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# **How profitable is Lloyd's underwriting?**

**By Professor Tim Congdon CBE**

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Tim Congdon is an economist and businessman. He founded Lombard Street Research, one of the City of London's leading economic research consultancies, in 1989, and was its Managing Director from 1989 to 2001 and its Chief Economist from 2001 to 2005.

Perhaps his most prominent role was as a member of the Treasury Panel of Independent Forecasters (the so-called "wise men") between 1992 and 1997, which advised the Chancellor of the Exchequer in a successful period for economic policy. His involvement with Lloyd's began in 1991 when he became a Name. He served on Lloyd's Prudential Supervision Committee between 2001 and 2003, and has been a non-executive director of the Association of Lloyd's Members since 2003. Mr. Congdon has been a visiting professor at two business schools and is currently a Visiting Research Fellow at the London School of Economics. He was awarded the CBE for services to economic debate in 1997. He is currently writing two books, one on *Keynes, the Keynesians and Monetarism* and the other on *Money in a Modern Economy*.

## Executive Summary

The purpose of this study is to assess the likely future return from Lloyd's underwriting, given both the historical experience and the structure of the insurance market. It should be of particular interest to a prospective third-party capital provider. Two key terms are "capacity", i.e. the maximum value of insurance premiums receivable in one year by a capital provider, and "capital", i.e. the risk capital provided by a particular individual, family or company in order to underwrite insurance business. A reasonable rule of thumb is that – for a third-party capital provider at Lloyd's with a spread of syndicates – capital must be not less 40% of capacity. Capital is charged to Lloyd's in the form of "Funds at Lloyd's" (FAL). The main conclusions are as follows:

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- Over the last 50 years or so the average profit from Lloyd's underwriting has been 2% – 3% of capacity. Given a 40% ratio of FAL to capacity, that implies an underwriting return on capital of 5% – 7½% a year.
  - Lloyd's underwriting enables an investor to "use capital twice".
  - The typical long-run annual return on equities is usually cited as 5% – 7% a year. It follows that an equities-based investor who puts all his or her capital into Lloyd's as FAL should eventually double the return on capital.
  - Lloyd's underwriting is risky, while the volatility of returns may have increased in recent decades. But – if underwriting returns are expressed relative to capacity – participation in Lloyd's is no riskier than investing in UK equities.
  - The potential doubling of investment returns from participation in the Lloyd's market may seem remarkable, but it needs to be remembered that a 2% – 3% return on capacity implies that profit margins are wafer-thin.
  - The meaning of the 2% – 3% return on capacity is that, out of every \$100 of insurance premiums, the capital-provider receives only \$2 or \$3. The rest of the \$100 is absorbed by policyholder claims, brokerage and other costs.
  - Returns on Lloyd's underwriting are not correlated with those on UK equities (and, almost certainly, not with those on other equity markets either).
  - Underwriting returns are increased by the selection of high-quality syndicates and by good decisions on timing (i.e. reducing underwriting in a "soft market" and/or ahead of major loss events). The advice of a members' agent can be invaluable here.

# 1. How profitable is Lloyd's underwriting?: An analysis of the record

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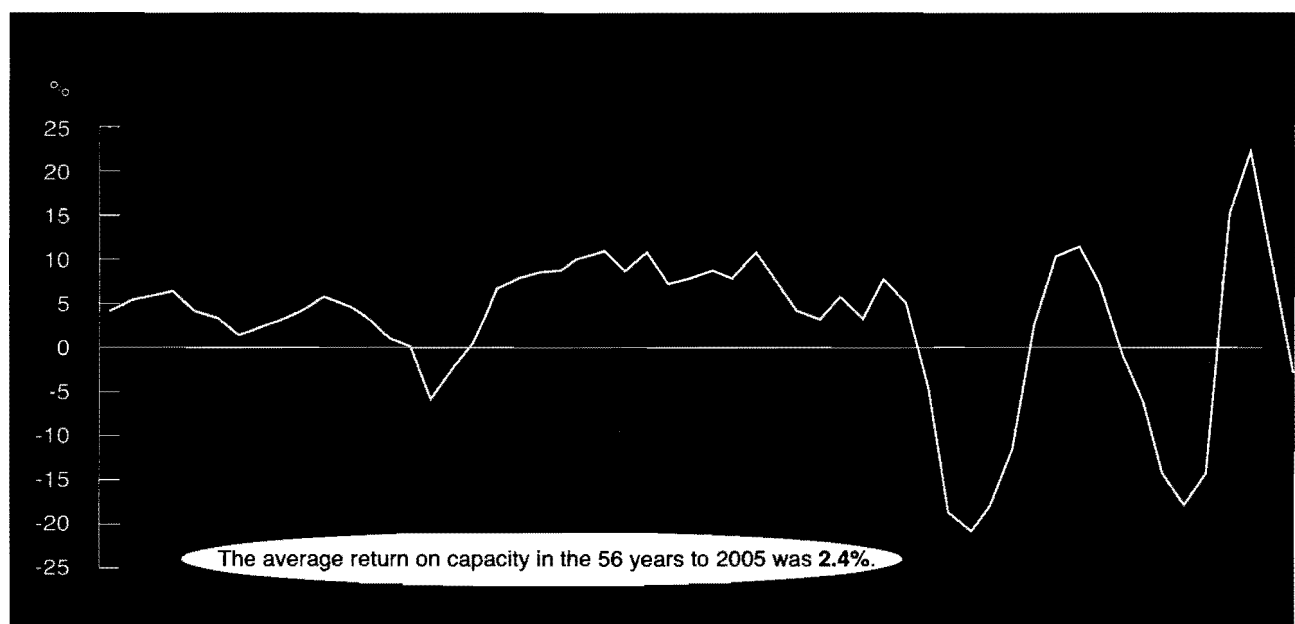
## The long-run record

For someone considering committing capital to insurance underwriting at Lloyd's, two questions are basic. Is it a profitable activity in the long run? And what rate of return is to be expected on the capital at risk?

One way of arriving at the answers is to look at the record. The following chart sets out the numbers for a period of 56 years from 1950. The average return on "capacity" over this very long-run period was a positive 2.4%, which translates – on the most plausible assumption about the capital requirement – to an annual return on capital of 6.0%. ("Capacity" represents the maximum value of insurance premiums that a capital provider can receive. Over most of the period under consideration here, a third-party capital provider would have been required to lodge Funds at Lloyd's equal to 40% of his or her capacity and Funds at Lloyd's would have constituted the amount of capital directly at risk of loss. The achievement of a 2.4% return on capacity therefore implies a 6.0% return on capital.)

Has Lloyd's underwriting been profitable in the long run?

Chart shows % pre-tax return on capacity, 1950 – 2005



Lloyd's underwriting can be a hazardous business and it is misleading to give figures precise to a decimal point. The 2.4% and 6.0% numbers are more meaningful if they are translated into ranges of, say, 2% – 3% on capacity and 5% – 7½% on capital. That – in a nutshell – is the past long-run performance of capital providers at Lloyd's. As will be explained later, there is a definite logic in this outcome, and the 2% – 3% and 5% – 7½% ranges are a reasonable basis for extrapolating into the future.

Nevertheless, it is obvious from the chart that the average is not the whole story. The essence of insurance underwriting is the acceptance of risk, in order to cushion policyholders from extreme adverse events and the associated loss. Policyholders pay premiums to their insurers to make their own lives less risky, but of course the insurers bear more risks than before. While premiums may exceed claims in the long run, the evidence of the chart is that periods of heavy claims have sometimes inflicted severe financial damage on Lloyd's' capital providers. Someone who initiated underwriting at Lloyd's in the mid-1980s, just before the massive losses of the 1988 – 92 period, may not be comforted by the thought that he or she would have had good profits if they had started 30 years earlier.

Someone sceptical about the 2% – 3% and 5% – 7½% ranges could therefore say that they depend on the period chosen. If one chose a shorter period (say, the last 20 years) the verdict would be less favourable. An analysis of the return from Lloyd's underwriting must include – necessarily and inescapably – some discussion of the pattern of returns over the decades, and that is bound to refer to key events in the institution's development. One approach would be to focus on complete “insurance cycles”, that is long periods which contain phases of both profits and loss. The chart suggests three such periods,

- from 1950 to the mid-1960s, when there were three loss years centred on Hurricane Betsy in 1965,
- from 1967 to 1992, when a sustained period of excellent profitability was followed by disastrous losses in the five years to 1992 due (mostly) to asbestos-related diseases and pollution in the USA, and
- from 1993 to 2005, when good profits were again followed by losses, although conclusions about this phase are necessarily provisional as the dimensions of the current cycle (if it is one) will only be known some years from now.



The record from 1950 to Hurricane Betsy

The main source of information on Lloyd's historical performance is the publication *Statistics relating to Lloyd's*. (This used to be produced by the Corporation every year, but has been discontinued. The best source nowadays is the Association of Lloyd's Members annual *Market Results & Prospects*, which is produced in conjunction with Moody's Investors Service.) The statistics relating to the first 20 years after the Second World War are far less comprehensive than those covering later decades. Indeed, at that time market participants seem to have been rather coy about how much money they made from underwriting. According to David Gibb in *Lloyd's: a study in individualism*, published in 1957, "What the net underwriting profits of Lloyd's Names are nobody (except the Inland Revenue from whom no secrets are hid) has ever known." But Gibb was exaggerating. As explained in Appendix 1, although no data are available for the return on capacity until the mid-1960s, *Statistics relating to Lloyd's* has a series for the pre-tax return expressed as a percentage of net premiums (i.e. gross premiums, minus reinsurance premiums paid to non-Lloyd's insurers). As net premiums ought always to be lower than capacity, the return on net premiums would be systematically higher than that on capacity.

Appendix 1 gives the actual figures for the rates of return on net premiums and estimates of the rates of return on capacity in the 1950 – 66 period, on the (plausible) assumption that the ratio of capacity to net premiums was the same in this 17-year period as in the subsequent 17-year period. The procedure is rough-and-ready, but it is difficult to see what else could have been done. The result is that the average rate of return on capacity in the 1950 – 66 period was 2.5%, with a standard deviation of 3.2. This agrees with the remark made by Gibbs in his book, from the perspective of someone who had been active in the market for over 30 years, that "it seems reasonable to assume that the average net profit in the good year is not less than eight per cent of the premium income". (The average return on net premiums in the eight years up to and including 1957 was in fact 6.5%, according to *Statistics relating to Lloyd's*.)

It should be emphasized that Lloyd's in the immediate post-war decades was very different from Lloyd's today. Marine risks were the dominant type of business, with the insurance of ships under the British flag accounting for a large part of the total. As underwriting had been hugely profitable in the final years of the Second World War, the number of underwriting members (or "Names") almost doubled between 1945 and 1953, but Lloyd's was small and intimate compared with now, and it was much more of an elite institution. The value of all underwriting profits at Lloyd's in 1953 – a particularly good year – was £19.3m. This may seem a tiny number by today's standards, but it was

equivalent to about £350m. in terms of 2006 prices. All Names had unlimited liability. In other words, all their resources – and not merely the funds they had lodged with Lloyd's – were at risk to meet large losses. In 1953 there were fewer than 3,500 such people providing capital at Lloyd's and on average they received a cheque from Lloyd's worth about £100,000 in 2006 prices.

#### The record from Hurricane Betsy to Reconstruction & Renewal

The 21 years to 1987 were consistently profitable and delivered an average return on capacity of 6.9%. With the world economy booming, Lloyd's became the leading market for aviation insurance and expanded its role as an insurer of US "surplus lines" (i.e. business that domestic US insurers did not want to write, often for regulatory reasons). Not surprisingly, the number of underwriting members soared, reaching an all-time peak of 32,433 in 1988. However, rapid growth and the increasing range of insured risks put Lloyd's under considerable management strain. Whereas its traditional business had been short-tail and typically related to a single catastrophic event (a shipwreck, a plane crash, a hurricane), its underwriters increasingly entered new areas with long-tail risks, notably product and medical liability business in the USA.

The measurement of profits and losses on these long-tail classes was far more problematic than for short-tail business. It became clear in the late 1980s that Lloyd's carried insufficient reserves for prospective claims arising from pollution and asbestos-related diseases in the USA. The five years to 1992 saw cumulative losses of about £7,500m. As the losses deepened, members resigned in large numbers, and the Council decided to initiate a programme of Reconstruction & Renewal (as it became known). The centrepiece was the formation of Equitas, a run-off insurance entity into which all of Lloyd's business in the 1992 and prior years would be reinsured. The intention was that all syndicates should account for their loss-making American business in the same way, and hence that all Names would be treated fairly and equitably. Senior market participants feared that the large number of resigning Names threatened the market's viability. The Council decided to allow underwriting on a limited liability basis, which was effectively a green light for the introduction of corporate capital. The first limited liability capital joined the market in 1994, when it constituted about a quarter of the total.

While the five years to 1992 were the worst in Lloyd's history, it is important to remember that they followed an unbroken 20-year period of profitability. Over the whole long cycle from 1967 to 1992 the average return on capacity was a positive 2.8%, which was slightly higher than in the 15 years before Hurricane Betsy. However, the market became far more risky, with the standard deviation of the annual returns climbing from 3.2 to 9.5.

### Reconstruction & Renewal to today

By giving permission for limited liability, Lloyd's allowed corporate capital into the institution for the first time. Some of the traditional capital providers (i.e. Names) also converted from unlimited liability into a new limited liability structure. (The two kinds of new structure were so-called "Namecos" and Scottish Limited Partnerships, but from 2007 these will be supplemented by Limited Liability Partnerships under English law.) Individuals – and sometimes families – who provided capital via Namecos and SLPs were invariably advised by a Lloyd's members' agent, just as they would have been in the 1980s. Capital provision at Lloyd's from 1994 therefore took two forms,

- underwriting where syndicate allocations were guided by members' agents, and
- underwriting managed by limited liability companies ("direct corporates").

The two types of capital provision have had sharply different profit experiences. The earlier chart related to the profit outcomes on members' agents' allocations. These numbers are plainly those most relevant to someone now considering the commitment of capital to Lloyd's underwriting with advice from a members' agent. Unfortunately, the direct corporates' results at Lloyd's in the late 1990s were markedly worse than those of capital providers advised by members' agents. In the ten years up to and including 2004 the average result for capital advised by members' agents was positive by 1.0%, whereas for direct corporate capital it was negative by 2.7%.

In the early years of limited liability the largest sources of new capital were overseas, notably the USA and Bermuda. However, they suffered the heaviest losses in the soft market of the late 1990s. (In 1999 the US and Bermudan corporates' loss was 25.6% of capacity and other international corporates' loss was 46.9%, compared with a loss of 14.4% for capital-providers advised by members' agents, according to the ALM's 2004 *Lloyd's Market Results and Prospects*.) Arguably, the new capital was too abundant relative to the size of the risks needing to be insured at Lloyd's and drove down rates to unprofitable levels. The effect of the new capital was therefore to reduce the returns of the Lloyd's market as a whole and to spoil the returns for traditional capital providers.

This point is important in interpreting the returns achieved by Lloyd's since 1993. Several of the overseas companies have withdrawn from the market in recent years. In a few cases their losses exceeded the capital they had lodged with Lloyd's and were not made good by injections of extra capital. Part of the losses therefore had to be covered by calls on the Central Fund, imposing further costs on other capital providers. Lloyd's responded to the unsatisfactory performance of some underwriting entities in two ways. It established a Franchise Directorate, with the power to stop a syndicate underwriting a risk if it thought the pricing inappropriate, and raised the hurdles for the entry of new



corporate capital. The Council of Lloyd's also made clear that it viewed the diversity of capital in the institution as a major competitive advantage and would not seek to exclude the third-party capital which before 1994 had been the only type of capital provided.

On the face of it the returns on capital provided via members' agents in the final period (1993 – 2005) were the worst in the three periods discussed here. Although the average return on capacity remained positive at 1.5%, it was lower than in both 1950 – 66 and 1967 – 92, and the standard deviation of the returns climbed to 12.4.

However, it would be very misleading to suggest that the returns from Lloyd's underwriting have been falling from one cycle to the next. First, the adverse impact of excessive competition – following the opening years of corporate capital – was abnormal. There are encouraging signs that the Franchise Directorate has raised the overall standard of underwriting and improved returns to capital providers. Secondly, while the selection of any period is arbitrary to some extent, it is fair to emphasize that the 1993 – 2005 period included three particularly bad loss patterns. These came

- in 2001, with the 9/11 disaster in New York,
- in 2004 which saw an unusually heavy incidence of hurricanes in the USA, and
- in 2005 which was affected by Hurricane Katrina, the most expensive single catastrophe in insurance history.

At the time of writing (November 2006), the results for third-party capital providers in 2005 and 2006 have not been finalised.\* In our statistical exercise it has been assumed that the 2005 loss on capital provided by members' agents was 3%, which is on the pessimistic side of current expectations. Of course the 2006 result remains to be determined, but American and Bermudan insurance companies involved in the same type of business as Lloyd's have announced results up to and including the third quarter of 2006. It is clear that – unless something dramatic happens in the final weeks of the year – 2006 will be highly profitable. An outcome as good as 2003 – which saw a 22.3% return on capacity – for capital provided by members' agents is possible. If the 2006 result were assumed to be a return on capacity of 15%, the third period would have delivered an average return on capacity in the 1993 – 2006 period of 2.4%, matching the average of the 1950 – 2005 period.

\*Lloyd's – like other commercial organizations – has annual accounting. However, the annual results of all insurance companies include a provision for changes in reserves on prior year underwriting. Because results for third-party capital providers are prepared on a three-year basis and are affected by these reserve changes, the numbers for 2005 and 2006 are, as stated in the text, not yet definite.

What do the three "cycles" tell us?

A number of points emerge from the table below, which summarizes the results of third-party capital provision at Lloyd's in the three distinct cycles suggested by the chart. First, the average return in each of the last three cycles has been similar. Further, each of the cycles has delivered the same sort of return as the entire 56- or 57-year period under discussion. The central numbers of about 2½% on capacity and 6% on capital are robust. Nevertheless, given the dispersion of returns over time, it would be better to think in terms of the proposed ranges, i.e. 2% – 3% on capacity and 5% – 7½% on capital.

Secondly, the standard deviation of the annual returns on capacity over the entire 56-year period was 8.8. But it is hardly news that – because insurance outcomes vary hugely from year to year – Lloyd's underwriting is a risky activity. The next section – which will compare the volatility of returns on Lloyd's underwriting with those on investment in UK equities – will show that capital-provision at Lloyd's as a whole is no riskier than investment in equities. Of course, if a capital provider has chosen badly-run, heavily loss-making syndicates, he or she will not do as well as the whole market, but that is unsurprising. The Lloyd's market – like the stock market – does not exist to protect people who make poor decisions.

#### Results of third-party capital provision at Lloyd's in three "cycles"

		Average return (%) on:		Standard deviation of return on capacity
		Capacity	Capital	
1st cycle	1950 – 66	2.5	6.3	3.2
2nd cycle	1967 – 92	2.8	7.0	9.5
3rd cycle #	1993 – 2005	1.5	3.8	12.4
	1993 – 2006	2.4	6.0	12.4

#Note that assumptions have been made about profitability in 2005 and 2006, to obtain these numbers. See text for further discussion.

However, one apparently disturbing trend is that the standard deviation of Lloyd's' returns was markedly higher in the 1970s and 1980s than in the 1950s and 1960s, and higher again in the last 15 years. On the face of it insurance underwriting is becoming riskier over time. This conclusion deserves more discussion than is possible here. It has to be recognised that the stability of returns in the 1950s and 1960s may have reflected the more routine character of the business being underwritten. As noted above, Lloyd's in that era was dominated by marine insurance, with many of the ships under the British flag, and with relative little uncertainty about the legal status of contracts, the nature of the insurer's liability and so on. Today Lloyd's is a big player in re-insurance, partly of

North American risks which can give rise to expensive litigation.

Finally, the analysis demonstrates the critical importance of maintaining a diversified portfolio of syndicates, and making good decisions about both timing and syndicate selection. In these respects Lloyd's underwriting is like any other business. Some third-party capital-providers have – over long periods of one, two or three decades – achieved returns on their capital far in excess of the 5% – 7½% range highlighted here. Indeed, for some individuals Lloyd's has been the origin of substantial personal fortunes. On the other hand, some Names lost all their capital in the 1988 – 92 loss-making phase. One message is clear-cut: good advice – such as that provided by a well-established Lloyd's members' agent – is essential.

## 2. How does underwriting at Lloyd's compare with equity investment?

Is Lloyd's riskier than investing in equities?

Lloyd's underwriting is widely regarded as a risky activity. Most investment advisers view a long-term holding in equities as lower-risk than involvement at Lloyd's, while also believing that the risks in an equity portfolio must be accepted in order to achieve good investment returns. How in fact do the returns on Lloyd's underwriting compare with those on equities?

Appendix 2 to this study compares the annual returns on UK equities – as measured by the FT 30-share industrial ordinary index – with the annual return on capital in Lloyd's underwriting (as calculated in the manner described in Appendix 1) over the 56 years from 1950 to 2005. The annual returns on equities can be calculated in two ways, either in nominal terms or in real terms (i.e. after adjustment for inflation). The following table summarises the results of the exercise. (Notice that total return is the sum of capital gain or loss, and dividend income. Notice also that the use of the FT 30-share industrial ordinary index almost certainly understates the true return on UK equities, for reasons discussed in Appendix 2. The understatement may be as much as 2% a year. In other words, the use of a different index and allowance for the contribution of share buybacks to returns would imply an annual nominal return on UK equities of about 13% a year and an annual real return of about 7% a year in the 56-year period.)

Equities vs. Lloyd's underwriting:

Comparing risk and return in the 1950 – 2005 period

	Average annual return, %	Standard deviation
Equities (FT 30-share industrial ordinary index)		
In nominal terms	11.1	16.2
In real terms (i.e. after inflation adjustment)	4.9	15.9
Lloyd's underwriting		
Relative to capacity	2.4	8.8
Relative to capital	6.0	22.0

Obviously the verdict depends on the chosen basis for comparison. Expressed relative to capacity, the return on Lloyd's underwriting is markedly less volatile than investment in equities. The standard deviation of returns is little more than half that on UK equities, as measured here. In practice most participants in the Lloyd's market would be operating on a geared basis. It is true that – when expressed relative to capital – the standard deviation of returns on Lloyd's underwriting is higher than on UK equities. However, capital providers can decide how much risk they want to assume. They do not have to expose all their capital and, in many cases, they would be unwise to do so. The central conclusion of the data over the 1950 – 2005 period is that – contrary to the widespread view of Lloyd's underwriting – it was not particularly risky compared with investing in equities.

Of course, by selecting a particular period a critic of Lloyd's could challenge this conclusion. In the latest "cycle" (i.e. from Reconstruction & Renewal to 2005) the standard deviation of returns on capital from Lloyd's underwriting was over 31, virtually double that on investing in equities over the 1950 to 2005 period. If one regards the last 15 years or so of Lloyd's returns as representative of the modern insurance industry, and particularly of the reinsurance areas in which Lloyd's specialises, participation in Lloyd's is indeed high-risk. But that does not mean participation would be a mistake. The answer may be for the capital provider to limit the extent of his or her involvement, so that the worst possible outcome is manageable. The worst outcome was in the five years to 1992 when the loss for the market as a whole amounted to 74.3% of capacity. This was grim, but it puts matters in perspective to remember that in a period of a mere 14 months to December 1974 the FT industrial ordinary index fell by over 63%. In the ten years to 1974 the average return on capital in Lloyd's underwriting was 12.9%, over three times that in equities, while the volatility of returns – as measured by the standard deviation – was lower.

It is vital to look at returns over the long run and not to be misled by the occasional large departures from the long-run figures which can confuse the analysis. Over the long run underwriting at Lloyd's has not been much more risky than investing in UK equities.

Are returns on Lloyd's underwriting correlated with those on equities?

Investment advisers are sometimes interested in the degree of correlation between so-called "asset classes" (equities, bonds, real estate, private equity). An asset class which has a time-pattern of returns different from that of other asset classes is often regarded favourably. A balanced portfolio with a mix of unsynchronised asset classes allows the investor to achieve the same return as with a single, high-risk asset class, but with less volatility. Appendix 2 sets out the annual return numbers on UK equities and Lloyd's underwriting; Appendix 3 reports an equation in which the annual returns on capital in Lloyd's underwriting are regressed on those in UK equities. The r-squared (a measure of the closeness of fit of the relationship between two variables) takes a value of under 0.001, compared with a maximum possible value of one. Meanwhile the value of the t-statistic on the regression coefficient (a measure of whether the independent variable in the equation, i.e. equity returns in this case, has a statistically significant effect on the dependent variable, i.e. Lloyd's underwriting returns) is under 0.2, whereas a value of over three is usually regarded as necessary to establish statistical significance.

The conclusion is straightforward. Returns on Lloyd's underwriting are not correlated in any meaningful way with those on investing in UK equities. This is not surprising, as the profitability of insurance underwriting is heavily impacted by the timing of catastrophes (hurricanes, earthquakes, major aviation disasters) and should be independent of equity returns. It is sometimes claimed that, in periods of high returns on their equity portfolios, competition forces insurance companies to lower rates and accept underwriting losses. By implication, equity returns and underwriting profitability are inversely related. There may be a relationship of this sort in certain kinds of insurance, but it does not seem to apply to Lloyd's.

What returns are achieved in the long run by combining equity investing with Lloyd's underwriting?

The discussion in the last few paragraphs has reviewed the returns on Lloyd's underwriting and investment in UK equities as if they were alternatives. However, one of Lloyd's key advantages is that membership of the institution enables an investor "to use capital twice". An equity portfolio can be lodged with Lloyd's – in the form of Funds at

Lloyd's – as the capital required to cover the losses which may arise from insurance underwriting. As explained earlier, a capital requirement equal to 40% of capacity (i.e. the maximum value of the insurance premiums) is standard for a third-party capital provider with a wide spread of syndicates. (This 40% ratio is lower than that needed for a specific syndicate by itself, because of the diversification of risk in a spread portfolio of the kind which Lloyd's members' agents arrange for capital-providers.)

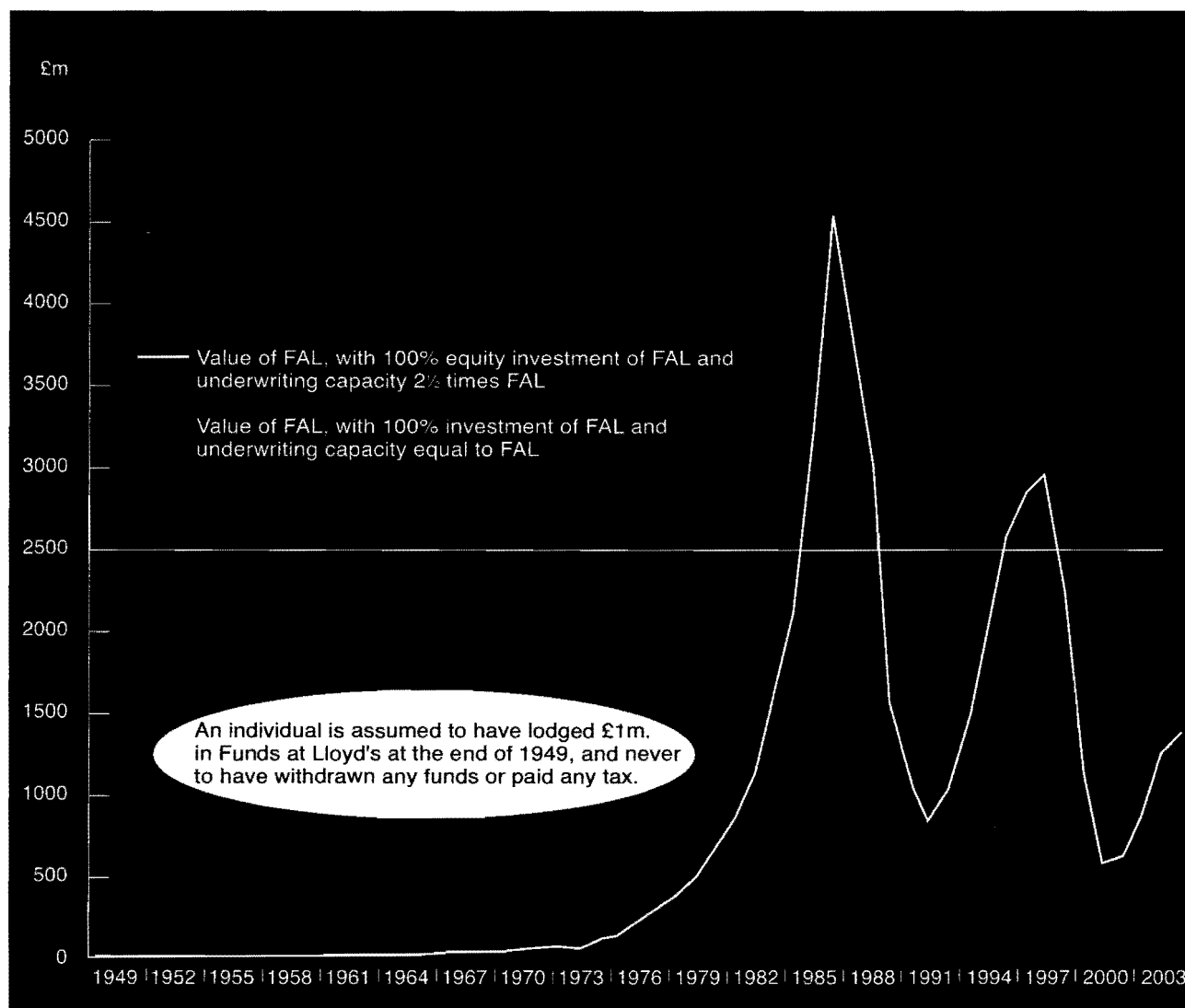
In other words, someone with – say – £1m. can pledge that sum to Lloyd's as FAL, invest the £1m. in the UK equity market (subject to certain Lloyd's diversification and other rules), and receive both the return on equities and the return on insurance underwriting (assuming that premiums exceed claims). Instead of being competitive, equity investing and insurance underwriting become complementary. What sort of return would an individual making a £1m. commitment achieve over time?

No one can predict the future, but it is possible to give numbers for the past. Suppose that someone (born in, say, 1920 and now in his or her late eighties) made a fortune early in life or received a large legacy, and decided at the end of 1949 to commit £1m. to Lloyd's FAL, invested the £1m. in 30 leading UK equities (i.e. those in the FT 30-share industrial ordinary index), and in subsequent years always retained all the equity returns (including dividends) and wrote insurance business to the maximum possible (i.e. £2.5m. in 1950, and rising over time). What would have happened to that individual's FAL over various periods in the past? The answer is shown by the continuous line in the accompanying chart and the data in Appendix 4. (Taxation and the three-year Lloyd's cycle are ignored in this analysis, for simplicity.)

At the end of 2005 the £1m. would be worth £1,380m. in money terms. (Note that – in terms of 1950 prices – the £1m. would have grown to only – if only is the right word – £57.3m.) These numbers may sound extraordinary, but they are correct. The compound annual growth rate of the individual's FAL in the 56 years would have been 14.1%, although with a very high standard deviation of 26.9. It is worth mentioning that an alternative strategy – in which the individual restricted his or her underwriting to the size of FAL (instead of operating with the 40% rule and having capacity of 2½ times FAL) – would have surrendered some return (with a compound annual growth rate of 12.4%), but reduced the standard deviation to 18.1. The volatility of returns with this alternative strategy – which are shown by the lower line in the chart – would not have been much greater than that associated with investing in UK equities by itself (i.e. without any insurance underwriting whatever).



How much would Funds at Lloyd's have accumulated since 1950?



Given the way in which Lloyd's is often presented in the media, the analysis in this section may come as a considerable surprise. But the explanation for the returns is not a mystery. In the long run both Lloyds' underwriting and investing in equities generate positive returns, and by combining the two income streams a bumper return becomes possible. As the extra return is accompanied by extra risk, an investor has to make a judgement about where he or she stands in the risk-reward spectrum. Mr. Warren Buffett has said frankly, on numerous occasions, that the returns from insurance underwriting have been crucial to the spectacular investment record of his company, Berkshire Hathaway. Appendix 4 includes a column with the per-share book value of Berkshire Hathaway shares since 1965. Over the 41 years to 2005 the average annual gain was

22.4% and the compound annual rate of increase was 21.5%. This was well ahead of the return in the same 41-year period to a Lloyd's capital-provider with full underwriting exposure (i.e. writing 2½ times FAL), who had an average annual gain of 15.7% and a compound annual rate of increase of 11.5%.

But it is not hard to work out why Mr. Buffett outperformed the fully-committed Lloyd's investor in this period. The point is that Mr. Buffett – much closer to the American scene than Lloyd's managing agents – was able largely to avoid the disasters of product liability insurance, which led to the losses of the 1988 – 92 period. If the five years 1988 – 92 are taken out of the record of both organizations over the 1965 – 2005 period, the average return in the remaining 36-year period comes out as 21.9% for Berkshire Hathaway and 21.8% for the Lloyd's investor. Indeed, in the first 22 years of the Berkshire Hathaway book-value per share record (i.e. from 1965 to 1987) the Lloyd's investor outperformed Berkshire Hathaway by a wide margin!

### 3. The economic logic behind the numbers

#### Returns over the long run

The classic text of the great American bull market of the late 1990s was Jeremy Siegel's *Stocks for the Long Run*. It showed that in the very long run the return on US equities had been in the range of 6% – 8% a year in real terms. Comparable exercises for the UK have generally found a similar figure, which is logical in view of the substantial capital flows across the Atlantic over the decades. The underlying economic explanation for the 6% – 8% number is simple enough. For most of the 20th century the dividend yield on US and UK equities was in the 4% – 5% area, while the economies enjoyed a long-run trend growth rate of 2½% – 3½% a year. The growth rate of output was matched by a similar growth rate of corporate dividends, which justified an upward appreciation, in real terms, of share prices also of 2½% – 3½% a year. So the real return on equities – the sum of income and capital gain – was 4% – 5% plus 2½% – 3½%, which is about 6% – 8% a year. In qualification, as running an equity portfolio is costly in various ways, the return achieved by an equity investor might in the end have been somewhat lower at 5% – 7% a year.

The analysis in this study suggests a powerful message. A reasonable expectation is that – if insurance underwriting is conducted sensibly – it could double the real return on an equity portfolio in the long run, although with an undoubted addition of risk. With a period of over 50 years under scrutiny, the message of the data is fairly clear. The annual return on capacity averaged out at about 2% – 3% and, given Lloyd's capital structure and the implied 40% capital requirement for a well-diversified capital-provider,

that translated into a 5% – 7½% annual return on capital. Since the capital could be put to work in an equity portfolio at the same time, the real return on that portfolio was doubled. The last section compared Lloyd's' results with those of Berkshire Hathaway. The comparison should not be pressed too far, as Lloyd's' returns are inferior to Berkshire Hathaway's. (Berkshire Hathaway's results have been less volatile, and it avoided the most heavily loss-making liability business in the USA in the 1970s and 1980s.) Nevertheless, a striking fact is that – if the 1988 – 92 years were excluded – the returns on Berkshire Hathaway shares and in Lloyd's underwriting (with FAL committed to a standard portfolio of UK equities, and equity returns added to those on underwriting) would be virtually the same over a period of four decades.

Most premiums are paid back to policy-holders to meet claims

This study has shown that apparently very high returns can be made by an investor who is prepared to accept the risks of insurance underwriting in addition to those of equity investing. Some analysts – particularly financial economists who believe that competition must always eliminate excess profits – may be puzzled that such favourable returns are possible over extended periods. But a sense of perspective comes from remembering that the return on capacity is only 2% – 3% a year in the long run. Consider what this means in more detail. Policyholders pay many billions of dollars, euros and pounds of premium every year to the insurance industry, including Lloyd's, and primary insurers similarly pay billions every year to re-insurance entities, again including Lloyd's. The meaning of the 2% – 3% return on capacity is that – on every \$100 of premium – policyholders in aggregate would receive back \$98 or \$97, if the costs of brokerage, administration and so on could be ignored. In other words, for every \$50 of premium between \$48.50 and \$49 would be paid back in claims. (Admittedly, the figure would be reduced to \$47 or \$48 if the business were re-insured and the re-insurance industry also made 2% – 3% on capacity.)

## Conclusion: new third-party capital is welcome

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### The magic of diversification

Intense competition is at work in the international insurance industry and whittles down the returns to capital providers. The margins are already wafer-thin. But, despite the competition, capital providers are able to benefit from taking in premiums and bearing the risk of loss. Indeed, as this study has shown, in some periods their returns have been spectacularly high. The magic lies in the diversification of risk and the resulting ability to economise on capital. It is the requirement that FAL be only 40% of capacity which allows a 2% – 3% return on capacity to become a 5% – 7½% return on capital.

Is the 40% FAL requirement too low? Some corporate members, with highly specialised and risky books of insurance business, have been assessed by Lloyd's as needing a risk-based capital requirement equal to 75% of capacity or even, in some cases, more than 100% of capacity. Indeed, it is sometimes claimed that the 40% FAL requirement, for third-party capital providers with a highly diversified portfolio, is "unfair" or "subsidized" compared with the capital arrangements for corporate members. However, this suggestion was disproved in the soft market of the late 1990s and the heavy loss year of 2001. Several corporate members failed to meet all their losses (which, as explained earlier, had then to be covered by the Central Fund), whereas hardly any calls on the Central Fund arose from third-party underwriting business.

### Diverse capital base a major competitive strength

The contrasting experience of corporate and third-party capital in the last soft market helps to explain why Lloyd's now regards the diversity of its capital base as a major competitive strength. New third-party capital is welcome. The merits of the traditional Lloyd's structure were demonstrated in late 2006, when a new syndicate 6103 was created at short notice to take advantage of high reinsurance rates. The speed of the operation compared favourably with the delays and costs of raising insurance risk capital in financial markets.

Lloyd's has a remarkable history and a unique structure. No other institution in the world separates the provision of insurance capital from the broking and underwriting of risks in the same way. For over 300 years the market has been able both to pay all valid claims and (despite what the newspapers sometimes say) to deliver good returns to capital providers. Lloyd's underwriting remains a valid and rewarding adjunct to portfolio investment today at the start of the 21st century.

#### Appendix 1. Estimates of return on capacity at Lloyd's, 1950 – 66

The source for the estimates of Lloyd's profits in this study before Reconstruction & Renewal is the 1998 issue of *Statistics relating to Lloyd's*. Nowhere does this publication have a simple year-by-year series for the profit or loss as a %age of capacity. However, Table 1.1 has a column for the pre-tax profit to Names from 1950, who at that time were the only category of capital providers at Lloyd's, to 1995, which was the second year for corporate capital with limited liability. (It is important for some purposes to notice that this result is not the pure year result, which is separately identified for the 1987 – 95 period in Table 1.3.) The publication has a series for total capacity from 1967 in Table 6.1. The numbers for the pre-tax return on capacity from 1967 to 1993 in Appendix 2 below are derived by dividing the pre-tax profit and loss figure in Table 1.1. by the total capacity figure in Table 6.1. However, because figures for capacity before 1967 are not given in *Statistics relating to Lloyd's* (and may not now be available at all), the numbers for the pre-tax return on capacity before 1967 have to be obtained by a different method. *Statistics relating to Lloyd's* does have a figure for pre-tax return on net premiums from 1950 to 1995. The procedure here has been to calculate the ratio of the pre-tax return on net premiums to the pre-tax return on capacity in the 17 years from 1967, to assume that the same ratio applied in the preceding 17 years and to divide the pre-tax return on net premiums by the ratio in the 17 years from 1950. The ratio of the pre-tax return on net premiums to the pre-tax return on capacity in the 17 years from 1967 was in fact 1.67. The table below shows the pre-1967 data for the pre-tax return on net premiums (which, as explained, is an actual figure) and the pre-tax return on capacity (which is estimated).



Table 1.1

	Pre-tax return as % of net premiums, from Statistics relating to Lloyd's	Backward extrapolation of pre-tax return on capacity, 1950 – 66
1950	6.6	4.0
1951	8.8	5.3
1952	9.5	5.7
1953	10.6	6.3
1954	6.5	3.9
1955	5.2	3.1
1956	1.9	1.1
1957	3.2	1.9
1958	4.5	2.7
1959	7	4.2
1960	8.9	5.3
1961	7.4	4.4
1962	5.1	3.1
1963	1.2	0.7
1964	(0.4)	(0.2)
1965	(10.2)	(6.1)
1966	(4.3)	(2.6)

Appendix 2. Annual returns on Lloyd's underwriting compared with those on investing in UK equities

The following series show the annual returns on capacity and capital in Lloyd's underwriting, and the annual returns on investing in UK equities, in the 1950 – 2005 period. The return on capital is the return on capacity multiplied by 2.5. (In other words, it assumes that the capital provider is subject to the 40% capital ratio and uses his or her capital to the full.) The derivation of the underwriting returns series is explained in Appendix 1 and the text. The return on UK equities is that on the FT 30-share industrial ordinary index, with the average value in one year divided by that in the previous year to obtain the capital gain or loss, and the dividend yield added to give the total return. The real returns series is obtained by adjusting for the rise in the GDP deflator. (Other methods are possible, but interpretation of the results would not be affected.)

Note that the FT 30-share industrial ordinary index is usually regarded as inferior to, for example, the FT all-share index and may somewhat understate returns on UK equities. A general problem affecting the measurement of equity returns in the last 20 years is that corporate payouts have increasingly taken the form of share buybacks rather than dividends, with the result that the returns calculations based on indices and dividend yield data again understate returns. Data are given at the end of the appendix comparing the returns on the FT industrial ordinary index with the median return on UK equities actually achieved by UK pension funds in the 20 years to 2005, in order to review the seriousness of this problem.



Table 2.1

	Pre-tax return on Lloyd's underwriting as % of capacity	Pre-tax return on Lloyd's underwriting as % of capital	Total return on UK equities (FT 30-share index) - %, nominal	Total return on UK equities (FT 30-share index) - %, real
1950	4.0	9.9	7.6	5.1
1951	5.3	13.2	21.5	13.8
1952	5.7	14.2	(9.9)	(16.9)
1953	6.3	15.9	13.4	9.1
1954	3.9	9.7	36.6	34.0
1955	3.1	7.8	21.5	17.1
1956	1.1	2.8	(1.5)	(8.1)
1957	1.9	4.8	10.1	6.6
1958	2.7	6.7	2.9	(0.3)
1959	4.2	10.5	42.4	40.2
1960	5.3	13.3	31.6	29.6
1961	4.4	11.1	5.2	2.2
1962	3.1	7.6	(5.2)	(7.9)
1963	0.7	1.8	15.9	14.3
1964	(0.2)	(0.6)	14.4	9.8
1965	(6.1)	(15.3)	3.1	(2.2)
1966	(2.6)	(6.4)	4.4	(0.7)
1967	0.4	1.1	12.2	9.6
1968	6.5	16.3	34.5	29.9
1969	7.4	18.6	(4.8)	(10.0)
1970	8.3	20.7	(8.8)	(15.3)
1971	8.5	21.3	10.3	1.2
1972	10.0	25.0	34.6	24.3
1973	10.8	27.1	(9.7)	(16.1)
1974	8.4	20.9	(33.9)	(42.2)
1975	10.4	26.0	30.6	2.8
1976	6.9	17.2	24.3	7.8
1977	7.5	18.8	28.3	12.8
1978	8.2	20.5	11.6	0.0
1979	7.5	18.8	5.7	(7.7)
1980	10.3	25.8	5.3	(11.9)
1981	7.0	17.4	17.9	6.0
1982	3.9	9.8	16.1	7.9
1983	2.7	6.8	25.2	18.7
1984	5.5	13.7	28.1	22.5
1985	2.9	7.3	22.1	15.7
1986	7.6	19.1	32.4	27.9
1987	4.9	12.4	28.0	21.6
1988	(4.6)	(11.6)	(4.8)	(10.5)
1989	(18.8)	(47.1)	27.4	18.6
1990	(20.9)	(52.4)	3.5	(3.9)
1991	(18.0)	(45.0)	14.8	7.8
1992	(11.9)	(29.7)	6.2	2.0
1993	2.5	6.3	21.3	18.2
1994	10.0	25.0	10.9	9.3
1995	11.2	28.1	6.9	4.0
1996	7.0	17.5	14.9	11.1
1997	(1.0)	(2.5)	13.2	10.0
1998	(6.3)	(15.8)	19.3	16.2
1999	(14.4)	(36.0)	12.4	9.9
2000	(18.2)	(45.5)	(3.7)	(4.9)
2001	(14.5)	(36.3)	(13.6)	(15.5)
2002	14.7	36.8	(24.1)	(26.3)
2003	22.1	55.3	(22.1)	(24.4)
2004*	8.9	22.3	21.8	18.7
2005*	(3.0)	(7.5)	18.4	15.8
2006*	15.0	37.5		

\*The Lloyd's numbers for 2004, 2005 and 2006 are estimates. See text for further discussion.

Because of the known deficiencies of the FT 30-share industrial ordinary index (and discussed above), the table below compares the returns on the FT industrial ordinary index with the return on UK equities actually achieved by the median UK pension fund in the 20 years to 2005. (The numbers for the UK pension fund industry are taken from the CAPS survey, i.e. the Combined Actuarial Performance Survey, which is now supervised by Mellon Analytical Solutions.) The table confirms the suspicion that the FT 30-share index understates true returns on UK equities, perhaps by over 2% a year. This point is mentioned in the text and is relevant to the interpretation of the equity returns data before the mid-1980s, but data on pension fund returns does not in fact extend as far back as 1950. (The two indices in the table relate to slightly different periods, but this does not affect the conclusions. The equity market in fact had better performance in the first quarter of 1985 than in the first quarter of 2005, which should have helped the FT 30-share index relative to the all-share index in this exercise.)

Table 2.2

Calendar year	FT 30-share industrial ordinary index, % annual return	Actual return on UK equities for median UK pension funds, % annual return	Year to 31 March
1985	22.1	30.6	1986
1986	32.4	22.3	1987
1987	28.0	(6.7)	1988
1988	(4.8)	21.2	1989
1989	27.4	9.4	1990
1990	3.5	8.7	1991
1991	14.8	4.3	1992
1992	6.2	25.9	1993
1993	21.3	17.5	1994
1994	10.9	2.7	1995
1995	6.9	25.5	1996
1996	14.9	17.4	1997
1997	13.2	34.6	1998
1998	19.3	5	1999
1999	12.4	10.7	2000
2000	(3.7)	(9.3)	2001
2001	(13.6)	(2.4)	2002
2002	(24.1)	(29.8)	2003
2003	(22.1)	31.5	2004
2004	21.8	15.2	2005
Average annual rate of return, %	9.3	11.7	
Compound annual rate of return, %	8.1	10.5	

### Appendix 3. The correlation between underwriting returns at Lloyd's and UK equity returns

The % annual return on capital in Lloyd's underwriting (the second column in Appendix 2) was regressed on the % annual nominal return on UK equities (the third column) to see whether returns in the two activities were correlated. The following equation is reported.

Annual % return on Lloyd's underwriting =  $6.37 - 0.035$  Annual % return on UK equities

r squared	0.000643
Standard error of equation	22.20
Standard error of intercept term	3.67
Standard error of regression coefficient	0.19
t statistic for intercept term	1.74
t statistic for regression coefficient	(0.19)

The equation shows that there is hardly any correlation between the two series.

Appendix 4. What have been the long-run returns from combining Lloyd's underwriting with UK equity investment?

The first two series below show, from 1950, the total return for an individual who lodges a portfolio of 30 leading UK shares as Funds at Lloyd's and underwrites with a capacity  $2\frac{1}{2}$  times the value of the portfolio, and who retains all the returns (capital gains on the shares, dividends and Lloyd's profits) in FAL, and from 1965, both this series and the annual book value per share of Mr. Warren Buffett's Berkshire Hathaway Inc., derived from the Berkshire Hathaway website. The Berkshire Hathaway numbers are after taxes paid by the Berkshire Hathaway company; the Lloyd's numbers are pre-tax. In the Lloyd's case the underwriting and equity returns have been added in each year, instead of carrying out the multiplicative adjustment implied by compound interest. (The total combined return is  $x\% + y\%$ , where  $x$  is the underwriting return and  $y$  is the equity return. The multiplicative formula

$$\text{Total return \%} = \{[(1 + x/100) \times (1 + y/100)] - 1\} \times 100$$

would be regarded as usual in exercises of this kind, but simple addition is in fact more appropriate because it better captures the effect of payment delays in Lloyd's underwriting.) Notice that – as illustrated in Table 2.2 – the figures for UK equity returns used here are probably somewhat lower than those achieved in reality. The third series shows the value of the FAL of an individual who lodged £1m. with Lloyd's at the end of 1949, and pursued a strategy of 100% equity investment and full Lloyd's underwriting exposure in all later years. The final column shows the outcome of a more cautious strategy, with 100% equity investment, but Lloyd's underwriting restricted, with capacity equal to FAL. (The restriction of capacity to FAL greatly reduces risks.)

Table 4.1

	Total return of individual with equity portfolio pledged as Lloyd's FAL, - % per annum	Berkshire Hathaway, per share book value - % change	Value of FAL pledged to Lloyd's assuming continuous re-investment and full Lloyd's exposure - in £m., at end year	Value of FAL, same assumption as previous column, except FAL equal to capacity - in £m., at end year
1949			1.0	1.0
1950	17.5		1.2	1.1
1951	34.8		1.6	1.4
1952	4.4		1.7	1.4
1953	29.3		2.1	1.6
1954	46.3		3.1	2.3
1955	29.3		4.0	2.8
1956	1.3		4.1	2.8
1957	14.9		4.7	3.2
1958	9.6		5.2	3.3
1959	53.0		7.9	4.9
1960	45.0		11.5	6.7
1961	16.4		13.3	7.4
1962	2.4		13.7	7.2
1963	17.7		16.1	8.4
1964	13.8		18.3	9.6
1965	(12.3)	23.8	16.1	9.3
1966	(2.1)	20.3	15.7	9.5
1967	13.3	11.0	17.8	10.7
1968	50.8	19.0	26.9	15.1
1969	13.8	16.2	30.6	15.5
1970	11.9	12.0	34.2	15.4
1971	31.6	16.4	45.0	18.3
1972	59.6	21.7	71.9	26.4
1973	17.4	4.7	84.4	26.8
1974	(13.1)	5.5	73.4	19.9
1975	56.6	21.9	114.9	28.1
1976	41.5	59.3	162.6	36.8
1977	47.1	31.9	239.2	50.0
1978	32.2	24.0	316.2	60.0
1979	24.5	35.7	393.6	67.9
1980	31.1	19.3	516.0	78.5
1981	35.3	31.4	698.2	98.0
1982	26.0	40.0	879.4	117.6
1983	32.0	32.3	1161.2	150.5
1984	41.7	13.6	1646.0	201.0
1985	29.5	48.2	2130.8	251.3
1986	51.4	26.1	3226.9	351.9
1987	40.4	19.5	4530.9	467.9
1988	(16.4)	20.1	3787.7	423.7
1989	(19.7)	44.4	3043.2	460.1
1990	(48.9)	7.4	1555.7	379.8
1991	(30.1)	39.6	1086.8	367.8
1992	(23.4)	20.3	832.0	347.1
1993	27.7	14.3	1062.1	429.8
1994	35.9	13.9	1443.7	519.8
1995	35.0	43.1	1949.4	614.2
1996	32.4	31.8	2581.0	748.8
1997	10.7	34.1	2856.0	839.8
1998	3.5	48.3	2957.2	948.9
1999	(23.6)	0.5	2258.4	929.6
2000	(49.2)	6.5	1148.1	726.4
2001	(49.9)	(6.2)	575.5	522.1
2002	12.7	10.0	648.5	473.2
2003	33.2	21.0	863.7	473.3
2004	44.1	10.5	1244.2	618.7
2005	10.9	6.4	1380.0	714.0