Reinsurance Commutation

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When an insurer and a reinsurer enter into a contract, they expect a lengthy relationship. The contract may cover policies written by the primary insurer over (for example) a 12-month period, but it may be years before the last claim covered under such policies has closed and final reimbursement has been made from the reinsurer to the insurer.

Sometimes, as this process unfolds, one party or the other will want to terminate the relationship early. When this happens, the parties have the option of executing a *commutation agreement.* The International Risk Management Institute defines a commutation agreement as "an agreement between a ceding insurer and the reinsurer that provides for the valuation, payment, and complete discharge of all obligations between the parties under a particular reinsurance contract".[1] The reinsurer typically makes an immediate payment to the primary insurer. In return, the reinsurer is absolved from all future involvement with the claims or policies covered by the agreement.

Commutations present challenges to the actuary in the areas of pricing, reserving, and accounting. This study note will focus on the accounting for, and taxation of, commutations. However, in order to understand the accounting, we will need to look at least briefly at the motivations of the parties to a commutation, and at pricing and reserving.

Motivations of the Parties

Commutations arise for many reasons:

(1) Either the primary insurer or the reinsurer may wish to exit a particular line of business. The reinsurer exits at once by commuting. For the primary insurer, commuting may be a first step, followed by a *loss portfolio transfer* to a third party. Loss portfolios may be easier to transfer without the uncertainty of a reinsurance overlay.
(2) Either the primary insurer or the reinsurer may have concerns about one another's solvency. If the reinsurer is shaky, commutation eliminates credit risk to the primary insurer. If the primary insurer is shaky, commutation provides an immediate cash infusion, and allows the reinsurer to avoid potential future problems with a liquidator who may take over the primary insurer.
(3) The relationship between the primary insurer and reinsurer may have frayed over time. There may have been disputes over claim resolution, or over contract provisions. The parties may prefer a single negotiation over commutation price, followed by termination of the relationship, to protracted argument over other issues.
(4) Even in the absence of acrimony, the primary insurer and reinsurer may have different ideas about loss development under the underlying policies. If actuaries for the two parties are setting drastically different loss reserves, a commutation at an intermediate price may leave each side convinced that it is getting a good deal.

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[1] http://www.irmi.com/online/insurance-glossary/terms/c/commutation-agreement.aspx

In some cases, the original contract executed between a primary insurer and a reinsurer may provide for commutation under given terms, after a given period of years. These provisions are typically found in reinsurance for long-tailed lines such as accident and health and workers compensation.

Pricing

The process of pricing a commutation begins with each side estimating the claim payments which would occur in the absence of commutation. To the reinsurer, these anticipated payments are loss reserves. To the primary insurer, they are reinsurance recoverables.   The reserves and recoverables will most likely include case reserves, claims incurred but with not enough reported, and claims incurred but not yet reported at all. (The latter two amounts will be classed as IBNR for the remainder of this note.) Given normal uncertainty, it is unlikely that the two parties' estimates will be identical.

Next, each party will attempt some estimate of *when* the anticipated payments will occur, and apply a discount factor to account for risk and for the time value of money. Neither the time estimate nor the discount factor will likely be identical for the two parties. One factor likely to generate different discount factors is that the reserves represent a risky liability to the reinsurer, whereas the recoverables represent a risky asset (or contra-liability) to the primary insurer.

Losses are booked on a nominal basis, but valued for purposes of pricing a commutation on a discounted basis. Discounting can be significant for long-tailed lines and (especially) for excess of loss reinsurance. It will thus sometimes happen that the price of a commutation is significantly lower than *either* party's booked estimate of nominal loss.

Each party must consider the effect of taxation on the value of a commutation. Taxation will be addressed more fully later in this note.

Finally, each party must consider unique factors relating to the motives for the commutation. For example, when solvency is an issue, the parties must consider the possible distribution of future claims as well as the expected value. The healthy party may be willing to commute at a price which generates a small expected economic loss, in return for avoiding the possibility of a major loss if claims prove larger than expected and the counterparty becomes insolvent.

Ultimately, the two parties must agree on a commutation price, or the commutation will not take place. Typically each side will have a range of acceptable prices, and negotiating skill and leverage will determine where within the range of overlap that the settlement falls.

Accounting and Reserving

The following example concerns two insurance companies, Primary and Re. Primary has been writing a book of business for the past three years, and ceding a portion of it to Re. We will assume that all Primary policies have an effective date of January 1, so that policy and accident years are the same. We will further suppose, after three years, that losses have developed as follows:

Primary:

			@ 12 mos	@24 mos	@36 mos
Paid losses	Gross	2013	1000	2000	2500
		2014	1000	2000	
		2015	1000		
	Ceded	2013	500	1000	1250
		2014	500	1000	
		2015	500		
	Net	2013	500	1000	1250
		2014	500	1000	
		2015	500		
			@ 12 mos	@24 mos	@36 mos
Reserves	Gross	2013	2000	1500	1000
(case+IBNR)		2014	2000	1500	
		2015	2000		
	Ceded	2013	1000	750	500
		2014	1000	750	
		2015	1000		
	Net	2013	1000	750	500
		2014	1000	750	
		2015	1000		
			@ 12 mos	@24 mos	@36 mos
Ultimate loss	Gross	2013	3000	3500	3500
		2014	3000	3500	
		2015	3000		
	Ceded	2013	1500	1750	1750
		2014	1500	1750	
		2015	1500		
	Net	2013	1500	1750	1750
		2014	1500	1750	
		2015	1500		

Note that this example follows the SAP convention of offsetting ceded recoverables against losses.

Now we will examine how Re accounts for its portion (the portion ceded by Primary) of the same book of business. We will assume, somewhat simplistically, that Re consistently reserves its portion of the book at 10% higher than Primary. This may be because of differences of opinion about the future of the claims outstanding, or it may simply reflect differences in reserving philosophy or methodology.

Re:

			@ 12 mos	@24 mos	@36 mos
Paid losses	Gross	2013	500	1000	1250
		2014	500	1000	
		2015	500		
			@ 12 mos	@24 mos	@36 mos
Reserves	Gross	2013	1100	825	550
(case+IBNR)		2014	1100	825	
		2015	1100		
			@ 12 mos	@24 mos	@36 mos
Ultimate loss	Gross	2013	1600	1825	1800
		2014	1600	1825	
		2015	1600		

Now we will suppose, at the end of the year 2015, that Primary and Re choose to negotiate a commutation applying to all claims within the 2013 policy year. As seen above, Primary believes that future reimbursement from Re will equal 500. Re believes that its future payments to Primary, for the 2013 policy year, will equal 550. The commutation price negotiated between Primary and Re will quite possibly be lower than either number, because of the time value of money.

We will suppose the parties agree on a price of 400. Note that Primary is considered the buyer in this transaction, and Re the seller, even though money moves from Re to Primary, because the item being sold is a liability (responsibility for future claim payments). We will assume this transaction closes before the end of 2015, and reexamine each company's triangles thereafter.

For clarity we will show the original triangles without the commutation, copied from above, alongside the adjusted triangles after the commutation, side by side:

Primary <u>without</u> commutation:

			@ 12 mos	@24 mos	@36 mos
Paid losses	Gross	2013	1000	2000	2500
		2014	1000	2000	
		2015	1000		
	Ceded	2013	500	1000	1250
		2014	500	1000	
		2015	500		
	Net	2013	500	1000	1250
		2014	500	1000	
		2015	500		
			@ 12 mos	@24 mos	@36 mos
Reserves	Gross	2013	2000	1500	1000
(case+IBNR)		2014	2000	1500	
		2015	2000		
	Ceded	2013	1000	750	500
		2014	1000	750	
		2015	1000		
	Net	2013	1000	750	500
		2014	1000	750	
		2015	1000		
			@ 12 mos	@24 mos	@36 mos
Ultimate loss	Gross	2013	3000	3500	3500
		2014	3000	3500	
		2015	3000		
	Ceded	2013	1500	1750	1750
		2014	1500	1750	
		2015	1500		
	Net	2013	1500	1750	1750
		2014	1500	1750	
		2015	1500		

Primary <u>with</u> commutation:

			@ 12 mos	@24 mos	@36 mos
Paid losses	Gross	2013	1000	2000	2500
		2014	1000	2000	
		2015	1000		
	Ceded	2013	500	1000	1650
		2014	500	1000	
		2015	500		
	Net	2013	500	1000	850
		2014	500	1000	
		2015	500		
			@ 12 mos	@24 mos	@36 mos
Reserves	Gross	2013	2000	1500	1000
(case+IBNR)		2014	2000	1500	
		2015	2000		
	Ceded	2013	1000	750	0
		2014	1000	750	
		2015	1000		
	Net	2013	1000	750	1000
		2014	1000	750	
		2015	1000		
			@ 12 mos	@24 mos	@36 mos
Ultimate loss	Gross	2013	3000	3500	3500
		2014	3000	3500	
		2015	3000		
	Ceded	2013	1500	1750	1650
		2014	1500	1750	
		2015	1500		
	Net	2013	1500	1750	1850
		2014	1500	1750	
		2015	1500		

Re <u>without</u> commutation:

			@ 12 mos	@24 mos	@36 mos
Paid losses	Gross	2013	500	1000	1250
		2014	500	1000	
		2015	500		
			@ 12 mos	@24 mos	@36 mos
Reserves	Gross	2013	1100	825	550
(case+IBNR)		2014	1100	825	
		2015	1100		
			@ 12 mos	@24 mos	@36 mos
Ultimate loss	Gross	2013	1600	1825	1800
		2014	1600	1825	
		2015	1600		

Re <u>with</u> commutation:

			@ 12 mos	@24 mos	@36 mos
Paid losses	Gross	2013	500	1000	1650
		2014	500	1000	
		2015	500		
			@ 12 mos	@24 mos	@36 mos
Reserves	Gross	2013	1100	825	0
(case+IBNR)		2014	1100	825	
		2015	1100		
			@ 12 mos	@24 mos	@36 mos
Ultimate loss	Gross	2013	1600	1825	1650
		2014	1600	1825	
		2015	1600		

Primary's gross paid losses and reserves are unchanged, as the decision to commute the claims should not affect Primary's assessment of what the gross ultimate cost of these claims will be. The commutation payment is booked as a recovery of paid losses, and ceded reserve recoverables for 2013 are set to zero.

Re experiences the commutation as an increase in paid loss, with reserves again set to zero. Re's ultimate losses decline to the extent that the commutation payment (400) was less than Re's previously booked loss reserves (550).

Note that the commutation is severely distorting to Primary's ceded and net loss triangles. Primary shows downward development in 2013 net paid losses, which would be very unusual in the absence of a commutation. Primary's ceded 2013 reserves drop to zero, and 2013 net incurred (ultimate) losses develop upward (from 1,750 to 1,850) even though there has been no change in Primary's estimate of gross ultimate loss (which remains at 3,500).

Re's loss triangles also show the effects of the commutation. Re's 2013 paid losses ratchet sharply upward between 24 and 36 months. Re's 2013 incurred (ultimate) loss develops downward, not due to any change in estimates of the ultimate number or severity of 2013 claims but only due to the commutation price (400) being lower than previously booked loss reserves (550).

Distortions to net incurred loss will show up in the loss triangles in Schedule P, Part 2 of each company's Annual Statement. Distortions to net paid loss will show up in Schedule P, Part 3.

In addition, a commutation will distort the claim closure rates in Part 5 of the reinsurer's Schedule P, since from the reinsurer's standpoint a commuted claim is considered to be closed.

Actuaries must take such distortions into account when calculating loss development factors, when assessing reserve adequacy, or when using Schedule P to review claim severity or closure trends. For this reason, commutations must be disclosed by the ceding (buying) company in Section E of the reinsurance note in the Note to Financial Statements. The disclosure must include a list of reinsurers and the amount of loss, loss adjustment expense, and earned premium commuted from each to the ceding company during the year.

The disclosure, however, does not break down the amounts commuted by accident year or line of business, and therefore will not suffice to properly adjust loss triangles. Actuaries will require more detailed internal information if and when they need to do so. Also, there is no disclosure requirement for the reinsuring (selling) company.

Consider also the effect of the commutation on Primary and Re's statutory income statements and statutory surplus. Primary has replaced an offset to liabilities booked at 500 with an asset (cash) of 400. This results in a drop of 100 in pretax income and a drop of 100 in statutory surplus (assuming the recoverables were authorized or secured and counted in statutory surplus). Re has replaced a liability of 550 with a cash payment of 400. This results in an increase of 150 in pretax income and in statutory surplus. (Tax considerations will likely have further effects on statutory surplus.)

Finally, consider that this example has been simplistic in that it involved the commutation of an entire policy year within an entire book, and examined the impact on that book as a whole. In practice, commutations may cut across lines of business and policy years. Statutory accounting principles require that "commuted balances shall be written off through the accounts, exhibits, and schedules in which they were originally recorded"[2].

In practice, this means that the single commutation price may need to be allocated among multiple lines and multiple years, and ultimately down to individual policies so that insurers can make an accurate assessment of profitability among various cuts of their book. This can be especially challenging when excess of loss reinsurance is being commuted, since the commutation payment should logically be applied only to those claims—some known and some still unknown—which ultimately pierce the excess layer.

Accounting and Taxation

For tax purposes, unpaid losses are valued on a discounted basis, as discussed elsewhere in the syllabus.[3] Companies determine the appropriate discount factor by accident year and line of business, by using either their own or IRS payment patterns and IRS published discount rates.

In the case of a commutation, note that the buying and selling company need not, and probably will not, have applied the same discount factor to the relevant unpaid losses. First, in the case of nonproportional reinsurance, the reserves will be classified according to the originating line of business by the ceding (buying) entity, but as "nonproportional assumed liability" reinsurance by the reinsuring (selling) entity.

In the case of quota share (proportional) reinsurance, the ceding and reinsuring entities will classify the business the same. However, one company may elect to use its own historical payment patterns, and the other may use IRS payment patterns. Or, both companies may use their own payment patterns, which will inevitably be different.

For our example, we will assume that Primary applies a discount factor of 0.875, and Re applies a discount factor of 0.85. We will further assume that both companies are facing an effective marginal tax rate of 35%, although tax rates also need not be equal, as there are a myriad of factors that may influence a company's marginal tax rate.

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[2] National Association of Insurance Commissioners, *Accounting Practices and Procedures Manual*, 2012, Statement of Statutory Accounting Principles 62R, "Property and Casualty Reinsurance," paragraph 63.
[3] Odomirok, K.C.; McFarlane, L.M.; Kennedy, G.L; and Brenden, J., *Financial Reporting Through the Lens of a Property/Casualty Actuary*, Casualty Actuarial Society, 2012, pages 248-251

As a result of the commutation, Primary therefore experiences a taxable income gain of:

$400 - (500 * 0.875) = -37.5$

and a tax decrease of $37.5 * 35\% = 13.13$.

Re experiences a taxable income gain of

$(550 * 0.85) - 400 = 67.5$

and a tax increase of $67.5 * 35\% = 23.63$. Note the asymmetry in results, caused by both the differing reserve amounts and the difference in discounting. The calculated tax increases and decreases apply over and above whatever other income taxes the two companies may have incurred during the year; they represent the result of the commutation itself. Each company should of course consider the tax impact of commutation at various prices as part of the process of negotiating the commutation price.