

TRENDS IN THE UNDERLYING PARAMETERS

When the management of a company is about to set its premium rates for the following year, an estimate of the likely parameters that go towards the make up of the premium rates will have to be made. These parameters include claims frequency, claims cost, expenses, and interest income. Here we are just considering the basic premium ignoring other factors. At its disposal, the management should have several years of basic data available. What is required is to have as good an estimate of the parameters as possible with the resulting outcome differing by pure random variation. It is not enough just to average the last few years or even longer and take the resulting figure as the one required. Some consideration should be given to the underlying trends or bias in certain directions in these parameters. A trend in any one of the parameters may be observed by considering several years data and a decision will be made on which direction this trend will take, whether by an explicit allowance or by simply doing nothing at all and lagging behind the trend.

Here we should distinguish between a slow moving trend and a rapidly moving one. It may not be too serious to ignore the former, but dangerous to ignore the latter.

Once a trend is observed an explanation, if possible, is required. It may simply be a change in mix of the business has caused one or more of the factors to move in another direction, but this could be considered an internal trend which the company should be aware of. What is more difficult to explain is the effect of an external trend or some external influence that the company has no control over. In considering trends we should also consider events that happen at a particular time and whether these events will have an influence that will continue into the future. An example of

this is the oil price explosion in 1974 which had a great effect on the economies of the non-oil producing countries of the world. Continuing high inflation was a feature thereafter to date and to ignore the consequences of this event would have resulted in an under-estimate of inflation rates during this period.

The question of what is a trend and what is random variation is answered by whether the random event will have a continuing influence into the future and whether this influence will increase or diminish, but there is an element of judgement involved in answering this question.

Let us consider the external trends which affect the parameters used in the premium rates.

a) Economic Trends

This is very important for all classes of business both the world economy and the UK economy. In considering the subject of economics, inflation immediately springs to mind as it has been the biggest influence on premium rates in recent years. In considering past statistics on retail price and average earnings inflation over the last ten years, there has been no consistent trend over this period. All that can be said is that the underlying level of inflation in the last decade was higher than the previous decade, but this is no reliable guide to the future. Events such as the oil price explosion, changes in government policies, and the increasing expectations of the population all work against using past experience as a reliable guide to the future, but past behaviour combined with causes for this behaviour narrows the range of likely values of future inflation in the short term. Forecasting the rate of inflation in the UK is a precarious business and it is possible to forecast may be a year ahead with a narrow range of values, but after that, the range becomes wider

and an average view of the likely level of future inflation would probably be made after three or four years into the future. For each class of business a different inflation index may be used to try to reflect the cost of the claims. With short tail classes, such as fire and householders business with a run-off largely over three years, inflation is not as big a problem as the long tail classes with a run-off largely up to ten years. The potential error in the long tail class is far greater than the short tail. If the rate of inflation deviated within one or two percentage points from year to year, then it would not be considered the difficult problem it has become, caused by fluctuating from year to year by several percentage points on many occasions in the UK, and this is what makes it so difficult to forecast.

The rate of inflation is influenced by various factors both world factors and internal factors of the country, not least by government policy. Government policy is liable to change at the very least with every change in government and this creates another variable factor in future economic trends.

It is likely that whatever assumption is made regarding future inflation, the outcome is going to be different, and there is a large potential loss by assuming an optimistic trend in the future that proved to be false.

The economic activity of the world and of individual countries is a very important trend which should be monitored by insurers. A recession has a set of problems which insurers may have to adjust to, not least increased competition, and the effect on claims costs should be anticipated. Reduced activity and higher unemployment may mean more theft and vandalism claims, but may also mean less motor accident claims

through reduced travelling. A boom may pose a different set of problems in keeping with a higher level of activity with possibly more accidents at work and on the roads. By not being aware of the trend and making too optimistic assumptions concerning claims frequency can have a large effect on the profitability of the business and can be felt very quickly in the shape of lower profitability in the next year.

b) Social Trends

This is really the effect on claims costs by the changing attitude of society over a period of time. There may be pressure from a more caring society to try to compensate adequately for injuries received by accidents, by increasing court awards more than the rate of inflation. This can be monitored by insurers by considering the court awards made on certain types of injury from year to year. The results of this analysis can be translated into an addition to the inflation rate assumption if required.

Alternatively, society may try to protect itself by legislation which includes speed limits for motor vehicles, making seat belts compulsory while driving a vehicle, greater safety in the work-place and greater fire precautions. The effect of these changes over a period of years is probably not quantifiable, but should be borne in mind when considering trends in frequency and claims size.

Social trends can have an effect on the items under the control of an insurer through the expenses and expenses may increase faster or slower than expected by society's attitude to such items as pensions, safety at work, lower working hours and fringe benefits of all kinds, and pressure to achieve these benefits.

c) Weather Trends

The weather has a great effect on the claims frequency and cost for many classes of business. When considering the weather the occurrence of "rare" events such as floods and earthquakes spring to mind, but on deeper consideration these events happen every year in one part of the world or another and, in the case of floods, some areas experience them year in and year out. It appears to be nonsense to start talking about forecasting weather trends when anyone considers the vagaries of an English summer, but scientific studies of the weather are carried out and should be considered with classes which are greatly influenced by the weather.

The frequency for many classes is different for every month of the year and this is not just random variation. A bad winter with a great deal of snow and ice on the roads can be bad for the motor portfolio's claim frequency, while the drought during the summer of 1976 had an adverse effect on the householders account with the high level of subsidence claims.

The difficulty is that not every year experiences adverse weather conditions so that the insurer is in a dilemma about what to include for bad weather. Weather trends is an area where insurers could take a great deal more interest, especially with the large amount of work being done in this field and long range weather forecasting could be beneficial to insurers in many areas.

d) Political Trends

As governments pass legislation and manage the economy, the type of government in power at any one time can have a significant effect on the cost of insurance. By political trends we mean the direction

in which government moves over a period of time. It may be becoming more intrusive and creating a more restrictive climate or by allowing more freedom. Again this is impossible to quantify as changes cannot be assumed until they actually happen. Legislation which causes insurance companies extra cost tends not to be forewarned and can be retrospective and this cannot be allowed for in the premium rates.

Governments, by their management of the economy, create the conditions for high or low inflation, high or low interest rates and the level of activity in the economy, and in democratic societies there does appear to be a regular change in political colour from time to time, which can alter certain assumptions made concerning the future.

It is doubtful whether political trends can be built into premium rating parameters but it can be borne in mind when a general election is imminent.

Misjudgement of Trends

In trying to estimate the parameters in the premium rates the foregoing trends may have been taken into consideration implicitly or explicitly.

The insurer in setting premium rates for the next year is interested in the parameters for that year, so that a judgement on whether the present year's parameters will extend into next year or otherwise will be improved by his knowledge of external factors operating on this class of business. What is to be ascertained is whether there is a bias in the direction of the parameters from year to year, or whether there is just random variation.

Some of the foregoing trends cannot be allowed for in the premium rates specifically as no hard information is available, but as many of the parameters require judgement, then these trends could influence the insurer to be a

bit more optimistic or a bit more pessimistic.

If the actual outcome of these parameters is different from the assumptions, then it could be a misjudgement of the trends, but if there has been no recognition of a trend, then it would probably be put down to random variation.

It is virtually impossible to quantify the effect of a misjudgement in a trend which would involve separating the trend from random variation, but it is easier to compare the assumption with what actually happened and an analysis of the differences should be conducted. Insurers should be constantly looking for trends in the parameters, but it is important to be able to recognise a trend and try to explain it as the penalties for doing nothing can be severe in times of intense competition.

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