Calculation of penalties for breaches of regulatory obligations

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Executive summary

The Commission for Communications Regulation (ComReg) has sector-specific powers to ensure that operators comply with regulatory obligations. If, following an investigation, ComReg is of the view that there has been a breach, it has civil enforcement powers to apply to the High Court and request the imposition of penalties.

We understand that, where a penalty has been considered appropriate by ComReg in the past, this has been decided on a case-by-case basis rather than according to a pre-defined methodology. We also understand that a number of live cases relating to wholesale markets are currently being considered by ComReg, in which there have been complaints by competitors regarding restrictions on wholesale provision.

ComReg is considering whether, for breaches of regulatory obligations at the wholesale level, it should adopt a turnover-based approach. This would embody the principle of deterrence. Similar approaches are employed by the European Commission and many national competition authorities in the context of breaches of competition law, as well as by some national regulatory authorities (NRAs) in an ex ante regulatory context.

Any new methodology will need to be consistent with Irish and EU legislation. The latter requires member states to publish rules on levying penalties for breaches of ex ante regulatory obligations—including that penalties should be appropriate, effective, proportionate and dissuasive. Ireland has transposed these requirements into its legislature. Where a penalty is sought by ComReg, the High Court must assess what penalty (if any) should apply. It must take into account the circumstances of non-compliance, including:

- its duration;
- the effect on consumers, users and other operators;
- the submissions of the regulator on the appropriate amount;
- any excuse or explanation for the non-compliance.

Within this framework, we have explored what methodology might be appropriate going forward for assessing penalties for breaches of wholesale obligations (non-discrimination, transparency, access). We have looked at both theory and practice.

In terms of theory, there are two basic objectives behind fines:

- **punishment (backward-looking, harm-based)**—a fine is set such as to reflect the harm caused to the affected party in the past by the action of the firm (the fine 'internalises' the harm caused);
- **prevention (forward-looking, deterrence-based)**—assuming that monitoring is imperfect, the fine might be aimed at providing an incentive for firms to comply with their obligations.

The calculation of the optimal value for a penalty depends on two relevant assumptions: whether the regulator is able to perfectly monitor compliance; and whether the behaviour of the economic agents (i.e. individuals and firms) is consistent with rational choice theory.

Based on full rationality and perfect information, the penalty would be one based on a narrow view of 'proportionality'—one in which the fine reflects the wrongdoing, in terms of the illicit profits made or the harm caused by the infringement.

However, with imperfect monitoring, an additional 'deterrence' element is needed—to take account of the probability that a non-compliant company may not always be caught. Here the optimal fine is based on a cost–benefit calculation that the potential breaching firm might undertake in terms of assessing the additional benefits to the offender of the breach, less an assessment of the expected fine (taking account of the probability of being caught).

With imperfect monitoring, the deterrence-based fine will *always* be higher than the harm-based fine, if only direct (rather than wider) impacts are taken into account. While a regulator might seek to improve its monitoring capability, to increase the probability of the firm being caught, this can be costly, which means that raising fines would be a more straightforward route to pursue.

Nonetheless, fines—to achieve optimal deterrence—can become disproportionately high. In practice, most regimes apply a cap—as a percentage of total turnover—on penalties (the European Commission has a cap of 10%, as do most member states). Mitigating circumstances (such as negligence), or inability to pay, may also be taken into account.

Behavioural biases that may lead to repeat offending (recidivism) and lack of cooperation with the authorities may be taken into account as aggravating factors.

In practice, it may be difficult to implement the theoretical approach. For example, cases of restrictions of wholesale access to competitors are exclusionary forms of conduct that harm consumers indirectly by restricting competition. In this instance, the deterrence-based approach, strictly applied, would require the calculation of a number of factors, including:

- the lost profits to the affected parties or gained profits to the breaching party, as compared to the counterfactual;
- the probability of detection and prosecution, which may vary by the type of offence;
- potentially wider factors (the impact on society, market trust, other cascades of impact).

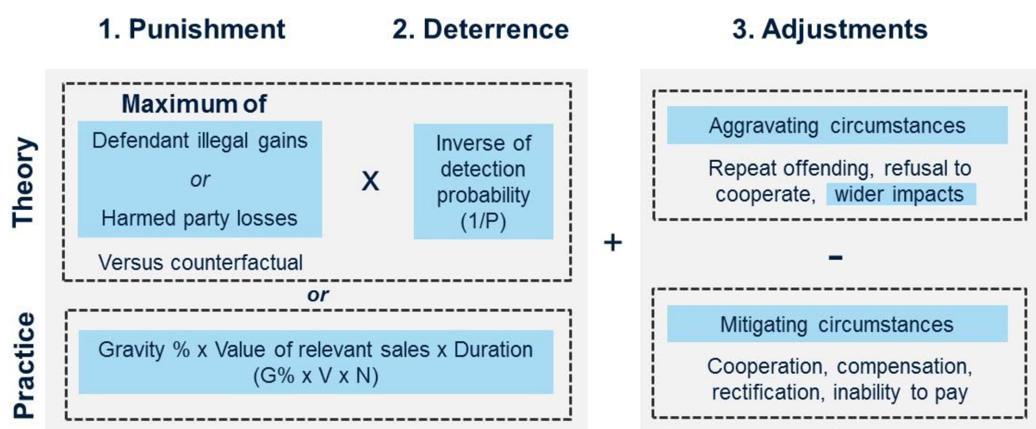
Calculating profits gained (or harm caused) relative to a counterfactual can be challenging, and may not always be possible. Computing the estimated detection probability relies on knowing the number of breaches that go undetected relative to the number that are detected. This is not an easy task, and will vary by the type of conduct and by jurisdiction. It is unlikely to be estimated with a sufficient level of robustness.

In practice, a compromise is often adopted, and percentage of turnover is used as a relevant benchmark in calculating deterrence-based penalties. This includes the approach adopted by the European Commission in the ex post competition cases that it reviews.

Based on a review of practice, and the theory outlined above, the potential approaches to assessing penalties for breaches of regulatory obligations are

shown in Figure 1 below. The theoretically optimal approach is presented in the top left-hand quadrant, while a more practical approach—taking account of the European Commission's approach to fines in ex post competition cases—is presented in the bottom left-hand quadrant. In both cases, aggravating and mitigating circumstances may be taken into account in the assessment—as shown on the right-hand side of the figure.

Figure 1 Optimal penalty design



Source: Oxera, adapted from a framework set out in Lianos, I., Jenny, F., Wagner von Papp, F., Motchenkova, E. and David, E. (2014), 'An optimal and just financial penalties system for infringements of competition law: a comparative analysis', Centre for Law, Economics & Society, UCL Faculty of Laws.

The Commission's approach is summarised as follows:[1]

> The Commission's fining policy is aimed at **punishment** and **deterrence**. The fines reflect the **gravity** and **duration** of the infringement…The starting point for the fine is the percentage of the company's annual sales of the product concerned in the infringement (up to 30%). This is then multiplied by the number of years and months the infringement lasted. The fine can be increased (e.g. repeat offender) or decreased (e.g. limited involvement). The maximum level of fine is capped at 10% of the overall annual turnover of the company.

The European Commission approach offers an appropriate compromise. It uses readily available data on sales, and takes account of punishment and deterrence through the calculation of the basic amount and the subsequent upward and downward adjustments. It has been noted that the expected gain from the violation will, to a large extent, be positively correlated with the undertaking's turnover in the affected market throughout the duration of the infringement.[2]

We also looked at the approaches in different member states to assessing penalties for breaches of ex ante obligations in communications, and were provided with a research briefing on these.[3] From this, we observe that there is considerable variation across member states in the way in which the European Commission requirement has been put into practice, but that many countries incorporate a role for deterrence.

The case of the Netherlands was examined in more detail, as there have been numerous cases over recent years in which the Netherlands Authority for Consumers and Markets (ACM) has imposed fines for breaches of regulatory

[1] European Commission (2013), 'Competition: Antitrust procedures in abuse of dominance. Article 102 TFEU cases', July.
[2] Wils, W. (2007), 'The European Commission's 2006 Guidelines on Antitrust Fines: A Legal and Economic Analysis', Public Lecture, King's College London, Centre of European Law, 15 February.
[3] Cullen International (2016), 'Fines for ECS providers', prepared for ComReg, March.

obligations. We also examined the approaches adopted by UK economic regulators when imposing penalties on regulated companies. The regulators' approaches share similarities, each taking account of the seriousness of the breach and the potential harm, and any aggravating or mitigating factors. The precise methodology, however, varies.

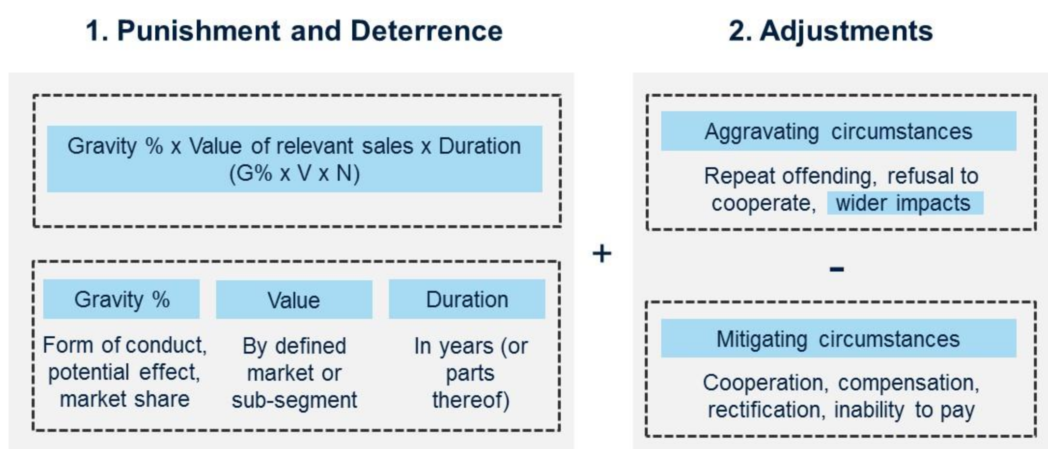
We also explored cases in Belgium and Poland, as well as South Africa, in which the competition authorities had found breaches of competition law, and had set out how they had assessed the resulting fines. A common theme is that the fines have been assessed taking into account the breaching party's turnover, the gravity and duration of the infringement, and any aggravating or mitigating circumstances.

Our assessment is that the European Commission's fining approach is valid. There is ample precedence for adopting a turnover-based approach that encompasses deterrence. Furthermore, competition and regulatory policy are based on similar economic principles. Refusal to supply and margin squeeze share the same economics as breaches of regulatory requirements relating to non-discrimination, transparency and access. The theory of harm is that a breach of wholesale regulatory obligations would be expected to have a knock-on impact on downstream retail competition.

In a workable methodology for ComReg, any penalty should be consistent with the European Commission guidance on setting penalties for breaches of regulatory obligations.[4] In this respect, any penalty should be appropriate, effective, proportionate and dissuasive.

The recommended methodology is summarised in Figure 2. Any methodology will need to balance prescription and flexibility. There will be elements of the regime that could be established upfront, and elements for which discretion should be retained.

Figure 2 Recommended methodology for setting penalties



Source: Oxera.

The approach then will involve assessing the following:

[4] Directive 2002/20/EC of the European Parliament and of the Council of 7 March 2002 on the authorisation of electronic communications networks and services, OJ L 108/21, 24.4.2002; as amended by Article 3, Directive 2009/140/EC of the European Parliament and of the Council of 25 November 2009, OJ L 337/37, 18.12.2009. Also, Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive), OJ L 108, 24.04.2002; as amended by Article 1 of Directive 2009/140/EC.

- the turnover metric used;
- the determination of gravity; and/or
- the assessment of mitigating/aggravating factors.

All other things remaining constant, conduct at the wholesale level that would be expected to harm competition in one or more retail segments will attract a higher candidate turnover figure, higher gravity, and/or more aggravating factors (and fewer mitigating factors).

The turnover metric will relate to the turnover of the breaching party. In practice, there is discretion to adopt a wide or a narrow approach:

- narrow definition (retail)—taking into account affected competitors, and thus based on a subset of the defined retail market;
- wider definition (retail)—taking into account the overall consumer impact, based on the relevant retail product and geographic market;
- widest definition—taking account of indirect impacts along the value chain, at both the wholesale and retail level.

However, the theory of harm regarding wholesale breaches is that these are a means to an end in causing harm to competitors at the retail level. Therefore, a conservative approach would be to start with a narrow definition of relevant retail sales—the specific retail sub-segments that are affected by the breach—and then consider how far the relevant market should be expanded to include other retail segments.

Once the relevant sales have been decided on, it will be necessary to apply an assumption on gravity—i.e. the percentage of affected sales. This will depend on the nature of the conduct in question and the market share of the breaching party in the affected retail market or sub-segment.

In practice, the most serious cases examined by ComReg would be akin to a refusal to supply, or margin squeeze cases (abuse of dominance cases under competition law). These would be expected to have the most significant impact on competition and might attract a gravity of up to 15%. Other breaches might attract a lower gravity. For example, a gravity of 5–10% could apply to a non-discrimination, transparency or access breach where this would be expected to have a material (but less significant) impact on retail competition.

Aggravating and mitigating circumstances would then also be taken into account. It might be sensible to offer significant discounts to penalties where a breach was not deliberate, where it has since been remedied, and where there has been cooperation with the regulator. Discounts to the basic amount might be as high as 50%. For repeat offending (recidivism), fines might be increased.

1 Introduction

The Commission for Communications Regulation (ComReg) has sector-specific powers to ensure that operators comply with regulatory obligations, and to carry out investigations where it is suspected that there has been a breach in compliance.

ComReg also has overall objectives to promote competition; to contribute to the development of the internal market; and to promote the interests of users.

The mechanism through which penalties might then be levied for non-compliance differs from that of sector-specific regulators in some other jurisdictions, which can decide upon and issue penalties for non-compliance.

If, following an investigation, ComReg is of the view that there has been a breach, it has civil enforcement powers to apply to the High Court and request the imposition of penalties. However, the High Court is not bound by ComReg's recommendation, and ultimately the Court decides whether a penalty should be levied and what its magnitude should be, albeit taking into account ComReg's recommendations on the appropriate level.

We understand that, where a penalty has been considered appropriate by ComReg in the past, this has been decided on a case-by-case basis rather than according to a pre-defined methodology. ComReg is considering whether, for breaches of regulatory obligations at the wholesale level, it should adopt a turnover-based approach. This would embody the principle of deterrence. Similar approaches are employed by the European Commission and many national competition authorities in the context of breaches of competition law, as well as by some national regulatory authorities (NRAs) in an ex ante regulatory context.

In this context, ComReg has asked Oxera to address the following questions.

- What are the economic principles underlying the European Commission's fining guidance for breaches of competition law?
- How does this compare to other potential methodologies used by electronic communications national regulatory authorities in the EU?
- Is the turnover-based approach, applied in ex post competition enforcement cases, suitable (i.e. economically well founded and soundly justified) for calculating penalties for breaches of ex ante wholesale regulatory obligations in the Ireland communications sector?
- How might the European Commission's approach be adapted, if necessary, given this difference in context (ex ante versus ex post)?

This report answers these questions as follows:

- in section 2, we briefly discuss the relevant legal and regulatory framework in Ireland, and what this means for the design of an approach for calculating the penalty for breach of regulatory obligations;
- in section 3, we outline the economic theory behind regulatory enforcement. In particular, we consider the objectives of regulatory sanctions before discussing different types of regulatory sanction, and how financial penalties (if deemed necessary) can be optimally designed;

- in section 4, we consider the approaches adopted by the European Commission and national regulatory and competition authorities in assessing penalties for ex post and ex ante breaches, and the economic rationale;
- in section 5, we present our recommendations on a workable methodology for ComReg for calculating penalties for breaches of wholesale regulatory obligations.

2 The legal and regulatory framework in Ireland

Any methodology for setting penalties for breaches of ex ante regulatory obligations needs to take into account the latest theory and regulatory best practice regarding penalty design.

Importantly, this must be consistent with the legal framework applicable to Ireland. We have discussed these issues with ComReg's legal team and counsel.

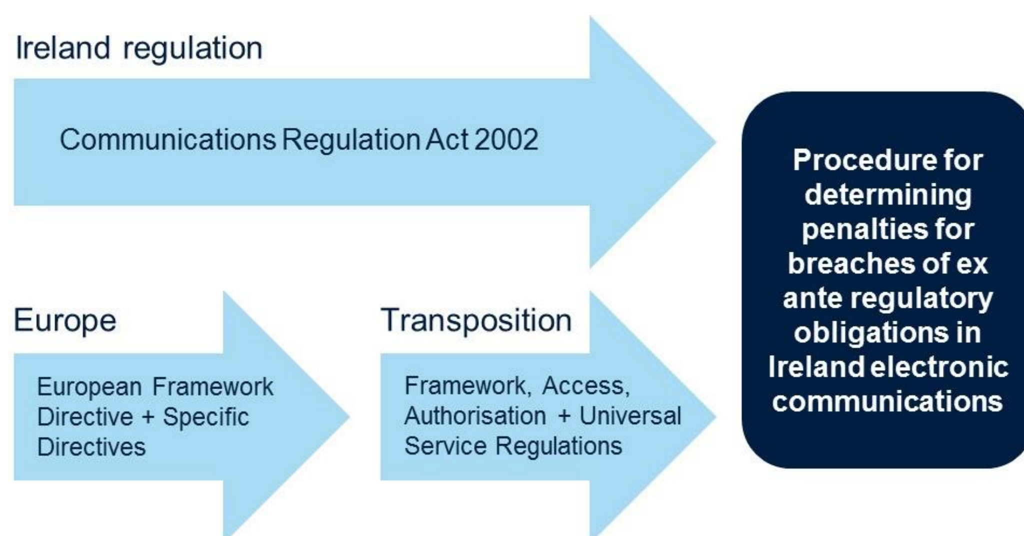
2.1 The legal and regulatory framework in Ireland

We have taken into account three key pieces of legislation in developing a methodology for imposing penalties for breaches of regulatory obligations.

First, ComReg has overarching regulatory functions and objectives, as set out in the Communications Regulation Act 2002. Second, EU legislation requires member states to empower relevant authorities to levy penalties, while also requiring them to set out rules that are consistent with key criteria. Third, Ireland has transposed these requirements into its own legislation, through the adoption of a suite of Regulations.

The various relevant elements of the legislation are illustrated in Figure 2.1.

Figure 2.1 Legal rules relevant to setting penalties in Ireland



Source: Oxera.

The Communications Regulation Act 2002 (as amended) sets out ComReg's *functions*, one of which is to:[5]

> ensure compliance by undertakings with obligations in relation to the supply of and access to electronic communications services, electronic communications networks and associated facilities and the transmission of such services on such networks.

The Act also sets out a number of objectives of the Commission, including: to promote competition; to contribute to the development of the internal market; and to promote the interests of users.[6]

[5] Section 10(1)(a).
[6] Section 12(1)(a).

In turn, ComReg must take 'all reasonable measures' towards achieving these objectives, including:[7]

> in so far as the promotion of competition is concerned—(i) ensuring that users, including disabled users, derive maximum benefit in terms of choice, price and quality; (ii) ensuring that there is no distortion or restriction of competition in the electronic communications sector
>
> in so far as contributing to the development of the internal market is concerned—(i) removing remaining obstacles to the provision of electronic communications networks, electronic communications services and associated facilities at Community level

In performing its functions—including setting penalties—ComReg must have regard to these objectives. For example, ComReg might wish to apply penalties to encourage consumer choice at the retail level, and to discourage behaviour that could otherwise limit competition at the wholesale level.

As regards EU law requirements, member states across Europe have been required to transpose into their national legislation requirements set out in the 2002 Common Regulatory Framework for Electronic Communications. These requirements include those contained in the 'Framework Directive' and the 'Specific Directives' (Access Directive, Authorisation Directive, Universal Service Directive, and Directive on privacy and electronic communications[8]).

For example, Article 10 of the 2002 Authorisation Directive (as amended by the Better Regulation Directive of 2009)[9] provides the basis in EU law for the imposition by regulators of penalties for breaches of regulatory obligations in electronic communications. It states that, where such a breach occurs:

> The relevant authority shall have the power to require the **cessation** of the breach…either immediately or within a reasonable time limit and shall take **appropriate** and **proportionate** measures aimed at ensuring compliance. [emphasis added]

These 'appropriate and proportionate measures' include financial penalties, and member states must empower relevant authorities (in practice, government departments, economic regulators or courts) to impose:[10]

> **dissuasive** financial penalties where appropriate, which may include periodic penalties having **retroactive** effect [emphasis added]

Further clarity is provided for cases in which a serious breach has occurred, and where the aforementioned penalties (or indeed other sanctions) have proven to be ineffective:

> In cases of **serious or repeated** breaches of the conditions of the general authorisation or of the rights of use, or specific obligations…, where measures aimed at ensuring compliance…have **failed**, national regulatory authorities may **prevent** an undertaking from continuing to provide electronic communications networks or services or suspend or withdraw rights of use. Sanctions and **penalties** which are **effective**, **proportionate** and **dissuasive** may be applied to cover the period of any breach, even if the breach has subsequently been **rectified**. [emphasis added]

[7] Section 12(2)(a) and section 12(2)(b).
[8] Directive 2002/58/EC, OJ L 201, 31.7.2002, p. 37.
[9] Directive 2002/20/EC of the European Parliament and of the Council of 7 March 2002 on the authorisation of electronic communications networks and services, OJ L 108/21, 24.4.2002; as amended by Article 3, Directive 2009/140/EC of the European Parliament and of the Council of 25 November 2009, OJ L 337/37, 18.12.2009.
[10] Directive 2002/20/EC of the European Parliament and of the Council of 7 March 2002 on the authorisation of electronic communications networks and services, OJ L 108/21, 24.4.2002; as amended by Article 3, Directive 2009/140/EC of the European Parliament and of the Council of 25 November 2009, OJ L 337/37, 18.12.2009.

The above Article 10 Authorisation provisions need to be read in conjunction with Article 21a of the Framework Directive (again, as amended by the Better Regulation Directive).[11] The latter states:

> Member States shall lay down **rules on penalties** applicable to infringements of national provisions adopted pursuant to this [the Framework] Directive and the Specific Directives and shall take all measures necessary to ensure that they are implemented. The penalties provided for **must** be **appropriate**, **effective**, **proportionate** and **dissuasive**. [emphasis added]

In the case of Ireland, the above EU provisions (set out in both the Framework Directive and Specific Directives) were transposed into national law in 2011. This was done through the adoption of a series of Regulations, as follows:

- the 'Framework Regulations';[12]
- the 'Access Regulations';[13]
- the 'Authorisation Regulations';[14]
- the 'Universal Service Regulations'.[15]

All four of these regulations contain materially identical terms regarding the methodology and process to be followed in imposing penalties for breaches of regulatory obligations. In all cases, there is a Civil law procedure for doing so.

If, following an investigation, the Commission is of the view that there has been a breach, it has civil enforcement powers to apply to the High Court for a declaration of non-compliance and an order to impose financial penalties, whether or not the non-compliance has been remedied. The High Court must take account of ComReg's recommendation, but is not bound by it—the Court ultimately decides whether a penalty should be levied and, if so, what its magnitude should be. Box 2.1 provides more details.

Box 2.1 Procedure for determining penalties for breaches of ex ante regulatory obligations in Ireland electronic communications

The procedure, as set out in the four Regulations, is as follows:

- ComReg must apply to the High Court in seeking a penalty for non-compliance by an operator (it does not have the power to apply the penalty itself)
- ComReg may then request that a penalty be paid for the period of non-compliance, even if there has since been compliance
- the High Court must decide whether there has been a breach of regulatory obligations
- it is then for the High Court to decide what amount, if any, should be paid, and it is not bound to the amount proposed by ComReg. In doing so, the High Court will consider the circumstances of non-compliance, including:

[11] Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive), OJ L 108, 24.04.2002; as amended by Article 1, Directive 2009/140/EC of the European Parliament and of the Council of 25 November 2009, OJ L 337/37, 18.12.2009.
[12] Regulation 37 of the European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2011 (S.I. No. 333 of 2011).
[13] Regulation 19 of the European Communities (Electronic Communications Networks and Services) (Access) Regulations 2011 (S.I. No. 334 of 2011).
[14] Regulation 16 of the European Communities (Electronic Communications Networks and Services) (Authorisation) Regulations 2011 (S.I. No. 335 of 2011).
[15] Regulation 31 of the European Communities (Electronic Communications Networks and Services) (Universal Service and Users' Rights) Regulations 2011 (S.I. No. 337 of 2011).

- its duration;
- the effect on consumers, users and other operators;
- the submissions of the regulator on the appropriate amount;
- any excuse or explanation for the non-compliance.

- any financial penalty ordered by the High Court shall be paid to ComReg as income.

Source: Oxera, based on Regulation 37 of the European Communities (Electronic Communications Networks and Services) (Framework); Regulations 2011 (S.I. No. 333 of 2011). Regulation 19 of the European Communities (Electronic Communications Networks and Services) (Access) Regulations 2011 (S.I. No. 334 of 2011); Regulation 16 of the European Communities (Electronic Communications Networks and Services) (Authorisation) Regulations 2011 (S.I. No. 335 of 2011); Regulation 31 of the European Communities (Electronic Communications Networks and Services) (Universal Service and Users' Rights) Regulations 2011 (S.I. No. 337 of 2011).

An important distinction is between the *rules* that the EU provisions require and the *methodology* to be employed in setting penalties. The EU provisions are not prescriptive about the precise approach to be adopted by member states. In Ireland, the legislature sets out the rules to be followed by the High Court in terms of general principles and process. The particular methodology for setting penalties is then for ComReg to propose in its submissions to the High Court.[16]

2.2 Cases to date in Ireland

We understand that to date, where a penalty for breach of regulatory obligations has been considered appropriate by ComReg in the past, this has been decided on a case-by-case basis rather than according to a pre-defined methodology.

A criminal law route is available to ComReg in addition to the civil route discussed above, but this is more suitable for cases in which end-consumers at the retail level have been directly harmed, than it is for breaches of wholesale obligations. This is because, under the criminal enforcement route, the maximum fine per breach is €5,000. When a number of retail customers are directly affected, this can result in a significant fine. However, for wholesale breaches that affect competitors, in which there is one offence, the maximum fine would effectively be €5,000. This may have limited impact in terms of punishment or deterrence.

We understand that five live cases relating to wholesale markets are currently being considered by ComReg, in which there have been complaints by competitors regarding restrictions on wholesale provision. Any new methodology for calculating the level of penalty, if a breach of regulatory obligations is found, would need to be capable of dealing with types of breach similar to those being investigated in the above cases—i.e. refusal to supply, discriminatory behaviour, or lack of transparency at the wholesale level—whereby an incumbent favours its retail affiliate over its competitors.

In these cases, the more direct harm caused would be to retail competitors that are seeking access. End-consumers could then be harmed indirectly, through the reduction in competition in the related retail market, and the subsequent detrimental impacts on prices and choice in this market. The question is then how to set the fine, both in theory and in practice.

[16] As discussed in section 4.2, EU member states differ in terms of the level of prescription in their rules on the methodology to be employed. In the Netherlands, for example, a government policy communication also sets out the methodology to be adopted. In the UK, the legislation requires the national regulatory authority (NRA) to set out a methodology.

3 Theory of regulatory enforcement

This section provides an overview of the economics literature on regulatory enforcement, and the implementation and design of financial sanctions.

It first considers the objective of regulatory sanctions, before discussing different types of regulatory sanction. It then looks at how financial penalties, where they are deemed necessary, can be optimally designed to deliver the objectives of enforcement.

3.1 Objective of regulatory sanctions

The overall aim of regulatory sanctions is generally to ensure that regulated entities comply with regulatory obligations (often captured in a licence) and are unable to benefit from non-compliance. Sanctions may also be used to provide redress to any parties harmed by regulatory non-compliance. These objectives are reflected, for example, in the six 'Macrory principles' for regulatory sanctions, which have been widely adopted by UK regulators, as set out in the box below. These principles are also broadly consistent with those adopted across Europe in setting fines for non-compliance (see section 4).

Box 3.1 The Macrory principles

A sanction should:

1. aim to change the behaviour of the offender;
2. aim to eliminate any financial gain or benefit from non-compliance;
3. be responsive and consider what is appropriate for the particular offender and regulatory issue, which can include punishment and the public stigma that should be associated with a criminal conviction;
4. be proportionate to the nature of the offence and the harm caused;
5. aim to restore the harm caused by regulatory non-compliance, where appropriate;
6. aim to deter future non-compliance (by both the offender and others within the regulatory community).

Source: Macrory, R. (2006), 'Regulatory Justice: Making Sanctions Effective', Final Report, Cabinet Office, November, http://webarchive.nationalarchives.gov.uk/20070305103615/http:/cabinetoffice.gov.uk/regulation/reviewing_regulation/penalties/index.asp.

3.2 The choice of regulatory sanction

Regulators typically have a spectrum of regulatory sanctions at their disposal, ranging from less interventionist (such as written or verbal warnings) to more interventionist measures (such as financial penalties or licence revocation). This is captured in the literature in the concept of an enforcement pyramid, as introduced by Ian Ayres and John Braithwaite.[17]

Under this model, the regulated company is subjected to increasingly interventionist sanctions in response to continued or more severe infringements (with less interventionist methods adopted where there is compliance). For example, a regulator might seek to address non-compliance through warnings

[17] Ayres, I. and Braithwaite, J. (1992), *Responsive Regulation: Transcending the Deregulation Debate*, Oxford University Press.

and informal undertakings in the first instance, but impose formal enforcement orders or regulatory sanctions if the company continues not to comply.[18]

The enforcement pyramid concept has been adopted by a number of economic regulators—for example, Figure 3.1 outlines the hierarchy of sanctions that Ofwat (the economic regulator of the water industry in England and Wales) has available for enforcing compliance by water companies.

Figure 3.1 Ofwat's enforcement pyramid

Source: Ofwat (2009), 'Ofwat's approach to enforcement', July, p. 9.

Financial sanctions are therefore typically one component of a wider regulatory enforcement toolkit. An important initial task for regulators is deciding whether a financial sanction is the optimal regulatory response or whether the use of other enforcement tools (such as reparations and orders), if available, would be more appropriate.

Baldwin and Cave (1999) note that financial sanctions and prosecution are most likely to be pursued when infringements are flagrant, repeated or extreme in their consequences.[19] Conversely, more informal regulatory actions (including promoting self-regulation) may be more feasible and appropriate if there is a high level of compliance and serious breaches are infrequent.

[18] For example, the UK Office of Rail and Road has codified this through a 'regulatory escalator' process, under which areas of concern are recorded at an early stage and 'escalated' to more formal action where the regulator is not satisfied with the company's explanations or corrective actions.
[19] Baldwin, R. and Cave, M. (1999), *Understanding Regulation—Theory, Strategy, and Practice*, Oxford University Press.

3.3 Calculating the level of a financial sanction

Once it has been determined that levying a financial sanction is the most appropriate response to a contravention, the regulatory authority needs to calculate the optimal level of the sanction to achieve its stated objectives.

There are two basic objectives behind fines:

- **punishment (backward-looking, harm-based)**—a fine is set such as to reflect the net present value (NPV) of harm caused to the affected party in the past by the action of the firm (i.e. it 'internalises' the harm caused). This can also be redress for the affected party, if the fine is then awarded to them. Harm can include harm to a consumer (downstream) and/or to an industry participant (e.g. at the wholesale level);
- **prevention (forward-looking, deterrence-based)**—assuming that monitoring is imperfect, in this case a fine is set so as to create an incentive effect, based on a cost–benefit calculation that the potential breaching firm might undertake in terms of the additional benefits to the offender of the breach, less the expected fine (the fine if caught, multiplied by the probability of being caught).

The calculation of the optimal value for a penalty depends on two assumptions: whether the regulator is able to perfectly monitor compliance, and whether the behaviour of the economic agents (i.e. individuals and firms) is consistent with rational choice theory. These aspects are explored below.

3.3.1 Perfect monitoring, full rationality

Broadly speaking, the economic literature highlights that the optimal value for a penalty will depend on whether the regulatory authority is able to perfectly monitor compliance, and whether company behaviour is consistent with rational choice theory. This theory posits that economic agents are fully rational and decide whether or not to commit a breach by undertaking a cost–benefit assessment of the net benefits from doing so.[20]

With perfect monitoring and rational decision-making, the optimal penalty can be informed by:[21]

- the NPV of harm caused to the affected party by the action of the firm. This can include harm to a consumer (downstream) or to an industry participant (e.g. at the wholesale level);
- any benefit accrued by the company from non-compliance—for example, in the form of any additional profit earned by the company or costs avoided as a result of non-compliance.

Since there will not always be a 1:1 relationship between the benefit received by the company from non-compliance and the harm to third parties, the optimal penalty should, in theory, be the maximum of these two values.

In practice, it may be easier to calculate just one of these two values in some instances—for example, where a significant proportion of the harm or benefit is

[20] See, for example, Becker, G. (1968), 'Crime and Punishment: An Economic Approach', *Journal of Political Economy*, **76**:2 pp. 169–217; Landes, W.M. (1983), 'Optimal Sanctions for Antitrust Violations', *University of Chicago Law Review*, 50, pp. 652–78; and Polinsky, A. and Shavell, S. (2000), 'The economic theory of public enforcement of law', *Journal of Economic Literature*, **38**:1, pp. 45–76.
[21] Niels, G., Jenkins, H. and Kavanagh, J. (2016), *Economics for Competition Lawyers*, second edition, Oxford University Press, pp. 394–95.

indirect or unquantifiable (such as reputational benefits)—leading to one approach being preferred. It should be noted that such approaches are often adopted in damages assessment,[22] and we understand that the approach followed by ComReg towards licence-breach penalties thus far has been predominantly harm-based.

3.3.2 Imperfect monitoring, full rationality

The above approach adopts a narrow view of 'proportionality'—one in which the fine reflects the illicit profits made or the harm caused by the infringement.

However, with imperfect monitoring, an additional 'deterrence' element is needed in the penalty, to take account of the probability that a non-compliant company will not be caught. In this instance, the fine is set to create an incentive effect, based on a cost–benefit calculation that the potential breaching firm might undertake in terms of the additional benefits to the offender of the breach, less the expected fine (i.e. the fine if caught, multiplied by the probability of being caught).

Importantly, with imperfect monitoring, the deterrence-based fine will *always* be higher than the harm-based fine, if only direct (rather than wider) impacts are taken into account.[23]

Take the example of a cartel at the retail level, in which prices are artificially raised above the competitive level. Assume that prices are 100 above what they should be. In this case, the harm to the consumer equals the gain to the firms of the conduct concerned—higher prices penalise consumers, while benefiting the cartel.[24]

Basing the penalty purely on harm caused would result in a fine of 100 on the colluding firms. However, this may not provide much of a deterrent in the future, if the regulator cannot readily monitor whether collusion is taking place.

Why is this? Assume that the probability of the firms being caught and prosecuted, should they form a cartel, is 0.3. On this basis, the expected benefits of cartel participation, to risk-neutral firms, is 100, while the expected fine is 0.3*100, or 30. The firms therefore—rationally—collude. In contrast, a fine based on deterrence would need to satisfy the condition that 100 < 0.3*(fine), which implies a much higher fine of at least 333.

Consequently, when there is imperfect monitoring and the probability of detection is fixed, the optimal fine is equal to the maximum of the harm (or the benefit to the company) divided by the probability of detection.[25]

The level of fine in the optimal deterrence approach therefore reflects the monitoring technology available. If monitoring were perfect, the fine would simply be set at the level of consumer harm or the benefit to the offender. In practice, the probability of being caught will depend on the resourcing and monitoring effectiveness of the regulator, and the expediency and effectiveness of the investigation and prosecution process.

[22] However, exemplary damages actions may also incorporate the second bullet in section 3.3.1—deterrence.
[23] See Oxera (2011), 'Crime doesn't (always) pay: what determines the level of fines?', *Agenda*, October.
[24] As discussed above, harm and gains may not always be equal. Also, cartels are often regarded as having few welfare benefits and wider harmful effects, including instilling inefficiency. These impacts are ignored in this simplified example.
[25] See, for example, Polinsky, A.M. and Shavell, S. (2007), 'The Theory of Public Enforcement of Law', *Handbook of Law and Economics, Volume 1*, Elsevier, Chapter 6, p. 420.

The question is then how much effort the regulator should put into monitoring. In this respect, enforcement comes at a cost. The regulator will need to select an optimal monitoring strategy. It may need to prioritise and investigate the most serious breaches, but not all breaches. This will affect the probability of detection.

As a rule of thumb, raising the probability of detection can be costly, which means that raising fines would provide a more straightforward solution.

In relation to the specific investigation being undertaken, case-work costs would generally be additional to the calculation of the fine. These factors also imply higher fines for those firms that do not cooperate with the authorities during an investigation, and lower fines for those that do. These issues can be taken into account as mitigating or aggravating circumstances.

The above model can also be adjusted to include wider market and societal harm (e.g. lack of trust, inefficiency, impact on related markets). If greater than the deterrence-based fine, this may in practice set the level of the fine.

For example, in the case of cartels:[26]

> the total harm to the economy from cartels is typically greater than the illicit gains made by the cartelists - the extra cartel profits are equal to the cartel overcharge harm, but there are additional inefficiencies and volume harms caused to suppliers and purchasers of the cartel. Therefore fines based on harm to the economy would achieve at least as much deterrence as fines based on illicit gains (at least in the case of cartels)

Proportionality does, however, remain a constraint. Given that detection rates may be low (cartel detection rates have been estimated to be 20% or lower[27]), setting a fine based on optimal deterrence may result in fines that are so high that they could be regarded as disproportionate. This is particularly the case given the chance of mistakes being made in enforcement, the possibility of negligence (rather than conscious infringement) by the parties involved, and the fact that high fines may lead to bankruptcy.

In practice, most regimes apply a cap—as a percentage of total turnover—on penalties (the European Commission has a cap of 10%, as do most member states). Mitigating circumstances (such as negligence), or inability to pay, may also be taken into account.

In practice, in order to demonstrate inability to pay, it would be necessary for the offending party to prove that the fine would make the company insolvent—or at least cause it serious liquidity problems. The European Commission has taken into account, and sometimes accepted, such arguments in determining the level of fines. Inability to pay is relevant, as forcing a company to go insolvent could, by decreasing the number of firms in the market, reduce competition. However, it remains a controversial area and case law is mixed.[28]

While the above discussion has focused on cartels, the considerations are equally valid for abuse of dominance cases. The theory of harm is different here,

[26] Niels G., Jenkins H. and Kavanagh J. (2011), *Economics for Competition Lawyers*, first edition, Oxford University Press, p. 478.
[27] Ormosi, P.L. (2011), 'How big is a tip of the iceberg? A parsimonious way to estimate cartel detection rate', University of East Anglia Centre for Competition Policy Working Paper 11-6, 5 June.
[28] For a discussion, see Niels G., Jenkins H. and Kavanagh J. (2016), *Economics for Competition Lawyers*, second edition, Oxford University Press, pp. 397–99.

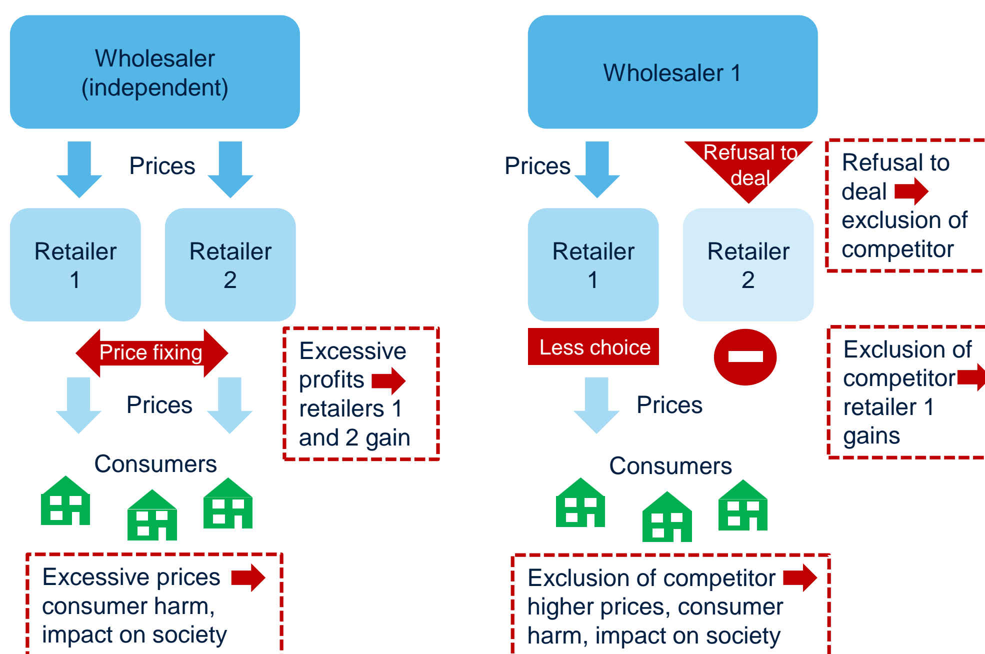
however, and this needs to be taken into account in the penalties methodology. These issues are discussed further in section 3.3.3.

3.3.3 Theories of harm in a vertical setting

Cases of restrictions to access to competitors, as an abuse of dominance, are exclusionary forms of conduct that harm consumers indirectly by restricting competition. In this instance, the profits lost by entrants seeking access might be used to calculate deterrent-based penalties (in so far as lost profits to the entrants mean gained profits to the incumbent). Such an approach, for example, is used in calculating follow-on damages in margin squeeze cases.[29]

Figure 3.2 provides a comparison of what might be involved in examining firm gains and losses, or consumer and wider societal harm, depending on whether the issue of non-compliance lies at the retail level or wholesale level. The left-hand side of the figure considers the impact of collusion between two retailers. In this instance no firms suffer loss (except, potentially, the independent wholesaler, which faces lower overall market demand). The main impacts are felt by the colluding firms (which gain) and by consumers (who lose, as does wider society).

Figure 3.2 Different theories of harm and implications for penalties



Source: Oxera.

On the right-hand side of Figure 3.2, it is assumed that the wholesaler owns Retailer 1, and refuses to allow Retailer 2 access to its network. In this instance there could be a cascade of gains and harm through the value chain. The excluded competitor would suffer a loss of profits, while Retailer 1 would gain from enjoying a monopoly position in the retail market. The higher retail prices that result would then translate into consumer harm at the retail level, with potential knock-on impacts for wider society.

[29] See Oxera (2013), 'Squeezed and damaged: follow-on damages actions in margin squeeze cases', *Agenda*, June.

The various pieces of information provided in Figure 3.2 can be used to calculate harm-based or deterrence-based penalties, for breaches of either ex post competition law or ex ante regulatory obligations. However, the economic deterrence-based approach, strictly applied, would require the calculation of a number of factors, including:

- the lost profits to the affected parties or gained profits to the breaching party, as compared to the counterfactual;
- the probability of detection and prosecution, which may vary by the type of offence;
- potentially wider factors (impact on society, market trust, other cascades of impact).

In practice, a compromise is often adopted, and percentage of turnover is used as a relevant benchmark in calculating deterrence-based penalties. This includes the approach adopted by the European Commission in ex post competition cases, as discussed in section 4. In the case of refusal to supply, the restriction at the wholesale level is a means to an end for the dominant firm to restrict competition in the related retail market. Therefore, in such cases, the relevant turnover is often taken to be the turnover of the offending firm in a defined retail market or sub-segment of this market.

3.3.4 Allowing for irrationality of the firm

As discussed above, rational choice theory dictates that the optimal penalty with imperfect monitoring is equal to the expected net harm of the contravention divided by the probability of detection.

However, insights from behavioural economics suggest that firms (and individuals within those firms) may not behave in a fully rational way, and may not therefore respond to incentives as predicted by standard theory.[30] These behavioural biases may need to be taken into account in setting the optimal fine.[31] These stem mainly from a conflict between individual decision-makers within a firm and the biases they face, and the more rational desires of shareholders.

The potential biases include the following.[32]

- **Availability bias**—those that have breached before may soon forget past fines, and breach again. This highlights the importance of reminding parties of the presence of the regulator and its powers to set fines, as well as ensuring that market players have adequate governance in place to ensure that day-to-day compliance is maintained.
- **Optimism bias**—firms/senior management may be overconfident, and may underestimate the chances of being caught for a contravention. This implies that the optimal fines to deter breaches would need to be higher than implied by rational choice theory.

[30] Tversky, A. and Kahneman, D. (1974), 'Judgment under Uncertainty, Heuristics and Biases', *Science*, **185**:4157, pp. 1124–31.
[31] See, for example, Korobkin, R.B. and Ulen, T.S. (2000), 'Law and Behavioural Science: Removing the Rationality Assumption from Law and Economics', *California Law Review*, **1051**, pp. 1085–90; and Wils, W.P.J. (2006), 'Optimal Antitrust Fines: Theory and Practice', *World Competition*, **29**:2, pp. 183–208.
[32] Niels, G., Jenkins, H. and Kavanagh, J. (2011), *Economics for Competition Lawyers*, first edition, Oxford University Press, p. 477.

- **Lack of self-control**—depending on the governance of a firm, managers may lack self-control or accept responsibility for their actions. Managers' personal interests and shareholders' interests may be misaligned. This provides support to the argument that fines should be only one aspect of the enforcement toolkit, since financial incentives alone may be insufficient to ensure compliant behaviour.

In so far as these behavioural biases manifest themselves through certain behaviours—revealed when the firm in question comes under investigation—they can be implicitly taken into account in the aggravating or mitigating circumstances that a regulator may apply.

For example, recidivism—a lapse into repeat offending after the offender has received financial penalties or other sanctions—is an important concept in criminal justice. From a psychological perspective, lapsing could be driven by availability bias, optimism bias and/or lack of self-control on the part of individual decision-makers in the firm. A key implication is that, compared to a fully rational world, much tougher financial penalties for repeat offenders are required to achieve any given deterrence effect. But another implication is that financial penalties alone may not be sufficient to deter breaches. Other instruments are needed.

Similarly, lack of cooperation with the authorities may stem from behavioural biases, which could also be taken into account as an aggravating factor.

A further behavioural bias relates to the corporate governance of firms. High fines may be ineffective in achieving deterrence if managers' and shareholders' interest are not aligned, such that the firm itself is not able to make 'rational' decisions in its own interests.

For example, it may be that certain managers have decided, in secret, to form a cartel. This enables the company to make higher profits than otherwise, which benefits the company, and which are (in part) shared with managers through larger bonus payments. If the infringement is subsequently detected, and the company is prosecuted and fined, it is unlikely that the managers—who have already received their bonuses—will bear these costs. Rather, it will be the company's shareholders.

In such situations, higher fines on the company may be of limited use. Managers face a one-way bet. Instead, greater use of personal penalties—such as fines or limits on directors—may be required. Such issues may be uncovered if the issue of negligence by senior management is explored as part of a review of mitigating circumstances.

Another factor that may be relevant to fines is the role of trust in facilitating cartels. As highlighted by Stucke (2010):[33]

> Why are cartels more durable than the Chicago School's static framework would predict? One answer may lie in the behavioural economics research: namely, price fixers, like the test subjects in other experiments, may be more trusting and co-operative than rational choice theory predicts. As the behavioural experiments show, where trust will lead to more favourable outcomes, people tend to trust at a higher level than if all are operating under a traditional game theory...Social norms, long-standing personal relations, and peer pressure may facilitate trust in cartels with many members.

[33] Stucke, M.E. (2010), 'Am I a Price-Fixer? A Behavioral Economics Analysis of Cartels'.

Understanding the role of this trust can help when designing fines, as well as other interventions, to deter future breaches. Stucke notes that, in the USA, despite escalating criminal and civil fines, treble private civil damages, longer jail sentences, and a generous leniency programme compared to elsewhere, the USA has not reached optimal deterrence—the cases continue to come before the authorities. Stucke therefore recommends looking at the behavioural factors at work before responding with greater fines and jail sentences.

Trust is of more relevance to cartel cases than it is to abuse of dominance cases (such as refusal to supply and margin squeeze). However, other issues discussed above—such as recidivism and lack of cooperation with the authorities—may still be relevant to abuse of dominance cases. In such cases, while it is not completely necessary to determine precisely which behavioural biases are at work, understanding the psychology helps to determine whether any given penalties regime is likely to be effective in achieving deterrence, and the weight to give to different factors in the assessment of aggravating and mitigating circumstances. Personal penalties might be considered as complementary to—as opposed to an alternative to—fines on the firm.

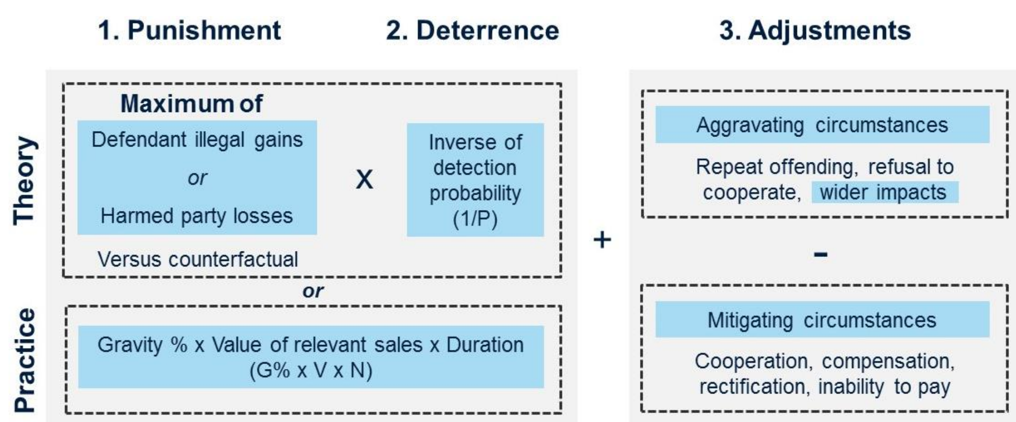
4 Towards a practical methodology

This section discusses lessons from practical examples of levying penalties for breaches. It looks at:

- the European Commission ex post fining guidelines;
- ex ante communications fining methodologies in different member states;
- approaches adopted by UK regulators for ex ante breaches;
- international precedence on ex post competition law fines.

Based on this review of practice, and the theory outlined in the preceding section, the potential approaches to assessing penalties for breaches of regulatory obligations are set out in Figure 4.1. This forms a reference point for the discussion.

Figure 4.1 Optimal penalty design



Source: Oxera, adapted from a framework set out in Lianos, I., Jenny, F., Wagner von Papp, F., Motchenkova, E. and David, E. (2014), 'An optimal and just financial penalties system for infringements of competition law: a comparative analysis', Centre for Law, Economics & Society, UCL Faculty of Laws.

4.1 The European Commission ex post fining guidelines

The European Commission has powers to investigate allegations of anticompetitive behaviour at the EU level. This covers anticompetitive agreements (breaches of Article 101 TFEU) and abuses of dominance (breaches of Article 102 TFEU). Where it finds a breach, the Commission has powers to fine companies up to 10% of their worldwide turnover.

The European Commission first issued guidelines on how it would assess the required penalties in 1998.[34] These were replaced with more stringent guidelines in 2006.[35] The intention was to enhance the deterrent effect of the fines.[36]

While the guidelines do not require member states to implement precisely the same approach when assessing alleged anticompetitive behaviour at a national

[34] European Commission (1998), 'Guidelines on the method of setting fines imposed pursuant to Article 15 (2) of Regulation No 17 and Article 65 (5) of the ECSC Treaty', (98/C 9/03) 14.1.98.
[35] European Commission (2006), 'Guidelines on the method of setting fines imposed pursuant to Article 23(2)(a) of Regulation No 1/2003', (2006/C 210/02) 1.9.2006.
[36] European Commission (2006), 'Competition: Commission revises Guidelines for setting fines in antitrust cases', IP/06/857, Brussels, 28 June.

level, a number of member states have adopted elements of the approach in their own decision-making on fines.[37]

The Commission's approach is summarised as follows:[38]

> The Commission's fining policy is aimed at **punishment** and **deterrence**. The fines reflect the **gravity** and **duration** of the infringement…The starting point for the fine is the percentage of the company's annual sales of the product concerned in the infringement (up to 30%). This is then multiplied by the number of years and months the infringement lasted. The fine can be increased (e.g. repeat offender) or decreased (e.g. limited involvement). The maximum level of fine is capped at 10% of the overall annual turnover of the company.

The 2006 guidelines introduced three main changes to enhance the deterrent effect of fines imposed by the Commission. The revised guidelines generally meant higher fines for offences. The changes meant:[39]

- an 'entry fee' for serious breaches, regardless of the duration of the breach;
- a closer correlation between the fine and the duration of the infringement;
- higher fines for re-offending (i.e. recidivism).

In summary, the approach then included the following components:

- a **basic amount**, composed of:
  - value of sales (V) x gravity (G) x duration (N);
  - an additional 'entry fee' (for particularly serious breaches);
- **adjustment factors**:
  - aggravating circumstances (increased fines);
  - mitigating circumstances (reduced fines);
- a deterrence multiplier (if required);
- a legal maximum (10% of total turnover);
- fine reductions (leniency, settlement, inability to pay).

Box 4.1 outlines in more detail the main provisions in the 2006 guidance, and the way in which the European Commission proposes to calculate each of the components described above.

Box 4.1 European Commission methodology for determining fines

According to the 2006 guidance, the level of a fine, issued due to breaches of cartel rules or other anticompetitive agreements, or abuse of dominance, must be sufficiently high both to **punish** the firms involved and to **deter** others from infringing the competition rules.

[37] See, for example, UK Office of Fair Trading (2012), 'OFT's guidance as to the appropriate amount of a penalty', September.
[38] European Commission (2013), 'Competition: Antitrust procedures in abuse of dominance. Article 102 TFEU cases', July.
[39] European Commission (2006), 'Competition: Commission revises Guidelines for setting fines in antitrust cases', IP/06/857, Brussels, 28 June.

The first step is to determine the basic amount. This is calculated as a percentage of the value (before tax) of relevant sales connected with the infringement, multiplied by the number of years the infringement has been taking place:

- relevant sales (V)—this is the undertaking's sales of goods or services to which the infringement **directly or indirectly** relates in the relevant geographic area within the EEA. The Commission will normally use the sales made by the undertaking during the last full business year of its participation in the infringement;
- sales percentage, or 'gravity' (G)—this will be between 0% and 30%, depending on the seriousness of the infringement. Considerations include the nature of the infringement (e.g. the abuse of dominance, price fixing), combined market share, the geographic scope, and whether the infringement has been implemented. For cartels, the relevant percentage will tend to be 15–20%;
- duration (N)—the (rounded) number of years the infringement lasted. Periods of less than six months are counted as half a year; periods longer than six months but shorter than one year are counted as a full year.

The European Commission then adds to this initial calculation a further amount—an 'entry fee'—that is applied to all cartel cases and, at the Commission's discretion, to certain other types of infringement. This will be between 15% and 25% of the value of annual sales (irrespective of the duration of the infringement). This is intended to deter firms from engaging in illegal practices in the first place.

The basic amount may then be adjusted by the Commission:

- upwards—in the event of aggravating circumstances: reoffering/recidivism; refusal to cooperate/obstruction; role of leader in, or instigator of, the infringement; and/or
- downwards—if it finds that there are mitigating circumstances: terminating the infringement; negligence; limited involvement; effective cooperation; conduct authorised/encouraged by public authorities.

In respect of aggravating circumstances, firms that reoffend will be penalised more heavily, taking into account not only the Commission's earlier decisions but also rulings by national authorities. Firms that re-offend could face a 100% increase in their fine for each subsequent infringement.

There is also the prospect of a deterrence multiplier. This will be imposed on undertakings with particularly large turnovers beyond the affected sales. The Commission will also take into account the need to increase the fine to a level that is necessary to exceed the amount of gains improperly made where it is possible to estimate that amount.

The legal maximum fine for each firm remains 10% of its total worldwide turnover in the preceding business year.

There are also arrangements for fine reductions:

- reductions for 'inability to pay'—where there is a risk of irretrievably jeopardising the economic viability of an undertaking due to the imposition of the fine;
- interaction with leniency—the guidelines acknowledge the application of the EU's leniency rules. For example, in the case of cartels there is a 100% leniency reduction for the first applicant, 30% to 50% leniency reduction for the second applicant, and 20% to 30% leniency reduction for the third applicant.

Source: European Commission (2006), 'Guidelines on the method of setting fines imposed pursuant to Article 23(2)(a) of Regulation', No 1/2003 (2006/C 210/02).

Box 4.1 shows that, while incorporating aspects of an economic approach, the European Commission methodology is still based on a percentage-of-turnover calculation. However, in a paper on optimal antitrust fines, Wils (2006) notes:[40]

> In practice, it does not appear feasible to measure econometrically the theoretically optimal fine for a given antitrust violation. The theory on optimal fines

[40] Wils, W. (2006), 'Optimal antitrust fines: theory and practice', *World Competition*, **29**:2, June, pp. 183–208.

> remains however useful as general guidance for the practice affixing the amount of antitrust fines.

In this respect, in another paper, Wils (2007) highlights that the European Commission's 2006 guidelines strike a balance between what is desirable in theory and what is possible in practice:[41]

> deterrence, at least in the case of antitrust violations committed by a single undertaking, requires that, from the perspective of the undertaking contemplating whether or not to commit a violation, the expected fine, discounted by the probability that a fine is effectively imposed, exceeds the expected gain from the violation. For deterrence to work, fines should thus in principle be set at a level exceeding the expected gain from the violation multiplied by the inverse of the probability of a fine being effectively imposed. It would not appear possible in practice for a competition authority or a court, even with the help of the best experts trained in econometrics, to measure or estimate reliably this theoretically correct minimum fine for a given antitrust violation

The author continues:[42]

> If it would thus not be a good idea to try to estimate the theoretically correct minimum fine for each given antitrust violation, the insight that, for deterrence to work, fines should in principle be set at a level exceeding the expected gain from the violation multiplied by the inverse of the probability of a fine being effectively imposed, may still be helpful in finding a workable method of setting fines. The expected gain from the violation can safely be assumed to be positively correlated with the undertaking's turnover in the affected market throughout the duration of the infringement

As such, Wils is generally supportive of the approach set out in the European Commission's 2006 guidance. More serious offences are associated with a higher assumed gravity.

However, some other commentators have highlighted potential problems with this kind of approach. Bageri et al. (2013)[43] note that *most* competition regimes (including in the USA and EU) impose fines for competition law breaches based on affected commerce—normally as a percentage of revenue. They note that this 'rule-of-thumb' approach may generate the following distortions:

- firms operating in one core market (under investigation) can expect lower penalties than a firm operating across several diversified markets;
- when fines are based on revenues rather than excess profits, this provides an incentive to set a cartel price even higher to raise the gain relative to the penalty;
- firms at the end of the value chain, with lower profits-to-revenues ratios, expect to be penalised more harshly than those firms at the beginning of the value chain.

The authors recommend a deterrence-based approach incorporating profit gained or loss in the equation. Their view is that econometric methods have improved over the years, which makes calculating damage or gains easier.

[41] Wils, W. (2007), 'The European Commission's 2006 Guidelines on Antitrust Fines: A Legal and Economic Analysis', Public Lecture, King's College London, Centre of European Law, 15 February.
[42] Wils, W. (2007), 'The European Commission's 2006 Guidelines on Antitrust Fines: A Legal and Economic Analysis', Public Lecture, King's College London, Centre of European Law, 15 February .
[43] Bageri, V., Katsoulacos, Y. and Spagnolo, G. (2013), 'The distortive effects of antitrust fines on revenue', Bank of Greece Working Paper 153, February.

Lianos et al. (2014)[44] undertake a comparative analysis of the situation in the EU, and propose a revised methodology (which nonetheless includes important aspects of the 2006 European Commission guidance). They note that, while expected ex ante profits gained due to the violation, divided by the probability of detection, provide for a more economic approach to setting penalties compared to a percentage of turnover based on affected commerce, expected profits are not observable and may be administratively costly to compute compared to simple turnover-based metrics. The authors therefore propose a compromise, as illustrated in Box 4.2.

Box 4.2 Optimal fines for competition law breaches

Determination of the basic fine amount

- Take the highest of the following:
  - estimate the excess illegal gains from the offence (that is, 100% of the overcharge);
  - estimate the pecuniary losses to the affected parties (100% of these losses) to the extent that the loss was caused intentionally, knowingly, or recklessly;
  - if the above options are too difficult, use a proxy based on a percentage of affected sales or volume of commerce (on the basis of, for example, 10–15% as an overcharge estimate—for example, in the EU the starting point is 30% of affected sales)
- Apply a multiplier equal to the inverse of the estimated detection probability (e.g. 6 if the detection probability is estimated as 1/6).
- In order to take duration into account, the base fine should be multiplied by the number of years of participation in the infringement.
- Where the calculated fine exceeds the statutory maximum, it should be possible to apply a higher fine disgorging the gains where the gains actually made can be calculated.

Source: Lianos, I., Jenny, F., Wagner von Papp, F., Motchenkova, E. and David, E. (2014), ‘An optimal and just financial penalties system for infringements of competition law: a comparative analysis’, Centre for Law, Economics & Society, UCL Faculty of Laws. The box covers the calculation of the basic amount but omits other aspects of the approach, such as aggravating and mitigating factors, as these are broadly similar to the European Commission’s 2006 model.

However, it is not always clear that the optimal fines approach is possible, given the available data and research methods available.

As noted, calculating profits gained (or harm caused) relative to a counterfactual can be challenging and may not always be possible, although econometric methods have improved over the years. Perhaps more problematically, computing the estimated detection probability relies on knowing the number of breaches that go undetected relative to the number that are detected, given the monitoring activity of the regulator. This is not an easy task, and will vary by the type of conduct and by jurisdiction. It is unlikely to be estimated with a sufficient level of robustness.

It is perhaps easier to compute gained profits in the case of cartels. Here, econometric ‘difference-in-difference’ methods can be used to estimate by how

[44] Lianos, I., Jenny, F., Wagner von Papp, F., Motchenkova, E. and David, E. (2014), ‘An optimal and just financial penalties system for infringements of competition law: a comparative analysis’, Centre for Law, Economics & Society, UCL Faculty of Laws.

much prices were higher than they should have been—the ‘overcharge’. This is often employed in assessing follow-on private damages.[45]

To then create a deterrence effect as part of a competition law approach, a figure on illicit gains obtained through this method would need to be combined with an assumption on the probability of detection. In this respect, the European Commission notes:[46]

> For hardcore cartels, the detection rate is generally assumed to be no more than somewhere between 10% and 20%. For other infringements, the detection rate is higher, but the ‘conviction’ rate (i.e. the rate of successful damages actions) is likely to be much lower, since claimants often find it very difficult to produce proof that the contested conduct produced actual anti-competitive effects.

On balance, the European Commission 2006 approach is therefore an appropriate compromise, as it uses readily available data on sales, and takes account of punishment and deterrence through the calculation of the basic amount and the subsequent upward and downward adjustments.

The approach may also be easier to apply beyond cartel cases—i.e. to abuse of dominance cases such as refusal to deal and margin squeeze—where estimating gained/lost profits, harm to competitors and consumers, and the probability of detection is likely to be more difficult.

The emphasis on deterrence in the European Commission approach also means that the ex post (competition law) approach is applicable to an ex ante (regulatory) context.

It has been noted that there is significant variation across EU member states in the calculation of gravity and the treatment of mitigating and aggravating circumstances. These issues are returned to in section 4.4.

4.2 Ex ante communications fining methodologies in member states

As highlighted in section 2, the European Commission has required member states to set out *in advance* the rules that they will adopt for calculating penalties for breaches of regulatory obligations in the electronic communications sector.[47] The EU requirements do not prescribe the precise approach to be adopted, other than that penalties should be appropriate, effective, proportionate and dissuasive.

The following subsections first discuss the frameworks adopted by different member states, and then describe in more detail cases in which penalties for breaches of ex ante regulatory obligations have been levied in the Netherlands.

4.2.1 A comparison across EU member states

The approach adopted in the Irish legislature is discussed in section 2. The Irish *rules* set out the process and some general principles—but it is for the regulator to set out a *methodology* for calculating fines in the event of a breach of regulatory obligations.

[45] Difference-in-difference estimation involves econometric analysis of pricing data over time with a ‘before’ and ‘after’ period, and comparing these prices between parties subject to the cartel and a control group of parties not participating in the cartel.
[46] European Commission (2008), ‘Accompanying document to the WHITE PAPER on Damages actions for breach of the EC antitrust rules. IMPACT ASSESSMENT’, COMMISSION STAFF WORKING DOCUMENT, COM(2008) 165 final, SEC(2008) 405.
[47] Article 21a of the Framework Directive.

In undertaking our research, we were also provided with a research briefing by Cullen International on the approaches adopted in various member states.[48] From this, we observe that there is considerable variation across member states in the way in which the European Commission requirement has been put into practice.

In many cases, the methodology for calculating fines is specified in legislation or in government communications (this is the case in the Netherlands, Germany, Italy, Spain and Portugal). In one case (the UK), the sector legislation requires the regulator to publish upfront a methodology for calculating penalties. The Italian NRA has also published guidelines.

The rules and methodologies that emerge from this are varied:

- some countries (such as Austria) continue to have very basic and general approaches to setting financial penalties, with no formal process for linking the financial penalty to the harm suffered by affected parties or the benefits accrued by the offender;
- it is common for national regulatory authorities (including those in Italy, the Netherlands, Spain and the UK) to take a checklist approach, involving variations on the following steps:
  - establish a starting penalty, based on the seriousness of the breach (including the resulting economic harm or benefit to the offender), its duration, and the offender's culpability. This often involves assessing profits gained or lost, the observed impact on the market, and the size and value of the affected market;
  - consider whether there are any aggravating factors, including previous offences and the extent of senior management knowledge of the breach;
  - consider whether there are any mitigating factors, including attempts to remedy the harm and cooperation with the regulator's investigation;
- in some countries, there are pre-determined maximum fines for different severities of breach, with the regulator given discretion to determine the level of the fine within the legal limits.

Table 4.1 provides an overview of the interpretation of the European Commission framework in six countries.

Table 4.1 Review of practice in selected member states

Country	Approach to setting fines
Austria	• Fines related to telecoms regulations are imposed by regional authorities rather than the national regulatory authority • Thresholds for fines are determined by the Telecommunications Act
Germany	• BNetzA has direct power to imposed fines under sections 126 and 149 of the Telecommunications Act (TKG) • The TKG sets upper limits for different offences • There is no guidance on the calculation of fines. However, BNetzA applies the general rules of the Misdemeanour Act, which requires fines to be based on the severity of the offence and the offender's culpability
Italy	• The legislation establishes ranges for fines in response to different breaches (e.g. 2–5% of turnover for breaches of the NRA's market analysis decision)

[48] Cullen International (2016), 'Fines for ECS providers', prepared for ComReg, March.

	• The regulator adopts a two-step method to assess fines, based on (i) setting the basic fine; and (ii) reducing the basic fine for any mitigating factors (namely, any actions to mitigate the consequences of the breach)
Netherlands	• The ACM has direct powers to set fines, which it does on a case-by-case basis (following a government fining policy rule) • Penalties are set on the basis of a percentage of the operator's relevant turnover, and for certain breaches there are defined ranges for any financial penalties • Fines are based on the severity, circumstances and duration of the breach and can be adjusted for mitigating and aggravating factors
Spain	• The National Commission for Markets and Competition (CNMC) has discretion to set the level of fines subject to maximum financial penalties of €20m for very serious breaches, €2m for serious breaches, and €50,000 for other breaches • CNMC takes account of the severity (i.e. social impact) of the breach, and aggravating circumstances (e.g. previous breaches)
UK	Discussed in detail in section 4.3.1

Source: Based on Cullen International (2016), 'Fines for ECS providers', prepared for ComReg, March.

4.2.2 Practice in the Netherlands

The case of the Netherlands is of particular interest, as the ACM has imposed fines for breaches of regulatory obligations in numerous cases in recent years. These are discussed in Box 4.3.

Box 4.3 Fines for regulatory breaches in the Netherlands

Although the level of a fine must be determined on a case-by-case basis, the ACM follows a fining policy rule set out by the Minister of Economic Affairs. The policy rule specifies factors that influence the level of fines for violations of telecommunication regulations (as well as competition law, procurement rules, consumer protection rules, and energy regulations).

ACM sets fines based on a percentage of relevant turnover. The level of the fine depends on the severity, circumstances and duration of the breach. ACM can increase the fine in the light of aggravating circumstances, including if the offender has been fined for a similar breach before; has obstructed the investigation; played a leading role; or has exerted pressure on others to maintain the breach. ACM can decrease the fine for mitigating circumstances, including if the offender has compensated the affected parties; or has cooperated with ACM.

In November 2013, ACM imposed four fines on the Dutch telecommunications incumbent, KPN, totalling €973,000. KPN was judged to have placed retail broadband competitors using its fibre-optic and copper networks at a disadvantage. KPN is required to inform competitors two months in advance of any plans to offer new or revised services on its networks, in order to give them time to offer an alternative. Since KPN introduced new retail broadband services without providing this notice, it did not comply with its **transparency** and **non-discrimination** obligations. This was not the first time that KPN had been fined for this type of behaviour, and it had not subsequently ended the behaviour. As such, the fines were higher than they might otherwise have been.

In January 2014, ACM fined KPN almost €30m for putting competitors at a disadvantage in a government tender. KPN is required to allow itself and competitors equal **access** to its fixed telephony network, and any changes to access conditions must be announced in a timely and complete manner. ACM established that, at a crucial moment in the tender process, KPN withheld tariff discount information that it was required to share with its competitors. By failing to inform its competitors, KPN placed them at a disadvantage since they were unable to incorporate the lower tariffs in their bids. ACM noted that similar violations had occurred in the past, and KPN was therefore put under intensified supervision. This was lifted in July 2014.

In September 2014, ACM imposed a fine of €2.7m for placing competitors at a disadvantage in call-forwarding. KPN had launched a new business call-forwarding service, *21 online, but competitors had not received sufficient advance warning. This fell foul of **non-discrimination** requirements. However, KPN had taken corrective action, and had also made the service

available to competitors. Following an appeal, ACM reduced the fine to €600,000, by adjusting for proportionality and the duration of the conduct.

In July 2015, KPN was fined a total of €8m for putting competitors at a disadvantage. A €6m fine was issued because KPN had not informed competitors of a new fault-monitoring and fault-correction service for businesses (ISDN line security) that it had introduced. This helped KPN to retain business customers. A €2m fine was also levied, as KPN had not allowed itself and competitors equal access to its SDF backhaul (a fibre-optic technology for fast Internet and television). The fines were appealed by KPN. The SDF backhaul fine was upheld in February 2016, while the ISDN line security appeal has yet to conclude.

Source: Oxera analysis of ACM (2014), 'Policy rules regarding fines and leniency', 1 August; NL Minister of Economic Affairs (2014), 'Policy rule of the Minister of Economic Affairs of 4 July 2014, no. WJZ/14112617, on the imposition of administrative fines by the Netherlands Authority for Consumers and Markets (2014 ACM Fining Policy Rule)', July; ACM (2013), 'ACM fines KPN for putting competitors in broadband services at a disadvantage', 20-11-2013; ACM (2014), 'ACM fines KPN for putting competitors at a disadvantage in government tender', 23-01-2014; ACM (2014), 'KPN fined for putting competitors at a disadvantage with regard to its business call-forwarding service', 29-09-2014; ACM (2015), 'Dutch telecom company KPN fined for putting competitors at a disadvantage', 21-07-2015; ACM (2016), 'Besluit op bezwaar boete KPN voor SDF-backhaul', 04-02-2016; Executive People (2016), 'ACM handhaaft boete van 2 miljoen euro voor KPN', 04-02-2016.

The cases discussed in Box 4.3 illustrate how the ACM has imposed a wide range of fines for breaches of regulatory obligations, including transparency, non-discrimination and access.

4.3 Approaches adopted by UK regulators for ex ante breaches

This section considers the approaches adopted by UK economic regulators when imposing penalties on regulated companies. A review of the approaches adopted by Ofcom, the Office of Rail and Road (ORR), Ofgem and Ofwat suggests that the regulators' approaches to financial sanctions are based on high-level principles that are applied on a case-by-case basis with individual consideration of the facts and circumstances of each breach.

The regulators' approaches share similarities, each taking account of the seriousness of the breach and the potential harm, and any aggravating or mitigating factors. The precise methodology employed varies.

4.3.3 Ofcom

The Communications Act 2003 requires Ofcom to publish guidelines on its policy for determining the amount of any penalty it imposes for breaches of regulatory obligations.[49] Given continued contraventions of regulatory requirements, Ofcom issued new guidelines in December 2015. To provide a stronger deterrent, Ofcom stated that it might be necessary in certain cases to set higher penalties than previously.[50]

The principal changes introduced by Ofcom were as follows:

- going forward, less weight would be attributed to precedent (which in Ofcom's view is non-binding), with the potential for higher penalties;
- a link would be established between deterrence and the size and turnover of the regulated body—in Ofcom's view, turnover (for the whole business, not just in the area of infringement) is a 'good indicator' of the kind of penalty required to secure the appropriate deterrent effect;

[49] Other than penalties imposed under the Competition Act 1998.
[50] Ofcom (2015), 'Penalty guidelines: s.392 Communications Act 2003', 3 December; and Ofcom (2015), 'Revising the penalty guidelines: Statement', 3 December.

- the level of penalty could be greater than any calculation of harm or gain. Other factors will also be considered, given that the intention of a penalty is to penalise wrongdoing and deter non-compliance;
- 'seriousness' would be added as an explicit consideration in the penalty assessment.

Ofcom will also assess and quantify harm/gains. More detail is provided in Box 4.4.

Box 4.4 Ofcom's revised approach to fines for regulatory breaches

In calculating penalties going forward, Ofcom will potentially take into account the following factors.

- The seriousness and duration of the contravention
- The degree of harm, whether actual or potential, caused by the contravention, including any increased cost incurred by consumers or other market participants
- Any gain (financial or otherwise) made by the regulated body in breach (or any connected body) as a result of the contravention

In addition, the following will be considered when determining the penalty.

- Whether in all of the circumstances appropriate steps had been taken by the regulated body to prevent the contravention
- The extent to which the contravention occurred deliberately or recklessly, including the extent to which senior management knew about it, or ought to have known about it
- Whether the contravention in question continued, or whether timely and effective steps were taken to end it, once the regulated body became aware of it
- Whether any steps were taken for remedying the consequences of the contravention
- Whether the regulated body in breach has a history of contraventions (repeated contraventions may lead to significantly increased penalties)
- The extent to which the regulated body in breach has cooperated with the investigation.

Source: Oxera analysis of Ofcom (2015), 'Penalty guidelines: s.392 Communications Act 2003', 3 December; and Ofcom (2015), 'Revising the penalty guidelines: Statement, 3 December.

While Ofcom would seek to quantify harm or illicit gains made, it 'will not necessarily do so in all cases'. Furthermore, Ofcom does not explicitly set out a mathematical method for calculating penalties. Rather, Ofcom has significant discretion in how it will appraise conduct and set penalties.

Interestingly, Ofcom notes that the penalty guidelines are not to be interpreted as a mechanism to enable providers to work out the risks and benefits of a contravention, or to identify where risking a contravention may be profitable. A potential issue is that this is what deterrence-based fines are, in theory, intended to achieve. However, there is also an argument that having some *ambiguity* around the precise mechanism can assist deterrence (see section 5).

The approach is also top-down as regards the assessment of turnover, in that it considers overall business turnover rather than turnover associated with the directly affected products. Ofcom states:[51]

[51] Ofcom (2015), 'Revising the penalty guidelines: Statement, 3 December.

> A relevant factor in securing this objective of deterrence is the turnover of the regulated body subject to the penalty. Penalties should be set at levels which, having regard to that turnover, will have an impact on the body that deters it from misconduct in future and which provides signals to other bodies that misconduct by them would result in penalties having a similar impact. That is, it must be at a level which can also change and correct any non-compliant behaviour, or potential non-compliant behaviour, by other providers.

The rationale is further elaborated on elsewhere in Ofcom's guidance:[52]

> If, in making our assessment in any particular case, we consider that the level of penalties set in previous cases is not [sufficiently effective] to enforce against the regulatory contravention concerned, and to deter future breaches, Ofcom may set higher penalties under these revised guidelines. Regulated bodies with a large turnover, for example, may be subject to higher penalties in order for a deterrent effect to be achieved.

The maximum fine is then 10% of total turnover. In practice, however, the same effect might be achieved through a more bottom-up assessment of turnover, based on the affected product sub-markets, using the gravity-based method adopted by the European Commission for competition investigations (see section 4.1), again with a maximum fine of 10% of total turnover.

Under its previous guidelines Ofcom examined a case in which BT had breached regulatory obligations, relating to providing vulnerable users with equivalence of access to services. While this resulted in limited financial harm to consumers, Ofcom was of the view that a penalty was justified since breaches of regulatory obligations are inherently serious, and that any penalty should both publish the offence and have a deterrence effect. Box 4.5 provides more details.

Box 4.5 Ofcom's assessment of BT contravention

In March 2015 Ofcom issued a penalty on BT for breaching General Condition 15. The fine levied was £800,000. This stemmed from the delayed launch by BT of its Next Generation Text (NGT) Service as a replacement for its Text Relay service. Both services are/were available to vulnerable users on home, office and mobile telephone lines from BT and other UK fixed and mobile telephone service providers.

While the delay did not result in subscribers being unable to make and receive calls, since the old Text Relay service remained in operation and the NGT service was also available on a trial basis, Ofcom deemed it appropriate to issue a penalty.

BT argued that there was no financial harm to consumers, that it had not previously been in breach of regulatory obligations, and that the contravention was caused simply by delays in the process.

Ofcom's view was that limited weight should be placed on whether there was direct financial harm, as BT's contravention was 'intrinsically serious' by denying equivalence of access to relevant services. Ofcom therefore sought a penalty to punish the contravention and to deter future non-compliance. It also took account of BT's compliance since the breach, and BT's past record of compliance with its various obligations.

Source: Oxera analysis of Ofcom (2015), 'Notification of Contravention of General Condition 15 under section 96C of the Communications Act 2003: Notice served on British Telecommunications plc ("BT") by the Office of Communications ("Ofcom")', non-confidential version, 16 March.

In this case the fine levied by Ofcom was £800,000. While sizeable in absolute terms, this can be compared against BT's overall turnover (for the financial year to March 2014) of £18,287m. Nonetheless, the case illustrates that, even where there is limited direct harm to consumers, *per se* breaches of regulatory

[52] Ibid.

obligations can demand penalties. The rationale is that ex ante regulatory obligations are intrinsically important, and penalties are necessary to deter future non-compliance.

4.3.4 ORR

Under the Railways Act 1993, the ORR has powers to levy financial penalties on a railway licence-holder for breaches of licence. Section 57B of the Act requires the ORR to publish a penalties statement outlining its approach to the calculation of penalties. The latest version of the penalties statement was published in December 2015, as part of the ORR's wider enforcement policy.

When assessing the size of a penalty, the ORR looks at three factors: proportionality; mitigating and aggravating factors; and consistency with its financing duty.

In terms of proportionality, the size of the penalty is intended to reflect the seriousness of the breach. When considering seriousness, the ORR takes into account the following.

- The actual and potential harm caused to passengers, freight customers and the public interest. This can involve calculating the likely financial value of the harm (e.g. by multiplying the estimated passenger delay by a value of time for those affected)
- The culpability of the offender (i.e. whether the offender has intentionally acted negligently or recklessly)
- The extent to which the offender has cooperated with the ORR during the investigation

The ORR has determined five levels of seriousness for breaches of licence, and outlined indicative starting penalties for each. The maximum amount of penalty is 10% of a firm's turnover. An important principle is that the starting penalty should not be less than any benefit that the licence-holder has obtained from the breach.

Table 4.2 The ORR's starting penalty thresholds

Seriousness of breach	Examples	Starting penalty
Technical or de minimis	A breach involving no, or very little, culpability, and causing no harm to third parties	Usually no penalty
Less serious	A breach involving a relatively small amount of harm, or isolated to a small geographical area	Up to £2m
Moderately serious	More serious implications, actual or potential harm for third parties	Up to £10m
Serious	Evidence of systemic failings resulting in serious harm or potential harm to third parties	Up to £25m
Very serious	Significant harm, or the risk of significant harm, caused to a wide range of third parties and/or greater culpability on the part of the licence-holder	Up to 10% of a licence-holder's turnover

Source: Office of Rail and Road (2015), 'ORR's economic enforcement policy and penalties statement for Railways licence holders', December.

The starting penalty may be adjusted to take account of the net effect of any relevant mitigating and aggravating factors, including:

- any steps taken to rectify the breach;

- any steps taken to minimise the risk of the breach recurring;
- any reparations offered;
- the extent of involvement of directors or senior management in the (in)action that caused the breach;
- repeated or continuing infringement;
- cooperation with the ORR's investigation.

4.3.5 Ofwat

Ofwat has powers under section 22A of the Water Industry Act 1991 to impose financial penalties on providers of water and sewerage services. Any financial penalty levied on a provider is not returned to customers but is paid into the Consolidated Fund operated by HM Treasury. However, Ofwat does expect companies to provide direct redress to customers where the companies have received direct financial benefits from a breach of licence:[53]

> Companies may have benefited financially through price limits or through incentive mechanisms, such as the overall performance assessment. If this occurs, we expect companies to provide full redress to their customers.

The level of penalties set by Ofwat is discretionary, but the regulator considers the factors in Table 4.3 when assessing whether a penalty is appropriate, the starting level of any penalty, and whether any modifications should be made to reflect aggravating or mitigating factors.

Table 4.3 Factors considered by Ofwat when calculating penalties

Considerations	Aggravating and mitigating factors
The seriousness and duration of the contravention	Repeated contraventions of failures
The degree of harm caused, including any increased costs incurred by customers	The continuation of a contravention or failure
Whether a penalty would be likely to create an incentive to comply and thereby deter future contraventions	Any involvement of senior management
Any financial or indirect gains made by the licensee as a result of the contravention	The level of cooperation with any investigation carried out
Any damage to other market participants	Proactive reporting of the contravention
Avoiding double jeopardy (i.e. not levying a penalty when the licensee is being, or has already been, prosecuted for the contravention concerned)	Taking appropriate action to rectify the contravention
Precedents set under equivalent provisions for other utilities	Activities to provide restitution and compensation

Source: Ofwat (2010), 'Section 22A Water Industry Act 1991: Statement of penalties with respect to financial penalties', November.

The maximum amount of any penalty is 10% of a licensee's turnover in the preceding year. In practice, however, where substantial penalties have been imposed, they have been between 0.3% and 3.5% of turnover.[54]

[53] Source: Ofwat (2010), 'Section 22A Water Industry Act 1991: Statement of penalties with respect to financial penalties', November.
[54] Ofwat (2016), 'Consultation on Ofwat's approach to enforcement', March, p. 20, para. 61.

4.3.6 Ofgem

Ofgem can impose a financial penalty and/or a consumer redress order under the Gas Act 1986 and Electricity Act 1989. As in the other sectors discussed above, financial penalties must not exceed 10% of annual turnover. Ofgem states:

> The Authority [Ofgem] considers that non-compliance should normally cost significantly more than compliance and that penalties should act as a significant deterrent to future non-compliance.[55]

The total penalty calculated by Ofgem is made up of two elements: (i) removal of the detriment suffered by consumers and any gain made by the regulated entity; and (ii) a 'penal element' that reflects the seriousness of the contravention and the need for deterrence.

These elements are addressed through a six-part process as follows.[56]

- Calculate the detriment to consumers and the gain to the regulated entity (in the form of additional profits or avoided costs/losses). In doing so, Ofgem will consider any prior efforts made by the regulated entity to provide redress to customers.
- Assess the seriousness of the contravention, including whether it was deliberate; whether senior management was aware or should have been aware of the contravention; and whether the contravention reveals a systemic weakness in compliance procedures. This is an important determinant of the 'penal element' of the fine.
- Consider aggravating or mitigating factors, including repeated offences, continued contravention, and any attempt to conceal the contravention. These factors also influence the 'penal element' of the fine.
- Consider whether a further adjustment to the penal element is needed to enhance the deterrent effect.
- A discount may be applied if the company agrees to settle the case early (30% discount in the early settlement window, 20% in the middle settlement window, and 10% in the late window).
- Establish the total financial penalty.

Ofgem notes that financial penalties should be borne by shareholders and should not be passed on to customers through higher prices (and, consequently, financial penalties should not be reflected in allowed costs).

4.4 International precedence on ex post competition law fines

As discussed above, the European Commission 2006 competition guidelines state that the basic level of a fine will be a percentage of the 'the undertaking's sales of goods or services to which the infringement *directly or indirectly* relates'.

This leaves open the question as to which market or sub-segment the fine should be based on. The short answer is that it all depends. Each case is examined on its merits and, while the guidelines are transparent, there is

[55] Ofgem (2014), 'The Gas and Electricity Market Authority's statement of policy with respect to financial penalties and consumer redress under the Gas Act 1986 and the Electricity Act 1989', November, p. 3, para. 2.4.
[56] Ofgem (2014), 'The Gas and Electricity Market Authority's statement of policy with respect to financial penalties and consumer redress under the Gas Act 1986 and the Electricity Act 1989', November, p. 5.

considerable discretion for the European Commission. Most fines relate to cartels, and the question of what segments or sub-segments to look at in abuse of dominance cases has been less well examined. The question in a cartel is about the value of commerce affected, which often relates directly to the specific definition of the products subject to the cartel.

A broader view of the affected sales is possible. In its approach to competition cases, the (former) UK Office of Fair Trading (OFT) states that, in calculating the basic amount:[57]

> The relevant turnover is the turnover of the undertaking in the **relevant product market and relevant geographic market** affected by the infringement in the undertaking's last business year. In this context, an undertaking's last business year is the financial year preceding the date when the infringement ended.

Affected sales are therefore calculated on the basis of a market definition exercise, which will have been undertaken prior to the assessment of penalties. However, different approaches are possible. For example, the Belgian competition authority has taken a narrower view on the determination of relevant sales.

In what follows, precedents from Belgium, South Africa and Poland are discussed, with a focus on the treatment of relevant sales, gravity, duration and aggravating/mitigating circumstances.

4.4.7 Case study: Belgium telecoms sector

On 26 May 2009, the Belgian Competition Council (BCC) imposed a fine of €66.3m on mobile operator, Belgacom Mobile (under the brand Proximus) for abusing its dominant position in the market for mobile telephone services in 2004 and 2005. The BCC found that the incumbent had undertaken a margin squeeze.

The fine represented the highest ever fine levied by the BCC at the time. It took into account the nature of the infringement, the market share of Proximus, the impact of the infringement, and the weaker position of emerging competitors in the retail professional services space. Box 4.6 provides an overview of the case, including the methodology used by the BCC to calculate the fine.

Box 4.6 Belgium telecoms margin squeeze case

In October 2005, a complaint was filed with the BCC by Base, a competitor in the business retail mobile sector. It complained that Proximus was undertaking a number of exclusionary practices, in particular in the retail sub-segment for professional clients (i.e. business customers with special requirements).

In its ruling, the BCC found that Proximus had a dominant position from 2002 to 2005 in the market for mobile telecommunications in Belgium, and that it had an 'important position' in the retail sub-market for professional clients. The BCC also ruled that Proximus had abused its dominant position by engaging in a margin squeeze. A margin squeeze occurs where the wholesale prices charged by the dominant incumbent to competitors are too high, and/or the retail prices charged by the incumbent to end-users are too low, such that an as-efficient competitor cannot earn a sufficient margin.

First, the BCC found that Proximus held a dominant position at the wholesale level (call originating and call termination). Second, there was a *negative* margin between the prices for 'on-net' communications of Proximus (between customers on its own network) and the 'off net' termination rates charged to its competitors (for calls from competing networks to Proximus's

[57] UK Office of Fair Trading (2012), 'OFT's guidance as to the appropriate amount of a penalty', OFT423, September.

network). This had a negative effect on competitors in the retail sub-market for mobile calls to business clients.

The BCC decided to fine Proximus and, in so doing, adopted an approach very close to that set out by the European Commission in its 2006 guidelines.

In determining **relevant turnover** as the basis for the starting point for calculating the fine, the BCC acknowledged that this could be 'directly or indirectly' related to the infringement. While the relevant market adopted by the BCC in its infringement decision was 'the market of mobile telephony in Belgium', as the impact of the incumbent's behaviour was in a specific sub-segment (retail professional clients), the BCC adopted a **narrower definition** of relevant turnover (i.e. one that related to the affected sub-segment). The BCC did not regard this as a contradiction of its decision to define a wider relevant market in finding an abuse.

Revenues from corporate customers for 2005 (the last full year of the infringement) were €340m. The BCC set a **gravity percentage at 15%** (and contrasted this against the European Commission maximum of 30% for 'severe' restrictions). This percentage reflected the 'serious but not very serious' nature of the offence, its impact on the market, and the size of the market. The abuse took place in a segment in which Proximus had a high market share but where competitors were just beginning to emerge. The initial basic amount was therefore set at €51m.

The **duration** of the infringement was two years. Interestingly, the BCC did not simply multiply the initial basic amount by two. Rather, given the circumstances of the case, the basic amount was increased as follows:

15% of the value of relevant sales in 2005 + 30% = €66.3m

There were **no aggravating or mitigating circumstances**. The incumbent had argued for reductions due to the complexity of the case, but this plea was rejected by the BCC. Proximus also argued that it was subject to regulation in setting mobile termination rates, and that this limited competition. In this respect, the BCC noted that companies operating in a regulated market must be attentive to competition law on their own initiative if regulations already in place limit free competition.

The fine was judged proportionate, and the deterrent effect was judged to have been secured by applying the additional 30% uplift for the second year of the infringement. The fine did not exceed the legal maximum of 10% of overall turnover, and lay well below the legal threshold. The BCC therefore imposed a fine of €66.3m.

Source: Oxera analysis of BCC (2009), 'Affaire CONC-P/K-05/0065: Base/BMB—Décision n° 2009-P/K-10 du 26 mai 2009', Conseil de la Concurrence, version publique.

A number or relevant observations emerge from the Belgian telecoms case, as follows:

- relevant sales were based on a narrow interpretation of the affected market—the retail sub-market for professional mobile services;
- gravity for margin squeeze was set at 15%—mid-way along the continuum put forward by the European Commission in its 2006 guidance (0% to 30%), reflecting the definition of a 'serious and not very serious' abuse;
- the duration calculation deviated from the European Commission approach, and was lower than might otherwise have been applied;
- mitigating circumstances were struck out, including the complexity of margin squeeze law and the case in hand, and the defence that regulation constrained the behaviour of the incumbent.

Refusal to supply, discriminatory conduct at the wholesale level, and margin squeeze are all interrelated, and so the BCC case is of particular interest to the current study.

4.4.8 Case study: South Africa

The experience of South Africa is of interest since the country has put into place a competition law framework based on the European Commission approach; has developed a framework for assessing fines based on the 2006 European Commission guidance; and has been explicit on the weightings given to different factors.

The approach to penalties has also developed over time.

- In 2005, the Competition Tribunal of South Africa (RSA Competition Tribunal), in *Competition Commission v South African Airways*, set out weightings based on nature, duration and extent, loss/gains, and mitigating/aggravating circumstances.
- In 2012 the RSA Competition Tribunal levied penalties in a cartel case, and explained the method adopted.
- In 2012 the RSA Competition Tribunal also levied penalties in an abuse of dominance case, and again explained the method adopted.
- In 2015 the South African Competition Commission published guidelines on assessing penalties, taking account of the European Commission 2006 guidelines.

Box 4.7 details the insights from the first case, in terms of the methodology used to set fines.

Box 4.7 South Africa penalties assessment: rebates

In the case of *Competition Commission v South African Airways*, the RSA Competition Tribunal examined the Commission's allegation that incentive schemes that South African Airways, the country's largest domestic airline, had with travel agents constituted an abuse of dominance, and were designed to exclude or impede South African Airways's rivals in the domestic airline market. The Tribunal ruled in 2005 that this practice was indeed an abuse. It also put forward a methodology for calculating the resulting fine.

The table below sets out the weights that the Tribunal assigned to different considerations in assessing the penalty. The middle column refers to the maximum percentage (totalling up to 10% of overall turnover), with the right-hand column setting out the Tribunal's ruling on each issue.

Factor	Maximum Percentage (%)	South African Airways allocation (%)
a) nature, duration and extent of contravention	3.0	0.75
b) loss or damage as a result of contravention	1.0	0.25
c) behaviour of respondent	1.0	0.5
d) market circumstances	1.0	0.75
e) level of profit derived	0.5	0
f) degree of cooperation with the Competition Commission and Competition Tribunal	1.5	0
g) found in previous contravention	2.0	0
Total	10.0	2.25

Source: RSA Competition Tribunal (2005), *The Competition Commission v South African Airways (Pty) Ltd*, Case Number 18/CR/Mar01, 28 July.

Box 4.7 illustrates that around half of the penalty is the basic amount, and the remainder is mitigating/aggravating. In essence, factors ‘a’, ‘b’, ‘d’ and ‘e’ could be regarded as being relevant to the assessment of gravity (5.5% maximum in total), with the remaining factors being aggravating (‘c’ and ‘g’) or mitigating (‘c’ and ‘f’). In this case, the gravity part of the calculation came to 1.75% of overall company-level turnover.

Box 4.8 sets out a more recent case that has taken on board the European Commission 2006 guidance.

Box 4.8 South Africa penalties assessment: cartels

The approach changed in the *Competition Commission v Steeledale et al.* case, which the RSA Competition Tribunal ruled on in 2012.

The case concerned a cartel in the wire mesh sector. One firm, BRC, had been granted conditional immunity by the Commission through a corporate leniency policy. Another, Steeledale, settled with the Commission through a consent agreement. The two remaining firms, RMS and Vulcania, had defended themselves on various grounds. However, the Tribunal ruled that they had indeed breached competition law.

The Commission sought as a remedy the imposition of a penalty of 10% of RMS’s and Vulcania’s respective annual turnovers, which was the maximum permissible under the law. The Tribunal was not bound by this recommendation, and set out its own approach to determining the penalties. In this respect, the Tribunal noted that it would follow the European Commission 2006 guidance, with adjustments:

> We have previously recommended in [a prior case] that the Commission, like its European counterpart, adopt guidelines to its approach to the imposition of penalties. At the time of deciding this case no such guidelines had been published. The [Competition Appeal Court] in [the prior case]…recommended having regard to the EU guidelines published in 2006…We have done so in this decision, but adapting some features of the approach to meet the requirements of our Act.

In calculating gravity, the Tribunal noted that Vulcania’s and RMS’s conduct was less severe than that of Steeledale and BRC, as the firms were not founding members of the cartel. As regards Vulcania:

> If the maximum proportion for this calculation by the EU is used as a guideline (…a maximum penalty of 30% in the most serious cases) we would regard this contravention as one for which 15% would be an appropriate figure. This gives a basic figure of R4,74 million (31,6x15%). This figure of 4,74 is then multiplied by 2, to provide for the two-year length of Vulcania’s participation. This leads to a figure of R9,48 million.

However, Vulcania was not an instigator, and it also left of its own accord before the cartel was detected. This substantially reduced the penalty. The one aggravating feature was the presence of its most senior manager at the cartel meetings. The mitigating factors led to a reduction of 40% in the basic amount. This gave a final figure, as rounded off, of R5.6m. Annual turnover was R184m, hence the penalty applied was 3% of its total turnover.

RMS also had a gravity weighting of 15%, and a reduction in its basic amount by 40% due to mitigating circumstances, leading to a penalty of R21.6m. Turnover for RMS in the 2007 financial year was R363m, hence the fine came to around 6% of total turnover.

Source: Competition Tribunal of South Africa (2012), *Competition Commission v Aveng (Africa) Limited t/a Steeldale, Reinforcing Mesh Solutions (Pty) Ltd, Vulcania Reinforcing (Pty) Ltd, BRC Mesh Reinforcing (Pty) Ltd*, 7 May.

Box 4.9 sets out a case of abuse of dominance through refusal to supply services to VANS/VPN competitors.

Box 4.9 South Africa penalties assessment: abuse of dominance

In *Competition Commission versus Telkom SA*, the RSA Competition Tribunal concluded in 2012 that, during the complaint period of 1999 to December 2004, Telkom, the incumbent

provider, refused to supply essential facilities to independent value-added network services (VANS) providers, and induced their customers not to deal with them.

The conduct was historical as opposed to current, and the case was an abuse of dominance matter rather than a cartel. In arriving at a penalty, the Tribunal noted:

> We start off by considering the affected turnover. Some difficulties were experienced here about whether the affected turnover should be limited to Telkom sales of Diginet lines or should include its VPN/VANs revenues. Telkom argued that only 62% of the total revenue of Diginet access should be considered in calculating affected turnover as the amount of R1,927,086,128 for 2004 also included other point-to-point services that had nothing to do with VPN services. The correct amount should therefore be R1,194,793,400. Added to this is the turnover for VPN services, R250,139,830 and for Internet Access R 159,873,512. The affected total turnover for 2004 is therefore R 1,604,806,742.

From the above it would seem that there were two points of contention: the proportion of wholesale Diginet turnover (100% or 62%) that should be assumed; and whether additional revenue from retail services (VPN and Internet access) should be taken into account. In practice, the Tribunal limited the Diginet wholesale revenues to those associated with VPN retail services (62% of Diginet wholesale turnover), but also included relevant VPN retail revenues.

In terms of gravity, the Tribunal stated:

> We must bear in mind that the nature of the contravention is an abuse of dominance and not a cartel and would therefore be at the lower end of the scale, namely between 10-15%...we consider 10% to be an appropriate percentage.

As such, the basic amount of the fine was calculated as 10% of the affected turnover of R1,604,806,742 for 2004, or R160,480,674, multiplied by four years, which amounts to R641,922,696. This was ‘way below’ the 10% turnover cap of R3.2bn.

However, there were some mitigating and aggravating factors:

> Having regard to the extent of harm caused by Telkom as summarised in [the Tribunal’s] conclusion on the merits and taking into account all the factors discussed…, [the Tribunal] accordingly reduce the amount of R641,922,696 by 30% to R449,345,887, rounded down to R449 million...Had Telkom’s actions not been tainted [the Tribunal] would have increased the level of the discount to above 50%. Its behaviour in this respect was an aggravating factor leading to the reduction in the discount that might otherwise have been granted.

The fine amounted to 2% of annual turnover for the 2010/11 financial year.

Source: RSA Competition Tribunal (2012), *The Competition Commission Applicant v Telkom SA LTD*, CASE NO: 11/CR/Feb04, 7 August.

The refusal to supply case is of interest, since the sub-segment used to define wholesale affected sales corresponded to the proportion of wholesale revenue associated with the VPN retail service. What is also of interest is that *both* wholesale and retail revenues were considered in the exercise—as opposed to simply a proportion of VPN retail revenues.

In this case gravity was set at 10%, and the maximum reduction in the basic amount for mitigating circumstances was 50%. In practice, due to the presence of aggravating factors, the penalty was reduced by a lower amount of 30%.

In 2015, the Competition Commission published guidelines on setting fines.[58] In preparing these, it conducted a review of guidelines developed by other competition authorities, including the European Commission and UK Competition and Markets Authority (CMA), and also looked to principles established by the Tribunal. The Commission was also mindful of differences in law across jurisdictions.

[58] Competition Commission South Africa (2015), ‘Guidelines for the Determination of Administrative Penalties for Prohibited Practices’, Final, Effective 1 May 2015.

4.4.9 Case study: Polish telecoms sector

The case of the European Commission's investigation of Telekomunikacja Polska (TP) is interesting as, in this instance, a wide number of breaches for refusal to supply were detected over a period of around four years. This justified a gravity of 10%. Box 4.10 provides a summary of the case.

Box 4.10 Telekomunikacja Polska

On 22 June 2011 the European Commission imposed on telecoms operator, Telekomunikacja Polska S.A., a fine of €127.5m for refusing to supply wholesale broadband products to alternative operators. The decision found that TP's behaviour was aimed at hindering alternative operators' access to TP's wholesale products.

TP is the incumbent telecoms operator in Poland. In view of its significant market power, the company was asked by the Polish national regulator to grant alternative operators access to its network in order to allow for effective competition in the downstream markets. However, the Commission found that from 2005 until 2009 TP engaged in abusive conduct towards alternative operators. The abusive practices included:

- proposing unreasonable conditions governing access to the wholesale broadband products—i.e. exclusion or modification of contractual clauses and extension of deadlines to the detriment of alternative operators;
- delaying the negotiation process: for example, in 70% of cases TP did not meet a 90-day regulatory deadline for concluding negotiations;
- limiting access to its network by, for example, rejecting alternative operators' orders on unreasonable grounds;
- limiting access to subscriber lines by, for example, rejecting alternative operators' orders to activate subscriber lines on unreasonable grounds;
- refusing to provide reliable and complete general information on TP's network—this information was indispensable in allowing alternative operators to take business decisions.

The fine was calculated on the basis of the average value of sales made by TP in the years between 2005 and 2009 to which the infringement directly or indirectly related. The Commission considered that the value of *both* wholesale and retail sales of Internet products in Poland were directly related to the infringement. This is because the infringement took place in the wholesale market in order to protect the retail market. With regard to market share, TP had a dominant position in both the retail and wholesale markets.

The Commission defined three relevant product markets in broadband access—one retail market and two wholesale markets:

- the retail mass market, which is the downstream market of broadband access services offered at a fixed location by telecoms operators to their own end-users;
- the market for wholesale broadband access ('the BSA market');
- the market for wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location.

In the wholesale market, TP is the sole supplier of local loop unbundling and BSA in Poland. In the retail market for the period of the infringement (2005–09), TP held high market shares in terms of both revenue (46–57%) and number of lines (40–58%). In addition, TP had a subsidiary in the market called PTK. The relevant geographic market was judged to cover the entire territory of Poland. The Commission also took into account the average annual sales over the period of the infringement (rather than the last period only), because it recognised that the infringement took place in a particularly high growth period for the market.

The Commission used a gravity percentage of 10%. In assessing this, the Commission took into account the fact that not all elements of TP's conduct were in place at the same time, as the process of obtaining access to TP's wholesale broadband products has several distinct consecutive stages (negotiating access and collocation contracts; accessing TP's network; activating subscriber lines; and obtaining general information). The Commission also noted that

refusal to supply had already been condemned by the Commission and the European courts, and that TP was aware of the illegality of its behaviour.

The basic amount was then determined by calculating 10% of the average value of sales made by TP in the three relevant markets, and multiplying this by 4.2 (corresponding to the duration of the infringement of four years and two months). This led to a basic amount of €136m. The Commission decided not to adjust the basic amount of the fine on the basis of aggravating or mitigating circumstances.

Finally, the Commission acknowledged that TP's conduct had also been the subject of decisions of the national regulator, UKE, fining TP for breach of its regulatory obligations. In order to take account of these fines, the Commission deducted their amount from the basic amount of the fine and set the final amount of the fine at €127.6m.

Source: Oxera analysis of European Commission (2011), 'Commission Decision of 22 June 2011 relating to a proceeding under Article 102 of the Treaty on the Functioning of the European Union (TFEU): COMP/39.525 – Telekomunikacja Polska', 22.06.2011.

Notably, the markets directly affected were judged by the Commission to be at both the wholesale and retail level. Affected sales were calculated using revenues from one retail market and two wholesale markets. In addition, a broad (as opposed to narrow) definition was adopted of the downstream retail market. The net result was a significant fine. There was also an element of double jeopardy that was recognised in this case, since TP had already been fined for breaches of regulatory obligations by the national regulator. This resulted in a deduction to the fine.

In this case, TP appealed to the General Court following the decision. It did not dispute the existence of the infringement, but argued that the Commission erred in calculating the basic amount of the fine. In particular, TP claimed that the Commission did not take account of the varying duration and intensity of the individual elements constituting the infringement.

The General Court, however, concluded that the Commission had taken due account of the differing duration and intensity of the separate elements and did not err by considering the elements as a whole when assessing the gravity of the infringement. Contrary to TP's claim, the General Court also found that the Commission had not taken into account the actual effects of the infringement in assessing its gravity and, consequently, did not have to provide any evidence to this effect.[59] In short, the General Court was of the view that the Commission did not need to prove that there had been an anticompetitive effect. Rather, the form of the conduct was sufficient.

[59] Stibbe (2016), 'General Court dismissed Orange Polska's appeal against abuse of dominance decision', 5 January, http://www.stibbe.com/en/news/2016/january/general-court-dismissed-orange-polskas-appeal-against-abuse-of-dominance-decision.

5 A workable methodology for ComReg

In this section we recommend a methodology that ComReg could use to calculate the level of financial penalties for breaches of ex ante regulatory obligations in electronic communications.

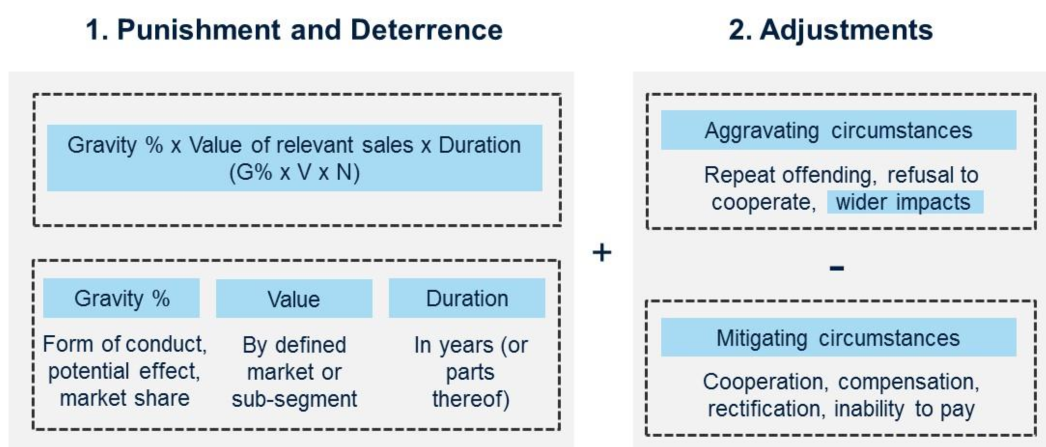
The focus of this methodology is on a particular theory of harm, where the action by a dominant provider of wholesale services hinders wholesale access by competitors, which in turn may dampen competition downstream at the retail level. In an ex post competition rules setting, such behaviour may take the form of refusal to supply or a margin squeeze.

Dominance in an ex post competition rules setting is equivalent to the concept of significant market power (SMP) in an ex ante regulatory setting. Where a provider of wholesale services has SMP, the EU telecommunications framework states that it is necessary to have some form of ex ante regulation for the set of wholesale services concerned, in order to protect consumers and to ensure a level playing field for competitors.

This can include price regulation for some wholesale inputs, and/or regulatory obligations at the wholesale level—for example, relating to transparency, non-discrimination and access. The theory of harm is then that breaches of these ex ante regulatory obligations may be expected, a priori, to have a negative impact on competition downstream.

The overarching penalties methodology that Oxera recommends is summarised in Figure 5.1.

Figure 5.1 Recommended methodology for setting penalties



Source: Oxera.

In what follows, we describe:

- reconciliation with regulatory objectives and economics;
- the relevance of the European Commission competition law approach;
- issues to bear in mind in arriving at the methodology;
- the recommended methodology.

5.1 Reconciliation with regulatory objectives and economics

The methodology should be consistent with ComReg's overarching functions and objectives to promote competition, promote consumer choice, and remove obstacles to the development of communications infrastructure.

Any penalty should also be consistent with the European Commission guidance on setting penalties for breaches of regulatory obligations.[60] In this respect, a penalty should be:

- appropriate—it should rectify a clearly identified breach of regulatory obligations that has a sufficiently material impact at a defined point in the value chain;
- effective—it should be practical to implement such that it can achieve its intended effects;
- proportionate—it should seek to address the harm caused or the illicit gains made;
- dissuasive—it should also deter future breaches of regulatory obligations by the party concerned or by other parties.

As discussed below, there will be elements of the regime that could be established upfront, and elements for which discretion should be retained.

5.2 Relevance of a competition law-based approach

As discussed in the preceding sections, the competition law-based approach to assessing penalties is relevant for assessing penalties in the event of breaches of ex ante regulatory obligations.

This is because:

- competition and regulatory policy are based on similar economic principles. Refusal to supply and margin squeeze share the same economics as breaches of regulatory requirements relating to non-discrimination, transparency and access (at least in so far as the latter result in exclusionary effects in downstream retail markets);
- EU rules require member states to enable relevant authorities in electronic communications to issue penalties for breaches of ex ante regulatory obligations, and for member states to set out rules on deciding on penalties for infringements. These penalties must be appropriate, effective, proportionate and dissuasive;
- a number of EU member states have adopted methodologies, within or as a consequence of these rules, that specifically include a role for deterrence (i.e. dissuasiveness), although there is variation across member states in the methodologies employed and the level of detail provided;
- while the objective of 'deterrence' is not mentioned explicitly in the rules contained in the Irish legislation, it should still play an important role. As discussed in section 2.1, EU requirements highlight a role for 'dissuasiveness'

[60] Directive 2002/20/EC of the European Parliament and of the Council of 7 March 2002 on the authorisation of electronic communications networks and services, OJ L 108/21, 24.4.2002; as amended by Article 3, Directive 2009/140/EC of the European Parliament and of the Council of 25 November 2009, OJ L 337/37, 18.12.2009. Also, Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive), OJ L 108, 24.04.2002; as amended by Article 1 of Directive 2009/140/EC.

and are binding; ComReg has general regulatory duties; the Irish legislation states that the circumstances of the non-compliance need to be taken into account 'including' certain factors (i.e. not necessarily excluding others); the High Court must take account of the effect on other operators (which may, in practice, be over the long term); and the High Court must take account of the regulator's recommended methodology. The ultimate decision is, however, for the High Court;

- the economics literature on optimal fines points to deterrence-based penalties, and this influenced the European Commission guidance on fines for competition breaches. The guidance was a practical reflection of what may be feasible to compute, to have a deterrence effect, given the data available.

We therefore consider that a reasonable methodology would be based in part on the European Commission's competition approach, the approach adopted by member states in relation to regulatory obligations in communications, and lessons from other regulators.

5.3 Issues to consider in arriving at the methodology

We note that setting fines on the basis of the theoretically optimal level is usually difficult in practice, as it requires calculation of the exclusion at the wholesale level and the knock-on impact on competition at the retail level, to determine the profits gained by the incumbent or lost by the retail competitor relative to the counterfactual (i.e. no breach of regulatory obligations). The probability of detection would also need to be taken into account. For *practical purposes*, this data might not be readily available at low cost or in a timely way.

A related issue is that a purely effects-based approach places the *burden of proof* on the investigating competition authority or regulator to show that there has been a negative impact on competition. This may not be conducive to effective deterrence where data availability is limited.

Instead, the European Commission's competition approach provides a compromise, using percentage of turnover on relevant sales, which is a more readily available metric.

It should also be borne in mind that ex ante regulatory obligations go *further* than competition rules in limiting certain behaviours.

Price discrimination by a dominant incumbent between different customer classes in the retail market is not a *per se* abuse under competition law. This is because it may be a way of spreading fixed costs that is output-enhancing. However, discrimination by a dominant incumbent at a wholesale level, between its own retail affiliate and the retail business of a competitor, and which in turn would be expected to have an exclusionary effect on competition at the retail level, may be prohibited under competition law. Margin squeeze and refusal to supply are examples of the latter.

Ex ante regulatory obligations often go further than ex post competition law in the following key respects.

- Regulatory obligations take a forward-looking view on potential market developments, and seek to address the risk of future harm.
- In this vein, it is recognised that there is SMP at the wholesale level, which necessitates some form of ex ante regulation, for example including

obligations for non-discrimination, transparency and/or access. It is the responsibility of providers with SMP in providing wholesale services to comply with these obligations.

- It can be assumed that, in the absence of this compliance, there would be a negative impact on downstream retail competition, or a risk of such an impact in future.
- In assessing breaches of ex ante regulatory obligations, therefore, the burden of proof should not necessarily be placed on the regulator to show cause and effect or downstream harm, in particular if a key objective is effective deterrence.

It would still be necessary for the regulator in recommending a penalty to set out the theory of harm (stemming from the form of the conduct), and to evaluate qualitatively the main impacts at the wholesale and retail level (who is harmed and who gains, directly and indirectly).

The European Commission competition-based approach then involves assessing the following:

- the turnover metric used;
- the determination of gravity; and/or
- the assessment of mitigating/aggravating factors.

All other things remaining constant, conduct at the wholesale level that would be expected to harm competition in one or more retail segments will attract a higher candidate turnover figure, higher gravity, and/or more aggravating factors (and fewer mitigating factors).

As discussed, there is wide variation across EU member states as to the precise methodology used to calculate fines for breaches of regulatory obligations in electronic communications, including in the assessment of mitigation or aggravating circumstances. Our proposed methodology leans towards the European Commission competition-based approach.

The calculation of the basic amount as ‘relevant sales x gravity x duration’ in effect encapsulates, by proxy, both punishment and deterrence.

There is also a matter of retaining regulatory discretion versus establishing aspects of its methodology in a systematic way upfront. From a practical perspective, while predictability creates legal certainty, it also restricts the flexibility of the regulator to arrive at a decision based on the merits of the case. Each case will be different.

Also, from a deterrence perspective, there are arguments for and against predictability. As Wils (2007) notes:[61]

> There appears to be a wide divergence of opinion as to how foreseeable or predictable fines should be. It is often argued, or implied, that the more predictable fines are, the better. On the other hand, enforcement officials, authorities and courts have often warned against the risk of too high a degree of foreseeability.

[61] Wils, W. (2007), ‘The European Commission’s 2006 Guidelines on Antitrust Fines: A Legal and Economic Analysis’, Public Lecture, King’s College London, Centre of European Law, 15 February.

In theory, it might be expected that more predictability will increase deterrence as, given the level of the potential fine, a firm will undertake a cost–benefit calculation of whether to breach. However, Wils (2007) highlights two main ways in which more predictability might actually reduce deterrence. First, if firms are risk-averse to high fines (given that these can lead to financial distress), a more indeterminate approach to setting fines enhances deterrence. Alternatively, as fines may be insufficient to provide effective deterrence, predictability may lead some firms—which would otherwise be law-abiding—to consider an infringement. Whereas before they did not have the calculations to perform the cost–benefit assessment, predictability enables them to do so.[62]

In short, any methodology will need to balance prescription and flexibility. In most policy contexts in which deterrence is an objective, some predictability of penalties is considered desirable in order to achieve fair and effective enforcement.[63] From a practical perspective, the methodology should be transparent, but it need not be completely comprehensive.

As discussed in section 4, another important issue will be which market segment or sub-segments to use in defining relevant sales. There are two perspectives here:

- from the perspective of *actual* competitors that suffer harm, the relevant turnover will be the specific sub-segment affected by the wholesale breach (e.g. the small business retail market for a specific product), although there may also be wider long-term effects;
- from the perspective of consumers, however, the market definition determines where competitive constraints lie. This may lead to a wider definition of relevant turnover (for example, fibre broadband retail turnover).

For example, on the second point, exclusion of competitors in one retail sub-market may mean higher prices in this sub-market (e.g. large businesses) and this may, in turn, mean higher prices in another sub-market (e.g. SME businesses). In contrast, if the two sub-segments did not constrain each other in this way—through demand-side substitution—they would not be deemed to be in the same market in the first instance (save for any rapid supply-side substitution).

Business and domestic users may be in separate retail markets, with separate pricing practices applying to each. If so, the ‘relevant market’ for determining the relevant sales would be narrower than in the case where different market segments constrain each other.

It is still within the discretion of the member state, however, to determine which approach it will use. The European Commission 2006 guidance relates to its own investigations, and does not require member states to follow precisely the same approach at the national level.

The European Commission 2006 guidance also refers to sales of goods or services ‘directly or indirectly’ associated with the breach. This provides some discretion for a narrow or wider definition of relevant sales to be adopted in the downstream market. The terminology also leaves open the possibility of

[62] Wils, W. (2007), ‘The European Commission’s 2006 Guidelines on Antitrust Fines: A Legal and Economic Analysis’, Public Lecture, King’s College London, Centre of European Law, 15 February.
[63] For a discussion of deterrence-based fines, see Niels G., Jenkins H. and Kavanagh J. (2016), *Economics for Competition Lawyers*, second edition, Oxford University Press, pp. 394–6.

considering, along the vertical chain, both retail *and* wholesale revenues in the analysis.

Practice varies. As discussed in section 4, following aspects of the Commission's approach, some countries have adopted a narrow definition of relevant turnover, whereas others have adopted a wider definition:

- **narrow definitions (retail)**—in Belgium there is precedence for adopting a narrow definition of relevant sales, based on a subset of the retail market. There has been discussion in this instance of the difference between assessing market definition and assessing relevant turnover for setting fines;
- **wider definitions (retail)**—in the UK, the (former) OFT favoured using 'the turnover of the undertaking in the relevant product market and relevant geographic market affected by the infringement in the undertaking's last business year'[64], which may in practice mean a wider retail market;
- **account of wholesale revenues**—there is also recent precedence in which the European Commission, in assessing relevant turnover, has taken into account revenues from both wholesale and retail services. This is evident from its examination of the Polish telecoms case. There also appears to be precedence for this in a refusal-to-supply case in South Africa.

The last approach could lead to concerns of double-counting if it is not implemented carefully, since it is likely that retail revenues already implicitly include payments for wholesale services. Ultimately, in refusal to supply and related cases, the restriction of access at the wholesale level is simply a *mechanism* through which harm would be expected to be caused to competition at the retail level, rather than an end in itself.

As regards market definition, it is of note that it would also be possible to define separate downstream markets by distribution channel. Once again, domestic and business products may be sold through different channels, and might be in different downstream markets.

In its 2011 wholesale broadband access market review, ComReg noted that, while it was not necessary to conclude on the *precise* scope of the retail broadband market, it was likely to be fairly broad. ComReg defined this market as encompassing broadband products offered over copper DSL, cable, fixed wireless access (FWA), and alternative fibre (FTTx) networks. These products were similar in terms of their product and pricing characteristics—to the extent that a customer would be likely to consider them substitutes.

A number of other retail products were excluded from this market definition—namely those delivered through retail narrowband access, satellite networks, leased-line networks, or mobile broadband networks. ComReg also reached the view that the retail broadband market, as defined, should not be segmented by customer type (e.g. residential versus business), given likely demand- and supply-side substitution.[65]

These past assumptions, in the context of a market review, do not prevent a narrower approach being adopted to determine fines. If wider impacts are not

[64] UK Office of Fair Trading (2012), 'OFT's guidance as to the appropriate amount of a penalty', OFT423, September.
[65] Ofcom (2011), 'Market Review: Wholesale Broadband Access (Market 5)', Response to Consultation and Decision, Decision D06/11, 8 July. See p. 8, p. 26 and p. 34.

taken into account in determining relevant sales, they might instead be taken into account in the calculation of gravity and/or wider aggravating impacts.

In any event, historical market definitions at the retail level may not be appropriate if these have not been updated for some time and have not taken into account developments in technology (for example, to determine SMP markets) that may affect the definition of the relevant markets.

Where it has been deemed appropriate to use a conservative approach, and to use a narrow definition of relevant sales at the retail level, it will be necessary to determine relevant sales for the retail sub-segment directly affected by the wholesale breach. This can be undertaken through an apportionment exercise, based on the share of wholesale lines associated with the breach. A potential approach is illustrated in section 5.4 below.

Another relevant issue is that of monitoring. Sector regulators usually have more day-to-day interaction with communications providers than a competition authority would have with firms in the economy in general. This may mean that the detection probability is higher than in the case of ex post enforcement. In turn, gravity, and therefore fines, might be lower than in the ex post competition cases discussed in section 4, while achieving the same deterrence effect. However, deterrence will still be important.

Moreover, even if the breaching party has remedied its behaviour, a penalty will still be required to ensure deterrence. Otherwise the firm may simply breach in the knowledge that, if this is discovered, it can simply remedy its behaviour and escape the penalty altogether. In effect, it would face a one-way bet. As such, remedies are simply a mitigating factor to be weighed alongside other factors.

Double jeopardy may also need to be taken into account in assessing proportionality. This is recognised by some member states in relation to ex post competition law enforcement. For example, in the UK, if a penalty or fine has been imposed by the European Commission (or by a court or other body in another member state) for the same agreement or conduct, the CMA must take this into account when deciding on the appropriate fine. This is to ensure that the firm will not be penalised again in the UK for the same anticompetitive effects.[66]

In competition investigations, the European Commission has also recognised the potential for double jeopardy, and has reduced the fine when an amount has already been levied for the same offence by a national court.[67] In an ex ante setting, Ofwat notes that double jeopardy is a relevant consideration in calculating penalties.[68]

By analogy, within Ireland, if two regulatory breaches occur at the same time (e.g. non-discrimination and transparency), which might be regarded as stemming from the same underlying offence, it may be that separate fines for the two breaches are not levied since they are not necessarily additive offences.

5.4 The recommended methodology

The penalties methodology, being based on a competition rules approach, assumes that a theory of harm has been established, which then justifies a penalty. This requires the following steps:

[66] UK Office of Fair Trading (2012), 'OFT's guidance as to the appropriate amount of a penalty', OFT 423, September, p. 16. See also Section 38(9) of the UK Competition Act 1998.
[67] See the discussion of Telekomunikacja Polska in section 4.4.
[68] See the discussion of Ofwat's approach in section 4.3.

- identify the relevant theory of harm (for example, breaches of non-discrimination at the wholesale level and their potential impact on downstream retail competition);
- evaluate qualitatively the main impacts at the wholesale and retail level (who is harmed, who gains, directly, indirectly);
- identify the (subset of) affected retail products (defined narrowly or more broadly), and hence the value of sales by sub-segment and geography. Make starting assumptions as necessary.[69]

The methodology then incorporates the components set out in Box 5.1. It involves calculating the penalty as 'value of retail sales x gravity x duration' of the breach, plus adjustments for any aggravating or mitigating circumstances. A deterrence multiplier might also be taken into account, as well as reductions for settlement or inability to pay.

Box 5.1 Recommended methodology for ComReg

In summary, the approach includes the following components:

- a basic amount, composed of:
  - Value of retail sales (V) x Gravity (G) x Duration (N);
- adjustment factors;
  - aggravating circumstances (increased fines);
  - mitigating circumstances (reduced fines);
- a deterrence multiplier (if required);
- a legal maximum (10% of total turnover);
- fine reductions (settlement, inability to pay).

Source: Oxera.

The theory of harm of interest is where a breach of wholesale regulatory obligations would be expected to have a knock-on impact on downstream retail competition, given current and potential market developments. Such behaviour needs to be punished and deterred.

The European Commission 2006 guidance makes it clear that it is the undertaking's sales that are of relevance. The issue of contention is whether only retail revenues are taken into account, or also wholesale revenues; and whether a wide or narrow approach is adopted to assessing affected retail revenues. We proxy the harm and deterrence effect by considering (i) the affected retail sales of (ii) the breaching party in (iii) the downstream market or sub-segment for (iv) the last full business year of the breach.

As discussed, in practice there is discretion to adopt a wide or narrow approach to assessing the relevant retail sales of the breaching party. The European Commission 2006 methodology also leaves open the possibility of considering wholesale revenues in addition to retail sales.

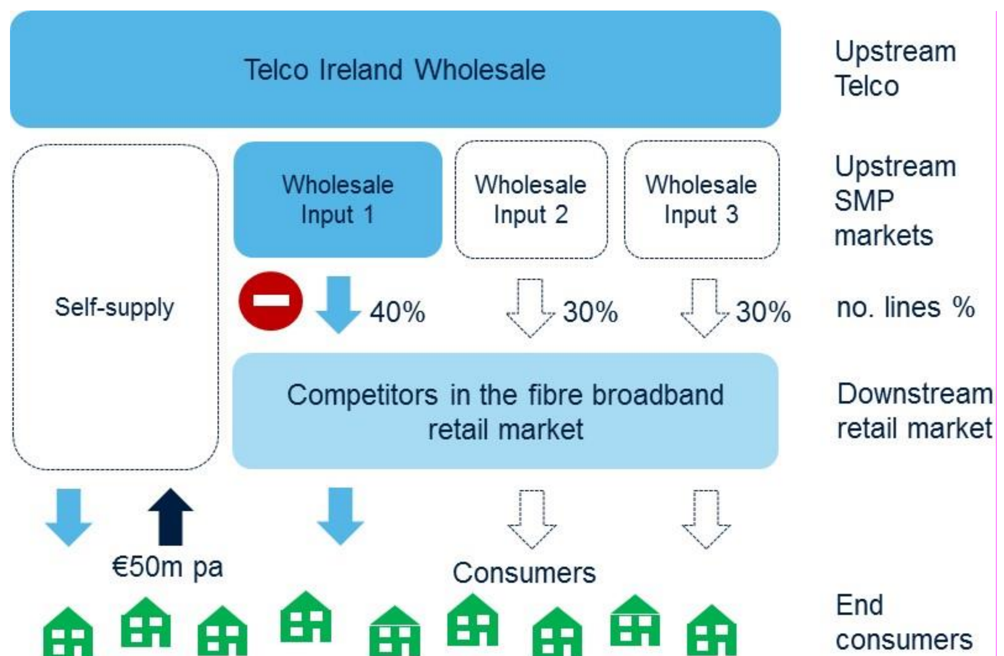
A conservative approach would be to focus on retail sales only, based on an assumption of what proportion of a competitor's retail sales are affected by the

[69] An illustration of the theory of harm in a refusal to supply (or deal) case was presented in Figure 3.1.

wholesale conduct breach (non-discrimination, transparency, access) in question. In practice, retail products (e.g. fibre retail broadband) are often supplied through multiple wholesale inputs (e.g. line-sharing, bitstream), and so an apportionment exercise would be necessary if this approach is adopted.

Figure 5.2 provides a hypothetical example where the wholesaler (Telco), which supplies three wholesale products to competitors, is in breach of a non-discrimination obligation in supplying Wholesale Input 1. It has upstream SMP and is not treating competitors in the same way as it treats its own self-supply division (i.e. there is not 'equivalence of inputs'). This places competitors in the retail fibre broadband market (assuming that the market is defined in this way) at a disadvantage.

Figure 5.2 Determination of value of relevant affected sales



Source: Oxera.

In this example, 40% of wholesale lines are supplied to competitors in the fibre broadband retail market through Wholesale Input 1. It may then, as an approximation, be assumed that the wholesale contravention *directly* affects only 40% of the fibre broadband retail market that is served by competitors. In order to take account of this potential harm—and to generate a deterrence effect—it might also be assumed that the relevant sales figure to be applied to the breaching party is its own retail fibre broadband sales (of €50m) multiplied by 40%. This leads to a relevant retail sales figure of €20m.[70]

Alternatively, this segmentation might be obtained by asking the wholesaler directly for the relevant data about which wholesale lines correspond to which portions of its self-supply fibre broadband retail revenues.

As noted, it would be possible to take a wider or narrower view of the relevant affected sales. A conservative approach would be to start with a narrow

[70] As a thought experiment, if Telco had breached across all three wholesale inputs, the relevant retail sales figure would be €50m. Keeping the number of retail fibre competitors constant, now assume that only one wholesale input exists (e.g. Wholesale Input 1). Assume that this is provided to all competitors in the retail fibre market, but that there is a wholesale breach of regulatory obligations. In this alternative scenario, the relevant retail sales would (again) be €50m. In theory, the impacts of the breaches on competition would be the same. The methodology outlined thus achieves a form of internal consistency.

definition of relevant retail sales—the specific retail sub-segments that are affected by the breach—and then look at the extent to which there are reasons to support the expansion of the relevant market to consider other retail segments.

Once relevant sales have been decided on, it will be necessary to apply an assumption on gravity (a percentage of affected sales). Gravity will depend on the nature of the conduct in question, and the market share of the breaching party with wholesale SMP in the affected retail market or sub-segment. The potential effect of the conduct could also be taken into account although, as discussed, this is likely to be qualitative in nature.

In practice, the cases likely to be examined by ComReg would be expected to be less serious than cartel cases. As discussed in section 4, the European Commission's competition fining guidelines assume a gravity of 15–20% for cartels. Based on competition precedence discussed in section 4, Box 5.2 presents some possible ranges for gravity for a range of breaches of regulatory obligations. These are purely illustrative, as gravity will vary on a case-by-case basis.

Box 5.2 Potential ranges for gravity (G) by conduct

- Equivalent to refusal to supply/margin squeeze: 10–15% (e.g. Belgacom Mobile, Telkom SA, Telekomunikacja Polska)
- Discrimination/transparency/access breach with a material (although less significant) potential impact on retail competition: 5–10%
- Discrimination/transparency/access breach with a potential impact on retail competition: 1–5%
- Pure regulatory breach with a very low potential impact on competition: <2%

Source: Oxera.

In Box 5.2 it has also been assumed that the telecoms ex post competition breaches discussed in section 4 (refusal to supply and margin squeeze) form an upper bound for the gravity element (10–15%), and that any breaches of regulatory obligations less serious in nature will attract a lower gravity. These ranges would need to be adjusted for the market share of the breaching party in the relevant retail market or sub-segment.

An Ofcom case was discussed in section 4 in which a fine was levied for a breach of regulatory obligations that had limited impact on competition or consumer harm. This led to a fine at the lower end of the scale (£800,000, which was a very small fraction of total company turnover).

Wider impacts not captured in relevant sales (e.g. in related markets) might be captured in the gravity figure as part of the basic amount (alternatively, these might be captured as aggravating factors).

The percentage of sales figure obtained should then be multiplied by the duration of the breach (in years, or parts thereof).

There is limited information on the assessment of aggravating and mitigating factors in abuse of dominance cases. In cartel cases, there can be increases in fines of up to 50% (e.g. for recidivism) and decreases of up to 50% for mitigating circumstances (e.g. negligence, cooperation with the authorities).

While the cases involving breaches of regulatory obligations before ComReg may be somewhat less serious in nature, it nonetheless may be sensible to offer significant discounts to penalties where a breach was not deliberate, where it has since been remedied, and where there has been cooperation with the regulator. Discounts to the basic amount might be as high as 50%. For recidivism, fines might be increased by this or a different percentage.

One option would be to set out in advance the weights that might be applied to alternative aggravating or mitigating circumstances, as per the approach previously adopted in South Africa (discussed in section 4). However, there will be case-by-case considerations, and an important role for regulatory discretion, which we recommend should be preserved.

As such, the recommended approach is to adopt a set of aggravating and mitigating factors without specifying weights, as summarised in Box 5.3. A similar approach was adopted by Ofcom in the UK telecommunications sector.

Box 5.3 Aggravating (+) and mitigating (-) circumstances

The following aggravating and/or mitigating circumstances would be considered in determining the penalty.

- Whether in all the circumstances appropriate steps had been taken by the regulated body to prevent the contravention
- The extent to which the contravention occurred deliberately or recklessly, including the extent to which senior management knew about it, or ought to have known about it
- Whether the contravention in question continued, or whether timely and effective steps were taken to end it, once the regulated body became aware of it
- Any steps taken for remedying the consequences of the contravention
- Whether the regulated body in breach has a history of contraventions (repeated contraventions may lead to significantly increased penalties)
- The extent to which the regulated body in breach has cooperated with the investigation

Source: Oxera.

The behavioural biases and associated factors discussed in section 3 could be taken into account at this stage. Wider effects on related markets, or over the longer term, may also be reflected in this assessment—in so far as they have not been reflected in the determination of relevant sales or gravity. This could, for example, be related to the recklessness or otherwise of the breach.

Finally, a limit for the fine, of 10% of total business turnover for the offence concerned, would apply. Fine reductions for settlement or (in the unlikely event of) inability to pay would also apply. The 10% overall turnover cap, and consideration of inability to pay, are safeguards aimed at ensuring that fines are not disproportionate.[71]

5.5 An illustrative example

In order to illustrate the application of the recommended approach, Box 5.4 provides an example in which a hypothetical provider of wholesale telecommunications services—Telco—has breached one of its wholesale

[71] See section 3.3.2 for a discussion.

regulatory obligations (non-discrimination). The products and numbers are fictional, and are for illustration only.

Box 5.4 Hypothetical illustration of the approach—'Telco'

In January 2015, ComReg launched an investigation into a potential breach of Regulatory Obligation A by Telco following complaints by its competitors. Specifically, competitors in the fibre broadband retail market argued that Telco had not provided access to Wholesale Service 1 on the same terms to competitors as it had provided to itself. This, they argued, placed them at a disadvantage in the retail market and harmed competition.

In February 2015 ComReg ruled that there had been a breach of Regulatory Obligation A. ComReg sought undertakings from Telco to ensure that remedial action was taken so as to achieve compliance. ComReg also judged that it was appropriate to recommend a penalty in this instance, which would seek to both punish the offence and deter non-compliance in future.

In doing so, ComReg established a **theory of harm**—that discriminatory behaviour by Telco, which held SMP in a relevant market which included the supply of Wholesale Service 1, placed retail competitors at a disadvantage in the **fibre broadband retail** market, and which could be expected to have a negative impact on competition in that downstream market.

Telco's fibre retail broadband turnover in 2014, the last year of the contravention, was **€50m**. The contravention lasted for **two years**, from January 2013 to December 2014. In the last year of the contravention, retailers in the fibre broadband retail market obtained around **40%** of their wholesale inputs via Wholesale Input 1 (see Figure 5.2 above). For practical purposes, the 40% figure was obtained through a proxy. This considered the number of wholesale lines accounted for by Wholesale Input 1 as a proportion of *all* wholesale lines (1 + 2 + 3) serving the fibre broadband retail market.

In calculating a basic amount for the penalty, ComReg took account of the gravity (G) of the offence, and judged this to be a discrimination breach with a material expected impact on retail competition. Telco had 65% of the fibre broadband retail market, and 75% of the fibre broadband retail market that could be linked to Wholesale Service 1. On this basis, ComReg decided on a **gravity of 5%**.

If based on a broad definition of the downstream market (fibre retail broadband), the relevant value of sales figure (V) would be €50m. However (as noted earlier in this section), a variety of approaches are available for determining relevant sales. In this instance, a conservative approach was adopted. Here it was assumed that the relevant sales were based on the proportion of the fibre broadband retail market served by competitors using Wholesale Input 1, or 40%*€50m = **€20m**.

Given that the duration of the breach (N) was two years, this provided a **basic amount** (G*V*N) = 5%*€20m*2 = **€2.0m**.

ComReg then considered whether there were aggravating and/or mitigating circumstances that might lead to an adjustment to the penalty.

In terms of **mitigating circumstances**, Telco had not engaged in the behaviour deliberately, and had remedied the breach soon after ComReg became aware of the contravention. It was also a first offence of this type. These factors would have justified a 50% reduction in the fine.

However, there was also a degree of non-cooperation with the investigation, when ComReg asked for data that would assist it in undertaking its calculations. This **aggravating factor** meant that ComReg would adjust the basic amount of the fine downwards by 40% rather than the full 50% that would have otherwise applied.

In total, this means that the final penalty to be applied to Telco for breach of Regulatory Obligation A was (1-40%)*€2.0m = **€1.2m**.

This amount was significantly below the cap of 10% of total turnover of Telco in 2014. There were no reasons to expect inability to pay.

Source: Oxera.

The key sensitivity in Box 5.4 is in the categorisation of the market used to determine the value of relevant affected sales, and whether this is broad or (as

assumed in Box 5.4) narrow. The other major sensitivity relates to the assumed gravity.

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