Reinsurance in Ireland: Development and Issues

by Anne-Marie Kelly and Brídín O'Leary[1]

Abstract

Ireland has the second-highest number of reinsurance companies in Europe, with its asset size corresponding to over 30 per cent of GDP. The Irish reinsurance industry plays a significant role in the global market. Using aggregated company-level data, the contribution of reinsurance to the Irish economy is shown to be relatively low compared with other insurance businesses. This article examines factors which contribute to reinsurance companies locating in Ireland, and attempts to review the potential implications for the reinsurance industry from the introduction of the new EU regulatory framework, Solvency II. The financial stability considerations arising from the location of these companies in Ireland are also explored.

1 The authors are Economists in the Statistics Division of the Central Bank of Ireland. The views expressed in this article are solely the views of the authors and are not necessarily those held by the Central Bank of Ireland or the European System of Central Banks. The authors would like to acknowledge the helpful comments of Joe McNeill, Gerard O'Reilly, Rory McElligott, Terry Quinn, Mary Cussen and Caroline Gavin in the Economics Directorate, and thank Tim O'Hanrahan, Andrew Coffey, Tom Mulholland and Karl Quinn in the Insurance Supervision Directorate for their assistance with the reinsurance data.

1. Introduction

Ireland has developed into a global centre for reinsurance services and during 2012 it had the second-highest number of reinsurance companies in Europe. In addition, the size of the reinsurance sector is quite large in Ireland, with their total assets equivalent to over 30 per cent of GDP. Given the magnitude of the reinsurance sector in Ireland, an understanding of the contribution of the sector to the domestic economy and its potential risks to financial stability is crucial.

It is somewhat surprising that there is a relative absence of publicly available analysis of the structure of the reinsurance industry in Ireland and the reasons behind this industry's development. This article aims to address that gap. Section 2 provides insights into the reasons behind the evolution of the industry in Ireland. The contribution of the industry to the Irish economy, both in terms of gross value added (GVA) and employment is discussed in Section 3. Section 4 examines the implications of the introduction of Solvency II on the industry in Ireland and the growing competition from insurance-linked securities (ILS) entering the market. The potential financial stability implications arising from the location of reinsurance companies in Ireland are analysed in Section 5. Section 6 concludes.

2. Evolution of the Reinsurance Industry in Ireland

Reinsurance is a form of insurance, purchased by insurance companies to manage the risks involved with underwriting policies. Insurance companies transfer part or all of the risk to the reinsurance company and pay a premium for this service. Reinsurance contracts can be structured in a number of ways including 'sharing losses proportionally', or 'in excess of a fixed amount'.

In general, reinsurance companies can be split into two categories, both of which are present in Ireland:

- 'Captive' reinsurance companies: These are insurance companies established by a parent firm for the purpose of insuring the exposures of its parent or affiliates.
- 'Non-Captive' reinsurance companies: These provide reinsurance cover across different business risks and to a variety of clients.

There were 85 reinsurance companies operating in Ireland in 2012. These companies are predominantly foreign-owned, with only one Irish-owned captive. France was the home country for 12 of the 85 Irish-based reinsurance companies, followed by Bermuda with 10. The European headquarters and also the subsidiaries of large global reinsurance groups for many reinsurance companies are located in Ireland. Like most other countries, the reinsurance industry is relatively concentrated with the 10 largest companies accounting for 75 per cent of all premiums written in Ireland in 2012, as seen in the European Insurance and Occupational Pensions Authority (EIOPA)[2] statistics.

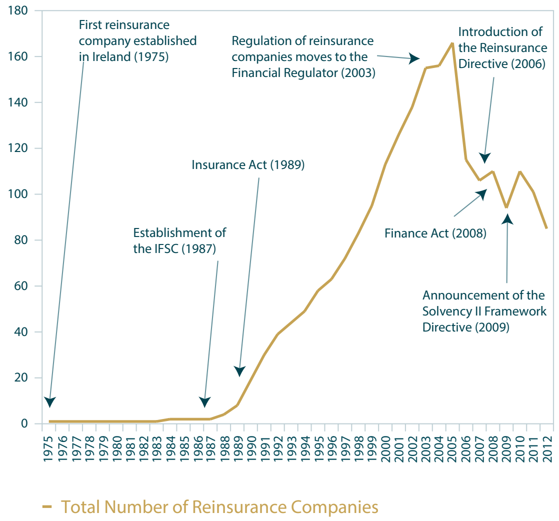
Table 1: Parent Countries of Reinsurance Companies in Ireland - 2012

Parent Country	No. of Non-Captives	Parent Country	No. of Captives
Bermuda	10	Spain	7
France	8	Germany	5
Germany	4	France	4
U.S.	4	U.S.	4
Netherlands	4	Sweden	3
Other	21	Other	11
Total	**51**	**Total**	**34**

Source: Central Bank of Ireland Supervisory Data.

2 The EIOPA statistics are available at this link: https://eiopa.europa.eu/publications/financial-stability/statistics/index.html

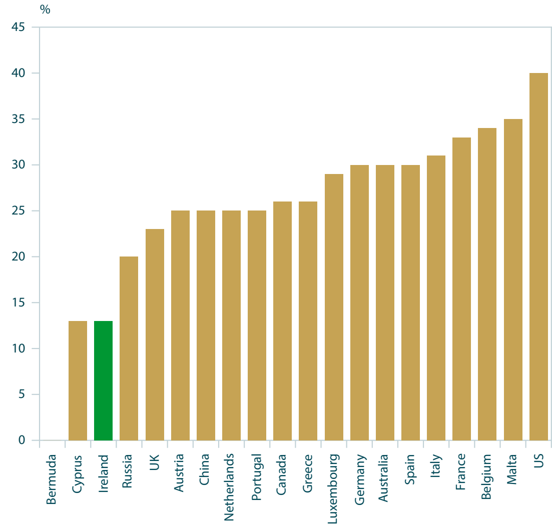
Chart 1: Number of Reinsurance Companies in Ireland



Note: IFSC in this chart represents the Irish Financial Services Centre.

Source: Central Bank of Ireland.

Chart 2: Global Corporation Tax Rates in 2013



Source: KPMG Financial Services.

The reinsurance industry is a relatively recent addition to the Irish economy, with the first company setting up its non-captive life reinsurance business in 1975 (Chart 1). The industry remained relatively small until the establishment of the Irish Financial Services Centre (IFSC) in 1987. In the decade after the formation of the IFSC, the number of companies grew from 4 to 83 companies. Some of the reasons quoted for the establishment of reinsurance business in Ireland include the tax regime, along with the Government reform of the IFSC regulations in 1999 which resulted in companies no longer being required to commit to job creation when applying for an IFSC licence. This may partly explain why the growth of the industry was not matched by an equivalent growth in employment. Since 2006, all financial companies operating in the IFSC pay corporation tax at 12.5 per cent, which remains among the most competitive in the world (Chart 2). However, this has not prevented the contraction in the number of companies operating in the industry, observed since 2005.

There was a slight increase in the numbers of Irish-based reinsurance companies operating in 2008. The introduction of the Finance Act, 2008, included changes such as some tax deductions, and the removal of value added tax payable for particular services. Ireland has also built an extensive tax treaty network, which may benefit reinsurance companies operating globally.

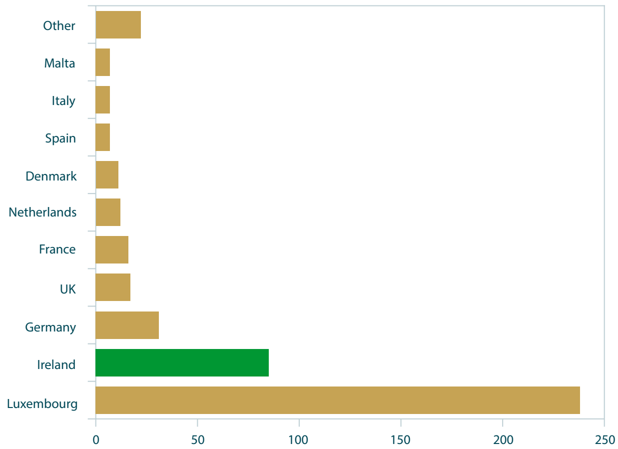
Regulation for reinsurance companies has developed significantly in Ireland over recent years. The introduction of the Insurance Act, 1989, required reinsurance companies to have full authorisation before conducting business in Ireland. During the early years, the (re)insurance industry was regulated by the Department of Enterprise, Trade and Employment. In 2003, the Central Bank and Financial Services Authority of Ireland (CBFSAI)[3] assumed responsibility for regulating the industry.

The introduction of the Reinsurance Directive 2006[4] marked a significant change to the

3 In 2010, the Central Bank of Ireland was created as a new single entity replacing the CBFSAI, which had two component entities – the Central Bank, and the Financial Regulator.

4 S.I. No. 380/2006 - European Communities (Reinsurance) Regulations 2006.

Chart 3: Number of Reinsurance Companies in Europe, 2012



Note: ‘Other’ includes reinsurance companies based in Liechtenstein, Austria, Belgium, Iceland, Sweden, Slovenia, Bulgaria, Cyprus, Czech Republic, Portugal, and Croatia.

Source: EIOPA Statistics.

regulatory framework in Ireland and across Europe including a new prudential regulatory framework for the supervision of reinsurance companies. This directive required the reinsurance industry to hold adequate reserves, to monitor the quality of their assets, and to ensure company solvency. It also created an onus on the companies to inform the regulator about their strategic business plans. It is likely that the introduction of this regulation forced a review of the business models of reinsurance companies in Ireland.

The 2006 directive also provided the legal framework that allowed reinsurance companies to conduct their services across the internal European market. This made it easier for companies to set up operations in a single country, and to offer their services anywhere within the EU. It was intended that this would further enhance the internal market for financial services. The change reduced the need for reinsurance companies to locate in the same country as their customer and enabled reinsurance companies to distribute their services easily across the EU under either ‘freedom of establishment’ or ‘freedom of services’ basis. These developments allowed reinsurance companies to consolidate business in a single location, which also contributed to a reduction in the overall number of companies.

Despite the recent decline in the number of reinsurance companies operating in Ireland, the industry continues to have the second-highest number of these companies in Europe as highlighted in Chart 3. At end-2012, 19 per cent of all reinsurance companies in Europe were based in Ireland, with only Luxembourg having a higher proportion at 53 per cent. On average, from 2010 to 2012, 40 per cent of the reinsurance companies based in Ireland were captives. Ireland ranked fourth for the number of captives located in a European country in 2011 (Business Insurance, 2012).

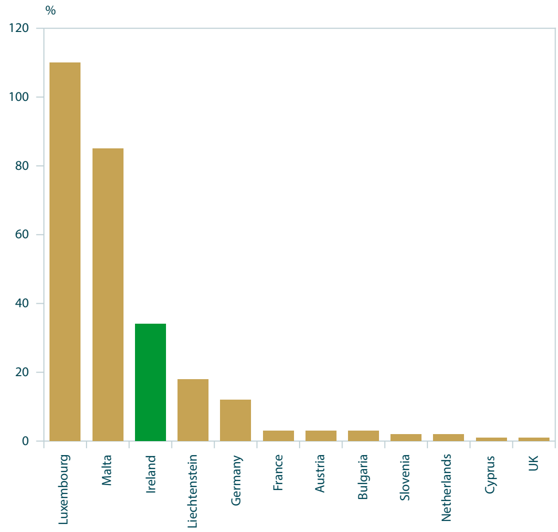
3. The Contribution of the Reinsurance Industry to the Irish Economy

This section examines the contribution to the Irish economy from the Irish reinsurance industry, in terms of a statistical estimate of its value added, the generation of employment and the payment of taxes. In 2012, on average each company had €647 million in assets, which highlights the significant balance sheet size of the industry in Ireland, totalling €55 billion at end-2012. The magnitude of the Irish industry’s assets is in contrast with the estimates of the value added and numbers employed by the industry presented below.

When measured in terms of GDP, Ireland had the third-highest total assets to GDP ratio in Europe in 2012, at 34 per cent (Chart 4). It should be noted that these total assets includes funds withheld[5]. The German reinsurance industry had the largest amount of assets, at €328 billion, yet in terms of its total assets to GDP ratio, it ranked fifth in Europe in 2012.

5 ‘Funds withheld’ represent assets that are withheld by the cedent (the insured party), which would usually be paid to the reinsurer.

Chart 4: Total Assets to GDP Ratio of Reinsurance Companies in Europe, 2012



Note: Total assets are net of the assets relating to retrocession activities. The reinsurance sector engages in retrocession when reinsurance companies insure other reinsurance companies, through the transfer of specific underwriting risks from one reinsurance company to another.

Sources: EIOPA and Eurostat.

The contribution of a sector to the Irish economy is represented as the gross value added (GVA) in the national accounting framework, used by the Central Statistics Office (CSO). The GVA of the total insurance sector (i.e. life, non-life, and reinsurance companies) in 2011 was approximately €2.5 billion (CSO, 2013). While no detailed breakdown of GVA for the reinsurance industry is available, a replication of the national accounting methodology is attempted in this article.

GVA for the reinsurance industry is calculated as the sum of each company's gross operating surplus plus wages and salaries. Gross operating surplus is a statistical concept calculated to measure profits or losses[6] in line with the international framework for the system of national accounts. It is calculated for each reinsurance company as:

Gross Operating Surplus = (Premiums – Claims) + (Net Investment Income before Deduction of Tax) – (Commission Payments) - (Net Other Operating Expenses)

Wages and salaries were estimated by multiplying the number of Irish staff and employees of reinsurance companies (and their related affiliates), by the CSO's figure for average wages and salaries for 'financial, insurance and real estate' activities[7]. This may be a lower-bound estimate as non-captives employ highly-skilled staff such as actuaries and underwriters, with high average wages. Wages and salaries were combined with gross operating surplus to get an estimated GVA for the reinsurance industry of €607 million in 2011 (Chart 5). This represented just 0.4 per cent of GDP or €133 per capita of gross value added. In 2011, the GVA of the reinsurance sector was predominantly earned from the gross operating surplus, with wages and salaries estimated to contribute only €20 million.

The Irish reinsurance industry's contribution to GVA has fluctuated between 2008 and 2012 (Chart 6). The fall in GVA between 2008 and 2010 is, in part, due to the declining number of reinsurance companies, as mentioned in Section 2. Some of the fluctuations in the GVA can also be explained by changes to the settlement date of claims, or the transfer of portfolio of claims following mergers within the industry. This contributes to the difficulties in estimating the financial sector's output, which have been well documented (Everett, McNeill and Phelan, 2013; Burgess, 2011; and Blades and Lequiller, 2006). It should be noted that while these reinsurance companies are located in Ireland, much of the GVA does not contribute to the domestic economy, as profits are repatriated out of Ireland.

Despite the reinsurance industry's balance sheet size, it is not a major contributor to employment in Ireland. The number of employees in the reinsurance industry is low, with a total number of just over 400 employees in Ireland in 2011. This reflects the wholesale nature of the business within the insurance industry. Non-captive companies tend to employ a higher number of employees than captives. Captives, by their nature, do not generally have any employees and are managed by professional service providers. In contrast, life and non-life insurance companies in Ireland

6 Gross operating surplus differs from accounting profits in that it aims to measure the surplus generated by operating activities after the labour factor input has been paid. It is the balance available to the company to "recompense the providers of own funds and debt, to pay taxes and eventually to finance all or a part of its investment" (OECD).

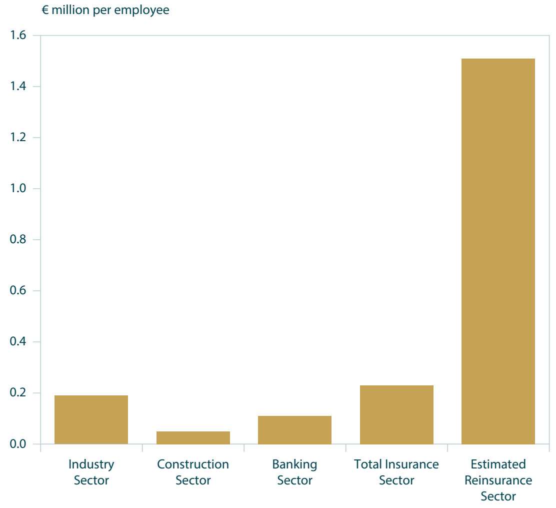
7 The wages and salaries figures used in the GVA calculation are taken from the CSO's Average Annual Survey on Earnings and Other Labour Costs for All Employees by Industry Sector and NACE code.

Chart 5: Sum of the Formula to Estimate 2011 Gross Value Added

Note: Claims includes some adjustments for miscellaneous other income.

Source: Estimated using Central Bank of Ireland Data.

Chart 7: GVA per Employee across all Business Sectors in Ireland, 2011



Sources: Business in Ireland, Central Statistics Office; and Central Bank of Ireland estimates.

Chart 6: GVA of Irish-Based Reinsurance Companies

Source: Estimated using Central Bank of Ireland Supervisory Data.

employed 12,852 in 2012 (Insurance Ireland, 2012). The reinsurance industry also contributes indirectly to the domestic economy through the purchase of services, particularly lawyers, consultants and actuaries. As with any niche sector, once a location has built up a pool of specialists, this can encourage other companies to establish operations here. This may result in further employment and taxation opportunities in the future.

An analysis of the relative size of GVA per employee, compared across different sectors is presented in Chart 7. The GVA is highest for the Irish reinsurance industry, highlighting the disproportionate contribution to GDP relative to the amount of people employed in the sector.

While the reinsurance industry's contribution to employment is very low in relation to the size of its assets, the industry contributes to the State via tax revenue, through their payment of income tax and corporation tax. The reinsurance industry paid an average of €237 million in taxes to the Irish and other countries' exchequers from 2010 to 2012. However, this represents tax paid globally, as it is not possible to separately identify how much of this was paid in Ireland.

Table 2: Summary of Solvency II Structure: Three Pillars[10]		
Pillar I	**Pillar II**	**Pillar III**
Minimum Capital Requirements	Qualitative Assessment of Internal Controls & Risk Management	Public Disclosure & Market Discipline

Source: Fitch (2014).

4. Challenges in the Reinsurance Industry

A number of pending developments may impact on the future progression of the reinsurance industry in Ireland. This section examines the opportunities and challenges to the industry as it faces two key changes: the introduction of Solvency II and the growing competition from insurance-linked securities (ILS).

4.1 Solvency II

Solvency II[8] is an EU directive that harmonises EU insurance regulation and intends to reduce the risk that an insurer would be unable to meet claims, or become insolvent. It will be introduced for the insurance sector, including reinsurance, in Ireland and other EU countries in 2016[9].

The objectives of Solvency II are to increase the protection of policyholders, minimise market disruption, and promote stability in the financial sector and broader economy. This will involve an overhaul of the current regulatory regime (Solvency I), affecting reinsurers, as well as life and non-life insurance companies. The introduction of Solvency II will mean European insurance markets must comply with an agreed set of regulatory rules, which in some cases represents a move towards a more stringent supervisory regime. Three pillars of Solvency II are listed in Table 2, each representing a different aspect of risk mitigation. The reinsurance industry will be obliged to meet the regulatory criteria outlined for each pillar. Swarup (2012) has identified some concerns about the regulatory regime that could potentially lead “to unintended consequences for the wider economy”. Some of these concerns are explored in further detail below.

4.1.1 Company Size

There may be further movement towards an industry with fewer, but larger reinsurance companies in coming years. The size of a reinsurance company could influence how it is impacted by the Solvency II criteria. In particular, Solvency II may benefit larger companies, rather than smaller companies with a less diversified range of business. This is because higher compliance costs could be less burdensome for larger companies as they may be better placed to invest in the necessary changes. Also, many larger reinsurance companies are either in the process of applying, or have already implemented, the new guidelines outlined in the Solvency II framework, smoothing out any transition effects. In contrast, smaller companies are likely to have more concentrated business lines, which may make it difficult for them to achieve the same level of efficiency in their capital management. These smaller companies may, therefore, seek to benefit from merger opportunities to improve their balance sheet position and use of capital to fulfill the Solvency II criteria. Ireland has already experienced a fall of 53 per cent in the number of captives, and 32 per cent in non-captives between 2010 and 2012.

4.1.2 Use of Reinsurance to Diversify Risks

The focus on insurance companies' risk management techniques may result in

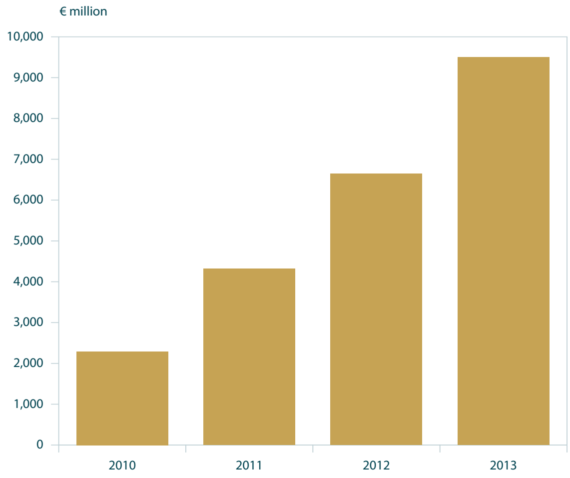
8 Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II).

9 EIOPA (2011) published the implementation date for the first application of the Solvency II regime as 1st January 2016.

10 This article does not attempt to present all details of Solvency II. Interested readers should refer to the EIOPA website on Solvency II for further details, https://eiopa.europa.eu/en/activities/insurance/solvency-ii/index.html

greater demand for reinsurance cover. The effectiveness of reinsurance cover in minimising risk will depend on how the industry transfers risks and the types of products that are used. Additional demands for reinsurance services could be met by new entrants into the industry or through new forms of regulatory arbitrage and the establishment of a 'shadow insurance' sector in the same way that the shadow banking sector has developed. These shadow insurance companies could, in effect, engineer instruments with similar pay-out structures as the contracts offered by reinsurance companies, but would operate outside of the standard insurance regulatory regime, discussed in more detail in Section 4.2.

Chart 8: Global Issuance of Catastrophe Bonds



Source: Bloomberg Data.

4.1.3 Impact of Equivalence

Solvency II will require reinsurance companies to assess the default risks of the reinsurance companies they use when reinsuring some of their own risks. This process will be easier for companies that have contracts with companies based in the EU or countries where the regulatory regime is deemed 'equivalent' with the EU. Equivalence will result in all contracts being treated the same. In the situation where equivalence does not exist, further European level group supervision will be required. Many countries, such as Bermuda and Switzerland, have achieved Solvency II equivalence between their regulatory regimes and the EU's. Although the number of US reinsurance companies located here are relatively small, it has yet to agree an equivalence regime with the EU, and "this is likely to have significant risk management, data, and system implications" (KPMG, 2011).

4.2 Insurance-Linked Securities

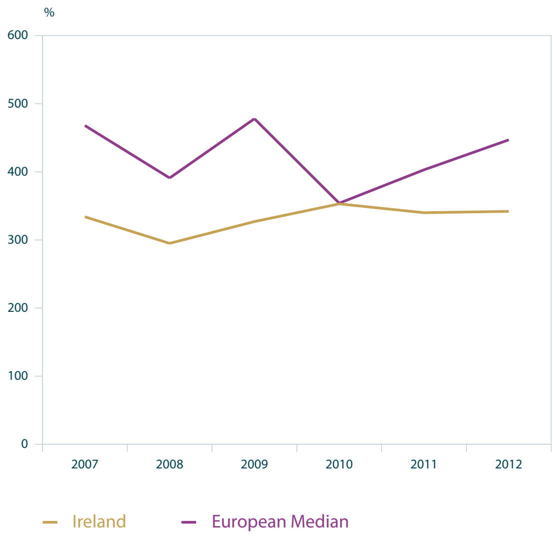
The development of insurance-linked securities (ILS) and other investment vehicles, issuing for example catastrophe, or 'cat', bonds, has led to increased competition for the reinsurance industry. Cat bonds are issued by (re)insurance special purpose vehicles, to cover losses in the event of natural disasters. Cat bonds allow the (re)insurance company to transfer some of the risk of catastrophic events onto investors, as some or all of the loss is covered by premiums and the principal amount of the cat bond.

Reinsurance companies in Ireland, and around the world, are facing greater competition as new investors are making it increasingly attractive for insurance companies to issue cat bonds directly to the markets. The demand for these bonds is being driven by hedge funds, investment banks, private equity, and other investors. These are entering the market to take advantage of the uncorrelated financial market risk, and the relatively high rates of return offered by these bonds. New issuance and outstanding volumes of cat bonds are at record high levels and since 2010, there has been a global increase in cat bond issuance of 314 per cent (Chart 8).

There has been an influx of capital into this sector, putting downward pressure on the reinsurance industry's prices, as shown by PWC (2012). As a result, the reinsurance industry was unable to increase prices to recoup the costs of the natural catastrophes that occurred in 2011. According to McKinsey (2013), "16 per cent of the approximately $300 billion in catastrophe reinsurance capacity worldwide is provided by third-party capital", posing a serious competitive threat to the industry. This could result in reinsurance company closures and mergers in Ireland, as the industry adjusts to lower prices. It should be noted that the stability of this source of capital is yet to be tested, as an increase in interest rates or large catastrophe losses could see an outflow of capital from the insurance industry.

Many reinsurers have also begun to issue cat bonds in specific circumstances as this offers them an opportunity to combine their experience of risk analysis with new financial products. Reinsurance companies issue cat bonds using vehicles known as 'sidecars'[11]. Sidecars are generally concentrated in the property catastrophe retrocession market, and are unlikely to enter into longer-term casualty reinsurance lines such as general liability lines[12].

Chart 9: Reinsurance Industry Solvency Ratio: Ireland and European Median



Source: Estimated using EIOPA data. The European Median is calculated using estimates for 13 European countries.

5. Reinsurance Companies and Financial Stability

The opportunities and challenges from the introduction of Solvency II and the growing demand for ILS will impact the reinsurance industry. Given this, it is important to consider the potential effects on Irish financial stability caused by the collapse of a reinsurance company, and the factors that should be taken into consideration in an assessment of financial stability. The financial stability risks are examined under several categories in this section, including the health of the sector (e.g. solvency ratios, profitability, and technical reserves), the impact of a low interest-rate environment, and systemic risk.

5.1 Health of the Reinsurance Sector

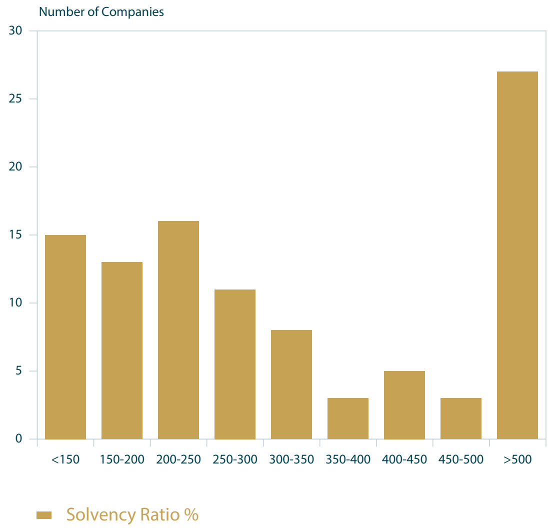
The solvency ratio can be an indicator of the health of the reinsurance industry. It determines the ability of a company to stay solvent and its ability to meet its financial obligations and claims. It is a measure of the ratio of the available solvency margin[13] relative to the required regulatory solvency margin. The Central Bank of Ireland requires all direct writers to maintain capital of at least 150 per cent of the calculated Required Minimum Solvency Margin or 100 per cent of the Minimum Guaranteed Fund. In Ireland, the solvency ratio for reinsurers stood at 342 per cent in 2012, with the majority of reinsurance companies in Ireland strengthening their solvency ratio since 2008. The median of European reinsurance solvency ratios is more volatile than Ireland's ratio which has been trending upwards for a number of years. Captives tend to operate at a lower level of solvency compared with non-captives, which have higher margins. The large number of captives operating in Ireland may, therefore, push the average solvency ratio downwards.

11 Sidecars are special-purpose reinsurers that provide dedicated collateralised quota-share reinsurance, often for a single ceding company that transfers a proportion of its underwriting risk (and relative capital investment), and in turn receives a ceding commission.

12 Liability lines insurance protects an individual/business from being legally liable for the injuries of others.

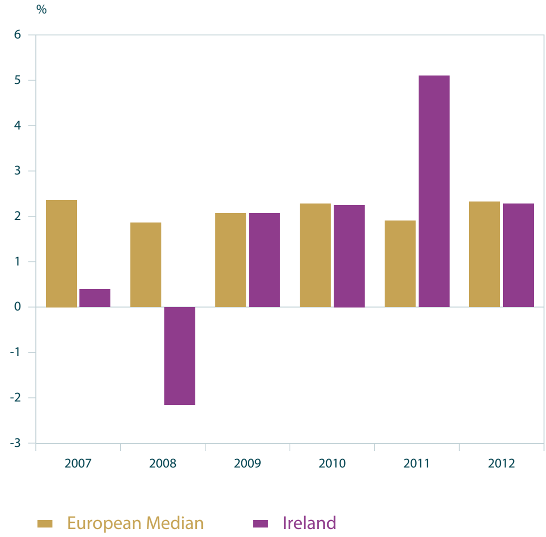
13 Available solvency margin is the difference between the value under the regulatory measurement of the eligible capital held by an insurer, and the sum of the values under regulatory measurement of the obligations.

Chart 10: Distribution of Reinsurance Companies in Ireland by Solvency Ratio, 2011



Source: Central Bank of Ireland Supervisory Data.

Chart 11: Profit/Loss to Total Balance Sheet Assets Ratio of Reinsurance Companies



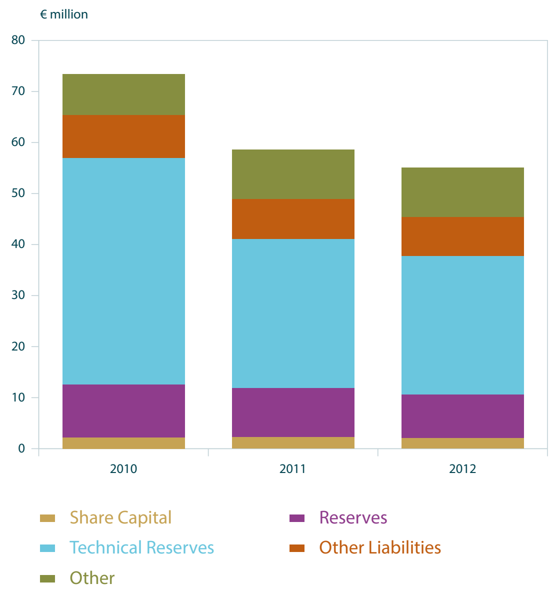
Source: EIOPA.

In order to further analyse the solvency position of the Irish reinsurance industry, the distribution of solvency ratios across all Irish-based reinsurance companies is presented in Chart 10. The capital management practices in the industry appear fragmented with a large number of companies maintaining capital far in excess of the required solvency (i.e. > 500 per cent). The companies with a solvency ratio in excess of 500 per cent are concentrated in the non-captive business, which generally have large operations and retain wider margins, which are held as a buffer for unforeseen expenses/losses. Other reinsurance companies maintain more modest solvency ratios, with smaller reinsurance companies typically holding a solvency ratio below 150 per cent.

The strength of the reinsurance industry can also be analysed using profitability ratios (Chart 11). Irish-based reinsurance companies collectively made a profit in every year from 2007 to 2012, with the exception of 2008. Profits remained broadly in line with the European norms from 2009 to 2012, with the exception of 2011 when the Irish industry reported exceptionally large profits primarily due to one-off items.

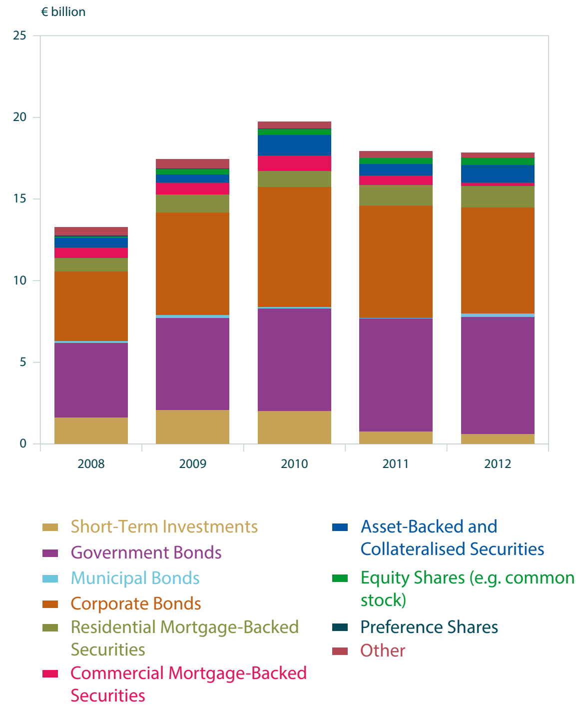
The amount of gross technical reserves on a reinsurer's balance sheet is an indication of its ability to withstand claims, both anticipated and otherwise. While the overall balance sheet size of Irish-based reinsurance companies has fallen between 2010 and 2012, the share of liabilities held in gross reserves have fallen more sharply (Chart 12). Irish-based reinsurance companies held 78 per cent of total liabilities in reserves and technical reserves in 2010, but this fell to 66 per cent in 2011, and 65 per cent in 2012. The ideal level of gross reserves changes from company to company, depending on the size of their operations and the business lines written. However, reinsurance companies should aim to hold, at a minimum, the expected claims from the level of their underwritings plus a risk margin. Diminishing reserves could be as a result of the release of reserves by reinsurance

Chart 12: Irish-Based Reinsurance Companies' Liability Structure



Source: Central Bank of Ireland Supervisory Data.

Chart 13: Total Irish Reinsurance Industry's Investment Assets by Categories



Source: Central Bank of Ireland Supervisory Data.

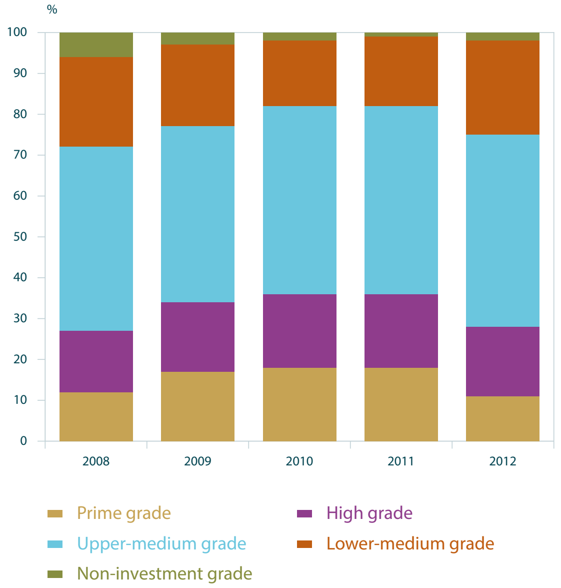
companies to maintain steady profit levels given the competitive, low-yield environment they are faced with. This means some reinsurance companies may release technical reserves into profit, ensuring profit levels remain unchanged from year to year. In a survey of 30 global non-life insurers, including reinsurers, it was found that "industry underwriting profitability would have been 4.1 percentage points lower if not for the reserve releases" (Central Bank of Ireland, 2013). Releasing reserves is not a sustainable profit base for (re)insurers, as an increase in the competitive environment, or a continuation of the low interest-rate environment could put further pressure on its reserve levels and on profitability.

5.2 Low Interest-Rate Environment

The reinsurance industry maintains large financial investments to help ensure adequate funding to cover claims and other expenses. Therefore, it is vulnerable to changes within the financial system, such as changes in interest rates. In the light of the current low interest-rate environment, the industry faces lower investment returns which, "complicates asset-liability management" (BIS, 2011). As the industry also faces downward pressures on demand, prices and underwriting profitability, increased reliance is placed on investment income to maintain overall profitability. As a result of this, reinsurance companies could be forced to re-allocate assets in their portfolios, as prolonged periods of low interest rates reduce returns on traditionally 'safe' financial assets. A potential downside of this asset reallocation is that investments could switch towards higher-yielding assets, which may not offer stable returns. This would change their associated risk profile, and could lead to (un)realised investment losses in the event of changes to the interest rate.

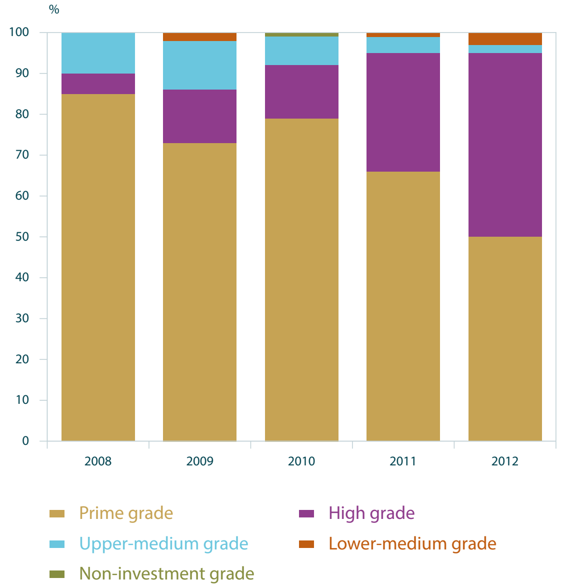
Reinsurance industry investment assets, broken down by category from 2008 to 2012 are presented in Chart 13. It can be clearly seen that the two largest investment categories for reinsurance companies are government bonds and corporate bonds. Total investment holdings increased between 2008 and 2010, before experiencing a fall in 2011 and 2012.

Chart 14: Percentage Breakdown of Irish-Based Reinsurance Sector's Corporate Bonds by Grades



Source: Central Bank of Ireland Supervisory Data.

Chart 15: Percentage Breakdown of Irish-Based Reinsurance Sector's Government Bonds by Grades



Source: Central Bank of Ireland Supervisory Data.

In the context of movements within asset categories, holdings of corporate bonds and government bonds by grade, from 2008 to 2012, are analysed. Between 2010 and 2012, reinsurance companies increased their holdings of riskier grade corporate bonds, as there was a shift in holdings of prime grade to lower-medium grade corporate bonds with the former declining by 7 percentage points, and the latter rising by 6 percentage points (Chart 14)[14]. Irish-based reinsurance companies' holdings of prime grade government bonds decreased by 35 percentage points, while their holdings of high grade government bonds increased by 40 percentage points between 2008 and 2012 (Chart 15). This reflects either movements between holdings of prime and high grade government bonds, or downgrades of the prime sovereign held by these reinsurance companies. The movements between grades in holdings of corporate and government bonds are influenced by many major events, including the low interest-rate environment, the introduction of Solvency II, and changes to the international accounting standards, which "are expected to affect investment decisions and influence investment horizons" (BIS, 2011).

Data analysed in Chart 14 and Chart 15 show that the asset portfolio of these reinsurance companies has worsened in terms of grades between 2008 and 2012. As stated above, the reasons may include the downgrading of existing assets or a search for higher yield. However, Becker and Ivashina (2013) states that insurance portfolios "exhibit a strong preference for safer bonds", while showing a bias towards higher yields. This can be seen in most of the movements in the large investment categories of reinsurance companies, as they increase holdings of high and upper-medium grade investments, while maintaining investment grade status. However, the overall portfolio of Irish-based reinsurance companies remains conservative, with changes largely taking place within asset grades rather than switching to new assets.

14 For this analysis, the ratings correspond to the following by Standard & Poor's, and Fitch: Prime grade: AAA; High grade: AA+ to AA-; Upper-medium grade: A+ to A-; Lower-medium grade: BBB+ to BBB-; and Non-investment grade: BB+ to BB-. Note: These ratings are also comparable to AM Best and Moody's categories of credit grade ratings.

5.3 Systemic Risk

The ownership and funding of Irish-based reinsurance companies is predominantly foreign. The majority of reinsurance business by companies located in Ireland relates to foreign risk, with the amount of Irish risk exposure limited. As a result, assessments of global systemic risks relating to the reinsurance industry are required. These are regularly undertaken by EIOPA[15] and the International Association of Insurance Supervisors (IAIS)[16]. In general, systemic risk is inherent to the industry and is extremely difficult to remove, with changing market conditions not only affecting the reinsurance industry, but systemically affecting the overall insurance sector and many other sectors with which it has links. The Financial Stability Board has identified large insurers known as the globally systemically important insurers (G-SIIs), which could potentially pose a systemic risk in the future. Some Irish reinsurance companies are part of these global insurance groups. These companies are required to enter into enhanced group-wide supervision by the end of 2014, with a recovery and resolution plan to be developed over the next couple of years.

Conclusion

Ireland continues to be a prime location for reinsurance companies. However, since its peak in 2005, there has been a reduction in the number of these companies operating in Ireland, due to forthcoming changes in regulation and competition from alternative financial products. The GVA of reinsurance companies in the Irish economy is shown to be low compared with the sum of life and non-life insurance activities. This article highlighted some financial stability risks arising from pending regulatory changes, increased competition and a low interest-rate environment. However, the risks to domestic financial stability are limited, as the reinsurance business is predominantly with non-residents.

15 The EIOPA Financial Stability Reports are available at this link: https://eiopa.europa.eu/publications/financial-stability/index.html

16 The IAIS publishes financial stability, macro-prudential policy and surveillance reports on its website at this link: http://www.iaisweb.org/Supervisory-Material/Financial-Stability-Macroprudential-Policy-Surveillance-988

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