228)	
R ²	0.110	0.427	0.087	0.497	0.256	0.584	0.029	0.598	0.080	0.629	
SER	0.632	0.556	0.777	0.660	0.678	0.592	0.591	0.425	0.593	0.424	
N	41	34	41	34	41	34	41	34	41	34	

p < 0.05, **p < 0.01, ***p < 0.001 (standard errors in parentheses)

Control Variables: Government Consumption, Openness, Inflation, Patents, OECD, EU

Table 3 2SLS and GMM estimation of performance indicators on competition policy indicators with control and instrumental variables (developed and developing countries)

Variables	PERF local	PERF local	PERF dominance	PERF dominance	PERF antitrust	PERF antitrust	PERF competition	PERF competition	PERF efficiency	PERF efficiency
	2SLS	GMM	2SLS	GMM	GMM	2SLS	GMM	2SLS	2SLS	GMM
Technique										
<i>COMP_{low}</i>	1.319 (0.949)	1.411 (0.816)	1.770 (1.218)	2.033 (1.065)	1.448 (1.211)	1.285 (0.796)	0.293 (0.720)	-0.065 (0.495)	0.980 (0.787)	0.806 (0.523)
R ²	0.394	0.377	0.534	0.499	0.549	0.545	0.583	0.580	0.561	0.574
SER	0.546	0.554	0.701	0.727	0.697	0.700	0.414	0.416	0.453	0.446
N	69	69	69	69	69	69	69	69	69	69
<i>COMP_{economics}</i>	2.265 (1.407)	2.434 ^{**} (0.887)	2.857 (1.660)	2.732 [*] (1.107)	3.734 [*] (1.824)	4.053 [*] (1.730)	1.486 (0.952)	1.778 [*] (0.843)	2.105 (1.132)	2.398 ^{**} (0.875)
R ²	0.183	0.116	0.4460	0.472	0.3241	0.227	0.543	0.451	0.436	0.323
SER	0.651	0.677	0.76881	0.751	0.84442	0.903	0.441	0.483	0.524	0.574
N	63	63	63	63	63	63	63	63	63	63
<i>COMP_{desire}</i>	2.335 [*] (1.111)	2.445 (0.825)	2.678 [*] (1.295)	2.636 (0.975)	4.689 ^{**} (1.622)	4.71 (1.480)	2.289 [*] (0.945)	2.404 (0.878)	2.586 ^{**} (0.994)	2.511 (0.765)
R ²	0.380	0.354	0.599	0.603	0.367	0.361	0.458	0.495	0.475	0.495
SER	0.558	0.570	0.651	0.648	0.815	0.818	0.475	0.490	0.500	0.490
N	65	65	65	65	65	65	65	65	65	65
<i>COM P_{defacto}</i>	1.880 [*] (0.825)	1.999 ^{***} (0.567)	1.845 [*] (0.919)	1.823 ^{**} (0.660)	3.069 ^{**} (1.098)	3.292 ^{**} (1.206)	1.485 [*] (0.675)	1.747 [*] (0.751)	1.813 [*] (0.718)	1.994 ^{**} (0.702)
R ²	0.400	0.357	0.635	0.636	0.473	0.406	0.515	0.410	0.517	0.444
SER	0.565	0.585	0.629	0.628	0.751	0.798	0.462	0.510	0.492	0.528
N	59	59	59	59	59	59	59	59	59	59

*p < 0.05, **p < 0.01, ***p < 0.001 (standard errors in parentheses)

Control Variables: Government Consumption, Openness, Inflation, Patents, OECD, EU

Instrumental Variables: British Colony, Age of Democratic Regime, Ethnic-Linguistic Fractionalization

Table 4 2SLS and GMM estimation of performance indicators on competition policy indicators with control and instrumental variables (developed and developing countries)

Variables	PERF local	PERF local	PERF dominance	PERF dominance	PERF antitrust	PERF antitrust	PERF competition	PERF competition	PERF efficiency	PERF efficiency
	2SLS	GMM	2SLS	GMM	2SLS	GMM	2SLS	GMM	2SLS	GMM
Technique	0.740	0.729	0.560	-0.114	-0.396	-0.482	-0.770	-0.861	0.025	-0.169
<i>COMP_{flow}</i>	(1.028)	(0.995)	(1.211)	(1.195)	(1.297)	(0.890)	(0.799)	(0.551)	(0.818)	(0.645)
R ²	0.284	0.283	0.352	0.363	0.254	0.209	0.4535	0.437	0.468	0.456
SER	0.529	0.529	0.623	0.618	0.667	0.687	0.41112	0.417	0.421	0.426
N	42	42	42	42	42	42	42	42	42	42
<i>COMP_{economics}</i>	1.972	2.004	2.624	2.463*	2.383	2.407*	-0.088	-0.138	0.872	0.883
	(1.964)	(1.034)	(2.184)	(1.167)	(1.806)	(1.130)	(1.099)	(0.676)	(1.117)	(0.668)
R ²	0.125	0.182	0.125	0.182	0.324	0.309	0.571	0.550	0.595	0.591
SER	0.749	0.724	0.749	0.724	0.619	0.626	0.377	0.386	0.383	0.385
N	36	36	36	36	36	36	36	36	36	36
<i>COMP_{deficit}</i>	1.438	1.746***	2.149*	2.127**	3.192**	3.097***	1.438	1.746***	2.149*	2.127**
	(0.899)	(0.466)	(1.051)	(0.675)	(1.084)	(0.892)	(0.899)	(0.466)	(1.051)	(0.675)
R ²	0.325	0.257	0.392	0.394	0.330	0.557	0.325	0.257	0.392	0.394
SER	0.530	0.557	0.620	0.619	0.640	0.380	0.530	0.557	0.620	0.619
N	38	38	38	38	38	38	38	38	38	38
<i>COMP_{defacto}</i>	1.282*	1.279***	1.458*	1.499***	2.087**	1.880*	0.826	0.620	1.040*	0.944*
	(0.618)	(0.274)	(0.715)	(0.437)	(0.665)	(0.877)	(0.455)	(0.491)	(0.457)	(0.409)
R ²	0.329	0.330	0.440	0.431	0.503	0.535	0.565	0.581	0.591	0.604
SER	0.536	0.536	0.620	0.625	0.576	0.558	0.394	0.387	0.396	0.390
N	34	34	34	34	34	34	34	34	34	34

*p < 0.05, **p < 0.01, ***p < 0.001 (standard errors in parentheses)

Control Variables: Government Consumption, Openness, Inflation, Patents, OECD, EU

Instrumental Variables: British Colony, Age of Democratic Regime, Ethnic-Linguistic Fractionalization

number of cases. On the contrary, the fact that an emerging country has adopted a specific legislation safeguarding competition seems to not have any effect on the markets.

For a more sophisticated inference analysis based on estimation methods such as 2SLS and GMM it is necessary first of all to check the relevance of the instruments chosen. In an overidentified model, where the number of instrumental variables exceeds the number of explanatory variables, the Sargan's test can be used to verify the validity of the instruments selected. The validity of the instruments for all four institutional indicators of both developed and developing countries has been positively tested. Consequently, even though this test has low power and provides no guarantee that the instruments used are valid, it brings further evidence to support the direction of the model's results.

Proceeding with the more advanced estimation techniques, from Table 3, which contains the 2SLS and GMM regression estimates for the entire sample, we can observe results that confirm those obtained under OLS. Although the substantive content of the competition law seems to lose statistical significance, what emerges, and this is more important for our purposes is that the estimates for the other three institutional indicators are stronger than those obtained through the OLS estimation, reaching in several cases the standard significance level of 5 %. Instead, from Table 4, which presents the 2SLS and GMM regression estimates only for the subsample of developing countries, we can observe results that confirm as well what is stated in Table 2, that is the fact that in emerging countries the factual independence of competition authorities seems to matter most. Furthermore, the impact of the formal independence of competition authorities appears strengthened in comparison to that one obtained through the OLS estimation, whilst the presence of economists still maintains a positive effect in some cases.

6 Conclusions

In the present paper, the aim has been to investigate the effectiveness of competition policy in developing countries from an empirical standpoint. It has shown that four competition indicators, originally built to explain differences in productivity, once controlled with the proper economic and institutional variables, seem to have an effect on five market indicators. Although not particularly strong, the presence of a competition authority increases the degree of competition of a country.

In particular, two main results are worth recapping. Firstly, as a general trend, apart from the mere adoption of a competition legislation by the national parliaments, all the institutional indicators exercise a positive impact on the markets, therefore competition authorities seem to be effective in enhancing the level of competitiveness of the respective countries. Secondly, as for the poorest countries, with respect to which we are interested in verifying whether the enforcement of a competition policy regime should be favored, what seems to be the most important factor for its effectiveness is the factual independence of the authorities predisposed.

The essential reason for this should be that the quality of the institutions of developing countries is certainly lower than the one of the industrialized nations, being affected more frequently for example by cases of corruption or government interference. In any case, one conclusion seems certain, that is competition policy is not harmful to development.

However, emerging countries, historically characterized by the nationalization of basic industries, are still adopting or constructing primordial competition policy frameworks, whose results could be seen only in delay, so in the near future. Actually, to be more precise, 81 of the 111 of the existing competition authorities worldwide have been created only in the last twenty years. Moreover, private enforcement, although still in an embryonic phase even in the developed countries, could undoubtedly make the market surveillance, thus the market efficiency, stronger.

As a result, in developed countries competition policy has actually beneficial effects on the intensity of competition, result so far unclear and often claimed only on the paper or taken for granted, while in developing countries is not the mere existence or the degree of competence, but the institutional quality of the competition authorities matters most for the effectiveness of a competition policy regime. In both cases, therefore, the creation of a competition authority is definitely worth, even though its functions and powers should be strengthened in order to register a more significant impact on the markets in comparison to the current results. Future research, exploiting more precise data that we hope will be available soon (e.g. panel data concerning specific sectors and not as here cross-sectional data related to an entire economy), could certainly offer further support to the conclusions here reached.

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Law, Development and Innovation

This book deals with one strand of the intense debate concerning the links between law and development, namely the coordination of innovation processes and legal change. It analyzes how innovation, and ultimately development, can be fostered or hindered by existing or new legal infrastructures. The book includes eleven original contributions from senior and junior scholars and is divided into two parts, the first focusing on theoretical frameworks and the second presenting several case studies on various institutional aspects. A particular strength of this part is its broad geographical coverage, which encompasses the legal frameworks in Europe, the Americas, Africa, and Asia. The contributions collected in this book will be of value to a broad readership. Academic scholars will find useful information on lessons learned from reforms implemented in different areas and come to better understand the methodological hurdles involved in reform assessment. Policymakers in national and international organizations can draw on these studies when designing new programs. Lastly, practitioners in developed and developing countries can use these contributions to promote the success of current or new initiatives.

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