

Reading: MSA.Ratios
Model: 2017.Spring #13
Problem Type: InvYld, ROE, ROA, Net U/W Leverage Ratio

(MSA ratios) a-Question

Given BALANCE SHEET

	current (1)	prior (0)
Cash	5,000	4,000
Bonds and Debentures	40,000	45,000
Common Shares	2,600	2,000
Real Estate	12,000	14,000
Agents and Brokers Receivables	500	750
Unearned Premiums Recoverable	10,000	12,000
Unpaid Claims and Adjustment Expenses Recoverable	?	?
Total Assets	105,000	101,000
Gross Unpaid Claims and Adjustment Expenses	40,000	38,000
Equity	30,000	28,000

INCOME STATEMENT

	current (1)	prior (0)
Net Premiums Written	44,000	47,000
Decrease in Net Unearned Premiums	1,200	1,000
Net Claims and Adjustment Expenses	35,000	32,000
Total Acquisition Expenses	5,000	5,000
General Expenses	3,000	3,200
Investment Income	6,000	4,000
Realized Gains	-1,000	500
Investment Expenses	500	400
Income Taxes – Total	2,500	2,800

ALSO:

Net Leverage Ratio (<i>at end of current year</i>):	260%	n/a
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- Calculate**
- (i) InvYld (Investment Yield)
 - (ii) ROE
 - (iii) ROA
 - (iv) Net U/W Leverage Ratio

Assesment Comment on the financial health of the company based on the quantities calculated above.

Calculate Calculate the unpaid claims and adjustment expenses recoverable at the end of the current year.

InvYld	=	2	x	NII	/	(	InvAss0	+	InvAss1	-	NII)
	=	2	x	4,500	/	(	65,000	+	59,600	-	4,500)
InvYld	=	7.49%	<== final answer to (i) - this is a good investment yield, but should monitor performance									

NII	=	InvInc	+	Realized Gains/Losses	-	InvExps
NII	=	6,000	+	-1,000	-	500
	=	4,500				

InvAss	=	cash	+	bonds & debentures	+	commons shares	+	real estate	
InvAss ₀	=	4,000	+	45,000	+	2,000	+	14,000	
	=								65,000
InvAss ₁	=	5,000	+	40,000	+	2,600	+	12,000	
	=								59,600

ROE	=	(	Nl.preTax	-	Tot. Tax	)	/	equity
	=	(	6,700	-	2,500	)	/	30,000
ROE	=	14.00%	<== final answer to (ii) - compare to acceptable minimum of 5.4 %					

Nl.preTax	=	NEP	-	net.CAE	-	TotAcq	-	GenExps	+	NII
	=	45,200	-	35,000	-	5,000	-	3,000	+	4,500
	=	6,700								

NEP	=	NWP	-	change(UEP)
	=	NWP	-	[current(UEP) - prior(UEP)]
	=	44,000	-	[-1,200]
	=	45,200		

ROA	=	(	Nl.preTax	-	Tot. Tax	)	/	( 2-yr average of assets
	=	(	6,700	-	2,500	)	/	average (105,000 , 101,000
	=	4.08%	<== final answer to (iii) - compare to acceptable minimum of 2.6 %					

Net U/W Leverage Ratio	=	NWP	/	equity
	=	44,000	/	30,000
	=	147%	<== final answer to (iv) - compare to acceptable MAXIMUM of 300 %	

Calculation of UCAE: We're given the value for Net Leverage Ratio, so let's write down the formula and see where it leads...

Net Leverage Ratio	=	(	NWP	+	Net.Liabs	)	/	equity
260%	=	(	44,000	+	Net.Liabs	)	/	30,000
==> Net.Liabs	=	34,000	<== Net.Liabs was the only unknown so I decided to solve for it					

Ok, but where do we go from here? You need to relate the unknown, UCAE recoverable, to quantities we have. To do this, it helps to recall that "Net" means "Net of reinsurance". Then we can relate "Net" and "Total" liabilities with this formula...

Net.Liabs	=	Tot.Liabs	-	UCAE recoverable	-	UEP recoverable
34,000	=	75,000	-	UCAE recoverable	-	10,000
UCAE recoverable	=	31,000	<== final answer to UCAE recoverable			

The term "Tot.Liabs" used in the above calculation was calculated as follows:

Tot.Liabs	=	Tot.Assets	-	equity	=	105,000	-	30,000	=	75,000
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