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Competition *policy brief*

Customer savings generated by the Commission's antitrust and merger enforcement: a 10-year perspective

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In a nutshell

It is possible to use a relatively simple methodology relying on previous work from the OECD to estimate the direct customer savings generated by the Commission's antitrust and merger enforcement.

For the ten-year period from 2012 to 2021, the estimated total direct customer savings from all antitrust and merger interventions by the European Commission were in a range of EUR 120 to 210 billion, or EUR 12 - 21 billion per year. While these ranges of estimates are relatively wide, they provide a good idea of the order of magnitude of the likely direct savings generated by the Commission's enforcement work.

Impressive as these numbers may be, they only reflect the "tip of the iceberg" in terms of positive effects of competition enforcement for society. Indeed, competition enforcement also generates (i) indirect deterrence effects and (ii) positive non-price effects on innovation, quality, and productivity which are likely to be significantly larger, but also more difficult to calculate.

Introduction

The European Commission's antitrust and merger enforcement aims to protect effective competition on the market with a view to ensure lower prices, improved quality and more innovation for the benefit of customers[1] and the EU economy as a whole.

Part of the above benefits of competition enforcement, namely those resulting from the *direct price effects for customers* of the Commission's interventions in the markets concerned ('direct customer savings') can be relatively easily estimated using a methodology suggested by the OECD[2], case specific information from past interventions as well as simplifying assumptions derived from the economic literature.

Starting in 2012, DG Competition has calculated and reported[3] on an annual basis the direct customers savings generated by its cartel and merger enforcement.

The present policy brief presents and discusses new and improved estimates of the direct customer savings generated by the Commission's competition enforcement over a full ten-year period 2012-2021. For the first time the estimates also include a full ten-year dataset on the direct customer savings generated by non-cartel antitrust interventions. The policy brief further discusses (1) methodological issues encountered by the Commission, (2) comparisons with the customer savings reported by other jurisdictions (3) macro-modelling efforts based on the customer savings calculations and (4) how to further develop the current work on customer savings.

Concept, basic method and assumptions

Estimating the direct customers savings generated by competition enforcement actions consists essentially in a 'bottom-up' summing-up of the estimated customer benefits generated by all individual competition enforcement actions ('interventions') during a given period of time.

Direct customer savings from a given intervention equal the product of estimates of (1) the price increase avoided as a result of the intervention, (2) the size of the affected market(s) or turnover, and (3) the expected duration of the price effect.

[1] Final consumers, but also customers of intermediate goods and services.

[2] OECD (2014), Guide for helping competition authorities assess the expected impact of their activities, https://www.oecd.org/daf/competition/Guide-competition-impact-assessmentEN.pdf[3] See, for instance, Annual Activity Report 2021, Directorate-General for Competition, https://ec.europa.eu/info/publications/annual-activity-report-2021-competition_en

[3] See, for instance, Annual Activity Report 2021, Directorate-General for Competition, https://ec.europa.eu/info/publications/annual-activity-report-2021-competition_en

Competition

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Annual customer savings are the sum of the direct customer savings associated with all competition policy interventions in a given year.

Information on the three components of the customer savings are based on case-specific information to the extent possible and on Commission assumptions (see Table 1 below) inspired by the economic literature and the OECD.[4]

Table 1: Assumptions used to calculate the customer savings from cartel, merger and antitrust interventions[5]

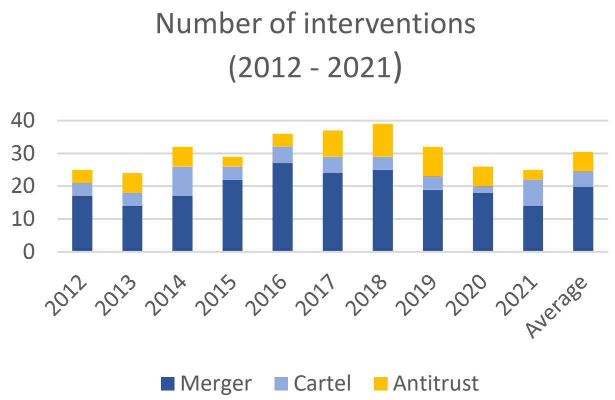
	Merger cases	Cartel cases	Antitrust cases
Avoided price increase	3-5%	10-15%	5-10%, unless case-specific information is available
Affected turnover	Annual turnover of all firms in the affected market(s)	Annual turnover of the companies under investigation in the affected market(s)	Annual turnover of the companies under investigation in the affected market(s)
Expected duration of the price effect	2/3/5 years	1/3/6 years	1/3/6 years

The main limitations of this type of calculations are that they underestimate the benefits of EU competition policy interventions as they do not report their deterrent effects and their positive non-price effects such as those on innovation, productivity and product quality.

The main strengths of calculating customer savings in this way are that (1) the calculation method is simple and the underlying assumptions are conservative, (2) the calculations can be performed at relatively low cost of resources and retroactively to create longer time series, (3) due to the law of large numbers, aggregate figures provide relatively robust ranges of outcomes and therefore a good idea of the order of magnitude of the true savings[6], (4) such calculations can help to control and, where appropriate, optimise priority setting for enforcement, (5) such calculations help to quantify and report on the likely benefits of competition policy to the general public and internal and external stakeholders such as the European Parliament.

Main findings

Over the past ten years (2012-2021), the average number of Commission interventions[7] per year was around 30 and was relatively stable with a majority of merger interventions (65% of the total number of interventions), followed by interventions in the area of non-cartel antitrust (19 %; composed of interventions against restrictive agreements and concerted practices under Article 101 = 11% and interventions against abuses of dominant positions under Article 102 = 8%) and cartel decisions (16%).



For the ten-year period under consideration, the estimated total customer savings from all competition policy interventions by the European Commission were in a range of **EUR 120 to 210 billion** depending on lower or upper bound assumptions made for the price effects of the different interventions. The average annual direct customers savings were thus in a range of **EUR 12 to 21 billion**. Total direct customer savings over the ten-year period from non-cartel antitrust, cartels and mergers ranged respectively from EUR 17- 26, 33-61 and 74-123 billion.

Table 2: Customer savings in billion EUR by year and instrument

Year	Merger	Cartel	Antitrust	Total customer savings
2012	5.5 – 9.1	1.4 – 2.0	0.1 – 0.2	7.0 – 11.3
2013	0.4 – 0.6	0.6 – 0.9	4.3 – 6.6	5.3 – 8.1
2014	2.1 – 3.6	1.7 – 2.6	2.4 – 7.7	6.2 – 13.9

[4] Cf. OECD (2014, quoted above) and A. Dierx and F. Ilzkovitz (2020), Ex-Post Economic Evaluation of Competition Policy: the EU Experience (Kluwer)), Ch. 11. Please note that contrary to the OECD 2014 guidance paper we consider ranges for the expected price effects of the competition policy interventions to reflect the ranges of such effects reported in the economic literature and the existing uncertainty over the average magnitude of such effects. Moreover, for mergers and cartels we use a higher upper bound of the range than the OECD single figure recommendation and for antitrust we use a lower bound of the range.

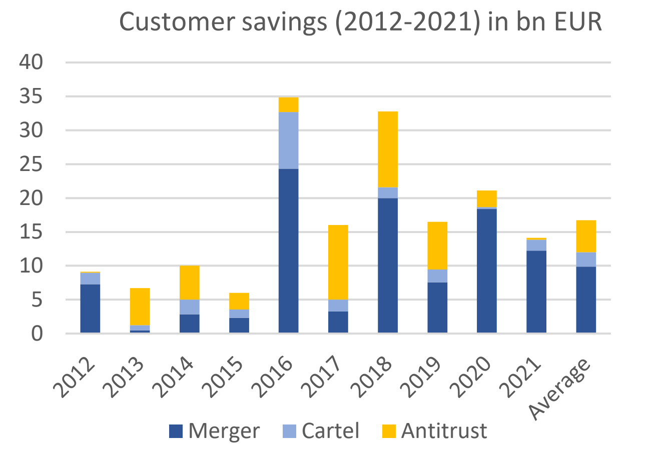
[5] Idem.

[6] Figures for individual cases are by the nature of the process less robust and therefore not reported in this policy brief.

[7] The sample of decisions ('interventions') used for the customer savings calculations consists of decisions concerning anticompetitive mergers, cartels and non-cartel antitrust conduct and agreements. Merger interventions include phase II prohibitions, phase II clearances subject to remedies, phase II abandonments and phase I clearances with remedies. Cartel interventions consist of prohibition decisions under Article 7 of Reg. 1/2003. Antitrust interventions include prohibition decisions under Article 7 and commitment decisions under Article 9 of Reg. 1/2003, as well as 'informal interventions' (see details below).

2015	1.7 – 2.9	1.0 – 1.5	1.6 – 3.3	4.3 – 7.7
2016	18.3 – 30.4	6.7 – 10.0	1.4 – 2.9	26.4 – 43.3
2017	2.4 – 4.1	1.4 – 2.1	7.8 – 14.3	11.6 – 20.5
2018	15.0 – 25.0	1.3 – 1.9	7.4 – 14.9	23.7 – 41.8
2019	5.7 – 9.4	1.5 – 2.3	6.4 – 7.7	13.6 – 19.4
2020	13.8 – 23.0	0.2 – 0.3	1.6 – 3.3	15.6 – 26.6
2021	9.2 – 15.3	1.3 – 1.9	0.2– 0.3	10.7 – 17.5
Total	**74 – 123**	**17 – 26**	**33– 61**	**124 – 210**
Average per case	0.4 - 0.6	0.3 – 0.5	0.6 – 1.0	

The annual direct customer savings varied considerably from year to year. They were particularly high in 2016 and 2018, with average annual amounts of over EUR 30 billion. In 2016, this was due to several important merger interventions and cartel prohibitions. In 2018 this was due to merger and non-cartel antitrust interventions (specifically Art. 102).



On average, annual aggregate customer savings from merger interventions are larger (EUR 7 - 12 billion per annum over the period considered, with wide variation from year to year) than those from antitrust interventions (EUR 3-6 billion per annum) and cartel prohibitions (EUR 2 - 2.5 billion per annum). This difference in large part reflects differences in the number of interventions made over the 2012-2021 period, which varies from 49 for cartels, 59 for antitrust and 197 for mergers.

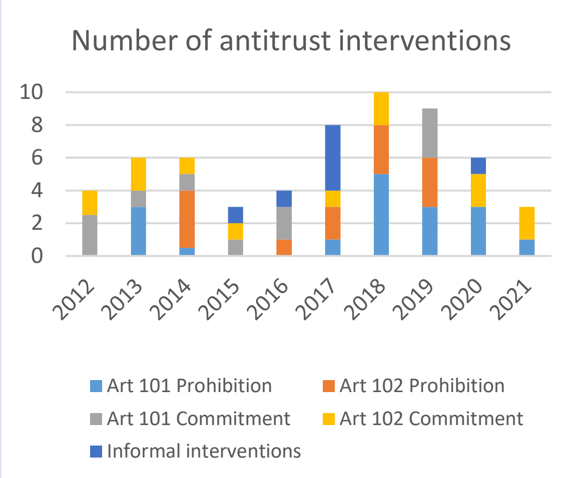
By contrast the customer savings associated with an "average" individual antitrust intervention (EUR 0.6-1) lie above those recorded for an average cartel prohibition (EUR 0.3-0.5 billion) or merger intervention (EUR 0.4-0.6 billion).

When comparing customer savings generated by interventions based on different enforcement instruments it is important to bear in mind that for mergers it is assumed - in line with the OECD methodology – that the intervention affects the prices of all firms in the affected market, while for cartels and antitrust it

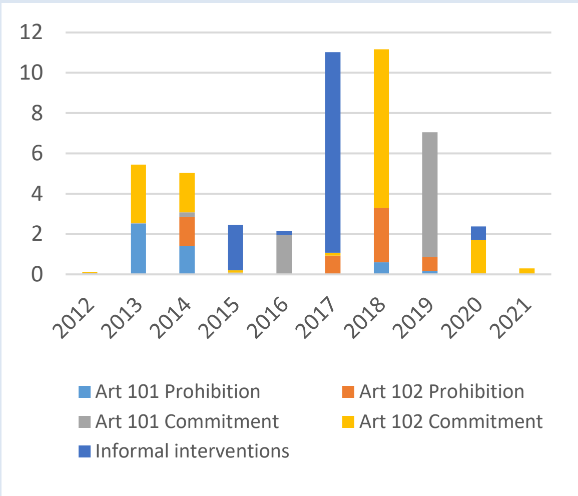
Antitrust interventions in focus

This year, for the first time, the Commission has also calculated retroactively the customer savings generated by non-cartel antitrust interventions. Due to the diversity of antitrust enforcement the exercise was more challenging than calculating direct customer savings for cartel and merger interventions.

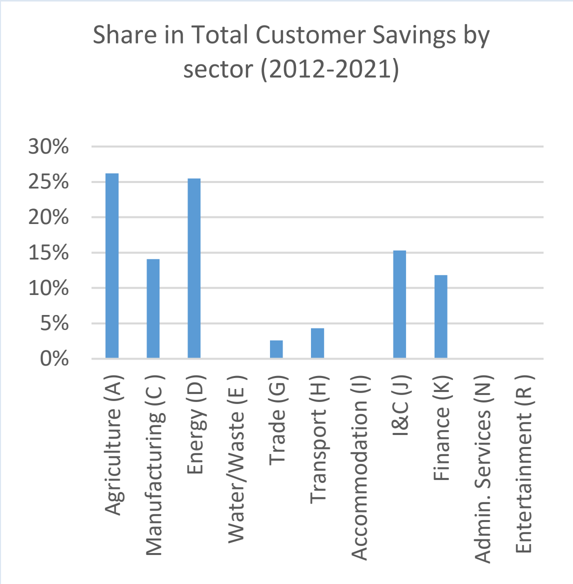
Over the period 2012-2021, the European Commission took 52 decisions aimed at stopping anticompetitive behaviour under Articles 101 and 102 TFEU. In addition, there were several 'informal interventions', i.e. Commission decisions to close a case after the Commission's investigation led to the termination and/or remediation of the conduct of concern.



The customer savings generated by antitrust interventions were largest in 2017 and 2018.



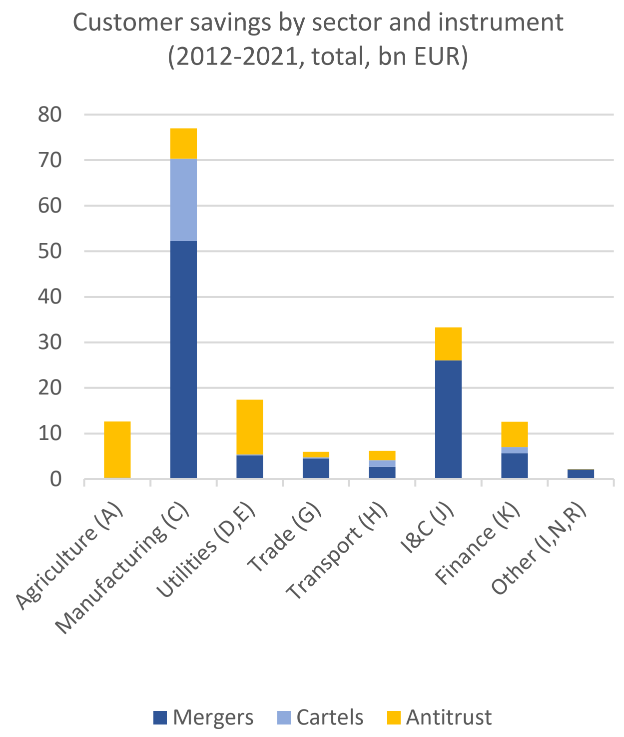
Over the full ten-year period large shares of the total customer savings were generated in the Agriculture and Energy sectors which are particularly important for consumers, followed by Information and Communication (I&C).



is assumed that the interventions affect only the prices of the firms under investigation[8].

The figure below illustrates the distribution of customer savings by sector and competition policy instrument. It shows that the customer savings from antitrust interventions (other than cartels) are present over a wide range of different sectors, with particularly large savings in the agricultural and utility sectors. Customer savings from merger interventions are more concentrated in the manufacturing and I&C (information and communication) sectors, while the customer savings from cartel prohibitions are largely concentrated in the manufacturing sector. About 46% of total customer savings are realised in the manufacturing sector.

[8] Cf. Table 1.



Methodological issues encountered by the Commission

As set out above the basic calculation method is inspired by the OECD guidance from 2014 and is relatively simple: customer savings from a given intervention equal the product of estimate of (1) the price increase avoided, (2) the size of the affected market(s) or turnovers and (3) the expected duration of the price effect in the absence of an intervention by the competition authority.

During the Commission's recent efforts to calculate, for the first time, customer savings generated by non-cartel antitrust interventions and to review the customer savings calculations for a full ten period also for the two other instruments, the Commission has encountered four complex methodological issues which have, to date, not been (fully) addressed by OECD guidance.

First of all, it became apparent that the calculation of customer savings **from antitrust interventions (excluding cartels) is more challenging** because non-cartel antitrust cases are significantly more diverse in nature than mergers or cartel cases. This diversity in turn makes the use of standardised assumptions on the avoided price increase and the expected duration of the price effect more difficult. To address this challenge, the responsible antitrust case teams have been approached with a questionnaire with the aim of collecting case specific data. The responses to the questionnaire suggest that antitrust cases more frequently seek to protect innovation competition than, for example, merger cases. The effects of these interventions on innovation cannot be measured, however, via direct customer savings calculations. In that sense, the estimates obtained in this area of enforcement can be deemed especially conservative.

Secondly, the issue arose whether or not to retroactively change the customer savings calculations decisions for past years when **intervention decisions initially included in those calculations are later annulled by the General Court**.

In line with the guidance of the OECD, customer savings calculations should be done on a yearly basis and cover all decisions taken during each year. In line with the same guidance DG Competition includes all interventions in its calculations including those that are appealed or might potentially be appealed in the future, because the fate of those actual or potential appeals cannot be predicted with any certainty.[9] The OECD guidance does however not contain express indications what to do with customer savings calculations for past years when a few years later a decision initially included in the customer savings calculations is annulled by the General Court.

On the one hand, it could be argued that the Commission should in such a scenario retroactively correct customer savings calculations for the past year in question, because otherwise the numbers for this past year contain interventions which have been found to be illegal by the General Court.

On the other, it must be borne in mind that, first, decisions initially annulled by the General Court may be confirmed on appeal and/or readopted by the Commission which raises the follow-on question whether decisions retroactively removed might later have to be retroactively added again.

Secondly, customer savings calculations report - as explained in the OECD guidance – the *expected* customer savings at the moment when the savings are calculated, as opposed to the actual effects, which can only be assessed on the basis of a proper ex-post evaluation.

Thirdly, these calculations should be simple, concise and transparent, there should be consistency over time and no double counting. If the customer savings figures for past years had to be changed repeatedly depending on the outcome of later court proceedings and possible re-adoptions of decisions, the customer savings calculations for past years would become unstable. Moreover, the numbers for the most recent years (which by definition do not yet reflect annulments) could not any longer be compared in a meaningful way with numbers for those past years which retroactively take into account annulments.

In the light of these difficulties and in line with the objectives of the customer savings calculations to keep them simple and concise, the Commission decided not to retroactively change calculations for past years following annulments. On the other hand, in order to exclude double counting and in order to maintain consistency over time, re-adoption decisions are excluded from the calculations.

A third methodological issue was to what extent the customer savings calculations for antitrust should take into account **'informal interventions'** of the Commission, i.e. Commission decisions to close a case after the Commission's investigation led to the termination of the behaviour of concern and/or the implementation of satisfactory remedies.

As can be seen from the graphs above, the Commission decided to include those informal interventions in its calculations because (1) depending on the case, for a competition authority, it can be an adequate use of its limited investigative resources to close an investigation without a formal decision, if the firms under investigation abandon and/or remedy the investigated conduct; and (2) from an economic point of view such informal interventions generate the same customer savings as formal interventions. In order to make sure the Commission does not claim credit for changes of business conduct which were not triggered by its investigation, an informal intervention is only included in the customer savings calculations in those cases in which the Commission communicated officially (e.g. in a press release or an official report) about its intervention and the effects on the investigated conduct.

A fourth methodological issue which so far had also not been addressed by OECD guidance was whether interventions in cartels and non-cartel antitrust cases tackling **infringements terminated before the Commission's investigation started** can generate direct customers savings.

Here, one can think for example of cartel cases where a leniency applicant informed the Commission of the illegal activities of the cartel, the Commission started an investigation, while the cartel stopped its activities before that date.

It could be argued that in those cases the Commission's investigation did not cause any positive effects for customers, as the infringement stopped before the official investigation started. On the other hand, at least in some of those cases the termination of the infringement was possibly caused by fear of an impending investigative action by the Commission, for example because the parties to a cartel feared that one of the members might apply for leniency. In those cases, the cartel's ending can be seen as directly linked to (and the logical consequence of) an imminent Commission investigation.

In order to keep the customer calculation exercise simple, and by way of compromise, DG Competition decided to take past infringements into account in both cartels and antitrust, if the infringement was terminated less than three years before the Commission registered the case and otherwise not to take those cases into account.

[9] According to the OECD guidance, decisions which are appealed can be included directly in the year in which they have been taken or only once they have become final. Each agency should decide the approach it prefers, but ensure that the approach is consistent over time and does not lead to any double counting of benefits.

Comparison with other jurisdictions outside the EU

An increasing number of competition authorities is conducting customer savings calculations along the lines suggested by the OECD. Table 3 below presents data on the total customer savings in billion euro from the Commission and three non-EU authorities, namely the US Department of Justice and Federal Trade Commission, and the Japan Fair Trade Commission.

Such a cross-jurisdictional comparison has to be made with great caution and is subject to important caveats given that it entails the comparison of figures reflecting different reporting methodologies, different competition enforcement systems and different economies. First, not all authorities report customer savings generated by all three enforcement instruments and the methodologies may differ. Second, the role of private enforcement is particularly strong in the US and more prominent than in most other jurisdictions. Likewise, the customer savings generated by the administrative enforcement by the EU National Competition Authorities (NCAs) or for that matter by US State authorities, are not taken into account, even if there are customer benefits associated with such interventions as well. Third, it has to be kept in mind that higher direct customer savings (reflecting intense enforcement activity) do not necessarily imply a more effective competition enforcement overall as a very efficient authority (building on a strong reputation from past interventions) may be able to more effectively deter anti-competitive behaviour with fewer interventions. Finally, the authorities in question are responsible for enforcing the competition rules in economies of different sizes. To overcome the latter problem, the last line of the table below reports average annual customer savings figures adjusted to take into account the differences in size of the economies considered: the figures are expressed 'as if' the economy in the different countries were of the same size as the EU economy in terms of GDP.

Bearing these limitations and caveats in mind, the below table suggests that the overall direct customer savings generated by the enforcement actions of the European Commission are significant also when compared to the customer savings figures reported by other competition authorities.

Table 3: Direct customer savings (in EUR bn) as reported by different jurisdiction worldwide

Year	EC	US (DOJ + FTC)	JFTC
2012	9.2	8.1	1.6
2013	6.7	1.6	1.2
2014	10.1	3.8	0.8
2015	6.0	6.3	0.3
2016	34.9	5.4	7.7
2017	16.1	4.7	2.2
2018	32.8	4.0	0.6
2019	16.5	7.9	4.3
2020	21.1	3.1	3.0
Annual average	**17.0**	**5.0**	**2.4**
Annual average adjusted by EU GDP	**17.0**	**3.9**	**7.0**

Macro-modelling efforts based on customer savings estimates

As already explained above the customer savings reported in this policy brief are only partial estimates which only measure the direct price effects of interventions for customers. Therefore, these estimates do for instance not capture the deterrent effects of competition enforcement nor the macroeconomic impact resulting from the decrease in prices and economic 'mark-ups' (i.e. the difference between the average selling price and average marginal costs) associated with these interventions in the whole economy.

In order to obtain a more accurate estimation of these macroeconomic effects, DG Competition in cooperation with colleagues from DG ECFIN and the Commission's Joint Research Centre has conducted over several years consecutive macro-modelling efforts in order to estimate how competition enforcement might affect EU GDP and prices.[10]

According to these macro-modelling efforts, the output of EU competition enforcement as measured by the number and market impact of merger, cartel and other antitrust interventions over the period 2012-2021 is used to calibrate a mark-up shock applied to a Dynamic Stochastic General Equilibrium (DSGE) model, the so-called QUEST III model. This model has been developed by the Directorate-General for Economic and Financial Affairs (DG ECFIN) and is used routinely by the Commission for instance for macro-economic forecasting. The QUEST III model allows evaluating the impact of competition enforcement on economy-wide measures of performance such as GDP, employment, prices and productivity. The economic assumption underlying the model is that reduced prices and mark-ups will lead to increased demand, output and investment and raise demand for the factors of productions (capital, labour).

The QUEST model is complemented by an input-output model, which explores the price effects of EU competition policy

[10] European Commission (2022), "Modelling the macroeconomic impact of competition policy: 2021 update and further development", report prepared by the Directorate-General for Competition, the Joint Research Centre and the Directorate-General for Economic and Financial Affairs, Publications Office of the European Union.

interventions at the industry/sector level, by exploiting information on the sector distribution of such interventions and by tracking the interlinkages between industries.

Simulation results based on the QUEST model indicate that EU competition enforcement of the type and magnitude performed during the ten years between 2012 and 2021 is likely to have a positive impact on GDP in the range of 0,6% - 1.1% in the medium to long term. The model suggests that the competition enforcement actions increase output and raise demand for the factors of productions (capital, labour). The combination of the price decline and the higher wages associated with increased labour demand and higher labour productivity yields an increase in consumption. Investment is also increasing because the negative direct effect of mark-ups on future profitability is more than offset by the positive effect of the increasing demand due to the lower prices.

These modelling estimates are based on conservative assumptions and are likely to underestimate the overall positive macro-economic effects of competition enforcement as they do not take fully into account the positive effects of competition enforcement on productivity via the increase in business dynamism or via radical innovation.

Further work

DG Competition is working on a number of further initiatives to improve the quantification of the effects of competition enforcement and of effective competition.

First, the Commission is in discussions with the national competition authorities within the ECN (European Competition Network) about the feasibility to calculate aggregate customer savings for the entire ECN combining those generated by national competition authorities and by the Commission. For the purpose of aggregating these results, a certain degree of alignment of methodology (in line with the OECD guidance) would be desirable.

Second, the Commission plans new research on the scale (and determinants) of the indirect or deterrence effect of competition enforcement actions. The indirect or deterrent effects of enforcement are those customer savings generated by the deterrence of anticompetitive conduct which would have taken place in the absence of deterrent Commission competition enforcement (e.g. deterred cartels, deterred anticompetitive mergers). A correct estimation of these indirect/deterrent effects of EU competition enforcement is of great importance for determining the overall impact of competition enforcement, as the economic literature considers that such indirect effects are significantly larger than the direct effect of competition policy interventions.

The most commonly used method to estimate deterrent effects relies on surveys of companies and their legal advisors about the effects of competition policy interventions on company behaviour. The most recent surveys on the deterrent effects of merger and antitrust enforcement are more than a decade old and cover the Netherlands and the UK only[11]. The intended research will have for the first time an EU-wide coverage and is expected to provide a much-needed update.

Thirdly, during a recent workshop including economists from the OECD, the IMF and academia[12] and as part of a recently launched external study exploring a number of aspects of the State of competition in the EU, DG Competition is exploring how to quantify the benefits of well-functioning competition for society and the reverse side of the coin, i.e. the societal costs of malfunctioning competition.

Economists consider that an increase in competition has a positive impact on macroeconomic performance via three main transmission channels: changes in allocative efficiency (reduction in prices and mark-ups and increase in business dynamism), productive efficiency (better management) and dynamic efficiency (increase in innovation)[13]. These changes lead to a reduction in costs and prices, an increase in productivity and innovation and ultimately an increase in growth.

The objective of this third workstream on the benefits of effective competition goes beyond the work on estimating the benefits of competition enforcement and seeks to estimate (1) how much better off is the EU in welfare/GDP terms as compared to different benchmarks characterising a less competitive economy, and (2) how much untapped potential there might still be to improve welfare/GDP further by benchmarking the EU economy against a more competitive economy.

Conclusion

The direct customer savings generated by the Commission interventions are large and in the range of EUR 120 to 210 billion for the period 2012 and 2021 or EUR 12-21 billion per year. Such customer savings calculations allow a competition authority to better explain the benefits of it work to stakeholders and citizens.

The overall estimates of direct customer savings generated by the Commission's enforcement actions during the last ten years are significant also when compared to the customer savings

[11] Twynstra Gudde (2005), Research into the anticipation of merger control, Report prepared for the NMa (Netherlands Competition Authority); Deloitte (2007), The deterrent effect of competition enforcement by the OFT, Report prepared for the Office of Fair Trading; Baarsma B., London Economics (2011), The impact of competition interventions on compliance and deterrence, OFT Report No. 1391.

[12] See https://competition-policy.ec.europa.eu/consumers/reaching-out/estimating-costs-non-competition_en

[13] Cf. Scherer, F. and Ross, D. (1990), Industrial market structure and economic performance, 3rd edition; J. B. Baker (2019), The Antitrust Paradigm.

figures reported by other competition authorities from outside the EU.

Even though the direct customer savings generated by Commission interventions are large, they only reflect the “tip of the iceberg” in terms of the positive effects of competition policy for society. Competition enforcement also generates: (i) indirect deterrence effects; and (ii) positive non-price effects on innovation, quality, and productivity which are likely to be significantly larger, but also more difficult to calculate.

Further work will involve further cooperation and coordination within the ECN as regards customer savings calculations, seek to make progress as regards quantification of the deterrent/indirect effects of competition enforcement and seek to make progress on the quantification of the ‘costs of non-competition’.