6.1.2 → Importance of accurately estimating unpaid claims

→ (notes above in pdfs)

→ Assignment

too large

→ Q1 The importance of accurately estimating unpaid claims can be examined from three points of view: internal management, investors, and regulators.

(a) Briefly describe how a redundant unpaid claim estimate can impact decisions for each of these three groups.

(b) Briefly describe how an inadequate unpaid claim estimate can impact decisions for each of these three groups.

→ a) → Internal management

→ It would make a book appear less profitable, causing a rate increase where one may not have been needed.

→ May purchase unnecessary reinsurance contracts or choose to increase reinsurance limits

→ Internal management will allocate capital towards meeting these liabilities which could have been invested elsewhere

→ Lead to a wrong interpretation of results + wrong decision to exit a LOB

→ Investors

→ Investors may see the decline in profitability + pull out their investments

→ Regulators

→ They may not correctly evaluate the liabilities of the insurer & thus take unnecessary measures to protect its solvency

→ b) → Internal management

→ May decide to decrease rates since their loss ratios look good

→ May decide to grow their business when they should not because their profits are not as high as they believe

→ May be overly optimistic + may reduce reinsurance limits

→ Could lead internal management to hold less than required capital to pay future claims

→ Investors

→ Inadequate unpaid claims estimates mean ultimate loss estimates will be low + the company will look really profitable to investors. Investors may decide to invest based on this even though they shouldn't

→ Regulators

→ May delay their intervention b/c they think the company is in a good position

→ Q2) Actuary A and Actuary B are each performing a reserve analysis for a small insurance company. To enhance credibility:

- Actuary A relies only on internal data, aggregated across all lines of business.
- Actuary B supplements internal data with industry data separately by line of business.

Describe the benefits and deficiencies of each of these two strategies.

→

SAMPLE ANSWER 1:

Actuary A Benefits: Combining [all lines of business] will give credibility if the mix of claims and product characteristics are relatively similar along with similar loss distribution and development patterns.

Actuary A Deficiencies: Different lines of business can have drastically different rates of settlement, different claim severity and frequency, etc. Combining them will distort estimates. Also, most estimation methods do not perform well where the mix of business is changing.

Actuary B Benefits: The benefit for Actuary B is that the industry data separated by lines of business will keep the data homogeneous in the treatment of claims, keeping long-tailed lines and short-tailed lines separate.

Actuary B Deficiencies: The deficiency for Actuary B is that the underwriting and claim reserve strategy may not be the same for the company and the industry which could cause inaccurate reserves.

SAMPLE ANSWER 2:

Actuary A Benefits: Actuary A's method will have the benefit that it incorporates company-specific operations such as settlement rates and case reserving practices. If all lines of business have similar development patterns and payout rates, this will allow the actuary to produce more credible factors.

Actuary A Deficiencies: This is a small company so aggregating all lines might still not be stable enough to produce an accurate result, and it's unlikely that all lines will be appropriate for each individual line since typically development patterns and experience differs by line.

Actuary B Benefits: Separating by line allows reserves to be set by line so that development factors should not be affected by changes in mix of business. Incorporating outside data allows for credibility weighting so the results aren't too volatile since the book is likely small.

Actuary B Deficiencies: Don't know coverage level, underwriting guidelines, development patterns & mix of business of the industry data.

SAMPLE ANSWER 3:

Actuary A Benefits: This could be reasonable if the sample size is small within each LOB. It would take into account your book mix and you would not have to worry about adjusting industry data to match your book.

Actuary A Deficiencies: Lines are not homogenous, ie, mix long-tail with short-tail lines may be inappropriate.

Actuary B Benefits: Have a lot of volume since using industry data too which increases credibility. Analyzing lines separately helps improve homogeneity.

Actuary B Deficiencies: The data could be insufficient to give credible volume. Also, the external data may be much different than the companies and will need to be adjusted.