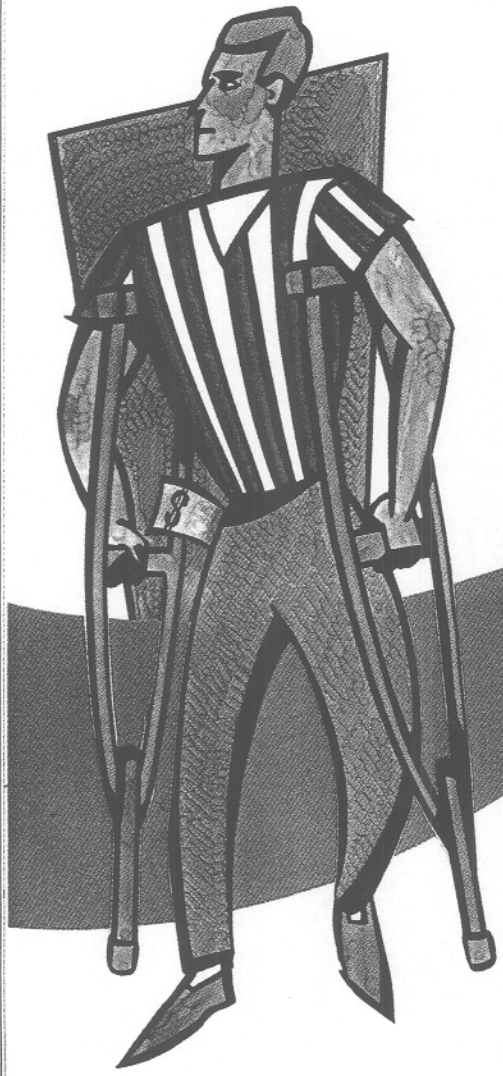
An Excessive Claim Tail

BY GARY G. VENTER



A new study indicates that excess workers' compensation insurance may be the property/casualty line with the longest claim tail.

Casualty insurers have long understood and accepted the fact that for certain lines of business it generally takes 20 years or more to pay all the claims and close the books on the policies. But they may not be aware that for workers' compensation coverages this will take the better part of a century and that for excess workers' compensation insurers it may take more than 30 years to pay just half of the ultimate losses.

A recent study by the Workers Compensation Reinsurance Bureau, which has reinsured a significant share of the market since 1912, collected

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EXA G WORKERS' COMPENSATION

ILLUSTRATION BY JAN PREZLOCK

evidence on the long-tail payout pattern for excess workers' compensation from its historical, and until now confidential, database. The bureau's database contains complete loss histories on all claims reinsured by the bureau since the early 1950s, as well as data on all claims still open at the end of 1991, some of which resulted from workplace accidents as far back as 1916.

THE ADVANTAGES

Since fairly mature data is needed to assess the tail of workers' compensation claims accurately, the bureau reviewed claims from accident years 1955 through 1965. It is important to note that the retention per claim for all bureau reinsureds was fairly constant in the first 10 years: $40,000 from 1955 through 1960 and $50,000 from 1961 through 1964. However, in 1965 it jumped to $100,000. To illustrate the retention level's considerable effect on excess claims payment and reporting patterns, the study often compared combined data for 1955 through 1964 to the data for 1965.

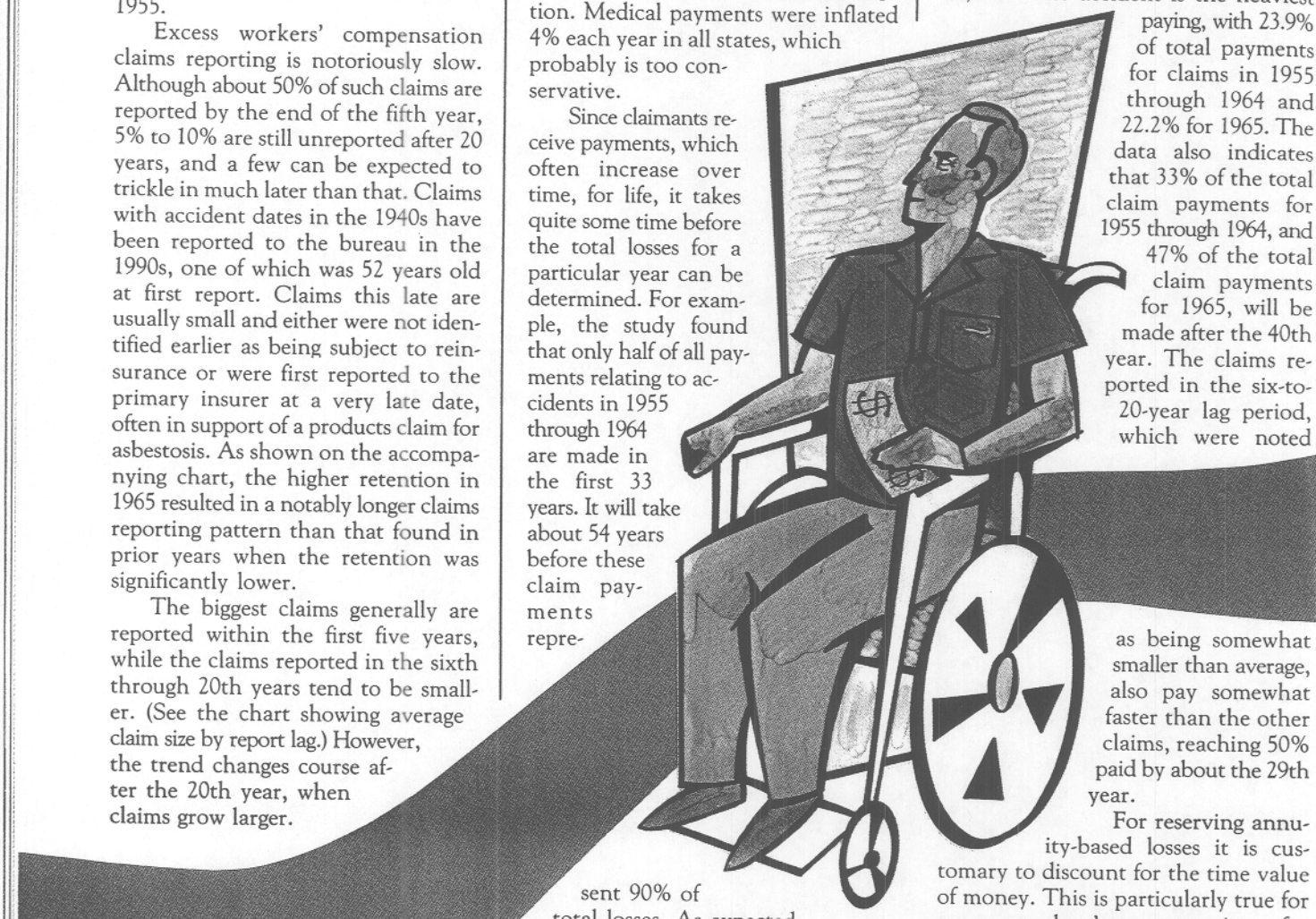
Two advantages of using this database are that all bureau reinsureds had the same retention level in any given year and there was no upper limit to the reinsurance provided. In contrast, since most other reinsurers imposed coverage limits during this period, their claims data would not reflect the full extent of excess losses because loss payments over the stated policy limit reverted to the ceding companies. Because of the unlimited reinsurance coverage and the fairly high retentions, the claims tail indicated by the bureau study may be longer than that found in other studies.

Also, while attempts were made to adjust dollar figures for inflation, this task was not straightforward. Compensation benefits, wages and medical costs all have changed, and the inflation rate for large claims may be significantly different from that for medium or small claims. Therefore, the inflation adjustments should be regarded as rough, with factors ranging from about 13.0

for claims in 1965 to 16.3 for claims in 1955.

Excess workers' compensation claims reporting is notoriously slow. Although about 50% of such claims are reported by the end of the fifth year, 5% to 10% are still unreported after 20 years, and a few can be expected to trickle in much later than that. Claims with accident dates in the 1940s have been reported to the bureau in the 1990s, one of which was 52 years old at first report. Claims this late are usually small and either were not identified earlier as being subject to reinsurance or were first reported to the primary insurer at a very late date, often in support of a products claim for asbestosis. As shown on the accompanying chart, the higher retention in 1965 resulted in a notably longer claims reporting pattern than that found in prior years when the retention was significantly lower.

The biggest claims generally are reported within the first five years, while the claims reported in the sixth through 20th years tend to be smaller. (See the chart showing average claim size by report lag.) However, the trend changes course after the 20th year, when claims grow larger.



This increase is partially due to the high inflation rates—especially for medical costs—of the late 1970s and early 1980s. Also, the average size of claims increased in 1965 because of the higher retention, as well as general inflation.

The study included loss payments through the end of 1991, representing 37 years of payment for accidents in 1955 and 27 years for accidents in 1965. Future payments were projected based on current annual medical and indemnity loss rates and standard mortality assumptions. In states where benefits are adjusted for inflation, indemnity payments were escalated at 6% per year, which is the standard assumption. Medical payments were inflated 4% each year in all states, which probably is too conservative.

Since claimants receive payments, which often increase over time, for life, it takes quite some time before the total losses for a particular year can be determined. For example, the study found that only half of all payments relating to accidents in 1955 through 1964 are made in the first 33 years. It will take about 54 years before these claim payments represent 90% of total losses. As expected, the claims tail for payments resulting from accidents in 1965 is even longer, with 50% of the total losses paid in the first 39 years and 90% paid by the 60th year.

80-YEAR CLAIMS TAIL

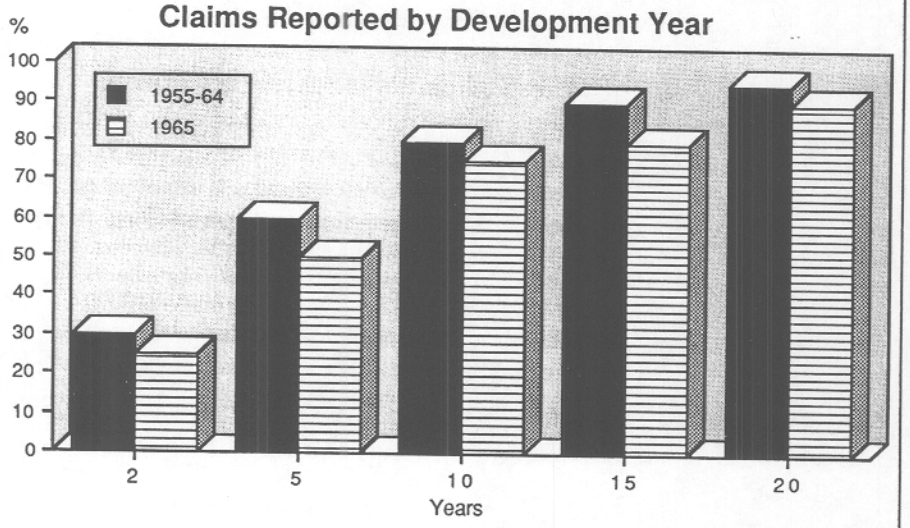
How long does it take to pay 100%? The bureau closed its books on accident year 1916 in 1990, after paying claims for 75 years. Claims are still being paid to victims of accidents that occurred in 1922. Given improved mortality, it is reasonable to expect that some claims will continue for 80 years or more, which means that insurers can expect to be paying claims for this year's workplace accidents until 2072.

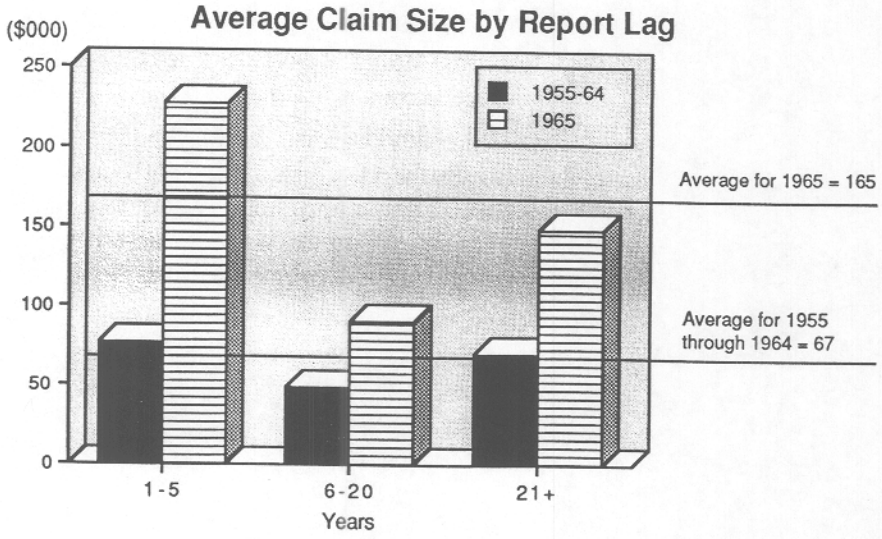
Another way of looking at the payout pattern, as shown in the accompanying chart, is to track the percent of losses paid by decade. This shows that the fourth decade (years 31 to 40) after the accident is the heaviest paying, with 23.9% of total payments for claims in 1955 through 1964 and 22.2% for 1965. The data also indicates that 33% of the total claim payments for 1955 through 1964, and 47% of the total claim payments for 1965, will be made after the 40th year. The claims reported in the six-to-20-year lag period, which were noted as being somewhat smaller than average, also pay somewhat faster than the other claims, reaching 50% paid by about the 29th year.

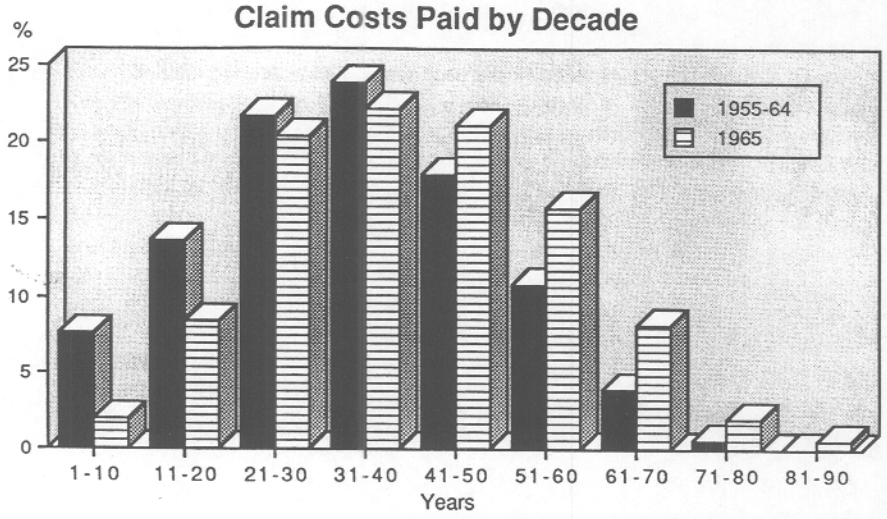
For reserving annuity-based losses it is customary to discount for the time value of money. This is particularly true for excess workers' compensation, for which the payout pattern is more similar to life insurance than it is to most property/casualty lines. The discounted reserve is the amount needed to invest at the assumed interest rate to cover all the loss payments as they come due. This often is expressed as a percentage of the ultimate payout. For example, using the payout pattern for 1955 through 1964 and a 5% annual interest rate, 25.4% of ultimate losses are needed as the discounted reserve in the first year. Although the estimated discount reserve will vary widely depending on payout patterns and interest rate assumptions, it should be taken into account when calculating excess reinsurance rates. However, before discounting with such dramatic factors, the ultimate costs must be fairly well understood.

The claims tail of workers' compensation reinsurance is not only long, it also is heavy, as evidenced by its

claim-severity distribution. It is useful to have an estimate of the percentage of total losses that are above various retentions. But the bureau does not collect information on the size of claims below the retention, so it does not have the full severity distribution. However, by relating total excess losses to estimated primary losses of bureau members, excess percentages can be estimated. These can be compared to the implied excess percentages from a standard mathematical severity curve to produce an implied severity distribution.







For instance, while slightly more than 16% of total losses would be expected to exceed a $500,000 retention, 6% of total losses would be expected above a $3 million retention. These percentages are much higher than some other estimates based on National Council on Compensation Insurance excess loss factors. The main reason for the difference is the longer development period available for bureau losses and its greater recognition of the tail emergence. Also, it should be pointed out that NCCI factors are not intended for reinsurance pricing, although they often are used for that.

UNIMAGINABLE LOSSES

Looking at individual large losses, a claim from a carpenter in New York who was paralyzed in 1957 at age 22 now is projected to cost more than $6 million. This amount could not have been anticipated in 1957, when total premiums for workers' compensation were $1.2 billion. A $6 million loss at that time would have added 50 points to the loss ratio of a fully reserved insurer with a 1% share of the U.S. workers' compensation market. Using standard assumptions for inflation, a similar claim occurring in 1993 could produce an ultimate cost close to $100 million, although possibly different inflation rates applying to large losses would have a significant effect on the total cost. Nonetheless, losses of this magnitude illustrate the importance of adequate reinsurance coverage, especially for small carriers.

The study also found that the primary reason that claims tend to get larger over time is not inflation but jumps to higher cost levels. This usually happens because of changes in the claimant's medical condition or the loss of a low-cost care provider, typically a relative. By tracking claims over time and seeing how often such jumps occur, estimates can be made of the number of claims likely to become large in the future. □