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- 2. Caveats

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- 3. Premise of this exposure rating method
- 4. Starting expected loss ratio (ELR) and CU ELR by state and portfolio CU ELR calculation
- 5. Incorporating effect of using manual premium on CU ELR

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6. 7.	Effect of percent of underlying factor on CU ELR Other factors that impact CU ELR		
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Caveats

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- Assumes all commercial umbrella risks are "average" for their ISO classification for both CGL and CAL
- Assumes ISO CGL and CAL rating plans are credible for exposures excess applicable underlying limit
- Method is much more credible for umbrella excess primary vs. excess another umbrella or excess policy
- Does not take into account restrictive or broadening endorsements to the extent that their impact is not reflected in ISO stat reporting

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Premise of this exposure rating method

- Assume cedent's CGL and CAL rating plans are both based on the most recent ISO edition dates for all rules and all rating factors
- Assume a \$1,000,000 per occurrence
- underlying limit for CGL Difference in premium between a \$2,000,000 per occurrence coverage limit and a \$1,000,000 per occurrence coverage limit represents CGL premium portion for 1st million of CU coverage of a CU policy



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- Assume a \$1,000,000 per occurrence underlying limit for CAL
- Difference in premium between a \$2,000,000 per occurrence coverage limit and a \$1,000,000 per occurrence coverage limit and a \$1,000,000 per occurrence coverage limit represents CAL premium portion for 1st million of CU coverage of a CU policy
- Sum of these differences represents premium charge for 1st million of CU coverage
- Such sum is ISO CU Benchmark premium for 1st million of CU coverage for a risk

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Starting expected loss ratio (ELR) and CU ELR by state and portfolio CU ELR calculation

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Starting expected loss ratio (ELR) and CU ELR by state and portfolio CU ELR calculation

- Starting underlying CU LOB ELR: 1/LCM for each LOB
- If LCMs vary by state for CGL and/or CAL, then have to calculate CGL, CAL and CU underlying LOB ELR separately by state
- CU expected loss ratio is actually sum of:
- Weighted average percentage of <u>underlying CU CGL ELR</u> by state and weighted average percentage of <u>underlying CU CAL ELR</u> by state
 - Weighted average percentage is based on underlying CGL premium from CU policies and underlying CAL premium from CU policies with each premium amount divided by the sum of those premium amounts
 - This sum is individual state CU ELR
- Portfolio CU ELR is sum of weighted average amount of individual state CU ELR based on each state's percentage of total CU premium

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Startin	ig exp	ected	loss ratio (El	LR) and	d CU ELR	by state a	nd
ροιτιοι			actuation				
	Examp	ole:					
	State	LOB	Premium	LCM	ELR		
	Α	CGL	7,000,000	1.65	60.61%		
	А	CAL	10,000,000	1.30	76.92%		
	Α	CU	850,000				
	В	CGL	25,000,000	1.70	58.82%		
	В	CAL	40,000,000	1.15	86.96%		
	В	CU	3,250,000				
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Sta bor	rting tfolio	expec CU El	ted loss ratio LR calculatior	(ELR) an า	d CU EL	R by stat
	Con	nmercia	al Umbrella Expe	cted Loss	Ratio using	g 1/LCM
	State	LOB	Premium	Weight	ELR	CU ELR
	A	CGL	7,000,000	41.18%	60.61%	24.96%
	А	CAL	10,000,000	58.82%	76.92%	45.24%
			17,000,000	State A	CU ELR:	70.20%
	В	CGL	25,000,000	38.46%	58.92%	22.62%
	В	CAL	40,000,000	61.54%	86.96%	53.52%
			65,000,000	State B	CU ELR:	76.14%
	А	CU	850,000	20.73%	70.20%	14.55%
	В	CU	3,250,000	79.27%	76.14%	60.36%
			4,100,000	Portfoli	OCU ELR	74.91%
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Incorporating effect of usir manual premium on CU EL	ig .R
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С	ommer	cial Umbrella	a Portfolio Mo	dification Fa	actors
State	LOB	Schedule Mod	Experience Mod	Package Mod	Fleet Factor
А	CGL	11	04	11	NA
А	CAL	04	08	NA	+.04
А	CU	06	NA	NA	NA
В	CGL	13	08	03	NA
В	CAL	02	+.03	NA	+.03
В	CU	11	NA	NA	NA



Incorporating effect of using manual premium on CU ELR · How does cedent define "manual premium" for CU rating purposes? - For GL, does cedent back out: - Schedule mod (or IRPM) only - Schedule and experience mod - Schedule, experience and package modification factors (full RMF) - For CAL, does cedent back out - Schedule mod only - Schedule and experience mod - Schedule, experience and fleet modification factors (full RMF) CAS Seminar on Reinsurance | June 7, 2016 | Gerald Deneen

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Incorporating effect of using manual premium on CU ELR

• If the applicable modification factor is a portfolio credit and is "backed-out" in the calculation of manual premium,

underlying CU LOB ELR should be lowered by multiplying starting underlying CU LOB ELR (using 1/LCM) by (1.00 +/- the portfolio debit or credit in decimal format)



- Use minus sign for credits because credits decrease the underlying CU LOB ELR.
 - For example, a portfolio schedule credit of 17% would mean underlying CU LOB ELR (using 1/LCM) is multiplied by .83.

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General Public Release Incorporating effect of using manual premium on CU ELR

- If applicable modification factor is not "backed-out" in the calculation of manual premium do NOT
- reduce the underlying CU LOB ELR if such factor is a credit or do NOT increase the ELR if such factor is a debit
- Umbrella reinsurer needs to decide if non-discretionary credits/debits such as package mod, fleet factor mod and experience mod should be backed-out in the calculation of umbrella manual premium



If reinsurer thinks these factors should not be backed out, but cedent does back them out, should the underlying CU LOB ELR be adjusted accordingly?

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	Incorp	oorat	ing effec	t of using	manual	premiu	im on Cl	J ELR			
•	 Assume only schedule modification factors are "backed-out" in calculation of manual premium 										
		Co	ommercial	Umbrella By	y State Ex	pected Lo	oss Ratio				
	State	LOB	1/LCM CU ELR*	Weight**	State CU ELR	Sched Mod***	Man. Prem. CU ELR	Man. Prem. LOB ELR			
	А	CGL	60.61%	41.18%	24.96%	.89	22.21%	53.94%			
	А	CAL	76.92%	58.82%	45.24%	.96	43.43%	73.84%			
					70.20%		65.64%				
	В	CGL	58.82%	38.46%	22.62%	.87	19.68%	51.17%			
	В	CAL	86.96%	61.54%	53.52%	.98	52.45%	85.22%			
					76.14%		72.13%				
	Durint Pin	*	See slide 12	2 **See slide	e 13	***See sl c	ide 15 AS Seminar on Rei 1e 7, 2016 Gerald	nsurance I Deneen 19			



In	corpo	orating	g effect of us	ing manı	ual prem	ium on C	U ELR
	Co	ommerc	ial Umbrella Po	rtfolio Exp	ected Los	s Ratio	
					Man Prem		
	State	LOB	Premium	Weight	ELR	CU ELR	
	A	CGL	7,000,000	41.18%	53.94%	22.21%	
	Α	CAL	10,000,000	58.82%	73.84%	43.43%	
			17,000,000	State A	CU ELR:	65.64%	
	В	CGL	25,000,000	38.46%	51.17%	19.68%	
	В	CAL	40,000,000	61.54%	85.22%	52.45%	
			65,000,000	State B	CU ELR:	72.13%	
	А	CU	850,000	20.73%	65.64%	13.61%	
	В	CU	3,250,000	79.27%	72.13%	57.18%	
			4,100,000	Portfoli	o CU ELR	70.79%	
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Incorporating effect of using manual premium on CU ELR

 If the underlying modified (or charged) premium is the cedent's commercial umbrella rating base, then umbrella reinsurer needs to decide if underlying CU CGL or CAL ELR should be adjusted by portfolio amount of discretionary credits or debits (schedule modification factor) If reinsurer decides yes, a portfolio credit would increase the underlying CU LOB ELR and a portfolio debit would decrease it



- Assume a portfolio schedule credit of 17%, underlying CU LOB ELR would be modified by (1/LCM ELR)/(1-.17)
- Non-discretionary factors should not adjust underlying CU LOB ELR except:
- A valid argument could be made that experience modification factor should adjust underlying CU LOB ELR because the maximum single loss value in ISO's experience mod calculation is often quite low (<\$300,000)

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Effect of percent of underlying factor on CU ELR

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Effect of p	ercent o	f underly	ing factor	r on CGL	portion o	f CU ELR
Assume the	following	is from ISO's	s most recen	t CGL ILF ta	ables for Stat	e A
Limit	Table 1	Table 2	Table 3	Table A	Table B	Table C
2,000,000	1.52	1.72	2.29	1.71	2.07	2.48
1,000,000	1.43	1.54	1.79	1.55	1.75	2.00
% of U/L	6.29%	11.69%	27.93%	10.32%	18.29%	24.00%
Assume the	following i	s from ISO's	most recen	t CGL ILF ta	bles for State	e B
Limit	Table 1	Table 2	Table 3	Table A	Table B	Table C
2,000,000	Table 1 1.35	Table 2 1.51	Table 3 2.05	Table A 1.71	Table B 2.07	Table C 2.48
Limit 2,000,000 1,000,000	Table 1 1.35 1.23	Table 2 1.51 1.34	Table 3 2.05 1.60	Table A 1.71 1.55	Table B 2.07 1.75	Table C 2.48 2.00
Limit 2,000,000 1,000,000 % of U/L	Table 1 1.35 1.23 9.76%	Table 2 1.51 1.34 12.69%	Table 3 2.05 1.60 28.13%	Table A 1.71 1.55 10.32%	Table B 2.07 1.75 18.29%	Table C 2.48 2.00 24.00%
Limit 2,000,000 1,000,000 % of U/L Assume the	Table 1 1.35 1.23 9.76% following i	Table 2 1.51 1.34 12.69% s cedent's (Table 3 2.05 1.60 28.13%	Table A 1.71 1.55 10.32% of underlyin	Table B 2.07 1.75 18.29% Ig factors for	Table C2.482.0024.00%both states
Limit 2,000,000 1,000,000 % of U/L Assume the	Table 1 1.35 1.23 9.76% following i Table 1	Table 2 1.51 1.34 12.69% s cedent's (Table 2	Table 3 2.05 1.60 28.13% CGL percent Table 3	Table A 1.71 1.55 10.32% of underlyin Table A	Table B 2.07 1.75 18.29% g factors for Table B	Table C 2.48 2.00 24.00% both states Table C
Limit 2,000,000 1,000,000 % of U/L Assume the % of U/L	Table 1 1.35 1.23 9.76% following i Table 1 8%	Table 2 1.51 1.34 12.69% s cedent's (Table 2 12%	Table 3 2.05 1.60 28.13% CGL percent Table 3 18%	Table A 1.71 1.55 10.32% of underlyin Table A 8%	Table B 2.07 1.75 18.29% g factors for Table B 12%	Table C 2.48 2.00 24.00% both states Table C 18%

Effect of p	ercent c	of underly	/ing facto	or on CGL	portion	of CU ELR
Assume the	following	is from ISO	s most recei	nt CGL ILF ta	bles for Stat	e A
Limit	Table 1	Table 2	Table 3	Table A	Table B	Table C
2,000,000	1.52	1.72	2.29	1.71	2.07	2.48
1,000,000	1.43	1.54	1.79	1.55	1.75	2.00
% of U/L	6.29%	11.69%	27.93%	10.32%	18.29%	24.00%
Assume the	following i	is cedent's (CGL percent	of underlyin	g factors for	State A
	Table 1	Table 2	Table 3	Table A	Table B	Table C
% of U/L	8%	12%	18%	8%	12%	18%
Redundancy ISO's most r	or deficie ecent CGL	ncy of cede ILFs for Sta	nt's CGL % c te A	of underlying	factors rela	tive to
	Table 1	Table 2	Table 3	Table A	Table B	Table C
ELR effect	78.63%	97.42%	155.17%	129.00%	152.42%	133.33%
CGL portion of percent of un % > 100% inc	f CU ELR pr derlying fac creases ELR	ior to the effe tors relative t ; % < 100% d	ect of the redu o ISO's CGL II lecreases ELR	Indancy or de Fs is multiplie	CAS Seminar on Re June 7, 2016 Gera	dent's CGL ve percentage sinsurance Id Deneen 24



Effect of p	percent o	of underly	ring facto	r on CGL	portion o	eral Public Release
Assume the	following is	s from ISO's	most recent	CGL ILF tab	les for State	В
Limit	Table 1	Table 2	Table 3	Table A	Table B	Table C
2,000,000	1.35	1.51	2.05	1.71	2.07	2.48
1,000,000	1.23	1.34	1.60	1.55	1.75	2.00
% of U/L	9.76%	12.69%	28.13%	10.32%	18.29%	24.00%
Assume the	following is	s cedent's C	GL percent o	of underlying	factors for	State B
	Table 1	Table 2	Table 3	Table A	Table B	Table C
% of U/L	8%	12%	18%	8%	12%	18%
Redundancy most recent	/ or deficier CGL ILFs fe	ncy of ceden or State B	t's CGL % of	funderlying	factors relat	ive to ISO's
	Table 1	Table 2	Table 3	Table A	Table B	Table C
ELR effect	122.00%	105.75%	156.28%	129.00%	152.42%	133.33%
CGL portion of percent of une percentages.	of CU ELR pri derlying fact % > 100% i	or to the effeo ors relative to ncreases ELR	t of the redur ISO's CGL ILF % < 100% d	idancy or defi s is multiplie ecreases ELR	ciency of cede d by the above CAS Seminar on Re June 7, 2016 Geral	ent's CGL insurance Id Deneen 25

						Ge	meral Public Release	
Ette	ct of p	percent o	of underly	/ing facto	or on CGL	portion c	of CU ELK	
Assu by sta	me the t ate	following is	s cedent's p	ercentage o	f CGL premiu	im by ISO CO	GL ILF table	
State		Table 1	Table 2	Table 3	Table A	Table B	Table C	
State	А	10%	57%	3%	9%	18%	3%	
State	В	17%	54%	3%	7%	16%	3%	
Redu most	Redundancy or deficiency of cedent's CGL % of underlying factors relative to ISO's most recent CGL ILFs by state (from slides 24 and 25)							
State		Table 1	Table 2	Table 3	Table A	Table B	Table C	
State	А	78.63%	97.42%	155.17%	129.00%	152.42%	133.33%	
State	В	122.00%	105.75%	156.28%	129.00%	152.42%	133.33%	
Weigl factor	Weighted average redundancy or deficiency of cedent's CGL % of underlying factors relative to ISO's most recent CGL ILFs by state							
						С	Total	
А	7.86%	55.53	% 4.66%	6 11.61%	6 27.44%	4.00%	111.10%	
В	20.749	% 57.119	% 4.69%	6 9.03%	24.39%	4.00% CAS Seminar on Br	119.96%	
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Effect of po	ercent of ur	derlying f	factor on C	AL portion o	Seneral Public Release			
Assume the	Assume the following is from ISO's most recent CAL ILF tables for State A							
Limit	Lt & Med	Heavy	X-Heavy	All Other	Zone			
2,000,000	1.91	2.15	2.33	1.88	2.53			
1,000,000	1.71	1.81	1.88	1.68	2.00			
% of U/L	11.70%	18.78%	23.94%	11.90%	26.50%			
Assume the	Assume the following is from ISO's most recent CAL ILF tables for State B							
Limit	Lt & Med	Heavy	X-Heavy	All Other	Zone			
2,000,000	1.66	1.94	2.14	1.73	2.53			
1,000,000	1.48	1.63	1.72	1.54	2.00			
% of U/L	12.16%	19.02%	24.42%	12.34%	26.50%			
Assume the	following is ceo	lent's CAL pe	ercent of under	lying factors for	both states			
	Lt & Med	Heavy	X-Heavy	All Other	Zone			
% of U/L	10%	20%	27%	10%	35%			
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Assume the following is from ISO's most recent CAL ILF tables for State A								
Limit	Lt & Med	Heavy	X-Heavy	All Other	Zone			
2,000,000	1.91	2.15	2.33	1.88	2.53			
1,000,000	1.71	1.81	1.88	1.68	2.00			
% of U/L	11.70%	18.78%	23.94%	11.90%	26.50%			
Assume the following is cedent's CAL percent of underlying factors for State A								
	Lt & Med	Heavy	X-Heavy	All Other	Zone			
% of U/L	10%	20%	27%	10%	35%			
Redundancy or deficiency of cedent's % of underlying factors relative to ISO's most recent CAL ILFs for State A								
most recent								
most recent	Lt & Med	Heavy	X-Heavy	All Other	Zone			
most recent ELR effect	Lt & Med	Heavy 93.90%	X-Heavy 88.67%	All Other 119.00%	Zone 75.71%			

Effect of percent of underlying factor on CAL portion of CU ELR Assume the following is from ISO's most recent CAL ILF tables for State B								
Limit	Lt & Med	Heavy	X-Heavy	All Other	Zone			
2,000,000	1.66	1.94	2.14	1.73	2.53			
1,000,000	1.48	1.63	1.72	1.54	2.00			
% of U/L	12.16%	19.02%	24.42%	12.34%	26.50%%			
Assume the f	ollowing is ced	ent's CAL pe	rcent of underly	ying factors for	State B			
	Lt & Med	Heavy	X-Heavy	All Other	Zone			
% of U/L	10%	20%	27%	10%	35%			
Redundancy recent CAL I	or deficiency of LFs for State B	cedent's %	of underlying fa	actors relative t	o ISO's mos			
	Lt & Med	Heavy	X-Heavy	All Other	Zone			
ELR effect	121.60%	95.10%	90.44%	123.40%	75.71%			
CAL portion of CU ELR prior to the effect of the redundancy or deficiency of cedent's CAL percent of underlying factors relative to ISO's CAL ILFs is multiplied by the above percentages. % > 100% increases ELR; % < 100% decreases ELR CAS sensitivations in Reinstrume [June 7.2016 [Ganal Dense] 29								

Effect	t of per	cent of ur	nderlying f	factor on C	AL portion	Seneral Public Release
Assum by stat	e the foll e	owing is cede	ent's percent	age of CAL pre	mium by ISO C	GL ILF table
	ate	Lt & Med	Heavy	X-Heavy	All Other	Zone
State A	4	46%	11%	4%	39%	0%
State E	3	43%	9%	5%	43%	0%
Redundancy or deficiency of cedent's CAL $\%$ of underlying factors relative to ISO's most recent CAL ILFs by state (from slides 28 and 29)						
Sta	ate L	t & Med	Heavy	X-Heavy	All Other	Zone
State A	\	117.00%	93.90%	88.67%	119.00%	75.71%
State B	3	121.60%	95.10%	90.44%	123.40%	75.71%
Weighted average redundancy or deficiency of cedent's CGL % of underlying factors relative to ISO's most recent CGL ILFs by state						
State	Lt & Me	d Heavy	X-Heavy	All Other	Zone	Total
А	53.82%	10.33%	3.55%	46.41%	0%	114.11%
B B bes	52.29%	8.56%	4.52%	53.06%	O% CAS Seminar on June 7, 2016 Ge	118.43% Reinsurance rald Deneen 30



Effect of percent of underlying factor on CAL portion of CU ELR								
Commercial Umbrella Portfolio Expected Loss Ratio								
S t t e	LOB	Prem	Wt. Avg. LOB Prem	1/LCM ELR	Sched Mod	Man Prem LOB ELR	% UL Factor on LOB ELR	% UL Factor LOB & CU ELR
А	CGL	7,000,000	41.18%	60.61%	.89	53.94%	111.10%	59.93%
А	CAL	10,000,000	58.82%	76.92%	.96	73.84%	114.11%	84.26%
		17,000,000		70.20%		65.64%		74.24%
В	CGL	25,000,000	38.46%	58.82%	.87	51.17%	119.96%	61.38%
В	CAL	40,000,000	61.54%	86.96%	.98	85.22%	118.43%	100.93%
		65,000,000		76.14%		72.12%		85.71%
А	CU	850,000	20.73%	14.55%		13.61%		15.39%
В	CU	3,250,000	79.27%	60.36%		57.17%		67.94%
		4,100,000		74.91 %		70.78%		83.33%
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Other factors that imp	act CU ELR
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Other factors that impact CU ELR

- Impact of "outdated" ILF edition date
- Calculate the percentage difference for each ILF table between current ISO edition date and cedent's ILF edition date
- Determine weighted average difference based on premium distribution by table
- Impacts underlying CU LOB ELR
- Impact of "outdated" loss cost edition date
 Impacts underlying CU LOB ELR
- Impact of a cedent's proprietary or non-ISO credits or debits
- Example: premium size discount, umbrella ILF discount
- Impacts underlying CU LOB ELR

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Other factors that impact CU ELR

- · If auto unit rates are used instead of percent of underlying factor determine ISO auto unit charge using method described in slide 9
- Compare above calculation with cedent's commercial auto unit rates
- Impacts underlying CU CAL ELR
- Impact of cedent's CLASS PLAN factors if they are different than ISO's most recent CLASS PLAN factors
- Impacts underlying CU CAL ELR

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Other factors that impact CU ELR

- Impact of minimum premium per million charges
- Impact of umbrella ILF factors - Create ISO commercial umbrella







- Compare cedent's CU ILF table to the above weighted average CU ILF table
- · Impact of commercial umbrella judgment modification (schedule debit or
- credit) factors
- All of the above bullet points on this slide impact CU ELR after portfolio CU ELR is calculated by applying each state's weighted average CU premium against that state's calculated CU ELR CAS Seminar on Reinsurance | June 7, 2016 | Gerald Deneen 35

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Q & A		
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Thank you	
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