



Impact of Cartels in Low-Income Countries (ICLIC)

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An estimation of the aggregate economic harm caused by cartels in developing countries provides evidence that it can be substantial irrespective of the scale of the economy in question.

Introduction

The detection and sanctioning of cartels remains of high importance to anti-trust authorities because of a clear understanding of their potential harm, and therefore the potential benefits of their deterrence. In the majority of jurisdictions, collusive practices that aim at fixing either prices or market shares are considered as damaging, as firms get an opportunity to block the entry of new rivals or to overcharge for their products or services without adapting the quality. At the same time, implementation of antitrust enforcement requires substantial investment and, therefore, it can be questioned to what extent those expenditures are compensated in terms of prevented consumers' damages. This is especially relevant to competition authorities in developing countries that often experience tough budget constraints and struggle to find the evidence that could support their efforts. Largely due to limited data, research on this question in those countries is extremely limited. The principal goal of this project is to provide missing evidence by assessing the aggregated economic harm caused by cartels in developing countries, in particular by applying efficient evaluation tools that are able to deal with the paucity of data.

Context of the Study

The list of developing countries chosen to participate in the study was created according to the active state of their competition authorities and sufficiency of their experience. For this reason, we restrict attention to a limited number of the concerned economies and to the period 1995 - 2013. Note that, even in relatively developed competition authorities, economic data on convicted cartels is sparse. This is because in order to detect a cartel, the authorities must rely on evidence of coordinated activities rather than on economic data (price dynamics, unreasonably high margins, etc.). Coupled with confidentiality issues, this resulted in the elimination of multiple recorded cartel cases from the calculation of aggregate effects. Availability of data also determined indicators chosen to measure the economic harm. In our study, data on price overcharges and cartel sales constitute the starting elements towards the measure of the aggregated economic harm induced by cartelization. In the context of developing countries, estimations of price overcharges appear to be very scarce. Therefore, to address this issue and fill some of the missing estimates, we have developed an original methodology that is simple enough to be implemented using a restricted set of data, while being well economically grounded.

Evaluation Methodology

Our project was executed in five consecutive phases.

- i. In the first phase, we collected data on main 'hardcore' cartels detected in developing countries. For this purpose, we utilized numerous sources such as competition authorities' websites, existing databases on international cartels, companies' annual reports, reports from international organizations such as OECD, UNCTAD, etc. To further enrich our database, we also asked relevant competition authorities to fill out a special questionnaire.
- ii. In the second phase, we aimed at estimating the missing price overcharges. Where collected data allowed, we employed a case-by-case approach to estimate each cartel's damages. This involves estimating market parameters under the cartel scenario, and the counterfactual competitive market conditions. From here, we can calculate price overcharges, output losses, and consumer welfare losses by comparing the counterfactual and real states.
- iii. The third phase consisted of looking at the descriptive statistics from the collected sample of cartels and comparing them to those for developed countries. Overall, we did not find any strong support for the widespread



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idea that cartels in developing countries are more harmful than those in developed ones. However, we do show that the impact in terms of price overcharges is at least similar.

- iv. Following Suslow, Levenshtein and Oswald (2003) for the fourth phase, we calculated aggregated cartels' affected sales and, more innovatively, aggregated cartels' excess revenues arising from price overcharges. Both measures were related to the GDP of the relevant country. We also performed a simplified cost-benefit-like analysis of the antitrust enforcement by relating cartels' aggregated excess revenues to budgets of corresponding competition authorities.
- v. Finally, to get an idea of how many of existing cartels remain unknown to competition authorities, the fifth phase adopted the methodology of Combe et al (2008) to empirically estimate the annual probability of discovering a cartel.

Summary Results

To date, we have collected a dataset containing information on 249 major 'hard-core' cartels that were prosecuted in more than 20 developing countries from 1995 to 2013. We find that the scale of price overcharges is at least similar to that induced by cartels in developed countries, that is to say around 23% on average. Our analysis also shows that, on average, a cartel decreases the production level by 15% in the concerned market.

Along with other interesting observations over the sample of cartels, the collected dataset allowed for the estimation of the cartels' aggregated economic impact in certain countries: Brazil, Chile, Colombia, Indonesia, South Africa, Mexico, Pakistan, Peru, Russia, South Korea, Ukraine and Zambia. In terms of affected sales as a percentage of GDP, taken on average for the considered period, it varies among countries from 0.01% to 3.74% with a maximal value of 6.38% for South Africa in 2002 (see Table 1.) In terms of cartels' excess revenues, the actual harm is also significant, with maximal rates reaching almost 1% of GDP for South Korea in 2004 and South Africa in 2002. We also find that aggregated cartel excess revenues exceed the competition authorities' budgets on average 76 times.

Furthermore, we estimate the maximal annual probability of uncovering a cartel to be around 24%. This basically means that at least 3 out of 4 all existing cartels remain undetected to competition authorities. Therefore, we suggest that the actual economic damage caused by collusive practices is at least 4 times bigger than is suggested by our estimations.

Table 1: Aggregated indicators

| Country | Aggregated excess revenues / GDP, % | | Affected sales/ GDP, % | | Aggregated excess revenues / Budget |
|--------------------------|-------------------------------------|---------------|------------------------|---------------|-------------------------------------|
| | Average | Max (year) | Average | Max (year) | Average |
| Brazil (1995-2005) | 0.21% | 0.43% (1999) | 0.89% | 1.86% (1999) | 308 |
| Chile (2001-2009) | 0.06% | 0.23% (2008) | 0.92% | 2.63% (2008) | 23 |
| Colombia (1997-2012) | 0.001% | 0.002% (2011) | 0.01% | 0.01% (2011) | 7 |
| Indonesia (2000-2009) | 0.04% | 0.09% (2006) | 0.50% | 1.14% (2006) | 29 |
| Mexico (2002-2011) | 0.01% | 0.02% (2011) | 0.05% | 0.11% (2011) | 7 |
| Pakistan (2003-2011) | 0.22% | 0.56% (2009) | 1.08% | 2.59% (2009) | 245 |
| Peru (1995-2009) | 0.002% | 0.007% (2002) | 0.01% | 0.023% (2002) | 6.44 |
| Russia (2005-2013) | 0.05% | 0.12% (2012) | 0.24% | 0.67% (2012) | 0.58 |
| South Africa (2000-2009) | 0.49% | 0.81% (2002) | 3.74% | 6.38% (2002) | 124 |
| South Korea (1998-2006) | 0.53% | 0.77% (2004) | 3.00% | 4.38% (2004) | 144 |
| Ukraine (2003-2012) | 0.03% | 0.03% (2011) | 0.15% | 0.16% (2011) | 0.84 |
| Zambia (2007-2012) | 0.07% | 0.09% (2007) | 0.18% | 0.24% (2007) | 11 |
| Average | 0.14% | | 0.9% | | 76 |



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Policy Implications

Competition authorities in developing countries could benefit from the results of the project in several ways. Firstly, significant for most considered countries, cartels' aggregated excess revenues as a proportion of GDP and the corresponding budgets of competition authorities advocate for a stronger enforcement of the competition law, or, if not already in place, for its introduction. Secondly, the methodology that we propose may be of a practical interest to young and non-experienced competition authorities as it uses a very limited set of input data to assess price overcharges induced by cartels. Therefore, efficiency of penalty rules can be also assessed by comparing the imposed fines with cartels' excess revenues. Actual excess revenues/penalty rates could be compared against relevant benchmarks that are seen as optimal penalty policy. Lastly, the created database on cartels may be seen as a reference list containing industries that are potentially vulnerable to collusive behaviour. Besides, cartel members often enter into collusive agreements in multiple, often neighbouring, economies. Evidence from other countries can (and should) be employed by competition authorities in local investigations. This may also encourage involved countries to create a platform that facilitate the sharing and maintenance of a common cartel database.

Moving forward...

Our project could further benefit not only from taking more cartels into consideration, but also from improving estimations of the harm caused by those already in the database. This can be done, for example, by taking into account reductions in consumption that naturally arise under excessive cartel prices. Furthermore, as many cartelized industries produce intermediary goods, output reductions can proliferate in other economic sectors, increasing the final economic harm manifold. Taking this into account would not only provide more accurate estimates, but would also allow us to define a set of industries with the highest damaging potential of cartelization deserving of special attention from competition authorities. We expect that both of mentioned potential venues for further research would need more comprehensive data on cartels and, therefore, their success crucially depends on the involvement of corresponding competition authorities.