MILLIMAN RESEARCH REPORT

Analysis of Solvency and Financial Condition Reports: Year-end 2022

Non-life insurers based in Ireland

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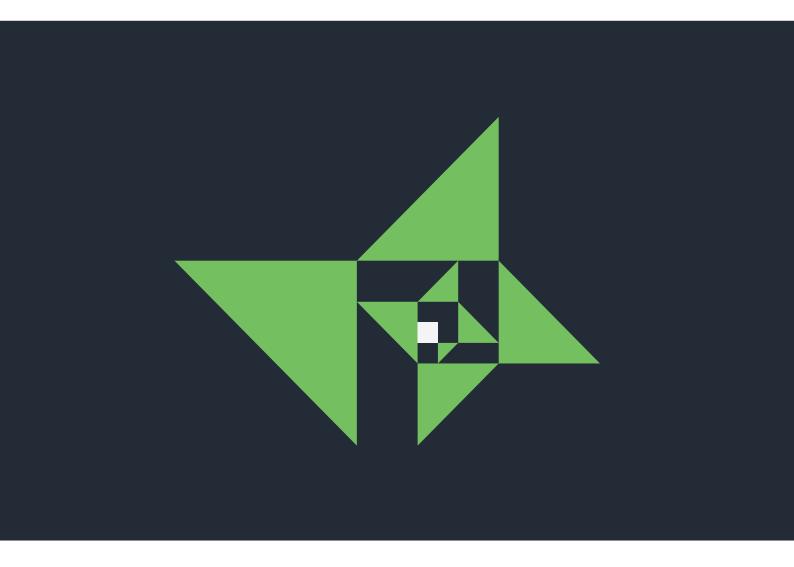




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Introduction

Under Solvency II, European insurers and reinsurers are required to publish Solvency and Financial Condition Reports (SFCRs). The SFCRs contain a significant amount of information, including details on business performance, risk profile, balance sheet and capital position. Insurers and reinsurers are also required to publish quantitative information in the public Quantitative Reporting Templates (QRTs) included within the SFCRs.

IRISH MARKET COVERAGE

All SFCRs for Irish insurers are available on the website of the Central Bank of Ireland (CBI) for financial year-ends in the 2016 calendar year to financial year-ends in the 2022 calendar year. In addition, the CBI publishes a data repository containing the QRT data for all insurers.

In this report our analysis of the Irish non-life insurance market includes direct writers only, as per the institution type categorisation in the CBI data. We have not included any reinsurers in this analysis.

There were 89 non-life insurers (including health insurers) in the CBI data as at 31 December 2022 (31 December 2021: 91). Of these, 44 were captive insurers (31 December 2021: 47).

Appendix 1 contains a list of all Irish non-life insurers included in our analysis in this report.

UNDERLYING DATA

In carrying out our analysis and producing this research report, we relied on data published by the CBI. We have not audited or verified this data and other information. If the underlying data or information is inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete.

We performed a limited review of the data used directly in our analysis for reasonableness and consistency and did not find material defects in the data. It should be noted that in some cases we have made minor adjustments to the data to correct known inconsistencies among QRTs in order to better inform our analysis. However, we have not made any material changes to the underlying data.

This research report is intended solely for educational purposes and presents information of a general nature. This report is not intended to guide or determine any specific individual situation and persons should consult qualified professionals before taking specific actions.

¹ CBI. Solvency and Financial Condition Reports (SFCRs). Retrieved 17 January 2024 from https://www.centralbank.ie/regulation/industry-market-sectors/insurance-reinsurance/solvency-ii/solvency-and-financial-condition-report-repository.

Analysis of Irish non-life insurers

ANALYSIS OF PREMIUMS

The total volume of gross premiums written by non-life insurers has increased to €30.6 billion in the 2022 calendar year from €27.4 billion in 2021. Of this, €1.1 billion was written by captive insurers (2021: €1.0 billion).

GROSS WRITTEN PREMIUMS

for non-life insurers have increased by 12% over the year

The 10 Irish non-life insurers with the highest total written premiums in 2022 (gross of reinsurance) are shown in the table in Figure 1, along with a comparison to previous years. These figures are provided in the QRT S.05.01, where gross written premiums are defined as all amounts due during the financial year (gross of reinsurance). Therefore, it represents all premium income during the year (not just new business premiums), including recurring premiums on regular premium business.

| FIGURE 1: TOP 10 GROSS WRITTEN PREMIUMS | | | |
|-----------------------------------------------------|--------|-------|-------|
| TOTAL GROSS WRITTEN PREMIUMS (€ MILLIONS) | 2022 | 2021 | 2020 |
| Zurich Insurance plc | 10,586 | 9,395 | 8,658 |
| XL Insurance Company SE | 5,454 | 5,090 | 5,368 |
| VHI Insurance DAC | 1,610 | 1,598 | 1,537 |
| AXIS Specialty Europe SE | 1,081 | 803 | 549 |
| AXA Insurance DAC | 1,000 | 953 | 907 |
| Berkshire Hathaway European Insurance DAC | 888 | 802 | 318 |
| Allianz Plc | 616 | 630 | 589 |
| Irish Life Health Designated Activity Company | 600 | 583 | 501 |
| Aviva Insurance Ireland Designated Activity Company | 585 | 566 | 523 |
| Allied World Assurance Company (Europe) dac | 518 | 442 | 308 |

The top 10 companies shown represent 75% of the total gross written premium by Irish non-life insurers in 2022. Almost all of the top 10 companies have seen a steady increase in gross written premiums since 2020.

Note that Zurich Insurance plc, now called Zurich Insurance Europe AG, relocated its head office from Ireland to Germany during 2023.

DOMESTIC BUSINESS

Within the Irish insurance industry, a significant number of companies are selling cross-border non-life insurance, generally into the EU on a Freedom of Services or Freedom of Establishment basis. Of the €30.6 billion gross written premiums in 2022, we estimate only €6.9 billion (c. 23%) was written in the "home country" (i.e., Ireland). In 2021, €6.3 billion of €27.4 billion gross written premiums by Irish non-life insurers was written in Ireland (also 23%).

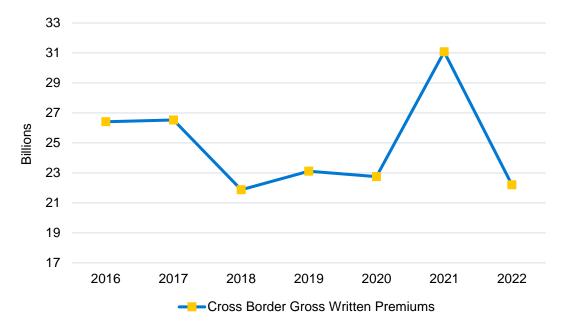
The five Irish non-life insurers with the highest gross written premiums in the domestic Irish market in 2022 are shown in the table in Figure 2 along with a comparison to previous years.

| FIGURE 2: TOP FIVE GROSS WRITTEN PREMIUMS IN HOME COU | INTRY | | | |
|-------------------------------------------------------|-------|------------------|-------|-------|
| IRELAND GROSS WRITTEN PREMIUMS (€ MILLIONS) | 2022 | 2021 | 2020 | 2019 |
| VHI Insurance DAC | 1,610 | 1,598 | 1,537 | 1,449 |
| AXA Insurance DAC | 739 | 717 | 670 | 649 |
| XL Insurance Company SE ² | 642 | 351 ³ | 647 | 538 |
| Allianz Plc | 616 | 569 | 525 | 507 |
| Irish Life Health Designated Activity Company | 600 | 583 | 501 | 521 |

Note that the figures shown in Figure 1 above for these companies differ where the company writes business outside Ireland. AXA Insurance and XL Insurance have material premiums written in countries other than Ireland. Allianz plc had business in Northern Ireland until 2022 but now only writes business in the Republic of Ireland.

Figure 3 shows the estimated total gross written premiums in Ireland by Irish non-life insurers since 2017.





² XL Insurance Company SE moved to Ireland from the UK in 2019 as a result of Brexit.

³ According to the SFCR of XL Insurance Company SE, the decrease in gross written premiums in Ireland in 2021 was due to North American excess casualty business moving to another entity. The subsequent increase in gross written premiums in Ireland in 2022 was due to the transfer of network partner business from a Spanish branch and a sister AXA XL entity.

CROSS-BORDER BUSINESS

Of the €30.6 billion gross written premiums in 2022 by Irish non-life insurers, we estimate €23.7 billion (c. 77%) was written "cross-border" (i.e., outside Ireland). Figure 4 shows gross written premiums cross-border by Irish non-life insurers since 2017.

25
20
15
10
5
0
2017
2018
2019
2020
2021
2022

——Cross Border Gross Written Premiums

FIGURE 4: GROSS WRITTEN PREMIUMS CROSS-BORDER

Insurers show a split of gross written premiums among their top five countries in the QRT S.05.02. The total top five countries shown by Irish non-life insurers at year-end 2022 account for approximately 85% of the €30.6 billion gross written premiums in 2022 by Irish non-life insurers.

The split by country of Irish non-life insurers' top five countries, excluding Ireland, in the QRT S.05.02 in 2022 is shown in Figure 5 (excluding several countries with 1% or less).

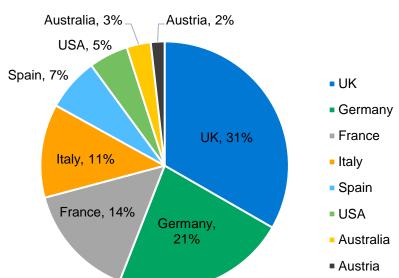


FIGURE 5: 2022 PROPORTION OF IRISH NON-LIFE INSURERS' TOP FIVE CROSS-BORDER GROSS WRITTEN PREMIUMS BY COUNTRY

As can be seen, cross-border business is dominated by the UK, Germany, France and Italy. The main Irish players in each country are set out in the tables in Figures 6 to 9.

The UK accounted for 31% of cross-border gross written premiums for Irish non-life insurers in 2022. The five Irish non-life insurers with the highest gross written premiums in the UK in 2022 are shown in Figure 6, along with a comparison to previous years.

| FIGURE 6: TOP FIVE GROSS WRITTEN PREMIUMS IN THE UK | | | | |
|--------------------------------------------------------|-------|-------|-------|-------|
| (€ MILLIONS) | 2022 | 2021 | 2020 | 2019 |
| Zurich Insurance plc | 3,488 | 3,052 | 2,475 | 2,259 |
| AXIS Specialty Europe SE | 616 | 444 | 269 | 140 |
| Allied World Assurance Company (Europe) dac | 396 | 358 | 236 | 148 |
| Berkshire Hathaway European Insurance DAC ⁴ | 288 | 320 | 40 | 0 |
| AXA Insurance DAC | 206 | 186 | 188 | 192 |

Note that the figures shown in Figure 1 above for these companies differ because all of them also write business in countries other than the UK. The total gross written premiums in the UK by Irish non-life insurers, as included in the top five countries in the QRT S.05.02 in 2022, was €6.0 billion, an increase on the 2021 figure of €5.2 billion.

Germany accounted for 21% of cross-border gross written premiums in 2022. The five Irish non-life insurers with the highest gross written premiums in Germany in 2022 are shown in Figure 7, along with a comparison to previous years.

| FIGURE 7: TOP FIVE GROSS WRITTEN PREMIUMS IN GERMANY | | | | |
|------------------------------------------------------|-------|-------|-------|-------|
| (€ MILLIONS) | 2022 | 2021 | 2020 | 2019 |
| Zurich Insurance plc | 2,238 | 2,117 | 2,101 | 1,920 |
| XL Insurance Company SE | 977 | 902 | 938 | 418 |
| CNP Santander Insurance Europe DAC | 293 | 217 | 184 | 187 |
| Berkshire Hathaway European Insurance DAC | 168 | 145 | 92 | 13 |
| Volkswagen Insurance Company dac | 89 | 104 | 75 | 55 |

Note that the figures shown in Figure 1 above for these companies differ because all of them also write business in countries other than Germany. The total gross written premiums in Germany by Irish non-life insurers, as included in the top five countries in the QRT S.05.02 in 2022, was €4.1 billion, an increase on the 2021 figure of €3.7 billion.

France accounted for 14% of cross-border gross written premiums in 2022. The five Irish non-life insurers with the highest gross written premiums in France in 2022 are shown in Figure 8, along with a comparison to previous years.

| FIGURE 8: TOP FIVE GROSS WRITTEN PREMIUMS IN FRANCE | | | | |
|------------------------------------------------------|-------|-------|-------|------|
| (€ MILLIONS) | 2022 | 2021 | 2020 | 2019 |
| XL Insurance Company SE | 1,211 | 1,248 | 1,466 | 290 |
| Zurich Insurance plc | 402 | 358 | _5 | - |
| CACI Non-Life dac | 245 | 239 | 194 | 188 |
| Wagram Insurance Company Designated Activity Company | 213 | 84 | 116 | 69 |
| Berkshire Hathaway European Insurance DAC | 184 | 125 | 63 | 29 |

⁴ Berkshire Hathaway began trading in March 2019 (and did not record any UK premiums in its top five countries in 2019).

⁵ Zurich Insurance plc was writing business in France in 2019 and 2020 but it wasn't included in its top five countries.

All of these companies also write business in countries other than France.

The total gross written premiums in France by Irish non-life insurers, as included in the top five countries in the QRT S.05.02 in 2022, was €2.7 billion, an increase on the 2021 figure of €2.5 billion.

Italy accounted for 11% of cross-border gross written premiums in 2022. The five Irish non-life insurers with the highest gross written premiums in Italy in 2022 are shown in Figure 9, along with a comparison to previous years.

| FIGURE 9: TOP FIVE GROSS WRITTEN PREMIUMS IN ITALY | | | | |
|----------------------------------------------------|-------|-------|-------|-------|
| (€ MILLIONS) | 2022 | 2021 | 2020 | 2019 |
| Zurich Insurance plc | 1,356 | 1,290 | 1,212 | 1,173 |
| XL Insurance Company SE | 320 | _6 | 259 | 147 |
| CACI Non-Life dac | 113 | 103 | 49 | 125 |
| ENI Insurance dac | 100 | 60 | 64 | 58 |
| Arch Insurance (EU) dac | 65 | 47 | 33 | 10 |

All of these companies also write business in countries other than Italy.

The total gross written premiums in Italy by Irish non-life insurers, as included in the top five countries in the QRT S.05.02 in 2022, was €2.2 billion, an increase on the 2021 figure of €1.8 billion.

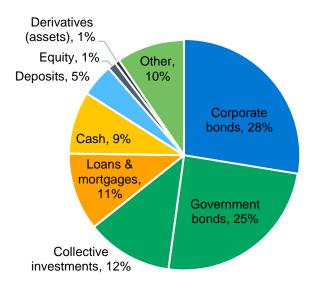
⁶ XL Insurance Company may have sold business in Italy in 2021 but it wasn't included in its top five countries.

Analysis of investments

We estimate total balance sheet assets at financial year-ends in 2022 of €71.5 billion for non-life insurers (2021: €74.5 billion).

These assets can be split into €37 billion in financial investments, €29 billion in reinsurance recoverables and €5 billion of receivables. The breakdown of the financial investments of €37 billion is shown in Figure 10.

FIGURE 10: SPLIT OF FINANCIAL INVESTMENTS BY ASSET CLASS



Corporate and government bonds account for 28% and 25%

of financial investments, respectively.

The majority of Irish non-life insurers are heavily invested in bonds, with 28% of total investments in corporate bonds and 25% of investments in government bonds. The remainder of investments are split as shown in the table in Figure 11. (Note that percentages do not add up to 100% due to rounding.)

| FIGURE 11: SPLIT OF FINANCIAL INVESTMENTS BY ASSET CLASS |
|----------------------------------------------------------|
| |

| | 2022 | 2021 | 2020 |
|---------------------------|------|------|------|
| Corporate Bonds | 28% | 32% | 30% |
| Government Bonds | 25% | 29% | 26% |
| Collective Investments | 12% | 9% | 10% |
| Loans & Mortgages | 11% | 9% | 13% |
| Cash | 9% | 7% | 5% |
| Deposits | 5% | 3% | 5% |
| Equity | 1% | 2% | 2% |
| Derivatives (assets only) | 1% | 0% | 0% |
| Other | 10% | 9% | 8% |

Analysis of solvency coverage

SOLVENCY COVERAGE RATIOS

The aggregate solvency coverage ratio for Irish non-life insurers was 181% for financial year-ends in 2022 (in 2021, 181%). This is calculated as total eligible Own Funds divided by total Solvency Capital Requirement (SCR) for all entities included in our analysis, based on the figures reported in SFCRs. Solvency coverage is significantly in excess of the required 100% coverage level, indicating that, in aggregate, Irish non-life insurers were in a very healthy solvency position at year-end 2022.

The solvency coverage ratio is **UNCHANGED** at **181%** at year-end 2022

Figure 12 shows the individual solvency coverage ratios by company for Irish non-life insurers at year-end 2022, excluding six outliers (for details see below).

The horizontal axis shows the corresponding own funds by company.

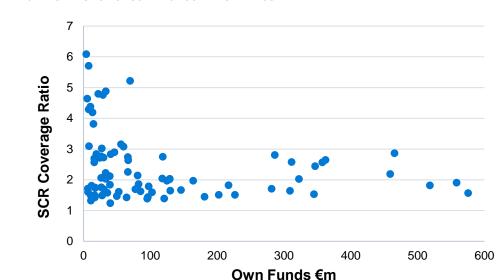


FIGURE 12: 2022 DISTRIBUTION OF SOLVENCY COVERAGE RATIOS

As can be seen, SCR coverage ratios can vary significantly. Smaller firms tend to have higher solvency ratios.

The outliers that were removed are one company that has a solvency coverage ratio greater than 900% (Companjon Insurance DAC, which is a relatively new company that is still growing its business) and the five Irish non-life insurers with the largest Own Funds at year-end 2022, which are shown in the table in Figure 13.

FIGURE 13: SOLVENCY COVERAGE INFORMATION FOR THE FIVE NON-LIFE INSURERS WITH THE HIGHEST OWN FUNDS

| | Own Funds (€ millions) | SCR Coverage |
|-------------------------|------------------------|--------------|
| XL Insurance Company SE | 2,623 | 137% |
| Zurich Insurance plc | 2,086 | 144% |
| Beazley Insurance dac | 1,898 | 210% |
| VHI Insurance DAC | 720 | 197% |
| IPB Insurance CLG | 687 | 307% |

SCR: INTERNAL MODEL COMPANIES

At year-end 2022, four Irish non-life insurers used full internal models (with the remaining 85 using the standard formula to calculate the SCR):

- Allianz plc
- AXA Insurance dac
- Beazley Insurance dac
- Zurich Insurance plc

Long-term guarantee and transitional measures

A number of measures are available to insurers both in terms of transitioning to the Solvency II regime and in terms of allowing for the impact of long-term guarantees. The measures include the use of the volatility adjustment or the matching adjustment (long-term guarantee measures), transitional measures on technical provisions or the risk-free interest rate term structure and transitional measures relating to the SCR. These measures would not typically be of material benefit to non-life insurers, but two non-life insurers were using the volatility adjustment as at year-end 2022:

- Allianz plc: The impact on its solvency ratio at year-end 2022 was to increase it from 133% to 137%.
- XL Insurance Company: The impact on its solvency ratio at year-end 2022 was to increase it from 135% to 137%.

No Irish non-life insurer is using the matching adjustment or the other transitional measures.

Summary

In summary, the key points noted in our analysis of Irish non-life insurers' SFCRs are:

- Gross written premiums by Irish non-life insurers have increased in 2022 both in Ireland and cross-border
- The solvency coverage ratio for Irish non-life insurers is stable at 181%
- There is limited use of internal models and the volatility adjustment by Irish non-life insurers

Appendix 1: Non-life insurers included in the analysis

The following list sets out the 89 non-life insurers based in Ireland included in our year-end 2022 analysis.

- Acadia International Insurance dac
- Advent Insurance Designated Activity Company
- Aetna Health Insurance Company of Europe Designated Activity Company
- Allianz Plo
- Allied World Assurance Company (Europe) dac
- Amtrust International Underwriters DAC
- Arch Insurance (EU) dac
- Arkema Insurance Designated Activity Company
- Aviva Insurance Ireland Designated Activity Company
- AXA Insurance DAC
- AXIS Specialty Europe SE
- Beazley Insurance dac
- Berkshire Hathaway European Insurance DAC
- BMS International Insurance dac
- Bupa Global Designated Activity Company
- CACI Non-Life dac
- Canterbury Insurance dac
- Carraig Insurance dac
- Catalina Insurance Ireland Designated Activity Company
- Chaucer Insurance Company Designated Activity Company
- CNP Santander Insurance Europe Designated Activity Company
- CODEVE Insurance Company dac
- Companjon Insurance Designated Activity Company
- Coromin Insurance (Ireland) Designated Activity Company
- Coverys International Insurance Company Designated Activity Company
- Cuardaithe Designated Activity Company
- DCC Group Insurances Designated Activity Company
- Decare Dental Insurance Ireland Limited
- ENI Insurance dac
- Euro Insurances dac
- Everest Insurance (Ireland) Designated Activity Company
- FBD Insurance Plc
- FDI Insurance Designated Activity Company
- Fidelis Insurance Ireland DAC
- Gasrule Insurance dac
- GD Insurance Company dac
- Golden Arches Insurance Designated Activity Company
- Great American International Insurance (EU) dac
- Greenval Insurance dac
- Hamilton Insurance Designated Activity Company
- Inveralment Insurance dac
- IPB Insurance CLG
- Irish Life Health Designated Activity Company
- Kingfisher Insurance dac
- KPN Insurance Company dac
- Lifeguard Insurance (Dublin) dac

- MBDA Insurance Designated Activity Company
- Medical Insurance Company dac
- MetLife Europe Insurance d.a.c.
- Miripro Insurance Company Designated Activity Company
- Nautilus Indemnity (Europe) dac
- Navillus Insurance Company dac
- NEIL Overseas dac
- Newell Insurance Designated Activity Company
- Noble Insurance Company Designated Activity Company
- Nokatus Insurance Company dac
- North of England P&I Dac
- ORKLA Insurance Company dac
- Ornua Insurance Designated Activity Company
- Pan Insurance dac
- PartnerRe Ireland Insurance dac
- Petroswede Insurance Company Designated Activity Company
- Pharma International Insurance dac
- Philip Morris International Insurance (Ireland) Designated Activity Company
- PI Indemnity Company, Designated Activity Company
- Pine Indemnity dac
- Probus Insurance Company Europe dac
- RSA Insurance Ireland dac
- RSIF International dac
- SASOL International Insurance dac
- Seamair Insurance dac
- Société D'Assurances Générales Appliquées (SAGA)
 Designated Activity Company
- Sofinsod Insurance dac
- SureStone Insurance Designated Activity Company
- TCS Insurance Company of Ireland Designated Activity Company
- The Baxendale Insurance Company dac
- The Standard Club Ireland Designated Activity Company
- Travelers Insurance Designated Activity Company
- UnitedHealthcare Insurance Designated Activity Company
- UPS International Insurance dac
- VHI Insurance DAC
- Vishay Insurance dac
- Vital Blue Insurance dac
- Volkswagen Insurance Company dac
- Wagram Insurance Company Designated Activity Company
- White Horse Insurance Ireland dac
- XL Insurance Company SE
- Yara Insurance dac
- Zurich Insurance plc

There were 91 non-life insurers based in Ireland included in our year-end 2021 analysis.

Non-life insurers included in 2021 that were not in 2022 are:

- R&Q Theta dac
- Standard Trane Insurance Ireland dac
- Woodlands International Insurance Company dac

All three of these companies were captives.

Non-life insurers included in 2022 that were not in 2021 are:

Coverys International Insurance Company dac

This company commenced writing business in September 2022.



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