

Hannover Rück SE

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Hannover Rück SE

Credit Report

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Group Members Rating Effective Date:
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Disclosure Information: Refer to rating unit members for each company's Rating Disclosure Form

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A.M. Best Rating Unit: 084092 - Hannover Rück SE

Best's Credit Ratings for Group Members:

Rating Effective Date: December 20, 2018

AMB#	Company	Rating Unit	Best's Financial Strength Ratings			Best's Issuer Credit Ratings		
			Rating	Outlook	Action	Rating	Outlook	Action
084092	Hannover Rück SE	<i>Rating Unit</i>						
085070	Hannover Rück SE		A+	Stable	Affirmed	aa	Stable	Affirmed
085064	E+S Rückversicherung AG		A+	Stable	Affirmed	aa	Stable	Affirmed
094351	Hannover Life Re Co of America		A+	Stable	Affirmed	aa	Stable	Affirmed
088859	Hannover Life Reasr BM Ltd		A+	Stable	Affirmed	aa	Stable	Affirmed
068031	Hannover Life Reassurance Amer		A+	Stable	Affirmed	aa	Stable	Affirmed
085314	Hannover Re (Bermuda) Ltd		A+	Stable	Affirmed	aa	Stable	Affirmed
084133	Hannover Re (Ireland) DAC		A+	Stable	Affirmed	aa	Stable	Affirmed

Rating Rationale:

Balance Sheet Strength: Strongest

- Balance sheet strength underpinned by strongest level of risk-adjusted capitalisation as measured by Best's Capital Adequacy Ratio (BCAR), prudent reserving approach, access to capital markets and effective capital management.
- Risk-adjusted capitalisation remains strongest as at year-end 2017 and 2018 to date despite a series of large losses, supported by the group's good earnings generation from diversified sources, low-risk investment portfolio and excellent credit quality of the retrocession panel.

- Comprehensive retrocession programme, including capital market transactions, helps to limit operating volatility and protect its capital base.
- Intangible elements, such as the value of in-force life business and hybrid debt, contribute to the significant capital buffers.
- Effective management of the business undertaken through the use of capital management tools.

Operating Performance: Strong

- Track record of strong operating performance through business cycles. The group has produced a weighted average return on equity of 12.9% and combined ratio of 95.9% over the past five years (2013-2017).
- The natural catastrophe and man-made losses in 2017 and 2018 dampened overall earnings; however, the group remains profitable, benefitting from investment income and life technical margins.
- Results in 2018 have been negatively affected by recaptures in the group's US legacy mortality business, following its decision to increase rates on certain policies. This performance is expected to be much improved from 2019.
- Investment performance is good with the five-year weighted average net investment return of 4.1%, but limited by the low interest rate environment and the group's low-risk investment approach.
- Performance of the non-life book supported by moderate net catastrophe exposure and effective expense management due to the group's lean organisational structure.

Business Profile: Very Favorable

- Globally diversified group with a leading market profile in the reinsurance sector.
- Business profile supported by strong brand recognition and long-standing relationships with stakeholders.
- Excellent diversification by line of business and product type, with strong positions in niche market segments.
- Tailor-made financial solutions and structured reinsurance complement core traditional reinsurance business.
- Lean and efficient infrastructure partly mitigates the impact of highly competitive environment and enables greater influence over pricing.

Enterprise Risk Management: Very Strong

- Risk management framework fully embedded within the organisation and effectively utilised for strategic decision making, which includes the utilisation of internal capital model.
- Extensive use of sophisticated tools and modelling techniques demonstrates highly developed risk culture required to support the complexity of global operations.
- Major risks are statistically quantified, with their impact on capital assessed via various stress and scenario assessments.
- Conservative policy in place to support catastrophe risk management.

Rating Lift/Drag

- Hannover Re group of companies maintains a high degree of financial and operational independence from the other operations of Talanx AG, the intermediate non-operating holding company, which is in turn owned by HDI Haftpflichtverband der Deutschen Industrie V.a.G.

Outlook

The stable outlooks reflect AM Best's expectation that Hannover Re's balance sheet strength will remain at the strongest level supported by strongest risk-adjusted capitalisation, good internal capital generation, low-risk investment portfolio, and moderate financial leverage, amongst other factors. Operating performance is expected to remain strong, supported by the group's profitable and relatively stable property and casualty operations, despite exposure to natural catastrophes, and the improvements in its US life legacy book following the remedial actions undertaken in 2018. It is also expected that Hannover Re's very favourable business profile and very strong ERM will provide some protection to it against the challenging operating environment in the reinsurance sector.

Rating Drivers

Positive rating actions are unlikely in the near term, but could occur over a longer time horizon if Hannover Re demonstrates strengthening of its key rating fundamentals to a standard commensurate with a higher rating level.

Additionally, a track record of improvements and greater stability in the performance of Hannover Re's legacy US life book will be required to support upwards rating pressure.

Negative rating actions could occur if Hannover Re's consolidated risk-adjusted capitalisation or operating performance were to fall to a level outside of A.M. Best's expectations, due to factors such as unexpectedly high losses or deterioration in underwriting risk controls resulting in sustained decline in technical results.

Negative pressure may also arise if A.M. Best revises its assessments on the level of independence between Hannover Re and its parent company, Talanx AG.

Financial Data Notes:

Time Period: Annual - 2017

Status: A.M. Best Quality Cross Checked

Key Financial Indicators:

Key Financial Indicators (000)

	Year End				
	2017	2016	2015	2014	2013
Premiums					
Gross premiums written - combined	17,790,506	16,353,622	17,068,663	14,361,801	13,963,409
Gross premiums written - non life	10,710,944	9,204,554	9,337,973	7,903,369	7,817,866
Net premiums written - combined	16,094,424	14,603,998	14,849,569	12,580,737	12,420,488
Net premiums written - non life	9,158,732	7,985,047	8,099,717	7,011,347	6,866,317
Net premiums written - life	6,472,779	6,425,048	6,492,412	5,411,425	5,359,847
Capital & Surplus	8,528,478	8,997,230	8,068,344	7,550,758	5,888,436
Total Assets	61,196,846	63,594,547	63,214,938	60,457,584	53,915,544

Source: Bestlink - Best's Statement File - Global

Local Currency: Euro

US \$ per Local Currency Unit 1.19804 = 1 Euro (EUR)

Key Financial Indicators: (Continued...)

Key Financial Indicators - A.M. Best Ratios (%)

	Year End				
	2017	2016	2015	2014	2013
Combined Ratio	100.0	94.0	94.7	95.0	95.1
Net Premiums Written to Equity	188.7	162.3	184.0	166.6	210.9
Liquidity					
Liquid Assets to Total Liabilities	68.6	69.7	65.2	63.1	61.5
Total Investments to Total Liabilities	76.2	76.7	71.5	68.6	66.5

Source: Bestlink - Best's Statement File - Global

(*) Data reflected within all tables of this report has been compiled from the consolidated financial statements of this company (Source: Company Financial Statement).

Best's Capital Adequacy Ratio Summary - AMB Rating Unit (%)

Confidence Level	95.0	99.0	99.5	99.6
BCAR Score	67.4	54.9	49.6	48.0

Source: Best's Capital Adequacy Ratio Model - Universal

Credit Analysis:

Balance Sheet Strength: Strongest

The BCAR scores presented under the "Best's Capital Adequacy Ratio Summary" section of this report are based on the year-end 2017 audited financial statements.

Capitalization:

Hannover Re's balance sheet strength is underpinned by risk-adjusted capitalisation at the strongest level as measured by BCAR. Within the BCAR model, A.M. Best gives capital credit to Hannover Re for its hybrid debt issue and the value-in-force of the life business, however, the group is not over-dependent of these softer capital elements. On a catastrophe-stressed basis, Hannover Re's BCAR scores show resilience and remain at the strongest level due to its effective catastrophe risk management.

Over several years, Hannover Re has demonstrated its ability to manage its capital effectively and limit its earnings volatility through the use of comprehensive retrocession programme and prudent reserving approach. The group has reported a compound annual growth rate (CAGR) of its capital and surplus of 7.2% over the period 2013 to 2017, supported by strong internal capital generation through solid earnings in each of those years, both from technical margins as well as investment income. In 2017, Hannover Re's retained earnings increased to EUR 7.0 billion from EUR 6.6 billion, although its overall capital base declined to EUR 8.5 billion from EUR 9.0 billion largely due to the absence of positive foreign-currency translations which boosted its capital in the prior year.

Capital management:

Hannover Re utilises effective capital management strategy with decision making based on its internal capital model. Additionally, the group benefits from robust regulatory oversight in the markets where it operates. The group maintained a Solvency II ratio of 260% at year-end 2017 (2016: 230%) and 252% at nine months of 2018, which is comfortably above its minimum target ratio threshold of at least 200%. In the third quarter of 2017, the group's regulator, BaFin, approved the utilisation of its internal capital model for the calculation of its operational risk. This, combined with the lower market risk and other factors, led to a higher Solvency II ratio in 2017 compared to 2016.

Capitalization: (Continued...)

Additionally, the group's capital management strategy encompasses the utilisation of other sources of capital, which include hybrid debt and traditional and alternative retrocession protection, to offset the high costs associated with the use of equity capital.

Capital is managed at the group level and is considered to be fungible across group subsidiaries. The allocation of capital across the group's operational companies is based upon the economic risk content of the respective business operation, after taking into consideration the local capital and solvency requirements.

Financial flexibility:

Hannover Re's access to the debt markets, as well as the traditional and alternative markets to support its retrocession needs, is a factor that underpins A.M. Best's opinion of the group's excellent financial flexibility. Additionally, the group has access to letters of credit and other facilities with various financial institutions to support its operations. Hannover Re maintains financial leverage and interest coverage ratios at levels that are within A.M. Best's tolerances for the strongest balance sheet strength assessment. Hannover Re's financial flexibility was enhanced by the initial public offering of its intermediate parent, Talanx AG, in 2012, which also maintains strongest risk-adjusted capitalisation.

A.M. Best believes that the Hannover Re group of companies maintains a high degree of financial and operational independence from other operations of Talanx AG. The group has direct access to capital markets being a publicly listed entity, as well as through the group.

Retrocession:

In A.M. Best's opinion, Hannover Re's retrocession strategy is a successful component within its risk management framework. The group has a comprehensive retrocession programme, which supports the stabilisation of its technical results through the elimination of peak exposures and therefore provides long-term protection of the group's capital. In addition to its traditional retrocession placements, Hannover Re benefits from its securitisation programmes allowing the group to control its aggregate exposures thereby maintaining losses within its risk appetite.

The group's retrocession programme includes a "whole account" protection which is a world-wide treaty consisting of two sections for peak and non-peak scenarios and a unique "K-cession" arrangement representing a modelled programme which has been utilised by the group for many years, as well as a large loss aggregate excess of loss cover, and additional covers which Hannover Re purchases with restricted territorial scope for its subsidiaries and branches.

The K-cession represents a modelled programme consisting of non-proportional reinsurance treaties for property, catastrophe, aviation and marine lines placed primarily in the capital markets. This transaction provides fully collateralised retrocession protection on peak worldwide natural catastrophe exposures. Despite losses experienced on this programme in 2017 and 2018 to date, Hannover Re continues to attract capacity to the K-cession, meeting its targets of obtaining at least USD 400 million of retrocession cover.

At the same time, the group is not over-dependent on its retrocession, as demonstrated by an average retention ratio (non-life) of 87.1% over the past five years (2013-2017). Furthermore, with regard to its credit risk exposure to its panel of retrocessionaires, A.M. Best believes that the downside risk associated with the potential for default is limited. This reflects the low counterparty exposure to a single party and the excellent credit quality of its panel. Additionally, a large portion of recoverables are collateralised with deposits or letters of credit.

Capitalization: (Continued...)

Capital Generation Analysis (000)

	Year End				
	2017	2016	2015	2014	2013
Capital & surplus brought forward	9,740,547	8,777,470	8,252,960	6,530,027	6,714,144
Currency exchange gains	-752,976	173,829	325,652	443,189	-233,757
Profit or loss for the year	1,044,577	1,226,426	1,214,713	1,065,107	939,249
Capital gains or (losses)	-71,909	166,457	-444,923	595,916	-442,611
Dividend to shareholders	-647,067	-612,953	-557,435	-403,380	-410,284
Other changes	-26,614	9,318	-13,497	22,101	-36,714
Total change in capital & surplus	-453,989	963,077	524,510	1,722,933	-184,117
Capital & surplus carried forward	9,286,558	9,740,547	8,777,470	8,252,960	6,530,027

Source: Bestlink - Best's Statement File - Global

Local Currency: Euro

US \$ per Local Currency Unit 1.19804 = 1 Euro (EUR)

Asset Liability Management – Investments:

Hannover Re actively manages its investments to ensure it maintains a conservative profile so that it can react to changing market conditions. The group maintains a low-risk investment portfolio, which is of high credit quality and well diversified. It consists mainly of fixed-income securities, cash and real estate. Additionally, at mid-year 2018, approximately 2% of total investment portfolio consisted of private equities. Hannover Re sold almost all of its listed equity portfolio in 2017 as part of its de-risking exercise and taking advantage of favourable market conditions. The group also finished its Barbell strategy on fixed-income securities in 2017.

Hannover Re invests in structured fixed-income securities: fixed-to-float notes, callable or puttable bonds and inflation linked bonds. These types of bonds accounted for approximately 20% of the group's total fixed-income portfolio in mid-2018. These securities are subject to strict investment guidelines. While the major part of the callable bonds are related to the corporate bond portfolio where a call feature at the end of maturity becomes more dominant in the market, the inflation linked bonds are held for hedging purposes and match the group's liability profile.

Recently, Hannover Re have made some changes to its investment guidelines, in particular, the group has increased flexibility of foreign-exchange hedging by inclusion of cross currency swaps into eligible instruments, widened limits for real estate and private equity, set structural limits for Real Estate and US infrastructure investments, and aligned the allowance for derivatives with regulatory wording. Any new investment initiatives are undertaken conservatively and are not expected to increase the overall investment risk profile of the group.

Reserve Adequacy:

The group demonstrates a conservative approach in the establishment of reserve provisions. Reserves are determined based on statistical (stochastic and deterministic) methods, with the adequacy verified and agreed upon by an independent third party on an annual basis.

The group strategy is to maintain a reserve buffer, particularly in light of the soft market conditions. Traditionally, the group has a high confidence level in its reserves and a margin above its external actuary's best estimate. Contributions from prior-year run-off profits have generally been within A.M. Best's expectations, with positive claims development illustrated over the past five years.

Historically, the group maintains a non-life large loss reserve budget set each year. In 2017, the large loss budget was EUR 825 million net (unchanged from 2016). This budget was exceeded by the third quarter of 2017 due to a series of catastrophe and man-made losses. At year-end 2017, the large loss expenditure came to EUR 1.13 billion (2016: EUR 627 million). As at nine months of 2018, Hannover Re's large loss experience was still below the large loss budget of EUR 825 million, at approximately EUR 365 million (net).

Hannover Re's L&H reserves are dominated by mortality and longevity risks. The reserving practices use cedants' data, with Hannover Re's adopting its own assumptions and utilising market-specific information. Specific concerns relate to a book of US life business that

Reserve Adequacy: (Continued...)

Hannover Re acquired in 2009. The results of this book have been below expectations and primarily reflected higher than expected mortality experience. In 2017, the performance of this book has further deteriorated, and Solvency II reserves for this book were substantially increased. Under IFRS, the provisions for this block continue to be calculated according to the "lock-in" principle whereby reserves set at inception cannot be modified.

Overall, AM Best believes that Hannover Re's reserving strategy is likely to continue to support the generation of strong technical profits, despite the deterioration in market fundamentals.

Operating Performance: Strong

Operating Results:

Hannover Re has a track record of maintaining strong operating results through business cycles. The group's highly diversified earnings profile is reflective of its diverse spread of risks both geographically and by line of business, conservative investment strategy and effective catastrophe management. The group's performance metrics are largely in line with its peers, however the performance is impacted by the weakness in Hannover Re's life book, which has been underperforming in recent years.

Hannover Re has an excellent five-year average return of equity (ROE) of 12.9% (2013-2017). Despite the various large catastrophe events that occurred in 2011 and 2017, the group was able to generate an ROE of 14.3% and 11.0% respectively in those years.

Hannover Re has generated better and more stable results since 2008, with the improvements being driven by several factors that include the implementation of a more conservative investment and reserving strategy, the stringent management of the group's natural catastrophe exposures and a shift to a less volatile business mix. The benefit of Hannover Re's less volatile operating model is demonstrated by the group's stable performance (underwriting and overall) since 2009, compared with its performance in the previous five-year period (2004-2008) when it reported weighted average CR of 103.7%. Additionally, the prudence in Hannover Re's reserves built within the company over time helps it to limit underwriting volatility. Positive run-offs have allowed the group to continue generate strong technical profits despite deterioration in market fundamentals in recent years. As an illustration, Hannover Re reported a five-year standard deviation in its non-life combined ratio of only 2% over 2013-2017.

Underwriting Results:

Non-Life Reinsurance:

The underwriting performance of the group's P&C portfolio is strong, a reflection of its highly diversified profile. Hannover Re has produced a five-year (2013 to 2017) average non-life combined ratio of 95.9%, ranging between 94% and 100%. The performance was weaker in 2011 with a combined ratio of 104.5% due to global natural catastrophe losses.

In 2017, the group was able to report a combined ratio of 100.0% despite a number of major losses. Major losses are defined as claims in excess of EUR 10 million (gross). These losses contributed to approximately 12.3% of the combined ratio in the year and were dominated by losses in the Americas. In 2017, Hannover Re's reserve run-off profit was EUR 1,058 million, or 11.6% of the group's net earned P&C premium. Positive run-offs were mainly generated in short-tail property business as well as in general liability and marine / aviation.

For the first nine months of 2018, Hannover Re reported a non-life combined ratio of 96.8%, which was negatively affected by a number of large and medium man-made and catastrophe losses. The largest catastrophe losses in this period (on a net basis) were claims from typhoons Jebi and Prapiroon in Japan, hurricane Florence in the US and storm Friederike in Europe. Additionally, the performance of the group's structured reinsurance business, which is characterised by higher combined ratios due to low risk transfer, but higher stability than the rest of the book, had a slight negative impact on the combined ratio in this period.

Life and Health Reinsurance:

The technical performance of the life and health segment is a partially offsetting rating factor for Hannover Re, owing to the underperformance of the mortality/morbidity portfolios. These accounts have generated higher than expected levels of mortality and morbidity experience due to a combination of factors that have affected the market as a whole, particularly for the US mortality business. Although, corrective measures have been taken to improve the profitability of the life and health segment, the results of the mortality and morbidity accounts continue to fail to consistently meet Hannover Re's internal performance expectations. At the same time, the new life business is noted to have better performance partially offsetting losses from the older book.

Hannover Re has undertaken a number of measures to improve performance of the life and health portfolio such as renegotiating terms where possible and optimising the collateral costs. In mid-2018, the group launched a major project where significant rate increase notifications were applied to certain treaties. Ceding companies had an option to recapture their policy if they decided not to accept a rate increase. The recaptures were much higher than had been anticipated and, as of October 2018, the group had a material one-time negative EBIT impact on that block of business. According to Hannover Re's assumption, the strain for the full year 2018 will be up to USD 400 million. The total Life & Health net income for the nine months of 2018 decreased to EUR 93 million compared to EUR 136 million for the same period of 2017. Following the one-off hit in 2018, the results are expected to be much improved from 2019 onwards, as the remaining life book is expected to be of a better quality.

Hannover Re's target is to generate an EBIT of at least 6% of net earned premium on Mortality/Morbidity business and at least 2% on Financial Solutions/Longevity business. Whilst financial solutions EBIT is much higher than the target, the Mortality/Morbidity book still fails to meet the group's internal target, with reported EBIT of 0.0% in 2017.

Investment Results:

Hannover Re reported positive investment returns in recent years above its target return of at least 2.7%, benefitting from its conservative asset allocation. The group's five-year weighted average net investment return for 2013-2017 is 4.1%. For the first nine months of 2018, Hannover Re reported return on investments of 3.3% benefitting from higher interest rates.

Financial Performance Summary (000)

	Year End				
	2017	2016	2015	2014	2013
Pre-Tax Income	1,292,619	1,617,655	1,670,920	1,370,670	1,102,392
Net income (after noncontrolling interests)	958,555	1,171,229	1,150,725	985,649	895,467

Source: Bestlink - Best's Statement File - Global

Local Currency: Euro

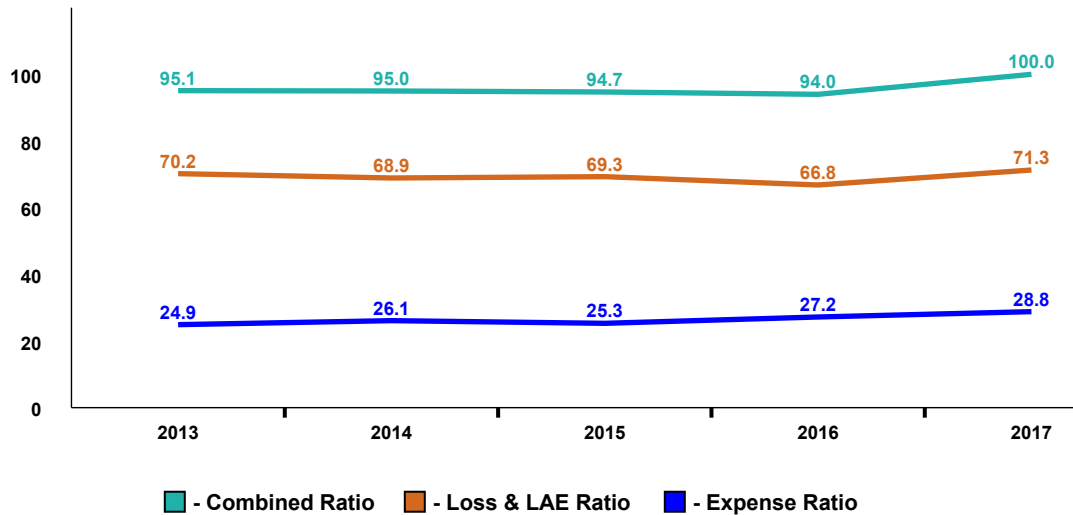
US \$ per Local Currency Unit 1.19804 = 1 Euro (EUR)

A.M. Best Ratios (%)

	Year End				
	2017	2016	2015	2014	2013
Overall Performance:					
Return on Assets	1.7	1.9	2.0	1.9	1.7
Return on Equity	10.9	13.7	14.7	14.7	15.0
Non-Life Performance:					
Loss & LAE Ratio	71.3	66.8	69.3	68.9	70.2
Expense Ratio	28.8	27.2	25.3	26.1	24.9
Combined Ratio	100.0	94.0	94.7	95.0	95.1
Combined less Investment Ratio	86.8	82.7	83.0	83.0	83.7

Source: Bestlink - Best's Statement File - Global

Combined Ratio (%)



Business Profile: Very Favorable

Hannover Re maintains a very favourable business profile as a leading global reinsurer. Hannover Re's leading market position reflects its highly diversified business mix (by product offerings and geographic spread), excellent financial strength, strong brand recognition and long-standing relationships with various stakeholders in the market. The established group's brand is underpinned by the expertise of its management team and successful track record of executing its strategy.

The group's excellent competitive position is a reflection of its business strategy, which pursues value-driven growth and the generation of risk-based returns in excess of the cost of capital. Hannover Re follows these strategic objectives through its ability to undertake active cycle management, allowing the group to optimally diversify its portfolio whilst balancing its risk return profile. Hannover Re therefore benefits from its ability to effectively deploy capital across its various business segments, thereby providing the group with the flexibility to manoeuvre through the varying market cycles.

Furthermore, Hannover Re's lean and efficient structures support its ability to focus on selective underwriting and bottom-line profits, particularly in challenging market conditions, without immediate concerns of the expense strain.

Market position:

At year-end 2017, Hannover Re ranked as the fourth-largest composite reinsurer globally with GWP of EUR 17.8 billion. The competitive conditions in the global reinsurance market remain intense, driven by the abundance of third-party capital, the international M&A activity and the rapid expansion of certain regional players. A.M. Best believes that Hannover Re's excellent diversification and lean operational structure support its ability to focus on selective underwriting and bottom-line profits during the challenging market conditions.

Approximately 38% of Hannover Re's GWP originated from North America in 2017, followed by Asia (12.6%), Germany (9.5%), United Kingdom (9.3%), Latin America (5.7%), Australia (2.7%), Africa (2.4%) and the rest of Europe (19.8%). Hannover Re holds a strong position in the US and is the third-largest life reinsurer, as measured by in-force business (at year-end 2017). This position is likely to remain stable over the medium term, due to the high barriers to entry to the US life reinsurance segment. The Asia-Pacific region has been a growth area for Hannover Re in recent years. The group has a strong market position in China as a local reinsurer and enjoys good customer relationships there. In 2017, Hannover Re commenced local operations in India, following the approval of its branch licence in the previous year. In its domestic market of Germany, Hannover Re benefits from its affiliation with Talanx AG, a leading multi-brand insurance group in Europe, and the excellent competitive position of its subsidiary, E+S Rueckversicherung AG, one of the largest composite reinsurers in Germany and a leading player within the domestic motor segment.

Management quality:

The management team of Hannover Re demonstrates an in-depth expertise and understanding of the group's business. In recent years, the group has proven its ability to execute on its key strategic plans and adapt its expectations as required by the changing operating environment. This was shown in 2017, when, after a series of natural catastrophe events, the group was able to adjust its outlook and outperform its new guidance (revised in November 2017) by the end of the year.

In August 2018, Hannover Re announced that its CEO was due to retire in May 2019. The Supervisory Board of the group appointed a successor who has become a member of the Executive Board with effect from 1 April 2019 and will take up the position of the CEO after the Annual General Meeting on 8 May 2019. The successor maintains deep expertise in the life and non-life reinsurance business, and has worked in the reinsurance industry for over 20 years holding various roles.

Distribution:

Hannover Re maintains excellent relationships with its stakeholders which ensures its access to business even during periods of intense competition. Long-standing relationships with clients allow the group to write tailor-made solutions on individual basis. Traditionally, around 60% of the overall (life and non-life) business is written directly, with the rest being placed via brokers. Outside of its domestic market, the majority of the business is sourced through brokers, especially for non-proportional business. In view of the digitalisation processes taking place in the insurance industry, Hannover Re places great focus on cooperation with cedants in order to offer the end-customers on-line underwriting and distribution solutions.

Hannover Re reports through two business segments: Non-life Reinsurance and Life and Health Reinsurance.

Non-life Reinsurance:

The non-life portfolio (representing approximately 60% of consolidated GWP in 2017) is highly diversified by line of business and territory. The group operates through three market segments: target markets comprising the markets of North America and Continental Europe (approximately 30% of non-life GWP at year-end 2017); specialty lines (26% in 2017), which consist of marine, aviation, credit surety and political risks, the UK, Ireland and London markets, and facultative reinsurance; and global reinsurance (44% in 2017), which encompasses all other segments worldwide including catastrophe reinsurance (primarily written out of Bermuda), agricultural risks, retakaful business, structured reinsurance and insurance-linked securities (ILS).

The non-life portfolio has achieved a good growth over the past five years (2013-2017), as demonstrated by a CAGR of 6.8%. However, growth has been subject to fluctuations, ranging between -1.4% and 18.2% over the period, which has been partially attributable to foreign exchange rate fluctuations. The 18.2% (8.1% on a constant currency basis) rise in GWP in 2015 was largely driven by a number of sizeable individual contracts, particularly for treaties written in Asia, the US and agriculture. In 2017, the business growth was supported by significant development of the structured reinsurance business.

Hannover Re continued to benefit from its strong market profile as a provider of alternative reinsurance products and services, with structured reinsurance and ILS offerings supporting the group's expansion in recent years. Additionally, Hannover Re's expansion continued to benefit from strong economic demand in the emerging markets, as well as strengthening macroeconomic conditions in the US.

Life and Health Reinsurance:

The life and health portfolio (representing approximately 40% of consolidated GWP in 2017) has been a growth story for Hannover Re overall, supported both organically and through acquisitions. In 2009, Hannover Re acquired the ING US individual life reinsurance business from Scottish Re Group Limited, along with its infrastructure to support the underwriting of new term reinsurance treaties. This transaction enhanced Hannover Re's profile in the US life segment.

Hannover Re operates its life and health business through two categories, namely financial solutions (approximately 13% of life and health GWP at year-end 2017) and risk solutions, which consists of mortality, morbidity and longevity business. The group is a leading provider of financial solutions, which seeks to optimise cedants' balance sheets through capital and reserve relief. Such transactions provide funding for new business strain and mergers and acquisitions, release embedded values in maturing portfolios and optimise tax, solvency and surplus requirements.

North America, Asia and the UK are Hannover Re's largest life markets representing 67% of life and health GWP in 2017 (combined), followed by Australia/New Zealand, Rest of Europe, Latin America, Germany and Africa. In the US, Hannover Re is focused on the areas of mortality and financial solutions, whilst in Europe the group targets the areas of longevity, retirement provisions and long-term care. Life and health business is generally sourced on a direct basis through a worldwide network of branch offices and subsidiaries.

Growth of the life and health portfolio has also been subject to significant fluctuations over the past five years (2013-2017) as demonstrated by the CAGR for the segment of 3.2%, with GWP development fluctuating between -7.5% and 19.7% over the period. In addition to the group's acquisitive expansion in the period, the movement in premium volumes has been affected by the prevailing strong competitive

conditions, particularly in Europe; demand for capital relief offerings, especially in regions moving to a risk-based insurance regulatory approach; and the strong economic activity of the emerging markets.

At year-end 2017, life and health GWP declined by 1%, driven by various dynamics within the portfolio. In particular, positive premium developments in the group's international life and health portfolio were partially offset by higher mortality in its legacy US mortality portfolio.

Group structure and affiliations:

Hannover Re is the intermediate operating holding company of the Hannover Re group of companies. The reinsurer is indirectly owned by Talanx AG (which held a 50.2% share of the group as at year-end 2017), institutional investors (38.6%) and private investors (11.2%). Hannover Re became a Societas Europea (SE) (a European public limited company) in March 2013.

Talanx AG is the intermediate non-operating holding company of the Talanx group of companies, a leading multi-brand insurance holding group in Europe. Talanx AG consists mainly of primary insurance companies, in addition to its stake in Hannover Re. Less than 5% of Hannover Re's business is derived from subsidiaries of the Talanx group. A.M. Best believes that the Hannover Re group of companies maintains a high degree of financial and operational independence from the other operations of Talanx AG.

In October 2012, Talanx AG was listed on the Frankfurt Stock Exchange resulting in its majority ultimate parent, HDI Haftpflichtverband der Deutschen Industrie V.a.G. (HDI V.a.G.), maintaining a 79% stake in Talanx AG (as at year-end 2017). HDI V.a.G. is a mutual holding company and its stake in Talanx remained relatively unchanged in recent years.

In 2018, Talanx AG announced that in pursuance of greater efficiency for the group's internal reinsurance structure, it had applied for a reinsurance licence to start writing business in 2019. This planned change is not expected to impact the business of Hannover Re, as internal reinsurance was previously placed with another Talanx group company.

Additionally, in May 2018, it was announced that the majority ownership of Hannover Re's subsidiary International Insurance Company of Hannover SE (Inter Hannover) will be transferred from Hannover Re to HDI Global SE (an industrial lines division within the Talanx group). Consequently, Inter Hannover may no longer be considered as strategically important to Hannover Re post sale. Whilst Hannover Re will lose its key source of direct premium income originating from Inter Hannover post sale, this is not expected to materially impact the group's business profile.

In January 2018, Hannover Re (through its subsidiary Hannover Finance Inc.) completed its purchase of Omaha Indemnity Co., a Wisconsin-domiciled property/casualty insurer in run-off. The main purpose of the acquisition was to enhance Hannover Re's operational flexibility in the US by having a licenced carrier there. The company has been renamed to Glencar Insurance Co. and is expected to initially write some business produced by Glencar Underwriting Managers Inc., which is also a part of the Hannover Re group.

Company History:

Hannover Re was founded in Germany in 1966 as a reinsurance and direct insurance company and was incorporated under the name Aktiengesellschaft fuer Transport und Rueckversicherung. In 1976, the company adopted the name, Hannover Rueckversicherung Aktiengesellschaft, after transferring its direct marine portfolio to its parent company, HDI Haftpflichtverband der Deutschen Industrie V.a.G. Since then, the company has written reinsurance business.

In 1997, Hannover Re acquired part of the in-force reinsurance portfolios of Skandia International Insurance Company of Stockholm, as well as Skandia's related infrastructure. The transaction complemented Hannover Re's activity in certain growth segments, namely, life and health reinsurance, facultative reinsurance and aviation/space reinsurance. The transaction provided further geographic diversification and consequently positioned the group as a leader in the worldwide aviation market. Hannover Re also acquired the renewal rights of all the property and casualty reinsurance business as of 1 January 1998.

Hannover Re played a pioneering role in the securitisation of insurance risk and announced the first financing securitised by life insurance policies in 1998. The company established a reinsurer in Bermuda in 2001 and has since participated successfully in the global catastrophe market.

With the disposal of Praetorian Financial Group Inc. (Praetorian) in 2007, Hannover Re decided to concentrate on its core business of non-life and life and health reinsurance. Based in New York, Praetorian is a primary specialty insurer, established in 2005 to take over the inforce business of Clarendon Insurance Group, Inc. (Clarendon). Hannover Re acquired Clarendon in 1999 providing the group with access to US programmes via the specialty segment of the market. In 2010, an agreement was reached to sell the run-off business of Clarendon, which was undertaken in 2011.

Geographical Breakdown (\$000)

	Year End				
	2017	2016	2015	2014	2013
Other Africa	495,844	454,514	503,754	451,265	476,183
Total Africa	495,844	454,514	503,754	451,265	476,183
Other Asia	2,535,295	2,416,250	2,950,202	2,214,766	1,637,028
Total Asia	2,535,295	2,416,250	2,950,202	2,214,766	1,637,028
France	748,266	682,894	701,380	666,892	565,698
Germany	1,215,478	1,241,991	1,368,419	1,225,113	1,264,120
Other Europe	2,215,680	1,880,892	1,776,980	1,626,667	1,726,952
United Kingdom	2,455,796	2,532,399	2,759,809	2,489,788	2,619,728
Total Europe	6,635,220	6,338,176	6,606,588	6,008,460	6,176,498
United States	6,160,822	5,332,901	5,089,930	3,935,986	4,043,677
Total North America	6,160,822	5,332,901	5,089,930	3,935,986	4,043,677
Australia	997,036	913,780	1,008,059	921,279	776,991
Other World-Wide	966,289	898,001	910,130	830,045	853,032
Total	17,790,506	16,353,622	17,068,663	14,361,801	13,963,409

Source: Bestlink - Best's Statement File - Global

Local Currency: Euro

US \$ per Local Currency Unit 1.19804 = 1 Euro (EUR)

Enterprise Risk Management: Very Strong

Hannover Re's enterprise risk management (ERM) supports a very strong assessment. The group's ERM capabilities fully support its complex globally diversified operations and are underpinned by the utilisation of a strong risk management framework. ERM is fully embedded across the organisation from the Board, through to individual business units.

The group has demonstrated active use of its risk management tools, including its internal model, to identify and measure risks and risk correlations. This has enabled Hannover Re to implement its strategic plan and maintain successful performance over the long term.

The group operates the "three lines of defence" model within its ERM. The first line of defence consists of risk steering and original risk responsibility for risk identification and assessment on the divisional or company level. The second line of defence - risk monitoring - is supported by the actuarial and compliance functions. The third line of defence represents the process-independent and group-wide risk monitoring performed by the internal audit function on behalf of the Executive Board. The group's Supervisory Board is at the top of its risk management system and is advising and supervising the Executive Board in its management of the company, inter alia with respect to risk management.

The group's risk strategy, risk register and central system of limits and thresholds are reviewed at least annually and form a key component of its Risk and Capital Management Guideline. Hannover Re's Group Risk Management Division is responsible for naming, measuring and evaluating the main risks of the group. It develops models to estimate various loss probabilities, reserve recommendations, assesses risks of catastrophes and large losses and develops Hannover Re's internal capital model, which lies at the foundation of the group's ERM.

The group manages its total enterprise risk so that it can expect to generate positive group net income with a probability of 90% p.a. and the likelihood of the complete loss of its economic equity and shareholders' equity does not exceed 0.03% p. a. These indicators are monitored using the internal capital model. As a result, Hannover Re's business is managed on a risk-adjusted basis. Additionally, the group utilises the "intrinsic value creation" (IVC) concept to support strategic decisions - a measure which indicates whether the group's business is generating a profit in excess of the cost of capital. Where the business segment fails to meet the IVC metric, the group is active in its response of applying corrective measures.

Special attention is given to emerging risks, from which potential danger is not yet known. In this regard, Hannover Re has established a working group called Emerging Risks and Scientific Affairs, which identifies, evaluates and monitors emerging risks. It analyses risks associated with climate change, technological developments, shortage of resources and supply chain, amongst others. Appropriate risk

management actions are taken as needed by Hannover Re in order to control these risks and may include, for example, the implementation of contractual exclusions or the development of new reinsurance products. Hannover Re employees are kept updated on these topics through an in-house information system.

During the past two years, Hannover Re was subject to a number of risks related to recent changes in the political and regulatory environment in countries where it operates. In particular, the group had to prepare for the potential consequences of the UK's vote in favour of leaving the EU ("Brexit") and the US tax reform. The group has sought necessary regulatory approvals and restructured its business activities as needed in order to mitigate any downside scenarios that may arise from these changes.

Catastrophe Exposure and Management:

Hannover Re demonstrates a conservative framework in place to support its catastrophe risk management. This process begins with the implementation of the group's potential catastrophe risk appetite within the strategic planning process, in which a defined portion of Hannover Re's capital is then allocated to the planned exposures for the year, according to the outcome of an internal model. The group's retrocession protection is then considered, based on underwriters' capacity demands and considering the risk budget for the group's catastrophic exposures.

Constant monitoring is undertaken of Hannover Re's exposures with the use of sophisticated modelling tools and support from the actuarial function. Additionally, stress tests are applied based on scenarios of various catastrophic events and their impact on the group's financial profile. Model validations are regularly undertaken to assess the limitations of the model and to test the validity of the model's outcome. In A.M. Best's opinion, Hannover Re demonstrates a thorough understanding of its catastrophe models and compensates prudently for any shortfalls.

Hannover Re's evaluation of its exposures to major catastrophic events also encompasses terrorism risk. The group utilises various tools, along with company- and market-specific data to support the assessment of its exposures based on several realistic disaster scenarios (RDS) in key locations. Pandemic risk and the risk of adverse long-term mortality trends associated with its life and health portfolio are also actively monitored. One of the tools to manage this risk is an index-based pandemic cover which Hannover Re introduced in 2013. This collateralised swap instrument has been placed with different investors in various tranches since then.

Financial Statements:

Balance Sheet:

Balance Sheet:

Assets	12/31/2017 EUR(000)	12/31/2017 % of total	12/31/2017 USD(000)
Cash & deposits with credit institutions	1,794,375	2.9	2,149,733
Bonds & other fixed interest securities	34,285,296	56.0	41,075,156
Shares & other variable interest instruments	37,520	0.1	44,950
Liquid assets	36,117,191	59.0	43,269,840
Real Estate	1,968,702	3.2	2,358,584
Real estate for own use	64,036	0.1	76,718
Inter-company investments	121,075	0.2	145,053
Other investments	1,850,510	3.0	2,216,985
Total investments	40,121,514	65.6	48,067,179
Reinsurers' share of technical reserves - unearned premiums	96,383	0.2	115,471
Reinsurers' share of technical reserves - claims	1,444,944	2.4	1,731,101
Reinsurers' share of technical reserves - life	1,173,244	1.9	1,405,593
Total reinsurers share of technical reserves	2,714,571	4.4	3,252,165
Deposits with ceding companies	10,735,012	17.5	12,860,974
Other debtors	4,101,091	6.7	4,913,271
Total debtors	4,101,091	6.7	4,913,271
Fixed assets	29,653	...	35,525
Prepayments & accrued income	2,704,862	4.4	3,240,533
Other assets	698,451	1.1	836,772
Goodwill	91,692	0.1	109,851
Total assets	61,196,846	100.0	73,316,269

Balance Sheet: (Continued...)

Balance Sheet: (Continued...)

Liabilities	12/31/2017 EUR(000)	12/31/2017 % of total	12/31/2017 USD(000)
Capital	120,597	0.2	144,480
Paid-up capital	120,597	0.2	144,480
Non-distributable reserves	1,480,364	2.4	1,773,535
Other reserves	-56,890	-0.1	-68,156
Retained earnings	6,984,407	11.4	8,367,599
Capital & surplus	8,528,478	13.9	10,217,458
Minority interests	758,080	1.2	908,210
Gross provision for unearned premiums	3,332,083	5.4	3,991,969
Gross provision for outstanding claims	24,292,869	39.7	29,103,829
Gross provision for outstanding claims - life	4,480,136	7.3	5,367,382
Gross provision for long term business - life	9,187,057	15.0	11,006,462
Total gross technical reserves	41,292,145	67.5	49,469,641
Long term borrowings	250,122	0.4	299,656
Other borrowings	1,491,951	2.4	1,787,417
External borrowings	1,742,073	2.8	2,087,073
Deposits received from reinsurers	974,786	1.6	1,167,833
Insurance/reinsurance creditors	980,241	1.6	1,174,368
Other creditors	4,269,052	7.0	5,114,495
Total creditors	5,249,293	8.6	6,288,863
Accruals & deferred income	1,860,107	3.0	2,228,483
Other liabilities	791,884	1.3	948,709
Total liabilities & surplus	61,196,846	100.0	73,316,269

Source: Bestlink - Best's Statement File - Global

Local Currency: Euro

US \$ per Local Currency Unit 1.19804 = 1 Euro (EUR)

Summary of Operations:

Statement of Income (000)

General technical account:

	12/31/2017	12/31/2017
	EUR(000)	USD(000)
Reinsurance premiums assumed	10,710,944	12,832,139
Gross premiums written	10,710,944	12,832,139
Reinsurance ceded	1,552,212	1,859,612
Net premiums written	9,158,732	10,972,527
Net premiums earned	9,158,732	10,972,527
Total underwriting income	9,158,732	10,972,527
Net claims paid	6,526,236	7,818,692
Net claims incurred	6,526,236	7,818,692
Management expenses	200,440	240,135
Acquisition expenses	2,434,368	2,916,470
Net operating expenses	2,634,808	3,156,605
Total underwriting expenses	9,161,044	10,975,297
Balance on general technical account	-2,312	-2,770

Source: Bestlink - Best's Statement File - Global

Local Currency: Euro

US \$ per Local Currency Unit 1.19804 = 1 Euro (EUR)

Life technical account:

	12/31/2017	12/31/2017
	EUR(000)	USD(000)
Reinsurance premiums assumed	7,079,562	8,481,598
Gross premiums written	7,079,562	8,481,598
Reinsurance ceded	606,783	726,950
Net premiums written	6,472,779	7,754,648
Net premiums earned	6,472,779	7,754,648
Net investment income	560,597	671,618
Total revenue	7,033,376	8,426,266
Net claims paid	5,666,843	6,789,105
Net claims incurred	5,666,843	6,789,105
Net increase/(decrease) in long term business provision	-571	-684
Management expenses	210,708	252,437
Acquisition expenses	1,081,775	1,296,010
Net operating expenses	1,292,483	1,548,446
Total expenses	6,958,755	8,336,867
Balance on long-term technical account	74,621	89,399

Source: Bestlink - Best's Statement File - Global

Local Currency: Euro

US \$ per Local Currency Unit 1.19804 = 1 Euro (EUR)

Summary of Operations: (Continued...)

Statement of Income (000) (Continued...)

Combined technical account:

	12/31/2017	12/31/2017
	EUR(000)	USD(000)
Reinsurance premiums assumed	17,790,506	21,313,738
Gross premiums written	17,790,506	21,313,738
Reinsurance ceded	1,696,082	2,031,974
Net premiums written	16,094,424	19,281,764
Increase/(decrease) in gross unearned premiums	437,768	524,464
Increase/(decrease) in reinsurers share unearned premiums	-24,986	-29,934
Net premiums earned	15,631,670	18,727,366
Net investment income	564,591	676,403
Other technical income	822	985
Total revenue	16,197,083	19,404,753
Net claims paid	10,324,103	12,368,688
Net increase/(decrease) in claims provision	1,868,976	2,239,108
Net claims incurred	12,193,079	14,607,796
Net increase/(decrease) in long term business provision	-571	-684
Management expenses	411,297	492,750
Acquisition expenses	3,513,411	4,209,207
Net operating expenses	3,924,708	4,701,957
Other technical expenses	3,781	4,530
Total underwriting expenses	16,120,997	19,313,599
Balance on combined technical account	76,086	91,154

Source: Bestlink - Best's Statement File - Global

Local Currency: Euro

US \$ per Local Currency Unit 1.19804 = 1 Euro (EUR)

Non-technical account:

	12/31/2017	12/31/2017
	EUR(000)	USD(000)
Net investment income	1,209,298	1,448,787
Other income/(expense)	7,235	8,668
Profit/(loss) before tax	1,292,619	1,548,609
Taxation	248,042	297,164
Profit/(loss) after tax	1,044,577	1,251,445
Dividend to shareholders	602,986	722,401
Exceptional income/(expense)	564	676
Minority interests	86,022	103,058
Retained Profit/(loss) for the financial year	356,133	426,662
Retained Profit/(loss) brought forward	6,628,274	7,940,937
Retained Profit/(loss) carried forward	6,984,407	8,367,599

Source: Bestlink - Best's Statement File - Global

Local Currency: Euro

Summary of Operations: (Continued...)

Statement of Income (000) (Continued...)

US \$ per Local Currency Unit 1.19804 = 1 Euro (EUR)

Hannover Rück SE

Report Revision Date:
January 17, 2019

Company Attributes:

Industry: Insurance
Business Type: Composite
Entity Type: Operating Company
Organization Type: Stock
Business Status: In Business - Actively Underwriting
Marketing Type: Direct Response

Company History:

Date Incorporated: N/A

Date Commenced: N/A

Domicile: Germany

Company Operations:

2017 Rank	Top 5 Geographic Distribution by DPW	
1	Total Europe	37.3%
2	Total North America	34.6%
3	Total Asia	14.3%
4	Total Africa	2.8%

Source: Bestlink - Best's Statement File - Global

Regulatory:

Auditor: KPMG AG Wirtschaftsprüfungsgesellschaft

An independent audit of the company's affairs through December 31, 2017, was conducted by KPMG AG Wirtschaftsprüfungsgesellschaft.

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