
Estimating the forward-looking return on sales benchmark

Note prepared for the Health Insurance Authority

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Strictly confidential

1 Introduction

1A Overview

- 1.1 The Health Insurance Acts (1994 to 2016) introduced a risk equalisation scheme ('RES') in the Irish health insurance market with effect from 1 January 2013. Under the RES, the Health Insurance authority ('HIA') pays credits to insurers, depending on the age, gender, level of cover and hospital utilisation of the insured individuals.¹ The credits are funded by levying a charge against insurers in the form of a stamp duty payment. Thus, the RES is a self-funding scheme as the total amount raised in stamp duties is set to equal the total amount paid in credits.²
- 1.2 Three health insurers are currently active in the private medical insurance ('PMI') market in Ireland: Vhi Healthcare ('Vhi')³, Laya Healthcare Ltd. ('Laya Healthcare') and Irish Life Health DAC ('Irish Life Health'). Given that Vhi has a larger proportion of members in the older age groups (and therefore bears

¹ European Commission (2016), 'State Aid SA.41702 (2016/NN) – Ireland Risk Equalisation Scheme', C(2016) 380 final, 29 January, para. 27.

² Ibid., para. 29.

³ For the purposes of this note, Vhi refers to Vhi Insurance DAC, if not indicated otherwise. Vhi Insurance DAC is a subsidiary company within the Vhi group.

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more risks) than the other insurers active in the PMI market, Vhi has so far been the sole net beneficiary under the RES.⁴

- 1.3 The compensation paid under the previous RES that was in place from 2016–20 was approved by the European Commission ('Commission') as compatible aid for a service of general economic interest.⁵ In 2020, the Commission approved the prolongation of the RES until the end of March 2022. The Irish government intends to notify a new RES to the Commission for the period 2022–26.⁶ We understand that the general compensation mechanism under the new RES will not change.
- 1.4 To ensure that the RES will not lead to overcompensation for the health insurers that are net beneficiaries under the scheme, an overcompensation test needs to be carried out. The first part of the overcompensation test is carried out from an ex-ante perspective with the objective of estimating an appropriate profitability benchmark applicable under the RES. The resulting benchmark is then compared against the expected profitability of the beneficiaries under the RES (i.e. Vhi) based on the insurer's business plan. The second part of the overcompensation test is performed from an ex-post perspective comparing the insurer's actual (i.e. outturn) profitability against the benchmark.
- 1.5 As part of the notification of the previous RES, Oxera assisted the HIA in the ex-ante overcompensation test.⁷ In particular, we derived the applicable profitability benchmark on the basis of the return on sales ('ROS') for a sample of European insurance companies and assessed whether there was a risk of overcompensation based on Vhi's business plan.⁸ This note provides an update to our previous analysis. In particular, we estimate the applicable profitability benchmark for the new RES, and compare Vhi's expected profitability over the period 2022–26 against the benchmark.

⁴ European Commission (2020), 'State Aid SA.58851 – Ireland Prolongation of the Risk Equalisation Scheme', C(2020) 8730 final, 14 December, para. 20.

⁵ European Commission (2016), 'State Aid SA.41702 (2016/NN) – Ireland Risk Equalisation Scheme', C(2016) 380 final, 29 January, para. 29. The previous RES that were in place in Ireland over the period 2003-16 were also approved by the Commission as compatible aid: European Commission (2003), 'State Aid N 46/2003 – Ireland Risk equalisation scheme in the Irish health insurance market', C92003) 1322 final, 13 May; European Commission (2009), 'State aid No N 582/2008 – Ireland Health Insurance intergenerational solidarity relief', C(2009) 3572 final, 17 June; and European Commission (2013), 'State aid SA.34515 (2013/NN) – Ireland Risk equalisation scheme for 2013', C(2013) 793 final, 20 February.

⁶ European Commission (2020), 'State Aid SA.58851 – Ireland Prolongation of the Risk Equalisation Scheme', C(2020) 8730 final, 14 December.

⁷ Section 4(a) of the Health Insurance Amendment Act 2016 stipulated the benchmark to be used for the overcompensation assessment based on Oxera's analysis.

⁸ Oxera (2015), 'Estimating the forward-looking return on sales benchmark', 16 November.

1B Structure of the note

1.6 This note is structured as follows:

- section 2 provides an overview of the methodology;
- section 3 sets out the results from the benchmarking analysis;
- section 4 presents Vhi's forecast profitability over the duration of the new RES, and compares it to the profitability benchmark identified in section 3;
- section 5 presents an overall conclusion; and
- the appendices provide an overview of the health insurers included in our analysis and the results for the forward-looking benchmark using alternative samples of comparators.

2 Methodology

2A Definition of the ROS for the insurance companies considered in the analysis

2.1 Various metrics can be used to measure a company's profitability. In this note, we base our analysis on the ROS metric, which has been accepted by the Commission in its decision that approved the previous RES.⁹

2.2 The ROS measures how much profit a business is able to generate from its sales. For the purposes of this note, the ROS has been calculated as earnings before tax (EBT) divided by revenues.¹⁰

2.3 Ideally, the forward-looking estimate of reasonable profit, as measured by the ROS, would be estimated from business plans or forecasts of the future profitability of comparators. However, in the absence of projections for the comparators included in the sample, the analysis presented in this note is based on recent data over the 2017–19 period for the relevant comparator companies.¹¹ It is reasonable to assume that, given a sufficiently broad

⁹ European Commission (2016), 'State Aid SA.41702 (2016/NN) – Ireland Risk Equalisation Scheme', C(2016) 380 final, 29 January, para. 41.

¹⁰ The ROS is generally defined as earnings before interest and tax (EBIT) divided by revenues (see Standard & Poor's rating methodology for insurers). However, it was not possible to obtain EBIT information from the Orbis database, which is used to obtain financial data for the insurance companies included in the comparator sample used for this analysis. This approach is broadly appropriate, as health insurers do not tend to be highly geared and therefore have relatively low interest costs. Based on Vhi's annual reports for 2017-19, Vhi did not report any interest paid in 2018-19 and only €4m of interest paid in 2017, which corresponds to 3.4% of its net operating expenses.

¹¹ We have considered whether any forecasts of the insurers' profitability are reported in annual reports or analyst reports prepared in 2019 for the companies included in the analysis. We examined analyst reports prepared in 2019 as, following instructions from the HIA, we have not considered the impact of the COVID-19

comparator set, recent past trends in profitability provide an appropriate indication of the forward-looking benchmarks. This approach is in line with the methodology followed by the Commission in other cases, as well as Oxera's previous assessment of the forward-looking ROS benchmark applicable under the previous RES scheme.¹²

- 2.4 While we apply this approach in our analysis, it should be noted that, as instructed by the HIA, we have not considered the impact of the COVID-19 pandemic on the profitability of European health insurers. However, given the length of the pandemic, we consider that further analysis should be undertaken to examine the impact of the pandemic on insurers' expected profitability, and to assess the robustness of the estimated benchmarks.
- 2.5 In line with the Commission's decision in relation to the previous RES, the ROS has been estimated gross of reinsurance (i.e. before taking into account reinsurance) and excluding income from investment activities.¹³ However, as explained further below, we have also estimated the ROS gross of reinsurance and including income from investment activities.

2A.1 Treatment of reinsurance

- 2.6 Insurance companies, including Vhi, purchase reinsurance as a means of risk management.¹⁴ In the past, Vhi used reinsurance as a capital management tool to maintain an adequate level of capital to meet its commitments to policyholders.¹⁵ Vhi's stopped using reinsurance in 2017,¹⁶ [REDACTED]
[REDACTED]
[REDACTED] We therefore consider it appropriate to use the ROS gross of reinsurance as a benchmark for the assessment of overcompensation. Furthermore, using the ROS gross of

pandemic on the profitability of the sample of European health insurers. However, these sources did not contain sufficiently detailed information on the insurers' expected profitability.

¹² European Commission (2016), 'State Aid SA.41702 (2016/NN) – Ireland Risk Equalisation Scheme', C(2016) 380 final, 29 January; European Commission (2013), 'State aid SA.34515 (2013/NN)—Ireland, Risk equalisation scheme for 2013', 20 February; and European Commission (2012), 'Commission Decision of 25 January 2012 on the measure SA.14588 (C 20/09) implemented by Belgium in favour of De Post-La Poste (now bpost)', Letter to the Member State, 25 January.

¹³ The ROS gross of reinsurance was calculated as EBT gross of reinsurance (EBT + premium ceded to reinsurers – claims paid by reinsurers) divided by revenues gross of reinsurance (revenues + premium ceded to reinsurers + other income). As Orbis does not provide data on claims ceded to reinsurers, we have obtained this data from each company's accounts individually. The ROS excluding investment activities was calculated by excluding net investment income and (un)realised capital gains from the revenues and EBT figures.

¹⁴ European Commission (2016), 'State Aid SA.41702 (2016/NN) – Ireland Risk Equalisation Scheme', C(2016) 380 final, 29 January, para. 42.

¹⁵ Vhi (2019), 'Annual report', p. 57.

¹⁶ Ibid, p. 42.

reinsurance avoids the possibility that the volatility of the reinsurance market is reflected in the profitability benchmark.

2A.2 Treatment of investment activities

- 2.7 To be in line with the Commission's approach for the previous RES, we estimate the ROS excluding income from investment activities.¹⁷ However, as a sensitivity check on the results, we have also estimated the ROS including investment activities as income from investment activities is an important part of insurers' profits. For example, Standard & Poor's rating methodology for insurance companies includes net investment income¹⁸ in the calculation of the ROS in order to provide a complete picture of an insurer's revenue-generating abilities.¹⁹
- 2.8 Moreover, while standard accounting rules separate out the investment and underwriting activities, from an economics perspective, an insurer's overall profitability is driven by both its underwriting income and its income from investment activities.²⁰ For example, a study by Swiss Re, a major European (re)insurer, found that a significant proportion of non-life insurers' pre-tax profit margins was derived from net investment results,²¹ which averaged 9.8% over the period 2008–17 and 10.6% over the period 1998–2007.²² The average underwriting result,²³ however, was negative at -1.1% for the period 2008–17 and -3.4% over the period 1998–2007.²⁴ This indicates that income from insurance premiums alone is typically not sufficient to generate positive profits. This is in line with our findings set out in section 3. As investment activities can have a significant impact on insurers' profitability, for the purposes of this analysis, we therefore also estimate the ROS including income from investment activities.

¹⁷ European Commission (2016), 'State Aid SA.41702 (2016/NN) – Ireland Risk Equalisation Scheme', C(2016) 380 final, 29 January, para. 42.

¹⁸ Net investment income refers to investment income that excludes expenses associated with generating the investment income.

¹⁹ Standard & Poor's (2019), 'Insurers: Rating Methodology', 1 July, p. 16. Furthermore, based on the rating criteria of Fitch Ratings used for insurance companies, pre-tax investment income, together with pre-tax underwriting performance, is taken into account in order to calculate the operating ratio to measure the profitability of non-life insurance companies. Fitch Ratings (2021), 'Insurance Rating Criteria', 15 April, p. 61.

²⁰ Swiss Re (2018), 'Profitability in non-life insurance: mind the gap', 9 July, p. 19, available at: https://www.swissre.com/dam/jcr:2bc0a0e4-ead0-4c29-8a55-0ee9329c38b4/sigma4_2018_en.pdf, last accessed 12 July 2021.

²¹ Swiss Re defines the net investment result as net investment income and realised capital gains as a percentage of net premiums earned.

²² The non-life insurance markets analysed by Swiss Re include Canada, France, Germany, Italy, Japan, the UK, the US, Australia and China. Swiss Re (2018), 'Profitability in non-life insurance: mind the gap', 9 July, p. 19, Figure 3.

²³ Swiss Re calculates the underwriting result as premiums minus commissions, underwriting expenses and losses incurred as a percentage of net premiums earned.

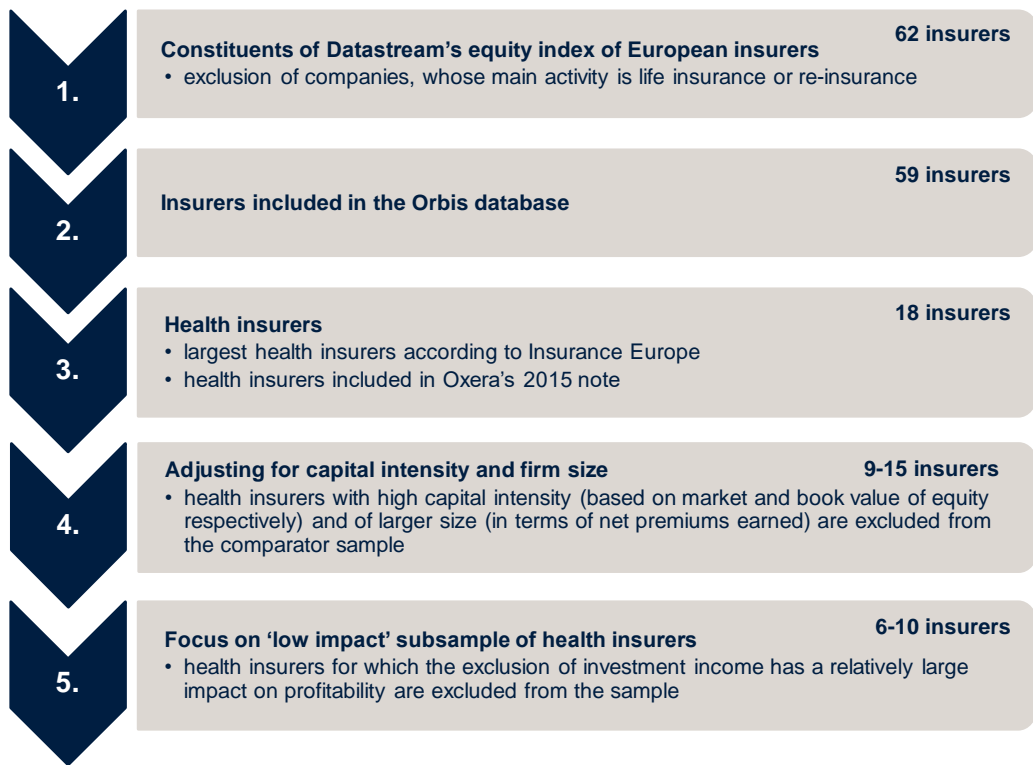
²⁴ Swiss Re (2018), 'Profitability in non-life insurance: mind the gap', 9 July, p. 19, Figure 3.

2.9 However, we note that Irish insurance companies, including Vhi, generate limited income from investment activities. Therefore, Vhi's ROS does not change significantly when investment activities are excluded. To ensure a like-for-like comparison when estimating the profitability benchmark, we focus on those insurers that generate relatively limited income from investment activities (the 'low impact' sub-sample). The approach to identify the 'low impact' sub-sample is explained in the next section.

2B Identifying the comparator sample

2.10 To derive the benchmark ROS, we identified a set of European health insurers to be used as comparators, to which we apply various controls to account for capital intensity, firm size and the role of investment income. The methodology we followed to identify this group of comparators is illustrated in Figure 2.1, and is explained further below.

Figure 2.1 Methodology to derive the sample of comparators



Source: Europe-Datastream Insurance; Orbis database and Insurance Europe's European insurance industry database.

- 2.11 The initial set of comparators was identified as the constituents of Datastream's equity index of European insurers.²⁵ On this basis, the initial sample was comprised of 62 insurers.
- 2.12 We obtained financial data for those insurers from the initial sample that were included in the Orbis database.²⁶ From the 62 insurers in the initial sample, Orbis contained financial information on 59 insurers.
- 2.13 From this set of insurers, we identified those focusing on health insurance, as the characteristics of life insurers and re-insurers may differ significantly from those of health insurers. In our previous analysis in 2015, we used the North American Identification Classification System (NAICS) codes to identify health insurance companies in the sample.²⁷ However, Orbis no longer provides NAICS codes at a sufficiently granular level to select health insurance companies from the sample of insurance companies. Therefore, we followed the approach below to exclude those insurers from the sample that are not involved in health insurance.
- We first used Datastream's industry classifications to exclude 21 companies whose main activity is life insurance or reinsurance.²⁸
 - Next, we comprised a list of insurers that are involved in health insurance. In order to do so, we used information published by Insurance Europe, which lists the top five health insurance companies for each EU Member State in 2018, and selected the firms that also appeared in our sample.²⁹ We complemented this by including companies that were not included in the Insurance Europe list, but were classified as health insurers in Oxera's 2015 note, which resulted in an additional 7 companies. For these companies, we

²⁵ The index is labelled 'Europe-Datastream Insurance'. This index was selected as the number of constituents (83) is larger than alternative indices, such as the 'STOXX Europe 600 insurance' index, which currently has 29 constituents.

²⁶ Orbis is a database that contains information on companies in a standardised format.

²⁷ NAICS codes allow companies involved in specific types of insurance to be identified—such as life insurance, health insurance, property and casualty, and title (real estate)—although multiple NAICS codes can be associated with a single company.

²⁸ Information on the classification of insurers was obtained from Datastream. FTSE Russell assigns an industry subsector to a company with the subsector definition most closely coinciding with the source of the company's revenues or the source of the majority of its revenues. The companies whose revenues are obtained mainly from life insurance and reinsurance respectively are defined within the group 'Life Insurance' and 'Reinsurance'. As these companies are excluded, the sample only considers companies that were assigned the subsector definitions, 'Full Line Insurance' and 'Property and Casualty Insurance'. See FTSE Russell (2019), 'Industry Classification Benchmark (Equity) v2.6', February, p. 6, available at: https://research.ftserussell.com/products/downloads/ICB_Rules.pdf, last accessed 12 July 2021.

²⁹ 2018 is the most recent year reported by Insurance Europe. The data was obtained from Insurance Europe's European insurance industry database, available at: <https://www.insuranceeurope.eu/statistics>, last accessed 12 July 2021.

have checked the company's accounts individually to ensure that those companies are still active primarily in the health insurance sector.

- 2.14 The overall sample comprises 18 European insurers (see Appendix A1), which are involved in health insurance (alongside other types of insurance).
- 2.15 As instructed by the HIA, based on their discussions with the Commission, we have also estimated the ROS benchmark for a sample that includes the other health insurers in Ireland aside from Vhi, namely Irish Life Health and Laya Healthcare.³⁰ The detailed results of this analysis are set out in section 3B.
- 2.16 As Vhi has been a net beneficiary under the RES in past years, we do not include Vhi in the sample to avoid circularity issues. However, as requested by the HIA, we have also calculated the ROS benchmark by including Vhi in the expanded comparator sample (i.e. in addition to Irish Life Health and Laya Healthcare). The results of this analysis are set out in Appendix 5A2.

2B.3 Adjusting for capital intensity, firm size and investment income

- 2.17 In order to identify comparators for the purposes of calculating the ROS, we consider it prudent to control for differences in capital intensity across companies.³¹ This is because a relationship may exist between the profit margin (i.e. the ROS) and the level of capital intensity—investors might require higher profit margins as capital intensity increases—such that more capital-intensive companies are expected to earn higher profit margins.³² This means that benchmarking Vhi's expected profits using the ROS of companies with relatively high levels of capital intensity would be less informative. Therefore, we have excluded companies whose capital intensity exceeds 100%.³³ For the purposes of this analysis, we consider both the book value and the market value of shareholder funds in order to calculate capital intensity.

³⁰ Data for Laya Healthcare Ltd. (the Irish branch of Elips Insurance Ltd.) was obtained from the HIA.

³¹ Capital intensity is defined as the value of capital employed (i.e. the sum of shareholder funds based on the book or market value and long-term liabilities) relative to total revenues (comprised of the gross earned premium, income from investment activities and other income). As data on long-term liabilities for the comparator set of insurers is not available from Orbis, long-term liabilities were proxied by multiplying total liabilities by the proportion of long-term insurance reserves relative to total insurance reserves.

³² See Oxera (2003), 'Assessing profitability in competition policy analysis', Economic Discussion Paper 6, prepared for the Office of Fair Trading, July, p. 118, available at: <https://www.oxera.com/wp-content/uploads/2018/03/OFT-Assessing-profitability.pdf>, last accessed 12 July 2021. If we do not control for capital intensity, the recommended ROS benchmark would slightly increase from 9.8% to 10.3%. Therefore, using capital intensity as a control represents a conservative approach.

³³ Due to a lack of data, we were not able to assess the capital intensity for the Irish insurance companies specifically. As we were instructed by the HIA to also present results for a sample that includes Irish Life Health and Laya Healthcare, we have included these companies as part of an extended sample in section 3B without controlling for capital intensity.

- 2.18 In addition, we control for firm size by excluding insurers from the sample whose average net premiums earned over the period 2017–19 exceed the upper quartile of the whole sample. This adjustment excludes relatively large companies, as company size might be positively correlated with profitability (i.e. due to economies of scale, larger companies may be more profitable).³⁴
- 2.19 Lastly, in order to calculate the ROS excluding income from investment activities and gross of reinsurance, we further restrict the sample of health insurers to companies that generate relatively limited income from investment activities. This ensures that the companies included in the final sample are sufficiently comparable to Vhi. In particular, we only include companies in the final sample for which the exclusion of investment activities has a smaller impact on the ROS than the median impact for the whole sample (the ‘low impact’ sub-sample). This approach is also in line with the approach accepted by the Commission for the previous RES.³⁵

3 Estimates of the forward-looking ROS from the sample of comparators

- 3.1 As highlighted in Table 3.1, we estimate the ROS for four different sub-samples in order to ensure the robustness of our results.

Table 3.1 Controls applied to comparator sub-samples

Sub-samples	Capital intensity	Size adjustment	Investment activities
Sub-sample 1	Market value	No	For all samples, we calculate the ROS gross of reinsurance and including as well as excluding investment activities. However, to obtain an appropriate ROS benchmark from a sample of companies comparable to Vhi we focus on the results from the ‘low impact’ sub-sample when estimating the ROS excluding investment activities.
Sub-sample 2	Market value	Yes	
Sub-sample 3	Book value	No	
Sub-sample 4	Book value	Yes	

Source: Oxera.

- 3.2 As highlighted below, we present the results separately for two different samples of the insurers: 1) European health insurers excluding the three Irish

³⁴ Swiss Re (2018), ‘Profitability in non-life insurance: mind the gap’, 9 July, p. 19, available at: https://www.swissre.com/dam/jcr:2bc0a0e4-ead0-4c29-8a55-0ee9329c38b4/sigma4_2018_en.pdf, last accessed 12 July 2021, p. 20.

³⁵ European Commission (2016), ‘State Aid SA.41702 (2016/NN) – Ireland Risk Equalisation Scheme’, C(2016) 380 final, 29 January, footnote 40.

health insurers; and 2) European health insurers including Irish Life Health and Laya Healthcare.³⁶

- 3.3 The estimates are obtained based on the assumption that recent historical trends provide a good indication of future trends in the health insurance industry. In addition, the analysis assumes that, going forward, Vhi will continue to be the sole net beneficiary of the RES. In the event that other insurers were to become net beneficiaries under the RES, or the capital intensity, size and investment profile of Vhi were to change materially, the benchmarks presented in this note might need to be reconsidered.

3A ROS estimates for each sub-sample based on European insurers excluding Irish insurers

- 3.4 Table 3.2 and Table 3.3 show the ROS estimates for the sub-samples of European health insurers (excluding the three Irish health insurers³⁷) following adjustments for capital intensity based on the market value of equity. See Table A1.1 and Table A1.2 for a breakdown of the companies included in the sub-samples.

Table 3.2 Sub-sample 1: ROS benchmarks (%) adjusted for capital intensity (based on the market value of equity) for European health insurers excluding Irish insurers

	2017	2018	2019	Pooled average
ROS (incl. investment activities)	8.6	9.6	9.3	9.2
ROS (excl. investment activities)	-4.8	-1.4	-3.4	-3.2
ROS for the 'low impact' sub-sample (excl. investment activities)	4.4	8.6	3.5	5.5

Note: The estimates are gross of reinsurance and represent the sample's median value. The pooled average refers to the average of the sample's median ROS over the period 2017–19. See Table A1.1 for a breakdown of the companies included in the sample.

Source: Oxera analysis.

Table 3.3 Sub-sample 2: ROS benchmarks (%) adjusted for capital intensity (based on the market value of equity) and firm size for European health insurers excluding Irish insurers

	2017	2018	2019	Pooled average
ROS (incl. investment activities)	7.9	9.6	8.8	8.8
ROS (excl. investment activities)	-4.8	2.4	-3.4	-1.9
ROS for the 'low impact' sub-sample (excl. investment activities)¹	4.4	8.6	3.5	5.5

Note: ¹ The control for firm size does not influence the ROS benchmark for the 'low impact' sub-sample, as the 50th percentile of the sub-sample (i.e. the median) remains the same. The

³⁶ Vhi is excluded from both samples reported in this section. Following a request from the HIA, the results including Vhi, in addition to Irish Life Health and Laya Healthcare, are presented in Appendix 5A2.

³⁷ Specifically, Vhi, Irish Life Health and Laya Healthcare are not included in the sample underpinning the estimates reported in this sub-section.

estimates are gross of reinsurance and represent the sample's median value. The pooled average refers to the average of the sample's median ROS over the period 2017–19. See Table A1.2 for a breakdown of the companies included in the sample.

Source: Oxera analysis.

- 3.5 Table 3.4 and Table 3.5 set out the ROS for the sub-samples of European health insurers following adjustments for capital intensity based on the book value of equity. See Table A1.3 and Table A1.4 for a breakdown of the companies included in the sub-samples.

Table 3.4 Sub-sample 3: ROS benchmarks (%) adjusted for capital intensity (based on the book value of equity) for European health insurers excluding Irish insurers

	2017	2018	2019	Pooled average
ROS (incl. investment activities)	9.3	10.2	9.3	9.6
ROS (excl. investment activities)	-4.8	2.4	-3.4	-1.9
ROS for the 'low impact' sub-sample (excl. investment activities)	6.4	11.1	4.2	7.2

Note: The estimates are gross of reinsurance and represent the sample's median value. The pooled average refers to the average of the sample's median ROS over the period 2017–19. See Table A1.3 for a breakdown of the companies included in the sample.

Source: Oxera analysis.

Table 3.5 Sub-sample 4: ROS benchmarks (%) adjusted for capital intensity (based on the book value of equity) and size for European health insurers excluding Irish insurers

	2017	2018	2019	Pooled average
ROS (incl. investment activities)	8.6	10.2	8.8	9.2
ROS (excl. investment activities)	-4.8	8.6	-3.4	0.1
ROS for the 'low impact' sub-sample (excl. investment activities)	6.4	15.2	4.2	8.6

Note: The estimates are gross of reinsurance and represent the sample's median value. The pooled average refers to the average of the sample's median ROS over the period 2017–19. See Table A1.4 for a breakdown of the companies included in the sample.

Source: Oxera analysis.

- 3.6 The results show that the median ROS gross of reinsurance and including investment activities, averaged over the period 2017–19, ranged from 8.8% to 9.6%. This is broadly in line with the results from our 2015 analysis where we found that the median ROS gross of reinsurance of a sample of European health insurers ranged from 8% to 11% over the 2012–14 period.
- 3.7 The results also show that, when investment activities are excluded, the ROS estimates can decrease significantly to the extent that they become negative, which highlights that the ROS can vary significantly when investment activities are excluded. Therefore, in order to estimate the applicable ROS benchmark for the new RES, we consider it appropriate to derive the benchmark from a

sub-sample of insurers that have relatively low investment income (i.e. the 'low impact' sub-sample). When considering the 'low impact' sub-sample, the pooled average³⁸ of the ROS gross of reinsurance and excluding income from investment activities ranged from 5.5% to 8.6%.

3B ROS estimates for each sub-sample based on European insurers including Irish Life Health and Laya Healthcare

3.8 As instructed by the HIA, we have also calculated the ROS benchmark including the Irish insurance companies, Irish Life Health and Laya Healthcare, in the comparator sample. We understand that the rationale for doing so has been discussed between the HIA and the Commission in the context of the notification of the RES.³⁹

3.9 In line with the results presented in section 3A, the tables below show the ROS estimates including the two Irish insurers using capital intensity and firm size as control variables.

Table 3.6 ROS benchmarks (%) adjusted for capital intensity (based on the market value of equity) and including Irish Life Health and Laya Healthcare

	2017	2018	2019	Pooled average
[Redacted]				

Note: The estimates are gross of reinsurance and represent the sample's median value. The pooled average refers to the average of the sample's median ROS over the period 2017–19.

Source: Oxera analysis.

Table 3.7 ROS benchmarks (%) adjusted for capital intensity (based on the market value of equity) and firm size and including Irish Life Health and Laya Healthcare

	2017	2018	2019	Pooled average
[Redacted]				

Note: The estimates are gross of reinsurance and represent the sample's median value. The pooled average refers to the average of the sample's median ROS over the period 2017–19.

¹ The control for firm size does not influence the ROS benchmark for the 'low impact' sub-sample, as the 50th percentile of the sub-sample (i.e. the median) remains the same.

Source: Oxera analysis.

³⁸ The pooled average refers to the average of the sample's median ROS over the period 2017-19.

³⁹ We note that insurance companies in Ireland were not included in Oxera's 2015 analysis.

Table 3.8 ROS benchmarks (%) adjusted for capital intensity (based on the book value of equity) and including Irish Life Health and Laya Healthcare

	2017	2018	2019	Pooled average

Note: The estimates are gross of reinsurance and represent the sample's median value. The pooled average refers to the average of the sample's median ROS over the period 2017–19.

Source: Oxera analysis.

Table 3.9 ROS benchmarks (%) adjusted for capital intensity (based on the book value of equity) and size and including Irish Life Health and Laya Healthcare

	2017	2018	2019	Pooled average

Note: The estimates are gross of reinsurance and represent the sample's median value. The pooled average refers to the average of the sample's median ROS over the period 2017–19.

¹ The control for firm size does not influence the ROS benchmark for the 'low impact' sub-sample, as the 50th percentile of the sub-sample (i.e. the median) remains the same.

Source: Oxera analysis.

- 3.10 The ROS benchmark increases by including the Irish insurance companies, given that they achieved a relatively higher ROS (gross of reinsurance and including investment activities) over the time period considered. In addition, the Irish insurers derive only limited income from investment activities such that the ROS of the 'low impact' sub-sample also increases compared to the sample that excludes the Irish insurers. In particular, when considering the 'low impact' sub-sample, the pooled average of the ROS gross of reinsurance and excluding income from investment activities ranged from [REDACTED].

3C Summary

- 3.11 In light of the significant impact that including the two Irish insurers has on the overall estimates of the ROS, we consider it appropriate not to base the results directly on a sample that is driven primarily by two estimates.
- 3.12 Therefore, in order to follow a conservative approach, we consider it appropriate that the benchmark ROS applicable under the new RES is in the range of the ROS estimates presented for the low-impact sub-sample derived from the set of European insurers excluding the two Irish insurers. On this basis, the ROS benchmark should range between 5.5% and 8.6%.

3.13 However, given the fact that the two Irish health insurers exhibit a relatively high level of profitability, the appropriate ROS benchmark could lie towards the upper end of the range.

4 Vhi's forecast profitability

4.1 As the Commission's 2011 SGEI Framework states that 'the Member State must provide the Commission with evidence that the projected profit does not exceed what would be required by a typical company',⁴⁰ Vhi's projections of the ROS gross of reinsurance over the period 2022–2026 have been examined.

4.2 The analysis is based on Vhi's business plan for the period 2022-25.⁴¹ The projections provided to Oxera do not include an estimate for 2026. [REDACTED]

[REDACTED]

4.3 [REDACTED]

4.4 [REDACTED]

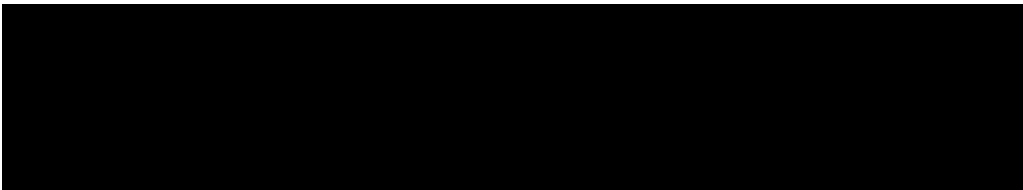
⁴⁰ European Commission (2011), 'European Union framework for State aid in the form of public service compensation (2011), Communication from the Commission', *Official Journal of the European Union*, 11 January, para. 35.

⁴¹ We have not undertaken any checks on the appropriateness of Vhi's business plan, as this is outside the scope of Oxera's work agreed with the HIA.



5 Conclusions

5.1 In line with the Commission’s approach in the previous RES, we have estimated the benchmark for the ROS gross of reinsurance excluding investment activities. Based on the analysis outlined in this note, the suggested estimate of the forward-looking ROS benchmark for the period 2022–26 should range between 5.5% and 8.6%. Given the fact that Irish health insurers exhibit a relatively high level of profitability, the appropriate ROS benchmark could lie towards the upper end of the range.

5.2 

5.3 To assess the robustness of the results, we would suggest conducting further analysis to examine the impact of the COVID-19 pandemic on the profitability of European health insurers. However, as set out in this note and discussed with the HIA, this analysis is not within the scope of our current work.

A1 Overview of the comparators

A1.1 Based on the approach set out in section 2B, we identified 18 European insurers (excluding the three Irish insurers) that were included in the analysis. The following tables show which companies were included in the sub-samples 1 to 4 to obtain the forward-looking ROS benchmark. The sub-samples vary by the control variables used (i.e. capital intensity based on either market or book value of equity and company size measured by net premiums earned). The 'low impact' sub-sample considers only those insurers for which the exclusion of investment activities has a smaller impact on the ROS than the median impact for the whole sample.

A1.2 Table A1.1 provides an overview of the insurers (excluding the Irish insurers) included in sub-sample 1 (i.e. the sample is adjusted for capital intensity based on the market value of equity) presented in Table 3.2.

Table A1.1 Companies included in sub-sample 1

Company	Incl. investment activities	Excl. investment activities	'Low impact' sub-sample (excl. investment activities)
Allianz SE	✓	✓	
Assicurazioni Generali SPA			
AXA SA	✓	✓	✓
Baloise Holding AG	✓	✓	
Croatia Osiguranje DD	✓	✓	✓
Grupo Catalana Occidente SA	✓	✓	✓
Helvetia Holding AG	✓	✓	✓
Mapfre Middlesea PLC	✓	✓	
Mapfre SA	✓	✓	✓
Powszechny Zakład Ubezpieczeń SA	✓	✓	✓
Sampo Oyj			
Topdanmark A/S			
Tryg A/S			
Unipol Gruppo SPA	✓	✓	
Unipolsai Assicurazioni SPA			
Uniqä Versicherungen AG	✓	✓	✓
Vienna Insurance Group AG - Wiener Versicherung Gruppe	✓	✓	✓
Zavarovalnica Triglav Dd	✓	✓	✓
Number of companies	13	13	9
Number of observations¹	39	39	21

Note: The three Irish insurers are not included in the above table. ¹ For the 'low impact' sub-sample, some companies are not included over the full period considered as the impact of excluding investment activities on the ROS is calculated for each year over the period 2017–19

(i.e. the insurers included within the 'low-impact' sub-sample can vary each year). Source: Oxera.

- A1.3 Table A1.2 provides an overview of the insurers (excluding the Irish insurers) included in sub-sample 2 (i.e. the sample is adjusted for capital intensity based on the market value of equity and company size) presented in Table 3.3.

Table A1.2 Companies included in sub-sample 2

Company	Incl. investment activities	Excl. investment activities	'Low impact' sub-sample (excl. investment activities)
Allianz SE			
Assicurazioni Generali SPA			
AXA SA			
Baloise Holding AG	✓	✓	
Croatia Osiguranje DD	✓	✓	✓
Grupo Catalana Occidente SA			
Helvetia Holding AG	✓	✓	✓
Mapfre Middlesea PLC	✓	✓	
Mapfre SA			
Powszechny Zakład Ubezpieczeń SA	✓	✓	✓
Sampo Oyj			
Topdanmark A/S			
Tryg A/S			
Unipol Gruppo SPA	✓	✓	
Unipolsai Assicurazioni SPA			
Uniqä Versicherungen AG	✓	✓	✓
Vienna Insurance Group AG - Wiener Versicherung Gruppe	✓	✓	✓
Zavarovalnica Triglav Dd	✓	✓	✓
Number of companies	9	9	6
Number of observations¹	27	27	15

Note: The three Irish insurers are not included in the above table. ¹ For the 'low impact' sub-sample, some companies are not included over the full period considered as the impact of excluding investment activities on the ROS is calculated for each year over the period 2017–19 (i.e. the insurers included within the 'low-impact' sub-sample can vary each year).

Source: Oxera.

- A1.4 Table A1.3 provides an overview of the insurers (excluding the Irish insurers) included in sub-sample 3 (i.e. the sample is adjusted for capital intensity based on the book value of equity) presented in Table 3.4.

Table A1.3 Companies included in sub-sample 3

Company	Incl. investment activities	Excl. investment activities	'Low impact' sub-sample (excl. investment activities)
Allianz SE	✓	✓	
Assicurazioni Generali SPA			
AXA SA	✓	✓	✓
Baloise Holding AG	✓	✓	
Croatia Osiguranje DD	✓	✓	✓
Grupo Catalana Occidente SA	✓	✓	✓
Helvetia Holding AG	✓	✓	✓
Mapfre Middlesea PLC	✓	✓	
Mapfre SA	✓	✓	✓
Powszechny Zakład Ubezpieczeń SA	✓	✓	✓
Sampo Oyj			
Topdanmark A/S	✓	✓	
Tryg A/S	✓	✓	✓
Unipol Gruppo SPA	✓	✓	
Unipolsai Assicurazioni SPA			
Uniqä Versicherungen AG	✓	✓	✓
Vienna Insurance Group AG - Wiener Versicherung Gruppe	✓	✓	✓
Zavarovalnica Triglav Dd	✓	✓	✓
Number of companies	15	15	10
Number of observations¹	45	45	24

Note: The three Irish insurers are not included in the above table. ¹ For the 'low impact' sub-sample, some companies are not included over the full period considered as the impact of excluding investment activities on the ROS is calculated for each year over the period 2017–19 (i.e. the insurers included within the 'low-impact' sub-sample can vary each year).

Source: Oxera.

Table A1.4 provides an overview of the insurers (excluding the Irish insurers) included in sub-sample 4 (i.e. the sample is adjusted for capital intensity based on the book value of equity and company size) presented in Table 3.5.

Table A1.4 Companies included in sub-sample 4

Company	Incl. investment activities	Excl. investment activities	'Low impact' sub-sample (excl. investment activities)
Allianz SE			
Assicurazioni Generali SPA			
AXA SA			
Baloise Holding AG	✓	✓	
Croatia Osiguranje DD	✓	✓	✓
Grupo Catalana Occidente SA			
Helvetia Holding AG	✓	✓	✓
Mapfre Middlesea PLC	✓	✓	

Mapfre SA			
Powszechny Zakład Ubezpieczeń SA	✓	✓	✓
Sampo Oyj			
Topdanmark A/S	✓	✓	✓
Tryg A/S	✓	✓	✓
Unipol Gruppo SPA	✓	✓	
Unipolsai Assicurazioni SPA			
Uniqä Versicherungen AG	✓	✓	✓
Vienna Insurance Group AG - Wiener Versicherung Gruppe	✓	✓	✓
Zavarovalnica Triglav Dd	✓	✓	✓
Number of companies	11	11	8
Number of observations¹	33	33	18

Note: The three Irish insurers are not included in the above table. ¹ For the 'low impact' sub-sample, some companies are not included over the full period considered as the impact of excluding investment activities on the ROS is calculated for each year over the period 2017–19 (i.e. the insurers included within the 'low-impact' sub-sample can vary each year).

Source: Oxera.

A2 Estimates of the forward-looking ROS including Irish Life Health, Laya Healthcare and Vhi

- A2.1 As Vhi has been a net beneficiary under the RES in past years, it is appropriate to exclude Vhi from the comparator sample to estimate the profitability benchmark in order to avoid circularity issues.
- A2.2 However, as requested by the HIA, we have also estimated the ROS including all three Irish insurance companies in the expanded comparator sample (i.e. including Irish Life Health, Laya Healthcare and Vhi).
- A2.3 In line with the results presented in section 3, the tables below show the ROS estimates for the sample including all three Irish insurance companies and using capital intensity and firm size as control variables.

Table A3.1 ROS benchmarks (%) adjusted for capital intensity (based on the market value of equity) and including all three Irish insurance companies

	2017	2018	2019	Pooled average
ROS (incl. investment activities)	8.3	9.9	9.3	9.2
ROS (excl. investment activities)	-2.0	2.4	0.4	0.3
ROS for the 'low impact' sub-sample (excl. investment activities)	6.7	13.6	9.0	9.8

Note: The estimates are gross of reinsurance and represent the sample's median value. The pooled average refers to the average of the sample's median ROS over the period 2017–19.

Source: Oxera analysis.

Table A3.2 ROS benchmarks (%) adjusted for capital intensity (based on the market value of equity) and firm size and including all three Irish insurance companies

	2017	2018	2019	Pooled average
ROS (incl. investment activities)	7.9	9.9	9.0	8.9
ROS (excl. investment activities)	-2.1	5.5	0.4	1.3
ROS for the 'low impact' sub-sample (excl. investment activities)¹	6.7	13.6	9.0	9.8

Note: ¹ The control for firm size does not influence the ROS benchmark for the 'low impact' sub-sample, as the 50th percentile of the sub-sample (i.e. the median) remains the same. The estimates are gross of reinsurance and represent the sample's median value. The pooled average refers to the average of the sample's median ROS over the period 2017–19.

Source: Oxera analysis.

Table A3.3 ROS benchmarks (%) adjusted for capital intensity (based on the book value of equity) and including all three Irish insurance companies

	2017	2018	2019	Pooled average
ROS (incl. investment activities)	9.0	10.8	9.3	9.7
ROS (excl. investment activities)	-2.1	5.5	0.4	1.3
ROS for the 'low impact' sub-sample (excl. investment activities)	8.3	13.7	13.0	11.7

Note: The estimates are gross of reinsurance and represent the sample's median value. The pooled average refers to the average of the sample's median ROS over the period 2017–19.

Source: Oxera analysis.

Table A3.4 ROS benchmarks (%) adjusted for capital intensity (based on the book value of equity) and size and including all three Irish insurance companies

	2017	2018	2019	Pooled average
ROS (incl. investment activities)	8.3	10.8	9.0	9.4
ROS (excl. investment activities)	-2.1	11.0	0.4	3.1
ROS for the 'low impact' sub-sample (excl. investment activities)¹	8.3	13.7	13.0	11.7

Note: ¹ The control for firm size does not influence the ROS benchmark for the 'low impact' sub-sample, as the 50th percentile of the sub-sample (i.e. the median) remains the same. The estimates are gross of reinsurance and represent the sample's median value. The pooled average refers to the average of the sample's median ROS over the period 2017–19.

Source: Oxera analysis.

A2.4 The results show that if all three Irish insurers, including Vhi, are included in the comparator sample, [REDACTED]

[REDACTED]

[REDACTED]