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Letter sent to CEOs of participating firms

Dear CEO

General Insurance Stress Test 2017 Feedback

Thank you for participating in this year's General Insurance Stress Test (GIST) exercise. In general, the submissions were of higher quality than in 2015, allowing us to provide more detailed feedback.

Stress testing remains a valuable tool for the PRA in pursuing a forward-looking, proportionate and judgement-based approach to supervision. It also helps our preparedness when events do occur – for example, the timely identification of the firms most likely to suffer significant losses as a result of the recent North Atlantic hurricanes.

Our main findings were:

- **Resilience** – The UK general insurance sector in aggregate, and regulated firms at an individual level, are resilient to those scenarios within the regulatory threshold of Solvency II.
- **Reinsurance interconnectedness** – There is no evidence that the level of interconnectedness, reflected by the concentration to specific reinsurers, has increased. The results indicate that concentration to individual reinsurers has fallen marginally since 2015, with alternative capital remaining an important part of reinsurance panels.

The results suggest potential areas for improvements that impact underwriting, finance and risk functions:

- **Exposure management** – For some firms, the stress test identified areas for improvement in the way accumulations of exposures are captured, monitored and reported to the board. Specifically, the ability of firms to identify concentrations of exposures and adhere to their own risk appetite limits is an important risk management tool that should complement regular reporting of modelled loss output.
- **Natural catastrophe modelling weaknesses** – The scenarios were designed, in part, to test risks that are either absent or not well captured in catastrophe models, such as flooding from rain associated with hurricanes or tsunamis following earthquakes. Results suggest few firms go beyond a simple loading to reflect weaknesses. Firms are encouraged to improve their ability to reflect these risks as their models evolve. Boards are encouraged to understand what the limitations are with the catastrophe modelling, and their inherent uncertainty when applicable, especially for their key perils.
- **Post loss planning** – Many firms would benefit from being more granular in planning the management actions they would take in the event of a major loss, including reinstating exhausted reinsurance cover when appropriate. In addition, firms would benefit from considering asset liquidity, capital fungibility and strengthening their resolution planning.
- **Accounting** – We observed that a number of firms struggled to forecast the movements in their Solvency II basic own funds in our stress scenarios, highlighting the time needed for large regulatory changes to become embedded. Firms should not underestimate the preparation needed when new accounting standards are introduced.

The results will inform supervision, for instance where firms are identified as outliers or have results which appear inconsistent with their stated risk appetite or the output of their internal model. We are following up with these firms as part of our normal supervision. We anticipate the next stress test exercise will be in 2019.

High level results and observations are contained in the Annex to this letter and we hope you find these of interest. If you wish to discuss the results in further detail, or have any additional insights you want to share, please contact your usual supervisory contact to arrange a meeting.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Anna Sweeney', with a stylized, cursive script.

Anna Sweeney

ANNEX: GIST 2017 RESULTS

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1 Introduction

The 26 largest general insurers in the United Kingdom, 16 large syndicates¹ and the Society of Lloyd's, participated in the General Insurance Stress Test (GIST) 2017. Between them, they accounted for some £80 billion of Gross Written Premium (GPW), representing approximately 82% of the UK general insurance sector by GPW, and held some £61.5 billion of Eligible Own Funds (EOF) as at 31 December 2016.

The stresses included four natural catastrophe scenarios and an economic downturn scenario consistent with the Banking Stress Test developed in 2017. In addition, GIST 2017 contained a separate section capturing the insurance exposures of UK general insurers to the different sectors of the UK economy. The full details of the scenarios and their design are available in our letter of April 11, 2017².

2 Executive summary

2.1 Industry loss

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
All loss amounts in £ billion	EU Wind & UK Floods	Pacific NW Earthquake	California Earthquake	US Hurricanes	Economic Stress
Estimated market loss	42 - 44	134 - 143	39 - 55	74 - 109	N/A
Gross loss (participating firms)	25.5	43.5	20.6	12.9	29.0
% of market	58 - 61%	30 - 33%	37 - 53%	12-17%	N/A
Net loss (participating firms)	8.0	18.8	6.4	3.9	21.9
% ceded	69%	57%	69%	70%	24%
% of industry EOF at 31.12.16	(13.0%)	(30.6%)	(10.4%)	(6.3%)	(35.7%)

2.2 Impact on firms and syndicates³ (for whom the scenario is deemed material)

All loss amounts in £ billion	EU Wind & UK Floods	Pacific NW Earthquake	California Earthquake	US Hurricanes	Economic Stress
No of firms/ syndicates with material exposures	37	26	24	22	40
EOF 31.12.16	56.9	42.7	37.3	36.6	61.3
% of EOF at 31.12.16	(14.0%)	(44.0%)	(17.1%)	(10.7%)	(35.7%)
Firms breaching SCR	4	2	1	0	8
No. firms/ syndicates where net loss > 50% EOF/ ECA at 31.12.16 ⁴	3	10	2	2	10

2.3 Interconnectedness

	EU Wind & UK Floods	Pacific NW Earthquake	California Earthquake	US Hurricanes	Economic Stress
Reliance on Bermudan-based reinsurers	31.7%	45.3%	46.7%	55.0%	33.6%
Reliance on Group reinsurers	33.3%	22.5%	26.6%	26.1%	48.4%
Collateralised arrangements	12.5%	22.0%	34.5%	35.0%	17.6%

¹ Some submissions included multiple syndicates when underwritten by the same managing agent.

² <http://www.bankofengland.co.uk/prs/Documents/about/letter110417.pdf>

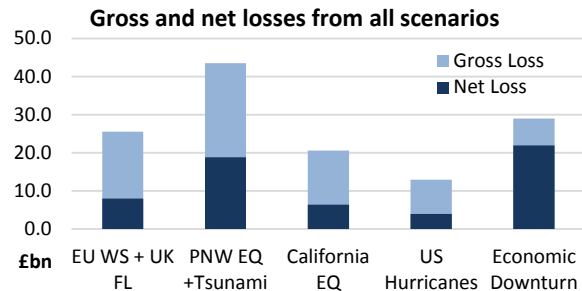
³ Industry figures include Society of Lloyd's and exclude individual syndicate data.

⁴ Syndicates counted separately and using Economic Capital Assessment (ECA) as a proxy for capital.

3 Resilience

3.1 Industry loss

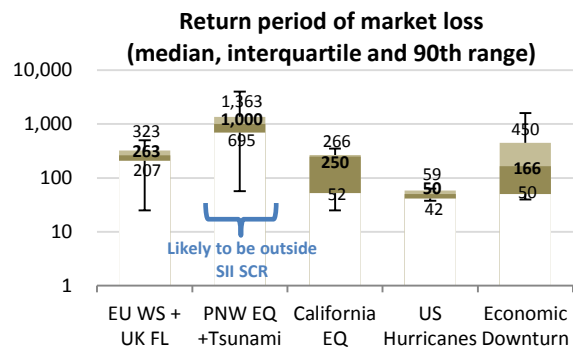
The Pacific North West Earthquake (PNW EQ) scenario created the largest gross loss to the UK insurance industry but, as in 2015, the economic downturn scenario caused the largest overall net loss.



3.2 Industry view of scenario likelihood

The chart (right) illustrates the wide range of industry views held as to the likelihood of each of our specified scenarios.

The US hurricanes scenario had the highest industry consensus, with the narrowest range of estimated return periods, and was perceived as most likely (median return period of 1 in 50).

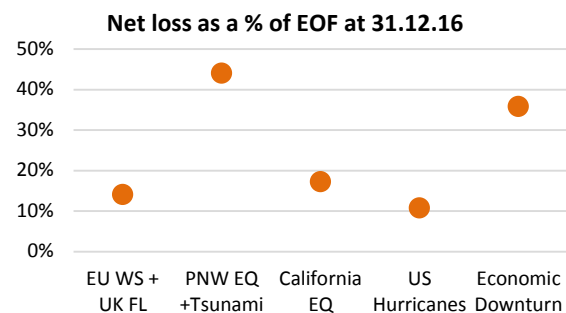


In contrast, the PNW EQ scenario was perceived as extremely remote (median return period of 1 in 1,000). It should be noted that there is considerable uncertainty in modelling such severe earthquakes and this was reflected in the wide range of return periods estimated by industry.

Conceivable but rare events such as the PNW EQ, which would cause among the largest insured losses from a natural catastrophe, provide a useful perspective on: how firms manage their accumulations, the management actions they would take in the event of a large loss and how effective resolution plans are. Many firms would benefit from improving those areas.

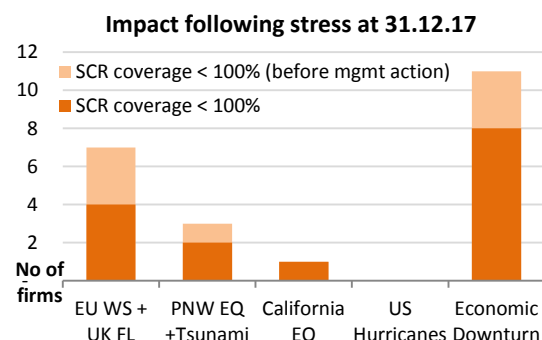
3.3 Impact on EOF and SCR coverage

The net loss from an economic downturn would be equivalent to some 35.7% of the Eligible Own Funds (EOF) as at year end 2016 and the PNW EQ would be equivalent to some 44% of EOF for those firms impacted by the loss.



Solvency coverage suggests that the sector is resilient to those specified scenarios that are within the Solvency II regulatory requirement.

Consistent with GIST 2015, the economic scenario would once again cause the highest number of insurers to fall below their solvency level as at year end 2017.



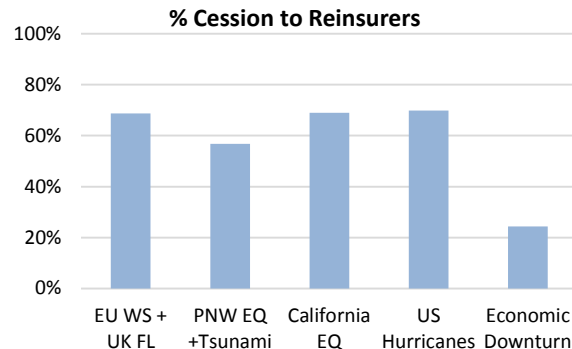
Less than a third of firms explicitly considered and reported separately on management actions that could be used to mitigate the impact of each scenario. As a result, at market level, the mitigation is less than 5% for each scenario.

4. Reinsurance interconnectedness

4.1 Substantial reliance on reinsurance

Reinsurance is the largest risk mitigation tool used by firms with about 70% of the gross loss reinsured for the European windstorm and UK floods (EU WS + UK FL), the California earthquake and the US hurricanes scenarios.

This is an increase from 2015 for the European windstorm and US hurricanes scenarios, possibly reflecting the current soft cycle of the reinsurance marketplace.



A lower percentage is reinsured for the PNW EQ due to its perceived remoteness. For the economic downturn scenario, firms would retain most of the losses (only a 24% cession to reinsurers) as general insurers are rarely willing or able to reinsure their investment risk.

4.2 Reinsurer concentration risk

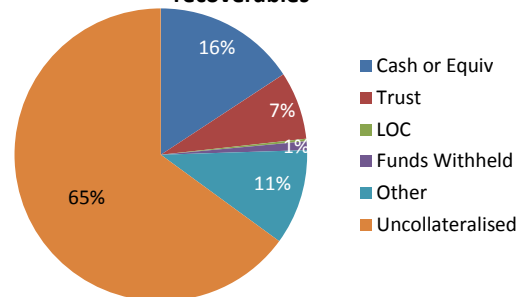
The PRA identified no significant concentration to any one reinsurer from this exercise, with the largest concentration to any one external reinsurer being some 10% of the UK industry recoverable. One caveat is that the PRA does not have data on exposures assumed by reinsurers from other cedants or through retrocession. In terms of reinsurer location, Bermuda represents the largest domicile accounting for some 55% of reinsurance recoverables for the US hurricanes scenario. Intra-group reinsurance also remains important for some firms, accounting for some 33% of recoverables for the European windstorm scenario.

4.3 Collateralised reinsurance

Collateralised arrangements (which include the use of catastrophe bonds and insurance linked securities) made up some 35% of recoverables for US hurricanes, identical to 2015.

Cash and assets held in trust made up the majority of the type of collateral held.

Type of collateral for US Hurricanes recoverables

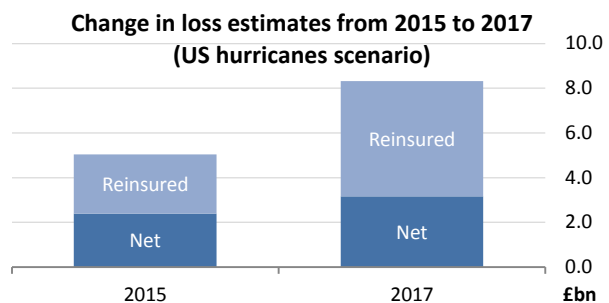


4.4 Analysis of change

The analysis of change indicates a significant increase in the London market's modelled gross losses to the PRA's US hurricanes scenario since 2015.

We believe this is a combination of a change in the catastrophe vendor models as well as underlying growth in US risks written in the London market.

We note that at a market level the gross and net losses are below those of our other scenarios, which suggests that the increase in exposures is not resulting in an increase in overall concentration of risk to US hurricanes.



Note: Only including firms and syndicates in scope both in 2015 and 2017

5. Potential weaknesses in catastrophe modelling

5.1 Risk versus uncertainty

The PNW EQ illustrates the distinction between risk and uncertainty. Such rare events as a magnitude 9.0 earthquake are inherently uncertain to model, with current modelling not allowing for time dependency. This reinforces the need for adequate exposure management by firms to avoid unknowingly betting the insurer on any one peril.

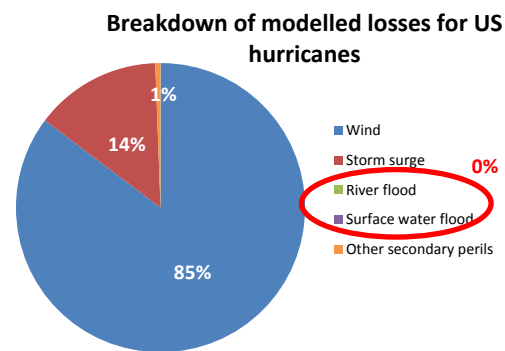
Specifically, the ability of firms to identify their concentrations of exposures and adhere to their own risk appetite limits is an important risk management tool that should complement regular reporting of modelled loss output. In addition, firms, especially Groups with legal entities in different jurisdictions, may find it useful to consider potential losses beyond the 1 in 200 or available capital, to the extent this could impact other groups of policyholders.

5.2 Non-modelled risks

There were some similarities between our US hurricanes scenario and the actual hurricanes Harvey and Irma.

From the breakdown of loss provided in submissions, it is clear that flooding from rain associated with hurricanes making landfall is not explicitly captured in the vendor models.

This could lead to some underestimate in US hurricane modelling output if similar hurricanes to Harvey become more prevalent – although we note flood coverage is still low in the United States.



The recent history of large natural catastrophe events suggests that non-modelled elements (or not sufficiently modelled elements) can be important constituents of the loss. Recent examples of such losses include: flood for Harvey (2017), tsunami for the Tohoku earthquake (2011), flood for Thailand (2011), aftershocks for the Christchurch, New Zealand earthquake (2011) and storm surge for Hurricane Sandy (2012).

5.3 Reliance on outsourced providers

Firms generally struggled with making allowance for secondary perils, such as tsunamis or precipitation induced flooding, beyond what the vendor models provide, highlighting their heavy dependence on the vendor models and reinsurance brokers for their catastrophe modelling.

For UK perils, firms potentially rely on a very limited number of external loss claim adjusters. This may pose a difficulty in processing claims quickly should a catastrophic event occur with a large number of claims.

5.4 Data quality

Exposure data quality is very variable across territories, with US data being more complete than elsewhere. Data capture in Europe, and the rest of the world, could be improved to minimise additional sources of uncertainty.

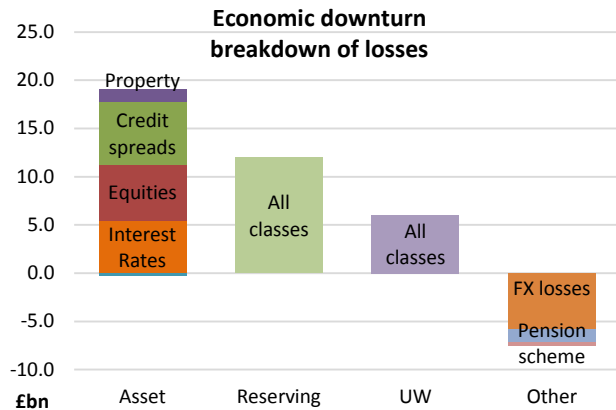
Peril	% sum insured where [] known				
	Geo-coded	Construction	Occupancy	Year Built	No of Storeys
US HU	98%	79%	94%	65%	60%
EU WS	96%	40%	91%	38%	21%

6. Additional observations

6.1 Economic downturn scenario

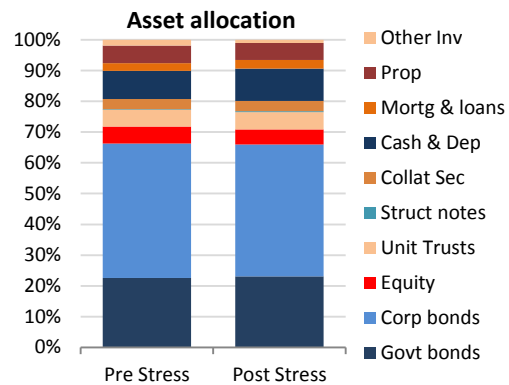
Deterioration in the value of assets constituted the largest part of the losses arising from the economic scenario. Similar to 2015, the widening in credit spreads was the major contributor to the asset losses for most firms due to their fixed income holdings.

Many firms benefited from sterling's depreciation due to their significant overseas business, and some firms had a positive offset from the impact of our scenario on their defined benefit pension scheme.



General insurers tend to be conservative investors holding most of their assets in fixed income securities and cash.

Most firms did not intend to change their asset allocation after the economic downturn scenario.



6.2 Solvency II balance sheet

This is the first year that the PRA asked firms to analyse the movement in basic own funds at year end caused by our different stress scenarios. Many firms struggled with this request, a number of submissions were unclear and resubmissions were often needed.

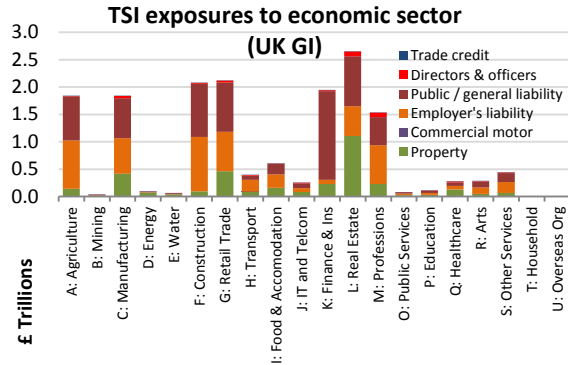
This indicates that the regime still needs time to bed down, highlights the challenges presented by Profit & Loss attribution on a Solvency II basis, and suggests the need for firms to improve the robustness of their own Stress and Scenario Testing.

It also points to the challenges posed by large or complex regulatory or accounting changes. Firms should not underestimate the time and resources needed when new accounting standards are introduced.

7. Sectoral information for commercial business

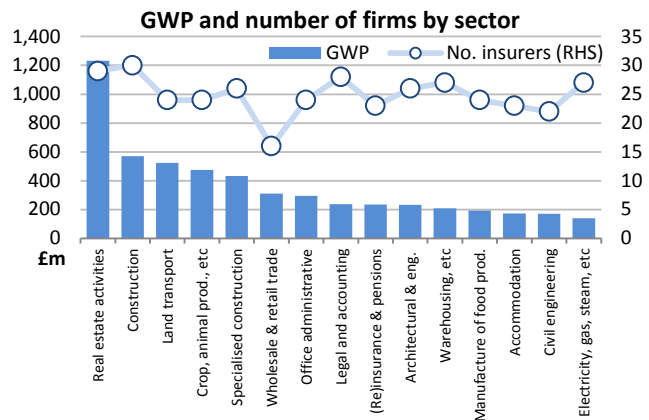
7.1 UK general insurance support to UK economy

While the UK general insurance sector collects some £11 billion of commercial premiums from the UK economy, its contribution in supporting all sectors of UK economic activity is substantially greater, with more than £16 trillion of Total Sum Insured (TSI), representing assets and potential liabilities insured.



7.2 Substitutability

Within any one sector there are at least 15 insurers providing cover. This gives some reassurance of the level of resilience in the event of some firms withdrawing from the UK insurance market.

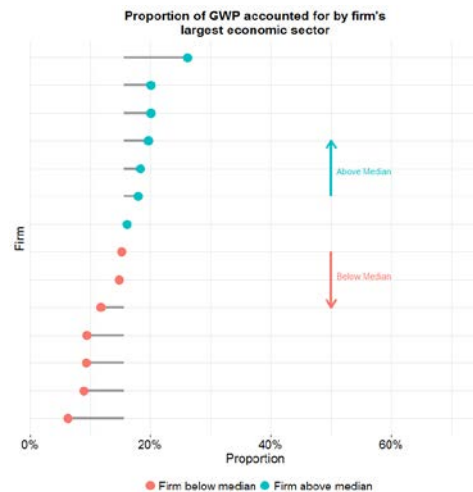


7.3 Our preparedness

Firms provided their exposures to various sectors of the UK economy, allowing the PRA to identify which firms are most exposed to a particular sector.

This should allow the PRA to focus its supervisory efforts on those firms most likely to be impacted in the event of a sectoral loss.

The data is also helpful in understanding the level of diversification across industries. This information can be combined with internal model outputs to assess the appropriateness of the level of diversification credit taken.



Premiums are generally well spread across economic sectors, with the maximum exposure by any single economic sector group accounting for between 5% and 25% of UK business for most firms in our sample.

7.4 Developing liability scenarios

The PRA intends to use the sectoral information collected to understand the possible cost of liability catastrophes and to explore what is the most appropriate liability scenario to include in future stress test exercises. Were the PRA to include a liability scenario in future stress tests, this would likely require Standard Industry Classification exposure information at least as granular as requested in GIST 2017.