(Klann - practice 01) a-Question

Reading: Klann.ReinsComm Model: 2016.Spring #27

Problem Type: mutually beneficial commutation price

Given

gross paid loss	4.1	
gross reserves (case + IBNR)	4.9	
gross discounted reserves (case + IBNR)	3.6	<== economic discount
ceded paid loss	0.4	
ceded reserves (case + IBNR)	2.5	
ceded discounted reserves (case + IBNR)	1.8	<== economic discount

The following discount factors are for tax purposes:

	primary	
	insurer	reinsurer
average discount factor	0.840	0.860
tax rate	31%	17%

<== for statutory discounting

The reinsurer's assumed losses equal the primary insurer's ceded losses

(A)	price	-	_p R c	+	Tq	>	0	<== for p	rimary insui	rer
(B)	- price	+	$_{\rm re}{\sf R}^{}_{\rm g}$	+	_{re} T	>	0	<== for re	einsurer	
ow:										
	$_{p}R_{c}^{-}$	=	1.8	<== use	<u>company</u> di	iscounted r	eserves (econ	omic value)	
	$_{\rm re}R^{}_{\rm g}$	=	1.8	<== use	<u>company</u> di	iscounted r	eserves (econ	omic value)	
or the p	rimary insure	r:								
	T_{q}	=	tax rate	x	(decrease	in taxable i	ncome for pr	imary insur	er))
		=	tax rate	x	(reserves o	commuted	-	price)
		=	31%	x	(2	.100	-	price)
	where:	reserves	commuted							
		=	undiscount	ed ceded	reserves	х	discount fa	ctor	<== tax di	scounting
		=	2.5			Х	0.840			
		=	2.100							
	Using thes	e values to	solve inequal	ity (A) giv	es:	price	>	1.665	<== for <i>ins</i>	surer's benefit
nd a sim	nilar calculation	on for the	reinsurer is as	follows:						
	$_{re}T$	=	tax rate	х	(decrease	in taxable i	ncome for pr	imary insur	er))
		=	tax rate	x	(-reserves	commuted	+	price)
		=	17%	Х	(-2	2.150	+	price)
	where:	-reserves	commuted							
	wiicie.	=	- undiscoun	ted cedeo	l reserves	х	discount fa	ctor	<== tax di	scountina
		=	-2.5	tea ceae	4 1 C3C1 V C3	X	0.860	ctor		occurrent g
		=	-2.150							
	Using thes	e values to	solve inequal	ity (B) giv	es.	price	<	1.728	<== for re	insurer's bene
	Jania tiles	c values to	Joire mequal	icy (D) giv	cs.	Price		1.720	101 TE	modici o belle

1.728

1.665

Final price range:

(Klann - practice 02) a-Question

Reading: Klann.ReinsComm Model: 2016.Spring #27

Problem Type: mutually beneficial commutation price

Given

gross paid loss	3.9	
gross reserves (case + IBNR)	4.9	
gross discounted reserves (case + IBNR)	3.4	<== economic discount
ceded paid loss	0.4	
ceded reserves (case + IBNR)	2.8	
ceded discounted reserves (case + IBNR)	2.5	<== economic discount

The following discount factors are for tax purposes:

	primary		ĺ
	insurer	reinsurer	l
average discount factor	0.850	0.890	ŀ
tax rate	35%	18%	l

<== for statutory discounting

The reinsurer's assumed losses equal the primary insurer's ceded losses

no overlap

Final price range:

(A)	price	-	_p R _c	+	рΤ	>	0	<== for p	rimary insurer
(B)	- price	+	$_{\rm re}R_{\rm g}^{-}$	+	_{re} T	>	0	<== for r	einsurer
Now:									
	$_{p}R_{c}^{-}$	=	2.5		<u>company</u> di		•		•
	$_{\rm re}R_{\rm g}^{-}$	=	2.5	<== use	<u>company</u> di	iscounted re	serves (econ	omic value)
or the pr	rimary insure	er:							
	T_{q}	=	tax rate	х	(decrease	in taxable in	come for pr	imary insur	er))
		=	tax rate	х	(reserves co	mmuted	-	price)
		=	35%	х	(2.3	380	-	price)
	where:	reserves (undiscounte 2.8 2.380	ed ceded I	reserves	x x	discount fa 0.850	ctor	<== tax discounting
	Using thes	e values to	solve inequal	ity (A) giv	es:	price	>	2.565	<== for insurer's benefit
nd a sim	ilar calculati	on for the i	einsurer is as	follows:					
	$_{\rm re}T$	=	tax rate	х	(decrease	in taxable in	come for pr	imary insur	er))
		=	tax rate	х	(-reserves c	ommuted	+	price)
		=	18%	Х	(-2.	492	+	price)
	where:		commuted						
		=	- undiscoun	ted cedec	reserves	X	discount fa	ctor	<== tax discounting
		=	-2.8			Х	0.890		
		=	-2.492						
	Using thes	e values to	solve inequal	ity (B) giv	es:	price	<	2.502	<== for reinsurer's bene

no overlap

(Klann - practice 03) a-Question

Reading: Klann.ReinsComm Model: 2016.Spring #27

Problem Type: mutually beneficial commutation price

Given

gross paid loss	4.2	
gross reserves (case + IBNR)	5.4	
gross discounted reserves (case + IBNR)	3.3	<== economic discount
ceded paid loss	0.5	
ceded reserves (case + IBNR)	2.9	
ceded discounted reserves (case + IBNR)	1.8	<== economic discount

The following discount factors are for tax purposes:

	primary		
	insurer	reinsurer	
average discount factor	0.880	0.870	<== for
tax rate	34%	18%	

== for statutory discounting

The reinsurer's assumed losses equal the primary insurer's ceded losses

1.413

Final price range:

(A)	price	-	_p R _c	+	т	>	0	<== for p	rimary insu	rer
(B)	- price	+	$_{\rm re}R_{\rm g}$	+	$_{re}T$	>	0	<== for r	einsurer	
low:										
	$_{p}R_{c}^{-}$	=	1.8		<u>company</u> di					
	$_{\rm re}R^{-}_{\rm g}$	=	1.8	<== use	<u>company</u> di	scounted re	eserves (econ	nomic value	·)	
or the pr	imary insure	r:								
	Tq	=	tax rate	х	(decrease	in taxable ir	ncome for pr	imary insur	er))
		=	tax rate	х	(reserves c	ommuted	-	price)
		=	34%	х	(2.	552	-	price)
	where:	reserves (commuted undiscount	ed ceded	reserves	x	discount fa	ctor	<== tax di	scountina
		=	2.9	eu ceueu	i esei ves	X	0.880	Ctoi	<== tux ui	scounting
		=	2.552			^	0.000			
	Using thes	e values to	solve inequa	lity (A) giv	res:	price	>	1.413	<== for <i>in</i> :	surer's benefi
nd a sim	ilar calculati	on for the	reinsurer is as	follows:						
	$_{re}T$	=	tax rate	х	(decrease	crease in taxable income for primary insurer)))
		=	tax rate	х	(-reserves	commuted	+	price)
		=	18%	х	(-2	.523	+	price)
	where:	-reserves	commuted							
		=	- undiscoun	ited cede	d reserves	х	discount fa	ctor	<== tax di	scounting
		=	-2.9			Х	0.870			
		=	-2.523							
	Using thes	e values to	solve inequa	lity (B) giv	res:	price	<	1.641	<== for re	insurer's bene

1.641

(Klann - practice 04) a-Question

Reading: Klann.ReinsComm Model: 2016.Spring #27

Problem Type: mutually beneficial commutation price

Given

gross paid loss	3.7	
gross reserves (case + IBNR)	4.6	
gross discounted reserves (case + IBNR)	3.6	<== economic discount
ceded paid loss	0.7	
ceded reserves (case + IBNR)	2.9	
ceded discounted reserves (case + IBNR)	2.1	<== economic discount

The following discount factors are for tax purposes:

	primary		
	insurer	reinsurer	
average discount factor	0.860	0.810	<=
tax rate	32%	18%	

== for statutory discounting

The reinsurer's assumed losses equal the primary insurer's ceded losses

(A)	price	-	$_{p}R_{c}^{-}$	+	$_{p}T$	>	0	<== for p	rimary insu	irer
(B)	- price	+	$_{\rm re}{\sf R}^{\scriptscriptstyle -}_{\rm g}$	+	$_{re}T$	>	0	<== for re	einsurer	
ow:										
	$_{p}R_{c}^{-}$	=	2.1	<== use	<u>company</u> di	iscounted r	eserves (econ	omic value,)	
	_{re} R ⁻ _g	=	2.1	<== use	<u>company</u> di	iscounted r	eserves (econ	omic value,)	
or the pr	imary insure	r:								
	T_{q}	=	tax rate	х	(decrease	in taxable i	ncome for pr	imary insur	er))
		=	tax rate	х	(reserves c	ommuted	-	price)
		=	32%	х	(2	.494	-	price)
	where:	reserves	commuted							
		=	undiscounte	ed ceded	reserves	X	discount fa	ctor	<== tax d	iscounting
		=	2.9			Х	0.860			
		=	2.494							
	Using thes	e values to	solve inequal	ity (A) giv	es:	price	>	1.915	<== for <i>ir</i>	surer's benefi
nd a simi	ilar calculati	on for the	reinsurer is as	follows:						
	$_{re}T$	=	tax rate	х	(decrease	in taxable i	ncome for pr	imary insur	er))
		=	tax rate	х	(-reserves	commuted	+	price)
		=	18%	х	(-2	.349	+	price)
	where:	-reserves	commuted							
		=	- undiscoun	ted cedeo	d reserves	х	discount fa	ctor	<== tax d	iscounting
		=	-2.9			X	0.810			, , , , , , , , , , , , , , , , , , ,
		=	-2.349							
	Using thes	e values to	solve inequal	ity (B) giv	Ας:	price	<	2.045	for r	einsurer's bene
	OSITIE LITES	e values lu	soive mequal	ity (D) BIV	cs.	price		2.043	~ IUI I	אווטעובו א טפוונ

2.045

1.915

Final price range: