LOOKING BEYOND THE DIRECT EFFECTS OF THE WORK OF COMPETITION AUTHORITIES: DETERRENCE AND MACROECONOMIC IMPACT

Conference hosted by the Netherlands Authority for Consumers and Markets (ACM), the UK Competition and Markets Authority (CMA) and the European Commission (DG COMP)

Motivation and purpose of the conference

Many Competition Authorities use imperfect but accepted methodologies for calculating the direct impact of competition policy interventions on consumers\(^1\). In contrast, we are not aware of any methodologies used by Competition Authorities to assess, let alone estimate, the deterrence effects\(^2\) of their work and to assess its macroeconomic impact. Such a methodology would be highly relevant for Competition Authorities as it would allow them to assess the total effect of their interventions and give a clearer picture of the impact of their work on the economy as a whole. In addition, taking deterrence effects into account could be informative for the prioritisation of resources across tools: if the relative size of the deterrence effects varies across tools, then using only the direct effects for resource allocation and prioritisation would be a mistake. It would also be interesting to understand better how deterrent mechanisms and effects have varied in the past depending on differences in competition policy enforcement.

Measuring only direct effects may lead to perverse conclusions and incentives as improvements in the application of competition law may reduce the direct benefits of a Competition Authority’s work. For instance:

- A merger control regime that deters anti-competitive mergers from being contemplated in the first place may lead to small direct benefits as few if any anti-competitive mergers are proposed.
- An effective cartel programme may lead to fewer cartels being created and so lead to a smaller number of detected cartels.

It seems unlikely that there will be one methodology that works for all the various aspects of competition policy enforcement as they raise different issues. Moreover, it would also be relevant to assess the macro-economic impact of the total (direct and deterrent) harm avoided as a result of competition policy interventions. In the remainder of this document, we set out what we consider to be the key questions of interest in relation to different areas of competition policy.


\(^2\) In this note we use deterrence in a broad sense. For example, in the case of cartels, we do not see deterrence only as stopping cartels from forming but also as the impact on the duration of and overcharge by existing cartels.
The purpose of the conference is to discuss the topics below with a view to developing practical approaches towards assessing and estimating the overall impact of competition authorities’ work.

**Key areas and questions for discussion**

**Cartels**

Competition Authorities tend to measure only the direct impact of cartel enforcement and commonly do so by estimating the expected value of a price decrease in an industry in which a cartel has been shut down. However, the full effect of cartel enforcement is larger as it includes the deterrent effect of cartels not being set up as a result of cartel enforcement and also, potentially, the effect of cartel enforcement on the size of cartel overcharges.

Hence Competition Authorities are also interested in measuring the deterrence benefits of cartel enforcement by assessing its impact on cartel formation as well as its impact on the existing but undetected cartels (e.g. size of overcharge). However, a Competition Authority only observes the cartels it detects and therefore tends to infer the characteristics of cartels (e.g. number of detected cartels, duration of detected cartels and estimated overcharge) and the impact of enforcement on these cartels (e.g. estimated reduction in cartel duration and overcharge) from this observed population (see Figure 1 in the Annex for illustration).

This raises the following questions:

- What is the effect of detecting cartels on deterring cartels and how could this be measured? More specifically:
  - What inferences could be drawn from the number of detected cartels about the number of cartels created (and the rate of detection/perceived rate of detection)?
  - To what extent does increasing the number of cartels detected or increasing the perceived detection rate lead to fewer cartels being created? Or some existing cartels disbanding? Or reducing their prices?
  - What other observable variables could be used as proxies to assess the impact of cartel enforcement on cartel formation?
- To what extent is the universe of detected cartels similar to the universe of undetected and deterred cartels?
  - Does cartel enforcement only deter the less stable and less harmful cartels or also the more harmful ones? Does this depend on the type of enforcement (e.g. relying on leniency vs ex officio cartel investigations)?

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3 Work by Miller (2009), Chang and Harrington (2009) and Davies and Ormosi (2013) outline useful theoretical frameworks for thinking about the whole population of cartels and the relationship between deterred and undeterred as well as detected and undetected cartels.

4 Studies that make inferences about the rates of detection by looking at a sample of detected cartels include Bryant and Eckard (1991) and Combe et al. (2008).

5 Studies that consider this question include Davies and Ormosi (2013) who argue that deterred cartels are likely to be the most marginal cases and hence the overcharge of deterred cartels is smaller than that of the observable population.
Can estimates of the overcharge and duration of detected cartels and the impact of cartel enforcement on these variables be used to make inferences about the duration and overcharge of undetected cartels? Could the same variables inform us about the avoided harm from deterred cartels?

- What is the relationship between resources directed towards detecting cartels and the number and competitive seriousness of cartels detected or deterred?
- What practicable methodological approaches would be best suited to assess the deterrence effect of cartel enforcement?

**Mergers**

With a competition policy regime that requires mandatory notification of mergers it may be reasonable to assume that Competition Authorities capture the universe of qualifying mergers (i.e. there are no undetected mergers).  

However, competition authorities would still be interested in understanding the extent to which their activities deter potentially anti-competitive mergers from being proposed or ensure that mergers are modified prior to being proposed to ensure compliance with the merger regime. On a standalone basis, the estimated (direct) impact of merger assessment will not be a good reflection of its real impact. This is for two reasons.

First, direct impact estimation only takes account of the harm avoided from anti-competitive mergers which were proposed and then blocked or for which remedies are accepted. But some anti-competitive mergers are never proposed in the first place or are modified due to a deterrence effect. If these mergers had been proposed and assessed, they would have been taken into account as the direct impact of merger control.

Second, in the presence of Type II errors (i.e. clearing anti-competitive mergers) some harm is realised from anti-competitive mergers which are proposed. If this is the case then if Competition Authorities activities do deter anti-competitive mergers then it is likely that the potential for harm through clearing these anti-competitive mergers would be avoided. It is also possible that improvements to the quality of decision making leading to a reduction in type II errors would enhance the deterrence effect because this implies that the probability of an anti-competitive merger being cleared has reduced.

Therefore, the overall impact of merger control may well significantly exceed the direct benefits from the prohibiting or clearing with remedies of anti-competitive mergers and would be better captured by taking deterrence effects into account. On the other hand, Competition Authorities may also need to consider the presence of Type I errors (i.e.

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6 There are papers that look at how the legal environment, the level of cartel enforcement activity and the introduction of leniency programmes affect the number of detected cartels, cartel duration and overcharge. These papers include Symeonidis (2000), Clarke and Evenett (2003), Brenner (2005), Connor and Bolotova (2006), Bolotova, Connor and Miller (2008), Miller (2009) and Smuda (2014). However, these studies do not specifically address the question of how changes in the amount of resources directed towards cartel detection affect cartel formation.

7 We are ignoring the fact that some regimes, such as the UK, make notification voluntary. However, it is worth noting that in both voluntary and mandatory systems there is a possibility of mergers going ‘under the radar’.

8 See, for example Sogard (2009).
blocking pro-competitive mergers) and their direct and deterrence effects (e.g. business chilling) (see Figure 2 in the Annex).

In this context, we consider that there are a number of questions relevant to an assessment of the deterrence effect of merger control. These include:

- To what extent can inferences about the deterrence effect of merger control activity be drawn from observable variables such as the number or composition of notified mergers? Is it reasonable to assume that for the most part it is the more anti-competitive mergers that are deterred?\(^9\)
- How do changes in the level of merger control activity (e.g. number of investigations) and mix of merger actions taken (e.g. prohibitions vs clearances with remedies) influence the deterrence effect?\(^10\)
- To what extent do increases in resources devoted to merger control reduce the level and seriousness of Type I and Type II errors? How do changes in the quality of decision making influence deterrence effects and the overall impact of merger control?\(^11\)
- To what extent can inferences be drawn about the potential harmfulness of deterred anti-competitive mergers from the ex-ante assessment of mergers that have been judged to be anti-competitive?

What practicable methodological approaches would be best suited to assess the deterrence effect of merger control?

*Anti-competitive behaviour (other than cartels)*

Very little theoretical or empirical work has been done to assess the deterrence effects of Competition Authorities’ actions against anti-competitive behaviour other than cartels or anti-competitive mergers.\(^12\) We are interested in exploring the possibility of measuring the deterrence effect of this type of enforcement (e.g. investigations into abuse of dominance or anti-competitive horizontal or vertical agreements).

Assessing the overall impact of these enforcement actions raises similar issues to cartel enforcement. However, one may also need to take into account the difference between the approaches towards different conducts (e.g. impact on deterrence of enforcement against infringements by ‘object’ versus ‘effects based’ cases) and consider the implications of Type I errors.

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\(^9\) A number of papers have been published that empirically estimate the link between the number of notified mergers and merger enforcement activity including Seldeslachts and Clougherty (2012), Duso, Gugler and Szucs (2010) and Seldeslachts, Clougherty and Barros (2007). The assumption is that a reduction in the number of notified mergers can be interpreted as an increase in the deterrence effect.

\(^10\) A number of the papers mentioned in footnote 9 look at how different merger enforcement actions and levels of activity lead to changes in the deterrence effect over time.

\(^11\) There are a few papers, such as Duso, Gugler and Yurtoglu (2011), that assess the quality of merger decisions based on stock market reaction of either the merging firms and/or rivals.

\(^12\) Apart from surveys by the OFT and NMa, we are not aware of any studies that look at the deterrence effect of non-cartel competition enforcement. See The deterrent effect of competition enforcement by the OFT, Deloitte/OFT (2007), The impact of competition interventions on compliance and deterrence, London Economics/OFT (2011) and Anticipating cartel and merger control, SEO/NMa (2011).
Therefore, the key questions of interest are the following:

- How much anti-competitive behaviour is deterred by detecting anti-competitive behaviour and what is the relative size of the potential harm from those anti-competitive behaviours (that is, are Competition Authorities more likely to deter anti-competitive behaviour with only minor effects)?
- Do different rules and enforcement actions against different types of conduct have different deterrence effects?
- What is the relationship between resources expended and deterrence as well as Type I and Type II errors?
- What aspects of the deterrence effect should Competition Authorities concentrate on in relation to non-cartel competition enforcement? What practicable methodological approaches would be best suited to this task?

**Use of surveys**

Both the NMa and the OFT have used surveys in an attempt to measure the deterrence effect of their work.¹³ By asking businesses and legal experts about their perceptions, these organisations were able to estimate how these two groups felt about the size of the deterrence effect. While this is a seemingly natural way to look at deterrence issues, this method is often criticised for introducing potential incentive incompatibility and informational limitations. As such, we are interested to find out the value of these methods going forward. In particular, we are interested in the following questions:

- How can surveys be done credibly to avoid (or minimise) incentive compatibility problems?
- What alternative methodologies could be used to circumvent the incentive compatibility issue?

**Macroeconomic effects**

While the link between competition and growth is well established¹⁴, less work has been done to analyse the impact of competition policy on growth. It is striking that the macroeconomic impact of such an important policy has not yet been assessed while measures of the macroeconomic impact of other competition-friendly policies, such as the Internal Market Programme or the liberalisation of network industries has been widely discussed.

We are interested in investigating the impact of the work of Competition Authorities on macroeconomic variables such as productivity and economic growth (see Figure 3 in Annex as an illustration). Measuring this impact is not an easy task. First, it requires appropriate indicators of competition policy (reflecting both the strength of competition laws and institutions¹⁵ and the perceived effectiveness of interventions made by competition

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¹³ See previous footnote.
¹⁴ See Ilzkovitz and Dierx (2014) for an overview of this literature.
authorities\textsuperscript{16}). Second, one needs to disentangle the effects of competition policy from other factors affecting productivity and growth. Third, it is harder to assess the chain of events which may follow competition policy interventions in the medium to long term than to look at the immediate effect of a specific competition decision in a given market. Reflecting this complexity, different approaches and indicators have been used to assess the macro-economic impact of competition policy.\textsuperscript{17}

In this context, we consider that the key questions of interest are the following:

- How to aggregate the microeconomic effects of competition policy interventions? More specifically:
  - How to aggregate the direct effects of competition policy interventions, i.e., the consumer harm avoided? Are the micro-economic calculations of the customer savings resulting from the main cartel and merger decisions the right approach? Alternatively, should one use an approach based on the number of interventions, taking into account the varying complexity of the decisions taken?
  - How to aggregate the deterrent effects of competition policy interventions? Does the academic literature offer comparable (albeit rough) estimates of the deterrent effects of (i) policy interventions using different instruments and (ii) different policy interventions within the same instrument? Alternatively, should one resort to surveys to obtain estimates that are comparable across instruments and interventions?
- How to assess the macroeconomic impact of the total (direct and deterrent) harm avoided as a result of competition policy interventions, More specifically:
  - Should the calculations of the customer savings be used to derive the effects on prices of competition policy interventions? How to combine the direct and deterrent effects in order to assess the total price effects of competition policy interventions?
  - Are there other channels than prices through which the reduction in consumer harm has an impact of the economy as a whole?
  - Which models could be used to simulate the macro-economic impact of competition policy?

Compliance

Compliance in an important area of Competition Authorities’ work. Therefore, it would be worthwhile to explore how to assess the overall impact of this activity in addition to looking at the impact of competition enforcement and merger control.

\textsuperscript{16} See outcomes of annual surveys by the WEF, IMD and GCR.
\textsuperscript{17} Nicholson (2004 and 2008), Dalkir (2007), Borrel and Jiménez (2008), and Gutmann and Voigt (2014) analyse the impact of competition laws and institutions on the perceived effectiveness of competition policy. Krakowski (2005), Hylton and Deng (2006) and Sama (2013) assess the effects of competition laws and institutions and/or the perceived effectiveness of competition policy on perceived competition, while Kee and Hoekman (2006), McCloughan et al. (2007), Buccirossi et al. (2008, 2011, 2013) and Gutmann and Voigt (2014) focus on macroeconomic effects in terms of changes in mark-ups, productivity, investment or GDP growth.
In particular, we would be interested in exploring the following:

- What are the knock-on effects of compliance programmes beyond their scope? How could these benefits and hence the overall impact of these programmes be measured?

Annex 1 – Illustration of direct and deterrence effects of cartel enforcement and merger control

Figure 1. Direct and deterrence effects of cartel enforcement

Figure 2. Direct and deterrence effects of merger control
Figure 3. The macroeconomic impact of competition policy
References

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