

EXAM 6 – UNITED STATES, FALL 2015

13. (2.5 points)

An insurance company writes multiples lines of business, including both commercial automobile and workers' compensation. Given the following information from the company's Insurance Expense Exhibits (IEEs) and Annual Statements (all figures are in thousands of dollars):

All Lines of Business	2013	2014
Policyholders' surplus	15,200	18,500
Net loss and LAE reserves	31,200	36,700
Net unearned premium reserves	7,600	9,000
Net earned premium	16,700	20,000

Commercial Automobile	2013	2014
Net loss and LAE reserves	2,000	2,300
Net unearned premium reserves	3,400	3,700
Net earned premium	6,200	6,600

Workers' Compensation	2013	2014
Net loss and LAE reserves	3,000	3,000
Net unearned premium reserves	1,500	1,500
Net earned premium	5,000	5,000

a. (1.5 points)

Calculate the amount of policyholders' surplus that would be allocated to commercial automobile and to workers' compensation in the 2014 IEE.

b. (1 point)

Describe one argument in favor of and one argument against the method used to allocate surplus by line of business in the IEE.

SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 13	
TOTAL POINT VALUE: 2.5	LEARNING OBJECTIVE: C1
SAMPLE ANSWERS	
Part a: 1.5 point	
<p><u>Option 1</u> Mean Policyholder Surplus = $(15,200+18,500)/2 = 16,850$ Total Business: $(31,200+36,700)/2 + (7,600+9,000)/2 + 20,000 = 62,250$ Surplus Ratio = $16,850/62,250 = 27.07\%$</p> <p>Commercial Auto Allocation: $27.07\% * [(2,000+2,300)/2 + (3,400+3,700)/2 + 6,600] = 3,329.4$ Workers Compensation Allocation: $27.07\% * (3,000+3,000)/2 + (1,500+1,500)/2 + 5,000 = 2,571.5$</p> <p><u>Option 2</u> Mean Policyholder Surplus = $(15,200+18,500)/2 = 16,850$</p> <p>Allocation Basis Total Business: $(31,200+36,700)/2 + (7,600+9,000)/2 + 20,000 = 62,250$ Commercial Auto: $(2,000+2,300)/2 + (3,400+3,700)/2 + 6,600 = 12,300$ Workers Compensation: $(3,000+3,000)/2 + (1,500+1,500)/2 + 5,000 = 9,500$</p> <p>Allocated Surplus Commercial Auto: $12,300/62,250 * 16,850 = 3,329.4$ Workers Compensation: $9,500/62,250 * 16,850 = 2,571.5$</p>	
Part b: 1 point	
<p>Arguments/Rationales "In Favor Of" (either two brief rationales or one more extensive rationale):</p> <ul style="list-style-type: none"> • Simple/easy to compute • Allows for quick assessment/meets the needs of users • Comparable/standard across companies, competitors, and lines • Formulaic/objective/can't be manipulated • Data readily available from Annual Statement • Easy to explain • Not distorted by reinsurance • Method has been good historically • Allocates more surplus to lines with higher reserves or larger lines • Retrospective • Considers investable assets • Using two years will smooth the results • Does not require projections • Allows regulators/investors to see profit by line or whether rates are excessive/inadequate • Cannot hide poor results <p>Arguments/Rationales "Against" (either two brief rationales or one more extensive rationale):</p> <ul style="list-style-type: none"> • Does not consider the risk characteristics/inherent risk of line • Fails to recognize catastrophe potential 	

SAMPLE ANSWERS AND EXAMINER'S REPORT

- Does not recognize cost of capital/required capital
- Does not recognize potential for adverse development
- Short-tail lines may require more surplus
- Retrospective/not prospective method
- Does not reflect future business
- Is distorted if there is a change in mix of business or rapid growth/shrinking
- Can't be used for ratemaking
- Does not consider management/actuarial opinions
- Time period is too short to reflect trends/future
- Does not reflect surplus generated by line
- Method is arbitrary/formulaic

EXAMINER'S REPORT

Part a

The candidate was expected to apply the IEE method of surplus allocation to the given data. The candidate had to demonstrate that average loss & LAE reserves, average unearned premium reserves and most recent year earned premium were used as the basis of the allocation. The candidate had to recognize that there were other lines of business besides Commercial Auto and Workers Compensation. The candidate had to allocate mean policyholder surplus.

Common errors included: calculating the allocated surplus to either Commercial Auto or Workers Compensation instead of both; not knowing the IEE surplus allocation method; not recognizing that there were lines of business other than Commercial Auto and Workers Compensation; not allocating mean policyholder surplus, using most recent year instead of two years.

Part b

The candidate was expected to understand the advantages and disadvantages of the IEE method of allocating surplus to line of business.

Common errors included: not providing two distinct points; restating the method, but not explaining how it was good or bad; mixing up the arguments for/against.