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Subject: SRM - 3

Chapter: Unit 4

Category: Practice Questions

1. Subject CT6 September 2007 Question 4

The table below gives the cumulative incurred claims by year and earned premiums for a particular type of motor policy (Figures in £000s).

Claims paid to date total £15,000,000. The ultimate loss ratio is expected to be in line with the 2003 accident year.

	Development year				
Accident Year	**0**	**1**	**2**	**3**	**Earned Premiums**
2003	3,340	3,750	4,270	4,400	4,800
2004	3,670	4,080	4,590		4,900
2005	3,690	4,290			5,050
2006	4,150				5,200

Ignoring inflation, use the Bornhuetter-Ferguson method to calculate the total reserve required to meet the outstanding claims, assuming that the claims are fully developed by the end of development year 3. [8]

2. Subject CT6 April 2009 Question 6

The following information is available for a motor insurance portfolio:

The number of claims settled:

	Development year		
Accidental year	0	1	2
2006	442	151	50
2007	623	111	
2008	681		

The cost of settled claims during each year (in 000's):

	Development year		
Accidental year	0	1	2
2006	6321	1901	701
2007	7012	2237	
2008	7278		

Claims are fully run off after year 2. Calculate the outstanding claims reserve using the average cost per claim method with grossing up factors, inflation can be ignored. [10]

3. Subject CT6 April 2012 Question 8

The table below shows claim paid on a portfolio of general insurance policies. You may assume that claims are fully run off after three years.

	Development year			
Underlying year	**0**	**1**	**2**	**3**
2008	450	312	117	41
2009	503	389	162	
2010	611	438		
2011	555			

Past claims inflation has been 5% pa. However, it is expected that future claims inflation will be 10% pa.

Use the inflation adjusted chain ladder method to calculate the outstanding claims on the portfolio. [10]

4. Subject CT6 April 2010: Question 8

The table below shows the incremental claims paid on a portfolio of insurance policies together with an extract from an index of prices. Claims are fully paid by the end of development year 3.

	Development Year					
Accident Year	**0**	**1**	**2**	**3**	**Year**	**Price index (mid year)**
2006	103	32	29	13	2006	100
2007	88	21	16		2007	104
2008	110	35			2008	109
2009	132				2009	111

Calculate the reserve for unpaid claims using the inflation-adjusted chain ladder approach, assuming that future claims inflation will be 3 % pa. [11]

5. Subject CT6 September 2012: Question 7

The table below shows claims paid on a portfolio of general insurance policies. Claims from this portfolio are fully run off after 3 years.

	Development Year			
Underwriting year	0	1	2	3
2008	85	42	30	7
2009	103	65	25	
2010	93	47		
2011	111			

(i) Estimate the outstanding claims using the basic chain ladder approach.[7]

6. Subject CT6 September 2013 Question 6

The tables below show cumulative data for the number of claims and the total claim amounts arising from a portfolio of insurance policies.

	Claim Numbers Development Year		
	0	1	2
2010	87	132	151
2011	117	156	
2012	99		

	Total Claim Amounts Development Years		
	0	1	2
2010	43,290	87,430	126,310
2011	68,900	125,290	
2012	74,250		

Claims are fully run off after two development years.
Estimate the outstanding claims using the average cost per claim method with grossing up factors. [10]

7. Subject CT6 April 2014 Question 9

The table below sets out incremental claims data for a portfolio of insurance policies.

	Development year		
Accident year	0	1	2
2011	1,403	535	142
2012	1,718	811	
2013	1,912		

Past and projected future inflation is given by the following index (measured to the mid-point of the relevant year).

Year	Index
2011	100
2012	107
2013	110
2014	113
2015	117

Estimate the outstanding claims using the inflation-adjusted chain ladder technique.[9]

8. Subject CT6 April 2015: Question 2

The table below shows cumulative claim amounts incurred on a portfolio of insurance policies.

Accident	Development Year			
Year	**0**	**1**	**2**	**3**
2011	1,509	1,969	2,106	2,207
2012	1,542	2,186	2,985	
2013	1,734	1,924		
2014	1,773			

Annual premiums written in 2014 were 4,013 and the ultimate loss ratio has been estimated as 93,5%. Claims can be assumed to be fully run off by the end of development year 3.

Estimate the total claims arising from policies written in 2014 only, using the Bornhuetter-Ferguson method.[7]