Measuring the contribution of EU competition policy to economic well-being

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The poorest in society may be most affected by the higher prices and lower quality and choice resulting from a lack of competition. The tools of competition policy (including merger and cartel control) allow countering the actions taken by companies to reduce effective competition in the markets. These tools "should contribute to steering innovation and making markets deliver clear benefits to consumers, businesses and society as a whole".[2] Increased evidence and a more in-depth analysis of the broader impact of competition policy interventions by the European Commission would help convince the larger public about the benefits of such interventions for the society as a whole.

While the relationship between competition and macroeconomic performance has been thoroughly if not conclusively investigated, there is much less evidence pertaining to the macroeconomic and distributional impacts of competition policy, at least in comparison with other policies affecting the conditions of competition, such as trade liberalisation or market deregulation. One reason is a lack of suitable data. Our access to a unique database containing information on important merger and cartel decisions taken by the European Commission over the period 2012-2016 has allowed us to conduct model simulations that shed light on the broader impact of these competition policy interventions.

In this analysis[3], the strength of competition policy is measured by the price increases avoided as a result of merger and cartel decisions, the expected duration of these price effects and the size of the markets directly and indirectly affected by the European Commission's decisions. The information collected on these three variables may be used to calibrate mark-up shocks that are then applied to a Dynamic Stochastic General Equilibrium (DSGE) model. DSGE models such as the QUEST model used here are very well suited to track the economy-wide effects of structural policies.

The QUEST model simulations take into account not only the direct effects of the European Commission's decisions but also their indirect, deterrent effects, which discourage market participants from engaging in future anticompetitive behaviour. There is a consensus amongst policymakers that deterrent effects are significant. However, they are difficult to measure because they cannot be observed directly and are not felt immediately. Two types of deterrent effects can be distinguished: sectoral deterrence and intertemporal deterrence. On the one hand, it is assumed that each important merger and cartel decision taken by the European Commission will not only have an impact on the relevant market directly affected by the decision (direct effect) but also on the whole subsector concerned by this decision (sectoral deterrent effects). For example, a merger remedy affecting airlines on an important route may discourage other airlines from considering an anticompetitive merger. On the other hand, intertemporal deterrence effects arise from companies' expectations that the European Commission will continue its competition policy interventions at the same pace into the foreseeable future. The annual mark-up shocks applied to the QUEST model are thus transformed into a permanent shock.

The particular characteristics of the QUEST model used allow tracking not only the macro-economic impact (in terms of GDP and employment growth, e.g.) of the mark-up shocks but also their distributional effects. This is achieved by disaggregating employment into various skills categories and making a distinction between different types of income earners (capital owners, wage earners and

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[1] The views expressed are purely those of the writers and may not in any circumstances be regarded as stating an official position of the European Commission.

[2] Quote from the mission letter from Jean-Claude Juncker, President of the European Commission, to Margrethe Vestager, European Commissioner for Competition.

[3] Dierx, Adriaan, Fabienne Ilzkovitz, Beatrice Pataracchia, Marco Ratto, Anna Thum-Thysen and Janos Varga (2017), "Does EU competition policy support inclusive growth?", *Journal of Competition Law & Economics*, Vol. 13, No. 2, pp. 225-260.

benefit recipients). The highly skilled are able to set aside part of their incomes for investment. Consequently, they become capital owners whose incomes move in line with the mark-ups of the companies that they own. The incomes of the less skilled come from wages and benefits only. Consequently the less skilled are more affected by price increases associated with the anti-competitive behaviour of companies.

Over the period 2012-2016, the European Commission took 93 important merger decisions (i.e. prohibitions or approvals subject to conditions) and 27 cartel prohibitions. The affected market value varies from year to year with a peak of more than 130 billion euro in 2016 for mergers and cartels combined. Under the baseline scenario, the likely price increase avoided by an important merger decision is set at 3% of the affected turnover. The avoided price increase due to a cartel decision is considered to be equivalent to the increase in price brought about by the cartel in the past (called the "overcharge"). The cartel overcharge is assumed to be 15% of the affected turnover. Both figures are rather conservative when compared to the findings of recent empirical literature. Finally, the length of time the increased price would have prevailed if the Commission had not intervened has been assessed on a case-by-case basis. For mergers, the length of this period depends on the importance of barriers to entry and expansion in the market(s) concerned. For cartels, the assumed duration of the effect reflects the European Commission's judgement of the future sustainability of the cartel at the date of detection.

Under these assumptions, we can derive the macroeconomic effects of competition policy in the form of a mark-up shock to the QUEST model. We calculate that under the baseline scenario the long-term decline in the mark-up level equals one percentage point, which corresponds to an eight per cent reduction in the average mark-up level.

The table below reports the percentage change of GDP and of selected macroeconomic variables of interest resulting from the one percentage point mark-up shock. The figures reported are in percentage difference from the non-shocked values. The table illustrates that competition policy interventions reduce price levels (as measured by the GDP deflator), which encourages consumption. Investment goes up because the negative effect of the mark-up reduction is dominated by the positive effect of the increased consumer demand, which also stimulates employment. The increase in investment brings about a rise in labour productivity, which in turn contributes to the increase in GDP. According to our model simulations GDP increases by 0.45% after five years and by 0.9% in the long term.

Table: Macroeconomic effects of a one-percentage point mark-up shock

	Percentage point change after five years	Percentage point change after fifty years
GDP deflator	-0.1	-0.6
Consumption	0.4	0.8
Investment	0.9	1.4
Employment	0.3	0.4
Labour productivity	0.1	0.5
GDP	0.4	0.9

The simulation results under the baseline scenario rely on a number of assumptions. Alternative simulations have been carried out to test the robustness of the macroeconomic results presented above. They show that the GDP effects vary substantially with the levels of price increase avoided due to merger decisions and the level of overcharges levied by cartels. These results plead in favour of competition interventions in markets where mergers would likely have an important impact on price levels and where cartel formation the biggest impact in terms of overcharges (e.g. in highly concentrated markets).

Similarly, the assumptions made on the function describing the ratio of deterrent over direct effects have an important impact on the simulations results. More precise estimates of the deterrent effects of competition policy interventions, in particular with respect to the size of the sector spill-over effects, give greater certainty about the size of the macroeconomic effects reported above. Nevertheless, what is clear is that it would be a mistake for competition authorities to define priorities only on the basis of the estimated direct effects of their interventions. Pursuing cases with limited direct effects but with significant deterrent effects is definitely worthwhile.

Finally, the model simulations also allow assessing the distributional effects of competition policy. They show that poorer households (low skilled and consuming all their income in each period) increase consumption proportionally more than richer households (high skilled and savers) – four times as much after five years. This supports the view that competition policy benefits the poorest in society.

Work should continue to improve our understanding of the broader effects of competition policy. We see four areas for further research. First, there is a need for more evidence on the size of the deterrent effects of merger and cartel decisions. Second, the macroeconomic impact analysis should cover other instruments of competition policy, such as State aid control and control of abuse of dominance. Third, transmission channels other than the reduction in mark-ups, such as increased business dynamism and innovation, should also be investigated. Finally, the differential effects of competition policy decisions affecting different sectors of the economy could be analysed.