20. (3.75 points)

The following information is available for an insurance company:

Accident Year	Cumulative Paid Claims ($000) as of (months) 12	24	36	48
2010	1,050	2,350	4,370	6,250
2011	1,100	3,970	6,350	
2012	1,160	4,860		
2013	1,460			

Accident Year	Case Outstanding ($000) as of (months) 12	24	36	48
2010	520	2,200	1,790	1,500
2011	600	1,270	690	
2012	730	770		
2013	920			

Accident Year	Closed Claim Counts (000) as of (months) 12	24	36	48
2010	5	7	10	13
2011	5	9	12	
2012	5	10		
2013	6			

Accident Year	Open Claim Counts (000) as of (months) 12	24	36	48
2010	3	4	3	1
2011	3	2	1	
2012	3	1		
2013	3			

Accident Year	Projected Ultimate Claim Counts (000)
2010	13
2011	13
2012	13
2013	13

The interpolation of cumulative paid claims (in $000s) by accident year (AY) is as follows:

Closed Claim Counts	AY 2010
5	1,050
6	1,700
7	2,350
8	3,023
9	3,697
10	4,370
11	4,997
12	5,623
13	6,250

Closed Claim Counts	AY 2011
5	1,100
6	1,818
7	2,535
8	3,253
9	3,970
10	4,763
11	5,557
12	6,350

Closed Claim Counts	AY 2012
5	1,160
6	1,900
7	2,640
8	3,380
9	4,120
10	4,860

- The selected annual severity trend rate for all maturities is 5%.
- Use an all-year simple average to determine age-to-age claim development factors.
- There is no development beyond 48 months.

Calculate an estimate of ultimate claims for accident year 2013 utilizing the reported Berquist-Sherman method with adjustments reflecting changes in both case outstanding and claim settlement rates.

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QUESTION 20	
TOTAL POINT VALUE: 3.75	LEARNING OBJECTIVE: B5
SAMPLE ANSWERS	

Adjusted Reported Triangle = Adjusted Paid + Adj Open Claim Count x (Adj Avg CO)

Avg CO adj = Case outstanding / Open CC

2010	265	698	657	1500
2011	278	733	690	
2012	292	770		
2013	307			

↑ Adjusted using 5% trend

DR = Closed Claim Counts / Ult Claim Counts

2010				1.000
2011			0.923	
2012		0.770		
2013	0.461			

<- select latest diagonal

Restated Closed Claim Counts

2010	6	10	12	13
2011	6	10	12	
2012	6	10		
2013	6			

Adjusted Paid Triangle

2010	1700	4370	5623	6250
2011	1818	4763	6350	
2012	1900	4860		
2013	1460			

Adj Open CC = Reported – Adjusted

2010	2	1	1	1
2011	2	1	1	
2012	2	1		
2013	3			

Adjusted Reported Triangle

1700 + 265 (2)

↑

2010	2,230	5,068	6,280	7,750
2011	2,374	5,496	7,040	
2012	2,484	5,630		
2013	2,380			

ATA

	12-24	24-36	36-48	
2010	2.27	1.239	1.234	
2011	2.315	1.281		
2012	2.27			
	2.285	1.26	1.234	<- All yr simple avg
CDF Ult	3.553			

Ult Claims = 2380 (3.553) = 8,456

EXAMINER'S REPORT

Candidates were expected to have an understanding of the Berquist-Sherman method and how to use it to adjust for environmental changes. They were expected to know the specific calculations/triangles required to calculate the adjusted ultimate.

The question was fairly challenging because it required the combination of two adjustments, which both include a large number of calculations/procedures that the candidate had to know and perform correctly.

Overall, most candidates received partial credit on this question. Most candidates who attempted the question received at least some partial credit. Very few candidates received full credit.

The most common mistake made by candidates was to not calculate and use an adjusted open count triangle. Other common mistakes included:

- Using the volume weighted average for the LDF selections, when the question specifically asked for a simple all-year average.
- Interpolating the paid triangle, when the interpolation table was provided (credit was still given for correct calculation via interpolation).
- Not combining the adjustments for case outstanding and claim settlements rates, and instead calculated two separate ultimates, when the question asked for one ultimate (or only doing one of the two calculation).
- Calculation errors.