A Shareholder Value Analysis of the Global (Re)insurance Industry

OXFORD METRICA

A Shareholder Value Analysis of The Global (Re)insurance Industry

Commissioned by

AON

Contents

The source of all financial data was corporate annual reports and financial statements (2001). The cut-off date for this research was 12 February 2003.

Foreword

The insurance and reinsurance industry is a fascinating world of which to be a part. The dynamics of the industry seem ever-changing – the risks that insureds have to deal with and the challenges that insurers face in balancing their assets and liabilities.

I have experienced several soft/hard market cycles, but I truly believe that the current market conditions are unprecedented – both with respect to cause and effect. The WTC disaster crystallised the already hardening market – not just because of the financial cost, but also because of the nature of the event and the scale and scope of losses suffered.

This then coincided with the severe meltdown in the world's investment markets over the last couple of years. Oxford Metrica analysed this phenomenon in a report previously commissioned by Aon, "Insurance and the Stock Market – The Asset Test".

We think it is now time to take a wider view of the issues facing the global non-life insurance industry, and have asked Oxford Metrica to conduct a detailed value analysis and to examine the key issues facing the industry. We are pleased to share their analysis with you, and trust that you will find the results informative and thought-provoking, as all the participants in the industry struggle to chart a strategic course through the "perfect storm".

Dennis L. Mahoney
Chairman and Chief Executive Officer
Aon Limited

Executive Summary

The aim of this briefing is to provide an independent, rigorous analysis of the performance of the global general (re)insurance market. The key results and policy implications of the research are outlined below.

Key Results:

- Twenty-five firms (the Top25) dominate the global (re)insurance market, with a combined market capitalisation of over US$500 billion.

- These firms adopt a wide range of strategies as regards: governance policy, globalisation, reinsurance purchase, underwriting decisions and investment allocation.

- Twenty-three firms of the Top25 portfolio lost money on their general (re)insurance underwriting operations in 2001.

- Despite a wave of downward rating action by the main rating agencies, the industry remains strong, with eleven firms in the Top25 each with a balance sheet of over US$50 billion.

- Newer, smaller, US and Bermudian firms staged the strongest value recovery post-9/11. Older, larger, European firms underperformed significantly.

- Substantial asbestos claims continue to hound the industry, with rising corporate liability claims also posing a major threat.

- There is a disturbingly wide range in financial reporting standards adopted by firms across the industry.

Policy Implications:

- Stricter, more economic underwriting decisions are essential for the continued survival of the industry.

- The equity markets can no longer be relied upon to generate the healthy investment returns seen in the 1990s.

- Additional reserve increases will be necessary for many firms facing the weight of growing asbestos and corporate liability claims.

- There is a clear need for more, and better quality, disclosure in financial reporting, particularly in Europe.

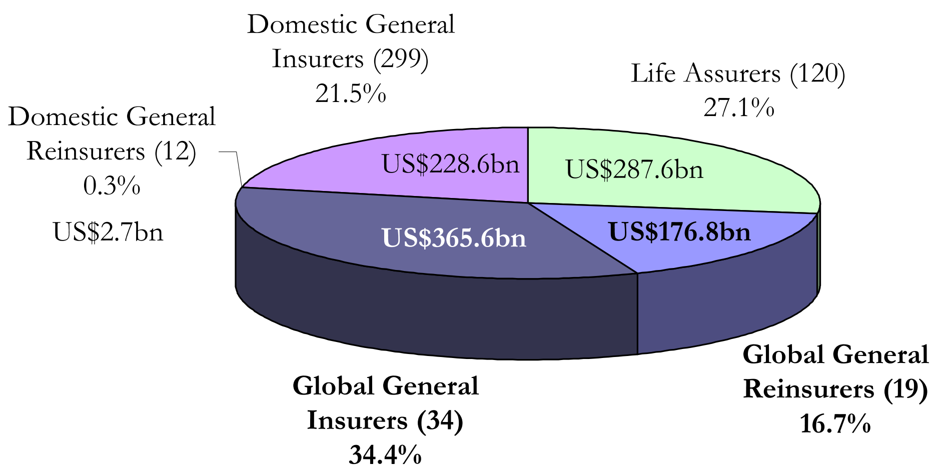
1 Defining the Global General (Re)insurance Sector

The subject of this briefing is the global general (re)insurance sector. This is defined as quoted firms that write general (non-life, property-casualty) reinsurance or insurance on a global basis as a major line of business.

How is value distributed?

Figure 1 shows the breakdown by primary type of business of the 484 quoted firms worldwide that write insurance as a main activity. These firms have a combined market value of US$1.061 trillion.

Figure 1: The Value Landscape (3 Jan 2003)



Approximately one-quarter of this value comes from the life assurance sector. A second quarter is represented by general insurers and reinsurers that focus exclusively on domestic business. The remaining US$542.4 billion represents 34 general insurers and 19 reinsurers that write global business.

It can be seen from Figure 1 that the distribution of value is very different across each subsector. Value across the 53 global general firms is much more concentrated than for either domestic firms (311) or life assurers (120) where the markets are more fragmented. For example, contrast 299 domestic general insurers with a combined market value of US$228.6 billion with just 34 global general insurers with a combined market value of US$365.6 billion.

Figure 2a focuses on global general (re)insurers and shows that the industry concentration is even more pronounced than at first observation. Of the 53 separately quoted entities represented in this subsector, 25 (with their subsidiaries) account for over 97% of the value. It is on these 'Top25' firms that this Briefing shall focus explicitly.

Figure 2a: The Value Dominance of the Top25 (3 Jan 2003)

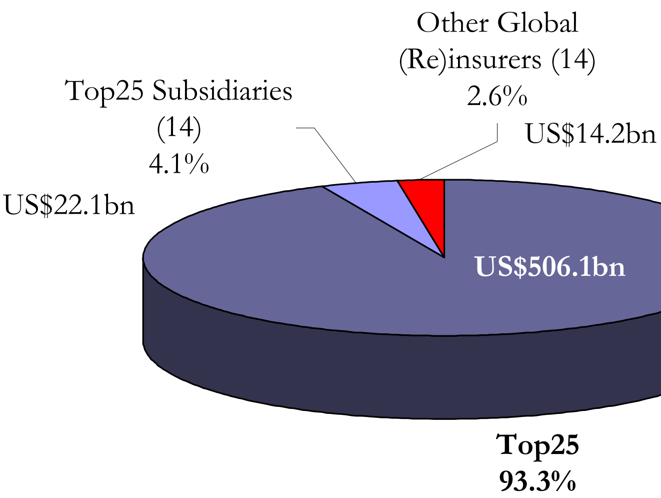
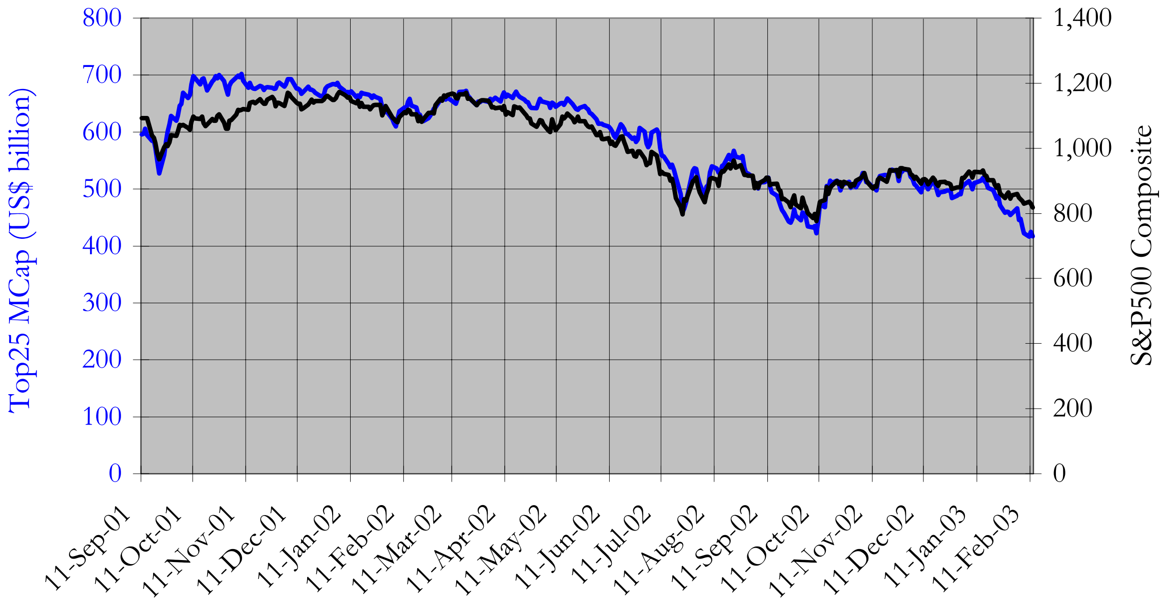


Figure 2b illustrates the value progression of the Top25 portfolio over time, against the S&P500 Composite market index.

Figure 2b: The Value Pattern of the Top25 (11 Sep 2001 - 12 Feb 2003)



Of the remaining 2.6% of value, 65% is accounted for by Travelers Property Casualty (previously a wholly-owned subsidiary of Citigroup) and Converium (previously the reinsurance arm of Zurich Financial Services) for which annual financial statements have yet to be published. A further 20% (of the 2.6%) is accounted for by five Lloyd's managing agents. These are profiled separately in Section 7. This leaves seven firms, each with a market capitalisation of under US$1 billion that, together, represent less than 0.4% of the global general (re)insurance market.

Listed in Table 1 are the Top25 firms selected for study. On 3 January 2003, these firms had a combined market value of over US$500 billion.

Table 1: The Top25 Global (Re)insurers

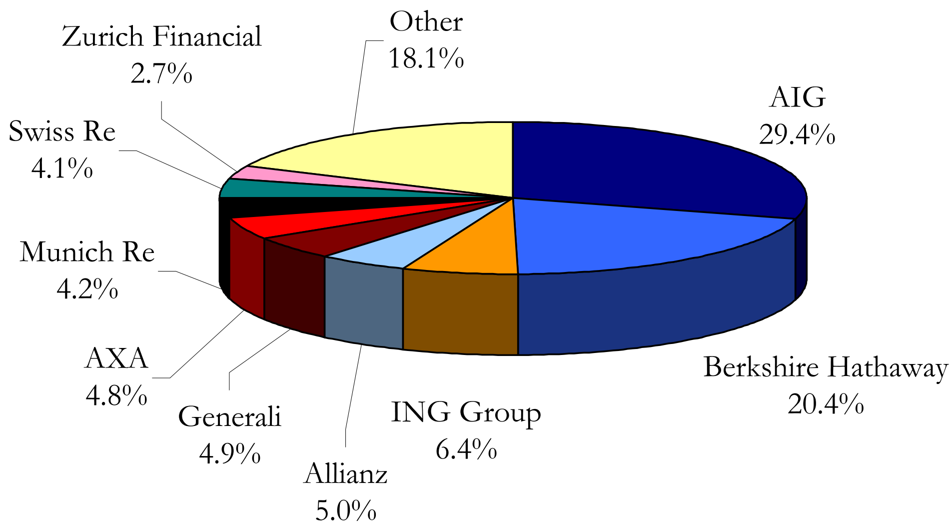
Company	Type of Business	Country	MCap (US$m) on 3 Jan 2003
AIG	Insurer	US	156,829
Berkshire Hathaway	Reinsurer	US	110,443
ING Group	Insurer	Netherlands	34,871
Allianz	Insurer	Germany	26,975
Generali	Insurer	Italy	26,736
AXA	Insurer	France	26,064
Munich Re	Reinsurer	Germany	22,705
Swiss Re	Reinsurer	Switzerland	22,423
Zurich Financial	Insurer	Switzerland	14,573
XL Capital	Insurer	Bermuda	10,828
Chubb	Insurer	US	9,371
The St. Paul	Insurer	US	7,937
ACE	Insurer	Bermuda	7,102
CNA Financial	Insurer	US	5,917
Transatlantic Hdgs.	Reinsurer	US	3,592
Royal & SunAlliance	Insurer	UK	2,937
QBE Insurance	Insurer	Australia	2,844
Partner Re	Reinsurer	Bermuda	2,626
Everest Re	Reinsurer	US	2,582
Hannover Re	Reinsurer	Germany	2,500
Renaissance Re	Reinsurer	Bermuda	2,216
IPC Holdings	Reinsurer	Bermuda	1,537
Odyssey Re	Reinsurer	US	1,153
SCOR	Reinsurer	France	767
Max Re Capital	Reinsurer	Bermuda	547
		Total	**506,075**

The Top25 portfolio was defined on 30 June 2002, though Table 1 presents updated values. The portfolio comprises twelve reinsurers and thirteen insurers. Ten firms are European, eight are American, six are Bermudian and one is Australian.

Which are the dominant firms?

Figure 3 illustrates exactly the same subsector as shown in Figure 2a but broken down by company. Clearly, the market values illustrated reflect non-insurance activities also. In value terms, AIG has almost one-third of the combined market value of the global market for general insurance and reinsurance. AIG's 60% ownership of Transatlantic Holdings and 24.4% ownership of IPC Holdings is reflected in the chart. Were it not to be reflected, AIG's value share would reduce slightly to 28.9%.

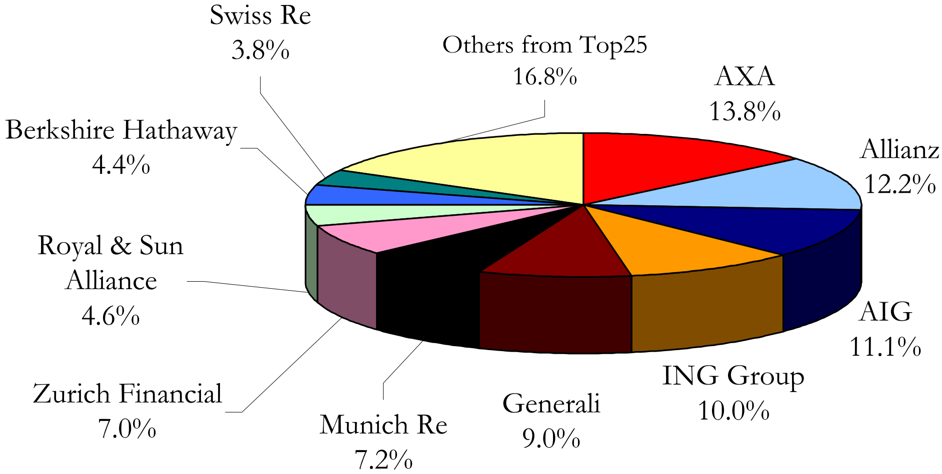
Figure 3: The Value Distribution by Company (3 Jan 2003)



The share of the 'value pie' of both Allianz and Munich Re has reduced over the previous six months; from 8.2% and 6.5%, respectively. Berkshire Hathaway has increased its share from 15.8% to 20.4%. The other firms illustrated have remained largely constant.

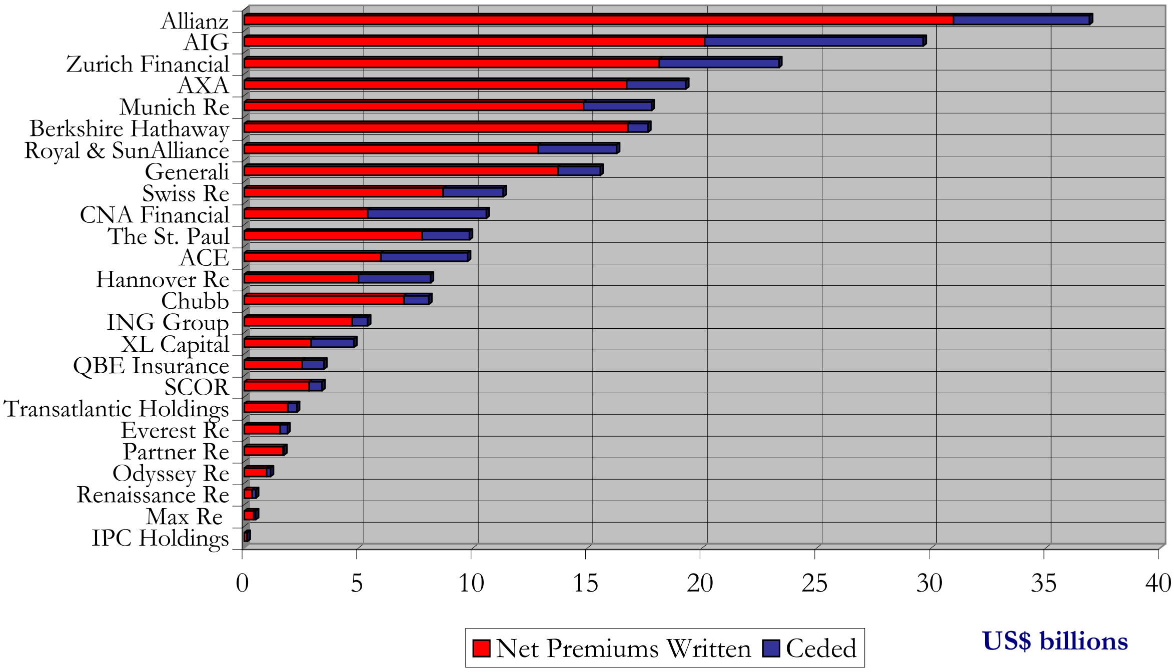
However, value is but one measure of dominance and reflects also non-insurance activities. Presented in Figure 4 is the distribution of total gross premiums written across the major firms. The distribution is almost identical to that for net premiums written with the exception of Zurich Financial which cedes a higher than average proportion of its premium volume. Comparison of Figures 3 and 4 reveals the very different value multiples at which these firms trade.

Figure 4: Distribution of Total Gross Premiums Written (2001)



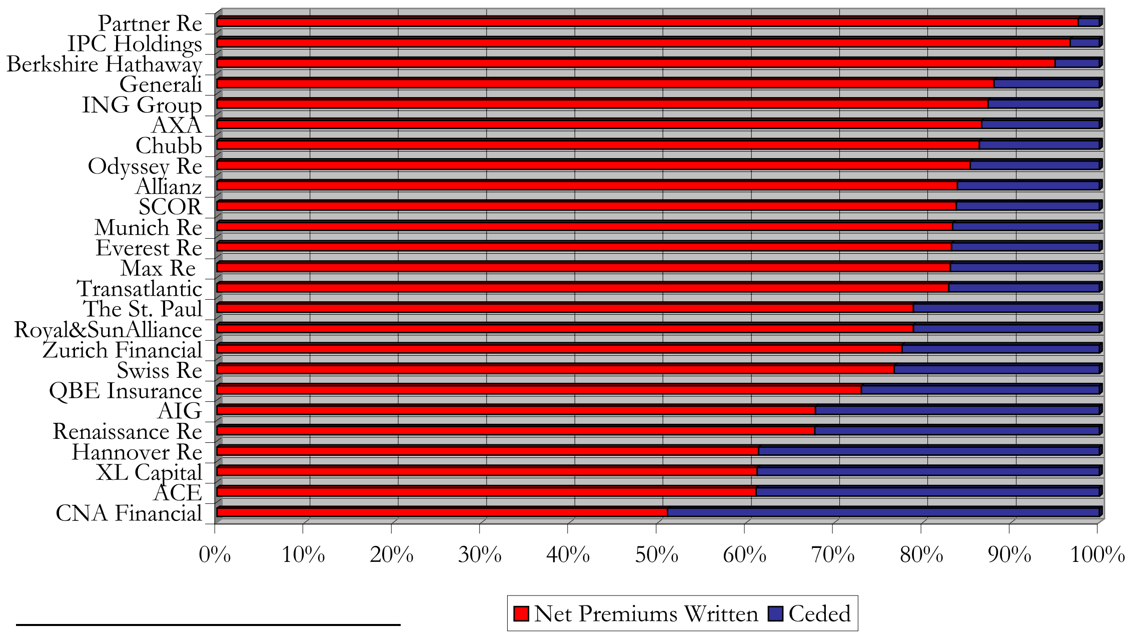
Berkshire Hathaway's strong value presence is not reflected in the distribution of total premium volume. In 2001, the firm derived approximately 43% of its annual operating revenue from non-insurance activities. However, a focus on general insurance in Figure 5 reveals a more prominent ranking for Berkshire. The graph shows the gross premiums written specifically for general insurance business across the Top25 global insurers and reinsurers.

Figure 5: Gross Premiums Written for General Insurance - 2001



The disappearance of ING Group from the top four global players is reflective of its extensive life operations. Figure 6 illustrates the range in reinsurance strategies adopted; ranging from Partner Re which cedes 2% of its premium income, to CNA Financial[1] which cedes 49%. No firm in the Top25 cedes more than 50% of its premium volume.

Figure 6: Allocation of GPW for General Insurance (%) - 2001



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[1] CNA Financial is 89% owned by Loews Corporation.

The reinsurance strategy adopted by management appears to have little to do with whether the firm primarily is a reinsurer or insurer. Nor does sheer size appear to be a determining factor, with AIG and Berkshire Hathaway emerging towards either end of the ranking. The decision of how much premium to cede to reinsurers (determining the ceding ratio) essentially reflects discretionary policy by management and, when applied effectively, can be a source of great competitive advantage. The advantage is derived more from effective implementation than from the ceding ratio itself.

Shown in Figure 7 for the Top25 firms are the total net premiums written across both life assurance and general (re)insurance operations. Immediately apparent are the extensive life operations of AXA, ING Group, Generali, AIG and Allianz yet the latter two firms still occupy the top two places in the ranking for general insurance.

Figure 7: Total Net Premiums Written - 2001

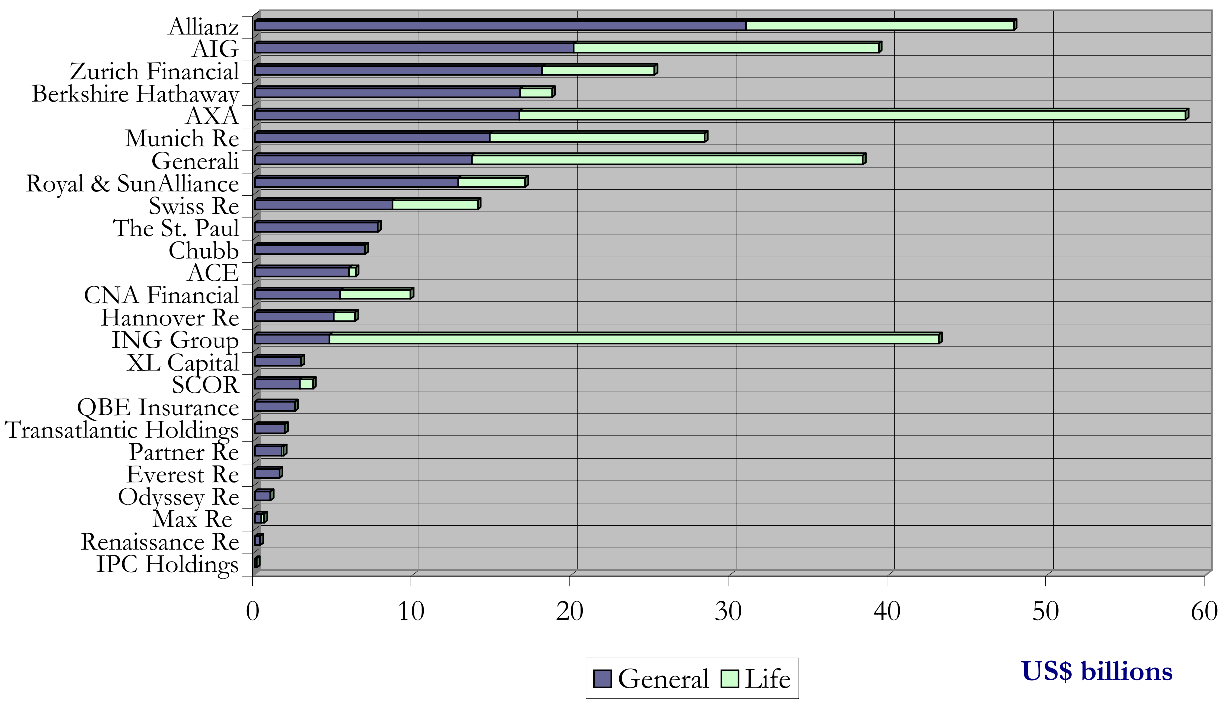
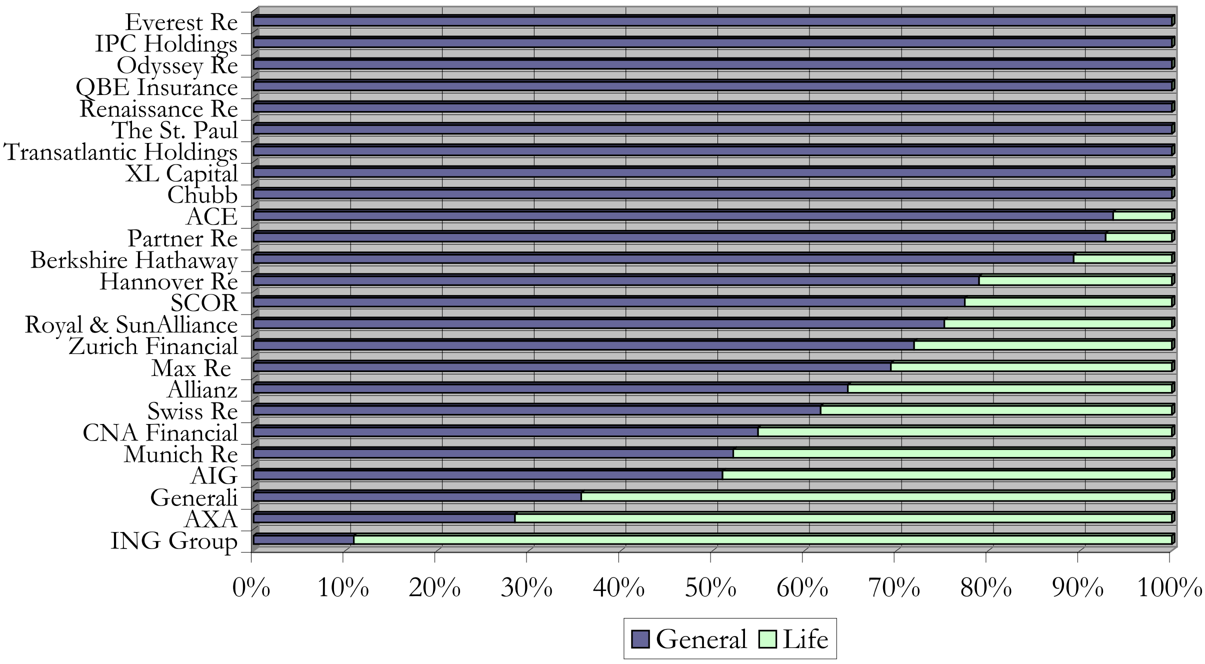


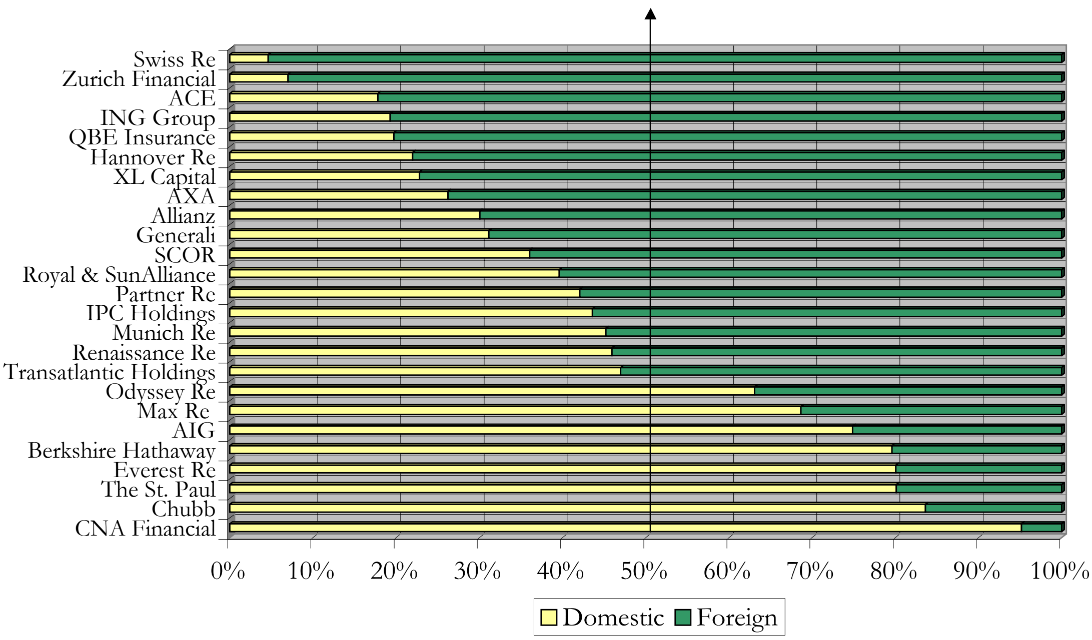
Figure 8 shows the proportional allocation of total net premiums written. Nine firms from the Top25 offer general (re)insurance exclusively. Of the remaining firms, there is a wide range in the extent to which they focus on general business. For ACE, general insurance business forms 94% of its total book whereas for ING Group, the comparative figure is 11%.

Figure 8: Allocation of Total NPW (%) - 2001



Similarly, there is a very wide range in the extent to which the Top25 firms underwrite a global portfolio of general business; illustrated in Figure 9. Clearly, the smaller the domestic[2] country of a parent company, the greater the need to expand to foreign climes to generate premium volume. Thus it is of little surprise to see the Swiss heading the globalisation ranking and the Americans with a much higher proportion of their business in domestic operations. Swiss Re generates 95% of its premium volume from outside Switzerland. CNA Financial generates only 5% of its premiums from outside the US.

Figure 9: Geographical Allocation of General NPW (%) - 2001



[2] The Bermudian firms define their domestic operations differently from each other. ACE and XL Capital both define 'domestic' as Bermuda; IPC Holdings defines it as the US; Renaissance Re defines it as the US and Bermuda; and both Partner Re and Max Re define domestic as North America.

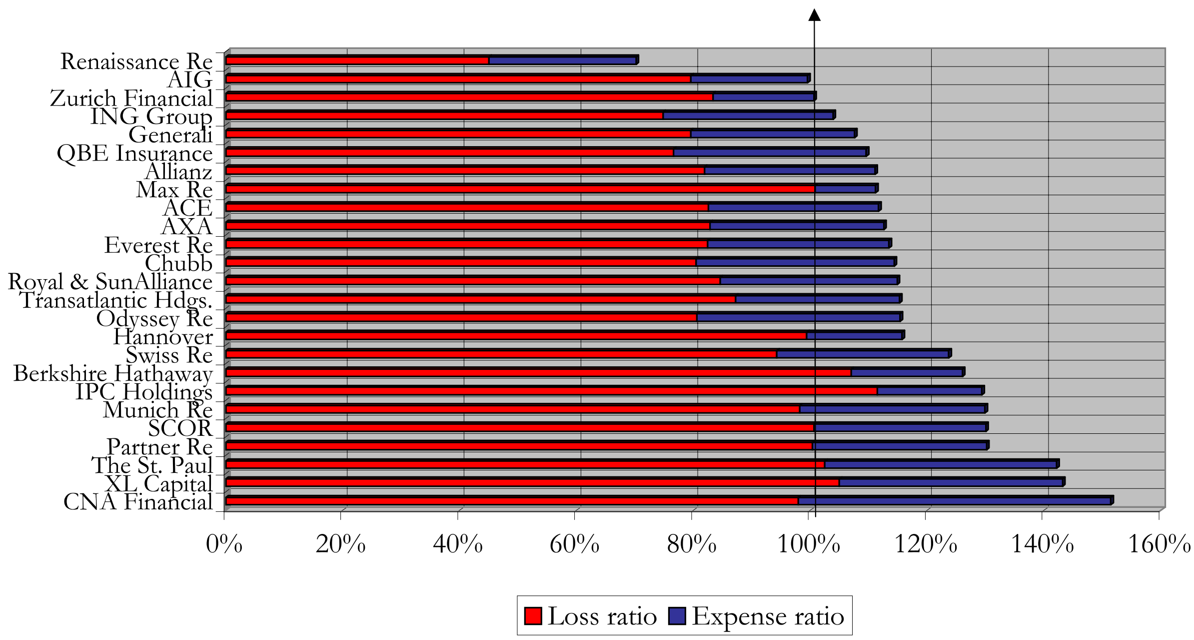
Eight firms produce less than 50% of their general net premiums from outwith their domestic country. The geographical allocation of total net premiums written is very similar to that of general insurance shown in Figure 9, with two notable exceptions. Zurich Financial's extensive life operations in Switzerland raise the proportion that is domestic to 15% of its total book. In contrast, AIG's strong international life operations increase the foreign proportion of its total business to almost 50%.

2 Analysing Financial Performance

The underwriting losses of insurers have been aggravated by widespread falling stock values, reducing insurers' ability to produce impressive results from the contribution of strong investment returns. Figure 10 illustrates the loss and expense ratios across the Top25 firms for the 2001 financial year. The combined ratios are calculated as the sum of two quotients; losses and loss-adjustment expenses as a proportion of net earned premiums (the loss ratio), and underwriting expenses and policy acquisition costs as a proportion of net earned premium (the expense ratio). The combined ratios calculated focus on the general insurance business written by each firm.

Only Renaissance Re (70.2%) and AIG (99.6%) manage to achieve a combined ratio of less than 100%.

Figure 10: Combined Ratios - 2001



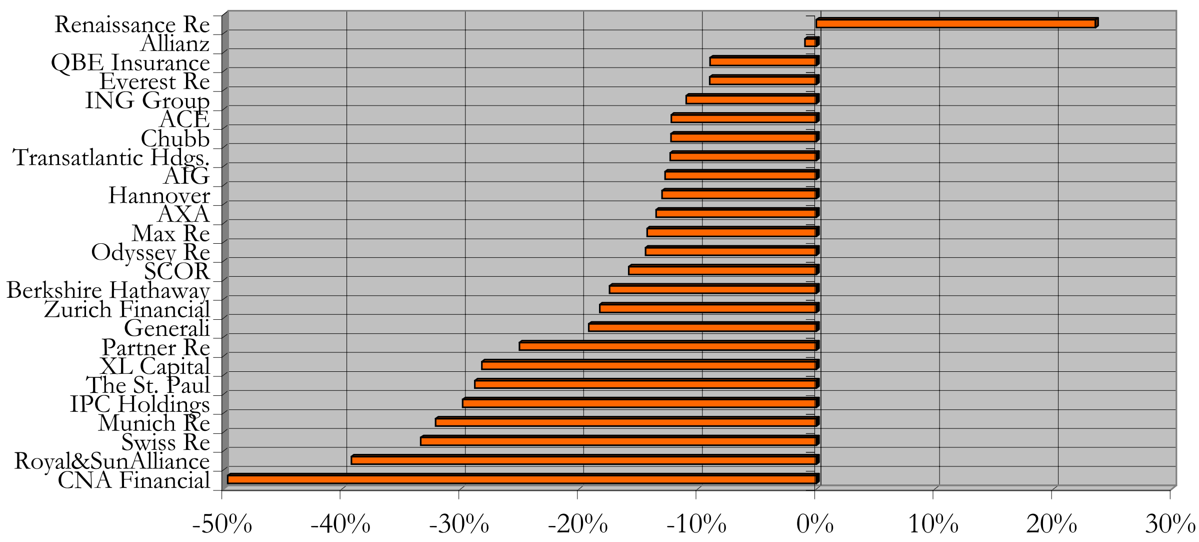
Ranked in Table 2 are the best and worst results when disaggregated into loss and expense ratios. It can be seen that Renaissance Re achieves first place in the combined ratio ranking due to an extremely low loss ratio of 45%. AIG appears as a top performer both in achieving a loss ratio of under 80% and an expense ratio of under 20%. Despite having the lowest expense ratio, at 10%, Max Re's combined ratio is negatively affected by its particularly high loss ratio of over 100%. IPC Holdings and Berkshire Hathaway also enjoy low expense ratios but have been adversely affected by high loss ratios. CNA Financial's expense ratio is extreme, at 54%. Both The St. Paul Companies and XL Capital appear towards the lower end of the rankings for both loss and expense ratios.

Table 2: Loss and Expense Ratios - The Tails of the Distribution

Loss Ratios		Expense Ratios	
< 80%	> 100%	< 20%	> 30%
Renaissance Re 45.0%	IPC Holdings 111.5%	Max Re 10.3%	CNA Fin'l 53.5%
ING Group 74.8%	Berkshire H. 107.0%	Hannover Re 16.3%	The St. Paul 39.7%
QBE Ins. 76.6%	XL Capital 105.0%	Zurich Fin'l 17.3%	XL Capital 38.2%
Generali 79.5%	The St. Paul 102.5%	IPC Holdings 17.9%	Odyssey Re 34.8%
AIG 79.6%	Max Re 100.8%	Berkshire H. 19.1%	Chubb 33.9%
	SCOR 100.6%	AIG 19.9%	QBE Ins. 33.0%
	Partner Re 100.4%		Munich Re 31.7%
			Everest Re 31.0%
			RSA 30.3%

Figure 11 shows the insurance performance by each firm. This is defined as the difference between reported net income and the net investment result (net investment income after interest paid), as a proportion of net earned premiums.

Figure 11: Insurance Performance - 2001



Other than Renaissance Re, each constituent of the Top25 portfolio made a loss from its overall, underlying operations in 2001. Both CNA Financial and Royal & SunAlliance perform poorly without the benefit of investment income. This is reflected also as regards cash flow performance[3], presented in Figures 12 and 13. Cash flow performance is defined as operating cash flow as a proportion of net earned premiums.

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[3] Generali does not disclose an annual statement of cash flows and so is excluded from Figures 12 and 13.

Figure 12: Cash Flow Performance - 2001

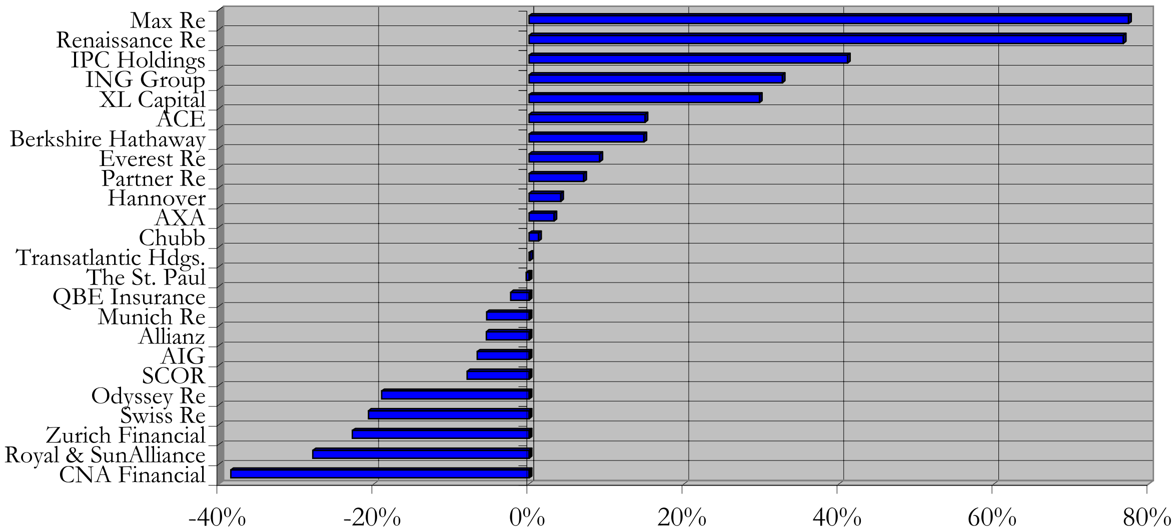
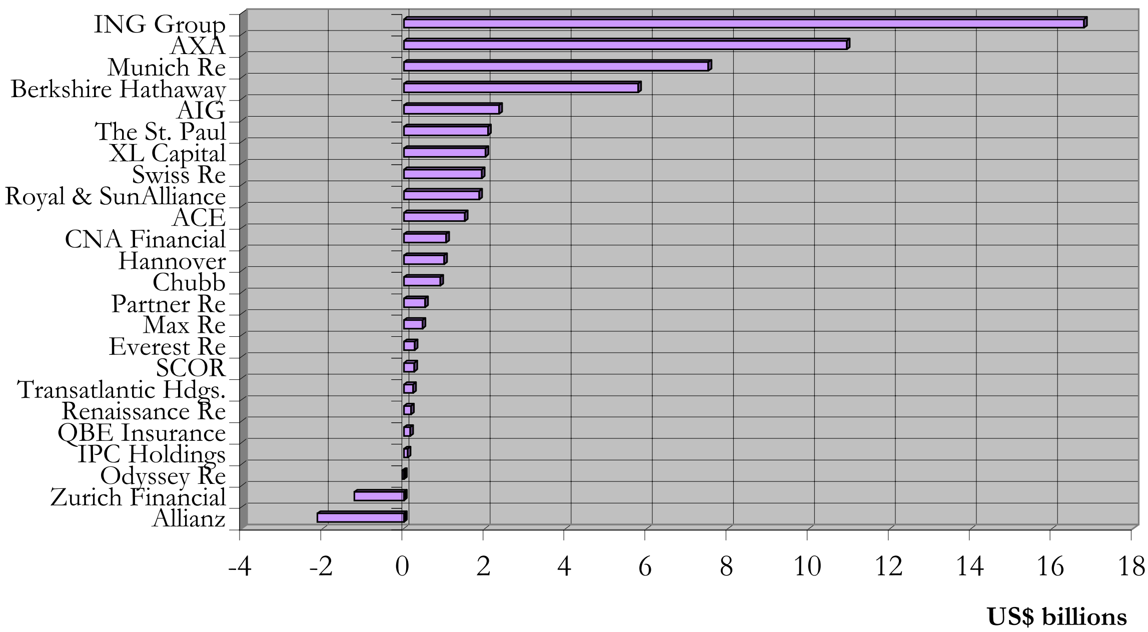


Figure 13 shows the excess of operating cash flow over net income. The graph illustrates the magnitude of non-cash charges recognised in the income statements of these firms and demonstrates the degree of discretion afforded to insurance companies in their financial reporting.

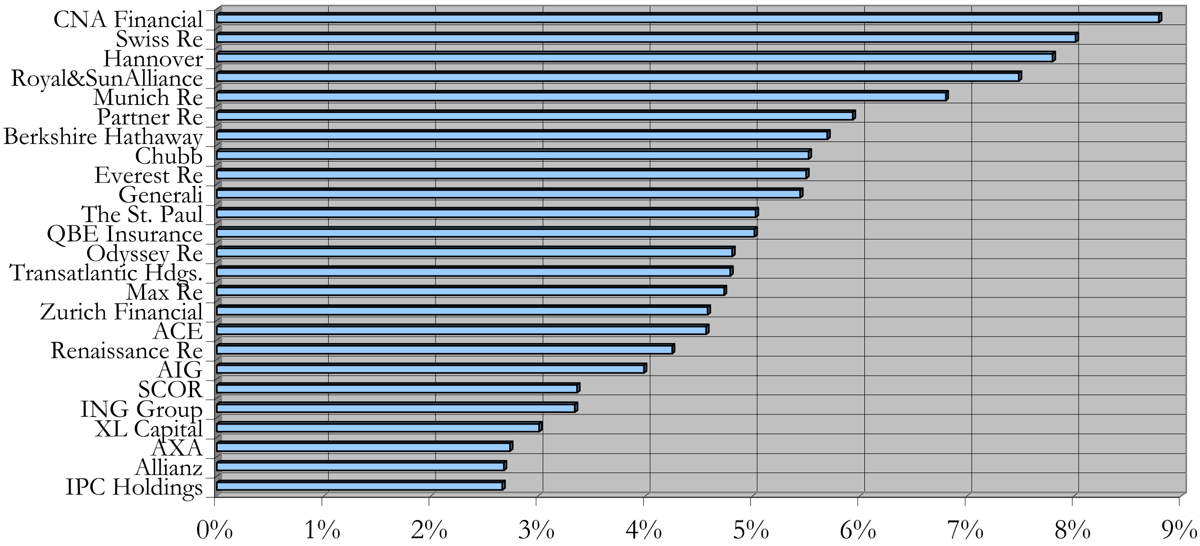
Figure 13: The Cash-Earnings Gap - 2001



When investment returns are examined, CNA Financial is the top performer and Royal & SunAlliance also appears in the top five, both achieving returns of over 7%. Investment returns are defined as net investment income as a proportion of total investments and cash. No firm in the portfolio achieves investment returns of beyond

10%. Given the dire state of the equity markets, it is impressive that each firm has managed to generate a positive return.

Figure 14: Investment Returns - 2001



These returns are influenced strongly by the allocation decision and, more precisely, both the degree of risk to which the assets are exposed and asset management capability. Firms vary in their exposure to the stock market; from Berkshire Hathaway with over 40% of its investment portfolio in equities to ACE, AIG and XL Capital, each with less than 5% exposure. These investment allocations between equities, bonds and cash are shown in Figures 15a and 15b.

Figure 15a: Investment Portfolio Allocation - 2001

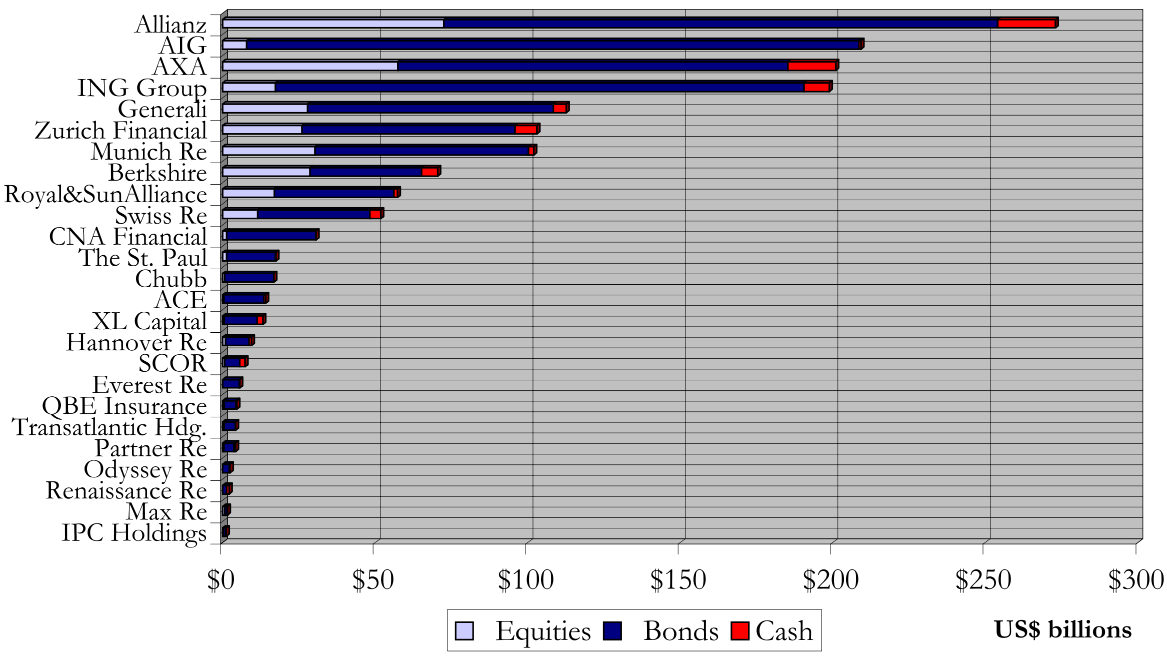
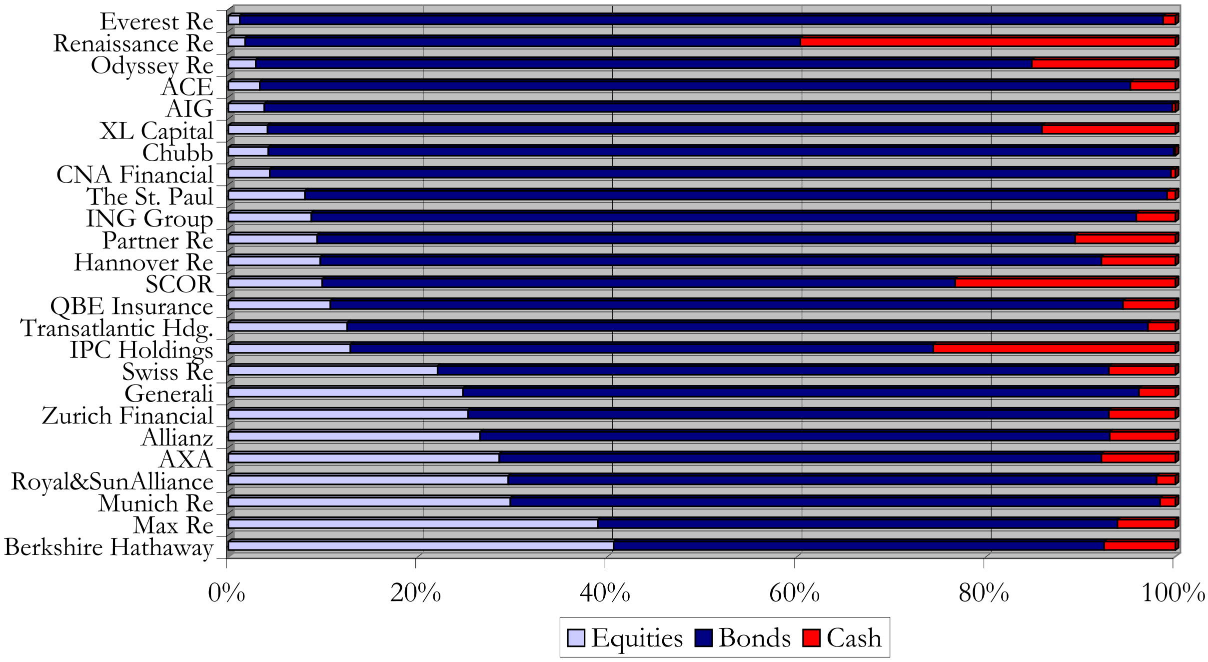


Figure 15b: Relative Investment Allocation (%) - 2001



As shown in Figure 15b, the European insurers and reinsurers tend to have a greater exposure to equities than the US firms. In part, this is due to regulatory requirements that deter US (re)insurers from holding large equity positions. The Europeans in the portfolio hold, on average, 22% of their investments in equities, whereas the American and Bermudian firms hold only 11% on average. The latter figure reduces to 6% when Berkshire Hathaway and Max Re are removed.

3 Analysing Strength and Capacity

The balance sheets of the Top25 (re)insurers were shaken severely in 2001 but they remain strong. Figures 16a to 17b present the balance sheets of the Top25 first by their assets and then by their liabilities.

Figure 16a: Insurers' Assets - 2001

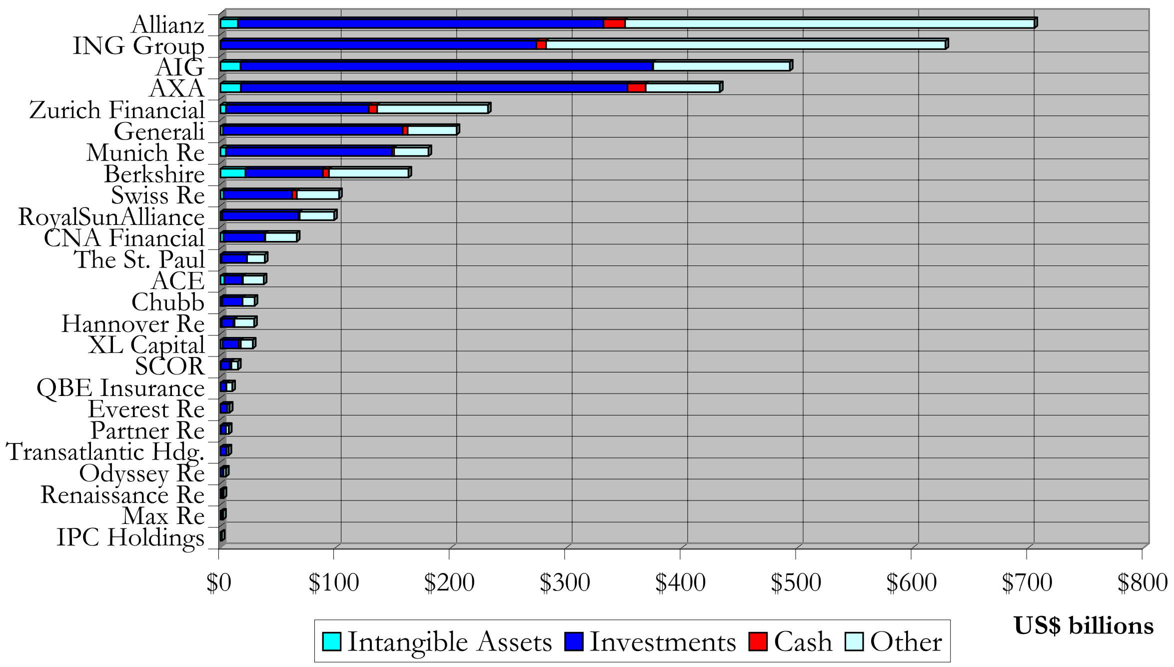


Figure 16b: Insurers' Assets (%) - 2001

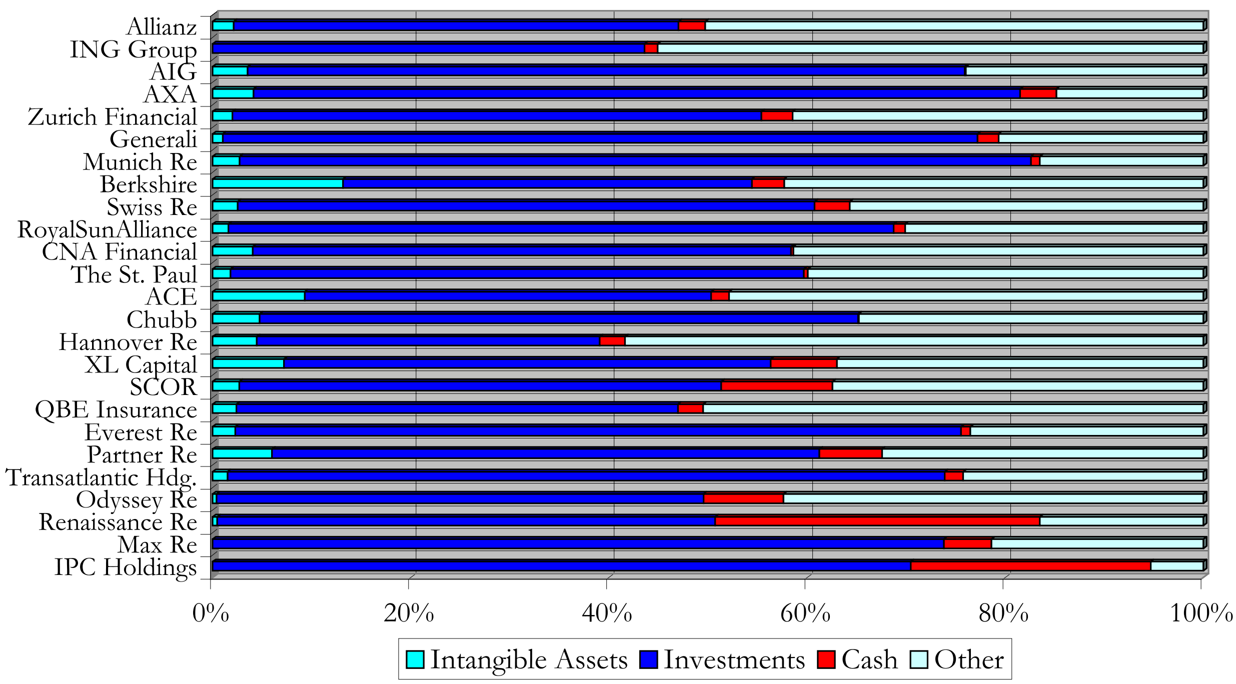


Figure 17a: Insurers' Liabilities - 2001

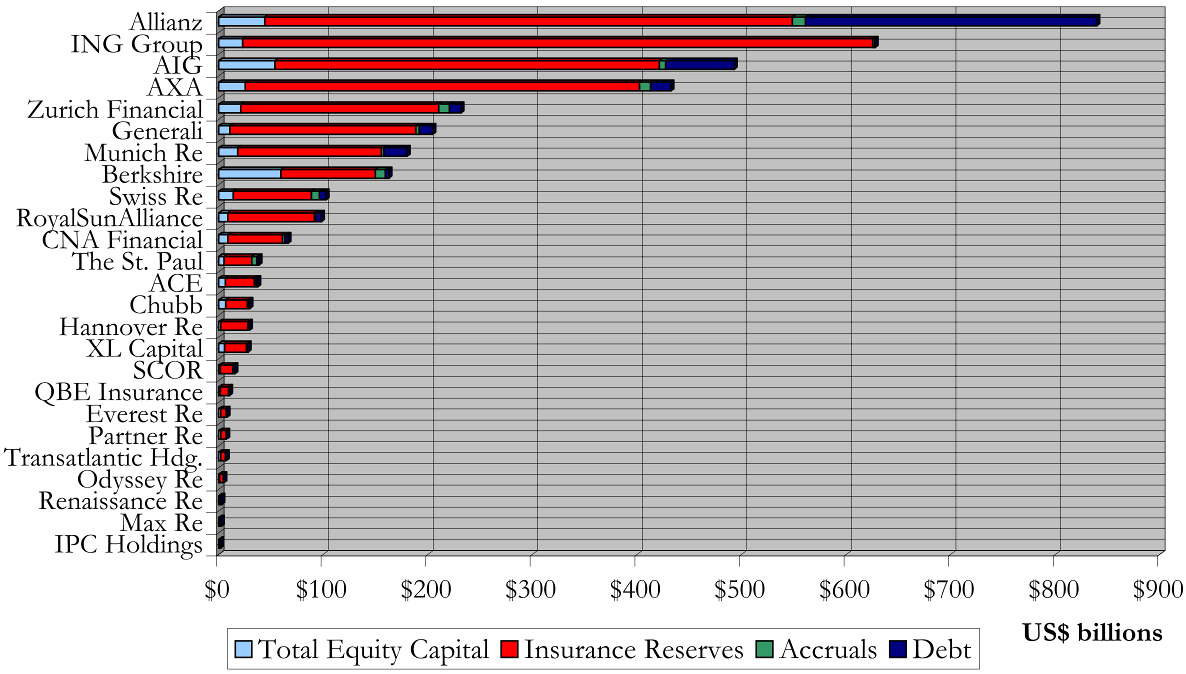


Figure 17b: Insurers' Liabilities (%) - 2001

Allianz, ING Group, AIG and AXA have, by some margin, the largest balance sheets, all at over US$400 billion. The second tier of firms with balance sheets between US$150 billion and US$250 billion includes Zurich Financial, Generali, Munich Re and Berkshire Hathaway. Total assets for Lloyd's of London in 2001 were US$68 billion.

The size and structure of Allianz' balance sheet has changed significantly since its acquisition of Dresdner Bank in 2001. In particular, Allianz acquired significant debt following the purchase. Included in ING's reserves are those for its banking operations.

IPC Holdings and Renaissance Re, both primarily property catastrophe reinsurers, have very similar balance sheet structures. Both firms carry significant cash holdings as a percentage of their assets, 24% and 33%, respectively; the largest proportion of cash across the Top25. Both firms also have significant equity capital as a proportion of their capital employed, 85% and 60%, respectively; again the largest proportions across the Top25. The four largest US insurers - AIG, Chubb, The St. Paul Companies and CNA Financial - hold the least cash as a proportion of their assets; all at under 0.5%.

Through its acquisitive strategy, Berkshire Hathaway proportionally has the most intangible assets of the Top25, at 13% of its total assets. Significant purchases during 2001 include Shaw Industries, Johns Manville Corporation, Mitek and XTRA Corporation.

Rating Action since Cat 9/11

It is not surprising that the balance of rating action by the four main agencies - Standard and Poor's, Moody's, AM Best and Fitch - has been downwards over the last year. Table 3 summarises the action taken on the long-term financial strength ratings of the Top25 insurers and reinsurers. Standard and Poor's and Moody's have been the most active agencies, though Moody's view is considerably more pessimistic than S&P's.

Table 3: Rating Action on Financial Strength since Cat 9/11

Rating Agency	Upgrades	Downgrades	Total Action	Net View
Standard & Poor's	9	11	20	-2
Moody's	0	18	18	-18
AM Best	1	6	7	-5
Fitch	0	7	7	-7

Table 4 shows both the current[4] long-term financial strength ratings awarded to the Top25 portfolio and any rating action since 11 September 2001. Those shaded red indicate a downgrade of one 'notch', those shaded blue indicate an upgrade of one notch, and those in bold indicate a movement of two or more notches. A negative sign in parentheses indicates that the firm has been placed on negative credit watch and 'NR' indicates that no comparable ratings were available. Lloyd's of London has been assigned 'A' by Standard and Poor's, and 'A-' by AM Best and Fitch.

[4] 31 January 2003

Table 4: Rating Action on Top25 since Cat 9/11

Company	S&P	Moody's	AM Best	Fitch
1.= AIG	AAA	Aaa	A++	AAA
1.= Berkshire Hathaway[5]	AAA	Aaa	A++	AAA
3.= Munich Re	AA+	Aa1	A++	AA+
3.= Swiss Re	AA+	Aa1	A++	AA+
5. Chubb	**AA+**	Aa2	A++	AA
6. Transatlantic Hdgs.	AA	Aa1	A++	NR
7. Allianz	AA	NR	A++ (-)	AA (-)
8.= Generali	AA	Aa2	A+	AA
8.= XL Capital	AA	**Aa2**	A+	AA
10. Partner Re	**AA**	Aa3	A+	A
11. AXA	AA	**Aa3**	A	AA
12. Hannover Re	AA (-)	**A2 (-)**	A+	NR
13. ING Group[6]	AA	Aa2	NR	NR
14. Everest Re	AA-	Aa3	A+	NR
15.= IPC Holdings	A+	NR	A+	NR
15.= QBE Insurance	A+	NR	NR	A+
17. ACE	**A+ (-)**	Aa3	A+	A+ (-)
18.= Renaissance Re	A+	A1	A+	A
18.= The St. Paul	A+	Aa3	A	NR
20. Zurich Financial	A+	**A1**	A	NR
21. CNA Financial	A-	A3	A	A
22. Odyssey Re	A-	Baa1	A	A-
23. Max Re	NR	NR	A-	A
24. Royal & SunAlliance	**A-**	**Baa1**	**A-**	A-
25. SCOR	**A-**	**Baa1**	**A-**	**BBB**

The rating landscape reveals only two carriers with top ratings; AIG and Berkshire Hathaway. In an uncertain environment, the financial strength of insurers becomes increasingly important. Swiss Re and Munich Re each has lost three of its prized triple-A ratings. Taking the brunt of the downgrades are Royal & SunAlliance (seven downgrades including three by S&P) and SCOR (eleven downgrades, including three by S&P and four by Fitch).

[5] General Re rating taken for S&P and Moody's
[6] ING Re rating taken for S&P

4 The Impact of Cat 9/11

The human and social costs of the terrorist attacks in the US on 11 September 2001 are devastating. Without detracting from that painful reality, this section focuses on the financial implications for the Top25 insurers and reinsurers. Many of these firms were directly and personally affected, well beyond the claims presented below.

Shown in Table 5 are the insurance claims associated with Cat 9/11 incurred by the Top25 as reported in their 2001 financial statements. The claims estimates presented are all net of reinsurance or retrocession and *after* tax. The Top25 cover almost US$13 billion of claims.

Also presented are the immediate cash holdings of each firm, as reported in their 2001 financial statements. Six firms are unable to cover 100% of their claims with their cash balances; Chubb (6%), The St Paul Companies (25%), CNA Financial (47%), Munich Re (85%), Transatlantic Holdings (95%) and Everest Re (96%). The remaining nineteen firms could pay their claims directly from cash holdings.

Table 5: Estimated Claims relating to Cat 9/11

Company	Claims estimate (US$m)	Cash (US$m)	Cash/Claim (%)
1. Munich Re	1,959	1,661	85%
2. Swiss Re	1,777	3,641	205%
3. Berkshire Hathaway	1,500	5,313	354%
4. Allianz	1,335	18,910	1,416%
5. XL Capital	796	1,864	234%
6. Zurich Financial	706	7,321	1,037%
7. The St. Paul	612	151	25%
8. ACE	559	671	120%
9. AIG	533	698	131%
10. AXA	500	15,710	3,142%
11. Chubb	420	26	6%
12. Partner Re	400	452	113%
13. CNA Financial	304	142	47%
14. Royal & SunAlliance	260	1,141	439%
15. Hannover Re	234	740	316%
16. SCOR	127	1,716	1,351%
17. Transatlantic Hdgs.	130	124	95%
18. QBE Insurance	129	258	200%
19. IPC Holdings	116	315	272%
20. ING Group	89	8,248	9,267%
21. Everest Re	75	72	96%
22. Odyssey Re	62	375	605%
23. Renaissance Re	48	866	1,804%
24. Generali	17	4,327	25,453%
25. Max Re	3	98	3,267%
Total for Top25	**12,691**	**74,840**	**590%**

Significant net claims were incurred also by Hartford Re (US$440 million after tax) and Employers Re (US$386 million after tax), a wholly-owned subsidiary of General Electric (GE). Most of these firms incurred additional losses, on top of the insurance claims, as a result of the disaster. For example, Travelers Property Casualty incurred net claims of US$502 million after tax and additional after tax losses of US$200 million in reduced revenue and additional expenses.

The Lloyd's market suffered a combined net loss of US$3.1 billion, pre-tax. Since any tax incurred is paid by individual members, it is not possible to assign a tax rate to this combined market loss. However, applying an approximated average rate of 30% suggests that, post-tax, the Lloyd's combined loss would lead Table 5.

The Stock Market Reaction

The most transparent measure of performance is provided by the stock market as it forms a collective opinion as to the future cash flow potential of each (re)insurer. The stock price performance of the Top25 firms for one year from 11 September 2001 is ranked in Table 6. ValueReaction™ captures the share price reaction to 9/11, where all market-wide influences have been stripped out and returns have been risk-adjusted[7]. Table 6 shows the mean average[8] ValueReaction™ over the year. Over this period, the S&P500 Composite fell by 16.8% and the Dow Jones Euro Stoxx fell similarly by 16.9%.

Table 6: Stock Market Reaction to Cat 9/11

Company	Average ValueReaction™ (%) 11/9/01 to 10/9/02
Renaissance Re	40.24
IPC Holdings	23.39
Transatlantic Holdings	16.34
ACE	11.30
Chubb	7.76
Berkshire Hathaway	7.33
XL Capital	7.11
Everest Re	6.53
Partner Re	6.04
Swiss Re	5.14
The St. Paul	3.97
Max Re	2.75
Odyssey Re	1.86
CNA Financial	1.12
AIG	-0.73
Munich Re	-2.43
Hannover Re	-5.18
ING Group	-7.26
Allianz	-8.99
Generali	-15.14
AXA	-17.69
Zurich Financial	-17.78

[7] For computational details, see Data and Methods.
[8] There is negligible difference between the mean and median averages across the firms.

SCOR	-27.77
QBE Insurance	-27.79
Royal & SunAlliance	-28.29
Average	**-0.73**

The portfolio of 25 firms then has been partitioned according to whether their average modelled performance was positive or negative over the post-event year. There emerge fourteen positive 'Recoverers' and eleven negative 'Non-recoverers'. Investors have used the Cat 9/11 crisis as an opportunity to adjust their expectations of future cash flow from these firms. This process results in a re-rating of insurers' senior management by investors and produces two groups of firms. The distinction between the two groups is not as distinct as with previous Oxford Metrica research into the shareholder value effects of reputation crises[9]. There appears in this case to be a middle group (from Chubb to Allianz in Table 6) where, in the current market turmoil, investors have yet fully to settle their expectations as to the future cash flow they might expect from these firms.

With the notable exception of Swiss Re that managed to exceed expectations over the post-event year, the Non-recoverers (those that underperformed market expectations) include all the European firms in the Top25 portfolio. More recently, Swiss Re's share price has not fared so well.

AIG is the only US firm in the 'Non-recoverers' category. The firm's share price performance is right on the cusp of the partition, exactly equal to the average across all twenty-five firms analysed. AIG's share price has suffered further in the wake of a net, post-tax increase to reserves of US$1.8 billion on 3 February 2003. According to the firm's Press release, "approximately 60% of the reserve increase will be applied to excess casualty loss reserves, including excess workers' compensation; 25% to directors' and officers' liability; and 15% to other casualty, including healthcare liability". In the context of AIG's US$5.4 billion net income for 2001 and assets of US$493 billion, the increase to reserves is not significant. However, investors were not expecting any such move and, indeed, the reserve increase seemed to trigger a sector-wide plunge as analysts then focused on the consequences of a tort system perceived as 'out of control'. In addition, AIG's valuation may be suffering from continued investor concerns over succession to Chairman Maurice Greenberg, widely-regarded as an exemplary insurance leader.

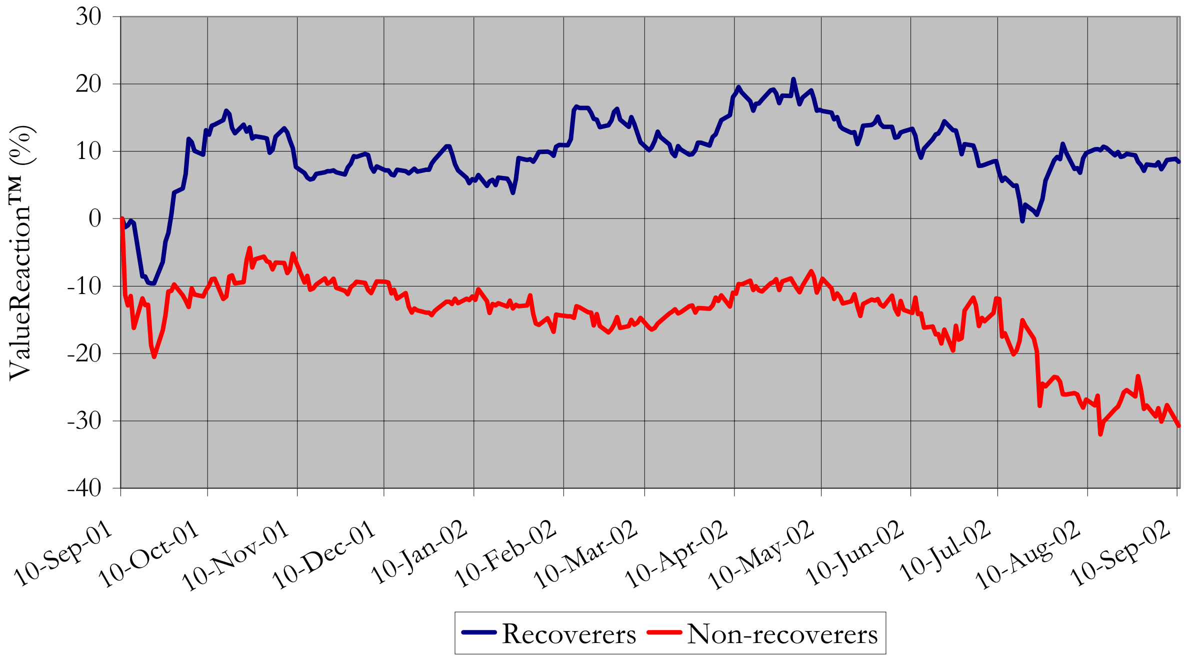
One reason that the European firms have fared worse in value terms since Cat 9/11 relates to their higher exposure to the equity markets; shown in Figure 15b in Section 2. A second reason for the poorer performance may reflect the different standards in each region of transparency in financial reporting.

Also noticeable is that the larger firms tend to dominate the Non-recoverers group. This is likely to be due, in part, to the age of the firms' capital. The smaller, 'newer' firms have, by definition, lower exposure to substantial historic liability claims.

The modelled share price performance of the Recoverers and Non-recoverers is averaged for each group and illustrated in Figure 18.

[9] *Reputation & Value: the case of corporate catastrophes* by Rory F Knight and Deborah J Pretty, Oxford Metrica (2001).

Figure 18: Recoverers and Non-recoverers in Insurance



Whilst both groups fall initially in value, the Non-recoverers do so by twice as much and proceed to underperform market expectations by up to 30% by the end of the post-event year. This translates into a combined loss of US$91.4 billion in pure market value over the year following Cat 9/11. The Recoverers portfolio exceeded investors' expectations by almost 10% over the post-event year, translating into a gain in pure market value of US$11.2 billion. The discrepancy of over US$100 billion between the two groups suggests that the market has made some strong judgments as to the average likely future performance of these two groups.

5 The Impact of Latent Liabilities

Asbestos is the most substantial claim facing the US property-casualty industry. It is estimated that US insurers ultimately will pay approximately US$65 billion in asbestos claims and US$56 billion in environmental liabilities. The actuaries[10] estimate further that approximately US$41 billion of the combined exposure has been paid already and US$23 billion currently is held in reserves. These figures imply that the US (re)insurance industry is under-reserved potentially by US$57 billion.

Moreover, the combined total claim of US$121 billion (US$65 billion for asbestos plus US$56 billion for environmental) is considered to be approximately one third of the total global cost, with another third being borne by insurers outside the US, and the final third being borne by the defendants themselves.

The ratings agency, AM Best, estimates that the cost of asbestos claims, on average, has risen by 15% per annum over the last two years. The agency predicts that the cost of claims will rise by at least 20% per annum over the next three to five years. The additional asbestos claims stem from the convergence of several recent unfavourable developments. While the first wave of defendants comprised asbestos manufacturers only, now being targeted are distributors and installers, and the 'net' appears to be spreading continually. A US$34 million verdict was extracted from Shell Oil by a roofer exposed to asbestos, Sears was hit with a US$1.5 million judgment for selling home insulation that allegedly contained asbestos, and Ford reportedly has US$1.7 billion in asbestos cases outstanding. Higher medical costs are expected due not just to inflationary pressures but to the expected maturation of more serious asbestos-related illnesses.

It is estimated that firms today spend more than US$1 billion to insure their environmental liabilities and clean-up costs; five times as much as they did in 1985. The predominant reason relates to the growing appeal of environmental impairment liability (EIL) insurance as a business tool.

Firms considering a merger or acquisition use the insurance to remove the financial uncertainties that could jeopardise a deal. Environmental contractors bidding on clean-up projects use it to support their guaranteed cost bids. Deregulated utilities use EIL insurance to package the facilities they shed, and financial institutions buy it to back up their lending portfolios. Not to be forgotten is the engineering expertise brought by the specialist carriers, which often has the effect of reducing the ultimate cost of EIL. These are just a few of the business applications of EIL insurance which increasingly is being thought of in terms of contract facilitation, rather than just another insurance cost.

Across the Top25 insurers' and reinsurers' annual financial statements for 2001, seven firms did not mention explicitly any exposure to asbestos or environmental liabilities. A further six asserted that they faced such liabilities but that they were not possible to quantify and, therefore, the associated reserves would not be disclosed. These firms, predominantly Europeans, are presented in Table 7.

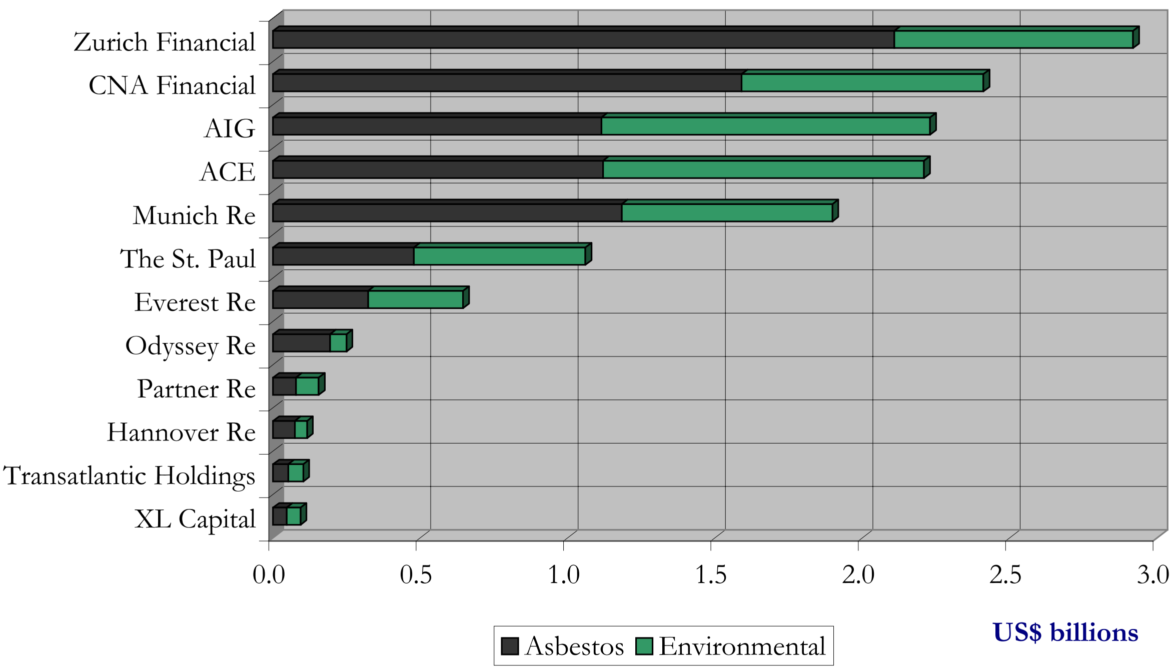
[10] *Source*: Tillinghast-Towers Perrin

Table 7: Disclosure of Asbestos and Environmental Liabilities - 2001

Not mentioned (possibly no known liability)	Quantification of reserves not disclosed
Generali	Allianz
ING Group	AXA
IPC Holdings	Berkshire Hathaway
Max Re	Chubb
QBE Insurance	Royal & SunAlliance
Renaissance Re	Swiss Re
SCOR	

The gross asbestos and environmental reserves[11] for losses and loss-adjustment expenses (2001) for the remaining twelve firms in the Top25 are illustrated in Figure 19. The observations made on Figures 19 and 20 clearly apply only in the context of the portfolio of firms for which data was disclosed.

Figure 19: Gross Loss and Loss-Adjustment Expense Reserves for Asbestos and Environmental Liabilities - 2001



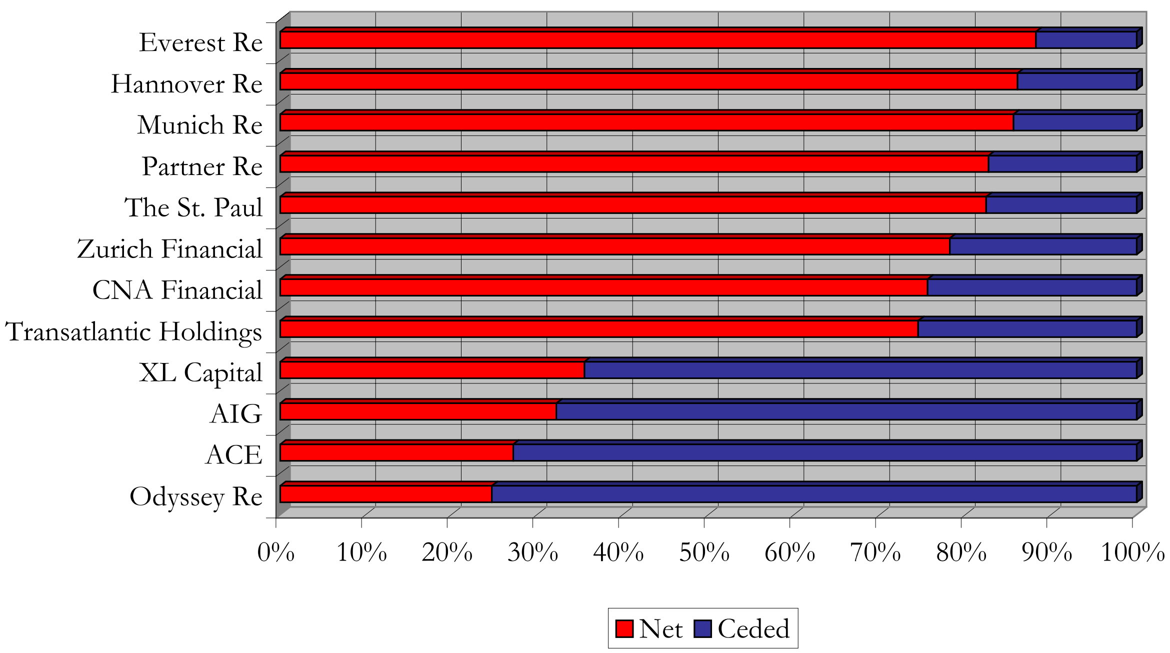
If it may be assumed that the size of loss reserves is a reasonable indication of exposure, then Zurich Financial and CNA Financial face the largest exposure to asbestos liabilities on both a gross and net basis. For exposure to environmental liabilities, the two firms

[11] *Assumptions*: Included in ACE's environmental reserves are those for other latent liabilities. Partner Re, Transatlantic Holdings and XL Capital do not disclose the split between gross asbestos and environmental reserves so a 50:50 split has been assumed. The specific asbestos and environmental ceding ratios for Transatlantic Holdings have not been disclosed, so the same ceding ratio as for total loss and loss-adjustment expense reserves has been calculated and assumed.

rank fourth and third, respectively. AIG and ACE face the largest gross exposure to environmental liabilities and occupy places fifth and fourth respectively for asbestos.

However, the reinsurance strategies adopted by firms is very different; illustrated in Figure 20. Both Zurich Financial and CNA Financial cede less than 30% of their exposure whereas for AIG and ACE, such a proportion more closely approximates their retention ratio. Hannover Re's relatively high retention ratio is driven largely by its high (94%) retention ratio for asbestos exposures, whereas Munich Re's relatively high retention ratio is driven more by its high (93%) retention ratio for environmental liabilities.

Figure 20: Reinsurance Strategies Adopted for Asbestos and Environmental Liabilities Combined - 2001



On a net basis, Zurich Financial, CNA Financial and Munich Re have the largest exposure to both asbestos and environmental liabilities, of the firms for which data on reserves is disclosed. In 2001, CNA Financial increased its asbestos reserves by US$800 million after tax and, most recently, ACE increased its reserves by US$2.18 billion (though this reserve is offset by US$1.86 billion of reinsurance, US$533 million of which is supplied by Berkshire Hathaway). The biggest reserves currently for asbestos are held by Travelers Property Casualty. On 14 January 2003, these reserves were increased by US$2.5 billion (US$1.3 billion after tax) to US$3.4 billion. Indeed, since the 2001 year-end, both ACE and Travelers have trebled their reserves for asbestos claims. It is anticipated that, over 2003, more insurers will strengthen their reserves significantly.

Additionally, it is known that Allianz, Chubb, and Royal & SunAlliance all face substantial asbestos claims. On 13 September 2002, Allianz announced it would increase its asbestos reserves by US$750 million. This reserve-strengthening is supplementary to an increase of US$800 million in 1995 and a further US$250 million in 2000. Allianz announced in 2002 its worst third quarter, citing among other factors the additions to its asbestos reserves in the US.

Last year, both Chubb and Royal & SunAlliance more than doubled their asbestos reserves; Chubb by US$625 million and RSA by £371 million (US$581 million). Chubb is to raise US$525 million in capital for general corporate purposes including strengthening asbestos liability reserves further. In the fourth quarter of 2002, RSA increased its asbestos related liability reserves by an additional US$225 million.

Early in 2002, The St. Paul Companies paid out US$987 million to settle a case with buildings products firm, Western MacArthur. On 18 December 2002, Halliburton settled 300,000 claims for US$4.1 billion and, two days later, Honeywell announced an asbestos settlement of approximately US$2.9 billion for 200,000 outstanding claims.

As the claims continue to rise and demands for transparency gain momentum, it is likely that firms will be encouraged (at the least) to provide greater quantitative information on such liabilities notwithstanding the measurement challenges. On 23 October 2002, an additional lawsuit was filed against The St. Paul Companies on behalf of shareholders who claim that the company inflated its stock price artificially by failing to disclose adequate financial information on asbestos claims.

6 Renewed Focus on Governance

Across all industry sectors, there are increasing demands for improved financial disclosure and more effective corporate governance. This section considers first the direct impact of Enron's collapse on the Top25 insurers and reinsurers. Second, the proposed accounting reform to charge employee stock options to the income statement is explored.

The Impact of Enron's Bankruptcy

2001 saw the high profile demise of Enron. Its bankruptcy affected insurers in potentially two ways. First, some firms were exposed to surety bond losses. Second, several investment portfolios, particularly those in the US, suffered as Enron's share price plummeted. Table 8 presents the reported losses from Enron to the Top25 (re)insurers. Each loss is presented net of reinsurance or retrocession and after tax, unless otherwise stated.

Table 8: Direct Losses from Exposure to Enron

Company	Loss (US$m)	Details, where disclosed
Chubb	143	Surety bond losses
The St. Paul	102	US$83m coverage for gas supply bonds + US$19m in investment losses
XL Capital	75	
CNA Financial	52	
Partner Re	47	Pre-tax
Berkshire Hathaway	46	Undisclosed as to pre- or post-tax
Transatlantic Hdgs.	39	Surety bond losses
Everest Re	25	Underwriting, credit and investment losses
Royal & SunAlliance	22	Announced in February 2002
SCOR	20	US$16m surety bond losses + US$4m investment losses
Odyssey Re	10	
Total	**US$581m**	

In addition to the direct Enron-related losses, the prevalence of other high profile governance failures - such as WorldCom, Global Crossing and Tyco - impacted stock market performance negatively and severely. These failures have produced a widespread loss of investor confidence in corporate America's ability to report accurate accounting numbers. The distinction between prudent earnings management and fraudulent earnings manipulation has been called into question. Even companies where no wrongdoing is suspected, but whose operations are complex, have suffered in the aftermath of Enron. Two prominent companies which appear to have been penalised in the markets for financial complexity are AIG and GE. The leaders of both firms -

Maurice Greenberg and Jeffrey Immelt, respectively - have responded rapidly with substantive attempts to improve transparency and access to information.

The Proposed Reform to Expense Employee Stock Options

Against this background of several significant governance failures, there has emerged a strong desire to curb so-called corporate excesses and errant managerial behaviour. It is a global issue punctuated by failures ranging from Enron in the United States to HIH in Australia and Vivendi in Europe. These managerial failures have prompted interest in a wide variety of measures that are perceived by some commentators to redress the current situation of inadequate governance policy and the lack of transparency.

Receiving serious attention as such a measure is the potential expensing of employee stock options. Currently, there is a requirement in the US for footnote disclosure. The debate is not new but has intensified significantly in recent months. Those advocating options expensing suggest that, by charging the fair value of options to the income statement, a more transparent and realistic picture of the firm's financial health is reported. However, such a transition in accounting policy is not without its questions of principle or practical difficulties. This is reflected clearly by the duration of the controversy over the last fifty years.

Listed in Table 9 are the six firms from the (re)insurance industry that have announced their intention to expense employee stock options voluntarily. Also presented are the negative percentage and dollar impacts on annual earnings ensuing from the decision. Given the considerable negative impact on the earnings of Chubb and Max Re, it is surprising to see the companies so willing to expense options in the absence of imposed regulation.

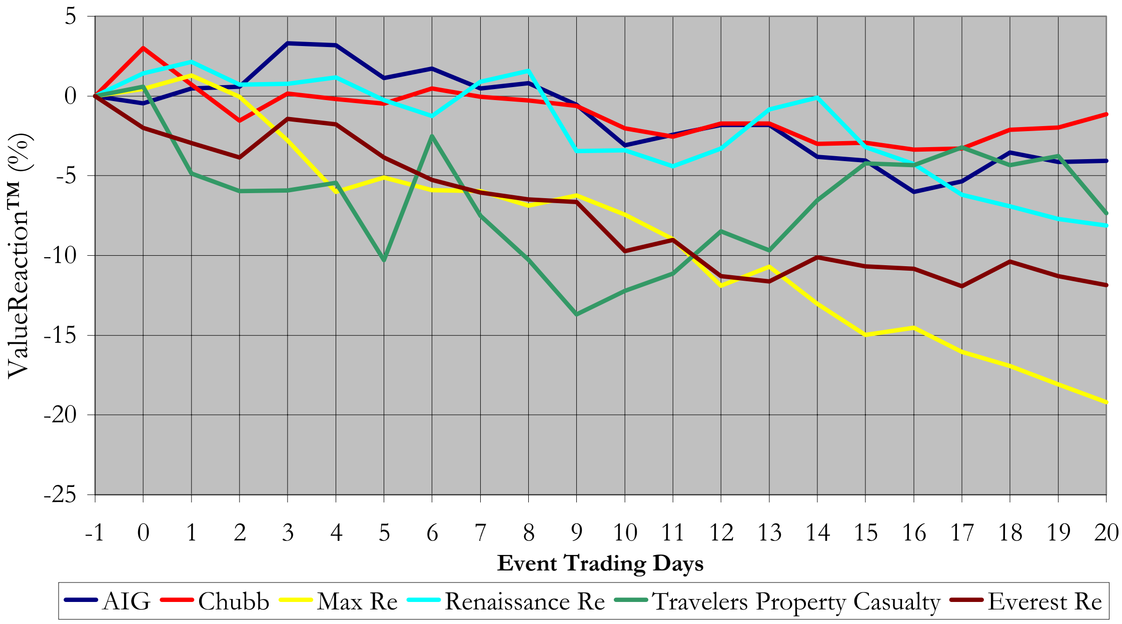
Table 9: (Re)insurers Selecting Voluntarily to Expense Options

Company	Date of Announcement	Impact on Earnings (%)	Impact on Earnings (US$m)
AIG	13 Aug 2002	3%	144
Chubb	13 Aug 2002	41%	46
Max Re	9 Sep 2002	36%	1
Renaissance Re	14 Oct 2002	7%	11
Travelers Property Casualty	16 Oct 2002	1%	15
Everest Re	21 Oct 2002	4%	4

As Chairman Maurice Greenberg of AIG explained, the voluntary expensing of options is intended entirely as a signalling measure to ease investors' concerns. Of the 132 US listed companies that made such announcements over the latter six months of 2002, 60 (45%) were financial firms. This strong sectoral presence is likely to be due to two factors. First, the large financial institutions traditionally are not heavy users of options so charging them as an expense to the income statement is unlikely to have as significant an effect on earnings as for firms in other sectors. Second, financial firms often have considerable asset management operations. As significant investors, therefore, financial firms will wish to lead the debate on improving governance and disclosure.

Figure 21 illustrates the stock market reaction to the firms' announcements over the first calendar month.

Figure 21: Value Reaction to Announcement to Expense Options



Given its 36% impact on net income, it is unsurprising to see Max Re underperform expectations by almost 20% in the wake of its decision to expense voluntarily. The earliest announcers, AIG and Chubb, receive the most favourable reaction from the market. This is consistent with ValueReaction™ results across the full portfolio of 132 US quoted firms that have selected voluntarily to expense. Across this portfolio, there is a marginally more positive reaction to the early announcements. Beyond the assessment of profit impact from expensing, it appears that the announcements were perceived by a market increasingly sceptical of self-serving behaviour.

7 Profiles on Special Markets

This section profiles three special insurance markets, each of which has a prominent presence in the global (re)insurance arena; Bermuda, Lloyd's of London and Japan.

Capital in Bermuda

Bermuda is a major insurance centre with over 1,600 international insurance companies. The flexible regulatory framework and favourable tax regime of Bermuda assists in the rapid creation of specialist insurance and reinsurance companies. Such a framework encourages new capital in the wake of disaster when insurance capacity is in short supply. Such was the case following 11 September 2001.

Almost 100 new (re)insurance companies (most of which are captives) have formed in Bermuda since Cat 9/11, taking advantage of gaps in coverage, tighter terms and conditions in policies, and higher premiums. All the new (non-captive) firms have attracted A+ to A- ratings from AM Best. Moody's estimates that the amount of new capital into Bermuda is over US$13 billion, possibly about half the new capital raised worldwide following 9/11. Table 10 includes a selective list of this new capital.

Table 10: New Capital into Bermuda

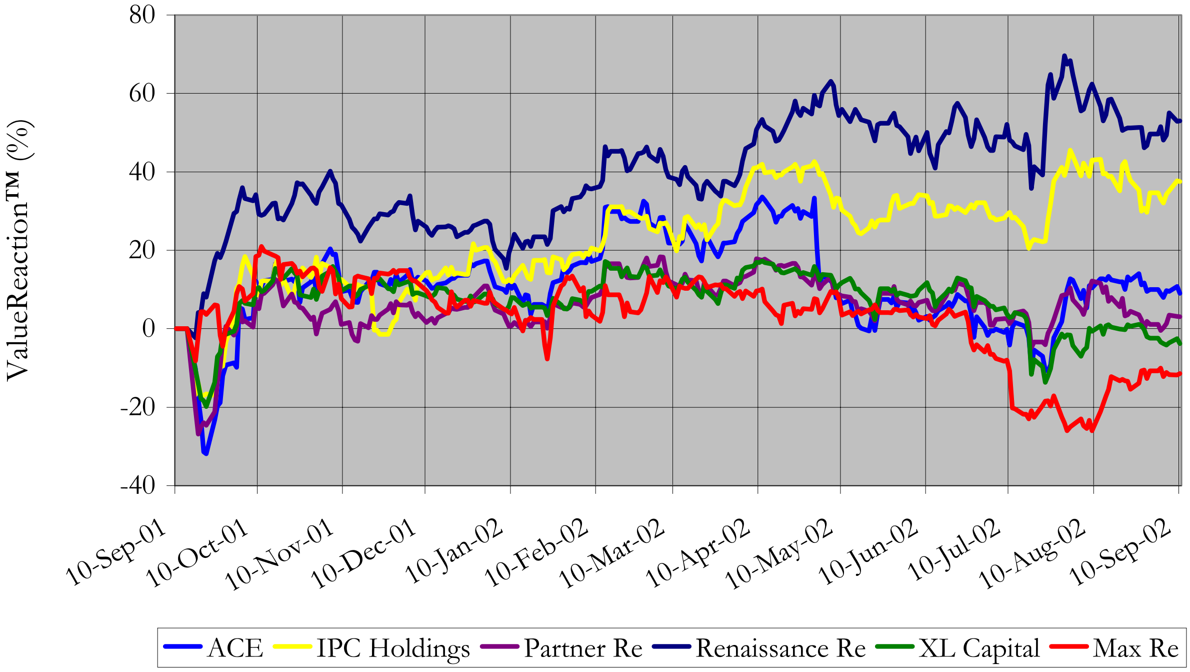
Company	Ownership/sponsor	Date of establishment	Initial Capital (US$m)
Axis Specialty	Marsh, Trident II	Nov 01	1,650
Allied World Assurance	AIG, Chubb, Goldman Sachs	Dec 01	1,500
Endurance Specialty	Aon, Zurich Financial Services	Dec 01	1,200
Arch Re	Arch Capital Group	Nov 01	1,000
Montpelier Re	White Mountains, Benfield Advisory, Bank of America	Dec 01	1,000
Catlin Insurance	Catlin WestGen Group, Capital Z Financial Services, JP Morgan Corsair	Jul 02	532
DaVinci Re	Renaissance Re, State Farm	Nov 01	500
Olympus Re	Leucadia National, Gilbert Global Equity Partners	Feb 02	500
Goshawk Re	Goshawk Insurance	Jan 02	145

In addition, there has been a high rate of capital raising by the established companies increasing debt and issuing new equity. ACE announced that it had filed with the SEC to sell up to US$1 billion in debt securities and common and preferred shares. XL Capital announced similar plans for at least US$1.5 billion. Also announcing capital-raising ventures were Partner Re (US$600 million), Renaissance Re (US$564 million) and

IPC Holdings (US$547 million). Newly raised capital has been used to increase capacity to take advantage of improving markets, aid company restructuring, introduce new lines of business, take up business withdrawn by other companies, and to strengthen company balance sheets.

Figure 22 shows how each of the Bermudian firms in the Top25 portfolio recovered value following Cat 9/11. After the initial drop in value, most of the firms recovered very well, with only Max Re dipping significantly below market expectations by the end of the following year. The firm has not been helped by its above average exposure to equities; 39% of its investment portfolio across bonds, equities and cash.

Figure 22: Value Recovery in Bermuda, post-9/11



Renaissance Re and IPC Holdings are the clear 'Recoverers' in Bermuda, both exceeding expectations by over 25% by the end of the post-event year. Both firms have continued their impressive value recovery in recent months.

With increasing premiums, fresh capital and increasing capacity, Bermuda is set to maintain its position as a leading global insurance and reinsurance market and as a centre for developing new ways to manage risk.

Capacity in Lloyd's

The opening capacity for Lloyd's of London in 2003 reached £14.45 billion (US$23.18 billion), an increase of 18% on 2002 and the highest capacity the market has achieved. There are 71 underwriting syndicates operating within Lloyd's that focus on unique, specialised and high-risk insurance and reinsurance.

Several companies from outside Lloyd's have formed underwriting syndicates within the market. Significant new capital has been raised in 2002 to take advantage of favourable market conditions and to increase capacity for 2003. Ascot Underwriting (40% owned and 100% funded by AIG) increased capacity by £78.5 million (US$126 million), an increase of 66%. Berkshire Hathaway increased capacity by a total of £585 million (US$942 million); at Wellington by £338 million (US$544 million), at Trenwick by £132 million (US$212 million), at Euclidean and Hiscox each by £50 million (US$81 million) and at SVB Holdings by £15 million (US$24 million). Table 11 details the corporate member capacity[12] across the Top25 portfolio of firms analysed in this report.

Table 11: Top25 Capacity at Lloyd's

Company	Managed 2003 Capacity (£m)	Managed 2002 Capacity (£m)	Growth Rate
QBE Insurance	843	653	29%
ACE	725	895	-19%
Berkshire Hathaway	585	496	18%
The St. Paul	438	521	-16%
XL Capital	340	442	-23%
AIG	269	118	128%

This profile focuses on the five largest (by market capitalisation) listed managing agents that operate multiple syndicates within Lloyd's: Amlin, Cox, Hiscox, Kiln and Wellington. The increased capacity[13] of these firms is shown in Table 12.

Table 12: Capacity of Leading Listed Managing Agents

Company	Managed 2003 Capacity (£m)	Managed 2002 Capacity (£m)	Growth Rate
Amlin	1,000	800	25%
Hiscox	842	504	67%
Wellington	700	625	12%
Kiln	658	531	24%
Cox	433	416	4%

[12] *Source*: Lloyd's Broker Market Update, January 2003
[13] Op. cit.

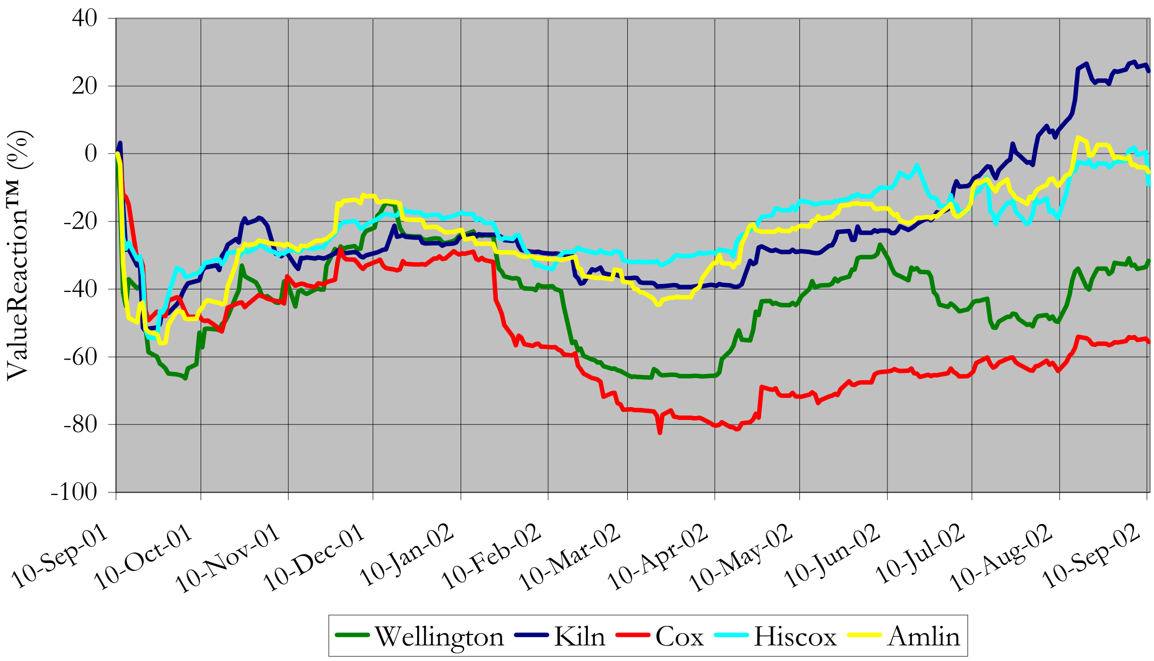
The Lloyd's market faced its single largest claim as a result of the terrorist attacks on 11 September 2001. The latest estimated gross loss to Lloyd's is £6.2 billion (US$8.97 billion) pre-tax, with a net loss of £2.1 billion (US$3.11 billion). Of the gross loss, 62% was from inward reinsurance and 38% from direct insurance. Table 13 and Figure 23 show the varied value responses to Cat 9/11 across the five firms under study. Market influences have been stripped from the analysis and the returns have been risk-adjusted.

Table 13: Value Recovery across Leading Managing Agents

Company	MCap on 3 Jan 2003 (US$m)	Average ValueReaction™ (%) 11 Sep 01 to 10 Sep 02
Hiscox	724	-21.37
Kiln	330	-22.57
Amlin	788	-24.27
Wellington	616	-47.27
Cox	373	-55.25

None of the Lloyd's firms fares well following Cat 9/11, though Kiln has started to regain value in recent months. Hiscox and Amlin managed to return to market expectations (where ValueReaction™ equals zero) by the end of the post-event year. Both Wellington and Cox underperform investors' expectations significantly.

Figure 23: Value Recovery at Lloyd's, post-9/11



Increasing premiums across the market have been supplemented by tighter terms and conditions, higher deductibles and tougher underwriting rules, partly in response to Cat 9/11. Lloyd's exposure to falls in equity prices is limited though, as a reinsurer, the market is not immune to the impact of falling investment portfolios on its member companies.

Consolidation in Japan

Dramatic and extensive consolidation has taken place within the Japanese non-life insurance industry in the past two years. Thin margins, low investment, volatile domestic equity markets and low interest rates have made mergers a necessity to remain competitive.

As part of Japanese government attempts to bring standards and legislation in line with European and American practices, deregulation has focused the non-life sector and had a profound effect on competition. Price competition between existing insurance companies has increased and been exacerbated by the introduction of limited non-life insurance policies by other financial institutions. This is set to continue as more lines of business are made available to financial institutions and new distribution channels, such as bancassurance and direct marketing, emerge to challenge the predominant method of agency selling.

Within this context of deregulation and increased competition, Japanese non-life insurance companies have sought alliances and mergers to strengthen their market positions. The main objectives of the mergers are to improve efficiency through synergies and cost-cutting, strengthen fund-raising capacity, and provide a platform for greater international presence. Japanese insurers look towards Asian markets particularly as a source of growth. Though primarily serving Japanese companies operating in Asia, the mergers provide an opportunity to invest further in the region and act as local subsidiaries providing services to local companies.

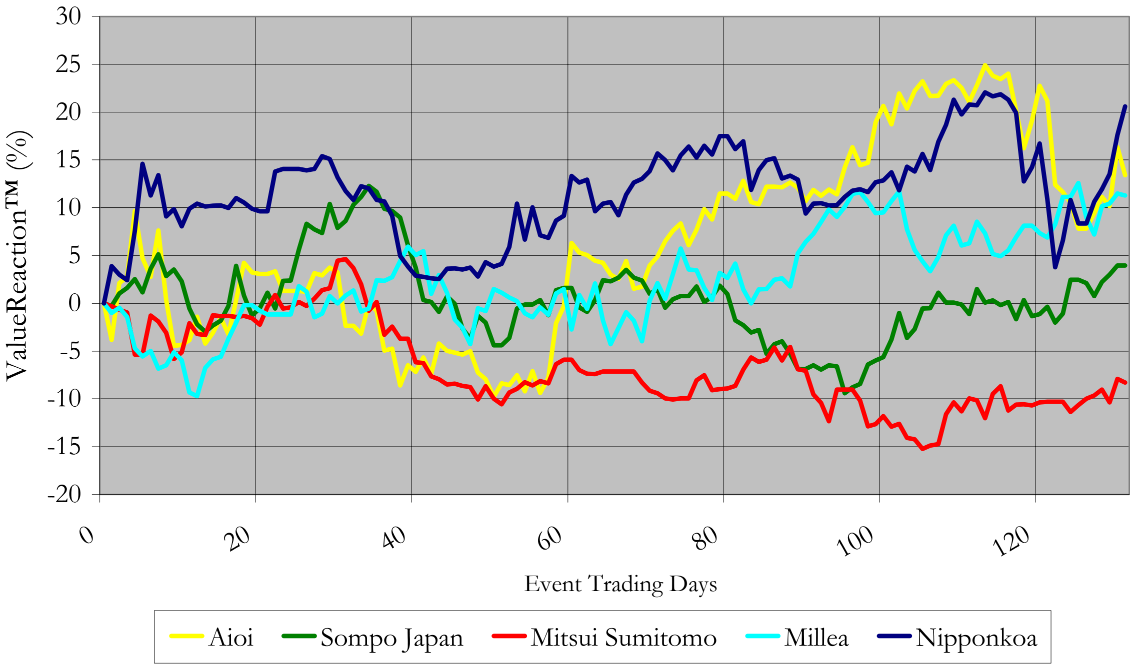
The impact of the terrorist attacks of 11 September 2001 on the Japanese non-life insurance industry has been mixed, clearly depending on the level of international exposure each company faced. Aioi Insurance is expected to lose ¥148 billion (US$1.23 billion) from its exposure to Fortress Re, the collapsed US aviation reinsurance agency. This includes ¥114.6 billion (US$859.4 million) in losses associated with Cat 9/11. The proposed three-way merger of Yasuda Fire and Marine, Nissan Fire and Marine and Taisei Fire and Marine Insurance was halted when Taisei filed for bankruptcy in November 2001 in the face of massive reinsurance claims from Cat 9/11. The two-way merger of Yasuda and Nissan was completed on 1 July 2002 as Sompo Japan. Presented in Table 14 are details of the biggest mergers.

Table 14: Japanese Mergers in General Insurance

Merged Entity MCap on 3 Jan 2003	**Between:**	**Date**
Millea Holdings US$13,240 million	Tokio Marine & Fire + Nichido Fire & Marine	2 Apr 02
Mitsui Sumitomo Insurance US$6,746 million	Mitsui Marine & Fire + Sumitomo Marine & Fire	1 Oct 01
Sompo Japan Insurance US$5,715 million	Nissan Fire & Marine + Yasuda Fire & Marine	1 Jul 02
Nipponkoa Insurance US$3,149 million	Nippon Fire & Marine + Koa Fire & Marine	1 Apr 01
The Aioi Insurance Co. US$1,446 million	Dai-Tokyo Fire & Marine + Chiyoda Fire & Marine	1 Apr 01

The stock market reaction to the merger announcements was mixed, as the following graph illustrates. Figure 24 shows the value reaction for six months after the merger announcement, where market factors are removed and returns are risk-adjusted. The announcements have been aligned in 'event time' so that, in each case, event day zero is the date of the respective announcement.

Figure 24: Value Reaction to Japanese Merger Announcements



Nipponkoa and Aioi received the most favourable reaction from the markets, both initially and on a sustained basis, though the latter's valuation has suffered severely in recent months due to its significant exposure to Fortress Re. Millea disappointed investors initially but has since outperformed expectations. Mitsui Sumitomo continues to underperform but is beginning to show signs of recovery. Mitsui Sumitomo recently increased its 2003 underwriting capacity at Lloyd's by 153% over 2002 to £252 million.

The consolidation of the non-life insurance industry in Japan brings with it the possibility of polarisation within the industry. The mergers took place primarily between the dominant larger companies so making it harder for the smaller companies to compete. The mergers have reduced 23 non-life firms to 6 mega insurance groups that would control collectively over 80% of the (Japanese) insurance industry's total premiums[14]. Moreover, the top three companies - Millea Group, Sompo Japan and Mitsui Sumitomo - hold 65% of the Japanese market[15]. Branding by larger companies is likely to be more powerful than by the smaller companies, although the latter may be able to provide niche services.

Agent sales remains the predominant distribution channel, as opposed to direct sales or other methods more popular elsewhere, but new methods are being introduced, driven by competition. Further mergers and alliances are expected as current merger initiatives are completed and second tier companies form alliances and merge with foreign firms.

[14] Asia Insurance Review, 12 September 2001
[15] Insurance Day, 27 May 2002

8 Data and Methods

The source of all financial data was corporate annual reports and financial statements (2001). Currency conversions have been made where applicable using exchange rates at balance sheet dates. The raw data on share prices and market indices underlying the study were obtained from *Thomson Financial Datastream* financial database. All Press information was obtained from *Dow Jones Reuters Factiva*, the international newspaper and newswire archive.

ValueReaction™

In order to measure the value reaction to an event, it is necessary first to extract the effect of other events that may impact shareholder value simultaneously. This is accomplished in two phases. The first phase is at the individual company level and involves filtering out from share price movements the effects of market-wide factors. The result of this process is the estimation of so-called abnormal returns for a period immediately following the event. These abnormal returns are presented on a risk-adjusted basis. In the second phase, these abnormal returns are aligned on the event day (trading day 0) and then accumulated over what is now event time, resulting in a portfolio value reaction from trading day 0 known as cumulative abnormal returns.

The cut-off date for this research was 12 February 2003.

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