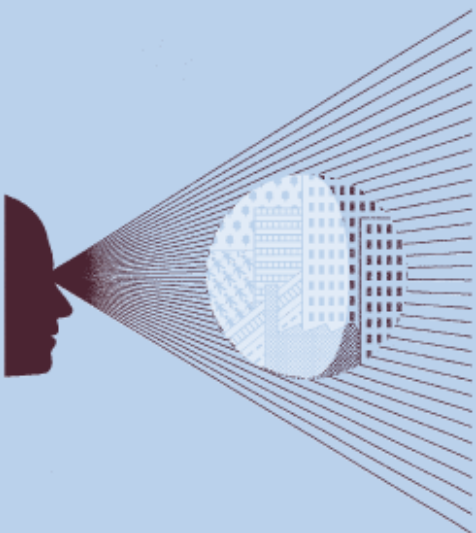


Market definition in the fixed voice access market

**Analytical framework and
review of economic evidence**

**Prepared for
Commission for Communications Regulation**

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Executive summary

Box 1 Summary of Oxera's report and main conclusions

As part of the review of the retail fixed voice access (FVA) market (Market 1 of the relevant markets susceptible to ex ante regulation), the Commission for Communications Regulation (ComReg) asked Oxera to assess whether its proposed conclusions on market definition are appropriate from an economics perspective and whether they are consistent with recent market developments and the available market evidence. Oxera was also asked to articulate an economic framework for market definition in the context of FVA and to recommend appropriate policy options.

A central message of this report is that market definition is not an end in itself, and what ultimately matters is how the overall regulatory framework is designed to deal with the competition problems in the market. With this in mind, Oxera reviewed the available evidence, including the responses to ComReg's consultation, and carried out additional analysis using established market definition tools. Although the evidence on market definition is not always clear-cut and conclusive, Oxera's conclusion overall is that ComReg's proposals on market definition are reasonable, particularly given the overall regulatory framework for FVA that ComReg has developed and implemented over the last few years.

Oxera's assessment focused on three aspects of the FVA market:

- **bundles**—assessing whether bundles should be the focal product of the market definition exercise, as well as whether FVA sold inside a bundle is a relevant market in its own right;
- **geographic aspects**—assessing whether geographic differences in competition are sufficiently strong to define separate markets;
- **fixed–mobile substitution**—assessing whether mobile access is a sufficient constraint on fixed access to belong to the same relevant market.

Oxera developed a conceptual framework to define the FVA market based on the well-established 'hypothetical monopolist' test. In this framework, the first key question is whether the focal product of the exercise should be stand-alone FVA, or FVA sold inside a bundle. Having identified a number of criteria to answer this question, Oxera applied these to the Irish market. Consistent with ComReg's approach, Oxera concluded that there are strong reasons to use stand-alone FVA as the focal product, given that the regulator's competition concerns pertain predominantly to stand-alone voice services—specifically, the risk of eircom charging retail prices that are too high, or leveraging a strong position in retail and wholesale FVA markets to adjacent markets through bundling.

In relation to whether FVA sold inside a bundle is part of the same relevant market as stand-alone FVA, Oxera found the evidence to be less clear-cut. However, Oxera concluded that ComReg's decision to include FVA sold inside and outside bundles in the same market is reasonable since the nature of the remedies imposed on eircom would have been substantially similar in the alternative scenario where stand-alone FVA and bundles are identified as separate markets—this is explained in further detail below. Having defined the market in this way, Oxera concluded that, consistent with the conceptual framework, ComReg was not compelled to start another market definition exercise taking bundles as the focal product.

Furthermore, ComReg's decision to define a national market for FVA sold inside and outside bundles is reasonable because differences in competitive conditions are already being captured in the design of remedies—most notably, in the 'net revenue test'. As regards the substitutability between fixed and mobile voice access, Oxera concludes that ComReg's approach to keep them separate is also reasonable as the evidence that mobile access places a sufficiently effective competitive constraint on fixed access is not strong enough.

Based on this analysis, Oxera identified a number of plausible scenarios for market definition, two of which are recommended:

- **recommended option 1**—a national relevant market for FVA (with calls), whether sold inside or outside bundles. This is ComReg's original market definition as set out in the consultation;
- **recommended option 2**—two separate relevant product markets: a national market for

stand-alone FVA (and calls); and FVA sold inside of bundles of broadband, split by geography between the larger exchange areas (LEA) and non-LEAs.

In the present context, the two retail remedies that are arguably the most important (in that they most directly address the key competition concerns) are the Retail Price Control (RPC) and the obligation not to unreasonably bundle. Either of the recommended market definitions would allow ComReg to design remedies that ensure the replicability of eircom's bundles, and mitigate or remove any concerns about excessive pricing of FVA at the retail level. If ComReg were to adopt recommended option 2 in future (or in any case option1), it could 'transfer' the net revenue test element of the 'not to unreasonably bundle' remedy from the retail to a relevant wholesale market. Given that the competition concerns underpinning the net revenue test stem primarily from vertical leveraging (from wholesale to retail), there would be a sound economic rationale for doing so, regardless of the conclusions on market definition in this market review.

Objectives of this report

As part of the market review for the retail FVA market (Market 1 of the relevant markets susceptible to ex ante regulation),¹ ComReg asked Oxera to assess whether its proposed conclusions on market definition are reasonable from an economics perspective and whether they are consistent with recent market developments and the available market evidence. Oxera has also been asked to include in its review a sensitivity and robustness check of plausible market definitions and possible impacts on regulation, as well as to review the evidence submitted in response to the FVA market review consultation. Drawing all of this together, Oxera has been asked to make a recommendation as to which approach (or approaches) to market definition is (are) likely to be the most appropriate, based on its (their) relative merits.

Box 2 Terminology

When discussing the FVA market, clarity of terminology is important. This report uses the following definitions:

- FVA refers to FVA regardless of whether it is sold inside or outside a bundle;
- fixed voice access and calls (FVAC) refers to the joint purchase of access and calls in the same transaction from the same supplier;
- FVA(C) refers to FVA or FVAC;
- stand-alone FVA refers to FVA sold without calls and outside a bundle;
- stand-alone FVAC refers to FVA sold with calls and outside a bundle;
- a bundle refers to FVA or FVAC sold with at least one other non-voice product; FVAC does not itself count as a bundle;
- a broadband bundle refers to a two-product bundle of FVA or FVAC and broadband;
- a 'triple-play bundle' refers to a bundle of FVA or FVAC, broadband and TV.²

Background: evolution of the existing regulatory framework for the FVA market and recent market developments

The 2007 FVA market review and the existing suite of remedies

ComReg's previous market review³ found a national market for lower-level retail narrowband access and a separate national market for higher-level retail narrowband access. These markets were defined to include residential and non-residential customers. Fixed calls and mobile access were both found to be in separate markets.

¹ ComReg (2012), 'Market Review: Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non Residential Customers', October.

² Although other forms of triple-play bundles (containing any three products) are available, for the purposes of this report Oxera uses the definition to refer explicitly to FVA or FVAC, broadband and TV.

³ ComReg (2007), 'Retail Fixed Narrowband Access Markets 07/26'.

ComReg found that eircom possessed significant market power (SMP) in both of the access markets that it defined in 2007. As a result, the regulator imposed several remedies at both the retail and the wholesale level.

At the retail level, ComReg imposed several remedies, with arguably the two most important ones (important in the sense that they most directly address the key competition concerns) being the RPC and the obligation not to unreasonably bundle. The RPC was imposed to address the risk of excessive pricing by eircom in respect of the sale of FVA. The obligation not to unreasonably bundle was made up of two parts: a requirement to offer all retail narrowband access services as stand-alone products, in order to address the concern of horizontal leverage of market power, and an obligation not to price a retail bundle that includes retail narrowband access below the costs of the wholesale elements (also known as the 'net revenue test'), in order to address the risk that wholesale remedies imposed on stand-alone products could be undermined by the sale of bundles (vertical leverage).

The obligations on eircom to provide a carrier pre-selection (CPS) and single-billing wholesale line rental (SB-WLR) product, which are important for promoting FVA competition on a national basis, have been implemented through market 1 (the retail market). However, the current FVA market review proposed to 'transfer' the latter market remedies to the wholesale market for call origination and transit (market 2) if necessary and appropriate.⁴ Accordingly, the retail remedies are (and will) be complemented at the wholesale level by a suite of remedies for markets 2, 4 and 5—in particular, SB-WLR; full and partial local-loop unbundling (LLU); and wholesale broadband access (WBA). Oxera's analysis presented in this report assumes that WLR and CPS remedies will be maintained, albeit as wholesale rather than retail remedies.

Recent market developments

Since the market review in 2007, a number of developments have taken place in the Irish telecoms market, both in the infrastructure and products available and in end-user behaviour. For the purposes of this market review, the most relevant trends include:

- growth in the take-up of bundles—the take-up of bundles of fixed voice access with another non-voice product grew from 46% in Q1 2010 to 59% in Q1 2013, and is largely dominated by broadband bundles.⁵ Most net additions are for bundles;
- stronger take-up of UPC's voice products—in 2006, shortly before the 2007 market review, UPC launched a managed VOIP service. Since then UPC has grown to become the third-largest provider of voice services, with 18% of subscribers;⁶
- investment upgrades by eircom in the UPC footprint—ie, ADSL2+ is available only in the UPC footprint;
- NGA roll-out by eircom—Over the past four years eircom has invested €1.4 billion in capital and by mid-2013 expects its NGA network to reach 500,000 premises, with 1.2m premises expected to be reached by 2015.⁷ The geographic reach of the current phase of NGA roll-out largely matches UPC's footprint;
- differentiation of wholesale pricing—eircom has very recently begun to offer a discount for some wholesale inputs (SB-WLR) when sold as part of a bundle inside the LEA;

⁴ For the purposes of this report, Oxera understands and assumes that SB WLR and CPS will be transferred to wholesale market 2, as outlined in the initial ComReg consultation.

⁵ ComReg (2013), 'Quarterly key data' June. These bundle statistics may differ from those published in the ComReg Quarterly Reports, given that they represent a sub-sample of total subscriptions (bundles that contain fixed voice access services).

⁶ ComReg (2013), 'Quarterly key data report', September.

⁷ <http://www.nextgenerationaccess.ie/>

- growth in mobile-only households—the proportion of mobile-only households has increased from 30% in 2006 to 36% in 2012.⁸

ComReg has taken into account the above key developments during the current market review process—in particular, in the design and updating of remedies. For example, recognising the development of sub-national competition with respect to bundles, the concept of the LEA was introduced in 2011 to recognise that different structural conditions are considered to be present in more urban areas.⁹ More recently, the net revenue test has been adjusted to provide further pricing flexibility to eircom inside the LEA.¹⁰ Furthermore, ComReg’s proposed remedies for wholesale NGA pricing have taken account of the retail pricing constraints faced by eircom in the LEA.¹¹

ComReg’s preliminary conclusions in the current FVA market review

ComReg’s preliminary conclusions in the 2012 market review (the focus of this report) are broadly similar to its findings in the 2007 market review, although some important changes can be observed. For example, taking account of the prevalence of bundles, ComReg has found a wider lower-level voice access (LLVA) market comprising PSTN and ISDN access over copper (narrowband access), as well as broadband access delivering managed VOIP (eg, voice over cable networks).

Taking stand-alone FVA as the focal product of the market review, ComReg found that fixed calls and FVA were in separate markets and that there was a market for FVA whether sold inside or outside a bundle. It also found that there are separate national markets for LLVA and higher-level voice access (HLVA), for both residential and non-residential consumers.

In the 2007 market review ComReg concluded that eircom had SMP in both the lower-level (PSTN/ISDN BRA) and higher-level (ISDN FRA and PRA) narrowband markets. In the 2012 market review, ComReg also concluded that eircom had SMP in both the wider LLVA and HLVA markets. However, as noted above, the assessment of SMP in the LLVA market explicitly took account of the fact that the market was defined to include broadband access capable of delivering a managed VOIP service.

Conceptual issues arising in market definition for FVA (section 2)

Several of the aspects of FVA market definition are complex and this complexity should be considered in the context of the overall market review—in particular, ComReg’s objective to promote a vibrant and competitive telecoms sector in Ireland.

Oxera’s assessment of ComReg’s proposals has therefore been particularly mindful of the fact that market definition is not an end itself, but rather the first step in the market review framework, with the real impact of any market definition seen in the assessment of SMP and, crucially, in the design of remedies. In general, where there is uncertainty about the specific boundaries of the relevant markets, it is appropriate and expected that national regulatory authorities (NRAs) will have to exercise some discretion. This regulatory judgement should be based on understanding the implications of different market definition scenarios for the finding of SMP and the design of appropriate remedies.

In considering the approach to market definition for the FVA market, Oxera has taken account of the standard approach to market definition under the European Regulatory

⁸ ComReg (2007), ‘Market Analysis: - Retail Fixed Narrowband Access Markets’, 07/26, para 3.41; and ComReg (2012), op. cit. para 3.52.

⁹ ComReg (2011), ‘Review of the Appropriate Price Controls in the Markets of Retail Fixed Narrowband Access, Wholesale Physical Network Infrastructure Access and Wholesale Broadband Access’, October.

¹⁰ ComReg (2013), ‘Price Regulation of Bundled Offers: Further Specification of Certain Price Control Obligations in Market 1 and Market 4’, February.

¹¹ ComReg (2013), ‘Next Generation Access: Remedies for Next Generation Access Markets’, January.

Framework¹² (consistent with competition law), alongside the FVA-specific issues that are present in the Irish market, namely:

- the considerable growth of bundles in the market;
- the potential for fixed–mobile substitution;
- the potential for differences in competitive conditions across Ireland to drive the definition of separate geographic markets.

These aspects are the most debatable issues, as identified in the industry responses to ComReg’s consultation.

The SSNIP test is the appropriate conceptual framework for product market definition

It is best practice for telecoms regulators and competition authorities to use the ‘hypothetical monopolist test’¹³ to define relevant economic markets, even where there are difficult conceptual issues, such as the presence of bundles of services. Consistent with this, Oxera’s assessment relies primarily on the analytical framework embodied in this test.¹⁴

The choice of focal product

In implementing the hypothetical monopolist test, a preliminary issue is the selection of the focal product that will be the subject of the SSNIP. The choice of a focal product will determine much of the remaining market definition process. There are several candidate products that could be used as the focal product, including FVA, FVAC, a broadband bundle and/or a triple-play bundle.

When choosing the focal product in the FVA market review, Oxera identified three considerations, as follows (in order of importance):

- **criterion 1: what is the competition concern that the regulator is trying to solve and where is its source?** This has been the key rationale to date for most NRAs to use stand-alone FVA as the focal product when reviewing Market 1. It is consistent with FVA being the only remaining retail product market in the European Commission’s list of markets susceptible to ex ante regulation¹⁵ and where there is therefore the greatest remaining concern about potential abuse of market power (excessive pricing, as well as leverage of market power when FVA is sold as part of a bundle). Hence, according to this criterion, it would be reasonable to use stand-alone FVA as the focal product in the market definition process;¹⁶
- **criterion 2: what are the implications for SMP assessment and design of remedies?** If a different product (eg, a broadband or triple-play bundle) exhibits sufficiently distinct competitive conditions such that it has the potential to change the assessment of competition in a market or in specific geographic areas of a market, criterion 2 suggests that selecting such a product as the focal product in the market definition exercise (in addition to stand-alone FVA—ie, two focal products and two separate SSNIP tests) might be appropriate. However, this would only be the case if, in not doing so, there is a concern that any difference in competitive conditions might be

¹² European Commission (2007), ‘Commission Recommendation of 17 December 2007 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services’, 2007/879/EEA, recital 3.

¹³ Also known as the ‘small but significant, non-transitory increase in price’, or SSNIP test.

¹⁴ The test asks whether a hypothetical monopolist of a focal product would be able to profitably impose a SSNIP—typically 5–10%. If the answer is no, this would indicate that the relevant market comprises additional products or a larger geographic area.

¹⁵ European Commission (2007), ‘Commission Recommendation on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services’, C(2007) 5406 rev 1.

¹⁶ However, one cannot rule out the possibility that retail bundled products could in future become the source of competition concerns for regulators.

overlooked and not adequately captured in the regulatory framework. In other words, absent a specific competition concern with broadband or triple-play bundles (criterion 1), whether to select one of these products as the focal product in the market definition exercise (in addition to FVA) on the basis of the second criterion is a question of regulatory judgement.¹⁷ As long as differences in competitive conditions are captured somewhere in the market review, selecting these services as focal products and/or identifying them as separate markets in their own right is not an absolute necessity;

- **critterion 3: which is the most popular product consumed by customers in the market?** In theory, NRAs could start the market definition exercise from the most popular or prevalent product variant that customers purchase, on the basis that the forward-looking competitive dynamics in the market would be likely to be driven by this product. This would be consistent with criteria identified by the Body of European Regulators for Electronic Communications (BEREC) in its report on the impact of bundled offers on market definition.¹⁸ For example, if there is strong growth of broadband bundles then an NRA might wish to test whether there are different competition concerns in this product rather than in stand-alone FVA or FVAC. However, in itself, this criterion could be misleading if there is no competition concern present in the most prevalent products sold in the market, or if such products do not yet exhibit sufficiently distinct competitive conditions from the stand-alone FVA product. Hence, to the extent that criterion 3 is used, if at all, it should only be in combination with the first and/or the second criteria described above.

Once a focal product has been chosen, the standard SSNIP test could be applied to analyse whether the market was any broader than the focal product (or, in the case of bundles, whether there is a bundle market or a market for the bundle's components). A general framework is outlined in Figure 1 below.

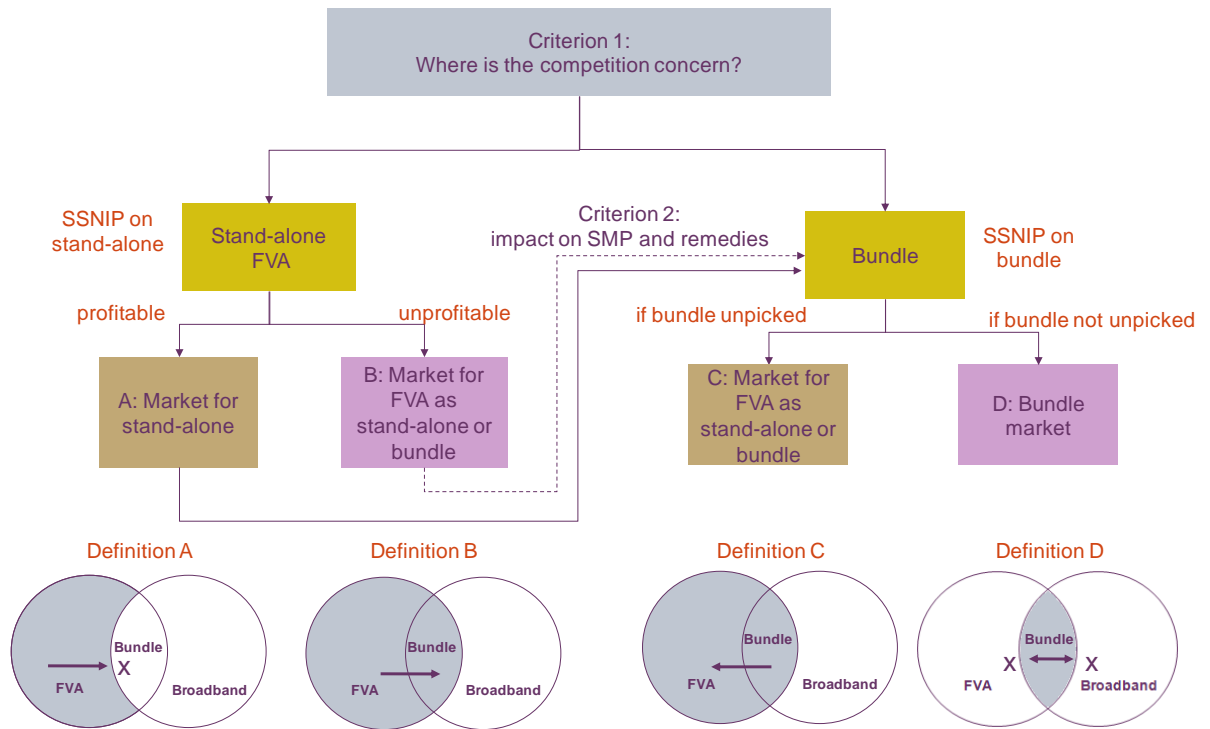
Consistent with the above discussion, the choice of a focal product will depend primarily on the source of the main competition concerns that the regulator wishes to test and address (criterion 1). In the context of the FVA market review in Ireland, this suggests that testing stand-alone FVA as a focal product is an appropriate starting point. However, this is on the basis that ComReg has a priori reasons to believe that some form of regulatory remedies may be required to address these competition concerns, or it is necessary to test whether the remedies imposed in the previous market review continue to be appropriate and justified. This would also be consistent with stand-alone FVA continuing to be in the relevant markets listed by the European Commission.

In the context of the framework outlined in Figure 1, this indicates that the left-hand side of the decision tree (stand-alone FVA) should form the starting point of the market definition exercise. As noted in the description of criterion 2, to the extent that there are no additional competitive concerns with a bundle (eg, a broadband or triple-play bundle), an NRA would not need to undertake a separate assessment starting with a bundle as the focal product. As explained below, it would be appropriate to undertake a separate assessment if certain sub-group of consumers would not be captured by the market definition, or if the bundles segment exhibits sufficiently different competitive conditions to the extent that this has implications for the finding of SMP and design of remedies (criterion 2).

¹⁷ The EU framework makes provision for identifying markets other than those listed in the Commission's Recommendation, through Article 7 procedures.

¹⁸ BEREC (2010), 'BEREC report on impact of bundled offers in retail and wholesale market definition', BoR, 10:64, December, para 85.

Figure 1 A general framework for FVA market definition



Note: Arrows in the Venn diagrams represent consumer substitution. 'X' represents an insufficient number of consumers switching for that product to be considered a competitive constraint.
Source: Oxera.

Having chosen stand-alone FVA as the focal product (left-hand side of Figure 1), the NRA would be required to undertake a SSNIP test to assess whether the market was wider than this product—for example, to test whether sales of FVA as part of a bundle are part of the same market.

If the SSNIP test on stand-alone FVA were profitable, this would suggest that the sale of FVA inside of bundles does not constrain the sale of stand-alone FVA, leading to the finding of market definition A (as shown in Figure 1 above). If this were the case, there would be a residual group of consumers purchasing FVA as part of a bundle which would not be part of any formally defined relevant market. Therefore, if a separate stand-alone market were identified (definition A), the NRA would also need to undertake a market definition exercise starting with the relevant bundled product(s) as the focal product (this scenario is represented by the solid arrow in Figure 1). Alternatively, if the SSNIP test for stand-alone FVA were unprofitable as a result of pricing constraints from the sale of FVA inside bundles, this would lead to definition B (a wide market for FVA regardless of whether it is sold inside or outside of bundles), and all FVA customers would already be part of a defined relevant market.

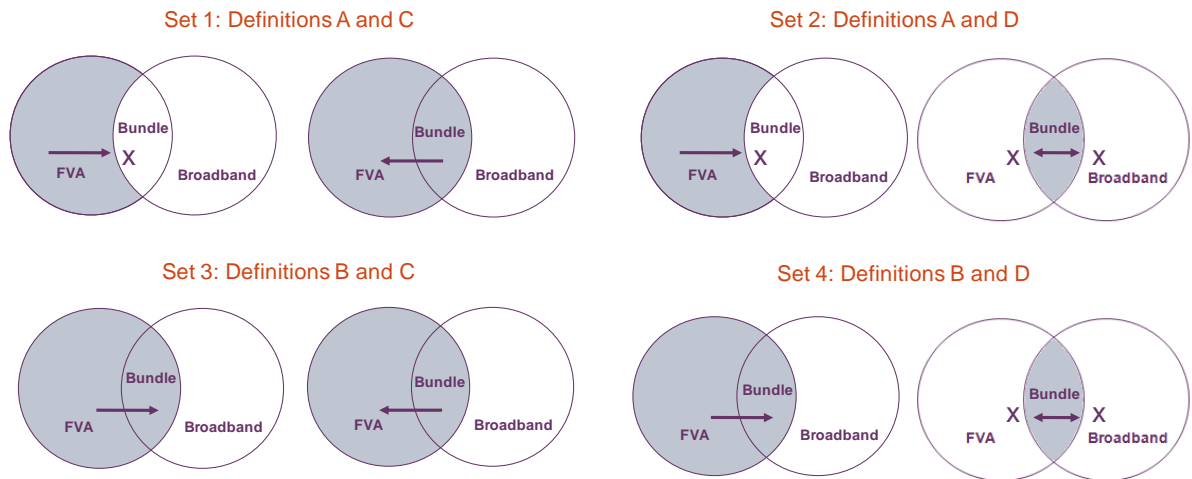
If there is evidence to suggest that the sale of particular bundles exhibits very distinct competitive conditions, an NRA may wish to test this hypothesis as well, and capture it at the market definition stage by selecting such bundles as focal products. (This scenario is represented by the dashed line in Figure 1, and is consistent with criterion 2 described above.) However, as specified in the criteria above, selecting bundles as focal products and/or identifying them as separate markets in their own right is not an absolute necessity insofar as they are reflected somewhere in the market review.

Returning to the top of the decision tree in Figure 1, in situations where there are clear competition concerns around a particular type of bundle, in addition to competition concerns for the stand-alone product, a market definition exercise is likely to be necessary for both

stand-alone and the bundle (ie, to follow both sides of the diagram). For example, if there is a competition issue about triple-play bundles owing to concerns about the replicability of the TV component, an NRA may also need to start with such a bundle as the focal product.

When the market definition exercise is conducted on the two different focal products, four combinations of definitions are possible (eg, definition A and definition C, definition A and definition D, etc)—see Figure 2.

Figure 2 Possible market definitions



Note: Arrows in the Venn diagrams represent consumer substitution. 'X' represents an insufficient number of consumers switching for that product to be considered a competitive constraint.
Source: Oxera.

Relevant geographic markets exhibit homogeneous competitive conditions

As regards geographic market definition, a more practical approach that is often followed is to identify areas with sufficiently homogeneous competitive conditions (HCCs).¹⁹ This is still consistent with the SSNIP framework and implicitly captures supply-side substitution. Oxera's analysis is consistent with this approach.

Furthermore, the European Commission has emphasised that differences in geographic conditions of competition can be captured at multiple stages in the framework (market definition, SMP or remedies) and the choice of where to capture such differences will come down to an overall assessment of the strength of the evidence and regulatory judgement.²⁰

Fixed–mobile substitutability

A further aspect of the definition of the product market for FVA is whether substitution to any other forms of communication—in particular, mobile access—would be sufficient to constrain the price of FVA. Conceptually, a standard SSNIP framework can be used to test whether sufficient numbers of FVA consumers would switch away from FVA in order to constrain a monopolistic provider of FVA. This framework will test whether the market is broader or no broader than FVA. If the market is broader, this does not immediately indicate what other products should be included in the market; rather, it will be necessary to test which other products are most likely to be substitutes acting as a constraint on FVA.

¹⁹ European Regulators Group (2008), 'ERG Common Position on Geographic Aspects of Market Analysis (definition and remedies)', October, p. 23.

²⁰ European Commission (2007), 'Commission Staff Working Document Explanatory Note: Accompanying document to the Commission Recommendation of 17 December 2007 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services', C(2007) 5406, p 13.

Oxera's preliminary findings on key aspects of the FVA market definition in Ireland (sections 3–5)

In light of the framework presented above, Oxera reviewed the available evidence, including ComReg's justification for its proposals as laid out in the 2012 consultation and the responses it received to that consultation. Furthermore, Oxera carried out additional analysis within the SSNIP framework relating to each of the three key issues identified (bundles, geographic differences and fixed-mobile substitution) based on the available market and survey data. The survey data allows a number of SSNIP tests to be conducted, as described in Box 3.

Box 3 SSNIP tests possible from 2012 market research

The SSNIP tests available from the survey data are restricted to the questions put to each type of respondent. The tests face some limitations due to sample sizes, the nature of the questions being asked, and the options available for respondents. As such, they may be more appropriately considered as price-sensitivity tests.

The available tests are:

- SSNIP on stand-alone FVA ('line rental'). (This is an imperfect proxy since, technically, the sample is consumers purchasing FVAC who think about line rental separately);
- SSNIP on fixed calls ('calls') (for consumers purchasing FVAC who think about calls separately). This SSNIP is not relevant for this report and is not conducted;
- SSNIP on stand-alone FVAC ('total bill') (for consumers purchasing FVAC who do not think about line rental and calls separately);
- SSNIP on bundle ('total bill') (for consumers purchasing FVA as part of a bundle).

The main findings of Oxera's analysis are summarised below.

Choice of focal product and treatment of bundles in the market definition stage (section 3)

It was reasonable for ComReg to start the market definition with stand-alone FVA (and not a bundle) as the focal product since, consistent with criterion 1 described above, this is the narrowest product set in which there is a concern about potential abuse of market power.

On the other hand, notwithstanding ComReg's valid reasoning that competitive conditions in access and calls have the potential to evolve separately during the market review period, the evidence examined for this report suggests that FVAC purchased together is, on balance, an appropriate relevant market. However, regardless of whether calls are included in the same relevant market as FVA, the assessment of SMP is unlikely to differ. ComReg's judgement is therefore reasonable.

In addition, the evidence on whether broadband and/or triple-play bundles belong to the same relevant market as stand-alone FVA or stand-alone FVAC is mixed. While the SSNIP tests conducted based on survey evidence suggest that these products are not part of the same market, these results need to be treated with caution owing to limitations with the survey data (eg, small sample sizes, ambiguity in responses). On the one hand, there is recent evidence of switching by customers from stand-alone purchases to bundles; on the other hand, there is evidence of some stand-alone FVAC customers (particularly those who do not currently purchase broadband from any provider) who would be less likely to switch to a bundle in response to a SSNIP.

Having defined a wide FVA, ComReg did not also examine bundles separately as focal products; rather, the approach it followed was sufficiently flexible to address the nature of competition in the bundles segment of the market. For example, the sale of broadband access bundled with managed VOIP (ie, voice services supplied over cable networks) was

included in the market definition for FVA. Furthermore, the existing suite of remedies has already been adapted to take account of the evolution of competition through bundles (eg, through an adjustment in the net revenue test).

In view of the uncertainty around the precise market boundary, ComReg's judgement to define a wide market for FVA sold within and outside a bundle, and, furthermore, to take account of differences in competitive conditions at subsequent stages in the market review process, is reasonable and consistent with criterion 2 of the framework described above. The evidence is to some extent mixed and it would *also* be reasonable to define separate product markets for stand-alone FVA(C) and bundles including broadband. However, as explained below, this approach would not result in materially different remedies.

Geographic market definition (section 4)

Geographic differences for stand-alone FVA and FVAC products are limited—eircom continues to hold a significant share of the market for stand-alone FVA and FVAC customers throughout Ireland. Hence, under market definition A in Figure 1, there would be a national market, as evidenced by uniform pricing and HCCs (albeit these rely on the national availability of the wholesale remedies of CPS and SB-WLR).

In contrast, there is growing evidence of geographic differences in competitive conditions in the sale of bundles (including bundles with FVA), which ComReg could have used to define a separate geographic markets (eg, inside/outside the LEA). These possible separate geographic markets could have been defined under either a market for FVA with bundles (definition B in Figure 1), or, more likely, if a separate relevant product market for bundles had been additionally identified (definition D in Figure 1).

European Commission guidance (consistent with the HCC, see above) highlights that sub national markets may not be appropriate where market boundaries are unclear. This appears to be the case in Ireland—eg, on a forward-looking basis, the sale of bundles will not necessarily be focused on the LEA. Broadband bundles are available across the whole of Ireland, and, with the entry of SKY Ireland into the market, triple-play bundles will also likely be widely available on a national basis. Furthermore, ComReg already takes account of these geographic differences in the design of remedies—most notably, through adjustments in the net revenue test inside the LEA.

Oxera therefore concludes that ComReg's assessment of geographic differences in the market is reasonable in the context of the overall market review.

Fixed–mobile substitution (section 5)

There is a range of evidence that can be used to assess the substitutability of fixed and mobile voice access in Ireland. While the proportion of mobile-only households is relatively high, it has grown only 6 percentage points over the course of the last market review, from 30% to 36%.

The survey evidence suggests that consumers are conscious of differences between fixed and mobile, and that most consumers have both types. When asked why they retained a fixed line, survey respondents gave various reasons, including that it is cheaper to make some types of calls (73%), that they prefer to use a fixed line for longer calls (64%), the quality of the line (55%), and access to broadband (54%). Thus, the characteristics of fixed voice services are desirable for some customers and may be sufficiently different to those of mobile to render substitution unlikely.

ComReg's survey also showed that 69% of businesses said that a fixed line was important for the day-to-day functioning of their business. Retaining a fixed line can add credibility to small businesses, and, for large businesses, it means that a single contact phone number can be retained for the entire businesses (eg, through a managed internal switch/PABX).

Oxera also conducted a number of SSNIP tests on stand-alone FVA and stand-alone FVAC customers, as well as customers buying FVA as part of a bundle. None of these tests indicated that mobile access was part of the relevant market, although, as noted previously, these results need to be treated with caution.

Overall, Oxera did not find sufficiently strong evidence (either through the SSNIP test or additional qualitative factors) to suggest that mobile access exerts a competitive constraint on FVA or FVAC. ComReg's conclusion in the market review is therefore reasonable.

What is at stake? Implications of market definitions for remedies (section 6)

Notwithstanding the overall finding that ComReg's approach and judgement in the FVA market review are reasonable, some elements of the market definition analysis were finely balanced and ComReg might choose (in this or future market reviews) to deviate from the status quo—for example, identifying separate markets for stand-alone FVA(C) and bundles; and/or defining separate geographic markets inside and outside the LEA. In these circumstances, sub-segments of the retail FVA market could become deregulated as a consequence. If retail regulation is partly or fully predicated on the effectiveness of wholesale remedies, it is important that the regulatory framework underlying the developing competition in bundles is not undermined by such a finding. This may require 'transfers' of remedies from the retail to the wholesale level/market, as discussed in further detail below.

Where there is uncertainty about the specific boundaries of the relevant markets, it is reasonable and necessary exercise discretion. This regulatory judgement should be based on understanding the implications of different market definition scenarios for any finding of SMP and the design of appropriate remedies. Two aspects are of particular importance for ComReg and the industry:

- **RPC.** If RPCs were lifted in some segments of the retail market as a result of a finding of no SMP, ComReg would lose the ability to protect –captive voice consumers. It is therefore essential that a finding of no SMP at the retail level is based on strong evidence of effective pricing constraints on eircom from various sources of competition (eg, OAOs relying on wholesale inputs, cable operators and/or mobile). To the extent that there is uncertainty over the strength of any of these sources of competition on certain segments of the market, SMP is still found and it may be premature to remove the RPC.
- **Obligation not to unreasonably bundle.** The legal underpinning of the net revenue test underlying ComReg's bundles regulation (with an aim to avoid margin squeeze) has thus far stemmed from the obligation 'not to unreasonably bundle' as a result of the finding of SMP in the retail FVA market (Market 1). However, by definition, margin squeeze (whether in stand-alone FVA, broadband or triple-play) is a form of *vertical leveraging* from the wholesale input market to prospectively competitive downstream retail markets. Therefore, if certain segments of the retail market were found to be competitive, and this was partly or fully based on OAOs' ability to replicate eircom's bundles, there would be a sound rationale to impose the 'net revenue test' as a wholesale remedy in relation to the upstream inputs SB-WLR and/or WBA, in markets 2 and 5 respectively.

As regards the obligation to offer FVA on a stand-alone basis (ie, the element of the obligation 'not to unreasonably bundle' dealing with concerns of horizontal leverage), a potential finding of no SMP in certain segments of the retail market could result in ComReg having to remove this remedy altogether. As noted above in the RPC discussion, to the extent that there is uncertainty over the effectiveness of competition to

act as a constraint on eircom’s ability to exploit captive voice customers, it may be premature to remove this aspect of the ‘not to unreasonable bundle’ obligation.

Table 1 below summarises Oxera’s conclusions on what could be plausible market definition scenarios and their implications for remedies.

A key message reflected below is that, irrespective of the market definition approach adopted, it is important to ensure that the regulatory concerns and regulation remain primarily the same. Option 2 below is the one that more closely reflects ComReg’s proposals in the 2012 FVA market review. In light of the evidence examined and the overall context of the market review, Oxera concludes that this approach is reasonable.

Table 1 Plausible market definition options and implications for remedies

Option/product dimension	Geographic dimension	Possible SMP finding?	Implications for retail remedies	Implications for complementary wholesale level remedies
Option 1: definition A only Stand-alone FVA(C)	National	Yes	Unchanged	Unchanged
Option 2: definition B only, or set 3 (equivalent to ComReg’s approach) FVA(C), whether sold inside or outside of bundles, national	National	Yes	Possible relaxation of RPC (eg, removal of RPC from the HLVA market)	Unchanged (except for taking account of competitive dynamics in the design of the remedy—eg, pricing flexibility in the LEA in the net revenue test)
Option 3: definition B only, or set 3 FVA(C), whether sold inside or outside of bundles, LEA non-LEA	Non-LEA LEA	Yes No?	No change in non-LEA Possible removal of all remedies in LEA	Unchanged in non-LEA Possible impact on the net revenue test. May transition to a wholesale margin squeeze test.
Option 4: set 2 Two markets: (1) Stand-alone FVA(C) sold outside bundle (2) Broadband bundles	Market 1 National Market 2 Non-LEA LEA	Market 1 Yes Market 2 Yes No	Market 1 No change Market 2 No change All remedies removed in LEA	Market 1 Unchanged Market 2 Unchanged Possible impact on NRT. May transition to a wholesale margin squeeze test
Option 5: set 4 Two markets: (1) FVA(C), whether sold inside or outside of bundles (2) Broadband bundles	Market 1 National or LEA/non- LEA split? Market 2 Non-LEA LEA	Market 1 ‘Yes’ in non- LEA; possibly ‘no’ in LEA Market 2 Yes No	Market 1 Possible removal of all remedies in LEA Market 2 No change All remedies removed in LEA	Markets 1 and 2 Unchanged under a national or non-LEA definition Possible impact on NRT in LEA. May transition to a wholesale margin squeeze test

Source: Oxera.

Oxera’s recommendations

Oxera has reached firm conclusions on many of the aspects of the FVA market definition, notably on fixed–mobile substitutability and the treatment of access and calls. The evidence on whether the bundles segment of the market exhibits sufficiently different competitive conditions is not, however, conclusive, and it could constitute a separate relevant market in its own right.

Two of the above market definition options are recommendable on the basis of the available evidence:

- **recommended option 1**—this is ComReg’s original market definition as set out in the consultation—ie, a national relevant market for FVA (with calls) whether sold inside or outside bundles;
- **recommended option 2**—two separate relevant product markets: a national market for stand-alone FVA (and calls); and FVA sold inside of bundles of broadband, split by geography between the LEAs and non-LEAs.

In the present context, the two retail remedies that are arguably the most important (in that they most directly address the key competition concerns) are the RPC and the obligation not to unreasonably bundle. The access remedy SB WLR/CPS is also of importance as it underlies competition in FVA (and calls) on a national basis. In Oxera’s understanding, it is proposed that this remedy be transferred from the retail to the wholesale market for call origination and transit. Either of the recommended market definitions would allow ComReg to design remedies that ensure the replicability of eircom’s bundles, and mitigate or remove any concerns of excessive pricing of FVA at the retail level. If ComReg were in future to adopt recommended option 2 (or in any case option 1), it could transfer the net revenue test element of the ‘not to unreasonably bundle’ remedy from the retail to a relevant wholesale market. Given that the competition concerns underpinning the net revenue test stem from vertical leveraging (from wholesale to retail), there would be a sound economic rationale for doing so, regardless of the conclusions on market definition in this market review.

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1 Introduction

The Commission for Communications Regulation (ComReg) has asked Oxera to review the evidence submitted in response to the market review consultation on the fixed voice access (FVA) market.²¹ Specifically, Oxera has been asked to set out an analytical framework to assess whether ComReg's market definition is reasonable from an economics perspective. Oxera has also been asked to include in its review a sensitivity and robustness check of different possible market definitions. These checks are expected to assess whether small changes in evidence or assumptions would have large impacts on the conclusions that are drawn. This report presents Oxera's analysis and takes into account the evidence put forward previously by ComReg and the respondents: ALTO, eircom, UPC, BT Ireland, Sky, Telefónica, Magnet and Vodafone.

The terminology used in this report is described in Box 1.1.

Box 1.1 Terminology

Clarity of terminology is important when discussing the FVA market. This report uses the following definitions:

- FVA refers to FVA regardless of how it is sold (eg, inside or outside a bundle);
- fixed voice access and calls (FVAC) refers to the joint purchase of access and calls in the same transaction from the same supplier;
- FVA(C) refers to FVA or FVAC;
- stand-alone FVA refers to FVA sold without calls and outside a bundle.
- stand-alone FVAC refers to FVA sold with calls and outside a bundle.
- a bundle refers to FVA or FVAC being sold with at least one other non-voice product. FVAC does not itself count as a bundle;
- a broadband bundle refers to a two-product bundle of FVA or FVAC and broadband;
- a 'triple-play bundle' refers to a bundle of FVA or FVAC, broadband and TV.²²

1.1 Legal, regulatory and policy background

As part of its duties, ComReg undertakes periodic reviews of electronic communications markets in Ireland. Such reviews have the purpose of assessing significant market power (SMP) in the various electronic communications markets, and, if needed, setting regulatory remedies for any undertakings found to have SMP. The European Commission's Recommendation of 2007 lists the electronic communications markets that national regulatory authorities (NRAs) need to analyse.

The 2007 FVA market review and the existing suite of remedies

ComReg's market review²³ in 2007 found a national market for lower-level retail narrowband access and a separate national market for higher-level retail narrowband access. These markets were defined to include both residential and non-residential customers. However,

²¹ ComReg (2012), 'Market Review: Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non Residential Customers', October.

²² Other forms of triple-play bundle (containing any three products) are available, but for the purposes of this report Oxera uses the definition to refer explicitly to FVA or FVAC, broadband and TV.

²³ ComReg (2007), 'Retail Fixed Narrowband Access Markets 07/26'.

access and calls were found to be complementary products rather than substitutes, and therefore defined to be in separate markets. ComReg also found that fixed and mobile access were not strong substitutes and therefore also belonged in separate markets.

ComReg found that eircom possessed SMP in both of the access markets that it defined. As a result, it imposed several remedies at both the retail and the wholesale level.

At the retail level, ComReg assessed several remedies and concluded that continuing to implement a Retail Price Control (RPC) was appropriate. Obligations on not showing undue preference, transparency and cost accounting were also imposed. Furthermore, ComReg imposed an obligation not to unreasonably bundle. This comprised two parts: a requirement to offer all retail narrowband access services as stand-alone products; and an obligation not to price a retail bundle which includes retail narrowband access at a price below the costs of the wholesale elements. Arguably, the two retail remedies which are most important (in the sense that they most directly address competition concerns) are the RPC and the obligation not to unreasonably bundle.

The RPC is intended to address the risk of excessive pricing by eircom in respect of the sale of FVA. The current RPC obligation imposes on eircom a price control of the form RPI-X (CPI-0) that applies to line rental and connection prices only.²⁴ It applies to all FVA regardless of how it is sold. Oxera understands that eircom has not priced up to the RPC.

The obligation not to unreasonably bundle is intended to address the risk of horizontal leverage from FVA to other (potentially more competitive) retail markets, as well as the risk of wholesale remedies imposed on stand-alone products (FVA, broadband) being undermined by the presence of bundles (ie, vertical leverage or margin squeeze). This 'bundling obligation' operates via the 'net revenue test' introduced in 2007. This test is in effect a margin squeeze test at the bundle level, which is intended to ensure that operators relying on eircom's wholesale inputs are economically capable of replicating eircom's retail bundles. In the design of the net revenue test for bundles, retail costs (the 'margin') are measured on the basis of eircom's fully allocated costs (FAC), except for the costs of calls included in bundles sold inside the larger exchange area (LEA) (which are measured on the basis of long-run incremental cost, LRIC). This LEA-specific aspect of the test is intended to give eircom greater pricing flexibility, in recognition of the fact that it faces greater competitive constraints in this area.

These retail remedies are complemented at the wholesale level by a suite of markets 2, 4 and 5 remedies (assuming that single-billing wholesale line rental (SB-WLR) is moved to market 2)—in particular, SB-WLR;²⁵ full and partial local-loop unbundling (LLU); and wholesale broadband access (WBA). However, although these are wholesale remedies, it is noted that the obligations on eircom to provide a carrier pre-selection (CPS) and SB-WLR product have currently been implemented through market 1 (the retail market).

Recent market developments

Since the market review in 2007, a number of developments have taken place in the Irish telecoms market in the available infrastructure, but also in the products available and in end-user behaviour. For the purposes of the 2012 market review, the most important trends include:

²⁴ ComReg (2007), 'Decision Notice and Decision Instrument; SMP Obligation: Retail Price Cap Remedy – Fixed Narrowband Access Markets', (ComReg Decision No. 03/07, Document No. 07/76, 1 October 2007).

²⁵ Oxera understands that, as part of the FVA consultation, it is proposed to transfer the latter remedies from the retail to the wholesale market for call origination and transit.

- growth in the take-up of bundles—the take-up of bundles of fixed voice access with another non-voice product grew from 46% in Q1 2010 to 59% in Q1 2013, and is largely dominated by broadband bundles.²⁶ Most net additions are for bundles;
- stronger take-up of UPC’s voice products—UPC launched a managed VOIP service in 2006 shortly before the 2007 market review. Since then UPC has grown to become the third-largest provider of voice services, with 18% of subscribers;²⁷
- investment upgrades by eircom in UPC footprint—ie, ADSL2+ is only available in the UPC footprint;
- NGA roll-out by eircom—In the past four years, eircom has invested €1.4 billion in capital and expects its NGA network to reach 500,000 premises by mid-2013, with 1.2m premises expected to be completed by 2015.²⁸ The geographic reach of the current phase of NGA roll-out largely matches UPC’s footprint;
- differentiation of wholesale pricing—eircom has very recently begun to offer a discount for some wholesale inputs where they are sold as part of a bundle inside the LEA;
- growth in mobile-only households—the proportion of mobile-only households has grown from 30% in 2006 to 36% in 2012.²⁹

The 2012 FVA market review and proposed remedies

In October 2012, ComReg issued a consultation document relating to the next review of Market 1 of the Commission’s Recommendation: ‘Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non Residential customers’. ComReg’s proposals in the 2012 market review are broadly similar to its findings in the 2007 market review, although a number of important changes can be observed. For example, taking account of the prevalence of bundles, ComReg has found a wider lower-level voice access (LLVA) market comprising PSTN and ISDN access over copper (narrowband access), as well as broadband access delivering managed VOIP (eg, voice over cable networks).

ComReg started with stand-alone FVA as the focal product of the market review. This is the product specified under Market 1 of the European Commission’s recommendation, given that there may be competition concerns with respect to this product. From this starting point, ComReg found that fixed calls and FVA were in separate markets and that there was a market for FVA whether sold inside or outside a bundle. It also found that there are separate national markets for LLVA and higher-level voice access (HLVA), for both residential and non-residential consumers.

In the 2007 market review ComReg concluded that eircom had SMP in both the lower-level (PSTN/ISDN BRA) and higher level (ISDN PRA and FRA) narrowband markets. In the 2012 market review, ComReg also concluded that eircom had SMP in both the wide LLVA and HLVA markets, but, as noted above, the assessment of SMP in the LLVA market took explicit account of the fact that the market was defined to include broadband access capable of delivering a managed VOIP service.

One of the main issues discussed in that consultation is how the market should be defined in the Irish context. This element is the focus of Oxera’s review.

²⁶ ComReg (2013), ‘Quarterly key data’ June. These bundle statistics may differ from those published in the ComReg Quarterly Reports, given that they represent a sub-sample of total subscriptions (bundles that contain fixed voice access services).

²⁷ ComReg (2013), ‘Quarterly key data report’, September.

²⁸ <http://www.nextgenerationaccess.ie/>

²⁹ ComReg (2007), ‘Market Analysis: - Retail Fixed Narrowband Access Markets’, 07/26, para 3.41; and ComReg (2012) op. cit. para 3.52.

1.2 Focus and structure of the report

ComReg’s market definition builds on the European Commission’s Recommendation on markets susceptible to ex ante regulation and on the principles set out by the Body of European Regulators for Electronic Communications (BEREC).³⁰ The focus of Oxera’s review is on ComReg’s conclusions on market definition and in particular the most debatable areas—not just those where ComReg has proposed a change to the status quo, but also those where the proposal to maintain the status quo has been challenged.

1.2.1 Areas where ComReg proposes a change to the status quo

ComReg’s consultation proposes certain changes to the status quo approach on Market 1. Specifically, as set out in Table 1.1 below, ComReg is proposing to adjust the market definition of lower-level access and higher-level access to:

- the national market for lower-level FVA (LLVA) consisting of access via PSTN and ISDN BRA over copper and via broadband connections using managed VOIP over cable, fibre, FWA and DSL;
- the national market for higher-level FVA (HLVA) consisting of access via ISDN FRA and PRA.

SMP is found in the latter sub-market but ComReg proposes to rely solely on wholesale remedies (SB-WLR and CPS) to address this.

Table 1.1 Summary of ComReg’s proposed markets and remedies

2007 markets	SMP	Remedies	2013 proposed markets	SMP	Remedies
Lower-level access (PSTN and ISDN BRA access)	Yes	Wholesale obligations: CPS and SB-WLR, and supporting obligations Retail obligations: RPC Not to bundle unreasonably Transparency Cost accounting Not to show undue preference	Lower-level FVA over copper PSTN and ISDN BRA access and broadband using managed VOIP over cable, fibre, FWA and DSL	Yes	Wholesale obligations: CPS and SB-WLR, and supporting obligations Retail obligations: RPC Not to bundle unreasonably Transparency Cost accounting Not to show undue preference
Higher-level access (Business ISDN PRA and FRA access)	Yes	Wholesale obligations: CPS and SB-WLR, and supporting obligations Retail obligations: RPC Not to bundle unreasonably Transparency Cost accounting Not to show undue preference	Higher-level FVA over ESDN FRA and PRA access	Yes	Wholesale obligations: CPS and SB-WLR supporting obligations only

Source: ComReg (2012), ‘Market Review: Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non Residential Customers’, October 26th. Table 1.

The respondents have broadly accepted the distinction between LLVA and HLVA. Furthermore, especially given the differences in terms of supply-side substitutability, most of the respondents agree with ComReg’s market definition. However, the responses are mixed with regard to the regulator’s conclusions on SMP and remedies. While eircom and Vodafone

³⁰ BEREC (2010), ‘BEREC report on impact of bundled offers in retail and wholesale market definition’, BoR, 10:64, December.

agree with ComReg that wholesale remedies would seem to suffice in the HLVA sub-market, the other OAOs (BT, Telefónica, Sky, ALTO) highlight concerns about the proposed removal of remedies.³¹ For example, Telefónica raises doubts as to whether eircom would not have incentives to foreclose the market by bundling FVA and other business products.

ComReg's proposed decision concluded that there was no residential/non-residential split and that instead it was appropriate to split the market between the products of LLVA and HLVA. This was not, in general, disputed by the industry, and therefore Oxera has not conducted a detailed analysis of this aspect of the consultation.

Rather, this report sets out a more generic framework which extends to the design of remedies. As the subsequent sections elaborate, there are sound economic reasons to impose an obligation on wholesale access markets (possibly in relation to regulated access inputs SB-WLR and/or WBA) that prevents margin squeeze, in order to address concerns about vertical leverage from wholesale to retail markets. Such remedies would also in principle resolve any bundling-related concerns in the HLVA sub-market.

1.2.2 Key issues identified during consultation

The respondents—eircom in particular—have disputed a number of aspects in ComReg's market definition. Consistent with the responses, Oxera considers that the evidence is more mixed with respect to the following aspects, and further analysis seems necessary:

- market definition for stand-alone versus bundled products;
- geographic market definition; and
- fixed–mobile substitutability.

As ComReg's regulatory approach on SMP and setting remedies will depend considerably on the findings on these three aspects, these aspects of market definition form the focus of this report.

1.2.3 Report structure

The report is organised in accordance with the key issues:

- section 2 sets out a generic framework for FVA market definition and for broader reflection on competitive conditions in a market review;
- section 3 reviews and analyses the available evidence on bundles;
- section 4 assesses how geographic differences in competition could be taken into account in the context of the FVA market review;
- section 5 analyses whether there is evidence to suggest that fixed and mobile access should be included in the same relevant market;
- section 6 sets out plausible market definitions and their likely implications for remedies, and presents Oxera's conclusion of its assessment of ComReg's approach.

³¹ ComReg (2013), 'Submissions received in response to Consultation. Market Review: Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non Residential Customers', ComReg document 12/117s, January 28th.

2 Conceptual issues arising in market definition for FVA

To formulate a robust market definition for FVA, a clear and consistent framework is needed. Market definition is undertaken in a variety of contexts, from market reviews and competition law cases to academic research studies. In the context of telecoms market reviews, the European Commission recommends that markets be defined in accordance with the principles of competition law, based on the Commission Notice on Market Definition.³²

The framework described in this section takes account of the standard approach to market definition under competition law, alongside the FVA-specific issues of the existence of bundling, the potential for fixed–mobile substitution, and the potential for geographic differences. The framework is described generically without specific reference to the Irish context, which is instead considered in the subsequent sections.

While a framework for market definition is important, it is appropriate to consider throughout this section that market definition is not an end itself. Rather, it is the first step in the framework, with the real impact of any definition seen in the assessment of market power and design of remedies. Where there is uncertainty about the specific boundaries of the relevant markets, it is appropriate and expected that NRAs would exercise discretion. This regulatory judgement should be based on understanding the implications that different market definition scenarios could have for the finding of SMP and the design of appropriate remedies.

2.1 Conceptual underpinning for market definition

To assess market power and determine whether regulatory remedies are needed, it is first necessary to define the relevant market under which such assessment will be made. Market definition entails determining the boundaries of the market in terms of products and geographic area. Different conclusions for SMP may be drawn depending on where these boundaries are defined.

There are both demand- and supply-side substitution aspects to market definition. In practice, NRAs often focus on the former, but supply-side issues are also important. This is particularly so in the FVA market, where boundaries may depend on the type of technology employed (digital versus analogue; low versus high level), or whether the market includes services sold to residential and/or business customers.

The Commission's SMP guidelines³³ recommend the use of the hypothetical monopolist test (also known as SSNIP test) as a useful tool for the purpose of market definition.³⁴ The starting point of the test is usually the narrowest possible candidate market, typically defined as a focal product in a particular geographic location.³⁵ The test then asks whether a hypothetical monopolist of that focal product/geography would be able to profitably impose a small but significant non-transitory increase in price (SSNIP)—typically 5–10%. If the answer

³² European Commission (2007), 'Commission Staff Working Document Explanatory Note: Accompanying document to the Commission Recommendation of 17 December 2007 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services', C(2007) 5406, p. 5.

³³ European Commission (2002), 'Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services', *Official Journal of the European Communities*, 2002/C 165/03.

³⁴ European Commission (1997), 'Commission notice on the definition of relevant market for the purposes of Community competition law', *Official Journal C 372* of 9.12.1997, para 17.

³⁵ See, for example, Office of Fair Trading (UK) (2004), 'Market Definition: Understanding Competition Law', December, para 3.2.

is no, this would be evidence that the relevant market is likely to comprise additional products or a larger geographic area, leading to the conclusion that the relevant market should be broadened.

To assess whether a given SSNIP is profitable, it is necessary to compare the estimated proportion of customers switching away from the focal product(s) in response to the price increase with a critical loss value. This value indicates the threshold at which switching becomes sufficiently high as to render the SSNIP unprofitable. If the SSNIP is unprofitable the market is considered to be broader than the original focal product. Box 2.1 explains in more detail the theoretical underpinnings of critical loss.

Box 2.1 Critical loss

To implement the SSNIP test, it is necessary to determine the critical level of demand substitution that would constrain a monopolist. This level is known as ‘critical loss’.

In the standard SSNIP case there is one homogeneous product. There is a starting situation in which Q units of the product are sold at price P , which gives rise to a price–cost margin $m = (P - C)/P$ (where C is marginal cost). There is then a hypothesised price increase $x = \Delta P/P$, which results in a fall in the quantity sold of ΔQ . The price increase leads to a gain in profits of $P(Q - \Delta Q)x$, whereas the quantity decrease gives rise to a loss of profits of $P\Delta Qm$.

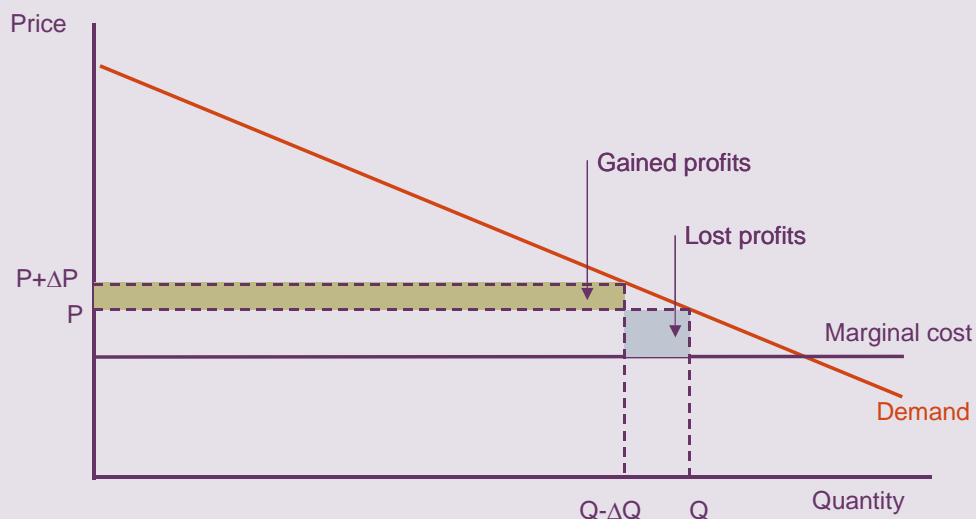
The key question is then: how low can the quantity go until the price increase becomes unprofitable? The answer is: the ΔQ for which the profit gains from the price increase are equal to the loss of profits from the decline in quantity. This leads to the ‘break-even’ equation:

$$P(Q - \Delta Q)x = P\Delta Qm$$

The gain is on the left-hand side; the loss on the right-hand side. The equation can be solved for the unknown ΔQ , delivering the standard formula for the critical loss expressed as a fraction of the original sales of the product:

$$\text{critical loss} = \Delta Q/Q = x/(m + x)$$

This situation is depicted in the figure below. The profits gained by the price increase are represented by the shaded rectangle between P , $(P+\Delta P)$ and $(Q - \Delta Q)$; the profits lost by the quantity reduction correspond to the shaded rectangle between Q , $(Q - \Delta Q)$, P and marginal cost. For any given price increase, $x = \Delta P/P$, the critical loss is the $\Delta Q/Q$ for which the two shaded rectangles have the same surface area. Note that, for simplicity, marginal costs are assumed constant. Demand is depicted as linear, but the above critical loss formula holds for any shape of the demand curve (see the main text).



Source: Oxera (2008), “Could” or “would”? The difference between two hypothetical monopolists’, November, available at www.oxera.com/Oxera/media/Oxera/downloads/Agenda/Hypothetical-monopolists.pdf?ext=.pdf.

In practice, implementation of the SSNIP test requires careful consideration. For example, the starting price for the test should be the competitive market price. In markets affected by market power, the prevailing price may be higher than the competitive price (known as the ‘cellophane fallacy’). In such situations, implementing a SSNIP that starts from the prevailing price can lead to markets being defined too broadly. In most cases it is not possible to control for the cellophane fallacy, but it should be borne in mind when interpreting the results of the test.

Further practical considerations with implementing the test relate to data collection and processing. To undertake the demand-side SSNIP test, it is crucial to have information on the price elasticity of demand. This could be based on econometric analysis of past data (revealed preference) if there is sufficiently reliable data that appropriately mimics the test (ie, customer responsiveness to a 5–10% price increase) In practice, however, this is most often the ‘stated-preference’ propensity to switch, as recorded from customer surveys. However, such surveys can face a range of problems, including framing of questions, misinterpretation of the SSNIP, and influence bias.³⁶

Implementing the SSNIP test is less clear-cut when defining the scope of geographic markets. From a demand perspective, subscribers would not move house in response to a SSNIP. This would render profitable a SSNIP test that started from a household as the smallest possible geographic unit, leading to the problematic conclusion that every household is a separate relevant market. To avoid this counterintuitive conclusion, therefore, the concept of homogeneous competitive conditions (HCCs) is typically used to define geographic markets. This involves identification of common factors of competition (number of operators, market shares, barriers to entry, etc), and grouping areas with ‘similar’ characteristics into relevant markets of their own.

Part of the rationale for using the HCC concept stems from the concept noted previously that market definition is not an end in itself. Where the SSNIP test cannot be applied with precision (which implies that market definition boundaries are ultimately a matter of judgement), the important point is that competitive dynamics are reflected somewhere (be it at the market definition stage, SMP assessment or design of remedies), thus using an HCC approach captures this by definition. The HCC approach is nevertheless consistent with the SSNIP framework as it implicitly captures supply-side substitution.

Despite the practical difficulties of applying the SSNIP test rigorously, it remains the appropriate framework to apply when defining relevant markets (as per the European Commission’s requirement that markets be defined in accordance with the principles of competition law, and that the Commission Notice on Market Definition is followed, as well as the SMP guidelines).³⁷ Typically the SSNIP test is the starting point of analysis where feasible; however, given practical issues, alternatives such as the HCC can substitute for it. In effect the HCC seeks to aggregate customers that face similar competitive choices. Conceptually, with appropriate information, the HCC ought to give the same outcome as the SSNIP test.

Three of the most debatable aspects of market definition for FVA are the treatment of bundles, geographic differentiation and the treatment of mobile access. These are discussed in detail in turn below.

³⁶ Where respondents overstate their responsiveness in an attempt to influence the outcome of the survey (eg, to show that they are more price-sensitive than they actually are).

³⁷ European Commission (2007), ‘Commission Staff Working Document Explanatory Note: Accompanying document to the Commission Recommendation of 17 December 2007 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services’, C(2007) 5406, p. 5.

2.2 Bundles

FVA products can be sold on a stand-alone basis or as part of a bundle. Competition concerns could potentially arise in both contexts. Additionally, the treatment of bundles in market definition may influence the subsequent SMP assessment and remedies. Market definition therefore needs to determine the scope of substitutability between these products and whether it would constrain the pricing behaviour of a hypothetical monopolist. Thus a range of possible markets may exist (bundle, stand-alone FVA, FVA sold inside or outside a bundle) and the definition exercise should consider which of these is the most appropriate (and whether a combination of them applies simultaneously).

In the context of bundles, the SSNIP framework is still appropriate. However, the implementation of the SSNIP test might encounter problems such as multiple candidate markets and non-uniqueness of relevant markets. If the bundle, rather than the stand-alone product, is used as the starting point for the analysis, a different set of market(s) can be found. Given these complexities (multiple candidate markets and non-uniqueness of relevant markets), the assessment could be complemented by an assessment of criteria suggested by BEREC.³⁸ These criteria are:

- economies of scale and scope;
- transaction costs faced by end-users;
- differing competitive conditions;
- end-user behaviour (the SSNIP test).

The BEREC criteria are useful complements in this context and entirely consistent with the approach followed by Oxera in this report. Indeed, while criteria such as economies of scope and transaction costs are important, ultimately their importance would be expected to manifest itself through their impact on end-user behaviour in response to a SSNIP test, as well as through differences in competitive conditions across segments of the market. Overall, the assessment should be ‘holistic’—ie, both approaches carry equal weight.

2.2.1 The choice of focal product

The choice of the focal product will determine much of the remaining market definition process. In this context, several candidates could be used as the focal product, including FVA, FVAC, a broadband bundle and/or a ‘triple-play bundle’, and starting from different products could lead to different outcomes. Oxera first considers what the Commission and BEREC have said about the choice of the focal product.

European Commission’s and BEREC’s views on the choice of focal the product

The Commission has provided a recommendation to NRAs on markets that are susceptible to ex ante regulation:³⁹

the starting point for market definition and identification is those markets that were identified in the initial Recommendation.⁴⁰

In this recommendation Market 1 is defined as ‘Access to the public telephone network at a fixed location for residential and non-residential customers’. This definition does not state explicitly whether this access is on a stand-alone basis or as part of a bundle. Thus, it appears ambiguous whether the Commission recommends that NRAs start from the stand-

³⁸ BEREC (2010), ‘Impact of bundled offers in retail and wholesale market definition’, 10:64, December.

³⁹ European Commission (2007), ‘Commission Recommendation of 17 December 2007 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services’.

⁴⁰ European Commission (2007), ‘Commission Staff Working Document Explanatory Note: Accompanying document to the Commission Recommendation of 17 December 2007 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services’, C(2007) 5406, p. 19.

alone product. The Commission also notes that NRAs should consider whether consumers prefer to purchase services as a bundle from a single supplier:

On the demand side, consumers may have a preference for a bundle if there are significant transactional costs. In this case, consumers may prefer to purchase the services as a bundle and from a single supplier. Hence the bundle may become the relevant product market.⁴¹

Note, however, that the phrasing of this quote is that the bundle may become the relevant product market, not that a NRA must start from the bundle and ignore the stand-alone product.

BEREC's guidance suggests that if a 'large proportion of consumers purchase bundles', this might indicate that consumers have a preference for consuming the product as a bundle. This in turn might suggest that a bundle should be the starting point in the appropriate context. Starting from a bundle would make intuitive sense if it is the most commonly sold product in the market. However, the context is also relevant. In competition law contexts, the focal product is usually determined by the nature of the complaint or alleged abuse. For example, if a complainant is arguing that they are being prevented from competing in the sale of bundles due to a margin squeeze, predatory practice or loyalty rebates, the competition authority would probably start with the bundle as a focal product. Therefore, BEREC also states that:⁴²

87. For example, if the analysis is trying to determine whether there is a problem with leverage of market power, assessing whether there is a separate market for the bundle of services (i.e. taking the bundle as the focal product of the market definition exercise) may not be the appropriate test.

Therefore BEREC appears to suggest that, although the most prevalent product has a good case for being the focal product, the context of the market definition exercise should also be invoked. In the case of a market review, therefore, it is the product that is susceptible to ex ante regulation (ie, where there is a regulatory concern such as leverage of market power or exploitation of captive customers) that may be the appropriate focal product. For example, concern about excessive pricing on stand-alone FVA could lead to stand-alone FVA being chosen as the focal product.

Criteria identified for choosing the focal product

Overall, guidance at the EU level on how to treat bundles is fairly open and non-prescriptive. This leaves scope for an NRA to address the issue in its own Member State. However, taking account both of first principles and of the recommendations of the Commission and BEREC, there appear to be three criteria to consider when contemplating the focal product in the FVA market (in order of importance):

- **critterion 1: what is the competition concern that the regulator is trying to solve and where is its source?** This has been the key rationale to date for most NRAs to use stand-alone FVA as the focal product when reviewing Market 1. This is consistent with FVA being the only remaining retail product market in the markets susceptible to ex ante regulation⁴³ and where there is therefore the greatest remaining concern about potential abuse of market power: excessive pricing, as well as horizontal and/or vertical leverage when FVA is sold as part of a bundle (although, as noted above, from an economic perspective, vertical leverage arises from market power held at the wholesale level).

⁴¹ Ibid.

⁴² See, BEREC (2010), op. cit., para 87.

⁴³ European Commission (2007), 'Commission Recommendation on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services', C(2007) 5406 rev 1.

Hence, according to this criterion, it would be reasonable to use stand-alone FVA as the focal product in the market definition process;⁴⁴

- **criterion 2: what are the implications for SMP assessment and design of remedies?** On the other hand, if a different product (eg, a broadband or triple-play bundle) exhibits sufficiently distinct competitive conditions such that it has the potential to change the assessment of competition in a market or in specific geographic areas of a market, criterion 2 suggests that selecting such a product as the focal product in the market definition exercise (in addition to stand-alone FVA—ie, two focal products and two separate SSNIP tests) could be appropriate. However, this would be appropriate only if there is a concern that, by not doing so, any difference in competitive conditions might be overlooked and not adequately captured in the regulatory framework. In other words, absent a specific competition concern with broadband or triple-play bundles (criterion 1), the choice of whether to select one of these products as the focal product in the market definition exercise (in addition to FVA) on the basis of the second criterion is down to regulatory judgement. As long as differences in competitive conditions are captured somewhere in the market review, selecting these services as focal products and/or identifying them as separate markets in their own right is not an absolute necessity;
- **criterion 3: which is the most popular product consumed by customers in the market?** NRAs may wish to start from the most popular or prevalent product variant that customers purchase on the market, on the basis that the forward-looking competitive dynamics in the market will be driven by this product. For example, if there is strong growth of broadband bundles then an NRA should consider whether there are different competition concerns in this product rather than in stand-alone FVA or FVAC. However, in itself this criterion could be misleading if there is no competition concern present in the most prevalent product sold in the market, or if such products do not yet exhibit sufficiently distinct competitive conditions from the stand-alone FVA product. Hence, this criterion should be used (if at all) only in combination with the first and/or the second criteria described above.

Choice of focal product in the presence of multiple bundles

The discussion so far has covered bundles at a conceptual level, with examples focused on FVA and broadband. In situations where a NRA wishes to use a bundle as a focal product (in addition to FVA), there is a question as to which of the many bundles sold in the market should be the focal product: broadband bundle; triple-play bundle, quadruple-play (fixed and mobile voice, broadband and TV), etc. The choice of starting bundle may influence the outcome. For example, a triple-play bundle may be more likely to be unpicked than a broadband bundle.

Assessing all types of bundle could lead to many more possible outcomes and sets of definitions. While expanding analysis in this way is conceptually possible, such an approach is likely to be appropriate only from a research perspective. From a practical (regulatory) perspective, multiple markets are likely to quickly become unmanageable. When the market definition is being conducted with a specific context or group of consumers in mind, it is more likely that only one or two of the possible markets are of relevance, and a multitude of focal products testing every variant of bundles will not be needed. For example, if it is found that consumers would split a bundle in response to a SSNIP, it is not necessary to test the market for stand-alone broadband in the context of a market review for FVA.

Regulatory judgement is likely to be needed here because it may not be practical or feasible to apply this rigorous testing for all possible starting points and branches. Hence, the test

⁴⁴ However, one cannot rule out the possibility that, in the near future, retail bundled products could be the source of competition concerns for regulators—this could be the case, in particular, for triple-play bundles that could require wholesale remedies on the pay-TV element in order to ensure that OAOs can technically replicate them.

could be done for the most representative bundle (eg, broadband bundle) and the likely result of other bundle tests could be inferred from this, unless there is strong evidence to suggest that the results of a SSNIP would change from bundle to bundle.

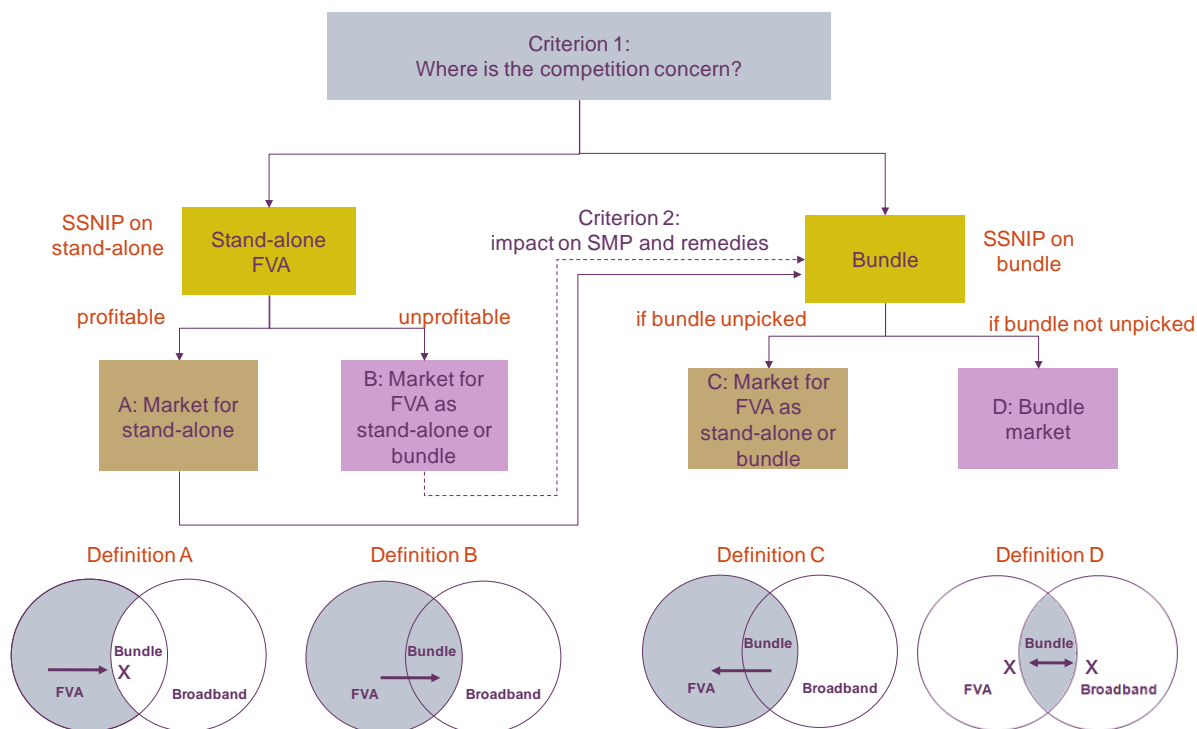
Consistent with the above discussion, the choice of the focal product will depend primarily on the source of the main competition concerns that the regulator wishes to test and address (criterion 1). In the context of the FVA market review in Ireland, this suggests that testing stand-alone FVA as the focal product is an appropriate starting point. However, this is on the basis that ComReg has a priori reasons to believe that some form of regulatory remedies may be required to address these competition concerns, or it is necessary to test whether the existing remedies imposed in the previous market review continue to be appropriate and justified. This would also be consistent with stand-alone FVA continuing to be in the list of markets listed by the European Commission.

2.2.2 Process after the focal product has been chosen

Once the focal product has been chosen, the standard SSNIP test could be applied to analyse whether the market was any broader than the focal product (or, in the case of bundles, whether there is a bundle market or a market for the bundle's components).

When the focal product is a stand-alone product, a SSNIP test can be implemented in the standard way. In the context of the framework outlined in Figure 2.1, this indicates that the left-hand side of the decision tree (stand-alone FVA) should be the starting point of the market definition exercise. As noted in the description of criterion 2, to the extent that there are no additional competitive concerns with a bundle (eg, a broadband or triple-play bundle), an NRA would not necessarily need to undertake a separate assessment starting with a bundle as the focal product. As explained below, it would be appropriate to undertake a separate assessment if certain sub-groups of consumer would not be captured by the market definition, or if the bundles segment exhibits sufficiently different competitive conditions (criterion 2).

Figure 2.1 Decision tree



Note: Arrows in the Venn diagrams represent consumer substitution. 'X' represents an insufficient number of consumers switching for that product to be considered a competitive constraint.
Source: Oxera.

The decision framework works as follows. Having chosen stand-alone FVA as the focal product (the left-hand side of Figure 2.1), the NRA would be required to undertake a SSNIP test to assess whether the market was wider than this product—for example, to test whether sales of FVA as part of a bundle form part of the same market.

If the SSNIP test on stand-alone FVA were profitable, this would suggest that the sale of FVA inside of bundles does not constrain the sale of stand-alone FVA, leading to a finding of market definition A, as shown in Figure 2.1 above. If this were the case, there would be a residual group of consumers purchasing FVA as part of a bundle which would not be part of any formally defined relevant market. Therefore, if a separate stand-alone FVA market was identified (definition A), the NRA would also be likely to need to undertake a market definition exercise starting with the relevant bundled product(s) as the focal product. (This scenario is represented by the solid arrow in Figure 2.1).

Alternatively, if the SSNIP test for stand-alone FVA were unprofitable as a result of pricing constraints from the sale of FVA inside bundles, this would lead to definition B (a wide market for FVA regardless of whether it is sold inside or outside a bundle), and all FVA customers would already be part of a defined relevant market. However, if there is evidence to suggest that the sale of particular bundles exhibits very distinct competitive conditions, an NRA may wish to test this hypothesis and capture it at the market definition stage by selecting such bundles as focal products. (This scenario is represented by the dashed line in Figure 2.1, and is consistent with criterion 2 described above.)

Returning to the top of the decision tree in Figure 2.1, in situations where there are clear competition concerns around a particular type of bundle—in addition to competition concerns for the stand-alone product—it would likely be necessary to conduct a market definition exercise both on the stand-alone product and on the bundle (ie, to follow both sides of the diagram). For example, if there is a competition concern about triple-play bundles due to concern about replicability of the TV component for example, an NRA may also need to start with such a bundle as the focal product. If the focal product is a bundle then a variant of the SSNIP test can be used. If a bundle is chosen to be the focal product, the Commission and BEREC suggest that, to determine whether it is a relevant market, evidence is needed on whether customers would ‘unpick’ the bundle and choose to obtain the services separately if a SSNIP were to be imposed on the bundle.⁴⁵ If so, each service comprising the bundle could constitute a relevant market in its own right, implying that the bundle should not be considered the candidate market.

If insufficient consumers would unpick the bundle to constrain a hypothetical monopolist, it is reasonable to conclude that there is a market for the bundle. The option to purchase the components separately is an insufficient constraint on a hypothetical monopolist’s behaviour. This is because consumers would most likely prefer to continue to receive the transactional complementarities, even though they have to pay 5–10% more.

The approach described here gives flexibility to NRAs, but also ensures that no competition concerns go unaddressed.

2.2.3 Possible outcomes

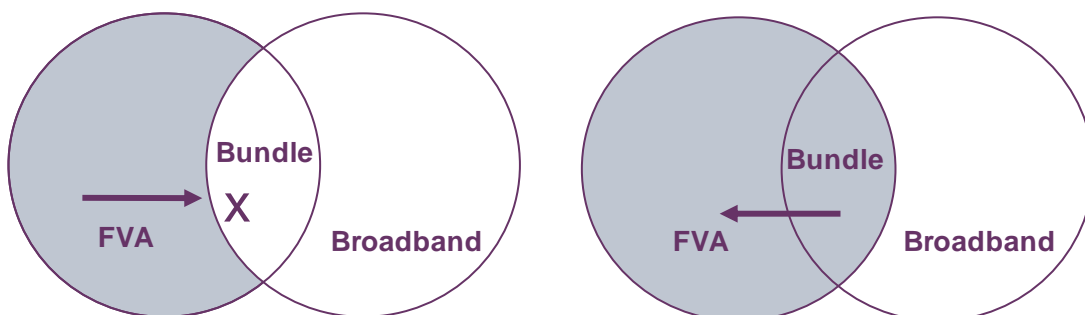
If only the stand-alone product is treated as a focal product, there are only two possible outcomes: definitions A and B, as described in Figure 2.1. However, if the approach set out above is followed and both the stand-alone product and bundle are treated as focal products, four possible sets of market definitions could arise.

⁴⁵ BEREC (2010), ‘BEREC report on impact of bundled offers in retail and wholesale market definition’, December, BoR (10) 64; and European Commission (2003), ‘Explanatory note accompanying the Commission’s Recommendation on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communication networks and services’, Explanatory note, February 11th.

Set 1—definitions A and C: market for stand-alone FVA/FVAC and market for FVA/FVAC (sold inside or outside a bundle)

If the SSNIP test on the stand-alone product finds that bundles are not a constraint on the stand-alone product then a market for FVA/FVAC is found (definition A). If the bundle is SSNIP-tested additionally and it is found consumers would unpick the bundle, there is also a market for the bundle’s components, regardless of whether they are sold inside or outside the bundle (definition B). In other words, a hypothetical monopolist of a bundle could not profitably raise the price of the bundle because too few consumers would unpick the bundle so as to act as a constraint on price.

Figure 2.2 Set 1—definitions A and C: market for stand-alone FVA/FVAC and market for FVA/FVAC (sold inside or outside a bundle)



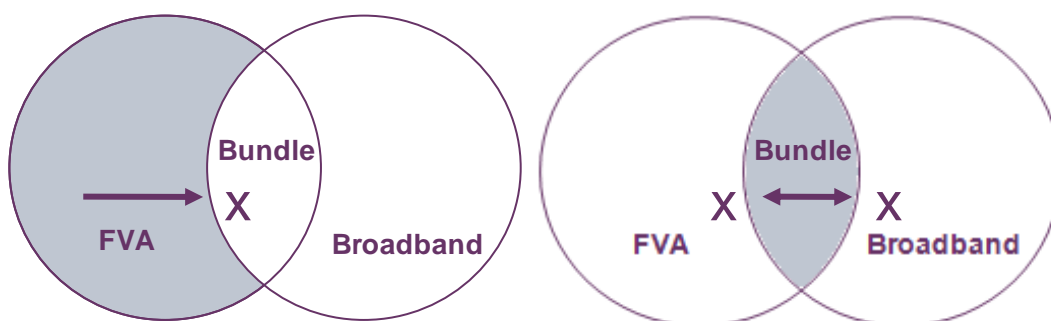
Note: Arrows in the Venn diagrams represent consumer substitution. X represents an insufficient number of consumers switching for products to be considered a competitive constraint. Source: Oxera.

In this case the decision tree has led to a finding of overlapping markets (for those individuals purchasing stand-alone). Such a finding, while counterintuitive, is not conceptually problematic. Overlapping markets simply reflect asymmetric substitution, which is common in telecoms markets. Consider the example of narrowband and broadband: broadband may be a substitute for narrowband, but narrowband is not a substitute for broadband. In this case, bundles may not be a substitute for stand-alone FVA, but stand-alone FVA may be a substitute for bundles.

Set 2—definitions A and D: market for stand-alone FVA/FVAC and bundles market

If the test on the stand-alone product finds that bundles are not a constraint on the stand-alone product then a market for FVA/FVAC is found (definition A). If the bundle is SSNIP-tested additionally and it is found that consumers would not unpick the bundle, there is also a separate bundles market (definition D).

Figure 2.3 Set 2—definitions A and D: market for stand-alone FVA/FVAC and bundles market

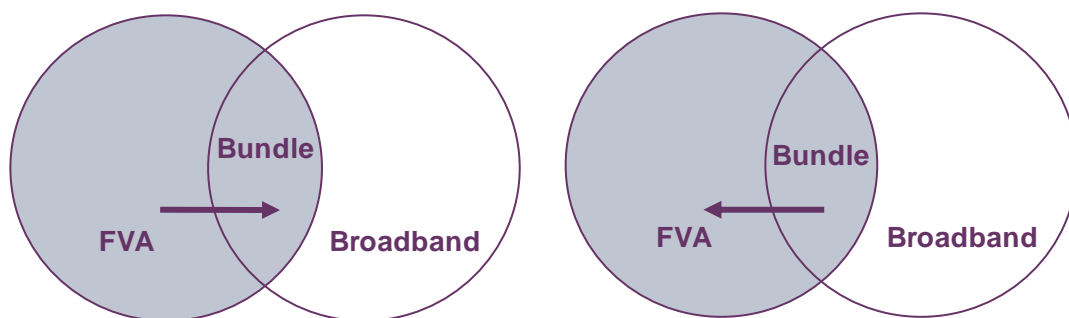


Note: Arrows in the Venn diagrams represent consumer substitution. X represents an insufficient number of consumers switching for products to be considered a competitive constraint. Source: Oxera.

Set 3—definitions B and C: market for FVA (sold inside or outside a bundle)

Alternatively, the SSNIP on stand-alone FVA may not be profitable because sufficient purchasers of stand-alone FVA may switch away (perhaps purchasing a bundle). This indicates that there may also be a market for FVA whether sold stand-alone or as part of a bundle (definition B). If the bundle is tested separately and it is found that consumers would unpick the bundle (as per set 1) then a market that covers FVA whether sold inside or outside a bundle (definition C) is found. Note that definitions B and C are effectively the same market, simply represented twice for consumers who are purchasing different products within that market.

Figure 2.4 Set 3—definitions B and C: market for FVA (sold inside or outside a bundle)

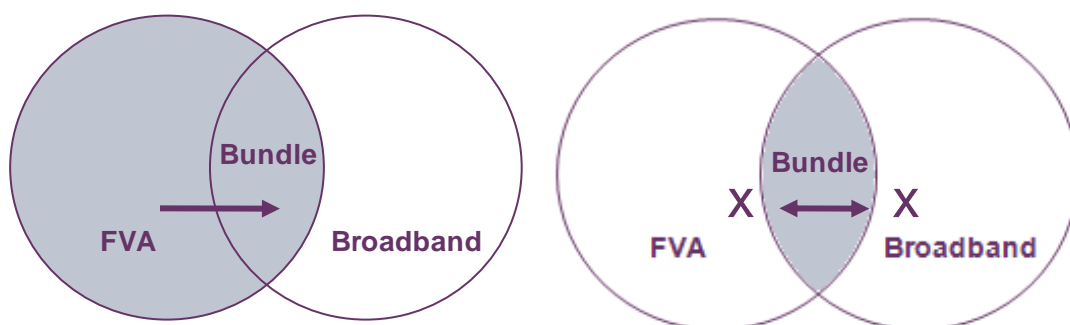


Note: Arrows in the Venn diagrams represent consumer substitution. X represents an insufficient number of consumers switching for products to be considered a competitive constraint. Source: Oxera.

Set 4—definitions B and D: market for FVA (sold inside or outside a bundle) and bundles market

Alternatively, the stage 2 SSNIP on stand-alone FVA may not be profitable because sufficient purchasers of stand-alone FVA may switch away (perhaps purchasing a bundle). This indicates that there may also be a market for FVA whether sold stand-alone or as part of a bundle (definition A in Figure 2.1). This market is shown in Figure 2.4, together with the previously defined bundles market.

Figure 2.5 Set 4—definitions B and D: market for FVA (sold inside or outside a bundle) and bundles market



Note: Arrows in the Venn diagrams represent consumer substitution. X represents an insufficient number of consumers switching for products to be considered a competitive constraint. Source: Oxera.

In the past, NRAs have tended to adopt the Commission's market definition for assessing market power in FVA services. However, until now no regulator has identified a market for

bundles, despite some having considered this (for example, Ofcom in its 2009 fixed narrowband market review).⁴⁶

2.3 Geographic aspects

2.3.1 Defining geographic markets in the telecoms sector

The framework for the product dimension described so far has not covered geographic aspects of market definition, which may be relevant because the availability of products may differ by region. Where this is the case, the ability and propensity of consumers to substitute between products may also differ by region and could therefore influence the behaviour of a hypothetical monopolist.

While the scope for demand- and supply-side substitution is relevant in the context of geographic market definition, in the context of market definition for fixed-line access services (including FVA, WLR and WBA, for instance) the SSNIP test on demand-side substitution is not informative. On the demand side, given the high costs associated with moving locations, it seems unlikely that a customer would move house in response to a SSNIP in the area where they live. This would lead to excessively narrow markets (ie, at the level of a household), which would be unlikely to be representative of the differences in competitive constraints that exist in the FVA market.

To avoid this counterintuitive conclusion, the concept of HCCs is typically used to define geographic markets. This involves identifying common factors of competition and, more specifically, assessing geographic units against criteria such as barriers to entry, numbers of suppliers, distribution of market shares and price differences, and grouping areas with 'similar' characteristics into relevant markets of their own.⁴⁷ The HCC approach is consistent with the SSNIP test with respect to supply-side substitution. Under this framework, geographic market definition might change depending on the product definition. If a product market is defined that has homogeneous market conditions across the country, defining a national market could be appropriate. Conversely, if the product definition includes products that face different market conditions across the country, the appropriate geographic market might change depending on whether the other services are provided under different competitive conditions and/or geographic coverage.

ComReg's design of remedies for bundled products builds on these principles—specifically, it has identified that structural competitive conditions are different within LEAs and outside them.⁴⁸

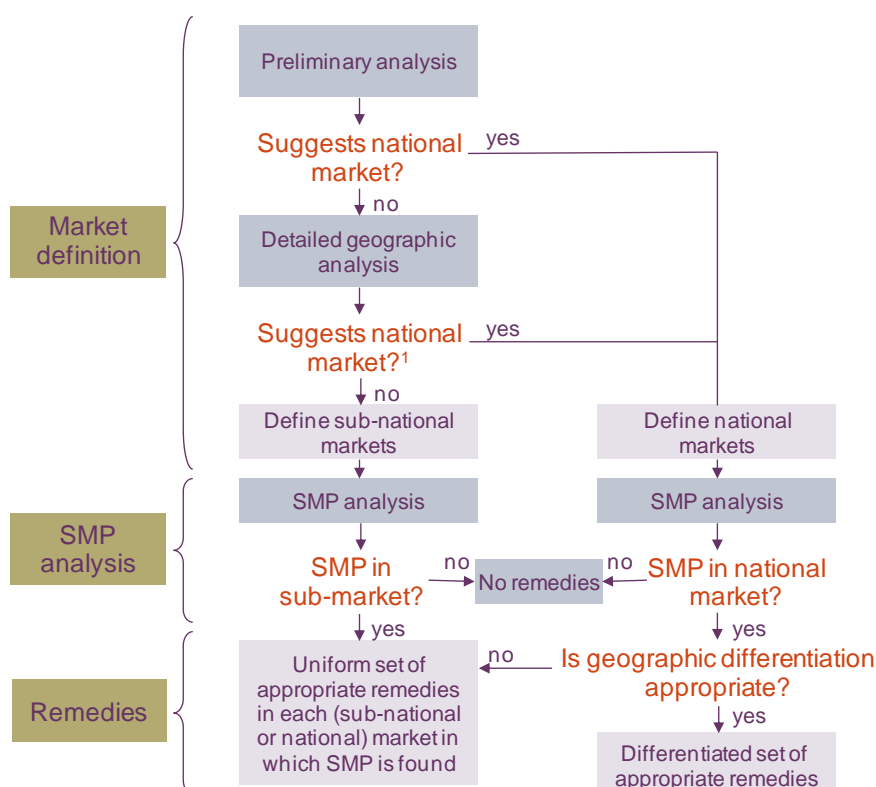
As suggested by ComReg's previous decisions in the context of bundles, geographic differences in competition may be taken into account at the stage of market definition, or, if SMP is identified, at the stage of defining appropriate remedies. Again, market definition is a means to an end rather than an end in itself. Regulators may exercise a degree of judgement when considering which approach would be most appropriate in order to target regulation where it is both needed and proportionate. The steps an NRA should go through in deciding whether to incorporate geographic elements in their market analyses, and if so how, have been identified. These are summarised in Figure 2.6.

⁴⁶ Ofcom (2009), 'Fixed Narrowband Retail Services Markets', Statement, September 15th.

⁴⁷ Ofcom (2010), 'Review of the wholesale broadband access markets', Statement, December 3rd.

⁴⁸ ComReg (2013), 'Price Regulation of Bundled Offers Further specification of certain price control obligations in Market 1 and Market 4', ComReg document 13/14, February 8th.

Figure 2.6 Geographic differences in the context of market review



Source: Oxera, based on European Regulators Group (2008), 'ERG Common Position on Geographic Aspects of Market Analysis (definition and remedies)', October, p. 23.

2.3.2 Possible scenarios in the context of FVA

In the specific case of FVA services, for example, the geographic market definition may change if bundles are included or not in the product definition. This is because certain types of high-quality broadband bundle and triple-play bundles are likely to be prevalent in areas where alternative networks have been rolled out (ie, the footprint of operators that focus on offering bundled services, such as UPC, tends to be limited to densely populated areas). This may lead to a finding of varying degrees of competition across Ireland, and to some geographic differentiation in the market definition. More specifically, if there were geographic differentiation in Ireland, it would most likely occur between the LEA and the non-LEA.

Returning to the possible outcomes for the product market definition described above, Table 2.1 shows some of the geographic market definitions that could occur, by product market.

Table 2.1 Bundles market and a market for stand-alone FVA

	Possible geographic market definition
Definition A only Stand-alone FVA	National
Definition B only Market for FVA whether sold inside or outside a bundle	National or LEA/non-LEA split
Set 1—definitions A and C Stand-alone FVA	National
Market for FVA whether sold inside or outside a bundle	National or LEA/non-LEA split
Set 2—definitions A and D Stand-alone FVA	National
Bundles market	LEA/non-LEA split
Set 3—definitions B and C Market for FVA whether sold inside or outside a bundle	National or LEA/non-LEA split
Set 4—definitions B and D Bundles market	LEA/non-LEA split
Market for FVA whether sold inside or outside a bundle	National or LEA/non-LEA split

Source: Oxera.

As can be seen from Table 2.1, the precise product market definition influences the likely geographic market definition. There are three points to be aware of from this illustration:

- retaining a national geographic market is more likely if a stand-alone FVA market has been defined;
- splitting the market by geography is more likely if a bundles market has been defined (definition D), or if the definition includes bundles (eg, definitions B and C);
- having possibly defined geographic markets, competitive conditions might be found to be stronger in the LEA for particular bundles. This is explained largely by the growing strength of competition for particular high-quality bundles within the LEA (which may lead to a finding of no SMP, or tailoring of remedies).

Oxera’s review of plausible geographic markets is discussed in further detail in section 4.

2.4 Fixed–mobile substitution aspects

A definition of the product market for FVA needs to consider whether substitution to any other forms of communication would be sufficient to constrain the price of FVA.

Conceptually, a standard SSNIP framework can be used to test whether sufficient numbers of FVA consumers would switch away from FVA such that this would constrain a monopolistic provider of FVA. This framework tests whether the market is broader or no broader than FVA. If broader, this does not immediately indicate what other products should be included in the market. Rather, it is necessary to test which other products are the most likely substitutes that are acting as a constraint on FVA.

Ultimately, in the absence of hard evidence on which products are closest competitors, some judgement/qualitative assessment must be used on the choice of the next product to test.

Consumers could use a range of means of electronic communication as substitutes for FVA. The order in which one would test whether mobile was the next product to add into the candidate market would most likely depend on the prevalence of take-up, as well as qualitative similarities between the products (eg, functionality). It would also be appropriate to take account of the reasons given by customers for retaining a fixed line, and whether features such as call quality or ability to access fixed broadband are common.

As identified in ComReg's consultation, (managed) VoIP and mobile access are likely to be among the most functionally similar to FVA, and would therefore be candidate products to be added to the focal product if the initial focal product is found not to constitute a market by itself.

ComReg has found that managed VoIP, such as that provided by UPC, belongs to the relevant FVA market, together with traditional PSTN voice access. The substitutability of mobile access is more debatable, and therefore examined in more detail in this report.

2.5 Conclusion

A primarily SSNIP-based approach can be used to define markets even in situations with difficult conceptual issues. Such an approach can be appropriately supplemented by additional analysis on qualitative factors. Before assessing empirical evidence, however, a clear statement on the overall framework is valuable because it highlights the range of possible outcomes. This indicates whether the framework is comprehensive in its outcomes and whether particular parts are important (eg, if aspects are not relevant to this market review). However, the choice of the focal product is likely to determine a market definition process.

There are three factors to consider when contemplating the focal product:

- competition concern: the product from which the competition concern stems has a stronger case to be treated as the focal product;
- implications for SMP assessment: if assessing a product could change the assessment of competitive dynamics—and hence alter the way the market is subsequently analysed—it has a case for being the focal product;
- the prevalence of the product: the most prevalent product has the strongest case for being treated as the focal product.

The precise choice of the focal product will depend on the criteria outlined above, and as such it is likely to be stand-alone FVA on the basis of criterion 1. Bundles can also be analysed, but this would be done taking them as a separate focal product.

The presence of bundles in the relevant market may lead to a greater likelihood of geographic distinctions (because of HCC criteria being linked to the intensity of bundles competition). Differences in geographic conditions of competition can be captured at multiple stages in the framework (market definition, SMP or remedies) and the choice of where to capture them will come down to an overall assessment of the strength of the evidence, together with regulatory judgement.

The extent to which fixed–mobile can substitute for FVA products should be tested for any of the possible FVA definitions identified so far.

In section 3 below, the conceptual framework articulated in this section is applied to the specific context of FVA in the Irish market.

3 Choice of the focal product and treatment of bundles in the market definition stage

This section applies the framework described in section 2.2 to the Irish market. ComReg's approach and the views of respondents to its consultation are described. Oxera then reviews the empirical data on the structure and trends in the market, to draw conclusions on the definition for calls and access and wider bundles.

Throughout this section Oxera focuses on a broadband bundle, although it is also cognisant that there are differences in competitive conditions for different types of bundles. For example, more homogeneous conditions are likely to exist for broadband bundles than triple-play bundles as cable pay-TV services are less extensively available.

3.1 ComReg's analysis and responses to consultation

ComReg's preliminary view on market definition was based on an approach that went beyond a narrow application of the traditional SSNIP test. Rather, it took account of four features of the market, consistent with the BEREC guidance on the assessment of bundles for market definition purposes:⁴⁹:

- economies of scale and scope;
- transaction costs faced by end-users;
- differing competitive conditions;
- end-user behaviour (the SSNIP test).

ComReg used these features to assess calls/access and prevalent types of bundle. Most of the above criteria had supporting evidence that pointed in opposite directions for both calls and access and bundles.

For **calls/access**, ComReg found it likely that there are economies of scope associated with their joint supply. It also found a high degree of demand for voice plans, which implied that there were some transactional complementarities for users. ComReg accepted that there was a strong link between choice of FVA supplier and choice of making calls, given that many callers do still make FVA calls. However, it also accepted that there is an increasing range of alternative options for making calls. ComReg's view was that end-users typically use the same FVA provider for FVA as for calls, but that there are more recurring opportunities to switch away from the FVA provider to obtain calls.

For **bundles including broadband**, ComReg found that there are economies of scope, given that the additional costs of supplying broadband were low. As was the case for calls and access, there are also some transactional complementarities in purchasing broadband together with FVA. However, the competitive constraints are tending in the same direction. For end-user behaviour, ComReg examined a breakdown of subscription types which showed a high proportion of end-users taking up bundles, and that bundles are often priced relatively less expensively.

ComReg's preliminary conclusions therefore involved an element of regulatory judgement, but also explicitly stated that the relevant market features would be monitored closely. ComReg's preliminary views on bundles were that:

⁴⁹ BEREC (2010), 'Impact of bundled offers in retail and wholesale market definition', 10:64, December.

- **the starting point should not include fixed calls**—its conclusion was based on the fact that there is scope for competitive constraints to emerge differently for FVA and calls;
- **the starting point should not include a broadband bundle**—where consumers have a preference for both FVA and broadband, ComReg found that, for transactional efficiency, they would tend to buy these from the same supplier. However, this was not deemed sufficient to consider starting from a bundled product, since a significant number of households still choose to purchase FVA as a stand-alone product. Similarly, there are other consumers who will purchase other parts of a bundle (excluding FVA) separately and will not purchase FVA at all. Additionally, the majority of businesses purchased FVA as a stand-alone product.

There were a number of responses to the consultation, of which eircom’s was one of the most significant. eircom disagreed with ComReg’s approach to the assessment of bundles. In particular, eircom felt that because consumers primarily buy complementary telephony services from the same supplier, a bundles market should be defined.

ComReg’s and eircom’s views are summarised in Figure 3.1.

Figure 3.1 ComReg and eircom’s views on bundles

	ComReg	eircom
Demand side	<ul style="list-style-type: none"> - economies of scale and scope in provision - different competitive conditions (easier to substitute calls) - transactional complementarities - FVA and calls are in separate markets 	<ul style="list-style-type: none"> - consumers predominately buy bundles (99% if calls and access include d) - few consumers buy calls and access separately (CPS has declined) - the main reason for switching is a cheaper double -or single-play offer
Supply side	<ul style="list-style-type: none"> - economies of scale and scope in provision - end-users who want both will purchase as a bundle - a significant proportion of households want just one or the other - stand-alone FVA is a separate market 	<ul style="list-style-type: none"> - competition takes place around bundles - few stand-alone products available - economies of scope in maintaining line access to consumer’s premises
Conclusion	<ul style="list-style-type: none"> - FVA is a market in its own right regardless of stand-alone or bundle 	<ul style="list-style-type: none"> - stand-alone FVA and bundled voice constitute separate markets

Source: Oxera based on ComReg (2012), ‘Market Review: Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non Residential Customers’, October; ComReg (2013), ‘Submissions received in response to Consultation - Market Review: Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non Residential Customers’, January 28th.

In addition to ComReg and eircom’s views, OAOs raised the following relevant points:

- Magnet did not agree that FVA was in a separate market to bundles FVA, but did agree that consumers like to buy FVA and broadband from a single supplier;
- Telefónica agreed that stand-alone was a separate market;
- ALTO and BT agreed that stand-alone was a separate market because of still significant proportions of businesses and customers that purchase stand-alone;
- Vodafone did not agree that stand-alone FVA was a separate market, but agreed that FVA, whether sold as stand-alone or part of a bundle, was a separate market. Vodafone highlighted that, historically, components of bundles were sold separately and that

therefore the movement towards bundles is now evidence of substitutability in one direction only.

The OAOs' opinions therefore represent a mixed range of reactions, although the overall theme seems to be an acceptance that there is still some form of relevant market susceptible for ex ante regulation, either for stand-alone FVA or for FVA whether sold inside or outside a bundle.

3.2 Oxera's assessment—approach to market definition for calls and access

FVA and fixed voice calls are distinct products that can be purchased separately, but they are closely linked and typically purchased together. A consumer who purchases stand-alone FVA typically receives a package of free calls as part of this. This raises the question of whether there is a distinct market for FVA (eg, line rental only) or a market for FVAC.

3.2.1 Choice of the focal product: FVA or FVAC

In theory, the focal product is a choice between FVA and FVAC, although it will be possible and appropriate to test both products in many cases.

For the purposes of this market review, the product with the competition concern is FVA. However, the market evidence shows that the vast majority of consumers purchase FVA and calls from the same supplier. Only 1% of consumers purchase calls separately from FVA.⁵⁰ This appears to be evidence that there are transactional complementarities. However, there is a caveat, since this 1% of consumers covers only those individuals who actually purchase CPS; it does not cover individuals who purchase FVA and calls but ultimately do not use any of the calls and instead use an alternative method for communication. This might arise where consumers purchase FVA solely to access broadband.

Given that most consumers purchase access and calls together, it may be difficult or inappropriate to test just FVA by itself as the focal product, even if this is where the competition concern lies. It therefore seems appropriate that FVAC could be the focal product in the SSNIP framework in the appropriate context, and it is at least appropriate to test whether FVAC can be considered a market rather than FVA and calls separately.

3.2.2 Applying the SSNIP framework for calls and access: critical loss analysis

It is possible to implement a SSNIP test on the focal product of FVAC. More specifically, the question is whether consumers would unpick the bundle of fixed calls and access by substituting the calls part of the bundle with some other type of call (mobile, Skype, etc).

ComReg conducted market research to accompany its consultation. This research has been used by Oxera throughout the report to provide an indication of the likely result of a SSNIP. More detail on the survey, the available SSNIPs and their limitations is given in Box 3.1 below.

⁵⁰ ComReg (2012), 'Market Review: Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non Residential Customers', October 26th, para 4.47.

Box 3.1 ComReg's market research

ComReg surveyed 1,000 residential households and 500 businesses. Its research covered a range of topics, including current behaviour and reasons for FVA purchasing decisions.

Arguably of most relevance for the purposes of market definition, ComReg's market research asked respondents about their price sensitivity. For example, it asked how they would respond to a 10% increase in price on their FVA bill. In this framework, the question that asked respondents what they would do in response to a 10% increase in price serves as a proxy for the SSNIP.

The SSNIP tests available from the survey data are restricted to the questions that were asked to each type of respondent. The tests that are available are:

- SSNIP on stand-alone FVA (note that this is an imperfect proxy since the sample is technically consumers purchasing FVAC who think about line rental separately);
- SSNIP on fixed calls (for consumers purchasing FVAC who think about calls separately);
- SSNIP on stand-alone FVAC ('total bill') (for consumers purchasing FVAC who do not think about line rental and calls separately);
- SSNIP on bundle (for consumers purchasing FVA as part of a bundle).

As such, a number of SSNIPs are available that can be used to inform the market definition process, although they have the following limitations:

- for several of the questions, the number of respondents who indicate actions relevant to a SSNIP framework is small;
- respondents were given the choice of saying that they would either definitely or possibly change their behaviour in response to a SSNIP. It is unclear how to distinguish between these two types of response;
- it is unclear whether respondents were aware that the individual prices of the constituent parts of a bundle are unchanged when the SSNIP takes place;
- some respondents suggested that they would switch to fixed line from another supplier, whereas in the SSNIP framework there should be no other suppliers of the focal product except the hypothetical monopolist;⁵¹
- some respondents suggested that they would downgrade to a cheaper FVA and calls bundle, which may or may not be considered as unpicking the bundle;
- some respondents stated that they would change their behaviour, but when asked how, they said they would do nothing.

The survey can be used to assess the result of a SSNIP on FVAC. This SSNIP provides insight into two questions simultaneously: whether customers would purchase calls and access separately in response to a SSNIP; and whether they may switch away to other products, such as a broadband bundle.

⁵¹ It is also not clear that switching to another provider is coincident with unpicking FVA and calls services.

Table 3.1 SSNIP analysis—sub-samples for FVA and calls

Stratum	Description	Definitely change	May change	Respondents, combined
Target population	Respondents who have a fixed line AND do not purchase a bundle AND do not think about line rental/calls separately	–	–	153
1	Respondents who would change behaviour in response to a 10% increase in the total cost of the bill	34	33	67
2	Respondents who would change by cancelling their fixed-line subscription	12	4*	16
3	Respondents who would change by cancelling their fixed-line subscription and using a mobile phone instead	10	1*	11
SSNIP test	Stratum 3/target population	7%	1%	7%

Note: * Some response categories appear to be recoded at a lower stratum.
Source: Oxera analysis of survey data supplied by ComReg.

In Table 3.1, the total population shows all the respondents who were asked the relevant SSNIP question. Stratum 1 then shows how many of these would change their behaviour in response to a 10% increase in the total bill. Stratum 2 shows how many would change their behaviour by cancelling their fixed-line subscription. Because some respondents in stratum 2 would cancel their fixed line but switch to another supplier (an option that should not be available under a hypothetical monopolist test), Oxera has elected to use an additional layer of filtering (Stratum 3) to clarify which customers would credibly cancel their FVA. Here, the credibility is assumed to be those who say they would cancel and switch to a mobile rather than those who would cancel and switch to another FVA provider. Thus, overall, the figures suggest that 7% of FVA consumers would hypothetically unpick the narrow bundle of calls and access.

Figure 3.2 illustrates this level of substitution against the levels of critical loss for a hypothetical monopolist. The use of a critical loss estimate to compare against a reaction to a SSNIP was described in section 2. The figure shows the break-even critical loss, which represents the maximum proportion of existing customers that a hypothetical monopolist would be prepared to lose in response to a price increase yet still find the price increase profitable.

Figure 3.2 Access and calls SSNIP test compared with critical loss (residential)



Source: Oxera.

The level of critical loss depends on the size of the margin that is earned on the retail products. Estimating such a margin is complex since it requires assessment of the appropriate cost metric (eg, marginal cost, LRIC, etc). Box 3.2 below provides further detail.

Box 3.2 Plausible margin for critical loss

Oxera has examined eircom’s regulatory accounts, and the accounts of possible international comparators (eg, BT in the UK), in order to arrive at an estimate of the price–cost margin for eircom.

Conceptually, the critical loss threshold relies upon knowledge of the marginal cost of a customer (or at least, a cost base that is consistent with the theoretical time period of the SSNIP test, of around 1–2 years). However, in FVA, the marginal cost is very low, in which case a metric such as LRIC or distributed LRIC (DLRIC) is likely to be more appropriate.

eircom’s regulatory accounts show that, for calls only, the DLRIC/FAC ratio for eircom is about 40–80%. If an assumption is added that price equals FAC then an estimate of 20–60% margin can be derived for eircom.

In addition, Oxera has examined figures for BT in the UK. These appear to suggest a price–cost margin in the range of 31–45%, based on:

- 45% for WLR (based on a DLRIC/price ratio of 0.54);
- 31% for broadband (based on a DLRIC/price ratio of 0.69);
- 37% for calls (based on a DLRIC/price ratio of 0.63).

Overall, Oxera would therefore estimate a margin in the range of 20–60%. The bottom end of that range is probably less likely since it assumes a very high marginal cost figure (80% of the price). A more realistic figure is likely to lie in the 40–60% range.

Source: eircom (2009), 'Current Cost and Long Run Incremental Cost Statements for the Year Ended 30th June 2009', Financial Statements; BT (2012), 'Current Cost Financial Statements for 2012 including Openreach Undertakings', Regulatory Financial Statements.

While there is some uncertainty about the level of the critical loss, the above results indicate that, for a hypothetical monopolist, a SSNIP on the bundle would be profitable at any plausible margin. Thus, in principle, a bundle of calls and access could represent a relevant market. That means both that calls and access are within the same market and that wider bundles are not part of this market. However, this calculation should be considered indicative only, owing to the limitations noted above.

3.2.3 Evidence on other factors

The survey evidence also supported the above indication that consumers may consider calls and access together. It suggested that only 15% of consumers think about calls and access separately.⁵² Other evidence that supports a finding of calls and access being in the same relevant market includes economies of scale and scope.

The main evidence against concluding that FVA and calls are in the same market is that they potentially face different competitive conditions. In particular, even when retaining FVA, consumers have more frequent opportunities to adjust their calling behaviour than their access behaviour. In other words, consumers have more options/alternatives when making calls (fixed, mobile, Skype, etc) and the marginal cost of exercising those options is much smaller (even zero in many cases) as opposed to changing access. This is borne out where the average number of calls per fixed line has decreased markedly, while mobile call traffic has increased over the same period. These trends suggests that FVA customers are purchasing fewer calls on average over their respective connections, while at the same time more calls are being made from mobile phones.

However, while there may be different competitive conditions among the many options/alternatives, the decision to purchase FVA in the first place may not be affected by the availability of such alternative options for calls. This is because, for some consumers, the choice of purchasing FVA, as opposed to other forms of access, is driven more by a desire to use FVA in order to access broadband rather than to access fixed calls.

3.2.4 Conclusion

Overall, it is possible to conclude that fixed access and calls are in the same market. This conclusion is different to that reached by ComReg in its consultation. However, Oxera notes that the precise definition has limited implications for the remedies for this market since it is unlikely to alter the finding of SMP.

That said, it is important not to confuse competition in relation to calls conditional upon having purchased FVA (where, in effect, the decision to purchase FVA is largely unaffected by the choices a customer has on how to make ongoing calls), with competition on calls affecting the initial decision to purchase FVA. For example, having decided to purchase FVA from its fixed provider, a consumer may also choose to complement that FVAC by also purchasing calls from a different provider, such as a mobile or Skype provider. In this way, there may be *partial* unpicking of the calls and access bundle. For some consumers it may be preferable to unpick the bundle and hence drop the fixed line and use mobile only. This indicates that the decision to purchase access is discrete, whereas the decision to purchase calls is continuous. Additionally, purchasing access is a requirement before purchasing fixed calls.

This would be consistent with the argument that the availability of making calls through other means (eg, mobile, Skype) has a relatively limited impact on the decision to purchase a FVA line in the first place. This is especially the case where people purchase FVA in order to avail themselves of ADSL broadband, particularly in a world where there is no naked DSL product.

⁵² ComReg (2012), 'Fixed voice research', August, Slide 28.

3.3 Oxera's assessment—approach to market definition for broadband bundles

Section 2 described a generic framework for the assessment of stand-alone FVA and broadband bundles. It showed that the SSNIP framework is a strong conceptual starting point, but it is recognised that it is not always practical or proportionate to implement. Thus, examining other criteria (eg, economies of scope, transaction costs) is informative, although they tend to lead to a less definitive conclusion. Both ComReg and eircom reviewed these criteria extensively and used them to form their respective judgements.

This section reviews the empirical evidence from the Irish market and uses this data to populate the framework described in section 2.

3.3.1 Is a broadband bundle a substitute for FVA/FVAC?

Following the logic articulated in section 2, it is reasonable to start from a focal product of FVA/FVAC in Ireland. This is because ComReg, having to take utmost account of the European Recommendation on relevant markets, is a priori concerned with competition issues around the stand-alone FVA/FVAC product.

When starting from stand-alone FVAC as the focal product, the evidence on whether FVAC sold as part of the bundle should be included in the relevant market is not clear-cut.⁵³ On the one hand, a SSNIP test conducted using the survey data collected as part of the consultation suggests that (assuming plausible LRIC levels of retail margins), stand-alone FVAC would be a separate market in its own right (see Figure 3.2)—ie, that a SSNIP would be profitable. A similar test for stand-alone FVA customers is not possible because the sub-sample (of 25 respondents) is too small to draw meaningful inferences. On the other hand, market trends do appear to show substantial switching to bundles.

ComReg itself also relied upon evidence that increasing numbers of consumers are switching to bundled products to draw its conclusion that there is a 'wide' product market encompassing both stand-alone and voice bundles. Given the nature of the evidence and ComReg's regulatory objectives, this conclusion seems reasonable, although it involves a degree of regulatory judgement.

What the market research and quarterly reports do not show clearly is the flow of current subscriptions into each bundle type. In aggregate terms, overall fixed-line penetration is low (62% of households relative to an EU average of 71%), and the most recent quarterly report indicates that the number of narrowband fixed-line access paths (PSTN and ISDN) declined at around 8% since quarter 2 2012.⁵⁴ As the flow of subscriptions into specific service and bundle types is more indicative of current consumer behaviour than the existing stock of connections, this flow is likely to be driven by consumer switching rather than new additions. It would seem plausible that much of the decline in fixed-line services is occurring in single-play-type subscriptions, and that there is some migration of single- to double- or triple-play.

One way to identify consumers who are taking out new subscriptions is to examine those who are switching supplier. Switchers must be taking out a new contract, and it is therefore possible to test whether, in doing so, they have a preference for a bundle. In its response to the consultation, eircom discussed evidence on switching levels.

ComReg's market research shows that 27% of FVA subscribers have switched within the last three years and, of these, at least 37% must have switched to a bundle because they switched to UPC.⁵⁵ The data does not, however, allow further detail on the propensity to

⁵³ Starting from stand-alone FVA is not possible due to the small samples in the survey.

⁵⁴ ComReg (2013), 'Quarterly key data report', September.

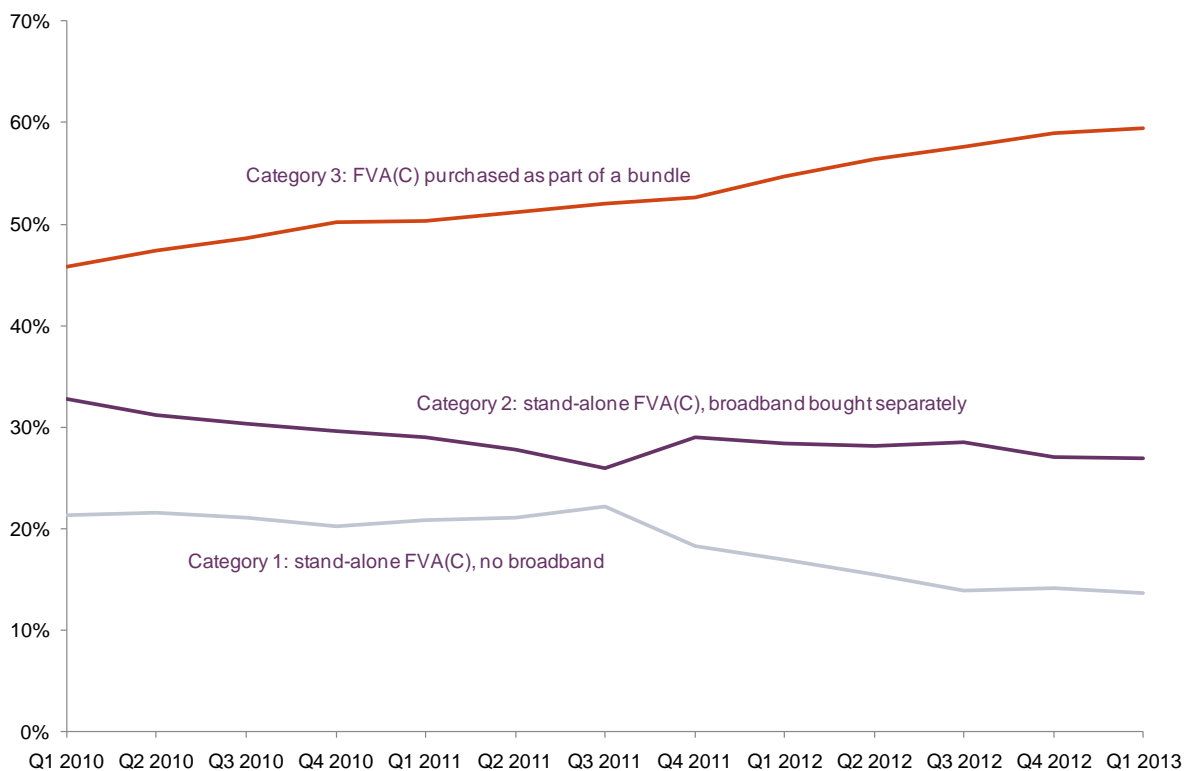
⁵⁵ The Research Perspective (2012), 'ComReg Fixed voice research', market research slides, pp. 39–40, August (172/630=27%).

switch to a bundle, since switchers to operators such as eircom may have switched to either a bundle or a stand-alone product.

However, there is a degree of bias in this evidence when using it to establish preferences for bundles. For instance, consumers who switch to some suppliers, notably UPC, may face the option to purchase FVA as part of a bundle only, because that supplier does not offer a stand-alone voice product. A consumer wanting to purchase a fixed voice service who switches to UPC must purchase a bundle.

Figure 3.3 shows that bundles have increased in prevalence since 2010. However, most of the abstraction appears to come from customers who currently purchase FVA(C) and broadband, but do so separately. Customers who do not purchase broadband have remained relatively more stable. This suggests that there is an observed degree of switching towards bundles and that they may act as a constraint, albeit primarily for customers who currently purchase broadband separately.

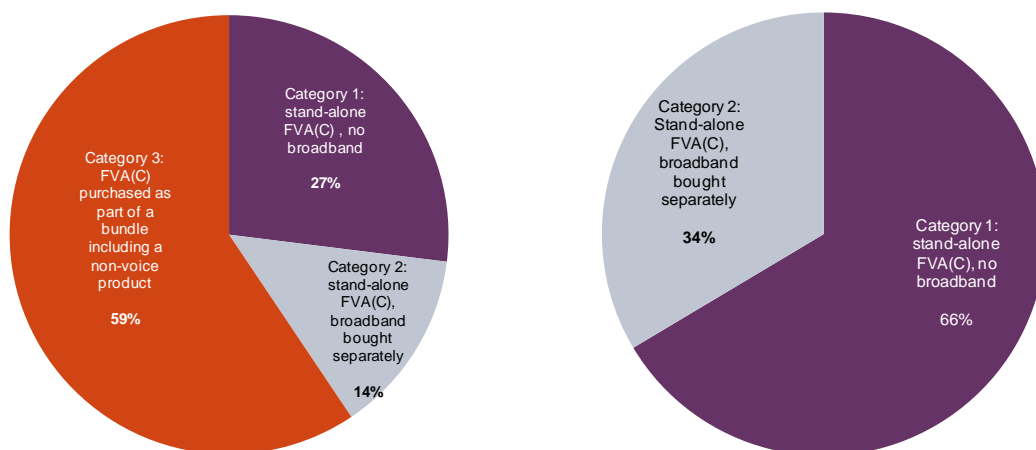
Figure 3.3 Trend in FVA(C) and bundles



Source: Data provided by ComReg.

Figure 3.4 shows the relative proportions of bundles among FVA consumers on the left-hand side. On the right hand side it shows the relative proportions of customers who do or do not buy broadband separately among FVA customers that do not purchase a bundle.

Figure 3.4 FVA categories purchased by consumers that use FVA, Q1 2013



Source: Data provided by ComReg.

To illustrate this point further, consider the proportion of customers who purchase FVAC and broadband separately as a proportion of all customers who do not purchase broadband.⁵⁶ In Q1 2013 this proportion was 34%, as shown in Figure 3.4. If the critical loss level is in the region of 15–25%, it would be necessary for around one-half to two-thirds of these category 2 customers to switch to a bundle (assuming no switching from category 1 customers) in response to a SSNIP in order for bundles to be considered a constraint. This is plausible given that cost savings are already likely to be available from switching to a bundle for those customers who currently purchase the components separately.

3.3.2 What market would be found if a broadband bundle was the focal product?

Oxera has suggested that stand-alone FVA should be the focal product, although this could be widened to include FVAC. However, as discussed in section 2, in principle the choice of focal product could be influenced by a consideration of how the market definition would affect subsequent analysis. An a priori belief that definition of a relevant market for broadband bundles could substantially affect the analysis of SMP/geographic markets and/or remedies would suggest that an additional assessment should be undertaken, with broadband bundles as the relevant focal product.

Since ComReg has already identified the LEA/non-LEA split within the bundles regulation, this is an indication that bundles have the potential to have an impact on the market review, by either leading to geographic market differences or affecting the analysis of market power and remedies.

In addition to above, there is evidence that the prevalence of broadband bundles in Ireland is now strong. Figure 3.4 indicates that stand-alone FVA is in the minority (albeit a significant minority, at 41%). It therefore may be appropriate, in addition, to consider the bundle as a focal product as well as the stand-alone product.

As made clear above, starting from bundles as the focal product is predicated on the potentially different competitive conditions exhibited by bundles. However, it is not necessary to start separately from bundles as the focal product as long as these differences are reflected in the SMP analysis or design of remedies (unless a separate market for stand-alone FVAC was found, in which case it would be necessary to carry out the market definition exercise starting from bundles in any case—see section 2). As done below, where

⁵⁶ It is assumed that all customers that purchase broadband separately also purchase voice services (outside a bundle).

the available evidence is mixed, it is good practice to analyse and articulate what the market definition would be if bundles were used as the focal product, and what would be the implications for remedies.

3.3.3 Applying the SSNIP framework for bundles

When starting with a bundle as the focal product (as an alternative to starting with FVA/FVAC as the focal product), the limitations to the survey, raised in section 3.2.2, apply equivalently here, except that two variations on these limitations are:

- some respondents suggested that they would switch to a ‘similar bundle’ from another supplier, whereas, in the SSNIP framework, there should be no other suppliers of the focal product except the hypothetical monopolist;
- some respondents suggested that they would downgrade to a cheaper bundle, which may or may not be considered as unpicking the bundle.

Despite these challenges, it is possible to use the survey to gain some indication of the result of a SSNIP on the broadband bundle. The results of the survey are shown in Table 3.2.

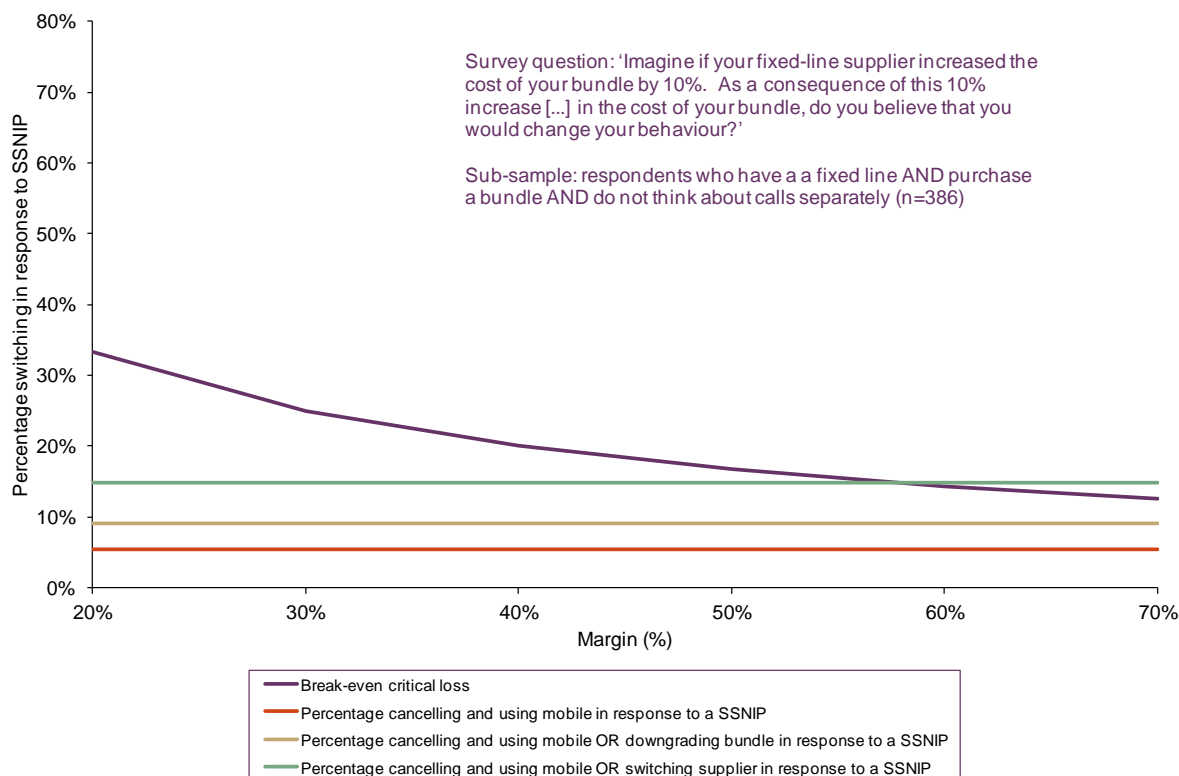
Table 3.2 SSNIP analysis: sub-samples for residential bundle customers

Stratum	Description	Definitely change	May change	Respondents, combined
Target population	Respondents who have a fixed line AND do purchase a bundle AND do not think about line rental/calls separately	–	–	386
1	Respondents who would change behaviour in response to a 10% increase in the total cost of the bill	107*	123*	230
2a	Respondents who would change by cancelling their fixed-line subscription	45	32	77
2b	Respondents who would change by altering the way their purchase services	42	50	92
3a	Respondents who would change by cancelling their fixed-line subscription and using a mobile phone instead	18	3	21
3b	Respondents who would change by altering the way their purchase services by downgrading their bundle (basic fixed line only OR basic fixed line and purchasing previously bundled services from an alternative supplier)	6	8	14
3c	Respondents who would change by cancelling their fixed-line subscription and switching suppliers (excluding to cable TV provider)	14	22	36
SSNIP test (cancel and use mobile)	Stratum 3a/target population	5%	1%	5%
SSNIP test (cancel and use mobile OR downgrade bundle)	(Stratum 3a + Stratum 3b)/ target population	6%	3%	9%
SSNIP test (cancel and either use mobile OR alternative supplier)	(Stratum 3a +Stratum 3c)/ target population	8%	6%	15%

Note: * Some response categories appear to be recoded at a lower stratum.
Source: Oxera analysis of survey data supplied by ComReg.

Thus, the values suggest that 5% of FVA consumers availing themselves of bundles would unpick the bundle if this is defined as using mobile services instead. This value increases to 8% if individuals who switch to another supplier are also deemed to have unpicked the bundle. Alternatively, if the group who either cancel and use mobile or downgrade is taken as the group who unpick the bundle, the proportion is 6%. These figures would be below the critical loss for a hypothetical monopolist at any plausible margin, and hence would suggest that a SSNIP on the bundle was profitable, as illustrated in Figure 3.5 below (ie, in Figure 2.1, this would mean arriving at definition D). This calculation should be considered indicative only, owing to the limitations noted above and since it excludes non-residential users.

Figure 3.5 Bundles SSNIP test compared with critical loss (residential)



Note: Break-even critical loss represents the level to which a hypothetical monopolist could increase prices while still achieving its initial level of profit. Intuitively, it captures what a monopolist 'could' do.
Source: Oxera.

Figure 3.5 shows that it is likely to be profitable for a hypothetical monopolist to implement a SSNIP on a broadband bundle at any plausible level of margin. Therefore, if the market definition analysis were carried out using broadband bundles as the focal product, the available evidence suggests that it is likely that there is a market for broadband bundles.

For business customers/consumers, the equivalent values are:

- 67% of the survey respondents have FVA, purchase it as part of a bundle and do not think about calls/access separately;
- 39% of these would definitely change their behaviour in response to a SSNIP and 35% might change behaviour, leading to a combined figure of 74%;
- 48% of these would cancel their subscription;
- 6% of these would give up their fixed-line connection.

Thus, the figures suggest that 2% (74% * 48% * 6%) of businesses with FVA that are concerned about the overall price of the package would cancel their subscription in response to a SSNIP. This is below the critical loss threshold for any reasonable margin, and therefore adds to the evidence that bundles would not be unpicked.

3.3.4 Evidence on other factors

The pricing of products, and in turn the margin that is earned on them, will give an indication of the relative levels of competition that exist between these products.

Oxera has seen evidence on the margins earned by eircom on different products, see Table 3.3 below. Table 3.3 shows that the margins earned on different products are substantially different.

Table 3.3 Margins on bundles and stand-alone products (€)



3.4 Conclusion

The market definition for bundles in Ireland depends to a large extent on the choice of focal product. Bundles are clearly prevalent, but this is not in itself sufficient to choose them as the focal product; it should instead be driven by the competition concern.

There is likely to be a competition concern around excessive pricing of stand-alone FVA and/or stand-alone FVAC (at least for some customers), as well as concerns about horizontal and vertical leverage of market power. Based on criterion 1 of the conceptual framework described above, it is therefore appropriate to use one of these as the focal product, as ComReg did in the market review consultation.

Regarding the question of whether calls and access are in the same or separate markets, there is evidence pointing in opposite directions. Oxera's additional analysis of the SSNIP evidence suggests that most consumers would not purchase access and calls separately in response to a SSNIP on stand-alone FVAC (FVAC as the tested focal product), and therefore that they may belong within the same market. This evidence, coupled with the evidence that the vast majority of residential consumers purchase access and calls together, suggests that it may be reasonable to use stand-alone FVAC as the focal product.

ComReg, on the other hand, noted that there was scope for competitive conditions in respect of calls and access to evolve differently over the market review period. This led it to conclude that calls and access are in separate markets.

In addition, the evidence on whether broadband and/or triple-play bundles belong to the same relevant market as stand-alone FVA or stand-alone FVAC is mixed. While the SSNIP tests conducted based on survey evidence suggest that they are not part of the same market, these results need to be treated with caution due to limitations with the survey data (eg, small sample sizes, ambiguity in responses). On the other hand, there is recent evidence of switching by customers from stand-alone purchases to bundles, but there is also evidence of a rump of stand-alone FVAC customers (particularly those who do not currently purchase broadband from any provider) who would be less likely to switch to a bundle in response to a SSNIP on FVA/FVAC.

A SSNIP test conducted on FVAC using the survey data collected as part of the consultation suggests that (assuming plausible LRIC levels of retail margins) stand-alone FVAC would be a separate market in its own right. However, there are a number of problems with relying on the survey data due to small sample sizes and ambiguity in the response options. As explained above there are reasons to believe that the SSNIP results are not the only factors that should be taken into account. The other factors (eg, the high degree of switching from stand-alone to the bundle) alternatively suggest that a market for FVA sold inside or outside a bundle exists (definition B), as ComReg identified in the market review consultation. Customers who purchase FVA/FVAC and broadband separately are more likely to switch to bundles to avail themselves of cost savings and could prospectively be considered a constraint.

Having defined a wide market for FVA with bundles, ComReg did not go on to examine bundles separately as focal products. However, the approach it followed was sufficiently flexible to address the nature of competition in the bundles segment of the market. For example, Oxera notes that the sale of broadband access bundled with managed VOIP (ie, voice services supplied over cable networks) was included in the market definition for FVA such that the constraint from relevant bundles (primarily UPC) has been taken into account. Furthermore, the existing suite of remedies has already been adapted to take

account of the evolution of competition through bundles (eg, through an adjustment in the net revenue test).

Overall, it is not clear-cut whether bundles also act as a constraint on stand-alone products. In view of the uncertainty around the precise market boundary, ComReg's judgement to define a wide market for FVA sold within and outside a bundle, and to take account of differences in competitive conditions with respect to bundles at subsequent stages in the market review process, is reasonable and consistent with criterion 2 of the framework described above.

4 Analysis of evidence on geographic market definition

This section focuses on geographic market definition, having assumed that the focal product has been chosen as stand-alone FVA(C) or FVA(C) whether sold inside or outside a bundle. In other words, that the left-hand side of the framework in Figure 2.1 has been implemented. It does not consider geographic market definition if a bundles market has been defined (the right-hand side of Figure 2.1).

4.1 ComReg's analysis and responses to consultation

In the consultation, ComReg proposes to define the relevant markets as national in scope. Its rationale for national-level market definition stems from the notion of sufficiently homogeneous competitive conditions in the FVA market across different geographic areas. Specifically:

In the absence of a clearly identifiable break in conditions of competition across geographical areas to justify separate relevant markets for the purposes of the present review, ComReg nonetheless proposes to take such emergent competitive pressures into account when designing relevant and proportionate regulatory remedies.⁵⁷

In this respect, ComReg recognised that there are some differences in competition (especially with bundles of FVA and broadband), but that the boundaries are not sufficiently stable for sub-national markets. Furthermore, it observed that there is no evidence of any significant sub-national pricing:

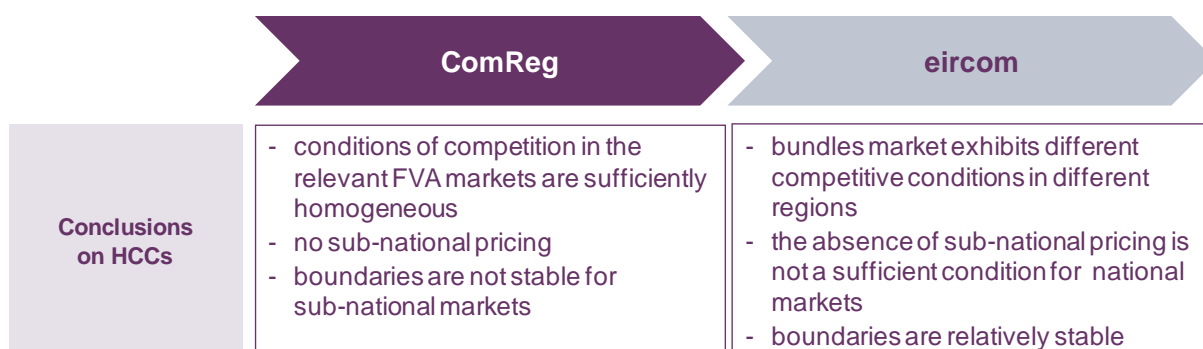
Therefore, it can be assumed that resellers have the ability to enter any geographic area sufficiently quickly and provide FVA using resale products, in response to a 5-10% price increase. This is indicative that the market for stand-alone FVA is national, though this is based on the presence of *ex-ante* regulation and the availability of effective wholesale products and thus there is more limited scope for pricing constraints from these reseller FSPs to materially constrain Eircom's commercial behaviour in specific regional/local areas.⁵⁸

While the OAOs do not challenge ComReg's approach to any significant extent, eircom's counterarguments build on the different competitive conditions in the bundles market. Central to eircom's geographic market definition is therefore the distinct relevant product market for bundles, in which eircom considers that competitive conditions are sufficiently different. Its rationale for a sub-national bundles market stems from the notion that the bundles sold in LEAs (at least) would be found competitive if such a market were defined. ComReg's and eircom's arguments are summarised in Figure 4.1 below.

⁵⁷ ComReg (2012), 'Market Review: Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non Residential Customers', October.

⁵⁸ *Ibid.*, para: 4.217.

Figure 4.1 ComReg and eircom positions on geographic market definition



Source: Oxera based on ComReg (2012), 'Market Review: Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non Residential Customers', October 26th; ComReg (2013), 'Submissions received in response to Consultation - Market Review: Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non Residential Customers', January 28th.

4.2 Oxera's assessment of competitive conditions in different areas

As set out in section 2, geographic market definition is typically determined as the area in which similar or sufficiently homogeneous competitive conditions exist. Under this framework, ComReg's geographic market definition may change depending on the product definition. In principle, the geographic market definition analysis should be carried out separately for each relevant product market. Where there is uncertainty in defining a product market, it may be less appropriate to find geographic differentiation. In the present context, the product market definitions on which there may be geographical differences in competitive conditions are:

- separate markets for bundles;
- a separate market for stand-alone voice services (including FVAC);
- a combined market of FVA(C) sold inside or outside a bundle;

As a vast majority of consumers purchase their fixed calls from the operator that provides their line rental (as discussed in section 3), defining access and calls as separate relevant product markets (even if possible, as discussed in section 3) would be unlikely to lead to a different finding in terms of geographic markets than if the two constituted a single product market. The focus of Oxera's assessment is therefore on the above three main scenarios.⁵⁹

Table 4.1 gives an overview of the take-up of key products in different geographic areas, and therefore provides a basis for assessing geographic boundaries under different product market definitions.

Table 4.1 Exchanges, premises and connections in LEA and non-LEAs, 2012



As Table 4.1 shows, the main difference between the LEA and non-LEA areas is the presence, and market share, of UPC. Furthermore, the share of LLU-based entry is limited throughout Ireland, although even more so in the non-LEAs. These differences in supply-side conditions are recognised by ComReg:

It is evident that, since the last market review in 2007, there has been an increase in the number, coverage and market share of alternative network-based operators. Alternative networks, such as those based on WPNIA inputs, cable networks, frequencies for WLL/WiMax, or the deployment of optical fibre in the local loop are increasingly visible

⁵⁹ As discussed in sections 2 and 3, there are other combinations of bundles provided in the market. However, for the purposes of market definition, it is reasonable to consider the most important product combinations.

in certain regions due to alternative FSPs investing in their own access networks, in particular, in more densely populated areas. Entry based on alternative networks has been more difficult to achieve on a national basis, however.⁶⁰

The implication of these developments is that eircom's retail FVA pricing may become increasingly constrained within urban (LEA) areas, as entrants rely on their own networks rather than the wholesale inputs mandated by ComReg (SB-WLR, CPS, WBA with bundles). The less that eircom's competitors base their retail offers on eircom's wholesale products (and hence primarily on the resale of eircom's retail offerings), the greater likelihood of benefit from economies of scale and their entry into, and competition in, the fixed telephony market. That said, UPC's network growth and, additionally, the emerging take-up of LLU do not necessarily mean that the boundaries of geographic FVA markets are sub-national in scope. As ComReg correctly observes in its consultation, and as is also clear in eircom's reasoning, the differences in competition are particularly prevalent in triple-play bundles, while the stand-alone segment seems to exhibit mostly HCCs.⁶¹

The case for sub-national markets is examined separately for each of the plausible product market definitions (as established in section 3). The assessment below is based on a range of available data from ComReg's consultation, ComReg's market research and eircom's response.

4.2.1 **Competitive conditions in different areas—stand-alone**

eircom's approach to geographic market definition essentially builds on the notion of distinct product markets of 'voice only' and bundles, and the arguably different competitive conditions between the two. eircom accepts that:

As the competitive conditions in the retail market for Voice Only services are largely the same across Ireland it may be reasonable to consider the market as national.⁶²

The evidence supports eircom's position in this respect. The stand-alone FVA market consists largely of consumers who do not value broadband, and who are less likely to switch supplier. eircom holds a strong position with respect to these, apparently more 'loyal', customers, and there are no significant differences in its position over time, even in certain regions such as UPC's footprint as shown in Figure 4.2.

Figure 4.2 eircom's share of 'voice only' subscriptions, UPC footprint (inferred from eircom data)



Furthermore, OAOs' marketing is focused almost entirely on bundled offers, and none of the providers has introduced sub-national pricing schemes for stand-alone voice offers. While national-level pricing is not a sufficient condition to conclude that markets are national in scope (as is discussed further below), Oxera is not aware of any localised price competition or different competitive conditions from the consumers' perspective. Furthermore, the cohort of stand-alone FVA customers is spread across Ireland, although take-up of bundled subscriptions is somewhat more prevalent within UPC's footprint, as can be inferred from Figure 4.1 above.

In relation to pricing, eircom does not accept ComReg's conclusion that 'competitive conditions for stand-alone FVA are homogeneous nationwide.'⁶³ eircom's reasoning is threefold:

⁶⁰ Oxera based on ComReg (2012), 'Market Review: Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non Residential Customers', October, para 4.218.

⁶¹ Ibid, para 4.228.

⁶² eircom (2013), 'Response on behalf of eircom Group to ComReg Consultation 12/117', January 25th, p. 37.

- ComReg has not considered how the national USO prices are reflected in the pricing incentives of other providers;
- wholesale access price is the same throughout Ireland (retail-minus-based SB-WLR);
- uniform pricing does not necessarily imply that competitive conditions are homogeneous.

Uniform pricing may not be a sufficient condition to conclude that the markets are national in scope, but it does provide a useful indication of the degree of competitive pressure that eircom is facing in different areas. Also, the regulated retail and the consequent SB-WLR price are, as far as Oxera understands, price ceilings rather than floors, and eircom could reduce its stand-alone FVA prices if it wished to (and faced a sufficient competitive pressure to do so). Indeed, eircom is planning to reduce its line rental prices, but only when sold as a part of bundle within the LEA. The stand-alone offer is not characterised by a similar sub-national discount.

Furthermore, differences in competitive outcomes relate predominantly to UPC's offers, and eircom's competitive responses have been manifested predominantly through quality upgrades in urban areas. The 'quality' of stand-alone voice services cannot be altered in the same way as that of bundles.

On balance, there is no strong evidence to suggest that the stand-alone market—if defined as a separate product market—could be defined on a sub-national basis.

4.2.2 Competitive conditions in different areas—bundles

As noted in section 2.3.2, if a separate bundles (voice and broadband) product market was defined, there are good reasons to consider a sub-national geographic market definition for the bundles market. This section reviews the evidence available on the competitive conditions in different areas—specifically, between the LEA and non-LEA.

ComReg has recognised the differences in the design of remedies for bundled products. Specifically, in the context of bundles (including an FVA element), it has recently investigated geographic areas that differ by underlying structural competitive conditions.⁶⁴ The differences are mainly related to entrants' investments and use of the wholesale network inputs that are available across the areas.⁶⁵ ComReg has decided that the designation of the approximately 80 LEAs is contingent on:

- the area being served by at least one alternative infrastructure provider (AIP) at the retail level, and by at least one other OAO that uses VUA or LLU inputs to serve end-users;
- the area not being served by an AIP, but at least two operators in the area providing retail services via VUA/LLU inputs;
- the area being served by an AIP, with eircom and other OAOs (ie, not the AIP) providing retail services to less than 20% of the premises in the exchange area,⁶⁶
- eircom giving prior notification that it intends to deploy NGA-based services in the exchange area to a reasonable number of lines in that area;
- the area being surrounded by exchange areas that meet the above criterion, or having economic affinity with adjacent qualifying areas.⁶⁷

The implication is that ComReg has already explicitly identified structural differences in competition between different areas based on explicit criteria that capture many of the supply-side factors. The criteria that ComReg has employed in the context of the design of remedies are consistent with the criteria that could be applied at the stage of the market

⁶³ ComReg (2012), 'Market Review: Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non Residential Customers', October 26th, para 4.236.

⁶⁴ ComReg (2013), 'Price Regulation of Bundled Offers Further specification of certain price control obligations in Market 1 and Market 4', ComReg document 13/14, February 8th.

⁶⁵ These include WLR, VUA, and radio spectrum (as an input to fixed wireless access).

⁶⁶ Subject to the AIP(s) collectively having a reasonable market share and coverage.

⁶⁷ This criterion is determined exceptionally, and is subject to case-by-case assessment by ComReg.

definition. The retail market outcomes depend on the underlying wholesale regulations; it is therefore appropriate to examine competitive conditions in the retail market taking into account the wholesale remedies on which the current and expected retail market outcomes are based.

Market share developments

The available market evidence is consistent with somewhat significant differences between the two areas. Put another way, basing the SMP assessment or the imposition of remedies on national market shares would mask the extent of the shifts in market shares occurring within the LEA with respect to bundles. Oxera has not thus far had access to retail market share data pertaining specifically to the LEA and non-LEA. However, the data covering market share developments inside the footprint of UPC's cable network reveals that eircom has been losing market shares for UPC, whose subscriptions are often sold as double- or triple-play bundles (see Figure 4.3; this market data has been provided by eircom, but has not been verified by ComReg).

Figure 4.3 Market shares of voice bundle subscriptions within the UPC footprint



The pattern suggests that UPC is able to attract churning subscribers from eircom retail (and wholesale) products, as well new broadband bundle subscribers, while eircom is losing subscribers in the growing broadband bundle.

As the definition of the LEA criteria suggests, the differences in competitive conditions with respect to bundles are not limited to the presence of UPC. OAOs are active throughout Ireland and market their services nationally. However, the quality (speed) of their bundles offering (including FVA with bundles) is dependent on eircom's network capabilities in a given area, unless OAOs provide voice bundled with broadband services over unbundled local loops, which is unlikely in rural areas.

Sub-national pricing

In the context of bundles, all operators in Ireland have continued to price on a national basis at both the retail and wholesale level. However, there are considerable differences if prices are compared in quality-adjusted terms. Nominal prices of bundles have remained constant over time for the same product categories. There are differences in terms of availability of faster broadband speeds, however, as eircom has introduced upgrades in urban areas only and some products do not exist in rural areas.⁶⁸ Therefore, in quality-adjusted terms, there are somewhat notable differences between areas, and these differences are, again, observed predominantly between the LEA and non-LEA.

Oxera's previous work for ComReg on retail pricing constraints (in relation to bundles of voice and broadband) found that, despite eircom's declining market share, eircom had not responded to UPC's offers by reducing its prices to the extent it could have within the boundaries of regulatory price controls (price floors in the wholesale broadband access market, in particular).⁶⁹ However, Oxera's conclusion was that, while the retail pricing constraints have not been fully effective in the legacy environment, eircom's planned NGA pricing is likely to meet competition from UPC. There are further indications of sub-national pricing constraints, as eircom has very recently introduced a temporary discount on SB-WLR prices inside the LEA for bundled products. Note that SB-WLR is a wholesale product, not a retail product, but there is a connection between the wholesale discount and the retail price.

⁶⁸ Oxera understands that not all exchanges have been upgraded to next generation broadband (NGB) capabilities. This connects an exchange to eircom's next generation core network (NGN) and allows broadband connections to be delivered without congestion. All else being equal, lower congestion improves the quality, especially in times of peak demand. Furthermore, Oxera understands that not all of eircom's exchanges are ADSL2Plus-enabled, which is required for the higher line speeds (> 12Mbps).

⁶⁹ Oxera (2013), 'Assessment of retail pricing constraints - Response to submissions on consultation 12/27: 'Next Generation Access ("NGA"): Proposed Remedies for NGA Markets', January.

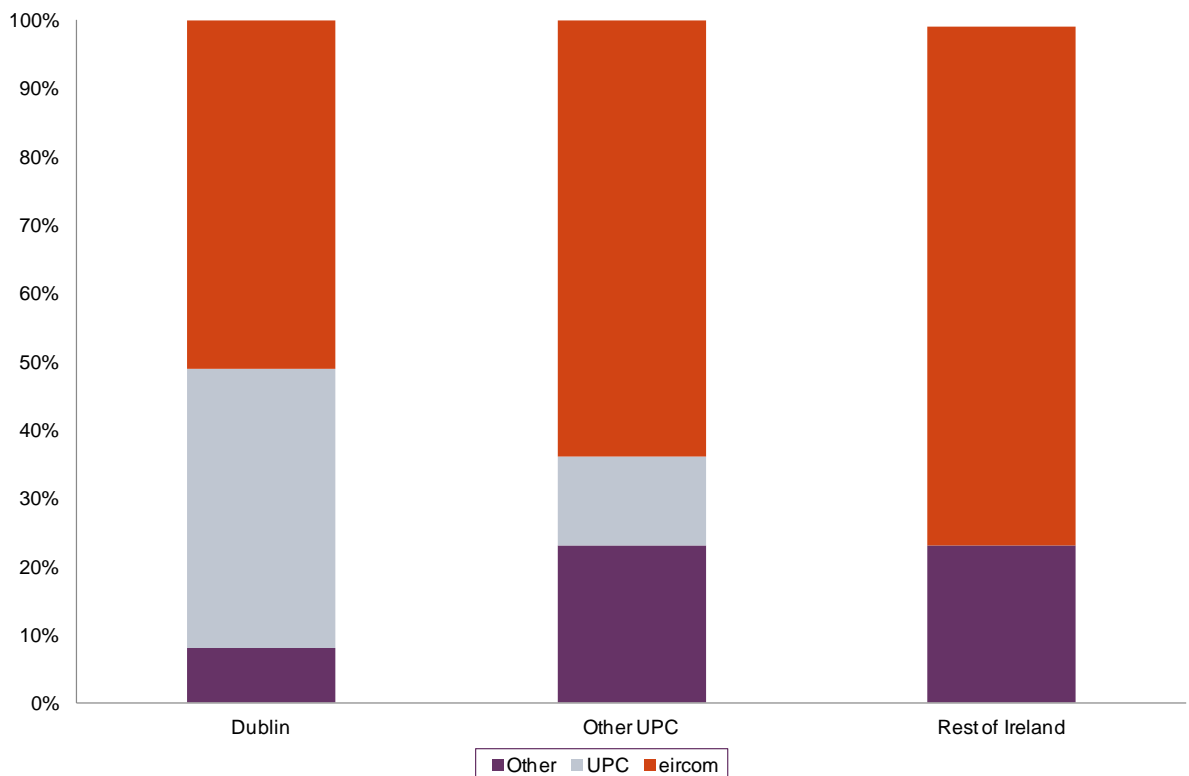
The implication is that eircom discounted the SB-WLR price so that it could reduce the price of a retail bundle (and not stand-alone FVAC) within the LEA. This further indicates that the retail pricing constraints that eircom faces inside the LEA (which is where NGA will mostly be rolled out) are likely to become increasingly effective going forward.

Overall, if a separate product market were defined for bundled services, eircom’s reasoning on geographical differences in competitive conditions appears justifiable.

4.2.3 Competitive conditions in different areas—stand-alone and bundles (status quo)

Under the status quo market definition, combining both stand-alone and bundled sales, the analysis on geographic boundaries is essentially a mix of the above scenarios. In other words, differences in terms of both behavioural characteristics (pricing, consumer behaviour) and structural characteristics (entry barriers, concentration) are not as stark as they are with respect to bundles (alone), nor as homogeneous as if only the stand-alone voice services were examined in isolation. As Figure 4.4 shows, eircom’s market position is substantially stronger in areas where it does not face competition from UPC, even if a market definition for FVA inside or outside a bundle were applied.

Figure 4.4 Market shares in the overall market of stand-alone and bundles (survey data)



Source: Oxera based on ComReg (2012), ‘Market Review: Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non Residential Customers’, October 26th.

ComReg recognises these differences, but points out other factors that are indicative of a national market, such as uniform pricing and the lack of a clear break in competitive conditions between the areas. While there could be a case to consider sub-national markets in the status quo product market definition, the geographic differences are less clear owing to eircom’s relatively strong position in the stand-alone segment throughout the country. If and when the evidence on the geographic market definition is inconclusive, it is reasonable and appropriate to consider the differences in the bundles market in the context of the design of remedies.

4.3 Conclusion

The geographic differences are clearest in the context of bundles, whereas eircom holds a significant share of the stand-alone customers throughout Ireland. As regards bundled services, there are emerging structural differences in both the supply and the demand side, and ComReg has already recognised these differences in the design of the net revenue test for bundles (LEA, non-LEA). As the data presented in this report indicates, historically the differences have been manifested mainly through quality. However, there is recent evidence of pricing constraints becoming increasingly effective, eircom's recent offer of a temporary SB-WLR discount for bundles within the LEAs being a clear example.

Against this background, ComReg has two plausible options:

- it could define a national market as it has done in the consultation. This option would require explicit recognition of different competitive conditions in the sales of bundles within the LEA. While RPCs are unlikely to be of relevance in the LEA bundles segment (eircom is planning to introduce a 'voluntary' discount in any case), ComReg would need to ensure that the obligation not to unreasonably bundle is maintained and designed so that it is in proportion to the competition problems identified;
- if distinct product markets were found for bundles and stand-alone FVA, there is a case for defining two separate geographic markets for the bundles market. The most obvious basis for sub-national market definition would be the LEA/non-LEA split currently applied in the context of the design of the net revenue test in the regulation of bundles. If such a definition were to lead to a finding of 'no SMP' inside the LEA for the bundles market, ComReg would need to ensure that appropriate wholesale remedies are maintained through wholesale regulation. This is because the current retail market outcomes rely partly on the obligation 'not to unreasonably bundle'.

Section 6 discusses these regulatory options in further detail.

5 Analysis of evidence on fixed–mobile substitutability

This section focuses on fixed–mobile substitutability, having assumed that the focal product has been chosen as stand-alone FVA(C) or FVA(C) whether sold inside or outside a bundle. In other words, that the left-hand side of the framework in Figure 2.1 has been implemented. It does not consider fixed–mobile substitutability if a bundles market has also been defined (the right-hand side of Figure 2.1).

5.1 ComReg’s analysis and responses to consultation

ComReg’s preliminary view on fixed–mobile substitutability is that mobile access is not a sufficiently effective substitute for fixed access, and thus that FVA and mobile should be considered as separate relevant markets. This conclusion was based primarily on an assessment of end-user preferences.

Specifically, ComReg argued that:

- end-users consider FVA and mobile access to be broadly complementary, as ‘dual access is the more common scenario among Irish households. For the majority (59%) of households, it is preferable to combine fixed and mobile access for voice telephony’;⁷⁰
- ‘64% of households still choose to also retain a fixed line connection for access to voice and broadband services (and therefore to access the internet over the fixed line)’;⁷¹
- ‘business users, in turn, are typically reluctant to substitute from fixed to mobile because they assign high importance to fixed network characteristics, such as, access to the internet and a single contact phone number for the business’;⁷²
- to date Internet access over mobile connections has not been viewed as an effective substitute for fixed broadband access.⁷³

ComReg highlighted the fact that a significant majority of households still retain a fixed line, even though fixed call volumes have been declining at the same time as mobile call volumes have been increasing.⁷⁴ Although the regulator recognised that mobile services could be a less costly option for lower-usage customers, it concluded that fixed voice was in general still cheaper than mobile. According to ComReg, this was supported by the survey, which indicated that: ‘there is a general perception among households with a fixed line phone that mobile phones for most call types are more expensive than the fixed line phone’.⁷⁵

On the supply side, ComReg was of the view that differences remain between fixed and mobile networks in the provision of FVA. It argued that ‘the time, costs and risks involved in investing in comparable access products for use at a fixed location using mobile network inputs renders such supply substitution not sufficiently immediate or effective’ to be considered as part of the FVA relevant market.⁷⁶

⁷⁰ ComReg (2012), ‘Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non Residential Customers’, Market Review, ComReg 12/117, October 26th, para 4.176.

⁷¹ Ibid., para 4.175.

⁷² Ibid., para 4.179.

⁷³ Ibid., para 4.183.

⁷⁴ Ibid., para 3.50.

⁷⁵ Ibid., para 4.194.

⁷⁶ Ibid., para 4.203.

The OAOs agreed with ComReg's preliminary view. For example, Vodafone noted that 'a portion of the market are not choosing between fixed and mobile on the basis of substitution but rather this market segment increasingly views mobile service as baseline and FVA as incremental and discretionary'.⁷⁷ BT and ALTO referred to the European Commission's view that there is insufficient evidence to prove that fixed and mobile access belong to the same market. Magnet agreed with ComReg's conclusion, but clarified that 'with the falling fixed termination rates and mobile termination rates and higher broadband speeds across mobile networks, mobile phones will become more a substitute product as opposed to a complementary product'.⁷⁸

Conversely, eircom concluded that mobile voice services impose a significant constraint on providers of fixed voice-only services, and thus that both services should be considered as part of the same relevant market. It argued that the market definition analysis should distinguish between voice-only users and those who buy voice bundled with other services (eg, broadband). eircom considered that mobile services are an effective substitute for FVA in the case of the former type of users, given that:

- the proportion of mobile-only households was increasing;⁷⁹
- the functionality of mobile is similar to, or even more advanced than, fixed-line telephony;⁸⁰
- marginal customers with a low level of consumption and high price sensitivity are likely to perceive mobile as a close substitute for fixed;⁸¹
- 'the expected reductions in the Department for Social Protection (DSP) subsidy will increase the substitution towards mobile services by fixed customers';⁸²
- the introduction of naked broadband services will also 'increase the pressure that mobile voice services exert over fixed voice services for customers who also acquire fixed broadband services'.⁸³

Finally, eircom disagreed with ComReg's view that fixed voice services are generally cheaper than mobile voice services. eircom based its argument on cross-country comparisons of the mobile voice premium, which illustrate that the 'premium' for mobile service (over the price of fixed voice services) has been falling sharply and has been negative in Ireland since 2008, and that such a 'premium' will continue declining as the DSP subsidy reduces.⁸⁴ Figure 5.1 summarises ComReg's and eircom's views on fixed–mobile substitutability.

⁷⁷ Vodafone (2013), 'Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non Residential Customers', Response to ComReg's Consultation 12/177, January 25th, p. 12.

⁷⁸ Magnet (2013), 'Submission to Consultation 12/117', January, p. 3.

⁷⁹ eircom (2013), 'Response on behalf of eircom Group to ComReg Consultation 12/117', January 25th, p. 22.

⁸⁰ Ibid.

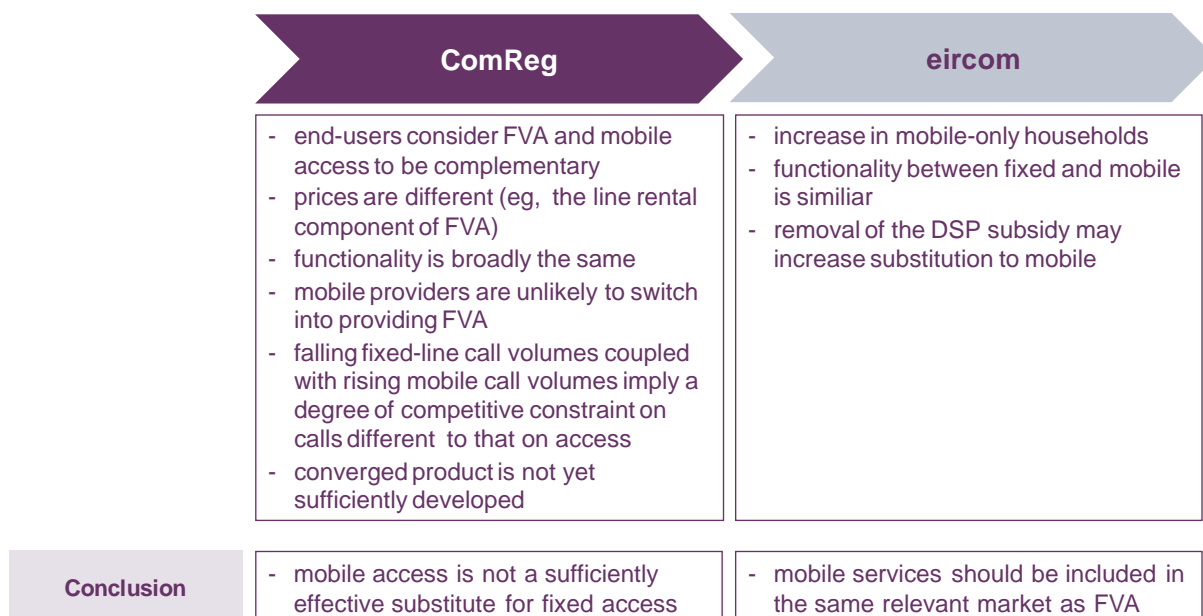
⁸¹ Ibid., p. 36.

⁸² Ibid.

⁸³ Ibid., p. 34.

⁸⁴ Ibid., p. 36.

Figure 5.1 ComReg and eircom positions on fixed–mobile substitutability



Source: Oxera based on ComReg (2012), 'Market Review: Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non Residential Customers', October; ComReg (2013), 'Submissions received in response to Consultation - Market Review: Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non Residential Customers', January 28th.

5.2 Oxera's assessment

Oxera has analysed the evidence on fixed–mobile substitutability by assessing the merits of the arguments and evidence put forward by ComReg and the respondents (in particular, eircom); and carrying out an illustrative SSNIP test, based on the data available.

5.2.1 Assessment of arguments put forward

According to eircom, the proportion of households moving towards mobile-only access has increased over time and now represents 36% of households. ComReg's analysis of the survey shows that these households are associated with particular characteristics, such as young, low-income and rented households. Furthermore, it shows that other customer types such as elderly people, homeowners and businesses, remain more attached to fixed access services.⁸⁵ This suggests that non-price factors may be important drivers of the demand for FVA, thereby limiting the extent to which the pricing of mobile services constrains providers of FVA services.

Furthermore, the market dynamics of call and line volumes show different competitive constraints for calls and access. As pointed out by ComReg, a high proportion of consumers have decided to retain their fixed line at the same time that fixed-line volumes have been declining while mobile volumes have been increasing (since 2007, although there have been some reductions in mobile volumes in the last few quarters—eg, mobile minutes fell 4.1% between Q1 2013 and Q1 2012).⁸⁶ This suggests that fixed–mobile substitutability may be stronger for calls than for access. This is further supported by the survey results, which indicate that 59% of households have both fixed and mobile access.⁸⁷

In terms of functionality, the stakeholders agree that both mobile access and FVA can be used as substitutes for making and receiving voice calls. However, eircom argues that mobile

⁸⁵ ComReg (2012), 'Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non Residential Customers', Market Review, 12/117, October 26th, para 4.178.

⁸⁶ ComReg (2013), 'Quarterly Key Data Report', June, p12.

⁸⁷ ComReg (2012), 'Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non Residential Customers', Consultation (Appendix A), 12/117a, October 26th, p. 18.

access provides the additional advantage of mobility; while ComReg argues that mobile services have the disadvantage of lower Internet access speeds and capabilities. The comparability of Internet access services between fixed and mobile access is important because, as shown by the survey, 54% of end-users who decide to keep FVA do so with the purpose of having a broadband connection.⁸⁸ To the extent that such quality differences remain (which is likely, even with the introduction of 4G mobile services), mobile access and FVA will be unlikely to be considered close substitutes at least for households that value broadband access.

eircom also argues that fixed–mobile substitution will be stronger for marginal FVA end-users, which are typically voice-only with low usage, thus concluding that a price increase would be likely to lead to a significant switch of this type of mobile service user. Although ComReg recognises that switching to mobile services is most attractive for low-usage customers, it argues that such switching could be limited by the fact that eircom offers low-cost access through its vulnerable-user scheme or ‘Talktime control’ package and the government’s free rental scheme, both of which are targeted at low-usage consumers.⁸⁹

eircom’s response seems to suggest that bringing calls into the market increases the likelihood that mobile could be found to be a substitute and/or that the market could be found to be competitive as a result of greater competition for the calls component of the FVA and calls bundle.

eircom further argues that the reduction of subsidies within the free-rental scheme, which it says applies to \times % of fixed voice-only end-users, could lead to marginal end-users having an even higher propensity to switch to mobile services.⁹⁰ However, such consumers would still have the option of keeping the fixed line under eircom’s vulnerable-user scheme or ‘control’ phone plans, which have characteristics more similar to pre-paid mobile offers. Also, in this case, non-price factors could remain important in the consumer’s decision on whether to keep the fixed line, as supported by the survey results.⁹¹

Overall, while it would be reasonable to continue monitoring the developments (eg, the take-up of naked DSL), there is no strong evidence to suggest that fixed access and mobile access are sufficiently effective substitutes. However, in principle, the question should be assessed by using a SSNIP framework.

Illustrative SSNIP test

The consumer survey has information on price sensitivity of end-users that could be used to perform a SSNIP test. The same caveats discussed in section 3.3.3 on the survey apply to this case. Therefore, the survey is used only to inform the likelihood that a SSNIP could be unprofitable given the available data. In other words, the SSNIP test will be carried to investigate whether the circumstances under which the actual loss would exceed the critical loss would seem plausible.

The survey provides information on price sensitivity both for respondents who answered that they would definitely change their behaviour and for those who were uncertain of doing so. Note also that respondents in surveys tend to overstate what they would actually do if faced with a real decision. Therefore, the results are likely to overestimate the actual loss from a SSNIP. In the absence of information on this bias, the analysis below is based only on respondents who said that they would definitely change their behaviour.

⁸⁸ ComReg (2012), ‘Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non Residential Customers’, Consultation (Appendix A), 12/117a, October 26th, p. 43.

⁸⁹ ComReg (2012), ‘Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non Residential Customers’, Market Review, 12/117, October 26th, para 4.182.

⁹⁰ eircom (2013), ‘Response on behalf of eircom Group to ComReg Consultation 12/117’, January 25th, p. 35.

⁹¹ ComReg (2012), ‘Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non Residential Customers’, Consultation (Appendix A), 12/117a, October 26th, p. 43.

The SSNIP in Figure 3.2 (on an FVAC focal product) is also relevant here. It indicated that the market was no broader than FVAC; in this context, this would imply that the market does not belong within the same relevant market as FVAC.

The survey also asked questions about price sensitivity to those consumers who thought about line rental and calls separately. Of this sub-sample, the portion that bought a non-bundled product was too small to draw meaningful inferences (n=25). However, the portion that bought a bundle and thought about line rental and calls separately was larger (n=74) and therefore more suitable for analysis. Table 5.1 shows the results of this question demonstrating that a 10% increase in the line rental price would cause some consumers to cancel their fixed line and switch to mobile services.

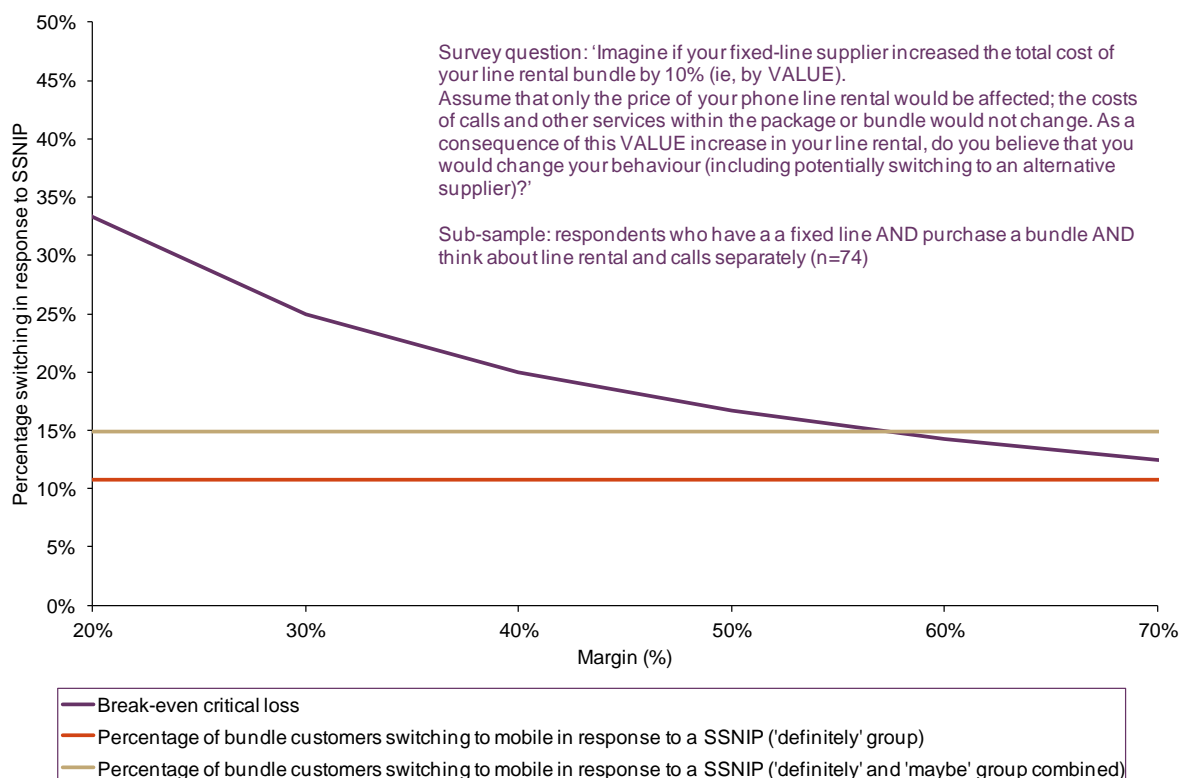
Table 5.1 SSNIP analysis sub-samples for bundle customers

Stratum	Description	Definitely change	May change	Respondents, combined
Target population	Respondents who have a fixed line AND do not purchase a bundle AND think about line rental/calls separately			74
1	Respondents who would change behaviour in response to a 10% increase in the line rental	30	18	48
2	Respondents who would change by cancelling their fixed-line subscription	10	5	15
3	Respondents who would change by cancelling their fixed-line subscription and using a mobile phone instead	8	3	11
SSNIP test (cancel and use mobile)	Stratum 3/target population	11%	4%	15%

Note: Some response categories appear to be recoded at a lower stratum.
Source: Oxera analysis of survey data supplied by ComReg.

This implies that between 11% and 15% of bundle customers would switch to mobile if the line rental price were to increase by 10%. These values have to be compared against the volume critical loss that would make the 10% price increase unprofitable. As indicated in Box 3.2, the plausible margin for the purposes of critical loss is likely to be between 20% and 60%. Thus the SSNIP is likely to be profitable and the market to be no wider than FVA sold inside or outside a bundle—ie, mobile access is not a substitute. Figure 5.2 illustrates the above results for different assumed margins.

Figure 5.2 Fixed–mobile substitution SSNIP test compared with critical loss (residential bundle consumers)



Note: Break-even critical loss represents the level to which a hypothetical monopolist could increase prices while still achieving its initial level of profit. Intuitively, it captures what a monopolist 'could' do.
Source: Oxera.

Other evidence

Other evidence suggests that consumers are conscious of differences between fixed and mobile and that most consumers have both. When asked why they retained a fixed line, survey respondents gave reasons such as that it is cheaper to make some types of calls (73%), they prefer to use a fixed line for longer calls (64%), the quality of the line (55%) and access to broadband (54%). ComReg's survey also showed that 69% of businesses said that a fixed-line phone was important for the day-to-day functioning of their business.

Overall, both the SSNIP test and other evidence taken together suggested that mobile access was not a sufficiently strong substitute for FVA for the two products to be considered in the same market.

5.3 Conclusion

There are two possible outcomes for an assessment of whether mobile access is part of the FVA market:

- consistent with ComReg's consultation, mobile access may be found not to be part of the FVA market. If so, the SMP findings would be consistent with those in the consultation; namely, that eircom has SMP over the provision of FVA;
- mobile access may be found to be a sufficiently effective substitute for FVA, in which case there are substantial implications for an SMP finding. The likelihood of finding SMP in a wider market of FVA and mobile access is small, and thus there would be a case for removing regulatory remedies.

On the basis of the findings described above, there is no strong evidence to suggest that fixed and mobile access are effective substitutes. In addition to the qualitative factors, indications from the SSNIP test imply that FVA is a market in its own right. However, it is also accepted that mobile access is a candidate for being one of the closest substitutes to FVA, and it therefore seems advisable to monitor market developments over the forthcoming regulatory period.

However, it is also accepted that mobile access is a good candidate for being one of the closest substitutes to FVAC. This because, in future, 'naked DSL' (ie, DSL-based broadband sold without FVAC) may become more prominent, and because new wireless technologies—in particular, 4G—will increase the broadband speeds that are available over mobile. While these developments are not yet present in the Irish market, it nevertheless seems advisable to monitor market developments over the forthcoming regulatory period.

6 Market definition options: implications for remedies

This report has reviewed the available evidence to provide an assessment of what could be plausible scenarios for market definitions in the fixed access markets. As has been made clear throughout the report, market definition should be used and interpreted as a means to an end, not as an end in itself. Specifically, it is ComReg's objective to ensure that regulatory remedies are targeted and designed to address competition problems that would prevail in the absence of regulation. Regulators should not lose sight of the purpose of the market definition exercise. This is particularly the case in the present context, given that the theoretical and practical challenges (especially surrounding bundles) can make the definition of the specific boundaries of product and geographic markets unmanageable (see section 3).

Therefore, where there is uncertainty about the specific boundaries of the relevant markets, it is expected and appropriate that regulators would exercise discretion. This regulatory judgement is based on understanding the implications of different market definition scenarios for the finding of SMP and the consequent design of appropriate remedies.

6.1 Key remedies that currently depend on the FVA review

In the present context, it is Oxera's understanding that two main types of remedy at the retail level are of particular importance, and may depend on the outcome of the Market 1 review: retail price controls on FVA, and the obligation not to bundle unreasonably. As previously noted, the access remedy SB WLR/CPS which is also of importance in supporting competition in FVA (and calls) on a national basis is proposed to be transferred from the retail to the wholesale market, market 2 respectively.

6.1.1 Retail price controls

If eircom possesses market power with respect to retail voice services, in the absence of remedies, it would have the incentive and ability to raise prices to the direct detriment of consumers who avail themselves of FVA services. This concern may be particularly relevant in the context of those consumers who currently purchase their voice services on a stand-alone basis and do not value broadband to such an extent that they would switch to (more competitively priced) bundled services, or to mobile only.

It therefore appears reasonable to exercise caution in drawing conclusions about the market definition. As a guiding principle, where the evidence is inconclusive, it would seem advisable to opt for a market definition that does not put the imposition of RPCs at risk where they are necessary and proportionate. There are some specific scenarios that warrant careful consideration.

- **Stand-alone cohort of consumers.** eircom's market share is declining regardless of whether bundles are treated as part of the wider FVA or defined as a separate market. This does not imply that eircom would not possess market power with respect to those consumers who would not switch to bundles in response to small price increases (simply because they do not value broadband sufficiently). Thus, if ComReg were to follow the status quo market definition (FVA including bundles), its SMP assessment and the design of remedies may need to recognise the distinction between the cohort of consumers who place value on broadband and those who do not. The latter cohort is likely to be less competitive, and hence there is sound rationale to protect these consumers. In addition to targeting SMP regulations at less competitive segments, ComReg has powers to continue imposing appropriate universal service obligations (USOs) on eircom, and hence to ensure affordable price levels for captive voice consumers, even in the absence of SMP.

- **The link between retail price controls and SB-WLR prices.** The RPCs have an indirect impact on the FVA connections sold as bundles, given that the regulated retail price sets the basis for the relevant wholesale access product. Specifically SB-WLR, a wholesale component of the bundles sold by the OAOs, is regulated on a retail-minus basis. This means that the wholesale price is derived by subtracting a ‘minus’ (reflective of retail costs) from the regulated retail price. Given that competition, and customer switching, is taking place mainly in the bundles segment, eircom would be less likely to charge excessive FVA prices when FVA is part of a bundle.⁹² However, ComReg would need to (and currently does) exercise some caution in defining the boundaries of the relevant FVA market before concluding that no operator holds SMP. The risk of too broad markets (eg, including mobile or defining broad competitive geographic markets) is that the retail *and*, therefore, SB-WLR prices become unregulated in areas where eircom does not face sufficient competitive pressure to keep the wholesale prices at a competitive level. One solution is to impose cost-based price ceilings on SB-WLR rather than linking it with the retail price.

These scenarios highlight the importance of the RPC with respect to certain customer groups and geographic areas. Oxera does not suggest that deregulation should be avoided even in markets that are becoming competitive; rather, it is advisable to exercise caution where there is uncertainty. In practice, ComReg may opt for a conservative option at the market definition stage, and retain its discretion to adjust remedies in accordance with the competition problems identified.

6.1.2 **Obligation not to unreasonably bundle**

In the responses to ComReg’s consultation, it is apparent that, from the OAOs’ perspective, it is essential that the obligation not to unreasonably bundle be retained. This obligation underlies the analytical framework for ComReg to assess whether eircom’s bundling of additional products with its line rental services could be considered ‘unreasonable’ and has been based on ComReg’s prevailing retail (narrowband) regulation.⁹³ The regulation is implemented as the net revenue test, which effectively ensures that OAOs can replicate eircom’s bundles and that margin squeeze is prevented *ex ante*.

The legal underpinning thus far has built on the notion of *horizontal leveraging* of market power—from the market of retail narrowband access to other competitive, or prospectively competitive, retail markets included in eircom’s bundles (eg, broadband). This is why the remedy has been imposed historically in Market 1. However, eircom could also engage in margin squeeze at the level of a bundle and foreclose entry through its pricing of one of the wholesale inputs with respect to which it has SMP. Indeed, by definition, margin squeeze is a form of *vertical leveraging*, whereby a ‘vertically integrated company attempts to exploit a position of dominance in an input market to restrict competition in a competitive downstream market’.⁹⁴ The net revenue test is a way to ensure that vertical leverage is not exercised.

In the context of eircom’s bundles, partly the same upstream network is used for the provision of different retail products, and anti-competitive effects can arise by virtue of a position of market power in one of the downstream markets *or* in the upstream market. Consequently, there is a risk that eircom’s bundles become unreplicable because of its wholesale pricing. As a result, OAOs in the retail market may not be able to earn a sufficient margin between the access price they need to pay and the lower retail price they would receive to compete with the incumbent—including on a bundle-to-bundle basis, which in turn would distort the choice of bundles.⁹⁵ Notably, the current state of retail competition in

⁹² The differences in bundle competition, as well as indications of retail pricing constraints in the LEA-bundle segment, relative to stand-alone are discussed in sections 3 and 4.

⁹³ This was also noted as the legal underpinning in the more recent report proposing certain adjustments to the net revenue test. See Oxera (2011), ‘Conceptual framework for the assessment of eircom’s bundles: Adjustments to the net revenue test’, September.

⁹⁴ Niels, G., Jenkins, H. and Kavanagh, J. (2011), *Economics for Competition Lawyers*, Oxford University Press, March, p. 239.

⁹⁵ By way of an example, this logic is consistent with Ofcom’s recent decision to regulate BSkyB’s wholesale pay-TV offerings coupled with a ‘safeguard’ remedy in relation to bundles: ‘Where Sky bundles additional products with Core Premium channels,

bundles is partly based on the bundling obligation (and the net revenue test) imposed on eircom; hence, it would be incorrect to remove the remedy not to unreasonably bundle on a finding that the retail market is competitive if it is competitive only because of the suite of remedies currently imposed on eircom.

As regards the obligation to offer FVA on a stand-alone basis (ie, the element of the obligation ‘not to unreasonably bundle’ dealing with concerns of horizontal leverage), a potential finding of no SMP in certain segments of the retail market would result in ComReg having to remove this remedy altogether. As noted above in the RPC discussion, to the extent that there is uncertainty over the effectiveness of competition to act as a constraint on eircom’s ability to exploit captive voice customers, it may be premature to remove this aspect of the ‘not to unreasonably bundle’ obligation.

Therefore, if ComReg were to find (some segment of) the retail market to be competitive, the risk is that (other remedies left unchanged) eircom would not have to comply with the net revenue test. The rationale for preventing margin squeeze in an ex ante regulatory context stems from the finding of market power in the upstream market. It would therefore seem appropriate in this circumstance to impose the obligation not to unreasonably bundle as a wholesale remedy, specifically as part of the SB-WLR and WBA.

6.2 Implications of plausible market definition scenarios

Table 6.1 summarises Oxera’s conclusions on what could be plausible market definition scenarios. These scenarios are those identified as plausible in sections 3–5. There are other potential outcomes, such as the inclusion of mobile in the FVA market, which would be most likely to result in a finding of no SMP. However, Oxera has not found strong evidence to suggest that fixed and mobile access or calls should be treated as effective substitutes. The options set out in the table are elaborated in detail below. Note that it has not been part of Oxera’s remit to carry out complete SMP assessments for different market definition scenarios. Therefore, the information in the table should be interpreted as an indicative illustration of what the SMP assessment could conclude, in order to understand what the implications could be for remedies.

Table 6.1 Plausible market definition options and implications for remedies

Option/product dimension	Geographic dimension	Possible SMP finding?	Implications for retail remedies	Implications for complementary wholesale level remedies
Option 1: definition A only	National	Yes	Unchanged	Unchanged
Stand-alone FVA(C)				
Option 2: definition B only, or set 3 (equivalent to ComReg’s approach)	National	Yes	Possible relaxation of RPC (eg, removal of RPC from the HLVA market)	Unchanged (except for taking account of competitive dynamics in the design of the remedy— eg, pricing flexibility in the LEA in the net revenue test)
FVA(C), whether sold inside or outside of bundles, national				
Option 3: definition B only, or set 3	Non-LEA LEA	Yes No?	No change in non-LEA Possible removal of all remedies in LEA	Unchanged in non-LEA Possible impact on NRT. May transition to a wholesale margin squeeze test.
FVA(C), whether sold inside or outside of bundles, LEA non-LEA				

there is a risk that it can leverage its upstream market power to distort downstream competition.’ Ofcom (2009), ‘Pay TV phase three document: Proposed remedies’, June 26th, para 7.76.

Option/product dimension	Geographic dimension	Possible SMP finding?	Implications for retail remedies	Implications for complementary wholesale level remedies
Option 4: set 2	Market 1 National	Market 1 Yes	Market 1 No change	Market 1 Unchanged
Two markets: (1) stand-alone FVA(C) sold outside bundle (2) FVA sold inside of bundles of broadband	Market 2 Non-LEA LEA	Market 2 Yes No	Market 2 No change All remedies removed in LEA	Market 2 Unchanged Possible impact on NRT. May transition to a wholesale margin squeeze test.
Option 5: set 4	Market 1 National or LEA/non- LEA split?	Market 1 'Yes' in non- LEA; possibly 'no' in LEA	Market 1 Possible removal of all remedies in LEA	Markets 1 and 2 Unchanged under a national or non-LEA definition Possible impact on NRT in LEA. May transition to a wholesale margin squeeze test.
Two markets: (1) FVA(C), whether sold inside or outside of bundles (2) FVA sold inside of bundles of broadband	Market 2 Non-LEA LEA	Market 2 Yes No	Market 2 No change All remedies removed in LEA	

Source: Oxera.

Option 1: definition A only, stand-alone FVA(C)

Under this option, ComReg would define the narrowest possible market retaining. It would be likely that such a market would be found to be national and there would be a strong basis for retaining the RPC to protect these consumers.

Option 2: definition B only or set 3, FVA(C), whether sold inside or outside of bundles, national

Under this option, ComReg would retain its current position and hence define the market as the FVA including bundles, and the finding of SMP and the design of remedies would remain unchanged.

Oxera considers that this option is reasonable, given that the evidence is mixed on the market definition for bundled services and the geographic markets, which in turn are contingent on the relevant product markets. However, if this option is implemented, it would seem advisable for ComReg to recognise the differences in competitive conditions with respect to bundles, as well as sales of bundles in the LEA and non-LEA areas. eircom's arguments are not without merit in this respect, and Oxera's assessment suggests that there are indeed structural differences in competitive conditions. In designing remedies, ComReg could reflect these differences.

Option 3: definition B only, FVA(C), whether sold inside or outside of bundles, LEA non-LEA

This option would follow the same product market definition as option 2, but make a distinction between the LEA and non-LEA in the geographic definition of the market. Again, there are reasons to suggest that the competitive conditions vary between these two areas. However, it is not clear-cut whether ComReg would find 'no SMP' even within the LEAs, given that eircom's market share of stand-alone customers is still relatively high and somewhat dilutes the overall competitiveness of the relevant product market (which in this case would be as wide as FVA including bundles).

If 'no SMP' were ComReg's conclusion inside the LEA, the RPCs would be removed, as would the obligation not to unreasonably bundle. In such a scenario, ComReg could ensure competitive conditions in the bundles segment by imposing the net revenue test as a wholesale remedy (SB-WLR and/or WBA).

Option 4: set 2, two markets: (i) stand-alone FVA(C) sold outside bundle (ii) broadband bundles

This option, essentially akin to what is proposed by eircom (apart from the mobile aspect), would be likely to lead to an outcome where ComReg would find that eircom possesses SMP in the non-LEA (both bundles and stand-alone) as well as inside the LEA with respect to stand-alone offers. The market evidence indicates that the finding of SMP would be unlikely for bundles within the LEAs.

The removal of SMP and all the remedies would require that the net revenue test be imposed as part of SB-WLR and/or WBA decisions. The removal of retail price controls would not be a concern, given that eircom is unlikely to engage in excessive retail pricing in the bundles segment of the market, as is evidenced by its current and planned pricing behaviour (discussed in section 3).

Option 5: set 4, two markets: (i) FVA(C), whether sold inside or outside of bundles (ii) broadband bundles; overlapping markets

This option would include the non-unique markets reflective of asymmetric substitution: bundles may be a substitute for stand-alone FVA, but stand-alone FVA may not be a substitute for bundles.

The regulatory implications of this option would depend on whether the FVA sold inside or outside the bundles would be found competitive inside the LEA. In such a scenario, the retail remedies including RPC would be lifted. The remedies would also be lifted from all bundles sold within the LEAs. As in the above options, this would mean that ComReg would need to retain the appropriate regulations through wholesale remedies.

7 Conclusions

As part of the review of the retail FVA market (Market 1 of the relevant markets susceptible to ex ante regulation), ComReg asked Oxera to assess whether its proposed conclusions on market definition are appropriate from an economics perspective and whether they are consistent with recent market developments and the available market evidence. Oxera was also asked to articulate an economic framework for market definition in the context of FVA and to recommend appropriate policy options.

A central message of this report is that market definition is not an end in itself, and what ultimately matters is how the overall regulatory framework is designed to deal with the competition problems in the market. With this in mind, Oxera reviewed the available evidence, including the responses to ComReg's consultation, and carried out additional analysis using established market definition tools. Although the evidence on market definition is not always clear-cut and conclusive, Oxera's conclusion overall is that ComReg's proposals on market definition are reasonable, particularly given the overall regulatory framework for FVA that ComReg has developed and implemented over the last few years.

Oxera's assessment focused on three aspects of the FVA market:

- **bundles**—assessing whether bundles should be the focal product of the market definition exercise, as well as whether FVA sold inside a bundle is a relevant market in its own right;
- **geographic aspects**—assessing whether geographic differences in competition are sufficiently strong to define separate markets;
- **fixed–mobile substitution**—assessing whether mobile access is a sufficient constraint on fixed access to belong to the same relevant market.

Oxera developed a conceptual framework to define the FVA market based on the well-established 'hypothetical monopolist' test. In this framework, the first key question is whether the focal product of the exercise should be stand-alone FVA, or FVA sold inside a bundle. Having identified a number of criteria to answer this question, Oxera applied these to the Irish market. Consistent with ComReg's approach, Oxera concluded that there are strong reasons to use stand-alone FVA as the focal product, given that the regulator's competition concerns pertain predominantly to stand-alone voice services—specifically, the risk of eircom charging retail prices that are too high, or leveraging a strong position in retail and wholesale FVA markets to adjacent markets through bundling.

In relation to whether FVA sold inside a bundle is part of the same relevant market as stand-alone FVA, Oxera found the evidence to be less clear-cut. However, Oxera concluded that ComReg's decision to include FVA sold inside and outside bundles in the same market is reasonable since the nature of the remedies imposed on eircom would have been substantially similar in the alternative scenario where stand-alone FVA and bundles are identified as separate markets—this is explained in further detail below. Having defined the market in this way, Oxera concluded that, consistent with the conceptual framework, ComReg was not compelled to start another market definition exercise taking bundles as the focal product.

Furthermore, ComReg's decision to define a national market for FVA sold inside and outside bundles is reasonable because differences in competitive conditions are already being captured in the design of remedies—most notably, in the 'net revenue test'. As regards the substitutability between fixed and mobile voice access, Oxera concludes that ComReg's

approach to keep them separate is also reasonable as the evidence that mobile access places a sufficiently effective competitive constraint on fixed access is not strong enough.

Based on this analysis, Oxera identified a number of plausible scenarios for market definition, two of which are recommended:

- **recommended option 1**—a national relevant market for FVA (with calls), whether sold inside or outside bundles. This is ComReg’s original market definition as set out in the consultation;
- **recommended option 2**—two separate relevant product markets: a national market for stand-alone FVA (and calls); and FVA sold inside of bundles of broadband, split by geography between the LEA and non-LEAs.

In the present context, the two retail remedies that are arguably the most important (in that they most directly address the key competition concerns) are the RPC and the obligation not to unreasonably bundle. Either of the recommended market definitions would allow ComReg to design remedies that ensure the replicability of eircom’s bundles, and mitigate or remove any concerns about excessive pricing of FVA at the retail level. If ComReg were to adopt recommended option 2 in future (or in any case option 1), it could ‘transfer’ the net revenue test element of the ‘not to unreasonably bundle’ remedy from the retail to the wholesale market. Given that the competition concerns underpinning the net revenue test stem primarily from vertical leveraging (from wholesale to retail), there would be a sound economic rationale for doing so, regardless of the conclusions on market definition in this market review.

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