



Europe Economics

WACC update for the Irish mobile, fixed-line, and broadcasting sectors

June 2022

Europe Economics
Chancery House
53-64 Chancery Lane
London WC2A 1QU

Tel: (+44) (0) 20 7831 4717
Fax: (+44) (0) 20 7831 4515

www.europe-economics.com



Contents

1	WACC Update.....	2
1.1	Introduction	2
1.2	Inflation.....	2
1.3	Risk-free rate	2
1.4	Total Market Return (TMR) and Equity Risk Premium (ERP).....	3
1.5	Beta	4
1.6	Debt premium	8
1.7	Summary of WACC parameters based on recent data	10
1.8	Cost of equity update	10
1.9	Cost of debt update	11
1.10	Summary of WACC update.....	11
2	Annex: Implications of National Broadband Plan	13
2.2	Reminder of the methodology used for assessing the Fixed Line WACC.....	14
2.3	Ways the relevance of the comparators could potentially be affected by the NBP	15
2.4	Impact on the WACC of the situation giving rise to the NBP and of the policy.....	17
2.5	Summary and Conclusion	19

1 WACC Update

1.1 Introduction

This paper provides an update of the WACC for the Irish telecommunication sector based on the updating methodology set out in our report “The Cost of Capital for the Irish Communications Sector — Final Report” published in October 2020 and dated May 2020 (henceforth the “2020 Report”).¹ This report represents the second WACC update, and follows a first update carried out in a separate report published in June 2021 and dated May 2021 (henceforth the “2021 Update Report”).² This report is structured as follows:

- We first provide an update of each WACC parameter, namely:
 - Inflation
 - Risk-free rate
 - Total Market Return (TMR) and the Equity Risk Premium (ERP)
 - Asset beta.
 - Debt premium.
- We then provide updated figures for the cost of equity, the cost of debt, and the overall WACC.

1.2 Inflation

Figure from our 2021 Update Report: 1.7 per cent

The European Commission Notice suggests using the 5-years-ahead Eurozone inflation forecast published by the European Central Bank (ECB). At the time of writing this report the longer term (5-years ahead) inflation forecast of the ECB³ is 2.1 per cent.

Updated figure: 2.1 per cent

1.3 Risk-free rate

Figure from our 2021 Update report: -1.16 per cent

The European Commission’s method for estimating the risk-free rate prescribes:

- using domestic government bonds with a residual maturity of 10 years;
- using an averaging period of 5-years;
- calculating average values based on the arithmetic mean; and
- using data with a weekly frequency.

Consequently, under the EC Notice’s proposed methodology, the risk-free rate for Ireland is determined by the 5-year average of weekly yields obtained from Irish government bond with a residual maturity of 10-years. Under such an approach, the Irish nominal risk-free rate at 27 May 2022 is 0.434 per cent. The value

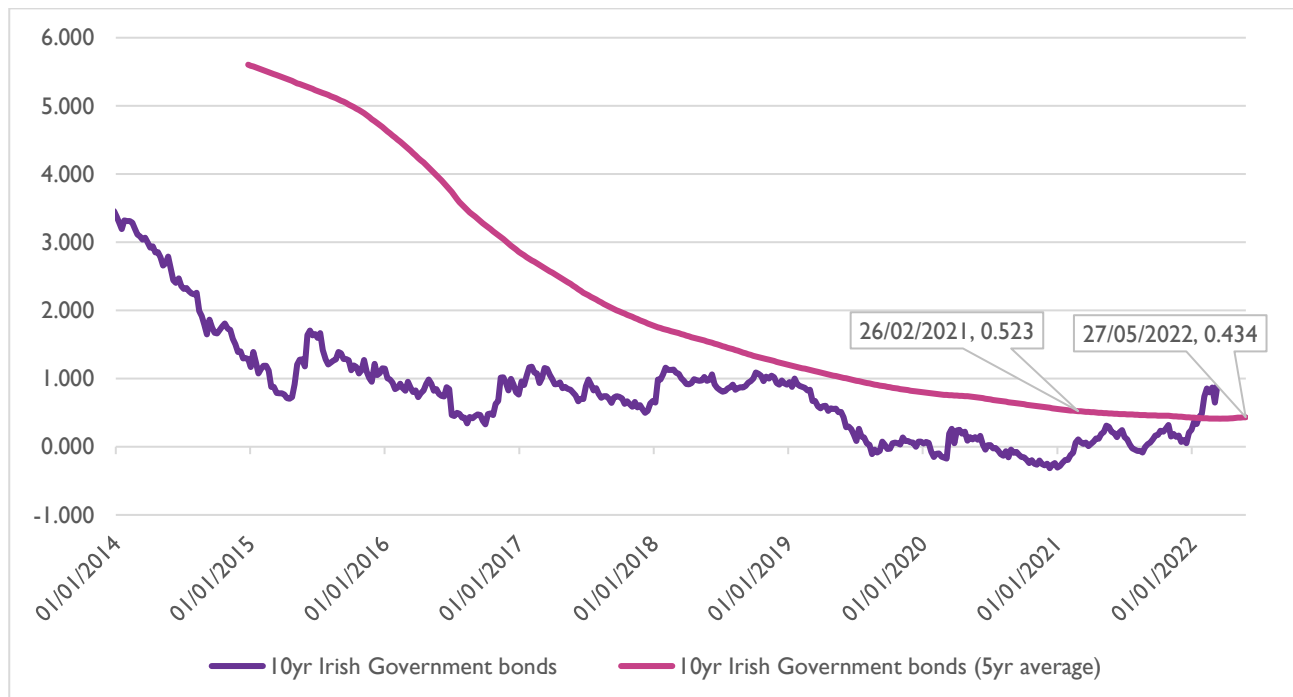
¹ See <https://www.comreg.ie/publication-download/the-cost-of-capital-for-the-irish-communications-sector-final-report>

² See <https://www.comreg.ie/media/2021/06/ComReg-2168a.pdf>

³ https://www.ecb.europa.eu/stats/ecb_surveys/survey_of_professional_forecasters/html/table_hist_hicp.en.html, 2022 Q2, reviewed as of 14 June 2022.

at end of February 2021 (i.e. the cut-off date used in the 2021 Update Report) was 0.523 per cent. The evolution of Irish government bond yield is reported in the figure below.

Figure I.1: Recent evolution of 10-year Irish Government bond yield



Source: Thomson Reuters and Europe Economics calculations

Given the inflation assumption of 2.1 per cent the **real-risk free rate** is therefore **-1.63 per cent**.

Updated figure: **-1.63 per cent**.

1.4 Total Market Return (TMR) and Equity Risk Premium (ERP)

Figure from our 2021 Update report: **7.66 per cent**

As we explained in our 2020 Report, for the purpose of implementing the EC approach, we move away from a literal reading of the current EC guidelines which prescribes a direct estimation of the ERP. Instead, we form a view on the appropriate TMR value based on the arithmetic mean of long-term historical series (we note that this specific estimation approach is consistent with EC guidelines) and derive an ERP by subtracting the recommended risk-free rate value from the TMR.

According to the latest DMS figures⁴ the real TMR for Europe is 6.1 per cent whilst the real TMR for Ireland is 7.0 per cent. We use these figures to determine a **real TMR range of 6.1-7.0 per cent**, with a **real TMR point estimate of 6.55 per cent** (i.e. the mid-point of the range). Since the real risk-free rate under the EC approach is -1.63 per cent, the **ERP range is 7.73-8.63 per cent**, with an **ERP point estimate of 8.18 per cent** (the mid-point of the range).

Updated figure: **8.18 per cent**

⁴ See Credit Suisse Global Investment Returns Yearbook 2022.

1.5 Beta

1.5.1 Mobile and fixed-line sector

Figures from our 2021 Update Report:

- Mobile: 0.50
- Fixed line: 0.48

Following the European Commission's recommendation, the relevant comparators' set should be composed of:

- Firms with liquid and frequently traded stocks.
- Firms that own/invest in electronic communications infrastructure.
- Firms with main operations located in the EU.
- Firms with investment grade credit rating (BBB- or above according to S&P rating system).
- Firms not involved in any substantial mergers and acquisitions recently.

The set of relevant telecoms (fixed-line and mobile) comparators that fulfils this criterion is the same set that was chosen in the 2020 Report. The final set of comparators, together with the split of revenues according to the segment where these are generated, is provided in the table below.

Table I.1: Final comparators set for mobile and fixed-line

Company	Country of exchange	Mobile revenues share	Fixed-line revenues share ⁵	Other telecom revenues share
BT	UK	22.48%	28.56%	48.97%
Elisa	FI	60.33%	39.67%	0.00%
KPN	NL	25.90%	30.21%	43.88%
NOS	PT	48.29%	17.66%	34.06%
Orange	FR	42.96%	41.33%	51.72%
Proximus	BE	33.23%	16.36%	50.41%
SwissCom	CH	26.19%	26.70%	47.11%
Telefonica	ES	73.94%	22.13%	3.93%
Tele2	ES	40.71%	27.35%	31.94%
Telekom Austria	AT	45.17%	37.81%	17.01%
Telia	SE	44.55%	16.83%	38.62%
Vodafone	UK	73.84%	26.16%	0.00%

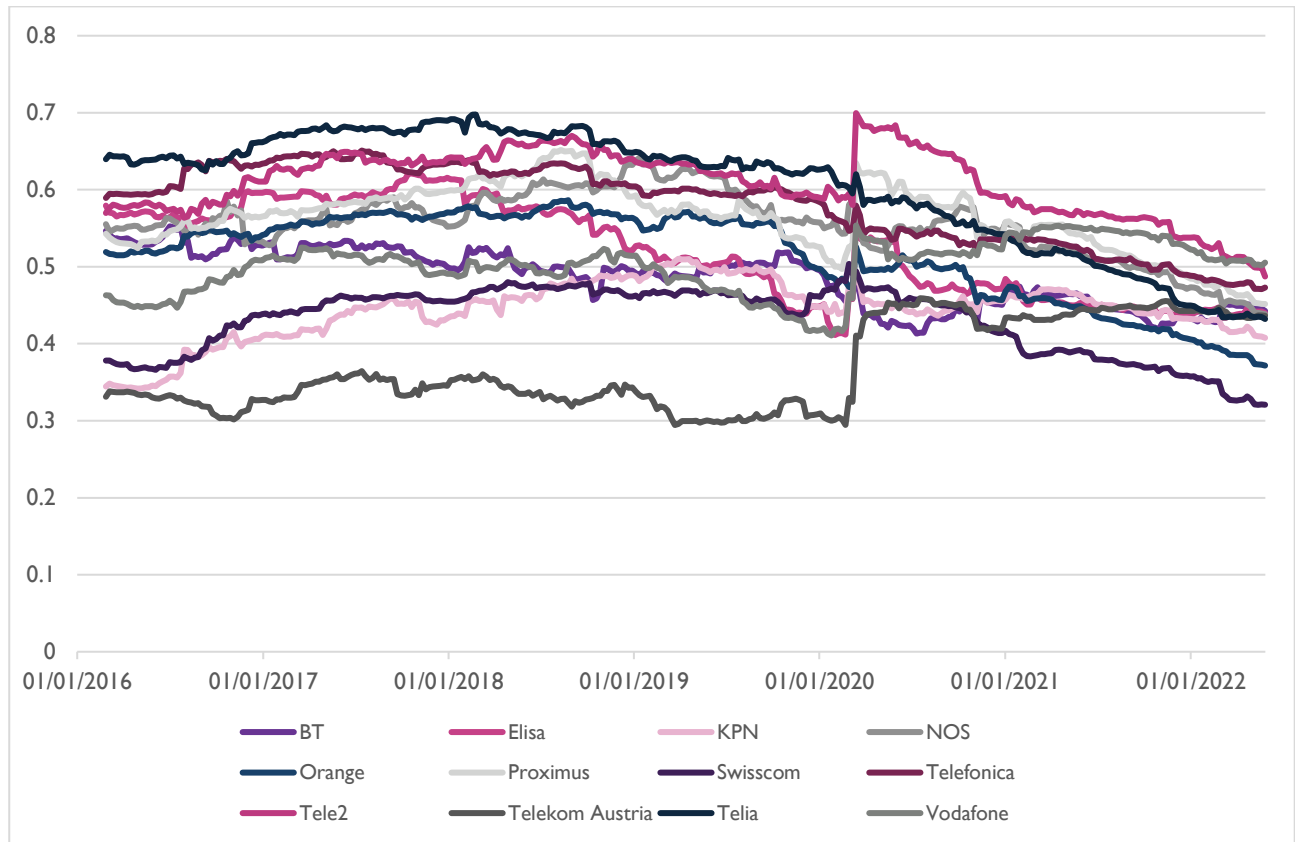
Consistent with the approach in our 2020 report and 2021 Update Report, in order to differentiate between the mobile sector and fixed-line sector unlevered betas, we estimated a weighted average of the operators' betas where the weights are proportional to the share of revenues each company generates from mobile activities and from fixed line activities⁶.

⁵ Fixed-line includes fixed line and broadband.

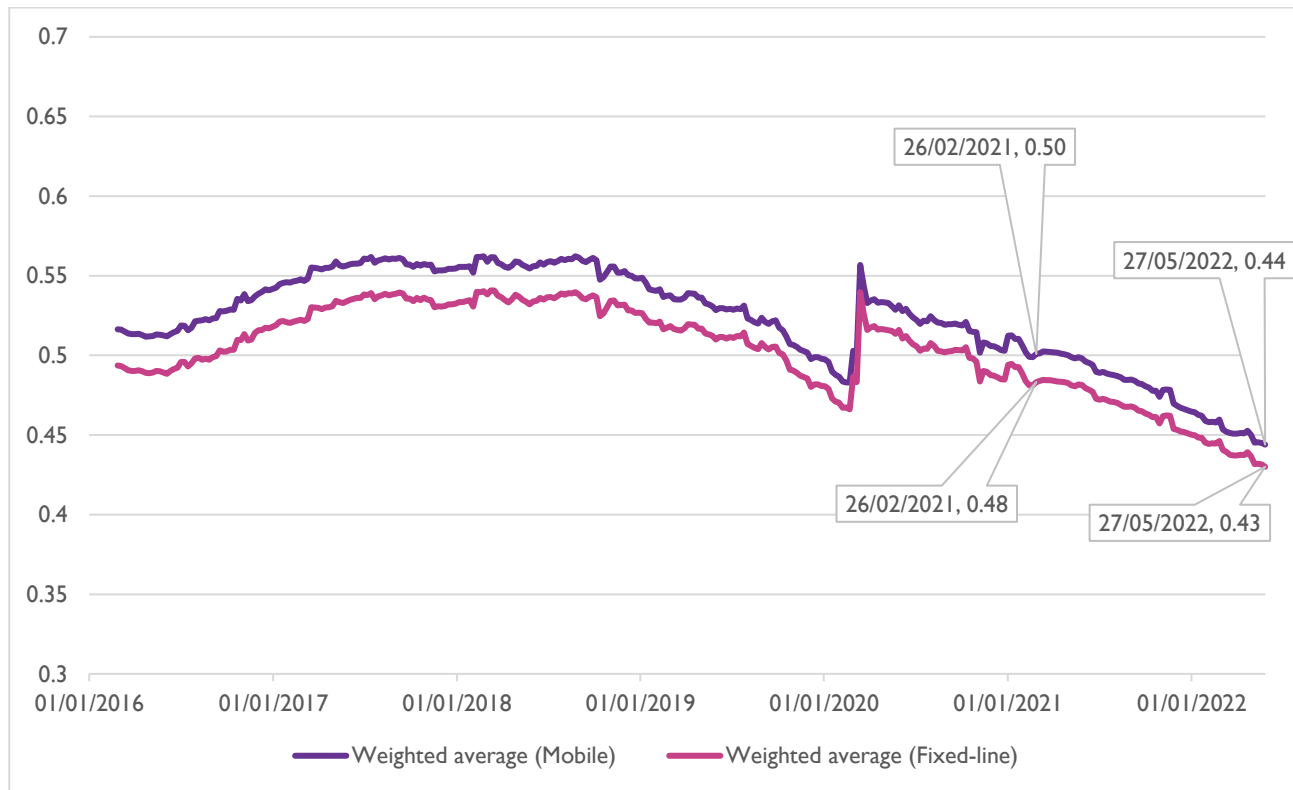
⁶ Assume there two companies: Company A has a 50 per cent share of mobile in its total revenue and Company B has 25 per cent share of mobile in its total revenue. The weighted average would be $(50/75)*\text{Asset Beta A} + (25/75)*\text{Asset Beta B}$

The 5-years weekly beta estimates for all comparators, together with the mobile and fixed-line weighted averages are reported below.

Figure I.2: 5-years weekly unlevered beta for telecom comparators



Source: Thomson Reuters and Europe Economics calculations.

Figure I.3: Weighted average 5-years weekly unlevered beta for mobile and fixed line

Source: Thomson Reuters and Europe Economics calculations.

A summary of the range of beta evidence under the EC approach is reported in the table below.

Table I.2: Summary of unlevered (asset) beta evidence under EC approach (spot values at 29-November-2019)

Company	5-years weekly unlevered (asset) beta
BT	0.44
Elisa	0.44
KPN	0.41
NOS	0.44
Orange	0.37
Proximus	0.45
Swisscom	0.32
Telefonica	0.47
Tele2	0.49
Telekom Austria	0.44
Telia	0.43
Vodafone	0.51
Simple average	0.43
Weighted average (mobile)	0.44

Company	5-years weekly unlevered (asset) beta
Weighted average (fixed line)	0.43

Based on the weighted average figures of the table above, the **asset beta for the mobile sector** is **0.44**, whilst the **asset beta for the fixed-line sector** is **0.43**.

We note that these are material reductions compared to values used in our 2021 Update Report. The spike up in betas that coincided with the start of the pandemic in early 2020, which was still a material contributor at the time of our 2021 report, has now diminished in significance and betas have returned to their longer-term downward trend that was clear from before the pandemic.

Updated figures:

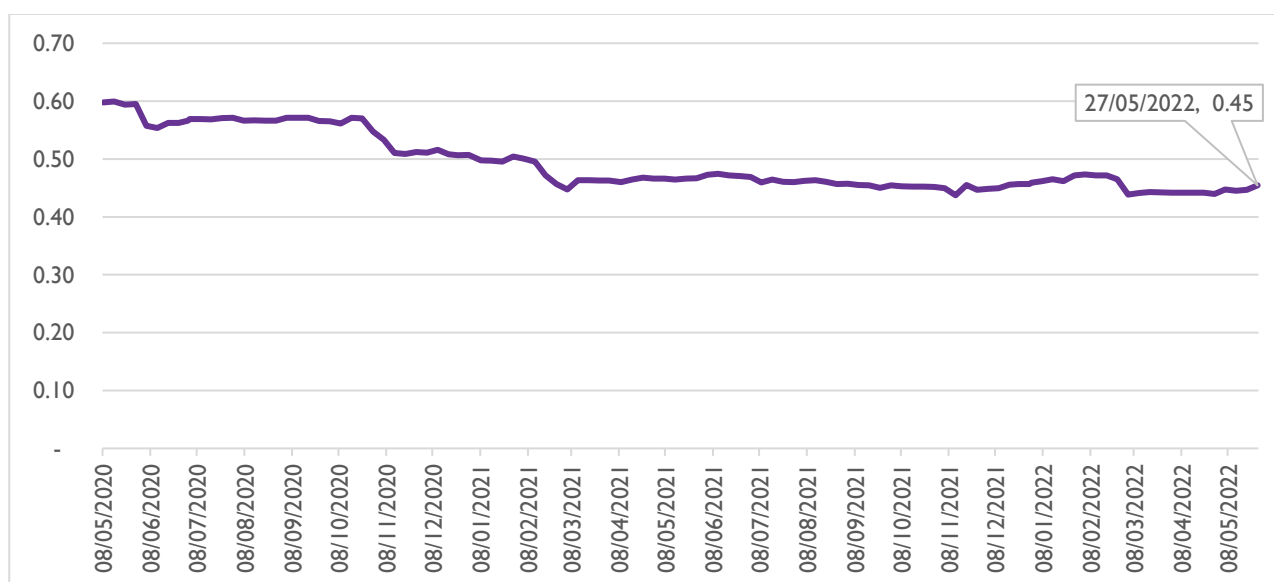
- Mobile: **0.44**
- Fixed line: **0.43**

1.5.2 Broadcasting sector

Figure from our 2020 report: **0.47**

Consistent with the approach taken in our 2021 Update Report, we place most weight on Cellnex as it is the only European-based broadcasting operator. We also note that, whilst Cellnex does not fulfil all the inclusion criteria set out by the European Commission (as it is rated below investment grade), stock price data is now available for a sufficiently long period to allow beta estimation over a 5-year time horizon based on weekly return frequency⁷. We provide below the chart of Cellnex 5-years weekly return data.

Figure I.4: 5-years weekly unlevered beta for Cellnex



Source: Thomson Reuters and Europe Economics calculations.

Based on the evidence provided above we conclude that the updated **asset beta for the broadcasting sector** is **0.45**. We note that this is a decrease from the 2021 Update figure of 0.47.

Updated figure: **0.45**

⁷ We recall that in our 2021 Update Report, due to data availability issues beta estimates were based on 2-years of daily returns data.

1.6 Debt premium

1.6.1 Mobile and fixed-line sector

Figure from our 2021 Update Report: 67bps

As set out at page 54 of our 2020 Report, our interpretation of the EC guidelines with regards to the estimation of the debt premium is to effectively construct a corporate bond (spread) index based on the average spread⁸ across all bonds that, at any point in time, have approximately 10 years to maturity. In our 2020 Report we calculated the five-year average of such index, and concluded that the debt premium was 62bps. In our 2021 Update Report we updated the corporate bonds spread index by including additional relevant bonds that have been issued since November 2019 (i.e. the cut-off date used in the 2020 Report) and, based on the updated analysis, we concluded that the debt premium had risen to 67bps. For the purpose of updating the debt premium in this report, we propose to employ a simpler approach that does not require re-constructing a corporate bond index. More specifically, we rely upon yield data provided by the corporate bond indices we used as a cross-check in our 2020 Report, namely:

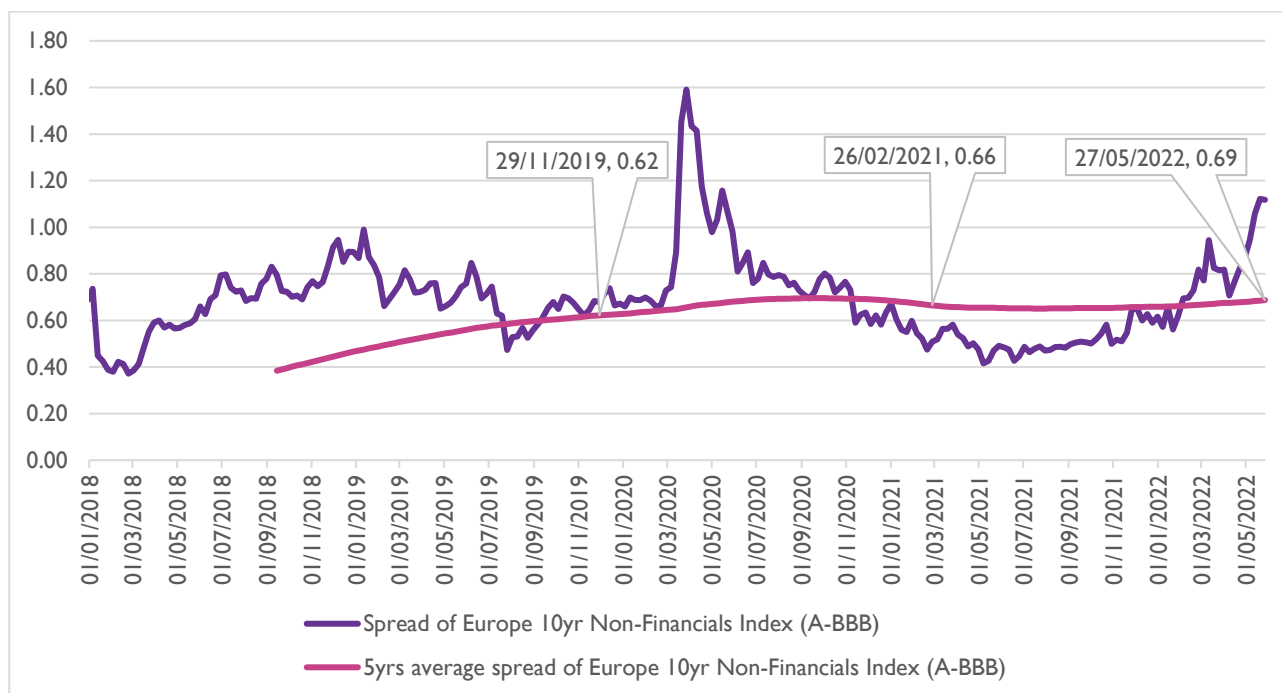
- **Thomson Reuters Europe Non-financial 10-year index, BBB** — a euro-denominated corporate bond index composed of bonds issued by European non-financial firms rated between BBB- and BBB+. The index is constructed so as to have a notional maturity of 10 years.
- **Thomson Reuters Europe Non-financial 10-year index, A** — a euro-denominated corporate bond index composed of bonds issued by European non-financial firms rated between A- and A+. The index is constructed so as to have a notional maturity of 10 years.

We estimate the debt premium based on these instruments as follows:

- First, since we regard a credit rating range between BBB and A as being representative of European telecom operators, we calculate the average (weekly) yield between the two indices (henceforth we denote the average between the two indices as “Thomson Reuters Europe Non-financial 10-year index, A-BBB”).
- Second, we calculate the spread between the yield of the A-BBB index and the yield of 10-year Irish government bonds.
- Third we calculate the average spread over a 5-year period.

The debt premium calculated in this manner is depicted below.

⁸ We recall that, following the EC guidelines, the spread is calculated with reference to a domestic bond yield with comparable maturity (i.e. 10-years).

Figure I.5: Debt premium (%) based on Thomson Reuters Europe Non-financial 10-year index, (A-BBB)

Source: Thomson Reuters and Europe Economics calculations.

As we can see from the chart above and from the table below, the debt premium estimates based on this alternative approach are nearly identical to those obtained following the EC Notice's proposed methodology.

Table I.3: Debt premium calculations: EC approach vs approach based on corporate bond indices

Report	Cut off-date	EC Notice's proposed methodology	Alternative approach based on Thomson Reuters index (A-BBB)
2020 Report	29-Nov-2019	62bps	62bps
2021 Update Report	26-Feb-2021	67bps	66bps
This report	27-May-2022	N.A.	69bps

Source: Thomson Reuters and Europe Economics calculations.

The debt premium estimate based on Thomson Reuters indices was 66bps in February 2021, and it is 69bps as of May 2022, i.e. an increase of 3bps. Therefore, we increase the debt premium value assumed in our 2021 Update Report by 3bps and conclude, the most recent debt premium figure is 70bps.

Updated figure: 70bps

1.6.2 Broadcasting sector

Figure from our 2020 report: 67bps

As we did in our 2020 Report and our 2021 Update Report, we use here the same debt premium figure obtained for the mobile and fixed-line sector i.e. a debt premium of 0.70 per cent.

Updated figure: 70bps

1.7 Summary of WACC parameters based on recent data

We provide below a comparison between the recent WACC parameters' mid-point values and those obtained in our 2020 Report.

Table 1.4: Comparison of WACC parameters mid-points

WACC parameter	Sector	2020 Report (cut-off date Nov 2019)	2021 Update Report (cut- off date Feb 2021)	This Report (cut-off date May 2022)
Inflation	Mobile / fixed-line / broadcasting	1.7%	1.7%	2.1%
Nominal risk-free rate	Mobile / fixed-line / broadcasting	0.82%	0.52%	0.43%
Real risk-free rate	Mobile / fixed-line / broadcasting	-0.86%	-1.16%	-1.63%
Real TMR	Mobile / fixed-line / broadcasting	6.35%	6.50%	6.55%
ERP	Mobile / fixed-line / broadcasting	7.21%	7.66%	8.18%
Asset beta	Mobile	0.50	0.50	0.44
	Fixed line	0.48	0.48	0.43
	Broadcasting	0.45	0.47	0.45
Debt premium	Mobile	0.62%	0.67%	0.70%
	Fixed line	0.62%	0.67%	0.70%
	Broadcasting	0.62%	0.67%	0.70%

1.8 Cost of equity update

As set out in Section 6.1 of the 2020 Report, the methodology for updating for the cost of equity requires determining first a cost of equity range based on an ERP range that reflects the DMS TMR estimates for Europe and for Ireland, and to then take the following percentiles of the range:

- **Mobile:** 80th percentile of the range.
- **Fixed line:** 64th percentile of the range.
- **Broadcasting:** 138th percentile of the range (i.e. above the top end by 38 per cent of the range).

Given the risk-free rate value set out in Section 0, the ERP range set out in Section 1.4, the beta estimates set out in Section 1.5, and the gearing values used in in the 2020 report, the cost of equity ranges and point estimate updates are as follows:

Table 1.5: Cost of equity update

	Nominal risk-free rate	ERP range	Asset beta	Gearing	Nominal cost of equity range (post-tax)	Percentile	Nominal cost of equity update (post-tax)
Mobile	0.43%	7.73%-8.63%	0.44	40%	6.10%-6.76%	80th	6.63%

Fixed line	0.43%	7.73%-8.63%	0.43	40%	5.97%-6.61%	64 th	6.38%
Broadcasting	0.43%	7.73%-8.63%	0.45	25%	5.07%-5.61%	138 th	5.81%

1.9 Cost of debt update

The methodology for updating for the cost of debt described in Section 6.1 of the 2020 report requires applying an “Irish fixed-line” premium of 116bps to the cost of debt figure obtained under the EC methodology. Since the nominal risk-free rate and the debt premium under the EC methodology are respectively 0.43 per cent and 0.70 per cent, the cost of debt — before uplifting — is 1.13 per cent. Thus, after applying the 116bps uplift, the **nominal cost of debt** update figure is **2.29 per cent**. The nominal cost of debt recommended in the 2021 Update Report was 2.35 per cent.

1.10 Summary of WACC update

In the table below, we compare the overall WACC of the 2020 Report and the 2021 Update Report to the update values obtained by applying the updating methodology with data up to the end of May 2022.

Table 1.6: WACC update (mobile)

	2020 Report (cut-off date Nov 2019)	2021 update (cut-off date Feb 2021)	This update (cut-off date May 2022)
Nominal cost of equity (post-tax)	7.01%	7.10%	6.63%
Tax rate	12.50%	12.50%	12.50%
Nominal cost of equity (pre-tax)	8.02%	8.11%	7.58%
Notional gearing	40%	40%	40%
Nominal cost of debt	2.60%	2.35%	2.29%
Nominal WACC (pre-tax)	5.85%	5.81%	5.46%

Table 1.7: WACC update (fixed-line)

	2020 Report (cut-off date Nov 2019)	2021 update (cut-off date Feb 2021)	This update (cut-off date May 2022)
Nominal cost of equity (post-tax)	6.67%	6.74%	6.38%
Tax rate	12.50%	12.50%	12.50%
Nominal cost of equity (pre-tax)	7.62%	7.70%	7.29%
Notional gearing	40%	40%	40%
Nominal cost of debt	2.60%	2.35%	2.29%
Nominal WACC (pre-tax)	5.61%	5.56%	5.29%

Table 1.8: WACC update (broadcasting)

	2020 Report (cut-off date Nov 2019)	2021 update (cut-off date Feb 2021)	This update (cut-off date May 2022)
Nominal cost of equity (post-tax)	6.22%	5.76%	5.81%
Tax rate	12.50%	12.50%	12.50%
Nominal cost of equity (pre-tax)	7.11%	6.58%	6.64%
Notional gearing	25%	25%	25%
Nominal cost of debt	2.60%	2.35%	2.29%
Nominal WACC (pre-tax)	5.98%	5.52%	5.55%

2 Annex: Implications of National Broadband Plan

2.1.1 2021 Numbers for Fixed Line and for CEI

As noted in the main report above, in our May 2021 WACC Update Report⁹ our recommendation for the Fixed Line WACC was 5.56 per cent, updating the 5.61 per cent recommendation in our May 2020 WACC Report.¹⁰

In our 2021 CEI WACC Report¹¹ we recommended that a WACC of 3.76 per cent be used for CEI in the National Broadband Plan Intervention Area¹², down from 4.03 per cent in our September 2020 CEI WACC Report.¹³ We argued that whereas “Pole and duct access is often treated as having a similar WACC to that of fixed line assets...[t]hat is not appropriate in the case of the NBP because of the very different revenue model, because of government guarantees of debt, and because the assets in the intervention area would be likely to become obsolete at an earlier date under strictly commercial use. Furthermore, some of the assets in question are those of an electricity network provider not a fixed line provider.” In respect of ComReg’s role and objectives relevant to the WACC, we noted that since “by definition, it is deemed that there would not have been commercial entry into the [State Intervention Area (SIA)] to provide broadband services...the access price generally, and WACC in particular, are not required to be set at a level that would facilitate new commercial entry, by either CEI providers or alternative wholesale broadband providers. Neither does there need to be supply-chain equivalence between the wholesale access prices available in the SIA via NBI, after taking account of the CEI access charge, and wholesale access prices available outside the SIA.”

That being so, we argued that the “central intuitive reasons that passive access WACCs have tended to be set at a similar level to fixed line network WACC” would not apply, because in “the case of the NBP CEI there are important differences from these international passive infrastructure WACC precedents, on both the cost risk and demand risk sides.” Specifically, we argued that

- “The step-in rights for CEI implies that its risk of default will be akin to that of a state-owned utility such as ESB Networks.
- For the cost of equity, there will be limited demand risk and cost risks will be close to those of a network utility — indeed, potentially some of the NBP CEI might literally be the assets of the electricity network owner. We should therefore expect that the asset beta for NBP CEI will be akin to that of an electricity network (perhaps even towards the lower end of an electricity network’s range, since the assets in question are likely to be lower-risk assets amongst electricity network assets).”

⁹ Europe Economics, WACC update for the Irish mobile, fixed-line, and broadcasting sectors, May 2021, <https://www.ComReg.ie/publication/europe-economics-report-pricing-of-eircoms-civil-engineering-infrastructure-and-the-weighted-average-cost-of-capital>

¹⁰ See [WACC-20_96a.pdf \(comreg.ie\)](#), Europe Economics, *The Cost of Capital for the Irish Communications Sector — Final Report*, May 2020.

¹¹ See [ComReg-21-108b.pdf](#), Europe Economics, *Cost of Capital for Poles and Ducts Access – Post-Consultation Analysis, Final Report*, September 2021.

¹² We also recommended that “every duct or pole in the transit area has a WACC given by q [a probability of being used each period by NBI] \times WACC of NBI use + $(1-q)$ \times WACC of commercial use...The most straightforward approach is to adopt the same CEI access WACC for NBI as applies in the SIA, even if other CEI access-seekers pay a rate reflecting the fixed line WACC (as per international precedent and the arguments of previous sections).”

¹³ <https://www.ComReg.ie/media/2020/09/ComReg-2081B.pdf>

2.1.2 EC Letter Comments

The European Commission set out a number of comments on ComReg's Draft Decision on CEI Pricing in its Letter of November 2021.¹⁴ At 3.1.4 of that Letter the Commission offers the following remarks on the WACC.

ComReg proposes applying a WACC value of 3.76% to the prices to be set for NBI access to Eircom's CEI. On the other hand, the WACC value of 5.56% will be applied to calculation of the prices to be set for other seekers of access to Eircom's CEI. ComReg argues that since providing access to NBI represents a lower risk for Eircom than in the case of other access seekers, Eircom should not be allowed a similar WACC when providing access to a specific entity less likely to default. However, the Commission draws to ComReg's attention that a WACC value, is an average representing the overall weighted average cost of capital of the operator building the infrastructure, and cannot therefore be differentiated between access seekers, on the basis of a difference in their specific risk profile. If ComReg takes the view that the overall risk for the infrastructure owner (Eircom in this case) has changed with the entry and plans of NBI, it should re-evaluate the overall WACC for this market, taking into consideration the combined risks(s) from the perspective of Eircom, and not define individual risk(s) and subsequent prices for access to the same infrastructure.

In addition to assessing differently the risk the different access seekers represent, ComReg applied different methodologies for calculating WACC values. It has developed a new methodology for calculating NBI's WACC. This methodology is different from the methodology ComReg uses to calculate the WACC value for other access seekers. The consequence of having one WACC value for NBI and a different one for other access seekers is that different operators are faced with two different prices for the same service provided by Eircom at the same cost. This discriminates against access seekers other than NBI.

ComReg interprets this as meaning that there should be one overall WACC for this market (which it understands as meaning the WACC it currently uses for determining prices for both Fixed Line and CEI access) that should be re-evaluated, "taking into consideration the combined risks(s) from the perspective of Eircom".

2.1.3 ComReg's approach and the question addressed in this Annex

Thus, under the National Broadband Plan, Eircom is set, over time, to become a material provider of non-fixed-line services, specifically a provider of civil engineering infrastructure (CEI) to NBI within the National Broadband Plan Intervention Area (IA) and Transit Area (TA). ComReg will use the same WACC for CEI services as for Fixed Line services. The purpose of this Annex is to consider whether that should result in a change in the WACC methodology.

2.2 Reminder of the methodology used for assessing the Fixed Line WACC

The Fixed Line WACC for Ireland was set¹⁵ on the basis of

- An analysis of the Irish risk-free rate, based on Irish and Eurozone government bonds data and on Irish and Eurozone GDP growth rates.
- An analysis of the Irish Total Market Return, based on DMS figures.
- A review of gearing, based on data for European comparators.
- Equity beta estimates, based on data for European comparators.

¹⁴ Commission Decision in Case IE/2021/2344: Wholesale local access provided at a fixed location in Ireland – Pricing for access to civil engineering infrastructure - Opening of Phase II investigation pursuant to Article 33 of Directive (EU) 2018/1972 - Commission comments pursuant to Article 32(3) of Directive (EU) 2018/1972, 19 November 2021. Hereafter referred to as "EC Letter".

¹⁵ ComReg Decision DI0/20, <https://www.ComReg.ie/publication/review-of-weighted-average-cost-of-capital>

- Cost of debt estimates, based on data for European comparators.

The answer produced by this methodology was to be updated each year according to an updating “recipe”.¹⁶

The question of whether the Fixed Line WACC updating methodology needs to be revised in the light of the NBP, can be restated as the question of whether the NBP makes these comparators less relevant or necessitates some form of adjustment in respect of them.

2.3 Ways the relevance of the comparators could potentially be affected by the NBP

As noted above, the NBP could potentially affect the WACC if it affected the relevance of the comparators used to calculate the WACC. It might do that if either:

- (i) the issues driving the NBP affected the WACC; and (ii) the proportion of “non-commercial households” (ie households affected by the issues driving the NBP) were materially different in Ireland from the proportions in the comparator countries; and (iii) the policy in the comparator countries did not wholly or largely offset the effects of the issues driving the NBP; or
- the proportion of non-commercial households were similar in Ireland to the proportions in the comparator countries but the effects of policy interventions were different in terms of their impact upon the WACC.

We shall first explain why the above possibilities might have impacts on the WACC, then take these possibilities in turn.

2.3.1 Why might the proportion of non-commercial households affect the relevance of comparators?

The NBP exists because the Irish authorities deem that in some areas of the country there would not be commercial provision of broadband services and yet it is nonetheless socially desirable that such services be available to the households that live there.

Let us consider a hypothetical scenario in which there would be no commercial provision for a proportion of households but no NBP nor any equivalent policy for the facilitation of the building of broadband services. What would have been the implications for the Fixed Line WACC?

In that case households would have continued to use copper services, and the CEI associated with them, for a period. Perhaps eventually these services would have been superseded by non-broadband alternatives, such as perhaps more extensive coverage of mobile telephony and more extensive use of mobile telephony signals, or perhaps one day satellite or drone technologies would have provided the basis. Whatever the case, what seems clear is that the consequence of the absence of broadband implementation would have been lower (if any) revenues and profits on the CEI that was already present in the IA.

Now, let us suppose that, at the time CEI investments were originally made, these issues had been anticipated in principle but that it was not known where in the country they would arise or, alternatively, that there was some idea of where they would arise but uncertainty as to in which year of the asset life of investments they would arise (eg 10 years after initial investment, 15 years, 25 years or whatever). (And remember: we continue to assume there will be no policy intervention).

¹⁶ There was some discussion with the European Commission regarding the appropriateness of the overall WACC relative to WACC’s set elsewhere in the EU, to which we responded here: <https://www.ComReg.ie/media/2021/12/21-130c-Annex-9-Europe-Economics-Note-on-WACC-non-conf.pdf>

If investors had anticipated the possibility of such risks, that could have meant that the WACC for CEI was elevated by them. And it is also possible that, the higher the proportion of the total network that was affected by such issues, the larger the effect upon the WACC (ie the greater the extent to which it would be elevated).¹⁷

The implication of the above is that the sort of issues that drive the NBP could (if not mitigated by policy) elevate the WACC.¹⁸ So if such issues were more prevalent in some country or countries from which comparators were drawn, and not mitigated by policy interventions, that could affect the relevance of comparators. So, we shall consider below, at Section 2.4.1, whether a materially different proportion of households in Ireland is subject to NBP-type issues of the non-commerciality of broadband from the proportion of households affected by such issues in the countries from which our comparators are drawn.

2.3.2 Do policy interventions tend to mitigate the impacts of non-commercial households on the WACC?

We have said above that an elevated proportion of households affected by NBP-type issues would, absent policy intervention, tend to elevate the WACC. But of course in many countries there will be policy interventions. And we have argued previously¹⁹ that (at least under an “as the world is” regulatory thought experiment, as versus an “efficient contestable or competitive market” thought experiment) such policy interventions tend to reduce the WACC, since they make revenue streams less sensitive to the economic cycle and they cut the risk of default.

What might happen is that the WACC comes to take a step form – with different WACCs at different points in the policy cycle. So, ex ante, when no-one knows where, amongst whatever CEI investments turn out to be uneconomic (some of which will be in areas where governments do intervene and some might, in principle, be in areas where the government does not intervene), the WACC is elevated to the extent that a higher proportion of the network is expected to become uneconomic before the technical lifetime of assets is reached and there is an offsetting reduction to the extent that policy interventions are anticipated. Then, when it is later revealed where government interventions will take place there is a two-part realisation of WACCs for new investments. First, if new investments were to take place in uneconomic areas where there was now known to be no government intervention their WACC would be very high (reflecting the very high – junk status – risks of investment in areas known to be uneconomic) whilst if new investments were to take place in uneconomic areas where government intervention was now known to be occurring the WACC would be lower – perhaps even lower than it had been ex ante for the network as a whole. The correct WACC to apply for regulatory purposes in such cases would depend upon the regulatory thought experiment. To the extent it was supposed to reflect the risks that were current at the time of the determination, the WACC might be reduced to reflect the low risks associated with the government-guaranteed revenue streams; to the extent it was supposed to allow for cost recovery of earlier investments the WACC might be similar to what the WACC would have been, at the earlier date, for CEI anywhere else in the network.

¹⁷ This would be potentially true, at least, to the extent those higher risks were systematic or were reflected in higher default risks on the cost of debt.

¹⁸ We note that whereas in Ireland all or almost all CEI is owned by Eircom¹⁸, in some other countries whose communications firms we use as comparators, multiple firms provide the CEI. That will not affect the discussion above provided that it is not the case that CEI assets owned by different firms in those countries are not subject to materially different risks of being exposed to NBP-type issues – eg provided that it is not the case that those firms have investment concentrated in parts of the country where NBP-type issues could have reliably been anticipated in advance not to have arisen. We have no evidence of such relevant geographic concentration of CEI investments amongst comparators but we note that our evidence on this point is limited.

¹⁹ See for example <https://www.ComReg.ie/media/2020/09/ComReg-2081B.pdf>

The key question, in thinking about the extent to which the above considerations may or may not affect the relevance of comparators for Ireland, would be the extent to which policy interventions elsewhere would be expected to offset or to exacerbate differences in the proportions of households affected. Broadly speaking, to the extent that we assume such interventions tend to more-than-offset (downwards) the WACC elevation associated with non-commercial households, we can say that there may be a modest inversion. Specifically, when the proportions of households affected and then mitigated by policy interventions in comparator countries are higher than those in Ireland, that may tend to mean the WACC for the comparator is (slightly) distorted downwards relative to Ireland's. Conversely, when the proportions of households affected and then mitigated by policy interventions in comparator countries are lower than those in Ireland, that may tend to mean the WACC for the comparator is (slightly) distorted upwards relative to Ireland's.

The above discussion has proceeded on the assumption that the nature of the government intervention in comparator countries is similar to that in Ireland. An alternative possibility might be that a comparator becomes less relevant because, although the proportion of households affected by NBP-type issues in that comparator's country is similar to the proportion in Ireland, the nature of government intervention is materially different – either by mitigating less or by mitigating more. Examples of plausible policies that could have significantly different impacts might be laissez-faire or full nationalisation of the uneconomic parts of the network (perhaps with only limited compensation for shareholders). If comparators had these kinds of policies that could also affect their relevant for WACC purposes.²⁰

A final issue, to some extent already pre-empted in the discussion above, is a time dimension. It is possible that government intervention could be announced but would only start to take effect (or, say, only start to affect a material proportion of revenues) after some future date. In such a case it is possible that effects on the WACC (or WACCs) might be different at different points in time. So, for example, if there were some difference in WACC between the situation in Ireland and that in the countries from which comparators are drawn, that might be nugatory today but rise to become material at some future date.

2.4 Impact on the WACC of the situation giving rise to the NBP and of the policy

In the previous section we have spelled out various ways NBP-type issues could affect the relevance of comparators for the setting of a WACC or WACCs for Ireland.

1. If the proportion of households in a comparator country are different from those in Ireland, then
 - a. to the extent that other country already has an operational government intervention in areas that would otherwise be uneconomic for broadband, the higher the proportion of households affected the (slightly) lower the WACC will be in comparator countries;
 - b. to the extent that other country does not yet have an operational government intervention in areas that would otherwise be uneconomic for broadband, the higher the proportion of households affected the higher the WACC will be in comparator countries;
 - c. to the extent that there were government intervention but it were of a materially different nature (in terms of its likely effects upon the WACC) from the effect in Ireland, that could reduce the relevance of its firms as comparators.
2. To the extent that interventions will become more significant only at a future date, then insofar as the relevant WACC thought experiment is forward-looking, any current distortion will be (to some extent) mitigated.

²⁰ We shall see below that, as one might expect given that EC State Aid Guidelines narrow the feasible spectrum of policies, in practice broadband policies are similar between Ireland and the countries from which comparators are drawn.

We shall consider each of these issues in turn.

2.4.1 Proportions of households affected

Ireland faces a material share of non-commercial households, covering (we are advised by ComReg) a little over 20 per cent of Irish households: there are approximately 537,000 premises in the NBP Intervention Area as a percentage of estimated total premises in Ireland of 2.4m.

ComReg has asked other regulators to assess the rough percentages of households affected within their jurisdictions.²¹ Such regulators from elsewhere have advised as follows.

- In Poland they term their non-commercial-viability of broadband areas “white spots” and these are estimated as constituting some 10-25 per cent of households
- In Spain such areas constitute a “low” proportion of households.
- In Romania such areas (termed “white areas”) constitute around 5 per cent of households.
- In Germany the presence of such areas is acknowledged but the extent is not known.
- In France such areas constitute more than 25 per cent of households.

We note that the comparators used in our Fixed Line beta analysis were from

- The UK
- Germany
- The Netherlands
- France
- Spain
- Sweden
- Italy
- Switzerland

It thus includes countries for which we have confirmation that the households proportion affected is higher than in Ireland (eg France) and countries for which that proportion is lower (eg Spain).

2.4.2 Presence or absence of government interventions in response to non-commercial households

All the regulators ComReg consulted confirmed that policies are in place in their country to mitigate the effects of non-commercial broadband areas or plans have been announced.

2.4.3 Differences in the nature of government intervention in Ireland from those in other countries from which comparators are drawn

Broadband policies are likely to be similar between Ireland and the countries from which comparators are drawn. This is partly because of an alignment of objectives and approaches but also reflects the fact that EC State Aid Guidelines narrow the feasible spectrum of policies.

The NBP in Ireland is different from broadband policies adopted elsewhere in one notable way: whereas in other countries government broadband support and interventions are typically focused on incumbents, under the NBP in Ireland that support is provided to a third party – NBI.

²¹ In May 2022 ComReg enquired of several NRAs if State supported fibre broadband rollout was present in their country, the extent of it and whether the undertakings involved were within the comparator groups used for the WACC calculation.

Although there are many potential economic implications of this difference between the Irish broadband policy and such policies elsewhere, we do not consider that it affects the specific issue under consideration in this annex – namely the relevance of comparators for the WACC. Whether government subsidies and guarantees are provided to the incumbent directly or to a third party, the consequence is that there is a more certain stream of CEI revenues and a lower risk of default on CEI revenue commitments than would be the case absent government interventions. So although we acknowledge there are important differences between the policies, our view is that they should not affect the relevance of our comparators for Fixed Line WACC analysis purposes.

No comparator is absolutely perfect. Countries differ and firms within countries differ. That is part of the advantage of taking a range of comparators and averaging across them. Furthermore, we also note that our methodology produced a range of approaches for disentangling Fixed Line-related and Mobile-related asset WACCs, and one should be cautious about attempting to over-engineer relatively modest adjustments to WACCs when the general methodological uncertainty is non-trivial anyway. Our judgement is that the above range of NBP-type-related effects falls well within the general range of uncertainty associated, in any event, with our comparator set. Such judgement calls and pragmatism are necessary for regulatory determinations. Our view is that the range of uncertainty inescapable in the case of the Fixed Line WACC was not so narrow that fine distinctions between whether the set of non-commercial-viability of broadband households is 10-25 per cent, exactly 20 per cent, or a bit over 25 per cent should be considered a robust basis for improving it. That is especially true when we note that the effect of broadband policies is to largely offset (or perhaps even slightly more-than-offset) the ex ante effect on the WACC of difference in the proportion of households affected by NBP-type issues. We are talking of modest differences in factors that would, even if they occurred on a significant scale, have only a small impact on the WACC. That does not seem to us to be a reason to change our Fixed Line WACC updating methodology.

2.4.4 Further mitigation of differences by the dynamic (time) dimension

This lack of a basis to change the Fixed Line WACC updating methodology is reinforced further when we consider the dynamic aspect of the policy. We understand that the share of Eircom revenues currently associated with the NBP is likely to be low. That share will increase in future years. There is likely to be a similar dynamic in the degree of interventions in comparator countries, also. That means that, to the extent that, notwithstanding the discussion above, there are some differences between the WACC in Ireland and that in comparator countries associated with NBP-type issues and the policies used to mitigate them, they are likely to become more material in future years than they are today.

Our view is that even as they become more material there is likely to be a parallel process amongst comparators, so those comparators will probably remain relevant. We acknowledge that that is a point that could be worth revisiting at a later stage – perhaps especially so should ComReg decide at some later date either to use a different WACC for CEI from the WACC used for Fixed Line services or to define geographic markets for different Irish regions. But for the current Decision period we see no robust reason to amend our Fixed Line WACC estimation methodology.

2.5 Summary and Conclusion

In this Annex we have considered whether the growing role of Eircom as a provider of CEI services under the NBP affects how we should update the WACC used by ComReg for Fixed Line and CEI services.

To summarise our argument:

- Other things being equal, in the absence of government intervention, the higher the proportion of non-commercial households the higher the asset beta and debt premium.

- Government intervention will tend to offset that increase in the asset beta and cost of debt, and in respect of the specific assets associated with the provision of services to non-commercial households, may more-than-offset it. The net effect is likely to be that where there are similar levels of non-commercial households with similar natures of government intervention, the WACC is likely to be similar, but even where the levels of non-commercial households differ only modestly, the WACC is still likely to be similar.
- There are no qualitative differences in intervention type worth exploring in detail, so the impact on the WACC is limited to the differences in the observed proportions of non-commercial households.
- The proportion of non-commercial households in Ireland appears to be fairly middle-of-the-pack amongst European comparator countries. Some have higher proportions than Ireland and some lower. Even where those proportions differ from the proportions in Ireland, they do so only modestly.
- Even if there were some modest differences between Ireland and comparator countries in WACCs associated with the issues giving rise to the NBP or in the impacts of policies used to address such issues, the current impact of such differences would be mitigated further by the fact that revenues associated with non-commercial broadband interventions are currently low and will only rise over time.

Our conclusion is that no change is required to the Fixed Line WACC updating methodology at this time. That methodology uses comparators from countries that have a range of households affected by issues similar to those in Ireland from somewhat below the Irish household share to above it, and have broadband policies that would be expected to have similar offsetting impacts on the WACC to Ireland's NBP. The net result of these effects is that the Fixed Line comparators used remain appropriate and the updating methodology (what we term the "recipe") ComReg has chosen to deploy remains valid and does not need to be amended.