

# Consolidated Guidance on Impact Assessment Procedures

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*Prepared by the International and National Consultants for*

## The Agency for the Protection and Development of Competition of the Republic of Kazakhstan

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## Executive summary

Competition and regulatory authorities are increasingly expected to demonstrate the effectiveness of their interventions and the value they generate for consumers, businesses, and society. In this context, the Agency for Protection and Development of Competition of the Republic of Kazakhstan (APDC) face a growing need to complement its enforcement activities with robust and transparent methods for evaluating their economic impact. This report develops a practical framework for assessing the impact of competition policy interventions and demonstrates its application in the context of Kazakhstan.

The project adopts a comprehensive perspective on competition-policy evaluation by integrating three approaches: ex-ante impact assessment, ex-post impact evaluation, and retrospective studies. Together, these approaches form a continuous evidence-based cycle through which competition authorities and regulators can estimate the expected benefits of interventions, measure their realised effects, and learn from past decisions in order to improve future enforcement.

The first part of the report develops a methodology for ex-ante impact assessment. Drawing on international practice adopted by competition authorities and international organisations, the framework provides a transparent and conservative approach to estimating the direct consumer benefits arising from competition interventions. The methodology focuses primarily on the interaction between affected turnover, expected price effects, and the duration of the intervention's impact. Its principal strength lies in its simplicity and consistency, allowing impact estimates to be produced regularly across different areas of enforcement while maintaining methodological comparability.

To illustrate the practical application of the methodology, the report presents a pilot assessment of three APDC enforcement actions representing distinct areas of competition policy: abuse of dominance, merger control (economic concentration), and cartel enforcement. Applying the proposed framework to these cases yields an estimated economic benefit exceeding KZT 222 billion in 2022 prices. When compared with APDC expenditures during the relevant period, the results imply a benefit-to-cost ratio of approximately 23:1, suggesting that each KZT 1 of public expenditure generated around KZT 23 of potential economic benefits. While these estimates should be interpreted as illustrative and subject to the assumptions underlying the methodology, they demonstrate the potentially substantial economic value created through effective competition enforcement.

The report emphasises that these estimates are deliberately conservative. The framework focuses primarily on direct consumer benefits and excludes a range of potentially important effects that are more difficult to quantify, including deterrence effects, dynamic efficiency gains, innovation impacts, and broader economic spillovers. As a result, the estimated benefits should generally be interpreted as lower-bound estimates of the overall value generated by competition policy.

The second part of the report reviews the principal methodologies used in ex-post evaluations, including impact. Unlike ex-ante assessment, which relies on assumptions regarding future outcomes, ex-post evaluation seeks to estimate the actual effects of interventions using realised market data. The report reviews the main causal-inference techniques currently applied in competition policy, including difference-in-differences, matching methods, synthetic control

approaches, regression discontinuity designs, event studies, and emerging machine-learning-based methods. These methodologies allow researchers and competition authorities to construct credible counterfactuals and identify the extent to which observed market outcomes can be attributed to a specific intervention.

The report highlights that ex-post evaluation has become increasingly important as competition and regulatory authorities face growing demands for accountability and evidence-based policymaking. While ex-post studies are often more resource-intensive than ex-ante assessments and can only be conducted for a limited number of cases, they provide more direct evidence regarding the actual consequences of policy interventions and can play a critical role in validating the assumptions used in ex-ante analysis.

The third part of the report examines retrospective studies of competition-policy decisions, focusing primarily on merger control but the lesson can be extended to other types of decisions. Retrospective evaluation extends beyond measuring impacts to assess whether competition authorities reached the correct decisions given the information available at the time. Drawing on evidence from Europe, the United States, and the broader academic literature, the report identifies several important lessons.

First, retrospective merger studies frequently identify post-merger price increases, particularly in highly concentrated markets, although the estimated effects are often modest and frequently mitigated through remedies. Second, market concentration consistently emerges as one of the strongest predictors of adverse post-merger outcomes. Third, the effectiveness of remedies plays a critical role in determining long-term outcomes, with evidence suggesting that remedy design is often as important as the initial decision itself. The report also emphasises that adverse outcomes observed retrospectively do not necessarily imply poor decision-making. Competition authorities make decisions under conditions of uncertainty and based on incomplete information. Effective retrospective evaluation therefore requires distinguishing genuine analytical errors from outcomes that were unforeseeable or were consistent with a reasonable decision based on the information available at the time. This distinction shifts the focus of evaluation away from blame and towards institutional learning.

A central conclusion of the report is that ex-ante assessment, ex-post evaluation, and retrospective analysis should not be viewed as separate exercises but as components of a single evidence-based framework. Ex-ante assessments generate predictions about the likely effects of interventions. Ex-post evaluations test those predictions against realised outcomes. Retrospective studies then examine why predictions succeeded or failed and identify opportunities for improving future enforcement. Together, these approaches create a feedback mechanism through which competition and regulatory authorities can continuously refine their analytical tools, improve decision-making, and strengthen policy effectiveness.

For the APDC, the implementation of such a framework would provide several important benefits. It would strengthen accountability by demonstrating the economic value generated by enforcement activities, improve transparency in communications with stakeholders, support evidence-based decision-making, and facilitate institutional learning. The report therefore recommends the gradual integration of impact assessment into the agency's routine activities, including the systematic collection of relevant data, the documentation of key assumptions and expected outcomes during investigations, and the development of regular evaluation exercises that combine ex-ante and ex-

post perspectives. Greater attention should be given to extending the measurement of competition policy impacts to include mechanisms such as privatisation, licensing, and related policy instruments. A thorough understanding of the effects of these decisions is crucial for constructing a more comprehensive and accurate impact framework.

Ultimately, the report demonstrates that impact assessment is more than a reporting tool. Properly implemented, it becomes an integral part of modern competition and regulatory policy, enabling competition authorities not only to measure the effects of their interventions but also to learn from experience and continuously improve the quality of enforcement over time.

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## 1. Introduction

Competition and regulatory authorities are increasingly expected not only to enforce competition law and regulation effectively but also to demonstrate the value of their interventions in a transparent, systematic, and evidence-based manner. This expectation reflects a broader shift towards performance measurement and accountability across public institutions, where policymakers, governments, businesses, and citizens seek clear evidence that public resources are being used efficiently and that regulatory interventions generate tangible benefits for society. For competition authorities, this requires the development of analytical frameworks capable of measuring and communicating the economic impact of enforcement activities.

This challenge is also relevant for the Agency for Protection and Development of Competition of the Republic of Kazakhstan (APDC), which, under the Regulation approved by Presidential Decree No. 428 of 5 October 2020, operates as a state authority directly subordinated and accountable to the President of the Republic of Kazakhstan. The APDC is responsible for protecting competition, restricting monopolistic activities, regulating and supervising state monopolies, and overseeing commodity exchange activities. In carrying out these responsibilities, the Agency plays a central role in promoting competitive markets and safeguarding consumer welfare. As a publicly funded institution, financed through the republican budget, it is increasingly important that the Agency can demonstrate the economic value generated by its activities and provide a transparent account of the benefits arising from competition enforcement.

Assessing the impact of competition policy is inherently challenging. Anti-competitive conduct often affects markets through higher prices, reduced output, lower quality, diminished innovation, or restrictions on consumer choice. Conversely, effective competition enforcement can prevent these adverse outcomes, encourage efficiency, stimulate innovation, and improve consumer welfare. For APDC, it is also important to consider the effects of privatisation and a broader range of regulatory interventions designed to promote competition. Many of these effects are difficult to observe directly, while others emerge only over time and may be influenced by factors unrelated to the intervention itself. As a result, measuring the effectiveness of competition policy requires explicit methodologies capable of identifying, quantifying, and, where possible, attributing economic outcomes to the actions of the competition authority.

Historically, Kazakhstan has not had a comprehensive framework for quantifying the economic benefits generated by competition enforcement. This report seeks to address that gap by developing a practical methodology for impact assessment that is both analytically robust and operationally feasible. The objective is not only to estimate the economic consequences of individual decisions but also to establish a systematic framework that can support accountability, transparency, institutional learning, and evidence-based decision-making over time.

The report focuses on three closely related approaches to evaluation: ex-ante impact assessment, ex-post impact evaluation, and retrospective studies of competition policy decisions. Although these approaches are sometimes discussed separately, they are best viewed together as elements of a broader policy-evaluation framework.

Ex-ante impact assessment seeks to estimate the expected effects of an intervention before those effects have fully materialised. Such assessments are forward-looking and rely on available

evidence, economic theory, empirical regularities, and informed assumptions about how markets are likely to respond to a competition authority's actions. Because actual outcomes cannot yet be observed, ex-ante assessment necessarily involves approximations and simplifying assumptions. Nevertheless, it provides a practical and timely mechanism for quantifying the anticipated benefits of competition interventions across a large number of cases and has become the principal approach used by many competition authorities around the world to report the benefits of their activities.

A complementary perspective is provided by ex-post impact evaluation. Rather than conjecturing expected outcomes, ex-post evaluation seeks to estimate the actual effects of interventions once sufficient time has passed for market outcomes to become observable. Using realised data and causal-inference methods, ex-post evaluation attempts to determine which observed changes in prices, output, market structure, innovation, or consumer welfare can plausibly be attributed to the intervention itself rather than to broader market developments. While ex-post studies generally provide stronger evidence of causality than ex-ante assessments, they are often more resource-intensive, data-intensive, and can only be undertaken for a limited number of cases after a considerable time lag.

The third component of the framework consists of retrospective studies. Retrospective evaluations build on ex-post impact assessment but extend their scope beyond the measurement of outcomes. Their objective is to examine whether competition authorities reached the correct decisions based on the information available at the time and to identify lessons that can improve future enforcement. Retrospective studies therefore focus not only on what happened after an intervention, but also on why outcomes differed from expectations, whether the original theories of harm proved accurate, and whether analytical frameworks and remedies performed as intended. In this sense, retrospective studies serve as a mechanism for institutional learning and continuous improvement.

Together, these three approaches form a continuous evidence cycle. Ex-ante assessment generates predictions about the likely consequences of intervention. Ex-post evaluation tests those predictions against observed market outcomes. Retrospective analysis then examines the reasons why outcomes matched or diverged from expectations and identifies opportunities to improve future decision-making. Rather than representing alternative methodologies, ex-ante and ex-post assessment, together with retrospective evaluation, are complementary stages of a single evidence-based policy framework through which competition authorities can enhance both accountability and effectiveness.

The primary focus of the impact assessment methodologies presented in this report is on consumer benefits, particularly those arising from lower prices or the prevention of price increases resulting from competition interventions. This focus reflects both international practice and the availability of reliable quantitative indicators. At the same time, it is important to recognise that consumer-price effects represent only part of the total benefits generated by competition policy. Broader impacts, including deterrence effects, improvements in product quality, increased innovation, dynamic efficiency gains, distributional effects, and wider economic spillovers, are often more difficult to quantify and are therefore excluded from the core methodology. Consequently, the estimated impacts reported throughout this document should generally be interpreted as conservative lower-bound estimates of the overall economic benefits associated with competition enforcement.

To illustrate the practical application of the proposed framework, the report includes pilot assessments of selected APDC enforcement actions using methodologies derived from international best practice and adapted to the institutional context of Kazakhstan. Three illustrative cases are examined using the methodology and rules set out in the Guidelines presented in the Appendix. The cases cover three key areas of competition enforcement: abuse of dominance, economic concentration (merger control), and cartel conduct. Together, they illustrate how the proposed framework can be applied in practice to quantify the economic effects of competition interventions and provide an initial assessment of the benefits generated by the APDC's enforcement activities.

More broadly, the report aims to contribute to the development of a culture of evidence-based competition policy and regulation in Kazakhstan. Quantitative impact assessment should not be viewed solely as a reporting exercise. When systematically implemented, it can strengthen accountability, improve transparency, support institutional learning, and provide valuable insights that enhance future enforcement decisions. The combination of ex-ante assessment, ex-post evaluation, and retrospective analysis creates opportunities not only to measure the impact of competition policy but also to improve the quality of competition policy over time.

The remainder of this report is organised as follows. Section 2 presents the ex-ante impact assessment methodology, reviews international practice, discusses the selection of key parameters, and applies the framework to a set of illustrative APDC cases. Section 3 introduces the principal methodologies used in ex-post impact evaluation and discusses their application to competition policy. Section 4 examines retrospective studies of competition authority decisions, reviews the accumulated empirical evidence, and develops a framework for interpreting retrospective findings and identifying institutional lessons. Section 5 concludes by bringing together the lessons from ex-ante assessment, ex-post evaluation, and retrospective analysis, highlighting their role within a unified evidence-based framework for competition policy. The report is complemented by detailed implementation ex-ante impact assessment guidelines presented in the Appendix, together with supporting analytical materials designed to facilitate future applications by the APDC.

**Highlights:** This work responds to the growing need for competition authorities to demonstrate the effectiveness and economic value of their interventions through transparent, evidence-based assessment. Focusing on the experience of the Agency for Protection and Development of Competition of Kazakhstan (APDC), it develops an integrated framework that combines ex-ante impact assessment, ex-post impact evaluation, and retrospective studies of competition policy decisions. Together, these approaches provide a comprehensive toolkit for measuring, validating, and learning from competition interventions. While ex-ante assessment estimates the expected benefits of enforcement actions, ex-post evaluation measures their realised effects, and retrospective analysis examines what those outcomes reveal about the quality of decision-making. By linking these complementary approaches within a continuous evidence cycle, the report demonstrates how impact assessment can strengthen accountability, support institutional learning, improve future enforcement decisions, and contribute to the development of a more effective and evidence-based competition policy framework in Kazakhstan.

## 2. Ex-ante impact assessment methodology

The ex-ante impact assessment methodology adopted by competition authorities is designed to provide a consistent and operational way of estimating the expected direct benefits to consumers arising from enforcement and regulatory interventions. It is grounded in a small number of core principles that ensure comparability across cases, transparency in reporting, and robustness in the face of limited data availability.

The framework is grounded in internationally recognised best practice, drawing on guidance developed by the OECD and the European Commission, as well as on methodological approaches adopted by leading competition authorities, including the UK Office of Fair Trading (since 2014 part of the UK Competition and Markets Authority). It is further informed by a body of research conducted by Professor Steve Davies at the Centre for Competition Policy, University of East Anglia, which laid the foundations for this ex-ante methodology. These approaches share a common structure based on estimating the value of affected turnover, the magnitude of price effects, and the duration over which these effects persist. Their widespread adoption reflects their balance between analytical rigour and practical feasibility, making them suitable for routine application across a wide range of cases.

The methodology is designed to serve multiple objectives. First, it enhances transparency by providing a clear and accessible quantification of the benefits of competition policy interventions. Second, it supports accountability, enabling authorities to demonstrate the effective use of public resources and to report on performance in a consistent way. Third, it can contribute to internal decision making by providing indicative measures of the relative impact of different types of interventions.

At the same time, there is a need for prudence and consistency in the application of the methodology. Given the inherent uncertainty associated with ex-ante estimation, the framework relies on conservative assumptions and standardised parameters to ensure that results are credible and comparable over time. The approach is therefore not intended to produce precise estimates of actual outcomes, but rather to provide a consistent and transparent baseline against which the benefits of competition policy can be assessed.

A first defining element of the methodology is its focus on the quantification of direct consumer benefits. These are typically measured as financial savings to consumers resulting from lower prices, improved quality, or enhanced market outcomes following intervention. In practice, price effects constitute the primary measurable dimension and therefore represent the central component of most calculations. While broader impacts, such as innovation, productivity, or deterrence, are recognised as important, they are either generally excluded from the core estimates due to measurement challenges or included via mapped price effects (mainly the case for quality and variety).

The methodology is built around a simple analytical structure. The estimated impact of a given intervention is derived from three key inputs: *affected turnover*, *price effect*, and *duration*. These elements are combined multiplicatively to generate an estimate of total consumer benefit. Despite its simplicity, the framework captures the key determinants of impact and lends itself to consistent application across different categories of cases. Let  $turnover_t$  denote the relevant turnover in period

$t$ , expressed in real terms (i.e., adjusted for inflation where appropriate), and let  $\Delta p$ , denote the proportional price change. The estimated benefit (impact) of the intervention in period  $t$  is then given by:

$$b_t = \text{turnover}_t \times \Delta p. \quad (1)$$

The impact typically lasts a certain number of periods. The aggregate impact calculated at time  $t$  over a duration of  $d$  additional periods to the time  $t$  when impact is calculated, with each additional period's effect discounted at the real interest rate  $r$ , can be expressed as:

$$B_t = \sum_{\tau=0}^d \frac{b_t}{(1+r)^\tau}. \quad (2)$$

The affected turnover represents the economic scale of the conduct or transaction under consideration. In order to maintain conservatism and ensure the credibility of estimates, authorities typically restrict the turnover to the revenues of the firms directly involved in the conduct in the relevant market. This approach deliberately underestimates the potential scope of impact, as it excludes indirect effects on other firms and markets, but provides a clear and defensible baseline for calculation. Where case-specific data are incomplete, turnover may be approximated using available market information or administrative data.

The price effect reflects the magnitude of the price change associated with the intervention. Conceptually, it corresponds to the overcharge removed in cartel or abuse cases, or the price increase avoided in merger control. Where detailed economic analysis is available, these effects can be estimated directly from case evidence. However, in most instances authorities rely on assumptions informed by empirical research and international benchmarks. These assumptions are differentiated by case type and are intentionally set at conservative levels to avoid overstating the benefits of intervention.

The third component, duration, captures the expected period over which the price effect would have persisted in the absence of the intervention. This is inherently a forward-looking parameter and is therefore subject to uncertainty. Consistent with the broader methodological approach, duration is typically calibrated using conservative assumptions or simple benchmarks derived from empirical evidence (often ex-post studies). Case-specific adjustments may be made where information on market dynamics, entry conditions, or the stability of the conduct is available.

Once these three elements are specified, the methodology proceeds in two steps. First, an estimate of the annual impact is computed as the product of turnover and the price effect (equation 1). Second, this annual impact is aggregated over the relevant duration to obtain the total benefit (equation 2). In some jurisdictions, future benefits are further adjusted through discounting, using a real discount rate denoted by  $r$ , consistent with public sector appraisal practices, thereby expressing the benefits in present value terms.

A key methodological principle is the systematic use of conservative assumptions. The objective is not to produce precise point estimates of true consumer benefits, but rather to provide credible lower-bound approximations. This principle is implemented through cautious choices at each stage of the calculation: limiting the scope of turnover, selecting price effects below or close to empirical medians, and adopting relatively short durations. In addition, several categories of benefits,

particularly those that are difficult to quantify, are excluded altogether. The resulting estimates are therefore likely to underestimate, rather than overestimate, the true economic impact of interventions.

The methodology also incorporates several standard assumptions to address data limitations. For example, where the immediate beneficiaries of an intervention are intermediate firms rather than final consumers, it is common to assume full pass-through of benefits to final consumers unless there is strong evidence to the contrary. Similarly, where case-specific evidence on price or duration is lacking, authorities rely on default values derived from academic literature, previous cases, and international practice. These conventions ensure that the methodology remains operational even in data-constrained environments.

Another important feature is the treatment of uncertainty and variability. Given the reliance on assumptions, authorities often present results as ranges or complement point estimates with sensitivity analysis. This helps convey the degree of uncertainty inherent in the calculations and enhances the transparency of the exercise. In addition, estimates are typically subject to revision as new information becomes available, particularly through monitoring and ex-post evaluation.

The methodology is intentionally designed to be flexible across different types of interventions. While the core framework remains unchanged, its application varies depending on the nature of the case. In enforcement cases, such as cartels or abuse of dominance, the approach is relatively standardised. In merger control, more detailed modelling techniques may be used where feasible, though simplified approaches remain common. In other areas, such as market studies or consumer protection enforcement, the methodology may be adapted to reflect the specific mechanisms through which benefits arise, while maintaining consistency with the overarching principles.

Extending the methodology to the study of privatisation, the withdrawal of partial public ownership, and related regulatory reforms requires a separate and focused research agenda. The central methodological issue concerns the treatment of price subsidies financed through public expenditure and how their effects should be incorporated into welfare calculations. Although artificially low prices may generate political support, they effectively constitute a mechanism for redistributing resources within society, either among contemporaneous groups or across generations. Traditional impact evaluations generally emphasise average effects, potentially overlooking important distributional dimensions. In contrast, recent contributions by Davies and Mariuzzo (2022) and Davies, Mariuzzo, and Zhang (2026) show how policy impacts can be evaluated through a redistributive framework that makes these distributional consequences explicit. This perspective merits greater attention, as assessments of regulatory policies should account not only for price and quality outcomes but also for the allocation of gains and losses across different segments of society. The same three pillars remain central to this analysis: duration, price effects, and turnover. The challenge is how to quantify those in this environment.

Finally, the methodology emphasises consistency over time and across cases. Standardised assumptions, common definitions, and documented procedures allow authorities to aggregate results, track performance, and communicate outcomes effectively. At the same time, the framework allows for gradual refinement as new evidence becomes available or analytical capacity improves.

**Highlights:** The ex-ante impact assessment methodology provides competition authorities with a practical, transparent, and internationally recognised framework for estimating the direct consumer benefits of competition interventions. Drawing on OECD, European Commission, and leading competition authority guidance, it measures impact through a simple but robust approach based on three core components: affected turnover, expected price effects, and the duration of those effects. The methodology is designed to support accountability, performance reporting, and strategic decision-making while ensuring comparability across cases and over time. Its defining feature is the systematic use of conservative assumptions, standardised parameters, and clear documentation, which prioritise credibility over precision and produce defensible lower-bound estimates of consumer benefits. Although broader effects such as innovation, productivity, and deterrence are generally excluded from the core calculations, the framework offers a consistent and operational basis for assessing the value of competition policy and can be refined progressively as data and analytical capabilities improve.

## 2.1. International practice

Ex-ante impact assessment of competition authorities' activities has become an established practice across advanced and emerging jurisdictions, driven largely by guidance developed by the OECD and its systematic dissemination among member and partner countries. This approach complements ex-post impact evaluation but is operationally simpler, more transparent, and more conducive to regular reporting cycles, useful to justify the return of the allocated budget.

A central feature of international practice is the convergence toward a harmonised methodology rooted in OECD work, particularly the framework laid out in its guidance on assessing the impact of competition authorities' activities. This framework provides a structured and replicable approach to estimating the direct consumer benefits arising from enforcement decisions, enabling comparability across jurisdictions and over time. The widespread adoption of this methodology reflects both its analytical tractability and its suitability for agencies operating under resource constraints. A central performance metric is the ratio of estimated benefits to the cost of operating the agency. This measure serves as a proxy for the return on public resources and enables robust international comparisons.

At the core of the OECD approach is a simple but robust accounting identity, according to which the estimated benefit of a competition intervention is equal to the product of three elements: the affected relevant turnover, the expected price effect of the intervention, and the duration over which the effect persists. This 'turnover x price effect x duration' framework has become the international benchmark for ex-ante impact assessment, as it balances conceptual clarity with quantified grounding. It allows agencies to generate *quantified estimates of consumer savings even in the absence of detailed econometric analysis* often grounded in ex-post impact assessment, thereby facilitating timely communication of results.

The OECD framework further emphasises the importance of adopting conservative assumptions to ensure credibility and avoid overstating impacts. In practice, competition authorities typically rely on evidence-based default parameters for price effects and durations, differentiated by case type. For example, hard-core cartels are generally associated with relatively high price effects, while mergers are assigned more modest estimates. *This standardisation serves two purposes: it ensures*

*consistency across cases and over time, and it reduces the informational burden on case teams, who may lack the data required for more case-specific quantification.*

International experience shows that the implementation of ex-ante impact assessment typically follows a sequence of clearly defined steps. First, agencies delineate the scope of decisions to be included in the exercise. In line with OECD recommendations, this generally encompasses major enforcement actions such as cartel decisions, merger interventions (including prohibitions and remedies), and abuse of dominance findings. Some jurisdictions extend the scope to include advocacy outcomes, such as regulatory changes induced by the authority, as well as mergers withdrawn following the agency's concerns, and market studies and investigations. Where authorities also have a consumer protection mandate, the scope of assessment should be extended to include consumer enforcement and consumer protection activities. In general, a cautious approach is usually adopted, excluding cases under appeal until final judicial confirmation is obtained. In the context of APDC, it is also necessary to account for regulatory changes and the introduction of competition through privatisation and the gradual withdrawal of state ownership from productive activities. These factors are likely to play a significant role in shaping market outcomes and should therefore be incorporated into the analysis, but they can only be accounted for in the impact calculation once they are implemented.

Second, agencies estimate the relevant turnover affected by each intervention. Here again, the international norm is to adopt conservative definitions, focusing on the revenues of the firms directly involved in the conduct or transaction, rather than the broader market turnover. When possible, such information should be collected during the agency's investigation. This approach mitigates the risk of overestimation and ensures that reported benefits reflect a lower-bound estimate of the true economic impact. In jurisdictions where data availability is limited, turnover is often proxied using sectoral statistics or national accounts aggregates, adjusted as necessary to reflect price changes and ensure consistency in real terms.

Third, the expected price effect of the intervention is determined. OECD guidance and the associated empirical literature provide indicative ranges for different types of conduct, based on meta-analyses of past cases. In practice, many authorities adopt central or lower-bound estimates within these ranges, consistent with the principle of conservatism. This reliance on externally validated benchmarks reduces discretion and enhances the defensibility of the results in institutional and public scrutiny. Where sufficient resources are available and a robust sample of decisions exists across case types, national authorities may undertake ex-post impact evaluations to estimate price effects and thereby inform the selection of appropriate price change assumptions.

Fourth, agencies specify the duration over which the benefits of an intervention are expected to accrue. International practice similarly relies on empirical medians when calibrating duration assumptions, particularly for cartels. A substantial empirical literature shows that cartels often persist for several years prior to detection. For example, Levenstein and Suslow (2006, 2011) report an average cartel duration of around five years, with many cases lasting between five and ten years or longer, while subsequent work by the same authors confirms that organisational and market characteristics can sustain collusion over extended periods. However, for ex-ante purposes, authorities typically assume shorter remaining durations (for example, a few years following intervention), reflecting uncertainty about market dynamics (efficiency), entry conditions, and the

persistence of remedies. This conservative truncation further strengthens the credibility of the estimates.

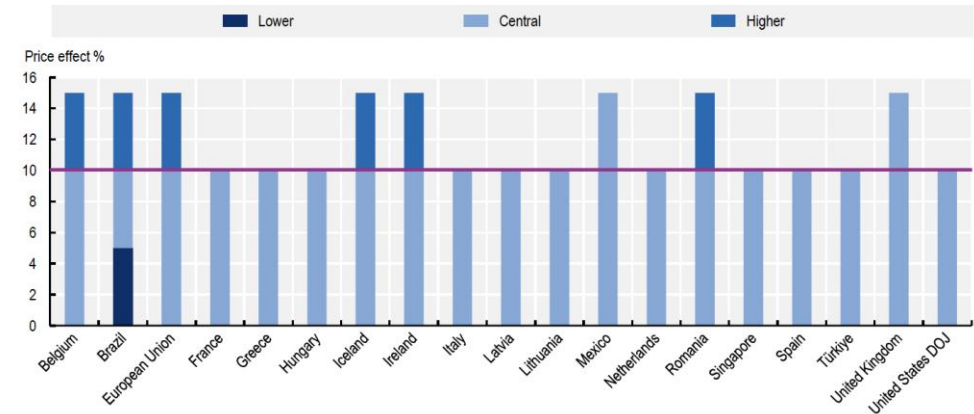
Fifth, calculated benefits are adjusted to present value terms through discounting, and results are aggregated across cases and over time, accounting for inflation (when possible, the change in producer prices within industry of the relevant market). The use of discount rates aligned with public sector appraisal guidelines is standard practice, ensuring comparability with other policy evaluations. Many authorities also report rolling averages to smooth year-to-year variability, given the inherently lumpy nature of competition enforcement. This is particularly important when the impact is assessed on an annual basis.

OECD competition authorities employ different assumptions regarding infringement duration, price effects, and turnover calculations. However, these methodologies are typically applied transparently, in accordance with published guidelines and internal assessments of effects that are tailored to the specific circumstances of each jurisdiction.

Appendix A of OECD (2025) (see footnote one) presents a range of international comparisons of assumptions on price effects and duration. We reproduce one of these figures below and refer readers to the report for the remaining international comparisons.

Figure A A.1. Assumptions used by authorities for cartel price effect

The assumptions authorities use if case specific data is not available for the price effect of stopping a cartel.



Notes: Purple line is the current OECD guidance level. Lower and higher estimates included where authorities use ranges or sensitivity tests.  
Source: June 2023 WP2 contributions to session on Assessment and communication of benefits of competition interventions and Authority annual reports.

Figure 1. International comparison of cartel price effect

Beyond the methodological core, international experience highlights the importance of communication and institutionalisation. For example, competition authorities such as the UK Competition and Markets Authority (CMA) and Ireland’s Competition and Consumer Protection Commission (CCPC), among others, publish impact assessment reports that present aggregate benefits, disaggregated by case type, alongside information on the agency’s budget. A common metric is the ratio of estimated benefits to costs, which provides a succinct indicator of value for money. In several jurisdictions, these ratios are substantial, reinforcing the perception of competition policy as a high-return public investment.

Another key lesson from international practice is the role of ex-ante impact assessment in supporting strategic decision-making. By systematically quantifying the expected benefits of different categories of intervention, agencies can better prioritise their activities, allocating resources toward cases with the greatest potential impact. This is particularly relevant in contexts where enforcement capacity is limited, and trade-offs are unavoidable. In this sense, ex-ante impact assessment serves not only as a reporting tool but also as an internal management instrument.

At the same time, OECD and national experiences acknowledge important limitations of the current approach. The standard framework captures only direct, static effects, namely, the immediate price reductions resulting from enforcement actions, and typically excludes broader dynamic and deterrence effects. Yet, there is increasing recognition that these indirect channels may be quantitatively significant. Recent analytical work suggests that competition enforcement can influence economy-wide outcomes, including productivity and GDP (Competition and Markets Authority, 2025; European Commission, 2024), by altering firms' pricing behaviour and investment incentives, including capacity. As a result, some jurisdictions are exploring complementary approaches to capture these wider impacts, although such efforts remain methodologically demanding and less standardised. Another limitation of current ex-ante impact assessment methodologies is their primary focus on average effects, which does not capture the important distributional implications often associated with competition policy. The issue is especially relevant when the policy under consideration concerns the removal of subsidies used to sustain artificially low prices. Because these subsidies tend to benefit poorer segments of the population disproportionately, analyses based on representative consumers may overlook important distributional consequences. Recent research, Davies, S., and F., Mariuzzo (2022) and Zhang, J. (2026), has begun to address this gap, identifying both the analytical approaches and the types of data required to incorporate distributional analysis into impact assessments. This represents a particularly relevant dimension in many jurisdictions, where it is important to demonstrate that competition policy tends to benefit lower-income households proportionally more than higher-income groups. Notably, these outcomes arise as a by-product of routine enforcement activity, rather than through the explicit prioritisation of distributional objectives.

In response to these challenges, the OECD has encouraged a pragmatic and incremental approach. Authorities are advised to begin with the core ex-ante framework, ensuring consistency and transparency, and to progressively refine their methodologies as data availability and analytical capacity improve. This includes developing internal guidelines, training staff, and conducting pilot exercises, all of which are commonly observed steps in countries that have successfully institutionalised impact assessment practices.

Overall, international experience demonstrates that ex-ante impact assessment, as defined and promoted by the OECD, is a viable and valuable tool for competition authorities. Its strength lies in its balance between rigour and feasibility, allowing agencies to produce credible, comparable, and policy-relevant estimates of their impact. While limitations remain, particularly with respect to dynamic, distributional and macroeconomic effects, the framework provides a solid foundation upon which more sophisticated analyses can be built. As such, it has become an integral component of modern competition policy and regulation, supporting accountability, transparency, and effective resource allocation.

**Highlights:** International experience shows that ex ante impact assessment has become a central tool for competition authorities, with the OECD framework emerging as the global benchmark. The methodology provides a practical, transparent, and internationally comparable way of estimating the direct consumer benefits generated by competition enforcement through a simple calculation based on affected turnover, expected price effects, and the duration of impacts. Its widespread adoption reflects a balance between analytical rigour and operational feasibility, allowing authorities to demonstrate accountability, assess value for money, and communicate the returns generated from public resources. By relying on conservative and standardised assumptions, the framework ensures credibility while supporting both external reporting and internal prioritisation of enforcement activities.

## 2.2. Selection of key parameters

The credibility of impact assessment results depends critically on the selection of the parameters, particularly (proportional) price effects (semi-elasticities), duration assumptions, and the definition of affected turnover. While case-specific evidence should be used wherever available, international practice suggests adopting standardised benchmarks informed by empirical literature relying on ex-post assessments and calibrated to ensure conservatism.

First, regarding price semi-elasticities assumed as price effects, the evidence base indicates substantial variation across case types and markets. Empirical studies suggest that the central tendency of cartel price effects is significantly above the traditional benchmark values used in impact assessments. However, to preserve credibility and avoid overestimation, authorities adopt conservative estimates derived from the lower bound of empirical medians, rather than means or upper-range estimates. Where appropriate, authorities may present a range of values (e.g. low, central, high) to reflect uncertainty and heterogeneity across cases.

Second, the selection of duration assumptions should similarly balance empirical realism and prudence. The academic literature suggests that anticompetitive conduct, particularly cartels, may persist for several years. Nonetheless, for ex-ante purposes, it is advisable to assume a shorter remaining duration, reflecting uncertainty about future market conditions and the potential for entry or behavioural change. Where case-specific evidence is available, such as indicators of cartel stability or barriers to entry, these should be used to refine duration estimates, potentially within a structured range.

Third, the definition of affected turnover should follow a consistently conservative approach. In most cases, the preferred benchmark is the revenue of the firms directly involved in the conduct, rather than total market turnover. Although this approach understates the full extent of impact, it enhances comparability across cases and reduces the risk of overstatement, particularly in the absence of reliable data on broader market effects.

More generally, the selection of parameters should adhere to three guiding principles: (i) consistency: similar assumptions should be applied across comparable cases to ensure coherence over time and across categories of intervention; (ii) transparency: all parameter choices and underlying assumptions should be clearly documented and, where possible, justified with reference to empirical evidence (within the country or from evidence from other similar countries) or established guidance; (iii) conservatism: in the presence of uncertainty, parameter values should err

on the side of underestimation, recognising that several important effects, such as deterrence and dynamic benefits, are typically excluded from the calculation.

The ex-ante impact assessment guidelines propose a set of default parameter values that vary by case type, notably for mergers, abuse of dominance, and cartels. In the present framework, the assumed price effect for mergers has been calibrated drawing on evidence and practice from the Competition and Markets Authority (CMA), ensuring alignment with established benchmarks in developed jurisdictions. For cartel cases, the current approach relies on parameter values derived, from Connor's cartel overcharge data (see *infra* footnote 4), from estimates used in Turkey and Mexico, two OECD partner countries, under the assumption that their market structures and enforcement contexts may provide a reasonable proxy for comparable developing economies. The same parameter values have, for simplicity, been extended to abuse of dominance cases.

However, this approach could be refined further. It may be preferable to anchor cartel price effects more systematically either on the average values reported across OECD jurisdictions in OECD (2025), or on empirical estimates derived from Connor's cartel overcharge data, with a specific focus on Asian or regionally comparable markets. This would strengthen the empirical grounding and enhance the credibility of the assumptions used. In turn, price effects for abuse of dominance cases could be either computed as the average values reported across OECD jurisdictions or calibrated to lie between assumptions for mergers and cartels, reflecting both the typically lower availability of empirical evidence for such cases and the greater uncertainty surrounding their impact. More broadly, periodic review and recalibration of these parameters based on updated empirical evidence and international practice would help ensure that the methodology remains both robust and policy-relevant.

**Highlights:** The effectiveness and credibility of ex ante impact assessments depend on the choice of key parameters, particularly assumed price effects, duration of impact, and the definition of affected turnover. International best practice emphasises the use of transparent, evidence-based, and conservative assumptions, drawing on empirical research and established benchmarks while ensuring consistency across cases. Although case-specific data should be used where available, transparent parameter values improve comparability, reduce discretion, and enhance the robustness of reported results. Given the inherent uncertainty surrounding competition interventions and the exclusion of dynamic and deterrence effects, authorities are encouraged to err on the side of underestimation and to periodically review and recalibrate assumptions as new evidence and international experience emerge.

## 2.3. Examples of calculations

To illustrate the application of the methodology, it is useful to present stylised examples of how estimated consumer benefits are derived across different types of interventions first in general terms and then how we apply the methodology to quantify APDC decisions.

### 2.3.1. General case illustrations

These examples are intended to demonstrate the logic of the calculation rather than provide precise estimates.

To familiarise with the logic of the range of price changes, consider a Cournot homogeneous good model with unit demand  $D = 1 - P$ ,  $n$  symmetric firms, and symmetric constant marginal cost  $c$ . The equilibrium prices  $P^* = \frac{1+nc}{n+1}$  for selected values of  $n$  and  $c$  are reported in the table below.

**Table 1: Simulated equilibrium prices in a textbook example**

|               | <b>c = 0</b> | <b>c = 0.2</b> | <b>c = 0.4</b> | <b>c = 0.6</b> | <b>c = 0.8</b> |
|---------------|--------------|----------------|----------------|----------------|----------------|
| <b>n = 1</b>  | 0.50         | 0.60           | 0.70           | 0.80           | 0.90           |
| <b>n = 2</b>  | 0.33         | 0.47           | 0.60           | 0.73           | 0.87           |
| <b>n = 3</b>  | 0.25         | 0.40           | 0.55           | 0.70           | 0.85           |
| <b>n = 5</b>  | 0.17         | 0.33           | 0.50           | 0.67           | 0.83           |
| <b>n = 10</b> | 0.09         | 0.27           | 0.45           | 0.64           | 0.82           |

The table suggests that in this model of competition and with these assumed parameter values, preventing a merger that would reduce the number of firms in the market from three to two leads to a lower price. For example, when  $c = 0.4$ , the corresponding avoided percentage price increase is  $100 \times (0.60 - 0.55)/0.55 = 9.09\%$ .

This pattern illustrates the classic merger paradox. In a Cournot market with homogeneous goods, the paradox implies that only mergers leading to monopoly or near-monopoly positions are profitable for the merging firms (Salant, S. W., Switzer, S., & Reynolds, R. J., 1983). This framework, however, abstracts from the role of efficiencies. If the three to two mergers discussed above were able to generate sufficient cost efficiencies, for instance, reducing marginal costs for both merging and non-merging firms from 0.4 to 0.2, the post-merger price without intervention would actually fall (e.g., from 0.55 to 0.47). When mergers generate sufficient efficiencies, the merger paradox may no longer hold. However, such an outcome is unlikely in most real-world settings, but it highlights the importance of accounting for efficiencies in merger assessment. In practice, competition authorities do consider efficiency gains, and mergers that generate substantial efficiencies may be approved despite potential concerns.

Moreover, the assumption of homogeneous products is highly restrictive. In most markets, products are differentiated, and the price effects of mergers are better captured through diversion ratios (cross-price elasticities). These can be calculated from survey data or estimated using structural demand models, although such approaches are often data demanding.

Another point illustrated by the table above is its ability to capture the concept of maximal cartel behaviour. For instance, in a cartel composed of three firms with marginal cost  $c = 0.4$ , prices would increase relative to Cournot competition by  $100 \times (0.70 - 0.55)/0.55 = 27.27\%$ . This represents the outcome under full collusion. In practice, however, cartels rarely achieve such maximal outcomes. Due to factors such as uncertainty, incentive compatibility constraints, and limited observability, colluding firms typically set prices below the fully collusive level in order to sustain cartel stability. A substantial literature from the 1980s, e.g Porter R.H. (1983) and Rotemberg, J. J., & Saloner, G. (1986), shows that equilibrium prices in cartel settings tend to fall short of the joint-profit-maximising level, even in cases where cartels were legal.

Using more practical examples, consider first a cartel enforcement case. Suppose that the firms involved in the cartel generate annual revenues (turnover) of KZT 100 million in the affected product market. Applying a conservative assumed price effect of 10-15%, the annual consumer harm attributable to the cartel would be estimated at KZT 10-15 million ( $b_t$  in Equation 1). If it is assumed that absent intervention, the cartel would have persisted for an additional two years ( $d = 2$ ), the total undiscounted consumer benefit from the authority's intervention would be in the range of KZT 30-45 million. Where appropriate, this amount may be discounted to present value terms using the applicable social discount rate. This example highlights how the combination of turnover, price effect, and duration directly determines the magnitude of the estimated benefit.

A second example relates to merger control. Suppose that a proposed merger affecting a market with relevant turnover of KZT 200 million is expected, in the absence of intervention, to lead to a price increase of around 3%. The annual consumer detriment avoided by blocking or remedying the merger would therefore be approximately KZT 6 million. If the anticompetitive effects are assumed to persist for two years, reflecting relatively low barriers to entry, the total benefit would amount to roughly KZT 12 million.

A third example concerns an abuse of dominance case. Suppose that a dominant firm generates KZT 50 million in annual sales in the relevant market and is found to have engaged in exploitative pricing behaviour. Applying a conservative assumption of a 5% price effect, the resulting annual detriment is estimated at KZT 2.5 million. Assuming a duration of three years, the total consumer benefit of the intervention would be KZT 7.5 million. As with other cases, these figures are intended to represent a lower-bound estimate and may be adjusted if case-specific evidence on pricing effects or market dynamics is available.

Summing the three illustrative examples presented above yields a total estimated impact of KZT 30M + 12M + 7.5M = KZT 49.5M. This figure should be interpreted as a conservative estimate of the overall consumer benefit generated by the interventions. If the cost of operating the authority over the same period amounted to KZT 3M, the resulting benefit-to-cost ratio would be approximately 16.5:1, indicating a substantial return on public resources.

Where the impact relates to interventions that occurred in earlier periods, for example, three years prior to the year of calculation ( $t-3$ ), it is necessary to restate the estimated benefits in current terms, assuming the impact took place from the time of the calculation. This can be achieved by adjusting the original amount for cumulative inflation over the relevant period, thereby expressing all impacts in real terms and ensuring comparability across years.  $b_t = b_{t-3}(1 + \pi)^3$ , where  $\pi$  is the average inflation rate during the period. Needless to say, the formula above could have used compound observed annual time-varying interest rates, instead of a constant  $\pi$ .

To account for the time value of money, future benefits may be discounted. For example, with a real discount rate of  $r = 0.1$ , the present value of the merger case above, assuming annual benefits of KZT 6M over two periods (the period in which the calculation is performed and the subsequent period), would be  $6 + \frac{6}{1+0.1} = 11.45M$ . The same discounting approach can be applied to all other examples.

The methodology can also be applied, with appropriate modifications, to consumer protection enforcement. In such cases, the calculation may be based not on price effects but on the reduction in consumer detriment associated with harmful practices. For example, if an intervention leads to a

reduction in the number of affected consumers (as proxied by complaints data), and the average detriment per consumer is known or estimated, the total benefit can be computed by multiplying the reduction in cases by the average detriment and the expected duration of the effect. Additional adjustments, such as scaling up for unreported cases, may be applied to reflect the broader population of affected consumers.

Across all these examples, several common features emerge. First, the calculations are deliberately simple and transparent, relying on a limited number of clearly defined parameters. Second, the use of conservative assumptions ensures that the resulting estimates err on the side of underestimation, thereby protecting the credibility of the exercise. Third, the methodology is sufficiently flexible to accommodate different types of interventions, while maintaining a consistent conceptual framework.

In practice, authorities often complement such point estimates with ranges or sensitivity analysis, reflecting uncertainty around key parameters such as price effects and duration. They may also aggregate results across cases and over time, for example by reporting annual impacts alongside multi-year averages, to provide a more stable and policy-relevant measure of performance.

These examples illustrate how the methodological framework can be operationalised in a consistent manner across different case types, while remaining adaptable to the specific characteristics of each intervention.

**Highlights:** The illustrative examples demonstrate how the ex-ante impact assessment methodology translates competition interventions into quantified consumer benefits through a simple framework based on affected turnover, expected price effects, and duration. Drawing on economic theory and practical enforcement scenarios, the examples show how actions against cartels, anticompetitive mergers, and abuses of dominance can generate substantial consumer savings, while highlighting the importance of conservative assumptions and the treatment of efficiencies, market structure, and uncertainty. The methodology is deliberately designed to be transparent, flexible, and operational, allowing authorities to estimate impacts consistently across different case types, aggregate results into meaningful performance indicators such as benefit-to-cost ratios, and communicate the value of competition policy in a credible and policy-relevant manner.

### **2.3.2. Applied impact assessment of APDC enforcement actions**

To demonstrate the impact assessment methodology, three APDC cases were selected, reflecting the main areas of activity of the competition authority and corresponding to the three forms of anti-competitive conduct discussed above. It is useful to begin by revisiting the impact assessment methodology applied to the three selected cases.

#### **2.3.2.1. Impact Assessment Methodology**

The purpose of impact assessment is to quantify the potential benefits accruing to consumers and the broader economy as a result of preventing anti-competitive conduct or implementing decisions in the field of economic concentration. By translating competition enforcement outcomes into measurable economic effects, impact assessment provides a systematic framework for evaluating

the effectiveness of regulatory interventions and their contribution to market efficiency and consumer welfare.

In line with established international practice, the assessment typically relies on three core parameters: (i) the size of the affected market, measured by turnover; (ii) the estimated price effect associated with the intervention; and (iii) the duration over which the impact is expected to persist. These parameters capture, respectively, the scale of economic activity influenced by the conduct or decision, the magnitude of the price distortion that is avoided or corrected, and the temporal extent of the resulting benefits.

Within this framework, turnover represents the total volume of sales in the relevant affected market and serves as a proxy for the economic scale of the intervention. The price effect reflects the estimated avoided price increase, or, in some cases, the price reduction, resulting from the prevention or remedy of anti-competitive behaviour. Finally, duration captures the number of years over which the price effect is expected to apply, thereby incorporating the persistence of the intervention's benefits over time.

In cases where the estimated effects extend across multiple years, adjustments are made to account for inflation and the time value of money. This ensures that monetary values remain comparable over time and accurately reflect their real economic significance. For the purposes of this report, and to maintain consistency across the analysis period, all monetary values for 2018–2022 are expressed in constant 2022 prices. The period used to calculate the impact was 2018–2022, with 2022 selected as the final year of the assessment window. This choice reflects the assumption that the impact assessment would be conducted at the end of the final year of the period, say December, once all decisions adopted during that year were known and could be included in the analysis. Had the impact been estimated during 2023 rather than at the end of 2022, it would have been more appropriate to use 2023 as the final year of the assessment window. The resulting impact estimates were assumed to be subsequently presented in a published impact report. Many competition authorities estimate the impact of their interventions over a multi-year horizon rather than on an annual basis, particularly agencies that issue relatively few decisions each year. Alternatively, the assessment could have covered the period 2022–2025, incorporating all decisions adopted during that timeframe, with the impact calculations and the corresponding impact report (the document that publicly presents these estimates) being prepared in 2026. This approach would be equally consistent with the practice of evaluating impacts over a defined period and reporting the results after the completion of the assessment window, while recognising that some benefits may continue to accrue beyond the reporting date and therefore may not yet have fully materialised.

A more detailed explanation of the methodology, including the underlying assumptions, parameter selection, and calculation procedures, is provided in the Impact Assessment Guidelines in the Appendix. These materials offer additional transparency and enable replication of the estimates presented in this report.

**Table 2. Key parameters**

| Parameter            | Approach                                                                                          |
|----------------------|---------------------------------------------------------------------------------------------------|
| Base year assumption | All monetary values are expressed in 2022 prices.                                                 |
| Price effect         | Based on observed estimates or assumptions derived from the ex-ante impact assessment guidelines. |

| Parameter          | Approach                                                   |
|--------------------|------------------------------------------------------------|
| Duration of impact | Determined individually for each case (see details below). |

The analyses of the three cases discussed below relied on the following data sources.

**Table 3. Data sources**

| Information                                          | Source                                                                                                                                                                       |
|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Case information                                     | Court decisions and related materials obtained from the Judicial Office portal ( <a href="https://office.sud.kz/">https://office.sud.kz/</a> ).                              |
| Macroeconomic indicators (inflation, interest rates) | Official statistics of the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan and the National Bank of Kazakhstan. |
| Company turnover                                     | Publicly available financial statements (for joint-stock companies). Data obtained from the Uchet information system (for limited liability partnerships).                   |
| APDC expenditures (costs)                            | APDC (provided upon request).                                                                                                                                                |

### 2.3.2.2. Three key cases

#### 2.3.2.2.1. Abuse of dominance: Air Astana JSC

As an example of abuse of dominance, this report examines the case involving Air Astana JSC, one of the largest airlines in the Republic of Kazakhstan. Following an investigation conducted by the APDC and subsequent court proceedings, the company was found guilty of abusing its dominant position through the application of unjustified fuel surcharges on domestic air routes.

The central issue in the case concerned the collection of an additional fuel surcharge from passengers. The economic rationale for such a surcharge is to compensate airlines for fuel costs where these cannot be accurately determined at the time tickets are sold. However, the investigation established that Air Astana purchased fuel through long-term and recurring contracts, maintained stable supply volumes, and held regular fuel inventories, allowing it to estimate fuel costs in advance and incorporate them into airfare pricing.

Another important aspect of the case was the absence of a transparent and consistent relationship between the fuel surcharge and the underlying cost factors. In particular, surcharge levels differed substantially across routes of similar length, while in some cases identical surcharges were applied to routes with significantly different distances. The court concluded that these practices reflected the absence of a coherent and economically justified methodology for setting fuel surcharges.

The proceedings also established that the company obtained aviation fuel from LLP ‘Petrosun’ through a government-administered distribution mechanism at prices significantly below prevailing market levels. This preferential access further called into question the necessity of imposing a separate fuel surcharge.

Taking these factors into account, the Court concluded that the application of the surcharge lacked sufficient economic justification and resulted in the generation of additional revenue through the abuse of a dominant position.

The revenue obtained from this practice was calculated only for profitable domestic routes operated by Air Astana, while FlyArystan, its low-cost subsidiary, was excluded from the calculation. According to the case materials the total revenue generated from the infringement during 2021 and the first five months of 2022 amounted to approximately KZT 17.5 billion. Following the Court's decision, Air Astana was fined KZT 876.9 million, equivalent to 5% of the identified revenue.

This case is classified as an instance of abuse of dominance. A description of the factual and legal background is provided above, while the detailed quantitative calculations underpinning the assessment are presented in the accompanying Excel workbook. The discussion below focuses specifically on the key assumptions and parameters used in the impact estimation.

Consistent with the adopted methodology, the impact assessment is based on three core elements: the size of the affected market, the estimated price effect, and the duration of the impact. Market size is approximated using Air Astana's revenue from domestic passenger air transport services, with all figures expressed in constant 2022 prices to ensure comparability over time. This approach allows the analysis to capture the economic scale of the activity directly influenced by the conduct in question.

The central parameter in the calculation is the price effect, defined as the avoided price increase attributable to the elimination of the fuel surcharge. According to the case materials, the surcharge applied by Air Astana ranged between KZT 4,000 and KZT 6,500 per ticket. Estimating the relative magnitude of this surcharge requires an approximation of average ticket prices in the domestic market, for which detailed route-level data are not publicly available.

In the absence of comprehensive official statistics, indicative estimates are derived from publicly available sources. Media reports<sup>1</sup> suggest that the average domestic airfare in 2019 was approximately USD 81, corresponding to KZT 31,003 at an average exchange rate of KZT 382.75 per US dollar. After adjusting for inflation, this figure provides a reasonable proxy for average fares expressed in 2022 prices. Additional sources indicate that domestic ticket prices typically ranged between KZT 25,000 and KZT 50,000, depending on the route and other factors such as demand conditions and booking timing.

Based on these data, a conservative assumption is adopted for the price effect. Specifically, it is assumed that the fuel surcharge resulted in at least an 8% increase in ticket prices, corresponding to a surcharge of KZT 4,000 relative to an upper-bound baseline fare of KZT 50,000. This assumption is deliberately cautious, as it captures only the direct mechanical contribution of the surcharge to prices and does not incorporate any indirect, such as those arising from reduced competitive pressure or strategic pricing responses.

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<sup>1</sup> TengriNews. В AirAstana объяснили цены на авиабилеты по Казахстану [J]. <https://tengrinews.kz/my-country/v-airastana-obyasnili-tsenyi-na-aviabiletyi-po-kazahstanu-500507/>

The duration of the impact is assumed to be five years. This reflects the view that, in the absence of regulatory intervention, the pricing practice could have continued over a prolonged period, thereby generating persistent effects on consumer welfare. While inherently uncertain, this assumption is consistent with standard practice in impact assessments, where the duration parameter is used to approximate the expected persistence of the infringement.

On the basis of these assumptions, the estimated economic benefit associated with preventing the infringement amounts to KZT 152.6 billion in 2022 prices. This figure represents the cumulative consumer gains arising from avoided price increases over the relevant period and provides an indication of the scale of the welfare effects that can result from effective competition enforcement in concentrated markets. The results are summarised in the table below and fully available in the Excel spreadsheet.

**Table 4. Summary statistics for the Air Astana JSC case**

| Parameter              | Value   |
|------------------------|---------|
| Turnover (KZT million) | 401,399 |
| Price Effect (%)       | 8.0%    |
| Duration (years)       | 5       |
| Impact (KZT million)   | 152,600 |

**Note:** From an impact assessment perspective, this case is an example of a dominant firm imposing unjustified charges on consumers. Intervention by the competition authority can be seen as preventing unjustified price increases and protecting consumer welfare as quantified above.

#### 2.3.2.2.2. Economic concentration: Acquisition of JSC Kcell by Kazakhtelecom JSC

As an example of impact assessment in cases of economic concentration, this report examines the acquisition by Kazakhtelecom JSC of a 75% stake in the voting shares of JSC Kcell in 2018. The transaction represents a significant example of consolidation within Kazakhstan's telecommunications sector and raises important questions regarding market structure and the effectiveness of regulatory oversight in merger control cases.

Kazakhtelecom JSC is the largest telecommunications operator in the Republic of Kazakhstan and has been active in the sector since 1994. The company provides a broad range of services, including broadband internet access, fixed-line telephony, digital television, and integrated telecommunications solutions. Due to its extensive infrastructure and long-standing market presence, Kazakhtelecom occupies a dominant position in several segments of the national telecommunications market, making any expansion of its activities subject to scrutiny under competition law.

At the time of the transaction, Kazakhtelecom already held a 49.5% ownership interest in Mobile Telecom-Service LLP, a company providing mobile telecommunications services under the Altel and Tele2 brands. This existing participation in the mobile segment meant that the acquisition of a controlling stake in JSC Kcell, a major mobile operator, had the potential to significantly alter

competitive conditions. Consequently, the transaction required prior approval under Kazakhstan's competition legislation, triggering a formal review process by the competent authority.

In its assessment, the Committee for Regulation of Natural Monopolies concluded that Kazakhtelecom and Mobile Telecom-Service LLP could not be considered part of a single economic group at that time. This determination was based primarily on the fact that the controlling stake in Mobile Telecom-Service LLP was held by a foreign partner, thereby limiting Kazakhtelecom's ability to exercise decisive influence over the company's strategic decisions. On this basis, the authority determined that the acquisition did not immediately result in excessive market concentration and granted approval for the transaction.

However, the market structure evolved rapidly following the approval. In June 2019, Kazakhtelecom acquired the remaining shares in Mobile Telecom-Service LLP, thereby securing full control over the company. By the end of that year, Kazakhtelecom simultaneously controlled both JSC Kcell and Mobile Telecom-Service LLP, effectively consolidating a substantial portion of the mobile telecommunications market under a single entity. This development led to a marked increase in market concentration and raised concerns regarding reduced competition and potential consumer harm.

It should be noted that this case is presented solely for illustrative purposes, with a primary focus on the 2018 acquisition of JSC Kcell and the regulatory assessment associated with it. Subsequent changes in ownership structure are not considered within the scope of this analysis, as they fall outside the temporal focus of the original transaction review.

An important feature of the case is that regulatory approval of the acquisition was accompanied by behavioural remedies aimed at mitigating potential negative effects on consumers. In particular, a three-year moratorium on increases in mobile service tariffs was imposed, reflecting concerns that increased concentration could lead to higher prices. While this measure provided temporary protection for consumers, its effects proved to be limited in duration. Following the expiration of the moratorium, mobile tariffs increased significantly across the market. In 2022, tariffs for Kcell services rose by approximately 27%, while certain Tele2 tariffs increased by between 25% and 37%. These developments highlight the challenges associated with designing effective remedies in merger control and underscore the importance of long-term impact assessment in cases involving high levels of market concentration.

As in the previous cases, the analysis is based on three core parameters: turnover, price effect, and duration of impact. Market size is proxied by the total revenue of participants in the mobile telecommunications sector, with all values expressed in constant 2022 prices to ensure temporal comparability. This measure captures the economic scale of the market potentially affected by the transaction and provides the basis for estimating the magnitude of consumer impact.

A key distinction between economic concentration cases and other types of competition infringements, such as abuse of dominance or cartels, is that the price effect cannot usually be observed directly. In this context, the assessment applies standard benchmark values, consistent with international practice and the recommendations set out in the Impact Assessment Guideline.

Specifically, an avoided price increase of 5% is assumed as in other countries in the world. This parameter reflects widely used approximations in merger analysis and is intended to represent a

cautious estimate of the potential upward pricing pressure resulting from increased market concentration. The use of a conservative benchmark helps to avoid overstating the effects of intervention, thereby enhancing the robustness and credibility of the results.

Support for this assumption can also be found in the specific conditions attached to the approval of the transaction. In particular, the merger was authorised subject to a three-year moratorium on increases in mobile service tariffs, indicating that the competition authority itself anticipated a risk of price increases. Notably, once this restriction expired, operators implemented significant tariff adjustments, with some service plans increasing by more than 20%. In this context, the assumed 5% price effect appears prudent and likely understates the full extent of potential price increases in the absence of intervention.

The duration of the impact is set at three years, corresponding to the period during which tariff restrictions were in force. This assumption reflects the time horizon over which regulatory measures directly constrained pricing behaviour and therefore defines the period during which consumer benefits from the intervention are most clearly identified.

On the basis of these assumptions, the estimated economic benefit associated with the intervention amounts to KZT 69.2 billion in 2022 prices. This figure represents the aggregate consumer welfare gains attributable to the prevention or mitigation of price increases during the relevant period and illustrates the potential economic significance of merger control in concentrated markets. The summary of the impact and key parameters is displayed in the table below.

**Table 5. Summary statistics for the acquisition of JSC Kcell by Kazakhtelecom JSC case**

| Parameter              | Value   |
|------------------------|---------|
| Turnover (KZT million) | 472,729 |
| Price Effect (%)       | 5.0%    |
| Duration (years)       | 3       |
| Impact (KZT million)   | 69,156  |

**Notes:** From an impact assessment perspective, this case illustrates how increased market concentration may translate into higher prices and demonstrates how competition authority decisions can influence market outcomes as demonstrated by the calculated impact in Table 5.

#### 2.3.2.2.3. Cartel agreement in the liquefied petroleum gas market of the Turkestan region

As an illustration of cartel enforcement, this report examines a case involving several liquefied petroleum gas (LPG) retailers operating in the Turkestan region. The case provides a useful example of how competition authorities identify and address coordinated behaviour in local commodity markets, particularly in sectors where pricing transparency and supply conditions may facilitate tacit or explicit collusion.

The investigation was initiated in 2022 by the Agency for Protection and Development of Competition following indications of potentially coordinated conduct during the period of November to December 2021. The authority's initial concerns were based on observed patterns of price alignment among competing retailers, which suggested the possibility of anti-competitive coordination. In particular,

several firms appeared to maintain similar retail price levels despite operating under differing cost conditions, raising questions about the independence of their pricing decisions.

A central element of the case was the existence of substantial LPG inventories that had been acquired at relatively low procurement prices prior to the observed increase in retail prices. Despite this, the companies proceeded to raise their retail prices almost simultaneously and to broadly comparable levels. Importantly, significant variations in procurement costs across firms were not reflected in their pricing behaviour, which would ordinarily be expected under competitive market conditions. This convergence in pricing, combined with the timing of the increases, constituted a key indicator of potential coordination.

During the proceedings, the companies sought to justify their pricing decisions by reference to objective economic factors, including increases in procurement, transportation, and other operational costs. However, the courts found these explanations insufficient and inconsistent with the evidence gathered during the investigation. In particular, the lack of a clear and proportional relationship between cost changes and price adjustments, together with the parallel pricing patterns observed across firms, led the courts to conclude that there was sufficient evidence of coordinated anti-competitive conduct aimed at maintaining elevated price levels.

As a result of these findings, administrative sanctions were imposed on the companies involved. These included financial penalties of up to 3% of annual revenue, as well as, in certain cases, the confiscation of monopoly income obtained through the infringement. The case underscores the importance of effective enforcement mechanisms in detecting and deterring cartel behaviour, particularly in essential commodity markets where such practices can have significant adverse effects on consumers and overall market efficiency.

As in the other cases, the assessment is based on three core parameters: turnover, price effect, and duration of impact. Market size is approximated using data on the revenues of LPG market participants, with all figures expressed in constant 2022 prices to ensure consistency across the analysis. This measure captures the scale of economic activity affected by the cartel and forms the basis for quantifying the resulting consumer harm.

In contrast to the economic concentration case, the price effect in cartel cases can be inferred from observed price dynamics during the period of coordinated behaviour. In this instance, the analysis relies on official statistics on retail LPG prices for November and December 2021, which correspond to the timeframe during which the anti-competitive conduct was identified. These data provide an empirical basis for estimating the magnitude of price increases associated with the cartel.

The estimation proceeds in two stages. First, the average monthly price increase is calculated based on the observed changes over the two-month period. This monthly rate is then annualised under the assumption that similar pricing dynamics would have persisted over a full twelve-month horizon in the absence of intervention. While this assumption necessarily involves a degree of simplification, it allows for a consistent conversion of short-term observed behaviour into an annualised estimate suitable for impact assessment.

Using this approach, the estimated price effect is 15.2%. This figure represents the potential annual price increase that could have been sustained had the coordinated conduct continued without

intervention. As such, it provides a proxy for the avoided price increase attributable to enforcement action and the termination of the cartel.

The duration of the impact is assumed to be four years, reflecting the likelihood that, in the absence of regulatory intervention, the anti-competitive arrangement could have persisted over a prolonged period. This assumption is consistent with standard practice in cartel impact assessments, where the duration parameter is used to approximate the expected longevity of collusive behaviour.

On the basis of these assumptions, the estimated economic benefit associated with preventing the cartel amounts to KZT 432.2 million in 2022 prices. This figure represents the cumulative consumer gains resulting from avoided price increases over the relevant period and illustrates the tangible welfare effects that can arise from effective cartel enforcement, even in relatively small and locally concentrated markets. The results and parameters are summarised in Table 6.

**Table 6. Summary statistics for the acquisition of liquefied petroleum gas market of the Turkestan region case**

| Parameter              | Value  |
|------------------------|--------|
| Turnover (KZT million) | 741    |
| Price Effect (%)       | 15.15% |
| Duration (years)       | 4      |
| Impact (KZT million)   | 432    |

**Notes:** From an impact assessment perspective, this case demonstrates how cartel behaviour directly affects consumer prices and how intervention can restore competitive conditions and reduce consumer harm.

### 2.3.2.3. Overall Results

The estimated impacts are summarised in the table below.

**Table 7. Summary overall results**

| Case                               | Type of infringement   | Turnover KZT million | Price effect % | Duration years | Impact KZT million |
|------------------------------------|------------------------|----------------------|----------------|----------------|--------------------|
| Air Astana JSC                     | Abuse of dominance     | 401,399              | 8.0%           | 5              | 152,600            |
| Kazakhtelecom JSC / JSC Kcell      | Economic concentration | 472,729              | 5.0%           | 3              | 69,156             |
| LPG Market of the Turkestan Region | Cartel conduct         | 741                  | 15.2%          | 4              | 432                |
| <b>Total</b>                       |                        |                      |                |                | <b>222,189</b>     |

The largest estimated impact is associated with the Air Astana case, which accounts for approximately 69% of the total measured effect. This result is primarily driven by two factors: the substantial size of the domestic aviation market and the relatively long duration over which the

identified pricing practices were assumed to have affected consumers. Together, these elements significantly amplify the overall magnitude of the estimated economic benefit arising from the intervention.

By contrast, the smallest estimated impact is observed in the LPG cartel case. This outcome largely reflects the more limited scale of the regional market in which the infringement occurred. Nevertheless, the case remains important from an analytical perspective, as it demonstrates that even localised anti-competitive behaviour can generate measurable negative effects on consumer welfare. As such, it highlights the relevance of enforcement activities not only in large national markets but also in smaller, regionally bounded sectors.

It is important to emphasise that these estimates relate exclusively to the selected case studies and do not capture the full scope of the Agency for Protection and Development of Competition (APDC)'s activities. Rather than providing a comprehensive measure of overall impact, they are intended to illustrate the practical application of the adopted methodology and to demonstrate how economic effects can be quantified in specific enforcement contexts.

At the same time, the results enable the calculation of an additional performance indicator: the benefit-to-cost ratio of competition enforcement. By comparing the estimated economic benefits generated by the reviewed cases with APDC's budgetary expenditures over the corresponding period, it is possible to derive an indicative measure of efficiency. The analysis suggests that each KZT 1 of public expenditure allocated to the Agency is associated with approximately KZT 23.32 in potential economic benefits. This implies a benefit-to-cost ratio of 23.32, pointing to a substantial return on public resources devoted to competition policy. Even when based on a limited and illustrative set of cases, this finding underscores the potential economic impact of competition enforcement.

**Highlights:** The application of the ex-ante impact assessment methodology to three APDC cases demonstrates how competition enforcement outcomes can be translated into measurable economic benefits for consumers. Using a consistent framework based on affected turnover, estimated price effects, and the duration of impacts, the analysis quantifies the benefits arising from interventions against abuse of dominance, merger-related competition concerns, and cartel conduct. The results suggest that these interventions generated an estimated KZT 222.2 billion in consumer benefits, with the Air Astana and Kazakhtelecom/Kcell cases accounting for the largest share of the impact due to the scale of the affected markets. Although the case studies are illustrative rather than comprehensive, they show that competition enforcement can produce substantial economic gains and deliver a high return on public resources, with the estimated benefit-to-cost ratio indicating that each KZT 1 spent on competition enforcement generated approximately KZT 23.3 in potential consumer benefits. This highlights both the practical value of the methodology and the significant contribution of competition policy to consumer welfare and market efficiency.

## 2.4. Recommendations for conducting ex-ante impact assessments in the future

Building on international experience and established methodological guidance, several practical recommendations can be identified to support the effective implementation of impact assessments by competition authorities. These recommendations aim to ensure that assessments are credible, operational, and sustainable over time, while remaining proportionate to available resources.

First, it is essential to establish clear internal guidelines and standardised procedures. A well-defined methodological framework, typically set out in an internal document, ensures consistency across case teams and over time. Such guidelines should specify definitions, parameter values, and data requirements, while also allowing for case-specific adjustments where justified. The OECD explicitly highlights the importance of consistency and transparency in maintaining the credibility of impact assessments. In practice, many authorities progressively refine these guidelines as experience accumulates.

Second, authorities should prioritise simplicity and proportionality in implementation. The success of impact assessment frameworks lies in their ability to be applied systematically across a wide range of cases. Overly complex methodologies risk becoming impractical and resource-intensive. For this reason, the use of simple formulas and conservative assumptions is generally preferred over highly detailed modelling, except in cases where sufficient data and analytical capacity justify more sophisticated approaches. A pragmatic balance between analytical rigour and operational feasibility is therefore required.

Third, data collection and management should be integrated into case work processes. A key constraint in conducting impact assessments is the availability of reliable data on turnover, pricing, and market conditions. Authorities should therefore ensure that relevant data are systematically gathered during investigations, so that they can be readily used for subsequent impact estimation. For example, during the investigation of a cartel, the authority may obtain case-specific evidence on the magnitude of the price overcharge, the likely duration of the cartel absent intervention, and the turnover of cartel participants in the affected market(s). Wherever available, such information should be stored and used in preference to default assumptions. In cases where data gaps persist, well-documented proxies or benchmark values can be employed to ensure continuity of the analysis while maintaining transparency and consistency.

Ex-post impact assessment (infra, Section 3), typically based on the construction of counterfactual scenarios, provides an alternative and often more rigorous approach to quantify the parameters and assess the robustness of the ex-ante calculated impact. Alternatives are expensive ad-hoc market surveys. However, ex-post assessment and surveys are generally more resource-intensive, requiring substantial data and time, and may not be feasible for a large number of cases. For this reason, ex-ante impact assessment remains the preferred methodology for routine and systematic evaluation of agency activities.

Fourth, the use of conservative and evidence-based assumptions should remain a guiding principle. Given the reliance on parameter values such as price effects and duration, it is important that assumptions are grounded in empirical literature and international practice, while erring on the side of caution. This reduces the risk of overstating impacts and strengthens the defensibility of results in external scrutiny. At the same time, authorities should periodically review and update these

assumptions in light of new evidence, including findings from ex-post evaluations and academic research.

Fifth, authorities should complement point estimates with sensitivity analysis and ranges. Given the inherent uncertainty surrounding key parameters, presenting a range of estimates, based on low, central, and high scenarios, can enhance transparency and provide a more nuanced picture of potential impacts. This approach is particularly useful when communicating results to stakeholders, as it highlights both the robustness of the methodology and the limits of precision.

Sixth, results should be aggregated and reported in a way that ensures stability and comparability over time. Many authorities report annual estimates alongside multi-year rolling averages to smooth fluctuations arising from the timing of major cases. In addition, disaggregation by case type, such as cartels, mergers, and abuse of dominance, can provide valuable insights into the sources of impact and support strategic decision-making.

Seventh, institutional arrangements should support coordination and quality control. This may involve establishing a dedicated team or focal point responsible for overseeing impact assessments, reviewing assumptions, and ensuring consistency across cases. In some jurisdictions, estimates are also subject to internal or external (preferred) review, which further enhances their credibility and robustness.

Eighth, it is possible to incorporate an analysis of deterrence, along with distributional effects based on available data, in an appendix to the impact report. Such analysis could help quantify the broader effects of decisions and identify which groups benefit the most in relative terms.

**Highlights:** International experience suggests that successful impact assessment frameworks depend not only on sound methodology but also on effective implementation and institutionalisation. Competition authorities should adopt clear and standardised guidelines, integrate data collection into case investigations, and rely on simple, transparent, and conservative methodologies that can be applied consistently across a wide range of cases. Assumptions regarding price effects, duration, and turnover should be evidence-based and regularly reviewed, while uncertainty should be communicated through sensitivity analysis and impact ranges. To enhance credibility and usefulness, results should be systematically aggregated, reported over time, and supported by appropriate quality-control mechanisms. More broadly, impact assessment should be viewed as an evolving process, where routine ex ante evaluation is complemented, where feasible, by ex post analysis, allowing authorities to progressively refine their methods and expand the assessment to include wider effects such as deterrence and distributional impacts.

### 3. Ex-post impact assessment methodology

After an extended discussion of ex-ante impact assessment, it is useful to turn attention to the complementary question of what competition authorities can achieve when time is more on their side. While ex-ante assessment is inherently predictive, seeking to anticipate the likely effects of a proposed intervention before a decision is taken or before the impact has materialised, ex-post impact assessment is retrospective in nature. Its objective is to determine whether an intervention produced the outcomes that were expected, whether it generated unintended consequences, whether it ultimately enhanced consumer welfare and market performance. This can serve to measure the societal impact. In this sense, ex-post assessment provides an essential reality check on the assumptions, theories, and analytical frameworks that underpin competition policy. It also offers the possibility to test the tools used ex-ante and assess the impact after time has passed.

The growing interest in ex-post impact assessment reflects broader developments in evidence-based policymaking. Public authorities are increasingly expected not only to justify their decisions at the time they are made but also to demonstrate that those decisions delivered measurable benefits. In competition policy, this expectation is particularly important because interventions often involve substantial uncertainty. Merger prohibitions, cartel enforcement, abuse of dominance cases, and market investigations are typically based on forecasts of how firms, consumers, and competitors are likely to behave. Retrospective evaluation offers an opportunity to compare these predictions with actual market outcomes and thereby assess the effectiveness of enforcement actions.

Ex-post impact assessment serves several distinct purposes. First, it provides accountability by enabling competition authorities to demonstrate the value of their activities to governments, stakeholders, and taxpayers through a quantification of the impact achieved with their decisions. Second, it contributes to organisational learning by identifying strengths and weaknesses in existing decision-making processes. Third, it supports methodological development by testing the validity of analytical tools, parameters and economic models used in competition cases. Through these functions, retrospective assessment helps ensure that competition policy remains grounded in empirical evidence rather than solely in theoretical reasoning.

A key feature of ex-post assessment is its focus on causality. Observed changes in prices, output, innovation, quality, or market structure cannot automatically be attributed to a specific intervention. Markets evolve continuously in response to technological change, macroeconomic developments, regulatory reforms, and strategic actions by firms. The central challenge for evaluators is therefore to establish a credible counterfactual: what would have happened in the absence of the intervention. Much of the methodological literature on impact and ex-post evaluation is devoted to identifying suitable approaches for constructing this counterfactual and isolating the effects of competition policy decisions from other contemporaneous influences.

Compared with ex ante assessment, ex-post assessment benefits from the availability of realised data, allowing researchers to examine actual market outcomes rather than predicted ones. However, this advantage is accompanied by its own challenges. Data may be incomplete, relevant variables may be difficult to observe, and the effects of interventions may emerge only over long periods of time. Moreover, retrospective evaluations often require significant analytical resources

and access to detailed market information. As a result, while ex-post assessment can provide powerful insights, it is not simply a more straightforward version of ex-ante analysis.

The relationship between ex-ante and ex-post assessment is best understood as complementary rather than competing. Ex-ante analysis remains indispensable because competition authorities must make decisions before outcomes are known. Nevertheless, the quality of future ex-ante assessments can be improved through systematic learning from experience. By examining which predictions proved accurate and which did not, authorities can refine their analytical frameworks, improve forecasting methods, and develop a better understanding of markets. The feedback loop created by retrospective evaluation is central to the continuous improvement of competition enforcement and justification of their budget.

Within competition policy, ex-post assessment can be applied to a wide range of interventions, including merger control, cartel enforcement, abuse of dominance cases, market studies, and regulatory advocacy initiatives, and for APDC, also to assess the impact of privatization. The methodologies employed vary according to the nature of the intervention and the availability of data, ranging from descriptive analyses and case studies to sophisticated econometric techniques designed to estimate causal effects. Despite this diversity, all ex-post assessments share the common objective of evaluating the real-world consequences of public action.

The remainder of this section focuses specifically on methods to conduct ex-post, or retrospective, evaluation of competition authorities' impacts. It discusses the principal methodological approaches used in the literature.

**Highlights:** Ex-post impact assessment is concerned with measuring the actual effects of competition policy interventions after the impact has materialised. Its primary objective is not merely to review past decisions, but to quantify the impact those decisions have had on market outcomes, such as prices, output, quality, innovation, and consumer welfare. By comparing observed outcomes with a carefully constructed counterfactual, ex-post impact assessment seeks to determine what changes can genuinely be attributed to an intervention and to estimate the magnitude of those effects. In doing so, it provides direct evidence on the effectiveness of competition policy, helps demonstrate the benefits generated by enforcement activity, and creates an empirical foundation for improving future decision-making.

### 3.1. Methodologies used in ex-post impact evaluation

The defining challenge of ex-post impact evaluation is the construction of a credible counterfactual. Once a merger has taken place, a cartel has been dismantled, or a remedy has been imposed, we observe what happened in the market. What we do not observe is what would have happened had the intervention never occurred. Because this alternative outcome is inherently unobservable, ex-post evaluation is fundamentally an exercise in causal inference. Its purpose is not simply to document market developments after a decision, but to determine how much of those developments can genuinely be attributed to the decision itself.

The methods available to competition economists differ primarily in how they construct this counterfactual. Some methods rely on comparisons with similar markets that were not affected by the intervention. Others use structural economic models to simulate an alternative world. More

recent approaches combine machine learning with causal inference. Although the methodological toolkit has expanded considerably over time, the central objective remains unchanged: to isolate the effect of a competition-policy intervention from the many other forces that simultaneously influence market outcomes.

### 3.1.1. Comparators

The most intuitive way to evaluate a competition policy decision is simply to compare market outcomes before and after the intervention. If prices fall, quality improves, innovation increases, or market concentration declines following the decision, one might conclude from a comparison between before and after, that the intervention was successful and the analysis could be used to quantify the impact. Similarly, one might compare outcomes in the affected market with those observed in another market at the same point in time and attribute any differences to the intervention.

Unfortunately, neither approach is generally reliable. A before-and-after comparison cannot distinguish the effect of the intervention from broader developments affecting the market or the economy. Macroeconomic conditions, technological change, regulatory reforms, shifts in consumer demand, or changes in firms' costs and strategies may all influence observed outcomes independently of the competition policy decision itself. Likewise, a simple comparison across markets may reflect underlying differences that existed long before the intervention took place.

These difficulties illustrate a fundamental principle of ex-post impact assessment. Observing a change after a competition policy intervention does not, by itself, demonstrate that the intervention caused that change. Credible impact assessment therefore requires methodologies capable of isolating the causal effect of the decision from other contemporaneous influences. It is for this reason that modern ex-post impact studies rely on formal causal inference techniques and carefully constructed counterfactuals rather than simple descriptive comparisons.

### 3.1.2. Difference-in-differences

Difference-in-differences (DiD) remains one of the most widely used methodologies in ex-post impact assessment within competition policy. Its appeal lies in its relative simplicity and its ability to estimate the causal impact of an intervention using observable data. Rather than examining outcomes only in the market affected by a competition policy decision, the method compares changes in outcomes in the affected market (treatment) with changes in a comparable but unaffected market (control). By focusing on differences in outcomes over time across treatment and control groups, DiD seeks to isolate the impact attributable to the intervention itself.

The basic intuition is straightforward. Suppose a competition policy intervention is followed by a reduction in prices, an increase in output, or an improvement in product quality. Taken in isolation, such changes might suggest that the intervention was effective. However, if similar changes occurred over the same period in a comparable market that was not affected by the intervention, then only part of the observed change can plausibly be attributed to the policy action. Difference-in-differences formalises this comparison and provides an estimate of the intervention's impact by netting out broader market and economic developments that affect both groups.

The credibility of a difference-in-differences analysis depends primarily on the parallel trends' assumption. This assumption requires that, in the absence of the intervention, the treatment and control groups would have evolved in a similar manner over time. Because the untreated outcome for the affected market is inherently unobservable, the assumption cannot be tested directly. Nevertheless, researchers can assess its plausibility by examining whether the treatment and control groups exhibited similar trends prior to the intervention.

Several additional considerations are important for the credible estimation of impacts. The treatment and control groups must be sufficiently comparable, and the control group should not itself be indirectly affected by the intervention through spillovers or strategic responses. Analysts must also account for the possibility that the intervention is correlated with unobserved factors that influence outcomes. Careful treatment of statistical inference, including the appropriate clustering of standard errors, is similarly necessary to ensure reliable impact estimates.

The selection of an appropriate control group is often the most critical aspect of research design. Depending on the nature of the competition policy decision under examination, researchers may use unaffected firms, industries, geographic markets, or products as comparators. Increasingly, formal matching and data-driven selection procedures are employed to strengthen the credibility of the counterfactual and reduce concerns that results are driven by arbitrary comparator choices.

Equally important is the treatment of time. The impacts of competition policy interventions often emerge gradually and may evolve in both magnitude and direction. Evaluations conducted shortly after an intervention may capture transitional adjustments rather than longer-term effects, whereas evaluations conducted much later may be influenced by unrelated market developments. For this reason, best practice in ex-post impact assessment increasingly relies on dynamic specifications that trace the evolution of impacts over time rather than focusing solely on a single average treatment effect, as discussed below.

### **3.1.3. Matching methods**

A closely related class of methods in ex-post impact assessment seeks to improve the credibility of causal estimates by enhancing the comparability of treated and control groups before impacts are estimated. These approaches are commonly referred to as matching methods. Their objective is to construct a more credible counterfactual by ensuring that affected and unaffected units are similar in relevant characteristics prior to the intervention.

The basic idea is simple. Rather than comparing units affected by a competition policy intervention with all unaffected units, researchers identify unaffected firms, markets, products, or industries that closely resemble the treated units on observable characteristics. These characteristics may include measures of concentration, market size, growth rates, entry conditions, product features, or any other pre-intervention factors that are likely to influence subsequent outcomes. By improving comparability, matching methods help reduce biases arising from systematic differences between treated and untreated units.

The most widely known approach is propensity score matching, in which the probability of being subject to a competition policy intervention is first estimated using observable characteristics. Treated observations are then matched with untreated observations exhibiting similar estimated

probabilities. More recent applications increasingly employ alternative techniques, including nearest-neighbour matching, genetic matching, and machine-learning-assisted procedures, which can often achieve better balance between treated and control groups and improve the quality of the resulting counterfactual.

Matching methods are particularly valuable in competition policy settings because interventions are rarely assigned randomly. Firms, markets, or industries affected by competition policy decisions often differ systematically from those that are not. Consequently, direct comparisons between affected and unaffected units may produce misleading estimates of impact. By constructing more comparable control groups, matching can strengthen the credibility of ex-post impact assessments and improve the interpretation of observed differences in outcomes.

In practice, matching is frequently used as a preliminary step before applying other causal inference methods, particularly difference-in-differences. Combining matching with subsequent impact estimation allows researchers both to improve the comparability of treatment and control groups and to account for common trends affecting both groups over time.

Nevertheless, matching has important limitations. While it can reduce biases associated with observable characteristics, it cannot address differences arising from unobservable factors that influence both the intervention and the outcomes of interest. As a result, matching alone is rarely sufficient to establish causality. It is best viewed as a tool for strengthening the design of ex-post impact assessments and as a complement to other methodologies aimed at identifying the causal effects of competition policy interventions.

#### **3.1.4. Staggered treatment and heterogeneous effects**

An important methodological development in ex-post impact assessment concerns situations in which competition policy interventions occur at different points in time. Such staggered treatment settings are common in competition policy, where decisions relating to mergers, cartels, abuse of dominance cases, remedies, or market investigations are implemented across different periods and may have heterogeneous effects. Increasingly, ex-post impact assessments seek to evaluate the effects of multiple interventions simultaneously, making it essential to account properly for differences in treatment timing.

A growing econometric literature has shown that conventional difference-in-differences models based on two-way fixed effects may produce misleading estimates in these settings. Goodman-Bacon (2021) demonstrated that the standard estimator can generate weighted averages of treatment effects that are difficult to interpret when treatment timing varies across units. Building on these insights, Callaway and Sant’ Anna (2021), Sun and Abraham (2021), and de Chaisemartin and D’Haultfœuille (2020) showed that biases can arise because units that have already been treated may inadvertently serve as controls for units treated at a later date. When treatment effects vary over time or across interventions, this can lead to distorted estimates of impact.

In response, a new generation of estimators has been developed to address these concerns. These methods explicitly account for variation in treatment timing and allow treatment effects to differ across units and over time. Rather than producing a single average effect that may obscure

important heterogeneity, they generate more transparent estimates of how impacts evolve following an intervention and how they differ across groups of treated units.

For large-scale ex-post impact assessments covering multiple competition policy decisions, the use of these modern approaches is increasingly regarded as best practice. By accommodating staggered intervention timing and heterogeneous treatment effects, they provide more credible estimates of policy impacts and help ensure that observed effects are attributed correctly to the interventions under study rather than to methodological artefacts.

### **3.1.5. Synthetic control method**

In some ex-post impact assessments, identifying an appropriate comparison group is difficult or even impossible. This challenge frequently arises when evaluating a major competition policy intervention that affects a unique firm, market, sector, or jurisdiction for which no single untreated counterpart provides a credible counterfactual. In such circumstances, conventional comparison-based approaches may be difficult to implement reliably.

Synthetic control methods were developed to address precisely this problem (Abadie and Gardeazabal, 2003; Abadie, Diamond and Hainmueller, 2010). Rather than selecting a single control unit, the method constructs a synthetic comparison unit as a weighted combination of multiple untreated units. The weights are chosen so that the synthetic unit closely matches the characteristics and pre-intervention trajectory of the treated unit across a set of relevant variables. The objective is to reproduce as closely as possible the outcome that would have been observed in the absence of the intervention.

Once the synthetic control has been constructed, it serves as the counterfactual against which the effects of the competition policy decision can be assessed. Any divergence between the observed outcomes for the treated unit and the outcomes of its synthetic counterpart after the intervention is interpreted as an estimate of the intervention's impact. The method therefore provides a transparent framework for measuring the causal effects of competition policy actions when traditional control groups are unavailable or unconvincing.

Synthetic control methods have become increasingly influential in ex-post impact assessment because they offer a systematic and transparent approach to counterfactual construction. Unlike many alternative methodologies, the contribution of each comparison unit can be observed directly through the assigned weights, making the resulting estimates relatively easy to communicate to policymakers, courts, and other stakeholders. This transparency has made the method particularly attractive in policy evaluation settings where credibility and interpretability are important alongside statistical rigor.

Nevertheless, the approach has important requirements and limitations. Its reliability depends on the availability of a sufficiently long pre-intervention period over which the synthetic control can be calibrated, as well as a sufficiently rich pool of potential comparison units from which the counterfactual can be constructed. Where these conditions are not met, the synthetic control may provide a poor approximation of the untreated outcome, thereby limiting the credibility of the resulting impact estimates. Despite these limitations, synthetic control methods have become an

important component of the ex-post impact assessment toolbox, particularly in cases involving large, unique, or highly visible competition policy interventions.

### 3.1.6. Regression discontinuity design

A further methodology used in ex-post impact assessment is the regression discontinuity design (RDD). This approach is applicable when the implementation of a competition policy intervention is determined, wholly or partly, by a predefined threshold. Such thresholds arise in a variety of competition policy settings. For example, merger notification requirements are frequently based on turnover thresholds, certain regulatory obligations may apply only to firms above a specified size, and competition authorities may allocate scrutiny or resources according to observable criteria linked to market structure or firm characteristics. Whenever treatment changes discontinuously at a known cutoff, regression discontinuity methods may provide a credible basis for estimating causal impacts.

The intuition underlying the approach is straightforward. Units located just above a threshold are often very similar to units located just below it. If an intervention applies only to those on one side of the threshold, any discontinuity in outcomes at the cutoff can be attributed to the intervention itself, provided that other determinants of the outcome vary smoothly around the threshold. The resulting comparison is analogous to a local experiment in which otherwise similar units are exposed to different treatment status solely because they fall on opposite sides of the cutoff.

In the context of ex-post impact assessment, RDD seeks to identify the causal effect of a competition policy intervention by comparing outcomes for observations immediately above and below the relevant threshold. For example, researchers might compare transactions that narrowly exceed a merger-notification threshold with those that narrowly fall short, or firms that become subject to a particular regulatory requirement with otherwise similar firms that remain outside its scope. Because the treated and untreated units are highly comparable, observed differences in outcomes can often be interpreted as evidence of the intervention's impact.

The principal attraction of regression discontinuity designs is their strong identification properties. Under relatively weak assumptions, they can generate highly credible causal estimates and are often regarded as one of the most rigorous quasi-experimental approaches available (Imbens and Lemieux, 2008; Lee and Lemieux, 2010). For this reason, RDD has become an increasingly important tool in applied policy evaluation whenever suitable thresholds are present.

Nevertheless, the method also has important limitations. Most notably, regression discontinuity estimates are local in nature, capturing the impact of the intervention only for observations located near the threshold. Consequently, the estimated effects may not be representative of the broader population of firms, markets, or decisions affected by the policy. In addition, the method requires a clearly defined cutoff and sufficient observations around the threshold to support reliable statistical inference.

Although regression discontinuity designs have been used less frequently in ex-post competition policy impact assessments than methodologies such as difference-in-differences or synthetic control methods, they offer one of the most compelling approaches for identifying causal impacts when appropriate thresholds exist. Where the institutional setting provides a clear assignment rule,

RDD can generate particularly persuasive evidence regarding the effectiveness of competition policy interventions.

### **3.1.7. Event studies**

A complementary approach to ex-post impact assessment focuses not on realised product-market outcomes, but on financial-market reactions to competition policy interventions. Stock-market event studies use movements in share prices around key announcements (MacKinlay, 1997; Kothari and Warner, 2007), investigations, decisions, or remedies to infer how investors expect an intervention to affect future competition and profitability. Because financial markets rapidly incorporate new information into asset prices, observed stock-price reactions can provide valuable evidence regarding the anticipated impact of competition policy actions (Duso, Neven and Röller, 2007; Duso, Gugler and Szucs, 2013).

The underlying logic is straightforward. If investors believe that a competition policy intervention will strengthen competition and reduce firms' market power, the expected future profits of affected firms may decline, leading to a fall in their share prices. Conversely, if an intervention is expected to enhance efficiency, improve market performance, or reduce uncertainty, market valuations may respond positively. Examining the reactions of competitors, suppliers, customers, and other related firms can also provide insights into the channels through which the intervention is expected to affect market outcomes.

Event studies offer several advantages for ex-post impact assessment. Most importantly, they can be implemented shortly after a competition policy decision, rather than requiring years of post-intervention data. They can therefore provide timely evidence regarding expected impacts and can often be applied to a much larger set of cases than methodologies requiring detailed market-level outcome data. Their relatively modest data requirements have made them particularly popular in studies evaluating the effectiveness of competition policy enforcement.

At the same time, event studies have important limitations. Most fundamentally, they measure market expectations about future impacts rather than realised outcomes. Investors may misjudge the consequences of a competition policy intervention, and expectations formed at the time of an announcement may differ from the effects that ultimately materialise. Consequently, event studies are best viewed as a complement to other ex-post impact assessment methodologies. While they provide valuable information about the impacts anticipated by market participants, they cannot on their own establish whether those impacts were eventually realised.

### **3.1.8. Simulation and structural methods**

Whereas reduced-form methods estimate impacts by comparing treated and untreated units, structural approaches seek to construct the counterfactual explicitly using an economic model of market behaviour (Reiss and Wolak, 2007; Nevo and Whinston, 2010). Rather than inferring the effects of a competition policy intervention from observed differences in outcomes, structural methods use estimates of consumer demand, firm conduct, and market equilibrium to simulate what outcomes would have occurred under alternative scenarios. The primary objective is to

quantify the impact of an intervention by comparing actual outcomes with outcomes generated under a model-based counterfactual.

Structural simulation is particularly useful in ex-post impact assessment when policymakers wish to evaluate not only the observed consequences of an intervention but also the outcomes that might have arisen under alternative policy choices. For example, a retrospective assessment may seek to compare realised market outcomes with those that would have emerged under a different remedy, a more stringent intervention, or no intervention at all. Such questions are often difficult, and sometimes impossible, to address using conventional reduced-form methods because the relevant counterfactuals were never observed. Structural models provide a framework for analysing these hypothetical scenarios and estimating their implications for prices, output, quality, innovation, profits, and consumer welfare (Peters, 2006; Weinberg and Hosken, 2013).

The principal advantage of structural approaches is their ability to address policy questions that extend beyond the observed data. By explicitly modelling the mechanisms through which interventions affect market behaviour, they can provide detailed insights into the channels and magnitude of policy impacts. As a result, structural methods have become an important component of ex-post impact assessment, particularly in settings where decision-makers are interested in understanding how alternative interventions might have influenced market outcomes.

Nevertheless, these advantages come at the cost of stronger modelling assumptions. The credibility of the resulting impact estimates depends on the validity of the underlying economic model, including assumptions regarding consumer demand, firm behaviour, market structure, entry and exit, and the nature of competitive interactions. If these assumptions are mis-specified, the estimated impacts may be misleading. Consequently, structural analyses are typically subjected to extensive sensitivity testing and validation exercises.

Reduced-form methods provide evidence that is often considered more transparent and less dependent on modelling assumptions, while structural approaches offer greater flexibility in analysing unobserved counterfactuals and alternative policy scenarios. When both approaches produce similar conclusions regarding the impact of a competition policy intervention, confidence in the findings is substantially strengthened.

### **3.1.9. Machine-learning-based causal methods**

Recent years have witnessed growing interest in the use of machine learning techniques within ex-post impact assessment. These approaches are typically combined with causal inference methods to improve the estimation of policy impacts in settings characterised by large datasets, numerous covariates, and potentially complex relationships between interventions and outcomes. Rather than replacing traditional impact-assessment methodologies, machine learning tools aim to enhance researchers' ability to construct credible counterfactuals, control for confounding factors, and identify heterogeneity in treatment effects.

One of the most prominent developments is double or debiased machine learning, introduced by Chernozhukov et al. (2018). This framework allows researchers to control flexibly for a large number of observable variables while preserving valid statistical inference for the causal parameter of interest. In the context of ex-post impact assessment, this can improve the estimation of

intervention effects when outcomes are influenced by many potentially relevant market, firm, or industry characteristics. By combining machine learning prediction methods with econometric techniques designed for causal analysis, double machine learning seeks to reduce model-selection bias while maintaining interpretability.

A related strand of research focuses on treatment-effect heterogeneity. Methods such as causal forests (Athey and Wager, 2019) are designed not only to estimate the average impact of an intervention, but also to identify how impacts vary across different units or contexts. In competition policy, such approaches can be used to examine whether interventions are more effective in certain types of markets, industries, firms, or institutional environments. This ability to uncover heterogeneity is particularly valuable because the effectiveness of competition policy interventions often differs substantially across cases.

These methods are especially useful for ex-post impact assessments that seek to evaluate the cumulative effects of large numbers of competition policy interventions. Competition authorities frequently possess extensive datasets covering hundreds or thousands of cases over long periods. Machine learning techniques can help researchers exploit these data more effectively by identifying patterns, nonlinear relationships, and sources of heterogeneity that may be difficult to detect using conventional econometric models.

Nevertheless, machine learning methods do not eliminate the fundamental challenges of causal inference. Their results remain dependent on the underlying identification strategy, the quality of the available data, and the validity of the assumptions used to establish causality. Techniques such as difference-in-differences, synthetic control methods, regression discontinuity designs, and structural modelling continue to provide the causal framework within which machine learning tools can be most effectively applied.

### **3.1.10. Matching the method to the question**

No single methodology is universally best suited for ex-post impact assessment. The appropriate choice depends on the nature of the competition policy intervention being evaluated, the available data, and the type of counterfactual required to identify and quantify its impact. Different methodologies address different evaluation challenges and provide alternative perspectives on the effectiveness of competition policy decisions.

Difference-in-differences is often a natural starting point when a credible comparison group can be identified, while matching techniques can improve the quality of that comparison by increasing the similarity between treatment and control units. Synthetic control methods are particularly valuable when the intervention affects a unique market, firm, or sector for which no obvious comparator exists. Regression discontinuity designs offer especially strong causal identification when interventions are assigned according to observable thresholds. Event studies provide insights into the impacts anticipated by financial markets, whereas structural simulation approaches are particularly useful for assessing counterfactual scenarios and welfare effects that cannot be observed directly. More recently, machine-learning methods have expanded the ex-post impact assessment toolkit by facilitating the analysis of large datasets and uncovering potentially important sources of treatment-effect heterogeneity.

In practice, the most informative ex-post impact assessments increasingly combine multiple methodologies. The use of several approaches allows researchers to triangulate evidence, comparing results obtained from different methods to assess their consistency and robustness. Such triangulation can help strengthen confidence in estimated impacts, identify weaknesses in particular methodologies, and provide a more comprehensive understanding of how and why competition policy interventions affect market outcomes.

The objective of ex-post impact assessment is not to identify a universally superior method, but rather to select the methodology, or combination of methodologies, that is most capable of providing a credible estimate of the intervention's impact. The choice should always be guided by the policy question under investigation, the characteristics of the intervention, the available evidence, and the plausibility of the underlying identification assumptions.

In many cases, combining methodologies can substantially enhance the quality of the assessment. Quantitative approaches designed to estimate causal impacts may be complemented by structural modelling to evaluate alternative policy scenarios, or by qualitative evidence that helps explain the mechanisms through which impacts arise. Information on market entry, innovation, firm behaviour, or strategic responses can often provide valuable context for interpreting estimated effects and understanding the broader consequences of an intervention.

Equally important is methodological transparency. Ex-post impact assessments should routinely report robustness checks, alternative specifications, sensitivity analyses, and tests of the underlying assumptions. Alternative control groups, placebo tests, and different modelling choices should be presented wherever feasible. Since impact estimates are often sensitive to methodological decisions, transparency regarding these choices is essential for assessing the credibility and reliability of the findings.

Finally, researchers and competition authorities should be transparent about the limitations of their evidence. Ex-post impact assessments are rarely conducted under ideal experimental conditions, and many evaluations face challenges such as data limitations, imperfect counterfactuals, spillover effects, or selection bias in the choice of cases for review. Acknowledging these limitations does not weaken the value of ex-post impact assessment. On the contrary, a clear discussion of the strengths and weaknesses of the evidence enhances the credibility of the analysis and contributes to a more balanced interpretation of the estimated impacts of competition policy interventions.

**Highlights:** The central challenge in ex-post impact assessment is the construction of a credible counterfactual: determining what would have happened in the absence of a competition policy intervention. Because this outcome is inherently unobservable, ex-post impact assessment is fundamentally an exercise in causal inference aimed at isolating and quantifying the effects that can genuinely be attributed to a decision rather than to other market developments. Over time, economists have developed a rich methodological toolkit to address this challenge. These methods range from comparator-based approaches, such as difference-in-differences, matching, synthetic control, and regression discontinuity designs, to event studies that exploit financial-market information, structural models that explicitly simulate alternative scenarios, and newer machine-learning techniques that combine predictive power with causal inference. While these approaches differ in their assumptions, data requirements, and applications, they share a common objective: providing credible estimates of the real-world impact of competition policy interventions. The following sections review the principal methodologies used in ex-post impact assessment and discuss their respective strengths, limitations, and areas of application.

### 3.2. Ex-post impact calculation

Ex-post impact assessment should build directly on the logic of the ex-ante methodology, while replacing assumptions and forecasts with observable market outcomes. The objective is to quantify the actual price change following the decision and determine the duration of the price effect. This ensures methodological consistency between the predictive analysis undertaken ex-ante and the realised effects measured ex-post. By retaining the same conceptual framework, the ex-post assessment allows a meaningful comparison between expected and estimated outcomes and provides valuable evidence for refining future impact assessments.

The starting point of the ex-post analysis is the estimation of the observed price change attributable to the intervention. Rather than relying on modelled price effects, the assessment uses realised market data to identify how prices evolved relative to an appropriate counterfactual. Depending on data availability, the counterfactual may be constructed using pre-intervention trends, comparator markets, or econometric techniques. The resulting estimate represents the actual price effect generated by the decision. The analysis then examines how long this effect persists, identifying the number of years for which prices remain materially different from the counterfactual benchmark.

Once the magnitude and duration of the price effect have been established, the economic impact can be calculated using the same approach as in the ex-ante assessment. Specifically, the estimated percentage price change is applied to the realised turnover in the affected market during the years in which the price effect is present. This converts the price effect into a monetary estimate of the benefit generated by the intervention. Using turnover as the basis for the calculation ensures comparability between ex ante and ex post estimates, while grounding the analysis in actual market outcomes rather than projected proxied values.

For example, consider a decision designed to increase competition in a particular market. An ex-post evaluation conducted several years later finds that prices were, on average, 4% lower than they would otherwise have been. Market turnover in the affected market was £500 million in the first year following the decision, £520 million in the second year, and £540 million in the third year. The evidence indicates that the price effect persisted for three years before dissipating. Applying the ex-post methodology, the annual impact would be calculated by multiplying the observed price effect by annual turnover. This yields benefits of £20 million in year 1 ( $4\% \times £500$  million), £20.8 million in year 2 ( $4\% \times £520$  million), and £21.6 million in year 3 ( $4\% \times £540$  million). The undiscounted cumulative impact attributable to the intervention is therefore £62.4 million over the three-year period. It is also possible to estimate the full price dynamics following the decision. In this case, the average price effect would be replaced by a time-varying price profile, allowing the impact calculation to reflect how prices evolve over time.

This example also highlights the close relationship between ex ante and ex post assessment. Suppose the original ex ante analysis predicted a 5% reduction in prices lasting for three years. The ex-post evaluation would reveal that the realised effect was slightly smaller, at 4%, but persisted for the same duration. Because both assessments use the same building blocks, namely the price effect, market turnover and duration of impact, the comparison between predicted and realised outcomes is straightforward and transparent. The ex-post exercise therefore serves not only to quantify realised benefits but also to evaluate the accuracy of the original expectations underpinning the intervention.

This proposed impact assessment approach creates a coherent bridge between ex ante and ex post evaluation. The ex-ante framework provides the underlying structure for translating price effects into economic benefits, while the ex-post framework replaces assumptions with estimated evidence on prices, turnover and duration. By combining these elements, the methodology produces robust estimates of realised impact and enables systematic comparison between expected and actual outcomes, thereby strengthening both accountability and learning within the impact assessment process.

### 3.3. Why ex-post impact evaluation matters

Competition policy is often described as evidence-based policymaking, but evidence becomes available at different stages of the policy process. Before a decision is taken, competition authorities must rely on forecasts, economic models, market evidence, and assumptions about how firms and consumers are likely to respond to an intervention. After a decision has been implemented, however, actual market outcomes can be observed. Ex-post impact assessment bridges these two stages by examining whether competition policy decisions generated the effects they were intended to achieve and by measuring the extent to which observed market developments can be causally attributed to those decisions.

This role is relevant across the full spectrum of competition policy and regulatory interventions. Merger decisions, cartel enforcement, abuse of dominance cases, market investigations, advocacy initiatives, and regulatory reforms all involve expectations about future market outcomes. Whether an authority blocks a transaction, imposes remedies, sanctions anti-competitive conduct, or promotes the liberalisation of a previously regulated sector, the intervention is based on an implicit or explicit prediction regarding its effects on competition, consumers, and market performance. Ex-post impact assessment provides the means to evaluate whether those expectations were realised in practice.

The rationale for undertaking ex-post impact assessment is multifaceted. First, it promotes accountability and legitimacy. Competition authorities exercise significant powers that can influence firm behaviour, investment decisions, innovation incentives, and consumer welfare. Measuring the actual impacts of interventions helps demonstrate whether enforcement activities deliver tangible benefits and whether public resources are being used effectively. Evidence on realised impacts can also support priority setting by identifying the types of interventions that generate the greatest benefits.

Second, ex-post impact assessment contributes to organisational learning. Competition authorities inevitably develop analytical frameworks, investigative practices, and assumptions regarding how markets function. Retrospective assessment provides an opportunity to evaluate the effectiveness of these approaches by comparing proxied and realised impacts. Where systematic discrepancies emerge, authorities can refine their methodologies, improve decision-making processes, and strengthen future interventions.

Third, ex-post impact assessment plays an important role in validating and improving ex-ante analytical tools. Competition policy decisions frequently rely on economic models and assumptions relating to consumer behaviour, market dynamics, entry conditions, innovation incentives, and competitive responses. Because the validity of such assumptions cannot be fully verified at the time

a decision is taken, retrospective evidence provides a valuable opportunity to assess their accuracy. In this sense, ex-post impact assessment serves as an empirical test of the analytical frameworks used to inform competition policy decisions.

Fourth, ex-post impact assessment can be used to evaluate broader competition policy and regulatory interventions. For example, policymakers may wish to assess the impact of market liberalisation, the removal of entry barriers, changes in sector-specific regulation, or reforms intended to increase competition in previously protected industries. Such evaluations seek to determine whether the intervention achieved its objectives in terms of prices, quality, consumer choice, investment, innovation, productivity, or other measures of market performance. By establishing a credible counterfactual, ex-post impact assessment provides evidence on the causal effects of these interventions and generates lessons for future policy design.

Finally, ex-post impact assessment imposes an important discipline on the theories and assumptions underlying competition policy decisions. Authorities increasingly rely on theories concerning market power, strategic behaviour, foreclosure, innovation effects, and dynamic competition. Retrospective impact analyses make it possible to evaluate whether these theories generate accurate predictions and whether particular analytical approaches systematically overstate or understate likely impacts. Such evidence can inform future enforcement priorities and contribute to the development of more effective competition policy.

Taken together, these functions demonstrate that ex-post impact assessment is more than a mechanism for reviewing past decisions. It is a central component of an evidence-based competition policy framework, providing a systematic means of measuring the real-world impacts of interventions, improving analytical methods, strengthening accountability, and enhancing the quality of future decision-making.

**Highlights:** Ex-post impact assessment is a cornerstone of evidence-based competition policy because it provides a systematic framework for measuring whether policy interventions have actually delivered their intended effects. By comparing ex-ante expectations with realised market outcomes, it enables competition authorities to assess the effectiveness of decisions, quantify their impact on consumers and markets, strengthen accountability, and improve future policymaking. Beyond evaluating individual cases, ex-post impact assessment serves as a mechanism for organisational learning, the validation of analytical tools and theories of harm, and the assessment of broader policy and regulatory reforms. As such, it closes the feedback loop between prediction and outcome, ensuring that competition policy is judged not only by the quality of its analysis but also by the real-world impacts it generates.

## 4. Ex-post (retrospective) studies

A natural extension of ex-post impact assessment is the analysis of ex-post, or retrospective, studies of competition policy decisions. While ex-post impact assessment focuses on measuring the causal effects of an intervention on market outcomes, such as prices, output, innovation, quality, or consumer welfare, retrospective studies are typically concerned with evaluating the decisions taken by competition authorities and the accuracy of the predictions underlying them. In practice, the two concepts are closely related and often overlap. The focus of this section is on retrospective studies as tools to learn lessons about decisions of competition agencies.

Retrospective studies employ the ex-post impact assessment methods discussed above, including difference-in-differences, synthetic control, event studies, and structural simulations, to estimate the actual consequences of a decision and compare them with the effects anticipated at the time of intervention. However, the scope of retrospective studies is wider. Beyond quantifying impacts, they seek to assess whether authorities reached the correct decision, whether the analytical framework and theories of harm were appropriate, and what lessons can be drawn to improve future enforcement. As a result, retrospective studies provide not only evidence on the effectiveness of competition policy interventions, but also a mechanism for evaluating and refining competition policy decision-making itself.

Often, they collate evidence from multiple ex post studies conducted across different markets to draw broader lessons and identify general patterns. They can rely on meta-analysis techniques to synthesize the large number of available estimates and derive more robust conclusions. This is typically a substantial undertaking, requiring a considerable body of evidence. However, meta-analysis can also be applied on a smaller scale to examine specific aspects of a decision, drawing on a more limited set of ex post studies.

Competition authorities rarely have the luxury of making decisions with complete information. Whether assessing the impact of a proposed merger, investigating a potential abuse of dominance, or designing a remedy to restore competition, or any other decision, authorities must act before the full consequences of their actions can be observed. They are therefore required to form judgments about how firms, consumers and markets are likely to behave in the future using only the information available at the time of the decision. This predictive exercise lies at the heart of modern competition policy and constitutes the domain of ex-ante impact assessment discussed above.

Through market definition, theories of harm, screening indicators, empirical analysis and, where appropriate, merger simulation models, authorities attempt to anticipate the competitive effects of alternative courses of action before those effects materialise. Such predictions are unavoidable. Competition policy is inherently forward-looking, particularly in mergers where intervention takes place before a transaction's consequences can be observed. Yet, uncertainty also means that even well-reasoned decisions may subsequently turn out to have underestimated or overestimated market effects. Firms may behave differently than expected, efficiencies may fail to materialise, new entry may emerge unexpectedly, or technological and economic conditions may evolve in ways that were impossible to foresee when the decision was taken. As a result, no ex-ante assessment, however sophisticated, can eliminate the possibility of prediction error.

This is where ex-post evaluation becomes important. Ex-post evaluation asks many of the same questions that motivated the original assessment but does so after the relevant events have

occurred and after sufficient time has elapsed for market effects to become observable. Instead of relying on forecasts and assumptions, the evaluator can examine actual outcomes: observed prices, market shares, entry and exit decisions, investment behaviour, innovation outcomes and other indicators of competitive performance. The central objective is to determine whether the authority's original assessment was broadly correct and, more importantly, to understand why outcomes either matched or diverged from expectations. This objective requires the formulation of a counterfactual situation.

Ex-ante analysis informs decisions; ex-post analysis evaluates the consequences of those decisions and the quality of the reasoning that supported them. Together they form a continuous evidence cycle in which predictions are generated, tested and refined. In this sense, ex-post evaluation plays a role analogous to model validation in empirical research: it provides an opportunity to compare predicted outcomes with realised outcomes and, where necessary, improve the analytical framework used to generate future predictions. For example, the price effects used in an ex-ante impact assessment could be revisited following an ex-post impact evaluation that estimates these effects from observed decisions made after the policy has been in place for a certain period.

The idea that competition policy should learn systematically from its past decisions has gained increasing prominence over the past two decades. As Ashenfelter, Hosken and Weinberg (2009) noted, competition policy occupies a somewhat distinctive position among public policy domains because many enforcement decisions rest on explicit economic predictions that can subsequently be tested against observable market outcomes and their counterfactuals. This creates opportunities for retrospective analysis that are often unavailable in other policy settings. Where ex-post evaluation programmes have been implemented on a sustained basis, the results have frequently influenced both enforcement practice and policy design. The retrospective analysis of hospital mergers in the United States, for example, significantly influenced subsequent approaches to healthcare merger assessment by revealing systematic patterns that had not been fully appreciated at the time of the original decisions.

At the same time, ex-post evaluation has undergone a significant methodological transformation. Early retrospective studies often relied on relatively simple comparisons of outcomes before and after a decision. Contemporary evaluations increasingly employ sophisticated causal-inference techniques designed to isolate the effect of a competition intervention from the multitude of other factors simultaneously affecting market outcomes. Difference-in-differences estimators, synthetic control methods, matching methods, structural merger simulations, event studies and, more recently, machine-learning-based causal approaches have all become part of the modern ex-post evaluator's toolkit. These developments have substantially improved the credibility and policy relevance of retrospective evidence and have brought ex-post evaluation much closer to the standards of causal analysis expected in applied economics more generally.

The growth of ex-post evaluation also reflects broader changes in competition policy itself. Competition authorities are increasingly expected not only to make sound decisions but also to demonstrate that those decisions generate tangible benefits for consumers and society. Governments, courts and stakeholders have become more interested in understanding the effectiveness of competition enforcement and in assessing whether scarce public resources are being deployed efficiently. Ex-post evaluation therefore serves not only an analytical function but also an important accountability function. It provides evidence on the effectiveness of intervention and helps strengthen the legitimacy of competition policy institutions.

This section reviews the current state of knowledge regarding ex-post evaluation of competition policy decisions. Its primary focus is merger control, where both the empirical literature and institutional experience are most developed. However, the discussion also extends to antitrust remedies, cartel enforcement and broader assessments of the economic impact of competition policy. The objective is not merely to describe existing studies but rather to show how ex-post evaluation contributes to a wider process of policy learning and institutional improvement.

More specifically, the section pursues four objectives. First, it reviews the accumulated evidence from the ex-post evaluation literature, with particular emphasis on the findings of the 2015 DG Competition review of EU merger decisions and the body of work that has followed. Second, it summarises and updates the methodologies used to conduct retrospective evaluations, recognising that the econometric and causal-inference literature has evolved considerably since the mid-2010s. Third, it presents a framework for distinguishing genuine decision errors from outcomes that may appear problematic ex post but were nevertheless consistent with a reasonable decision based on the information available at the time. Finally, it draws broader institutional lessons regarding how retrospective evaluation can be integrated into the wider impact-assessment cycle and used to improve future decision-making.

Ultimately, the value of ex-post evaluation lies not in identifying isolated successes or failures but in improving the quality of competition policy over time. A well-designed retrospective programme creates a feedback mechanism through which authorities can continuously refine their analytical tools, reassess their assumptions and strengthen their understanding of how markets respond to intervention. It is this learning function, perhaps even more than its accountability role, that explains the growing importance of ex-post evaluation within modern competition policy.

The most comprehensive assessment of ex-post-merger evaluation in Europe remains the study commissioned by DG Competition in 2015 and conducted by the Centre for Competition Policy at the University of East Anglia (Ormosi, Mariuzzo, and Havell). That study represented the first systematic attempt to take stock of the growing body of retrospective evidence on merger control within the European Union. Importantly, its methodology was deliberately designed to mirror the approach previously adopted by John Kwoka (2015) in his review of US merger retrospectives, thereby allowing meaningful comparisons between the European and American experiences. The study reviewed 77 retrospective evaluations, including 27 studies focusing on price effects and 50 examining broader non-price outcomes.

Retrospective studies may not be fully representative as they tend to focus on cases for which suitable data exist, cases that generated controversy, or mergers that were regarded as particularly important from a policy perspective. As both the DG Competition study and subsequent OECD work emphasise, findings from these studies should therefore not be interpreted as measures of the overall success or failure rate of merger control. Their principal value lies elsewhere: they provide detailed insight into those cases where the assumptions, methodologies and predictions underlying competition decisions can be tested against subsequent market outcomes. In doing so, they offer a unique opportunity to identify recurring strengths and weaknesses in merger assessment.

**Highlights:** Retrospective (ex-post) evaluation has become one of the most important mechanisms through which competition policy learns from experience and improves over time. While ex-ante assessments guide decisions based on predictions about future market developments, retrospective studies revisit those decisions once actual market outcomes can be

observed, allowing authorities to compare forecasts with reality. By combining rigorous causal inference methods with a broader assessment of decision-making processes, retrospective evaluations provide a unique opportunity to test theories of harm, validate analytical frameworks, identify sources of prediction error, and strengthen future enforcement. Beyond measuring the effectiveness of specific interventions, they create a continuous feedback loop between policy design and policy outcomes, enhancing both the accuracy and accountability of competition authorities. As the empirical and methodological literature has expanded, ex-post evaluation has evolved into a central pillar of evidence-based competition policy and an essential tool for institutional learning.

#### 4.1. Price effects

The strongest body of evidence concerns merger effects on prices, reflecting the greater availability of price data and the relative ease with which price changes can be measured using quantitative methods. While the individual studies vary considerably in their scope, methodology and market context, several broad patterns emerge.

Perhaps the most important finding is that post-merger price increases are not uncommon. Approximately sixty per cent of the studies reviewed reported some evidence of an increase in prices following the merger. However, these findings should not be interpreted as evidence that merger control systematically fails. The magnitude of the observed effects matters as much as their frequency. Across the sample, average price increases following unconditionally cleared mergers were generally modest, at just under five per cent. For mergers subject to remedies, the average estimated increase was considerably smaller, typically in the range of one to two per cent. These findings suggest that remedies are often successful in mitigating competitive concerns, even if they do not always eliminate them entirely.

A second and perhaps more significant result is the central role played by market concentration. Among all the variables examined in the retrospective literature, concentration appears to be the strongest predictor of adverse price effects. In relatively unconcentrated markets, post-merger price effects were generally close to zero. In contrast, mergers occurring in already concentrated markets were substantially more likely to be followed by measurable price increases. For unconditionally approved mergers in concentrated sectors, estimated price effects often fell in the range of ten to twenty per cent. Where remedies were imposed, the corresponding increases were materially smaller, suggesting that intervention was at least partially successful in preserving competitive constraints.

Taken together, these findings paint a nuanced picture. They neither vindicate nor condemn merger control. Rather, they suggest that authorities are broadly successful in identifying the markets where concerns are most likely to arise, while also highlighting the continuing importance of careful scrutiny in highly concentrated industries.

The European evidence is broadly consistent with the conclusions reached in the United States. Kwoka's meta-analysis similarly found that a significant proportion of studied mergers were followed by price increases, including some transactions that had been subject to remedies. His interpretation, however, was that the principal challenge for merger policy lay less in identifying problematic mergers and more in designing effective remedies. In particular, behavioural remedies

appeared significantly less reliable than structural interventions in preventing anti-competitive outcomes. Although the European evidence is somewhat more favourable towards remedies than the US experience, both literatures point to the same underlying conclusion: remedy design is often the critical determinant of long-run outcomes.

**Highlights:** Retrospective merger evaluations reveal that while post-merger price increases are not uncommon, their magnitude is often modest and substantially reduced when remedies are imposed. The evidence consistently identifies market concentration as the strongest predictor of adverse outcomes, with mergers in highly concentrated industries more likely to generate significant price increases. The findings suggest that merger control is broadly effective at targeting problematic transactions, while highlighting the crucial role of well-designed remedies in preserving competition and protecting consumers.

## 4.2. A Framework for identifying decision errors

Estimating the effects of a competition-policy intervention is only the first step in an ex-post evaluation. The more difficult, and ultimately more important, task is determining what those estimated effects imply about the quality of the original decision. A retrospective study may conclude that prices increased following a merger, that a remedy failed to restore effective competition, or that market concentration rose unexpectedly. None of these findings, however, automatically implies that the competition authority made a mistake. The central challenge is therefore one of interpretation: distinguishing genuine decision errors from outcomes that are adverse in hindsight but were nevertheless consistent with a reasonable decision at the time it was taken.

This distinction is essential because competition authorities operate under uncertainty. Decisions are made based on incomplete information, imperfect forecasts and evidence that may later prove inaccurate. Any framework for evaluating performance must therefore judge decisions against the information available at the time rather than against information revealed only after the fact. The objective of ex-post evaluation is not to replace ex-ante assessment with hindsight, but to assess whether the original reasoning, evidence and analytical process were sound.

The framework developed in the 2015 DG Competition review remains the most comprehensive attempt to formalise this distinction. At its core is the recognition that not all undesirable outcomes reflect poor decision-making, and not all apparent discrepancies between predictions and outcomes should be interpreted as failures of competition policy. Instead, retrospective evaluation must first identify the type of error that may have occurred and then assess whether the outcome genuinely reflects a flaw in the authority's analysis.

### 4.2.1. Type I and type II errors

Competition policy faces the same fundamental trade-off encountered in many regulatory and legal contexts: the need to balance the risks of intervening too much against the risks of intervening too little.

A Type I error arises when the authority intervenes unnecessarily. In the merger context, this would occur if a merger were prohibited, or subjected to remedies, even though it would not in fact have harmed competition. Such errors impose costs by preventing potentially beneficial transactions, reducing efficiencies or discouraging investment. A Type II error arises when the authority fails to intervene, or intervenes insufficiently, in a case that ultimately harms competition. In merger control, this corresponds to a clearance decision, or an inadequate remedy, that allows anti-competitive effects to materialise. This distinction is not merely conceptual. It has important methodological implications. The empirical methods available to the evaluator differ substantially in their ability to detect these two classes of error.

Type II errors are often easier to identify retrospectively because the relevant outcome is observable. If a merger is cleared without intervention and is subsequently followed by a significant and persistent increase in prices relative to an appropriate control group, the evaluator can directly examine whether competition appears to have been harmed. Difference-in-differences and related methods are therefore particularly well suited to identifying potential false negatives in enforcement.

Type I errors are more challenging because the relevant counterfactual is never observed. If a merger is blocked or heavily remedied, the evaluator cannot directly observe what would have happened under a no-intervention scenario. The control group sample would be too small to provide a credible counterfactual. Assessing whether intervention was excessive therefore requires methods capable of constructing an explicit counterfactual, typically through merger simulation or other structural approaches. This asymmetry is one of the most important lessons of the ex-post evaluation literature and explains why different methods are appropriate for different evaluative questions.

#### **4.2.2. Why an adverse outcome is not necessarily an error**

A common temptation in retrospective analysis is to treat any post-merger price increase, reduction in rivalry or deterioration in market conditions as evidence that the authority made the wrong decision. Such a conclusion is often too simplistic.

An adverse outcome can arise even when the original decision was reasonable and well founded. The first possibility is that the authority's analysis was genuinely flawed. The evidence may have been misinterpreted, the theory of harm may have been incorrectly specified, or the economic tools employed may have performed poorly. This is the only category that constitutes a true analytical error in the sense relevant to institutional learning.

A second possibility is that the authority knowingly accepted a limited adverse effect in one dimension because it expected offsetting benefits elsewhere. Competition decisions frequently involve trade-offs. A modest increase in price may have been judged acceptable because of anticipated efficiencies, improvements in quality, greater product variety or gains in innovation. A retrospective study focused on price alone may therefore identify an adverse outcome without demonstrating that the overall decision was incorrect.

A third possibility is that the authority's reasoning was sound, but the information available to it was incomplete or inaccurate. Competition authorities necessarily rely on evidence supplied by firms, customers, competitors and market participants. Some of that evidence may later prove misleading

or incomplete. In such cases, the problem lies not with the analytical framework itself but with the quality of the information available when the decision was made.

Finally, some apparent adverse outcomes may simply reflect uncertainty. Ex-ante assessments are forecasts, and all forecasts contain margins of error. Small deviations between predicted and realised outcomes are often inevitable and may not indicate any meaningful failure of analysis. An outcome that appears significant in hindsight may have been entirely indistinguishable from statistical noise given the evidence available at the time.

These distinctions are important because they shift the focus of evaluation away from outcomes alone and towards the decision-making process. The relevant question is not simply whether the outcome was favourable or unfavourable, but whether the authority made a reasonable decision given the evidence, theories of harm and analytical tools available when it acted.

#### **4.2.3. Reconstructing the decision environment**

A fair ex-post evaluation therefore requires more than measuring outcomes. It requires reconstructing the decision environment within which the authority operated. Evaluators should seek to understand what evidence was available, what uncertainties were identified, what theories of harm were considered and how competing pieces of evidence were weighed.

This is where ex-post evaluation connects most directly to ex-ante impact assessment. The better the original assessment is documented, the easier it becomes to evaluate retrospectively. Decisions that explicitly record expected price effects, anticipated efficiencies, assumptions regarding entry and innovation, and key sources of uncertainty provide a transparent benchmark against which subsequent outcomes can be judged.

Retrospective evaluation and prospective assessment should therefore be viewed as complementary stages of a single learning process. Ex-post evaluation is most informative when it assesses not only whether predictions were correct, but also why they succeeded or failed.

#### **4.2.4. Learning where errors are most likely**

One of the broader objectives of ex-post evaluation is to identify the circumstances under which decision errors are more likely to occur. The 2015 DG Competition review found that potential errors were concentrated disproportionately in highly concentrated markets, precisely the settings in which competition authorities already devote the greatest analytical attention. This finding is broadly reassuring, suggesting that enforcement resources are being directed towards those markets where predictive uncertainty and competitive risks are greatest.

Subsequent research has refined this conclusion. Using machine-learning methods and large samples of Commission decisions, Affeldt, Duso and Szücs (2021) show that the relationship between traditional structural indicators, such as concentration, dominance and entry barriers, and enforcement outcomes is more complex than simple linear models imply. The predictive importance of these indicators appears to vary across periods and institutional settings, and in some cases has weakened since the reforms to EU merger policy introduced in 2004.

The broader lesson is that the sources of decision error are themselves dynamic. Markets evolve, business models change and enforcement frameworks adapt. The factors that predicted poor outcomes twenty years ago may not be the same factors that matter today. For this reason, ex-post evaluation should not be viewed as an occasional audit exercise. Its value lies in providing a continuous mechanism through which competition authorities can reassess their assumptions, test the performance of their analytical tools and identify emerging sources of risk.

In this sense, the ultimate purpose of ex-post studies is not to determine whether a particular authority was right or wrong in a particular case. Rather, it is to build a systematic evidence base that improves the quality of future decisions. By distinguishing genuine analytical errors from defensible decisions that happened to coincide with adverse outcomes, competition authorities and regulators can focus their learning efforts where they are most needed and strengthen the effectiveness of the ex-ante assessments on which future enforcement depends.

#### **4.2.5. Institutional lessons for embedding ex-post evaluation**

The experience accumulated over the last decade in the European Union, the United States and the United Kingdom points to a broadly consistent lesson: ex-post evaluation delivers the greatest value when it is embedded within the routine activities of a competition authority rather than treated as an occasional academic exercise. Retrospective evaluation is most useful not as a mechanism for revisiting isolated decisions but as part of a continuous process of organisational learning. The authorities that have been most successful in generating policy-relevant evidence are those that have integrated ex-post evaluation into their wider impact-assessment and decision-making framework.

At a practical level, this implies that retrospective evaluation should not be viewed as a separate stage that takes place years after an intervention. Rather, it should be considered from the moment an investigation begins. The choices made during the original assessment, including how evidence is documented, what data are collected and which assumptions are recorded, have a direct influence on the quality and credibility of any future retrospective analysis.

#### **4.2.6. Designing the ex-ante record with future evaluation in mind**

An ex-post evaluation or study can only be as informative as the ex-ante assessment against which it is compared. If the original decision record does not clearly identify the authority's expectations, assumptions and reasoning, it becomes difficult to determine whether subsequent outcomes represent a success, a failure or simply an unforeseeable change in market conditions.

For this reason, competition authorities and regulators should make a conscious effort to document the key predictions generated during an investigation. Where possible, this should include quantitative expectations concerning prices, output, entry, efficiency gains, innovation outcomes and other factors that played a central role in the decision. Recording these predictions at the time they are made creates a benchmark against which future outcomes can be assessed directly, avoiding the need to reconstruct expectations retrospectively.

Equally important is the documentation of non-price considerations. Many competition decisions involve explicit trade-offs between different dimensions of welfare. Authorities may tolerate a modest increase in prices in exchange for expected efficiency gains, greater product variety or stronger incentives to innovate. Unless these considerations are recorded explicitly, a retrospective evaluation risks focusing narrowly on prices and overlooking the broader rationale that informed the original decision.

Where structural models are used, especially merger simulations, preserving model specifications, parameter estimates and key assumptions can generate substantial long-run benefits. Re-estimating a model using realised post-merger data often provides one of the clearest ways to assess how accurately the original analysis captured the underlying economics of the market.

#### **4.2.7. Timing evaluations appropriately**

The value of an ex-post study depends critically on when it is conducted. Evaluations undertaken too early risk confusing short-run adjustment effects with longer-term market outcomes. Prices may temporarily increase following a merger before efficiencies emerge, competitors adjust their strategies or new entry occurs. Conversely, some anti-competitive effects may take years to materialise. A retrospective conducted shortly after the decision may therefore provide an incomplete and potentially misleading picture.

Yet waiting too long creates a different problem. Over time, markets continue to evolve as a result of economic, technological and regulatory developments unrelated to the intervention under study. The longer the period between the decision and the evaluation, the more difficult it becomes to distinguish merger effects from other sources of change.

The challenge is therefore to identify a time horizon long enough for the intervention's effects to emerge but short enough to preserve a credible causal link between the decision and the observed outcome. In practice, this often means examining effects dynamically rather than relying on a single estimate. Reporting outcomes by year since the intervention frequently provides more information than a single average effect covering the entire post-decision period.

These considerations also highlight the value of establishing data-collection systems early. Maintaining ongoing information on prices, market shares, entry, capacity and other relevant indicators allows authorities to evaluate decisions using consistent data rather than attempting to reconstruct historical information years later.

#### **4.2.8. Creating the right institutional incentives**

One of the most important conclusions emerging from the early literature on ex-post evaluation was that the scarcity of retrospective studies was often an institutional rather than a methodological problem. Producing an evaluation that identifies a possible past error can create reputational risks that may discourage authorities from investing in systematic retrospective analysis.

The most successful evaluation programmes have addressed this challenge by institutionalising the evaluation function. Rather than relying on sporadic external studies, authorities such as DG

Competition and the UK Competition and Markets Authority have developed recurring programmes supported by dedicated resources and staff. This ensures a continuous flow of evidence and reduces the risk that evaluations become dependent on individual projects or external initiatives.

Equally important is the way retrospective findings are communicated. Ex-post evaluation is most productive when it is framed as a mechanism for learning rather than blame. The framework developed in the previous section is particularly useful in this respect because it highlights the distinction between genuine analytical errors and defensible decisions that happened to be followed by unfavourable outcomes. Maintaining this distinction helps ensure that evaluations contribute to institutional improvement rather than retrospective fault-finding.

Transparency also matters. Publishing retrospective evaluations, including those that find little evidence of problems, helps build a cumulative evidence base and improves public accountability. It also reduces the risk that the published literature becomes dominated by unusual, controversial or high-profile cases.

#### **4.2.9. Feeding ex-post findings into ex-ante assessment**

The ultimate purpose of ex-post evaluation is to improve future decision-making. A retrospective programme creates value only if its findings are systematically incorporated into future investigations, guidelines and analytical frameworks.

This feedback can occur in several ways. Merger simulations can be recalibrated using evidence on realised pass-through rates, demand elasticities or entry patterns. Screening tools and concentration thresholds can be reassessed in light of evidence regarding the circumstances under which enforcement errors are most likely to occur.

Remedy policies can be refined where retrospective studies reveal recurring weaknesses in particular forms of intervention.

More broadly, ex-post evaluation contributes to the gradual accumulation of institutional knowledge. Individual studies may focus on specific mergers or markets, but collectively they provide evidence on how competition authorities make decisions, where predictive tools perform well and where analytical assumptions require refinement.

Over the past two decades, ex-post evaluation has evolved from a relatively specialised academic activity into an increasingly important component of modern competition policy. Competition authorities in the EU and elsewhere are placing growing emphasis on retrospective analysis, motivated by a desire to improve accountability, strengthen analytical tools and learn systematically from past decisions.

The empirical evidence generated so far points to several broad conclusions. Merger retrospectives frequently identify price increases following transactions, particularly in already concentrated markets, although the magnitude of these effects is often modest and is frequently mitigated by remedies. At the same time, the literature has consistently shown that adverse outcomes cannot automatically be interpreted as evidence of poor decision-making. The relationship between

observed outcomes and decision quality is more nuanced and requires careful consideration of the information, assumptions and uncertainties that existed when the original decision was taken.

Alongside the growth of the evidence base, the methodological toolkit available to researchers has expanded considerably. Difference-in-differences remains the dominant approach in many settings, but advances in causal inference have transformed best practice. Matching methods, synthetic control, regression discontinuity designs, event studies, structural merger simulation and machine-learning-based approaches now provide a rich set of tools for constructing credible counterfactuals and identifying causal effects. Each has distinct strengths and limitations, and the most persuasive evaluations increasingly combine multiple approaches.

Perhaps the most important lesson emerging from this literature is that ex-post evaluation should be viewed as a learning mechanism rather than an auditing exercise. Its primary purpose is not to identify mistakes for their own sake but to improve the quality of future decision-making. A retrospective programme that systematically feeds its findings back into ex-ante assessment can strengthen the accuracy of predictions, refine theories of harm, improve remedy design and enhance the overall effectiveness of competition enforcement.

Ex-post evaluation and ex-ante impact assessment are complementary components of a single evidence-based framework. One looks forward and asks what is likely to happen; the other looks back and asks whether those expectations were justified. Together they provide the foundation for a competition-policy system capable not only of making decisions, but of learning continuously from experience.

**Highlights:** A central lesson from the ex-post evaluation literature (ex-post studies) is that assessing market outcomes is only part of the task; the real challenge is determining what those outcomes reveal about the quality of the original competition-policy decision. Adverse outcomes, such as post-merger price increases, do not necessarily imply that authorities made a mistake, since decisions are taken under uncertainty and based on the information available at the time. Effective retrospective evaluation therefore goes beyond measuring effects to distinguish genuine analytical errors from reasonable decisions that were later affected by unforeseen developments, imperfect information, or unavoidable forecasting uncertainty. In this way, ex-post evaluation serves not as a mechanism for assigning blame, but as a structured process of institutional learning that helps refine future assessments, improve enforcement tools, and strengthen evidence-based competition policy.

## 5. Conclusions

This report has developed an integrated framework for evaluating the impact of competition policy interventions, combining ex-ante impact assessment, ex-post impact evaluation, and retrospective studies of competition policy decisions (mainly horizontal mergers). These approaches should be viewed as complementary components of a single evidence-based policy cycle. Ex-ante impact assessment provides a structured framework for calculating the effects of competition authority interventions before impact takes place. Ex-post impact evaluation measures the actual consequences of those interventions once market outcomes become observable. Retrospective studies go a step further by examining what those outcomes imply for the quality of the original decision-making process. Together, these approaches create a continuous feedback mechanism through which competition authorities can improve the accuracy, transparency and effectiveness of future enforcement.

The ex-ante impact assessment methodology presented here is designed to provide a practical and operational tool for quantifying the direct benefits of competition enforcement. Drawing on international experience, it uses a transparent and standardised framework based on three key parameters: affected turnover, estimated price effects, and the duration of the intervention's impact. A major strength of this approach is its simplicity. By relying on a limited number of clearly defined assumptions, it can be applied consistently across a wide range of enforcement activities, facilitating regular reporting and allowing results to be compared across cases and over time. The methodology also adopts a deliberately conservative approach, focusing primarily on direct consumer benefits while excluding broader effects such as deterrence, dynamic efficiency gains and innovation impacts. Consequently, the resulting estimates should generally be interpreted as lower-bound measures of the overall benefits generated by competition policy.

The practical relevance of the methodology was illustrated through its application to three enforcement cases reviewed by the Agency for Protection and Development of Competition (APDC) of Kazakhstan. Despite the limited number of cases analysed, the exercise demonstrates how impact assessment can be used to provide a quantitative estimate of the benefits associated with competition enforcement. The estimated economic effect across the three cases exceeded KZT 222 billion in 2022 prices. Relative to the Agency's expenditure during the corresponding period, this implies a benefit-to-cost ratio of approximately 23:1, suggesting that every KZT 1 spent generated around KZT 23 in potential economic benefits. While these figures remain illustrative and depend on underlying assumptions, they highlight the potentially substantial economic value created through effective competition policy and demonstrate the usefulness of impact assessment as a tool for accountability and policy communication.

At the same time, the analysis highlights several important lessons for future ex-ante assessments. The credibility of impact estimates depends critically on the quality of the underlying data and the robustness of parameter selection. Assumptions regarding price effects, turnover and duration can have a significant influence on estimated outcomes and therefore require transparent justification and consistent application. The establishment of systematic data-collection procedures, particularly during investigations or decisions, would substantially strengthen the evidence base for future assessments. Greater use of sensitivity analysis and the presentation of impact ranges could further improve the transparency and interpretability of reported estimates while preserving the simplicity that makes the methodology operationally attractive.

The report has also reviewed the principal methodologies available for conducting ex-post impact evaluations. The central objective of ex-post evaluation differs fundamentally from that of ex-ante assessment. Rather than proxying future outcomes, ex-post analysis seeks to identify the causal effects of interventions using realised market data. Modern causal-inference methods, including difference-in-differences, matching approaches, synthetic control methods, regression discontinuity designs, event studies, structural simulations and machine-learning-based techniques, provide increasingly sophisticated tools for constructing credible counterfactuals and isolating the effects of competition interventions from other market developments. Although each methodology has particular advantages and limitations, the broader lesson is that ex-post evaluation has evolved into a rigorous and policy-relevant component of applied economic analysis. Its growing importance reflects the increasing demand for evidence not only that competition authorities act, but that their actions generate measurable benefits for consumers and the wider economy.

Beyond measuring impacts, the report emphasises the growing importance of retrospective studies as tools for institutional learning. Retrospective evaluations use ex-post evidence to assess whether competition authorities reached the correct decisions and whether the analytical frameworks underlying those decisions performed as expected. The accumulated evidence from merger retrospectives, particularly in Europe and the United States, provides several important insights. First, post-merger price increases are not uncommon, especially in highly concentrated markets. Second, remedies often appear to mitigate these effects, although their effectiveness depends critically on their design and implementation. Third, market concentration consistently emerges as one of the strongest predictors of adverse post-merger outcomes. Collectively, these findings suggest that competition authorities are broadly successful in identifying problematic transactions while also highlighting the continuing need for careful scrutiny in concentrated industries and ongoing refinement of remedy design.

An important lesson emerging from the retrospective literature is that adverse outcomes should not automatically be interpreted as evidence of poor decision-making. Competition authorities necessarily make decisions under uncertainty, relying on incomplete information and forecasts about future market developments. As a result, some decisions that appear problematic with the benefit of hindsight may nevertheless have been entirely reasonable given the information available at the time. Effective retrospective evaluation therefore requires distinguishing genuine analytical errors from outcomes driven by unforeseeable changes in market conditions, data limitations or forecasting uncertainty. This distinction shifts the focus from identifying blame to understanding how decision-making processes can be improved.

Perhaps the most valuable insight arising from both the ex-post evaluation and retrospective-study literature is the importance of creating a formal feedback loop between evaluation and future decision-making. Ex-ante assessments generate predictions regarding prices, output, competition and consumer welfare. Ex-post evaluations test these predictions against observed outcomes, while retrospective studies investigate why predictions succeeded or failed. The lessons obtained can then be used to refine future assumptions, improve theories of harm, recalibrate analytical tools and strengthen the design of remedies and enforcement strategies. In this sense, ex-post evaluation performs a role similar to model validation in empirical research, transforming individual decisions into opportunities for systematic learning.

Ultimately, the principal value of impact assessment lies not merely in quantifying the benefits of individual interventions but in improving the quality of competition policy over time. Ex-ante impact assessment enhances transparency and supports prospective decision-making. Ex-post evaluation provides credible evidence on realised outcomes. Retrospective studies transform that evidence into institutional learning. Together they form an integrated framework through which competition authorities can strengthen accountability, improve analytical accuracy and continuously refine their understanding of how markets respond to intervention. As competition policy becomes increasingly evidence-based, the integration of these three elements should be viewed not as an optional analytical exercise but as a core component of effective modern competition enforcement.

**Highlights:** This report demonstrates that effective competition policy requires a combination of forward-looking assessment, rigorous evaluation, and continuous institutional learning. The proposed ex-ante impact assessment framework provides a practical and transparent method for quantifying the expected benefits of competition enforcement, as illustrated by the Kazakhstan case studies, which indicate substantial economic returns from intervention. At the same time, ex-post impact evaluation and retrospective studies show how observed market outcomes can be used to test predictions, assess the effectiveness of interventions, and refine future decision-making. Together, these approaches form a unified evidence-based framework in which policy interventions are not only implemented and measured, but also systematically evaluated and improved, strengthening both the accountability and effectiveness of competition authorities over time.

# Guidelines on impact assessment of competition enforcement and advocacy activities

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## Agency for the Protection and Development of Competition of the Republic of Kazakhstan

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**Draft version.** This should serve as the starting point for initial impact assessment calculations. I recommend a review in due time, to identify methodological successes and refinements, enabling targeted Guidelines updates based on practical implementation experience.

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## A.1. Introduction

1. These Guidelines define the procedure for calculating ex ante the Impact Assessment (IA) of the antimonopoly response measures taken by the structural and territorial divisions of the Agency for the Protection and Development of Competition of the Republic of Kazakhstan (hereinafter referred to as the Agency). The Agency's Impact Assessment comprises the methodological framework and calculations used to quantify the economic benefits arising from its core functions: developing competition, fostering competition, preventing monopolistic activities, and conducting advocacy to protect consumer welfare across markets.
2. These guidelines are aimed to deliver transparent quantification of direct consumer benefits, facilitate calculation of benefit-cost ratios, and provide inputs for the Agency's annual or multi-annual Report on the State of Competition in the Country's markets. The methodology adopted in these Guidelines takes its cue from the Office of Fair Trading's (OFT) guidelines published in 2010,<sup>2</sup> which then became OECD standards. It not only ensures conservative estimates that withstand external scrutiny but also aligns seamlessly with international standards, including OECD peer review criteria, thereby bolstering the Agency's institutional credibility before domestic courts and peer international competition authorities.
3. Pursuant to established internal procedural timelines, the Agency's divisions must transmit their complete impact assessment material (encompassing raw data, analytical workings, assumption justifications, and narrative rationales) to the Agency's impact team.
4. These Guidelines mark a methodological evolution incorporating battle-tested elements from comparator authorities. The adoption of these guidelines and their implementation demonstrate transparency and ensure Kazakhstani practice attains parity with global exemplars. This integration facilitates cross-jurisdictional benchmarking and positions the Agency favourably within multilateral forums such as the OECD Competition Committee and International Competition Network. Officers are directed to treat these Guidelines as interpretive guidance.
5. The Agency's impact assessments concentrate exclusively on those quantifiable, direct financial benefits accruing to consumers from deployment of its core enforcement instruments. These encompass: (i) removal of anticompetitive or monopoly barriers, (ii) merger control decisions that prevent significant harm to competition, whether through outright prohibition, conditional approval subject to remedies or commitments, or the abandonment of transactions following concerns raised during the competition authority's review; (iii) competition enforcement interventions targeting cartels (horizontal agreements) and abuses of dominant position; (iv) market studies and full market investigations culminating in remedial recommendations or structural directives; and (v) consumer protection enforcement.
6. The Agency aspires to pioneer the inclusion of quantification of deterrence and redistributive impact among peer competition authorities, adopting the results of the methodology advanced by Davies et al. (2018) and the methodology suggested by Davies and Mariuzzo (2022) and Davies, Mariuzzo and Zhang (2026). This extension, positioning the Agency at the global methodological frontier, would elevate its impact assessments beyond conventional direct

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<sup>2</sup> OFT (2010), [A guide to OFT's Impact Estimation methods](#)

representative consumer savings, capturing the full welfare spectrum of antimonopoly interventions, assessing distributional impacts, while maintaining empirical robustness. In its early years, this aspect could be treated as an appendix exercise to build methodological experience while maintaining focus on core benefit quantification.

7. The affirmative scope embraces direct financial consumer benefits: price reductions or averted hikes; monetised uplifts in quality, product variety, service standards, or innovation trajectories; quantifiable time savings from streamlined commercial processes; and welfare gains from enhanced purchase decision-making. Inclusion predicates traceability to the Agency's intervention, validated by contemporaneous case evidence. In data-scarce scenarios, conservative proxy assumptions ensure estimates constitute a defensible lower bound. This ex-ante orientation, projecting post-intervention benefits from closure-date intelligence, distinguishes assessments from ex-post validation exercises reserved for methodological refinement.
8. The paramount objective animating these impact assessments is to furnish evidence of the Agency's material contribution to consumer welfare enhancement before impact fully materialises, crystallised through a benefit-cost ratio that validates efficient deployment of public resources. This evidentiary function supports accountability to the President and citizenry. If the exercise is repeated annually, quantification in Kazakhstani tenge terms enables three-year rolling averages, mitigating volatility from modest caseloads on anomalous periods, thereby presenting a stable performance narrative for stakeholder consumption.
9. Full pass-through presumes 100% transmission of upstream gains (e.g., wholesale price relief) to downstream consumers, balancing analytical rigour against resource proportionality. Jurisdictional discipline confines benefit to Kazakhstani consumers, with equitable apportionment in multi-agency investigations proportional to causal contributions.
10. All economic benefits and costs in the Agency's IA should be expressed in constant (real) prices using a base year (typically the financial year of the analysis). Inflation adjustment is recommended for three reasons: (1) to isolate real welfare changes from nominal price movements; (2) to ensure cross-year comparability; and (3) to align with the real social discount rate applied to future cash flows.
11. The benefits estimated by the Agency are ex-ante benefits. Consistent with the OECD's Guide for Helping Competition Authorities Assess the Expected Impact of Their Activities, these estimates relate to 'likely future impact effects that have yet to be observed' (OECD, 2014).<sup>3</sup>
12. Accordingly, the estimates do not take account of observed market outcomes following intervention, nor do they assess whether the Agency's interventions were correct or optimal in any individual case. While ex-post evaluations are an important part of competition authority practice, they are not well suited to quantifying the overall value of the Agency's outputs in the proximity of the decision. However, ex-post evaluations can be used to refine the default price change assumptions in the Guidelines and provide an evidence base for future methodological updates.

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<sup>3</sup> Although the estimates are produced after the interventions, they are based on ex-ante information and assumptions.

13. These Guidelines may also support pre-decision impact forecasting for internal strategic planning. However, such provisional calculations remain strictly for internal use and are excluded from the formal Impact Assessment calculations and published Report.
14. An independent researcher peer review fortifies probative value, mirroring protocols validated in other OECD judicial proceedings.

## **A.2. Methodological approach and evaluation indicators**

15. The Impact Assessment is carried out in three directions, each of which corresponds to a distinct aspect of the Agency's activities and is operationalised through a set of evaluation indicators. The first direction, 'Development of Competition', focuses on the removal of structural and regulatory barriers that impede the entry of new firms or the expansion of existing ones. The second direction, 'Protection of Competition', addresses the correction of anticompetitive conduct, including abuse of dominance, cartel-induced distortions, and the prevention of anti-competitive mergers. The third direction, 'Protection of Consumers', consists of enforcement and advocacy. These three directions jointly cover the principal enforcement contexts in which the Agency operates and ensure that the IA captures the full spectrum of the Agency's economic impact.

### **A.2.1. Development of competition**

16. The first direction, 'Development of Competition', comprises one indicator, which is designed to measure the economic effect of removing barriers that hinder the development of competition. The calculation of this indicator can be adapted to the availability of data.

#### **A.2.1.1. Removal of monopolistic barriers**

17. The Agency's removal of competition barriers targets structural obstacles that systematically restrict market entry, expansion, or contestability, ranging from excessive regulatory hurdles and licensing delays to discriminatory access restrictions, essential facility bottlenecks, or administrative barriers that mimic the exclusionary effects of dominance abuse. These interventions unlock market responses, fostering new entry, capacity expansion, and intensified rivalry that can substantially expand total market volume and consumer access, creating consumer welfare.
18. This list also includes deregulation of state-subsidised monopolies, which requires special treatment. When barriers are removed through the deregulation of state-subsidised monopolies, the pre-intervention counterfactual must exclude the artificial subsidy distortion, as subsidies create artificially low prices that mask true market dynamics. A naive pre/post price comparison would therefore understate intervention benefits, but this is conducted ex post. To ensure analytical comparability, such cases adopt a pure ex-ante assessment, forecasting competitive market outcomes against the pre-intervention unsubsidised monopoly counterfactual,

implicitly correcting for subsidy-induced distortions while maintaining methodological consistency with standard barrier removal protocols.

19. For ex-ante impact assessment, benefits are quantified exclusively from completed interventions yielding measurable market expansion, employing the standard discounted present value formula fully consistent with the Agency's other decisions:

$$B_t = \sum_{\tau=0}^d \frac{b_t * \Delta p * (1 + \pi)^\tau * (1 + g)^\tau}{(1 + i)^\tau}, \quad (A.1)$$

where all monetary values are expressed in constant base-year tenge (i.e., 2025 prices), with inflation adjustment mandatory per general IA methodology. The affected turnover at time  $t$  ( $b_t$ ) captures the baseline market volume in the constrained product-market, sourced directly from intervention case records or official statistical databases such as those maintained by the Bureau of National Statistics. As these decisions are at market-level, the turnover should be the one of the entire relevant markets. This represents the pre-intervention market turnover. The affected turnover can be adjusted by the expected market's historical compound annual nominal inflation rate,  $\pi$ , ensuring realistic dynamics. It is also possible to account for real growth, which is particularly important when considering longer time horizons. In most impact assessment exercises, where the duration is only a few years, the real growth rate is typically assumed to be zero. Throughout the remainder of this section, we adopt this simplified assumption, primarily to keep the notation and calculations simple. However, whenever reliable information on real growth is available, it should be incorporated into the impact calculations. Note also that  $\frac{(1+\pi)}{(1+i)} = \frac{1}{(1+r)}$ , where  $r$  is the real discount rate. Hence Equation A.1 can be simplified to

$$B_t = \sum_{\tau=0}^d \frac{b_t * \Delta p}{(1 + r)^\tau}, \quad (A.2)$$

The percentage avoided detriment ( $\Delta p$ ) proxies for saving induced in the market by the intervention. Where case teams have developed robust forecasts grounded in market participant submissions, entry projections, or econometric modelling, such proportional avoided detriment can be used. Instead, when granular forecasting proves infeasible due to data constraints or intervention complexity, the IA calculation employs a parametric coefficient directly to baseline turnover: ( $\Delta p$ )=5%. This percentage is conservative, considering the decision would have removed a resistant monopolistic behaviour.  $i = 0.12$  is the nominal social discount rate adopted to reflect the time value of future benefits. This high value of the nominal discount rate considers an inflation rate of just below 10%, yielding a real discount rate,  $r$ , close to 3%. The duration ( $d$ ) reflects the temporal horizon of enhanced contestability, informed by case-specific evidence such as projected entrant ramp-up periods, observed stabilisation of new competition, or historical entry persistence patterns. Absent specifics, a default of 10 years applies. This is longer than other enforcement timelines to capture that barrier removal catalyses structural static monopoly market.

20. Case teams prioritise primary data from intervention proceedings (market studies, entrant surveys, capacity projections), escalating to statistical trend analysis where needed, and applying parametric defaults only as last resort. All assumptions, growth rates, entry volumes,

duration require sensitivity testing (e.g.,  $\pm 3\%$  on  $(\Delta p)$  and 5-15 year  $d$  ranges) to demonstrate the robustness of the estimates.

21. This unified methodological framework seamlessly integrates barrier removal benefits with the Agency's broader enforcement architecture, consistently valuing enhanced rivalry through quantified market volume expansion rather than price correction alone. By capturing the distinct welfare gains from contestability restoration, new entrants, capacity growth, intensified competition, the approach maintains evidentiary conservatism across intervention types while illuminating barrier removal's pivotal role in market development.
22. This approach ensures that even when full data sets are not available, the Agency can still produce an evidence-informed estimate of the impact of its interventions.
23. If subsidies are present, their removal could, of course, lead to higher market prices and may give rise to political tensions. However, such increases merely reflect the elimination of prices that were previously kept artificially low through public intervention. These subsidies are ultimately financed either through taxation, which involves redistribution across society, or through government borrowing, which shifts the burden across generations. While it is important to consider the impact of higher prices on vulnerable groups within society, addressing these distributional concerns is a matter of public policy rather than impact assessment. As such, they should be treated separately from the calculation of the overall economic impact.

## **A.2.2. Protection of competition**

24. The second direction, 'Protection of Competition', comprises three indicators, each of which corresponds to a distinct category of anticompetitive conduct and the associated remedial action taken by the Agency. The purpose of these indicators is to estimate the consumer savings arising from the Agency's interventions, measured in tenge, and to provide a consistent basis for the aggregation of those savings across the Agency's caseload.

### **A.2.2.1. Mergers control**

25. The Agency's merger control regime is fundamentally anchored in the protection of consumer welfare, reflecting its mandate to preserve competitive markets that deliver fair prices, high-quality goods and services, and diverse choices to consumers. Mergers carry substantial potential to undermine these outcomes, through unilateral price increases, diminished innovation incentives, reduced product variety, or coordinated effects among remaining rivals, making robust assessment and intervention essential.
26. Within its ex-ante impact assessment framework, the Agency systematically quantifies the expected consumer benefits arising from interventions in every merger in which it identifies a restriction of competition. This encompasses a clear range of outcomes: the prohibition of mergers that would otherwise be expected to harm competition and consumers; the conditional approval of transactions subject to remedies or commitments that effectively address identified competition concerns; and cases in which the Agency's scrutiny directly prompts, or

substantially contributes to, the withdrawal or abandonment of a transaction after significant competition concerns have been identified during the review process.

27. By focusing on these SLC-driven interventions, the IA captures the tangible value of the Agency's work in preventing foreseeable market harms, while maintaining methodological rigour and transparency. At the heart of this quantification lies a standard discounted present value formula, harmonised across the Agency's impact methodologies to ensure consistency and comparability. This formula follows the structure of Equation (A.1), with the removal of growth due to the shorter duration and the real discount rate at the denominator. The benefits are:

$$B_t = \sum_{\tau=0}^d \frac{b_t * \Delta p}{(1+r)^\tau} \quad (A.3)$$

This expression elegantly decomposes the total consumer benefits,  $B_t$ , into its core components:  $b_t$ , the affected turnover/revenues delineating the economic footprint of the SLC;  $\Delta p$ , the proportion of avoided price increase or equivalent monetised detriment (encompassing not just price effects but also harms to quality, range, service levels, or innovation);  $r = 0.03$ , the real social discount rate adopted to reflect the time value of future benefits; and  $d$ , indexing the additional years over which the competitive harm would have persisted absent intervention, representing the total duration of that counterfactual harm period. Each element is scrutinised methodically, prioritising evidence from the original merger inquiry while applying conservative defaults grounded in economic theory and empirical precedent to guard against overestimation.

28. Affected turnover serves as the foundational measure of the SLC's market scope, conservatively defined as the total revenues generated by the merging parties specifically in those markets or product segments where the Agency has established an SLC. This information is typically gathered directly from the merging firms during the inquiry process, ensuring reliability; where precise revenue data is unavailable, the Agency robustly estimates it using complementary volume-based metrics from case files.
29. To maintain conservatism and avoid inflating estimates, non-SLC markets are excluded, as are broader product market totals that might inadvertently capture unaffected activity. Tailored adjustments apply in specific theories of harm: for coordinated effects cases, where the merger facilitates collusion among multiple firms, affected turnover encompasses revenues from all firms plausibly involved in the coordination; in 3-to-2 mergers, which critically alter the competitive landscape by reducing rivals from three to two, the turnover of the surviving non-merging competitor is also incorporated to reflect its heightened pricing incentives post-merger; and for partial divestitures, only the turnover attributable to the divested assets enters the calculation, precisely matching the remedial scope.
30. The avoided price increase term,  $\Delta p$ , quantifies the counterfactual competitive detriment that the Agency's intervention averts, extending beyond literal price hikes to embrace any quantifiable welfare loss, whether through degraded quality, curtailed innovation, narrower product ranges, or inferior service. Where the original investigation yields case-specific evidence, such as estimates of upward pricing pressure derived from the Generalised Upward Pricing Pressure Index (GUPPI) or diversion ratios, these take precedence for their direct relevance and empirical grounding. In the absence of such tailored metrics, the Agency adopts

a prudent default of 5% as the expected price uplift, calibrated to reflect typical unilateral effects in differentiated product markets while erring on the side of caution. This rises to 10% in merger-to-monopoly scenarios, where the elimination of all competition justifies a higher benchmark, drawing on well-established empirical patterns from post-merger studies and natural experiments in concentrated markets. The assumed price increase is larger than the corresponding estimates used in some jurisdictions because it is applied exclusively to the sales of the merging firms, rather than to the turnover of the entire affected relevant market. Jurisdictions that apply price effects to total market turnover typically employ smaller percentage increases.

31. Finally, duration  $d$  captures the temporal horizon of the averted harm, informed by the Agency's Merger Guidelines, which stipulate that entry or expansion must typically be 'timely' (within two years of an SLC emerging) to discipline a merger's effects, though this can vary contextually based on barriers to entry, market dynamics, or evidence of re-entry risks. Case-specific intelligence from the inquiry, such as projections of rival responses or historical entry patterns, governs where available, ensuring precision. Absent such details, a conservative default of two years is applied, reflecting the guideline benchmark and avoiding speculative extensions that could overstate long-term impacts. This integrated, evidence-led approach yields defensible, transparent estimates of the Agency's merger control value, underscoring its pivotal role in sustaining competitive vitality.

#### **A.2.2.2. Horizontal agreements/cartels**

32. The Agency's robust enforcement against cartels and horizontal agreements zooms in on the most egregious collusive practices that fundamentally undermine market rivalry. These include explicit price-fixing arrangements, market allocation schemes, bid-rigging conspiracies, output restrictions, and other coordinated efforts among horizontal competitors to suppress, distort, or eliminate competition. Such interventions swiftly dismantle these clandestine networks, immediately halting overcharges and artificial scarcity to deliver tangible, quantifiable consumer savings through the restoration of genuine competitive pricing and expanded product availability.
33. Beyond these direct effects, successful enforcement sends a powerful deterrent signal across industries, discouraging would-be colluders from even attempting similar schemes, while cases cleared after thorough investigation contribute indirectly by clarifying legal boundaries, establishing authoritative precedents, and enhancing overall regulatory predictability and transparency for legitimate businesses operating in compliant environments.
34. Within its ex-ante IA framework, the Agency maintains a deliberately conservative and transparent approach, quantifying consumer benefits exclusively from those cases that have reached definitive closure with concrete enforcement outcomes against one or more implicated undertakings. Qualifying cases include those culminating in formal infringement decisions issued by the Agency, convictions secured through the courts for cartel offences, or legally binding commitments obtained from parties to immediately cease and desist from the collusive conduct.

35. In scenarios where not all involved parties have admitted their role in the infringement, such as during phased resolutions, benefits are prudently allocated incrementally across the timeline of full case resolution, preserving the total estimated value for the case while avoiding premature over-attribution. This rigorous scope pointedly excludes all preliminary investigations, ongoing probes without final decisions, and any speculative quantification of broader deterrence benefits that ripple through un-investigated markets. Similarly, the inclusion of ‘by object’ cases, where the collusive agreement’s inherently anti-competitive nature presumes harm without requiring proof of actual market effects, carries no implication of a formal evidential finding regarding observed consumer detriment until a decision is formalised, clearly distinguishing these from more resource-intensive ‘by effect’ cases demanding demonstrated causal impacts.
36. The Agency adopts the identical discounted present value framework as outlined in its Merger Control (see Equation A.2 or A.3), where  $b_t$  captures in this case the affected turnover of all colluding undertakings across the impacted product and geographic markets, drawn reliably from investigation-gathered company financials or conservatively estimated via complementary volume and sales metrics where direct revenue data proves incomplete. The avoided price increase term,  $\Delta p$ , quantifies the counterfactual overcharge (or equivalent welfare loss from restricted output/supply) that would have persisted absent intervention, encompassing not only direct price inflation but also proxy-monetised harms to quality, variety, or service levels; case-specific evidence from the original probe takes precedence, but absent this, a uniform 15% default applies across all cartel types (price-fixing, sharing, rigging), calibrated by using the rounded up median cartel overcharge calculated using the Connor’s dataset for 11 cartel decisions in Mexico and Turkey.<sup>4</sup> Differentiation by precise infringement modality is eschewed unless compelling, case-unique evidence justifies deviation, prioritising methodological consistency and conservatism. Duration  $d$  reflects the projected longevity of the collusive scheme absent Agency action, derived wherever possible from internal documents, participant testimony, or detected behavioural patterns uncovered during the investigation; lacking such granularity, a 4-year horizon from the decision date serves as the prudent default, calculated as the average duration of cartels using the Connor’s dataset for 11 cartel decisions in Mexico and Turkey to err against underestimation of harm persistence.

#### A.2.2.3. Abuse of dominant positions

37. The Agency polices abusive conduct by firms enjoying dominant market positions, targeting unilateral practices that exploit entrenched power to foreclose competition, entrench monopoly rents, or distort market outcomes in ways fundamentally distinct from the mutual rival suppression characterising cartels. Prohibited abuses encompass a spectrum of exclusionary tactics: predatory below-cost pricing designed to bankrupt rivals, loyalty-inducing rebates that lock in customers and starve competitors of scale, refusals to supply essential inputs or interoperable access, predatory product bundling or tying that leverages dominance in one market to extinguish rivalry elsewhere, and excessive pricing that extracts supra-competitive returns from captive consumers. Agency interventions in these arenas promptly restore contestability, yielding direct consumer savings through tempered pricing, reinvigorated quality

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<sup>4</sup> Mexico and Turkey were chosen as they are developing countries, part of OECD’s 38 Member countries. The dataset can be downloaded from <https://purr.purdue.edu/publications/4487/1>.

competition, accelerated innovation, and broader choice, complemented by the indirect value of cleared dominance cases that refine jurisprudence, stabilise expectations around legitimate dominant firm conduct, and illuminate safe harbours for pro-competitive strategies.

38. The IA scope for dominance cases mirrors that applied to cartels above: quantification limited to investigations yielding enforcement against the dominant undertaking, via infringement decisions or remedial commitments to unwind abusive practices. Partial admissions trigger phased benefit attribution akin to cartels; preliminary or unresolved matters, plus unquantified deterrence, remain excluded (addressed separately in these Guidelines). By object dominance inclusions, rare but analogous in presuming inherent abusiveness, are treated with equivalent evidential caution.
39. The methodology is identical to the cartel/merger framework detailed above but with a slightly lower price effect. Affected turnover zeroes in on the dominant firm's revenues specifically from the abused market(s) or product lines, sourced from case records or volume-based proxies. Avoided price increase  $\Delta p$  encompasses excessive pricing extraction or exclusionary foreclosure effects, defaulting to 10% absent case-specific metrics, adjustable on evidential grounds to maintain uniformity. Duration gauges abuse entrenchment often more 'sticky' than cartels due to structural barriers and information asymmetries, leveraging case-derived evidence like internal strategy documents or rival foreclosure timelines; the 5-year conservative benchmark applies otherwise, appropriately elongated beyond merger norms to reflect dominance abuses' inherent durability and lower detection probabilities compared to overt cartel coordination.
40. The Agency's investigations into anti-competitive conduct abuse of dominance swiftly halt harmful practices, generating immediate and measurable consumer savings while serving as a powerful deterrent against future violations. Even cases cleared after formal scrutiny contribute indirectly by establishing critical legal precedents, regulatory stability, and greater market transparency, hence deter other anti-competitive behaviour.
41. For this ex-ante impact assessment, the Agency deliberately narrows its focus to closed enforcement cases only: those culminating in infringement decisions against involved parties. This conservative scope excludes preliminary or non-finalised investigations. Notably, including benefits from cases where anti-competitive potential is presumed by nature does not imply or constitute a formal determination of actual market harm.

#### **A.2.2.4. Market studies and market investigations**

42. The Agency's market studies and market investigations serve as powerful diagnostic and remedial tools to identify and address competition concerns or market failures that harm consumers. Market studies assess whether markets or specific segments within them are functioning effectively or exhibit systemic problems such as weak competition, information asymmetries, regulatory barriers, or behavioural biases. Where issues are detected, the Agency may recommend targeted solutions including guidance to businesses, consumer education campaigns, direct enforcement actions, policy recommendations to government or undertakings in lieu.

43. Market investigations, triggered by studies or other sources of content, enable deeper analysis and direct interventions such as divestitures, behavioural remedies, or pro-competitive access remedies. Collectively termed ‘market work’ in these guidelines, both tools yield consumer benefits through restored competition, lower prices, better quality, and enhanced choice.
44. Given the diversity of markets work, from rapid studies to multi-year investigations, the Agency tailors impact estimation to case specifics while maintaining consistency with its competition enforcement methodology. Benefits are included only for projects concluded within the financial year (period in case of multi-year IA): market studies qualify upon public announcement of findings, regardless of government response timing (though responses received within the year inform estimates); market investigations conclude at final report publication. To prevent double-counting, any segment escalated to formal investigation is excluded from study-level benefits. This ex-ante approach reflects expected future gains from announced outcomes, prioritising objectivity and verifiability.
45. Not all Agency recommendations, particularly those directed to government or third parties, are invariably implemented, due to policy priorities, fiscal constraints, or external factors. To address this uncertainty, the Agency applies a probability adjustment (scaling factor) to recommendation benefits, calibrated according to case team intelligence on implementation prospects: high-confidence reforms (e.g., accepted undertakings) receive full weight; lower-confidence ones are discounted accordingly. Absent specific evidence, an initial default of 50% applies, subsequently updated using the Agency’s internal review of historical recommendation uptake rates. This factor is periodically reassessed as new implementation data emerges, ensuring ongoing methodological robustness.
46. Impact calculation builds on the formula below.  $b_t$  denotes affected market turnover calculated at time  $t$  (sourced from case data or market reports),  $\Delta p$  captures the avoided price increase or monetised detriment (case-specific where possible, otherwise benchmarked against comparable interventions),

$$B_t = \sum_{\tau=0}^d \frac{b_t * \Delta p * Prob}{(1 + r)^\tau}, \quad (A.4)$$

Prob is the implementation probability (as above), and  $d$  is the benefit duration. The affected turnover delimits the problematic market segment; proxies welfare gains from remedies (e.g., 10% price effects calibrated to intervention type); deviations from defaults require evidential justification.  $r$  is the real social discount rate adopted as per established public policy conventions to reflect the time value of future benefits ( $r=0.03$ ).

47. Market studies and investigations typically target entrenched failures in static or regulated sectors, where absent Agency action, distortions would persist indefinitely due to high barriers, coordination problems, or inertia. Accordingly, the Agency adopts a default 5-year benefit horizon, longer than merger durations to reflect structural remedies’ durability. Case-specific evidence governs adjustments: dynamic markets (e.g., tech) may warrant shorter periods; static or heavily regulated ones (e.g., energy, healthcare) may justify longer periods. This balanced assumption ensures conservative yet realistic valuation of sustained consumer gains.

### A.2.3. Protection of consumers

48. The Agency's consumer protection enforcement targets trader practices that violate consumer protection legislation, deploying a spectrum of interventions, from informal warnings and advisory guidance to formal undertakings and court-ordered remedies. These actions safeguard consumers, with particular emphasis on vulnerable groups, against unfair commercial practices such as misleading promotions, aggressive sales tactics, hidden fees, non-compliant terms, or other breaches that erode trust and extract undue detriment. By compelling behavioural change, the Agency secures redress, prevents ongoing harm, and elevates market standards, yielding both immediate financial relief and longer-term gains in consumer confidence and choice.
49. Like market studies, consumer protection cases span diverse interventions and outcomes, necessitating case-tailored impact estimation while adhering to the Agency's principled framework. Quantification poses unique challenges, as many cases address non-price harms (e.g., deception, quality misrepresentations) rather than direct overcharges. Nevertheless, the Agency prioritises robust methods grounded in available evidence, drawing on OECD guidance that endorses flexible, data-driven approaches calibrated to information quality, favouring cases with clear affected turnover, harm magnitude, and conduct duration.
50. For cases with tangible monetary impacts, the Agency directly measures consumer savings:
- 50.1. Where enforcement secures compensation or repayments for affected consumers, these amounts enter estimates at face value, reflecting actual transfers restored.
- 50.2. Modifications to unfair terms (e.g., removing excessive penalties) yield directly countable savings, based on projected fee volumes under the prior regime.
- 50.3. Enhanced transparency (e.g., clearer upfront disclosure) averts hidden overcharges; absent case-specific data, a conservative 3% price rise avoided applies, informed by empirical scoping reviews of transparency interventions.
51. These direct metrics ensure precision where data permits, anchoring broader estimates in verifiable outcomes.
52. For remaining cases, encompassing behavioural nudges, practice cessations, or quality improvements without clear price linkages, the Agency develops proportionate, ad hoc methodologies leveraging case team intelligence, consumer surveys, or proxy benchmarks. The standard discounted present value formula provides structure where feasible (see Equation A.4). The affected turnover targets exposed consumer expenditure in impacted practices/markets;  $\Delta p = 5\%$  monetises avoided detriment (e.g., time savings, error avoidance, or quality uplift, proxied via willingness-to-pay studies); implementation probability *Prob* adjusts for compliance uncertainty; and duration reflects reformed conduct persistence (default: 2 years for behavioural changes, case-adjusted). Defaults remain conservative, with full transparency on assumptions and sensitivity testing to uphold credibility.
53. This integrated approach, prioritising direct measurement while extending rigorous proxies to diffuse harms, illuminates the Agency's vital role in protecting consumers from exploitative practices, complementing its competition toolkit with tangible welfare gains.

**Table A.1. Summary of conservative benchmark assumptions for Impact Assessment**

| Type of infringement                     | Price effect %                       | Duration years | Implementation probability % |
|------------------------------------------|--------------------------------------|----------------|------------------------------|
| Removal of barriers                      | 10%                                  | 10             | -                            |
| Mergers control                          | 5%                                   | 2              | -                            |
| Horizontal agreements/cartels            | 15%                                  | 4              | -                            |
| Abuse of dominant positions              | 10%                                  | 5              | -                            |
| Market studies and market investigations |                                      | 5              | 50%                          |
| Protection of consumers                  | 5%<br>(3% for enhanced transparency) | 2              |                              |

### A.3. Agency costs

54. The Agency's ex-ante IA systematically compares estimated consumer benefits against comprehensive cost figures to derive benefit-cost ratios, fulfilling requirements under its framework agreement with the relevant government department. These costs form the denominator in the ratio, providing a rigorous basis for evaluating enforcement efficiency and value for money.
55. Due to IA publication timelines, costs for the most recent financial year reflect pre-audit figures. The Agency addresses this by incorporating audited costs with a one-year lag, systematically reviewing and updating figures for the prior two financial years as final audited data becomes available from annual reports.
56. Total costs encompass all resource spending, including depreciation, but exclude expenses tied to regulatory appeals functions. This aligned scope ensures costs match precisely to the benefits captured in the IA, thereby maintaining methodological consistency and avoiding distortion from unrelated activities.

### A.4. New impact assessment methods

#### A.4.1. Quantification of deterrence

57. While the Agency's ex-ante IA focuses primarily on direct, case-specific consumer benefits from enforcement interventions, these actions simultaneously generate substantial deterrence against future anti-competitive conduct across markets. The OECD provides no standard methodology for quantifying deterrence effects, and most competition authorities, exclude them from headline benefit calculations due to fundamental measurement challenges. Focusing solely on direct benefits, however, risks substantially understating the true welfare contribution of enforcement work, particularly in high-profile cartel prosecutions, dominance abuse cases, and landmark rulings where the systemic demonstration effect may dwarf case-specific gains.

This is especially salient when market studies and forward-looking interventions receive quantified credit, potentially undervaluing deterrence-focused enforcement relative to structural remedies.

58. Deterrence operates through firms' perceptions of two core factors: the likelihood of detection and the severity of sanctions. A single intervention typically exerts only marginal influence on these perceptions, which are shaped far more by sustained enforcement patterns than isolated cases. Prolonged inaction erodes deterrence dramatically, while consistently severe penalties, even if varying case-by-case, reinforce regime credibility. Light sanctions, conversely, can undermine deterrence by signalling leniency. Thus, enforcement's deterrent value emerges primarily as a cumulative regime effect rather than an attributable case-level benefit.
59. The Agency addresses this by prioritising rigorous quantification of direct benefits (per relevant intervention guidelines) while treating deterrence as a distinct, complementary impact dimension. Deterrence estimates typically do not enter headline IA totals, preserving methodological transparency, but contextual evidence illuminates enforcement's broader contribution.
60. Practitioner surveys provide the most accessible deterrence evidence, consistently revealing substantial multipliers. The Agency may consider domestic surveys to generate jurisdiction-specific multipliers, treating results conservatively as directional evidence. Approaches draw on simulations, notably the framework developed by Davies, Mariuzzo and Ormosi (2018), which conceptualises detected cartels as a sample drawn from a broader population encompassing undetected operating cartels + deterred (never-formed) cartels. Their framework hinges on three parameters: detection probability (typically 10-20%), deterrence probability, and harm variation across the cartel population, calibrated from theoretical and empirical literature. Even with conservative inputs, they estimate at least 50% of total cartel harm is deterred, implying welfare losses absent enforcement could reach 13 times current levels. This means that a convicted cartel that generates an impact of 1KZT indirectly generates 13KZT savings by deterring other cartels from forming or continuing their misconduct.
61. In practice, the Agency excludes deterrence from headline benefit quantification to preserve analytical rigour and transparency. However, an appendix could usefully present sensitivity analysis incorporating conservative deterrence multipliers (e.g., 2-5x direct effects, per survey/modelling evidence), illustrating enforcement's substantially larger total contribution while clearly distinguishing core estimates from wider impacts.

#### **A.4.2. Distributional impact**

62. This section largely draws from Davies and Mariuzzo (2022) and Davies, Mariuzzo and Zhang (2026). Competition interventions may have distributional consequences as well as average effects. By lowering prices, improving quality, or preventing exclusionary conduct, enforcement can increase consumer welfare, but the gains may not be shared evenly across the society. Lower-income households typically spend a larger share of their income on consumption and are therefore more exposed to price increases in goods and services than higher-income households, who tend to save more and are less reliant on day-to-day consumption. As a result, competition policy may have a redistributive dimension: the benefits of stronger competition can

fall disproportionately on households with lower incomes, particularly when the affected markets supply necessities such as food, housing-related goods, transport, utilities, and other essential services.

63. One way to assess this effect is to examine whether households at different income levels are more exposed to concentrated markets. The basic idea is to compare household expenditure patterns with measures of concentration in the industries supplying the relevant goods and services. If lower-income households spend relatively more on products supplied by more concentrated industries, then market power is likely to have a more regressive impact. This approach does not establish causation, but it provides a useful descriptive indicator of how exposure to concentrated markets varies across the income distribution. It also helps identify whether the consumers most reliant on particular goods and services are the same consumers most likely to be affected by weakened competition.
64. A practical methodology would combine household expenditure data with industry-level concentration measures. Household spending can be drawn from a household budget survey, with expenditure broken down by income decile and product category. Industry concentration can be measured using the Herfindahl-Hirschman Index, or another accepted concentration measure, at an appropriately detailed industry level. The key step is to match household expenditure categories to the industries that produce or sell those products. In some cases, it may be more informative to match expenditure to retailers rather than manufacturers, especially where imports, exports, or mixed retail structures make the manufacturing side less relevant to consumer exposure.
65. Once the data are matched, a weighted concentration index can be calculated for each household income decile. This can be done by weighting the concentration of each product category by the share of household income, or by the share of household expenditure, devoted to that category. The resulting indicator gives an overall measure of how concentrated the markets faced by each income group are. If the weighted concentration index is higher for poorer households than for richer households, this suggests that lower-income households are more exposed to concentrated markets and may therefore be more vulnerable to the effects of market power. The same framework can also be extended by estimating income elasticities for individual product categories, which can help identify whether necessities are systematically supplied by more concentrated industries than luxury goods.
66. Where feasible, the Agency can extend this analysis to monetise redistributive impacts by calculating the estimated consumer benefits of specific interventions on a product-by-expenditure category basis, then apportioning those benefits according to each household income decile's spending share in that category. This approach directly quantifies how competition remedies redistribute welfare across the income distribution, revealing whether lower-income households capture a disproportionate share of total gains.
67. For impact assessment purposes, the value of this type of analysis is that it can complement the standard consumer surplus framework by highlighting who benefits from intervention. A merger remedy, a cartel, an abuse-of-dominance case, or a consumer protection action may produce aggregate gains, but those gains may matter more from an equity perspective if they accrue to households at the lower end of the income distribution. The analysis can therefore be used to describe the likely distribution of benefits, even if it is not always possible to monetise

redistribution precisely. Where monetisation is feasible, a more ambitious methodology could combine the estimated price effects of an intervention with household expenditure shares by income decile, to estimate how much of the total consumer saving accrues to each income group. That would provide a clearer picture of the redistributive incidence of competition policy, although such estimates would remain sensitive to assumptions about pass-through, consumption patterns, and product-level matching.

## **A.5. Conclusions**

68. These IA Guidelines establish a unified framework for quantifying the Agency's contributions to consumer welfare across its diverse enforcement and advocacy functions. By consistently applying the discounted present value methodology, tailored through case-specific parameters for affected turnover, avoided detriment, duration, and implementation probability, the Agency generates credible, transparent estimates that withstand external scrutiny while accommodating Kazakhstan's economic context, including a 3% real (12% nominal) social discount rate, and tenge-denominated projections.
69. The structured evidentiary hierarchy prioritises intervention-specific data, escalates methodically to trend analysis and conservative parametric defaults, and mandates sensitivity testing to ensure analytical rigour. Distinct sections for cartels, dominance abuse, mergers, barrier removal, market studies, consumer protection, and distributional effects recognise each tool's unique welfare mechanism while maintaining methodological coherence. Deterrence and redistribution analyses, presented as complementary appendices, illuminate enforcement's broader systemic value without compromising headline estimate conservatism.
70. As a living document, these Guidelines will evolve through practical implementation. Initial calculations using this draft framework should inform a mid-assessment review to refine defaults, validate assumptions, and incorporate emerging evidence. Pre-decision forecasting remains an internal strategic capability, excluded from published Reports to preserve objectivity.
71. Ultimately, this framework empowers the Agency to demonstrate its pivotal role in fostering competitive markets that deliver lower prices, better quality, and equitable outcomes for Kazakhstani consumers, translating enforcement outcomes into compelling evidence of public value while guiding resource allocation toward maximum welfare impact.

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