

Contingent Capital vs. Contingent Reverse Convertibles for Banks and Insurance Companies¹

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Contingent capital is a type of put option that entitles a company to issue new securities on pre-negotiated terms, often following the occurrence of one or more risk-based triggering events. Since the 1990s, contingent capital has been used by insurance companies and non-financial corporations.² But commercial banks have not historically relied on contingent capital, and indeed they have often preferred to *provide* it to other types of firms.

As the subprime problem burgeoned into a full-blown credit and liquidity crisis in 2007 and 2008, banks found themselves largely unable to raise significant new equity quickly from parties other than sovereign wealth funds and governments. Some banks have thus recently begun to consider contingent capital as a means of pre-arranging recapitalizations in any future crises. U.S. and European banking regulators have endorsed the idea in principle.³ And the U.K. Treasury reached an agreement with Lloyds Banking Group plc in November 2009 for Lloyds to issue “Enhanced Capital Notes”—that is, subordinated debt that can be converted into common stock if Lloyds’s core regulatory capital falls below 5% of its regulatory risk-weighted assets.

In an article in the Spring 2002 issue of this journal, I reviewed contingent capital facilities with an emphasis on their use by non-financial corporations.⁴ In this article, I review contingent capital for banks and insurance companies.

After providing some background on financial and regulatory capital, I describe contingent capital in general and explore the mechanics, benefits, and costs of the main types of facilities used by banks and insurance companies to date. I then consider the similarities and differences between contingent capital and “contingent reverse convertibles” like the Lloyds Enhanced Capital Notes. Although such reverse

convertibles are not, strictly speaking, a form of contingent financial capital, they offer banks the potential to recapitalize themselves rapidly in the face of a crisis without having to turn to governments and taxpayers. But many are skeptical about the prospects for success of these financial instruments, which will likely depend heavily on how they are priced. A final section compares contingent capital to insurance, which, although fundamentally distinct from contingent capital, does provide another means for banks to protect their capital base.

Financial and Regulatory Capital

Securities issued by banks and insurance companies⁵ with the aim of financing their operations are known as paid-in financial capital.⁶ Among the most important characteristics that distinguish different financial capital claims are differences in seniority, maturity (or “tenor”), voting rights, call provisions, and the nature of periodic cash distributions (for example, mandatory or discretionary, cumulative or non-cumulative).

Financial Capital

The main types of securities issued by banks and insurance companies are common stock, senior debt, subordinated debt, preferred stock, and hybrids. Traditional preferred stock is a perpetual security with discretionary non-cumulative distributions and is senior to only common stock in the issuer’s capital structure. Hybrid securities (that include convertibles, adjustable-rate preferred securities, and trust-preferred stock) are either preferred stock with debt-like features or deeply subordinated debt with equity-like features.⁷

One important economic function of financial capital is to absorb losses arising from the issuer’s business and financial risks.⁸ The loss-absorbency of a security depends on both its

1. I am grateful to Darrell Duffie, Paul Forrester, Ken French, Barb Kavanagh, Andrea Neves, and Tom Skwarek for comments on earlier drafts. The usual disclaimer applies, and the views expressed herein are mine alone and do not necessarily represent the views of any organization with which I am affiliated or their clients.

2. See C. L. Culp, *Structured Finance and Insurance* (New York: Wiley, 2006).

3. See W. C. Dudley, “Some Lessons from the Crisis,” *Remarks at the Institute of International Bankers Membership Luncheon (New York City)* (October 13, 2009), M. King, *Speech to Scottish Business Organizations (Edinburgh)* (October 20, 2009), D. K. Tarullo, “Confronting Too Big to Fail,” *Speech at the Exchequer Club (Washington, D.C.)* (October 21, 2009), and B. S. Bernanke, “Financial Regulation and Supervision After the Crisis: The Role of the Federal Reserve,” *Speech at the Federal Reserve Bank of Boston 54th Economic Conference (Chatham, Mass.)* (October 23, 2009).

4. See C. L. Culp, “Contingent Capital: Integrating Corporate Financing and Risk Management Decisions,” *Journal of Applied Corporate Finance* Vol. 15, No. 1 (Spring 2002).

5. References here to insurance companies also include reinsurance companies unless otherwise noted.

6. Banks and insurance companies also rely on customer liabilities like demand deposit accounts and insurance policies to raise funds. Customer liabilities are not generally considered financial capital.

7. See S. Sahara and A. Daws-Chew, *Hybrid Capital Securities: A Definitive Guide for Issuers and Investors* (London: IFR Market Intelligence & Thomson Financial Group, 2007).

8. See R. C. Merton and A. Perold, “Theory of Risk Capital in Financial Firms,” *Journal of Applied Corporate Finance* Vol. 6, No. 3 (Fall 1993). For a specific discussion of risk capital in the context of catastrophic insurance and reinsurance, see C. L. Culp and K. J. O’Donnell, “Catastrophe Reinsurance and Risk Capital in the Wake of the Credit Crisis,” *Journal of Risk Finance* Vol. 10, No. 5 (2009).

depth of subordination and the nature of the security itself. Common stock is fully loss-absorbing, whereas senior debt is loss-absorbing only after the bank or insurance company has failed. Preferred stock and hybrids are loss-absorbing in the event of insolvency but may also provide partial loss-absorbency while the firm is still a going concern—for example, through the cancellation or deferral of dividends or coupons.

Regulatory Capital

Banks and insurance companies are subject to minimum capital requirements. Although specific regulations differ across jurisdictions and firms, the common regulatory objective is to assess the capital adequacy of regulated financial institutions by comparing their risks with their loss-absorbing financial capital. “Regulatory capital” is loss-absorbing financial capital that can be used in varying amounts and types to satisfy minimum capital requirements.

Banks. Primary responsibility for enforcing minimum bank capital requirements lies with national central banks and regulators in the countries where the banks are domiciled. Cross-border harmonization is achieved largely through guidance from the Bank for International Settlements (BIS).

In 1988, the BIS promulgated the Basel Capital Accord to strengthen bank safety and soundness and level the international playing field. Together with its substantive amendments,⁹ the Accord specifies minimum capital requirements for internationally active banks in the Group of 10 industrialized countries. Risk weights are assigned to the bank’s assets, and risk-weighted assets are then compared to the bank’s regulatory capital to assess capital adequacy. Total eligible regulatory capital must be no less than 8% of the bank’s risk-weighted assets.

Under the Accord, Tier 1 regulatory capital must be at least 4% of the bank’s risk-weighted assets. Core Tier 1 capital comprises mainly paid-in common stock and retained earnings, whereas non-core Tier 1 capital may include non-cumulative perpetual preferred stock, consolidated minority equity interests, and certain hybrids.

The remaining 4% of a bank’s total capital requirement can be satisfied with Tier 2 capital, which includes undisclosed and revaluation reserves, general loan-loss reserves, subordinated debt, and some hybrids. Upper Tier 2 capital is perpetual and has discretionary distributions, whereas Lower Tier 2 capital securities have fixed maturity dates and fixed coupons.¹⁰

The large losses sustained by banks in 2007 and 2008 highlighted the economic distinctions between Tier 1 and

Tier 2 regulatory capital. Because subordinated debt (Lower Tier 2 capital) is loss-absorbing only after a bank fails, banks needed to raise new equity (core Tier 1 capital) to stay afloat notwithstanding Tier 2 capital eligibility. When that proved difficult, banks were forced to issue stock to the only willing buyers—mainly sovereign wealth funds and governments.

As a result, the BIS has of late taken a dim view of Tier 2 capital, and even hinted at abolishing it.¹¹ The BIS has also been working to revise its Tier 1 capital definitions. On September 6, 2009, the Group of Central Bank Governors and Heads of Supervision that oversee the Basel Committee on Banking Supervision agreed to a number of changes in eligible capital definitions, including increased “quality, consistency, and transparency”¹² for Tier 1 capital and requiring that the predominant type of Tier 1 capital should be common stock and retained earnings. The Committee also advocated the introduction of a leverage ratio requirement.¹³

It remains to be seen how the revised definitions will treat hybrids, which have been gradually integrated into regulatory capital requirements over time in a haphazard and inconsistent manner.¹⁴ At present, banks may use hybrids to account between 15% and 35% of their Tier 1 capital, depending on the hybrid itself and the domicile of the bank.¹⁵

Further confusing matters concerning the permissible use of hybrids, governments frequently ignored or skirted BIS hybrid guidelines in their own bank investments during the height of the credit crisis. The German government, for example, purchased €8.2 billion of hybrids from Commerzbank that share losses with common equity but are redeemable at par if no further losses occur. Those hybrids accounted for about 60% of Commerzbank’s Tier 1 capital at the time—well above the 35% maximum. One analyst described government usage of hybrids during the crisis as follows: “[R]egulators are changing the rules as they go along, governments are arbitraging them, and markets are ignoring them.”¹⁶

Insurance Companies. Insurance company regulatory capital is generally evaluated in terms of total claims-paying resources, which include both “hard” and “soft” capital.¹⁷ Hard capital includes loss reserves and the policyholders’ surplus (that is, the net worth of the insurance company including paid-in share capital). Soft capital includes unearned premium reserves¹⁸ and qualified contingent capital.

Insurance regulators have historically been more willing to recognize contingent capital as qualified regulatory capital than bank regulators. Trust-issued contingent capital (which will be

9. The substantially revised “Basel II” regime focuses mainly on amending the Accord’s risk-weighted asset definitions and does not make significant changes to definitions of eligible capital (apart from some recent proposals discussed later in the article).

10. Tier 3 capital can be used solely for market risk and is not discussed here.

11. D. Wood, “Basel Committee Looks at Tier-One Capital Quality,” *Risk* (March 2009).

12. Bank for International Settlements, “Comprehensive Response to the Global Banking Crisis,” *Press Release* (September 7, 2009).

13. *Id.*

14. See, e.g., Bank for International Settlements, “Instruments Eligible for Inclusion in Tier I Capital,” *Press Release* (October 27, 1998), and Sahara and Daws-Chew, *op. cit.*

15. D. Wood, “Capital Smorgasbord,” *Risk* (March 2009).

16. Wood, “Capital Smorgasbord,” *op. cit.*

17. For a discussion of how regulatory capital recognition will change under the new EU “Solvency II” regime, see C. Olliver, “Eligible Capital for Insurance Companies,” in *Hybrid Capital Securities: A Definitive Guide for Issuers and Investors*, S. Sahara and A. Daws-Chew, eds. (London: IFR Market Intelligence & Thomson Financial Group, 2007).

18. The UPR reflects premium written and collected but not yet recognized as income.

explained later), for example, is accorded 100% recognition as soft capital by both regulators and rating agencies.¹⁹

Contingent Capital

Contingent capital is a type of put option that entitles a company to issue new paid-in financial capital on or before some future date. Unlike paid-in financial capital, the contingent capital purchaser/issuer receives no cash and issues no new securities when the facility is placed—and, indeed, it must periodically pay a premium (called a “commitment fee”) to the providers of the contingent capital.

Common Features

Like an ordinary option, contingent capital can be described by the underlying asset, the time at which the option can be exercised, and the strike price at which the new security can be sold. Contingent capital facilities are also distinguished based on their “triggers” and by the nature of the facilities themselves (either standalone or trust-issued).

Underlying Asset. Contingent capital gives a firm the option to issue new debt, equity, or hybrid securities. In most cases, the terms of the underlying security are defined and set when the contingent capital facility is executed, not when “exercised”—that is, not when the financial capital itself is issued.

To date, most contingent capital issuers have attempted to avoid dilution and violation of covenants in existing debt (including those pertaining to capital structure seniority). For this reason, most facilities have involved the contingent issuance of deeply subordinated long-term debt, hybrids, or preferred stock.

If a bank or insurance company seeks to raise contingent capital that will satisfy regulatory capital requirements *when issued*, moreover, the underlying must reflect the type of regulatory capital the firm needs to raise. Many insurance companies, for example, have used contingent capital to help preserve underwriting capacity following a large industry-wide loss event. Because such events reduce aggregate industry capital and put upward pressure on premiums, insurance carriers do not want low regulatory capital to prevent them from writing new business at such times.²⁰ “Surplus notes” have thus been a popular underlying for insurance-based contingent capital facilities.

Tenor. Regardless of the tenor of the underlying security, the contingent capital facility itself generally has a finite life. A contingent equity facility, for example, may result in the issuance of new perpetual claims if and when it is drawn. But the facility itself gives the issuer the right to issue those claims for only a limited period of time.

Exercise/Strike Price. A contingent capital facility specifies the price at which the underlying securities may be issued. A fixed strike price is pre-defined, whereas a variable strike price is usually indexed to some company-specific or market-determined price or rate. A contingent capital facility to issue subordinated debt, for example, might specify a schedule of issuance prices that depend on the issuer’s credit rating at the time of exercise.

Exercise Style and Triggers. Like traditional options, contingent capital may entitle buyers to issue securities on several specific dates (a Bermuda-style option), on the date the facility expires (a European-style option), or any time during the facility’s life (an American-style option). Most contingent capital facilities to date have been American-style.

Contingent capital facilities, moreover, also usually include one or more additional triggers that must be pulled before the option can be exercised. Such triggers may be tied to a variable under the issuer’s influence (for example, credit-related losses above a certain threshold) or to exogenous variables (for example, the maximum sustained wind speed of a tropical cyclone upon landfall or the declaration of a banking crisis by a regulator).

Multi-trigger facilities are used in the insurance industry to help insurance purchasers tailor their risk coverage and control premium costs. In an insurance contract, the first trigger is the incurrence of insurable losses. Any second trigger is usually chosen to have relatively low or negative correlation with the insurable loss while still delivering the purchaser’s desired risk protection. All else equal, the lower the correlation between insurable losses and the second trigger, the lower the premium.²¹

In keeping with insurance terminology, we define the first trigger in a contingent capital facility to be the intrinsic value of the facility. In other words, we assume a facility will only be exercised if it is in-the-money.²² The second (and perhaps third) triggers then reflect any other condition(s) that must be met for the facility to be drawn.

Standalone Contingent Capital Facilities

Standalone contingent capital facilities are put options purchased in isolation by a bank or insurance company. Investors earn a commitment fee for agreeing to purchase financial capital in the future, but need not put up cash to purchase the securities until they are issued.

Standalone facilities expose contingent capital purchasers to the credit risk of facility providers. Most facilities in the past have been placed by capital providers with relatively strong credit ratings. But if credit risk is a concern of the bank

19. See, e.g., Standard & Poor’s, “Criteria: Bond Insurance Industry Overview And Analytical Focus,” *RatingsDirect* (June 29, 2006).

20. See Culp and O’Donnell, *op. cit.*

21. For examples, see Culp (2006), *op. cit.*, Chapter 25.

22. The “moneyness” of the option will, of course, be related to the issuer’s access to alternative sources of capital. If markets are illiquid and the contingent capital facility is the only available means to satisfy a regulatory requirement or pressing financial need, for example, then the facility is in-the-money virtually by definition.

or insurer, collateral and letters of credit may be demanded from the contingent investors.

Contingent Preferred Stock (Royal Bank of Canada CLOCS®).

Since the late 1990s, Swiss Re has offered a standalone contingent capital product known as Committed Long-Term Capital Solutions/Securities (CLOCS®). Over the past decade, Swiss Re has arranged more than a dozen such facilities with insurance companies and non-financial corporates totaling more than \$3 billion.

Swiss Re typically provides and structures CLOCS as a type of “bridge capital” that provides financial flexibility to issuers when they need it, while encouraging them to replace the capital issued under the facility with more loss-absorbing long-term capital within a few years. To accomplish this, the securities issued under most CLOCS to date have had relatively high spreads over LIBOR and could be prepaid by issuers without penalty. These features also made it easier for Swiss Re to syndicate the facilities to investors with relatively short-term investment horizons.

One of the few contingent capital deals done by a bank was a CLOCS negotiated in October 2000 between Royal Bank of Canada (RBC) and Swiss Re. Under the facility, Swiss Re agreed to pay C\$200 million (US\$133 million) in exchange for RBC preferred stock.²³ The preferred shares could be issued only after RBC incurred certain “exceptional” credit losses.

The RBC CLOCS deal was not motivated by regulatory capital considerations, nor was the facility afforded regulatory capital recognition by the Bank of Canada until drawn. Before the CLOCS deal was in place, RBC maintained excess reserves as a cushion above regulatory minimums. RBC was concerned that significant unexpected credit losses would deplete that buffer and force the bank to replenish its excess reserve cushion on unfavorable post-loss financing terms. RBC was also concerned about the capital inefficiency of holding too much in fully funded excess reserves against what was viewed as a low-probability loss event.

Thus, the Swiss Re CLOCS facility provided RBC with a capital-efficient method to maintain excess reserves and improve its return on equity by swapping balance sheet reserves for contingent capital. As RBC executive David McKay explained, “It costs the same to fund your reserves whether they’re geared for the first amount of credit loss or the last amount of loss... What is different is the probability of using the first loss amounts versus the last loss amounts. Keeping [paid-in] capital on the balance sheet for a last loss amount is not very efficient.”²⁴

Given its relatively small size, the RBC CLOCS was not syndicated—the entire position was taken by Swiss

Re. The preferred shares, moreover, were not convertible or mandatorily redeemable. If exercised, Swiss Re would simply become a preferred shareholder of RBC, free to hold or sell its securities like any other investor.

Contingent Convertible Preferred Stock (CatEPuts®).

Designed by insurance broker Aon, a Catastrophe Equity Put (CatEPut®) enables reinsurance companies with catastrophic property and casualty (P&C) exposures to issue new preferred or convertible preferred stock following a natural catastrophe that depletes the reinsurer’s regulatory surplus.

The first CatEPut was placed in the fall of 1996 for RLI Corporation, a specialty P&C insurer that sustained large losses following the 1994 Northridge earthquake. The second trigger in the RLI CatEPut was a large catastrophe-based P&C loss well in excess of RLI’s traditional reinsurance coverage.

RLI was primarily concerned with an erosion of its regulatory surplus that would jeopardize its underwriting capacity following a large catastrophe. Rather than adding to its reinsurance coverage (expensive) or waiting to procure new capital on a post-loss basis (time-consuming and potentially expensive), RLI secured a commitment from Centre Re to purchase up to \$50 million in preferred shares following the triggering event.²⁵ RLI had the right to refinance or redeem the preferred shares, and Centre Re had the right to convert the preferred stock into common after two years. The commitment fee for the facility was approximately 20-25% of the prevailing catastrophe reinsurance rates at the time.²⁶

A number of other CatEPuts were issued after the original RLI deal. In July 1997, for example, LaSalle Re purchased a \$100 million CatEPut entitling it to issue preferred stock following a catastrophe. The investor was “a syndicate of highly rated purchasers.”²⁷ The premium for the facility was \$2.35 million per annum, equivalent to a roughly 2% rate on line (ROL) and well below the ROL on a traditional catastrophe reinsurance program.

Andrew Cook, then CFO and treasurer of LaSalle, described the benefits of LaSalle’s CatEPut as follows: “First, we immediately receive an infusion of capital after a catastrophe, at terms and conditions that might not be available in a post-event marketplace. More important, it allows us to seize the opportunities that will present themselves in a post-event marketplace. Our underwriters will be in our offices writing business, not on the road trying to raise capital.”²⁸

Contingent Surplus Notes (Farmers Insurance CLOCS). Just before the advent of the credit crisis in 2007, Swiss Re closed a deal with Farmers Insurance Exchange (a U.S. cooperative affiliate of Zürich Financial Services) to provide Farmers

23. See R. Banham, “CLOCS Ticking to New Market,” *Reactions* (April 2001).

24. Banham, *op. cit.*

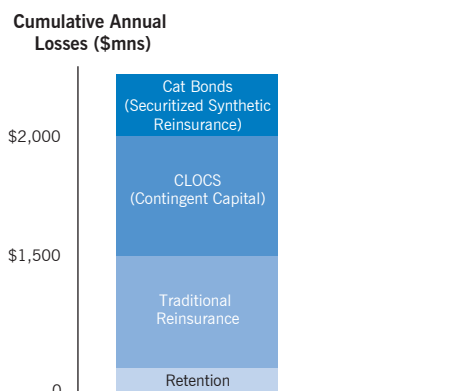
25. *Aon Insights* (Edition 4, 1999).

26. A. Punter, “Securisation of Insurance Risk,” *Aon White Paper* (April 1999).

27. R. Hunter, “Preparing for Catastrophe,” *Derivatives Strategy* (November 1998).

28. Hunter, *op. cit.*

Figure 1 Potential Farmers Risk Capital Structure



with contingent qualified regulatory capital. The tenor of the Farmers CLOCS facility is five years, during which Farmers has the option to issue \$500 million in 10-year surplus notes in the event of a Gulf Coast windstorm that generates over \$1.5 billion in claims for Farmers. In addition to Swiss Re, the other contingent investors included Calyon, Citibank, and Commerzbank.²⁹

The primary objective of Farmers was to preserve underwriting capacity following a large Texas hurricane. Like the RLI CatEPut, the Farmers CLOCS was also designed to complement rather than supplant the existing Farmers risk management program. Although Farmers has not yet issued any catastrophe bonds (to provide additional excess-of-loss reinsurance in the catastrophic layer), Figure 1 illustrates what the Farmers risk capital structure may eventually look like.

Trust-Issued Contingent Capital

Instead of purchasing standalone contingent capital, banks and insurance companies can also issue contingent capital through a trust. Trust-issued contingent capital is fully paid-up by investors, thus reducing the credit exposure of the contingent capital purchaser. Yet, like standalone contingent capital, the bank or insurance company does not obtain any cash until the contingent capital put is exercised and the new securities are issued.

The mechanics of a trust-issued contingent capital facility are illustrated in Figure 2. The trust itself is a special purpose entity (SPE) that is unaffiliated with the contingent capital purchaser. Securities are issued to investors by the trust, and the proceeds are invested in relatively low-risk collateral (as dictated by rating agency requirements). The insurance company or bank then purchases a put option from the trust entitling it to issue new securities.

As long as the put option written by the trust remains unexercised, investors in the trust's securities receive the interest earned on the trust collateral plus the put option premium paid by the bank or insurance company. If the put is exercised, the collateral investments are liquidated and the proceeds paid to the bank or insurance company to finance the purchase of their newly issued securities. Those securities are then distributed to the trust, after which investors receive principal and interest based on those newly issued securities.

ABC and CPS Securities. Trust-issued contingent capital has been an important source of soft capital for monoline insurers over the past decade. A monoline insurance company is a financial guaranty insurance company that underwrites only credit insurance (usually for bonds). Over the past decade, most of the major monolines have relied on either of two forms of trust-issued contingent capital: Asset-Backed Capital Commitment Securities (ABC Securities) and Committed Preferred Custodial Trust Securities (CPS Securities). In its criteria for rating monoline insurers, Standard & Poor's (S&P) indicates that "these facilities can provide essentially unquestioned access to funds without credit quality or market value risk."³⁰

ABC Securities are designed to allow only one new infusion of capital. When the preferred stock or surplus notes are issued, the new securities are distributed by the trust to investors and the trust itself is liquidated. CPS Securities, by contrast, allow the monoline to issue preferred stock to the trust and later redeem the issue. If the preferred shares are redeemed, the proceeds received by the trust are reinvested in high-quality collateral, and the insurer resumes payment of the put option premium. This process of issuing and then redeeming new preferred stock can be repeated as often as the insurance company wishes over the life of the facility.

Whereas investors in ABC Securities receive the actual financial capital claim when the monoline issues it, investors in CPS Securities continue to hold CPS Securities even after the put option has been exercised. For investors, this is economically equivalent to holding the newly issued security because that new security is the sole asset of the trust that collateralizes the CPS Securities.

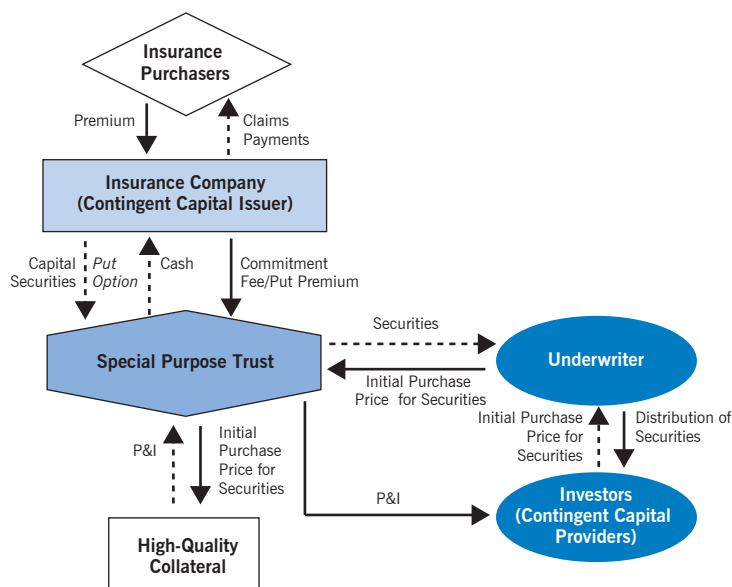
Auction-Rate Coupons. ABC and CPS Securities have often been issued as auction-rate securities (ARs) that pay an interest rate to investors at a rate determined periodically (e.g., every 28 days) through a Dutch auction remarketing process. If the auction fails as a result of insufficient bids (as occurred in 2007), the coupon rate paid to investors resets to a penalty rate until the next successful auction.

To reduce the risk of a maturity mismatch between the trust investments and the auction reset dates, most ABC and

29. "Cat Capital Solution," *Structured Credit Investor* (July 18, 2007).

30. S&P (2006), *op. cit.*, p. 7.

Figure 2 Trust-Issued Contingent Capital Facility



CPS Securities are collateralized with highly rated commercial paper (CP) maturing before the next auction date.³¹ Payments for any securities issued by the insurance companies, moreover, also occur on auction reset dates, thereby virtually eliminating market risk on the trust collateral.³²

Unlike other contingent capital structures, ABC and CPS Securities are single-trigger facilities—that is, the monoline sponsor can issue the new securities any time the option is in-the-money. But also unlike other structures, the premiums paid by the insurance companies are variable. The put premium is reset periodically to whatever rate is required to close the funding gap between the trust’s investment income (net of fees and expenses) and the latest auction-determined rate to be paid to investors.

Performance During the Crisis. At the end of 2006, financial guarantors had a total of \$2.4 billion outstanding in trust-issued contingent capital. Nine of the 15 rated bond insurers at the time relied on such facilities as an important source of soft capital.³³ Table 1 summarizes the use of these facilities by the major monolines and compares their sizes to other claims-paying resources.

The risk of auction failures for ARSs was well-known long before the advent of the credit crisis and was considered a very remote possibility (especially given the negligible numbers of failed ARS auctions prior to late 2007 and 2008). Standard & Poor’s (S&P) stated in 2006: “Acknowledging the risk of

a failed or dysfunctional auction, Standard & Poor’s believes issuing auction-rate securities to fund a committed capital facility is most appropriate for those bond insurers that are not part of a larger group, where there are a greater number of potential sources of adverse news that could cause an auction to fail to properly function. Specifically, bond insurers owned by a large, diversified group or by a small pool of investors are limited to auction-rate funded facilities equal to 10% of adjusted statutory capital (statutory capital plus committed capital facilities). All publicly held monolines can have auction-rate funded facilities equal to 20% of adjusted statutory capital.”³⁴ In other words, S&P considered the risk of auction failures to be so unlikely that up to 20% of financial guarantors’ regulatory capital could be provided through such facilities.

Although the big monolines’ financial disclosures indicated few credit losses in 2007, some market participants began to worry about some of the financial guarantors and their subprime exposures in the late third and fourth quarters of 2007. Auctions to reset ABC and CPS coupons began to fail in August and September 2007. Many investors in ABC and CPS Securities wishing to sell those securities thus could not do so through the auction re-marketing process.³⁵ Those same investors, of course, also began to receive the maximum penalty rate for their ongoing investment in the securities.

31. In the event that funds cannot be fully invested in CP, the investment manager must invest the remaining amount in short-term Treasuries that mature before the next auction date.

32. Investors did, however, bear the risk of default by the CP issuer.

33. Standard & Poor’s, *Global Bond Insurance 2007* (2007), pp. 14-15.

34. Standard & Poor’s, *Global Bond Insurance 2007* (2007), p. 7.

35. Secondary market and synthetic sales of the securities may still have been possible.

Table 1 **Claims-Paying Resources of Primary Financial Guarantors and Reinsurers**
as of 12/31/2006 (\$ millions)

	Statutory Capital	Unearned Premium Reserves	Present Value of Annual Premiums	Trust Contingent Capital
Panel (a): AAA-Rated Primary Financial Guarantors				
Assured	916.7	238.9	356.9	200.0
Ambac	6,397.6	3,373.4	2,404.8	800.0
CIFG	668.4	282.3	227.9	0.0
FGIC	2,405.0	1,378.9	630.8	300.0
FSA	2,554.1	2,070.7	827.9	200.0
MBIA	6,558.7	3,664.5	2,309.4	400.0
XLCA	227.9	83.2	213.5	0.0
Total	24,878.5	13,749.2	8,622.4	2,400.0
Panel (b): Monoline Reinsurers and Niche Companies				
ACA	387.1	249.8	245.6	0.0
AG Re	741.0	444.1	230.0	0.0
BluePoint	304.5	69.3	90.1	0.0
Channel Re	455.0	188.0	211.0	100.0
PMIG	199.3	1.6	0.0	0.0
Radian Asset	1,337.9	826.5	353.4	150.0
RAM Re	403.4	224.7	161.4	50.0
XLFA	1,321.9	653.3	359.7	200.0
Total	24,878.5	13,749.2	8,622.4	2,400.00

Source: Standard & Poor's, Global Bond Insurance 2007.

When several major monolines disclosed significant losses for the fourth quarter of 2007, a painful series of downgrades began in early 2008. And as of this writing, only two of the major monolines (Assured Guaranty and its affiliate Financial Security Assurance) have retained their AAA ratings. Most of the other major financial guarantors still rated AAA at the end of 2007 have now been severely downgraded, with some having entered run-off mode.

Nevertheless, trust-issued contingent capital did what it was designed to do for the issuers during the crisis. Virtually all of the facilities were drawn and converted to surplus-bolstering financial capital. Although the amounts of the facilities proved inadequate to save some of the monolines given their huge losses, the facilities themselves performed as intended.

Contingent Reverse Convertibles

Since the onset of the credit crisis, numerous suggestions have been made (with varying degrees of specificity) for banks to issue contingent reverse convertibles (CRCs) to raise core Tier 1 regulatory capital on an event-contingent basis.³⁶ Whereas traditional convertibles give *investors* the option to convert debt into equity, reverse convertibles give *issuers* that right.³⁷ Reverse convertibles have been issued mainly by banks as investment vehicles for their customers and are thus usually exercisable into the already-issued stock of some other firm.³⁸ Current proposals, however, involve banks issuing reverse convertibles exercisable into their own newly-issued common stock following one or more trigger events.

36. Even before the crisis, the use of reverse convertibles by banks for this purpose had been proposed in M. J. Flannery, "No Pain, No Gain": Effecting Market Discipline via 'Reverse Convertible Debentures'," in *Capital Adequacy Beyond Basel: Banking, Securities, and Insurance*, H. S. Scott, ed. (Oxford University Press, 2005).

37. Reverse convertibles and contingent reverse convertibles should not be confused with contingent convertibles or "CoCos." Introduced by Merrill Lynch in 2000, CoCos are convertibles with a second trigger tied to the issuer's stock price, essentially turning the

normal call option embedded in a convertible into an up-and-in barrier call option. See C. Marquardt and C. Wiedman, "Earnings Management Through Transaction Structuring: Contingent Convertible Debt and Diluted Earnings per Share," *Journal of Accounting Research* Vol. 43, No. 2 (May 2005).

38. For example, Barclays launched 27 reverse convertibles in late April 2009 with an emphasis on conversions into energy company stocks. See S. Morrell, "Barclays Makes Energetic Leap into Reverse Convertibles," *Structured Products* (April 20, 2009).

Despite the references to such financial instruments as “contingent capital,”³⁹ “contingent capital notes,”⁴⁰ and “contingent capital certificates,”⁴¹ CRCs are *not* contingent financial capital. Whether originally issued as debt or hybrids, CRCs are already a form of financial capital at the time of their original issuance, and are thus more accurately described as financial capital that can be contingently converted into common stock.

Lloyds Banking Group’s Enhanced Capital Notes

Issuance of CRCs by banks has been almost non-existent to date.⁴² The first recent such issue was announced by Lloyds Banking Group plc (LBG) on November 3, 2009, as part of an agreement with the U.K. Treasury for LBG to raise £21bn in fresh capital. LBG’s recent agreement and proposed recapitalization was motivated by the bank’s desire to exit the U.K. Asset Protection Scheme (APS), which provides banks with asset insurance in exchange for a fee paid to the U.K. Treasury.⁴³ LBG is currently 43.4% owned by the U.K. government, but ongoing APS participation could have increased the government’s stake to about 62%, as well as costing LBG an estimated additional £15.6 billion in fees.^{44,45}

Of the £21bn new capital LBG needs to raise, £13.5bn will come from a rights offering and £7.5bn will come through an offering to exchange certain existing securities for CRCs that Lloyds calls Enhanced Capital Notes (ECNs). The ECNs will originally be subordinated debt (Lower Tier 2 capital) with fixed maturities ranging from 10-15 years.⁴⁶ They are convertible by Lloyds into common stock if LBG’s core Tier 1 capital ratio falls below 5%.⁴⁷

The existing securities eligible for conversion into ECNs include Upper Tier 2 securities (£2.52 billion), Tier 1 securities (£7.68 billion), and preferred stock with an aggregate liquidation preference of £4.09 billion. In return for giving up more senior for more subordinated claims, investors in ECNs will reportedly receive between 1.5% and 2.5% in additional coupon income *vis-à-vis* the existing securities.⁴⁸

At the same time LBG announced its new ECN issue, it also indicated that the EC has required that Lloyds *not* pay

any discretionary coupons and *not* call its existing hybrids for the next two years. LBG is also prohibited from paying dividends on its common stock for two years.

CRCs in General

Apart from the Lloyds ECN issue, there are a wide range of possible structures that could be issued by banks under the CRC rubric. Some of the design aspects of these securities, moreover, have been hotly debated.⁴⁹

Security Type. A CRC could be originally issued as virtually any type of debt, preferred share, or hybrid security. Because regulatory capital is the primary motivation behind the issuance, however, the capital treatment of the original (pre-conversion) security is likely to be important to prospective CRC issuers.

Especially with the recent proposals by Basel to redefine Tier 1 capital and impose leverage ratio requirements on banks, some banks may not wish to issue CRCs as debt. Even issuing a CRC as a hybrid will take careful planning given the ambiguities and limitations on hybrids in a bank’s regulatory capital structure.⁵⁰

Political factors may also prod some banks toward issuing CRCs as non-core Tier 1 hybrids instead of Tier 2. In the midst of the crisis, for example, issuers were concerned that deferring coupons on subordinated debt would send a negative signal to the market. And investors feared proposals by some European regulators to force banks to defer coupons on Lower Tier 2 capital securities.⁵¹

The problem with issuing CRCs as non-core Tier 1 capital is, of course, the price. Tier 1 preferred securities typically yield around 9%, as compared to Lower Tier 2 yields of about 6%.⁵² Taking into account the “option premium” in the form of higher yields required by investors, non-core Tier 1 capital convertible into core Tier 1 capital could well be prohibitively costly for issuers. Even Lower Tier 2 capital plus the option premium might not be attractive to banks relative to issuing new core Tier 1 capital outright.

A significant benefit of the CRC structure, however, is guaranteed and immediate access to fresh core capital at a time when it may otherwise be hard to obtain. Some

39. See, e.g., Tarullo, *op. cit.*

40. R. Thomas, “What is Contingent Capital?” *Bank of America Research Note* (October 14, 2009).

41. M. Flannery, “Stabilizing Large Financial Institutions with Contingent Capital Certificates,” *Working Paper* (October 6, 2009).

42. There are isolated exceptions. In the early 1990s, for example, a European bank issued a dual-trigger reverse convertible that originally issued as senior debt with an option to be converted into preferred stock after a conversion decision made jointly by the issuing bank and the local central bank.

43. LBG entered the APS in March 2009. See, e.g., Her Majesty’s Treasury, *Asset Protection Scheme – Agreement with Lloyds* (March 7, 2009).

44. See J. Glover, “Lloyds to Raise Capital from CoCo Securities, Stock,” *Bloomberg* (November 3, 2009).

45. Even under the new agreement, LBG will still owe the Treasury about £2.5bn for the protection it has enjoyed under the APS over the past eight months. See Lloyds Banking Group, “Proposed Alternative to the Government Asset Protection Scheme comprising a Rights Issue and Liability Management Exercise by way of Exchange Offers, together with the HMT Transactions and Share Subdivision” (November 3, 2009).

46. “Lloyds Announces Exchange Offer for Upper Tier-Two,” *CreditFlux* (November 3, 2009).

47. Lloyds Banking Group, “Lloyds Banking Group plc Announces Exchange Offer to Eligible Investors of Certain Existing Securities for Enhanced Capital Notes” (November 3, 2009).

48. “Lloyds Announces Exchange Offer for Upper Tier-Two,” *CreditFlux* (November 3, 2009).

49. For a thoughtful review of most of the issues discussed in this section regarding CRCs, see D. Duffie, “Contractual Methods for Out-of-Court Restructuring of Systemically Important Financial Institutions,” *Submission Requested by the U.S. Treasury Working Group on Bank Capital* (November 6, 2009).

50. P. Wright, “Contingency Plans,” *International Financing Review* (October 24, 2009).

51. Thomas, *op. cit.*

52. S. Nixon, “Lloyds Banking on Contingent Capital for Escape,” *Wall Street Journal* (November 2, 2009).

banks may be willing to pay up for that assurance, especially with the bitter taste of government ownership still in their mouths. The trigger(s) embedded in the CRC, moreover, will presumably be designed so that the conversion event is very unlikely, which should reduce the option premium.

Another question affecting the price of these securities is how they will be rated. S&P has indicated, for example, that it will typically rate CRCs “at least one notch below a similar issue without the contingent capital trigger” and that “[i]f the issuer moves closer to the trigger point, we could lower the rating further to reflect the increased risk relative to other junior instruments in the issuer’s capital structure.”⁵³ S&P anticipates assigning a BB- rating to the Lloyds ECNs. LBG has a counterparty rating of A, and most of its hybrids and preferred shares with non-discretionary coupons are rated BB-.⁵⁴ That suggests that S&P believes in the low probability of the conversion. But, as always, rating agency decisions will be specific to each issuer and the particular triggers chosen.

Triggers. Numerous kinds of triggers are possible in CRC structures. One possibility is no trigger at all, as in ABC and CPS Securities. Alternatively, CRCs could include a bank-specific second trigger like the 5% core Tier 1 capital ratio trigger in the Lloyds ECNs.⁵⁵ Others have proposed a bank-specific trigger based on the issuer’s market value of equity (for example, the ratio of the bank’s market value of equity to total assets),⁵⁶ the bank’s credit default swap spreads, and the like. Or the facility could even include a more specific insurance-like fixed trigger, as in the RBC CLOCS facility.

In addition to a bank-specific second trigger, some have advocated a third trigger in which the conversion of CRCs into common stock would also require the occurrence of a “systemic event,” such as the declaration by a central bank of a systemic or liquidity crisis.⁵⁷ The Squam Lake Working Group on Financial Regulation, for example, explains: “If conversion were triggered solely by the declaration of a systemic crisis, regulators would face enormous political pressure when deciding whether to make such a declaration... And, perhaps most important, if conversion depended on only a systemic trigger, even sound banks would be forced to convert in a crisis. This would dull the incentive for these banks to remain sound.”⁵⁸

Squam Lake’s logic is sound, but central bankers are likely to resist (and have actually resisted in the past) a trigger tied to their own policy decisions. A systemic trigger could also raise concerns about fair and equitable treatment among banks. As Mark Flannery notes, the first bank to experience

problems that later manifest as a systemic crisis might be unable to convert its own CRCs until too late.⁵⁹ That could either penalize the first-loss banks or, worse, provide bank regulators with an incentive to declare a systemic crisis at the drop of a hat.

Dilution and Incentives. Although several pre-crisis contingent capital facilities involved the issuance of preferred stock convertible into common, virtually no facilities before the Lloyds issue involved common stock because of the dilutive impact on existing shareholders. Current proposals, by contrast, are being framed as recapitalization methods on which banks can rely in the event of a future systemic crisis. As such, the choice of common stock as the underlying makes sense from an incentive standpoint since the cost of diluting existing shareholders provides a strong incentive for issuers to engage in conservative and prudent investment and risk management.

Moral Hazard. All insurance and options in which the purchaser can influence the value of the underlying or the second trigger are subject to moral hazard when the option writer cannot costlessly monitor the actions of the option purchaser. Insurance companies have long addressed the moral hazard problem through contractual structures such as deductibles, co-insurance, policy limits, due diligence, representations and warranties, and the loss adjustment process.

Contingent capital facilities like CLOCS and CRCs both address moral hazard through a relatively high cost of drawing on the facility and the triggers that determine when the facility can be drawn. For CRCs, the cost of converting into a dilutive share issue mitigates moral hazard. For CLOCS, the relatively high drawn spreads accomplish the same. A significant difference between CRCs and CLOCS, however, is that CRCs are intended to be triggered when a firm is headed toward failure in order to provide an equity infusion that keeps the firm out of financial distress. CLOCS, however, were intended primarily to provide financial flexibility to companies well before they go into a death spiral. As such, the triggers on CLOCS facilities were specifically designed to protect CLOCS investors from the risk of investing in a failing firm.

Strike Price/Conversion Rates. An important feature of CRCs is the strike price at which the original debt or hybrid securities can be converted by the issuer into common stock. One possibility is a fixed strike price defined at the time of the initial issuance of the securities. That was essentially the approach taken by Lloyds. The conversion price of its ECNs (if

53. Standard & Poor’s, “Standard and Poor’s Rating Services Criteria Regarding Contingent Capital Securities,” *RatingsDirect* (October 26, 2009).

54. Standard & Poor’s, “Lloyds Banking Group ‘A/A-1’ Ratings Affirmed on Announced Capital Raising Plan; Various Actions Taken on Hybrid Issues,” *RatingsDirect* (November 3, 2009).

55. D. Kerr, “Lloyds’ Novel Capital Raising Set to Appeal to the Wealthy,” *Wealth-Bulletin* (October 30, 2009), and Lloyds Banking Group, *op. cit.*

56. Flannery (2009), *op. cit.* For an analysis of this kind of trigger, see the discussion in Duffie, *op. cit.*

57. See, e.g., Squam Lake Working Group on Financial Regulation, “Mechanism for Distressed Financial Firms: Regulatory Hybrid Securities,” *Council on Foreign Relations Working Paper* (April 2009).

58. Squam Lake Working Group on Financial Regulation, *op. cit.*, p. 4.

59. Flannery (2009), *op. cit.*

and when triggered) is the greater of (1) the volume-weighted average price of LBG's common stock between November 11 and November 17, 2009, and (2) 90% of the stock's closing price on November 17 multiplied by a factor.⁶⁰

Alternatively, the strike price of the CRC could be linked to one of the additional triggers in the facility, much like variable dual-trigger insurance as discussed earlier. The conversion rates could depend, for example, on the market price of the CRC itself or the bank's stock price.

Some favor a structure in which the conversion ratio is determined when the conversion occurs and not at the time of issuance.⁶¹ In an October 2009 speech, for example, Federal Reserve Bank of New York president William Dudley commented: "The conversion terms could be generous to the holder of the contingent capital instrument. For example, one might want to set the conversion rate so that the debt holders could expect to get out at or close to whole—that is, at par value. This is potentially valuable in that it would reduce the cost of the contingent instrument, making it a considerably cheaper form of capital than common equity."⁶²

In contingent capital facilities, a higher drawn spread on the underlying facility is usually offset by a lower commitment fee. But because CRCs convert into common stock, there is no drawn spread and the conversion rate has to do all the work. And because CRCs will be converted only when the bank is in trouble, the debt will be trading well below par. If the conversion fee is not specified upfront, par redemption of the debt could force the bank to issue a potentially unlimited amount of stock.

Investors and Systemic Issues. Some have expressed concern that CRCs might actually increase the very systemic risks they are intended to reduce. Bank of America warns, for example, that hybrid securities recognized as capital by banking regulators are treated as debt by insurance regulators. As a result, significant amounts of bank capital securities were held by insurance companies, creating a significant concern that a banking crisis could rapidly trigger a similar problem in the insurance industry.⁶³ That did not occur in 2007 and 2008, but if CRCs are held in high concentrations by insurance companies, significant cross-sector correlation risks could arise in the future.

Contingent Capital vs. Insurance

When a contingent capital facility is exercised, a new security is issued that gives the investor an ongoing interest in the issuer. Even if the contingent capital put option is exercised during a period of severely depressed performance, the resulting securities could bounce back if the firm recovers.

Contingent capital, if exercised, *always* creates an ongoing interest in the financial capital issuer for the contingent capital provider.

Although insurance and reinsurance bear many similarities to contingent capital, they are fundamentally different. When triggered (either in single or dual-trigger form), the insurance company pays *cash* to the insurance purchaser. Once the claim is paid and the policy exhausted, the insurance purchaser has no ongoing obligation to the insurance company. Similarly, the insurance company has no ongoing contingent liability to the insurance purchaser.

Despite the differences between contingent capital and insurance, the latter can certainly play an important role in protecting a firm's capital base.⁶⁴ Indeed, insurance has long been recognized as an important source of "risk capital" by insurance regulators, rating agencies, and market participants. And we saw in earlier examples (such as Farmers CLOCS) how insurance and contingent capital can work together and complement one another.

One concern that rating agencies and regulators have sometimes expressed about insurance as a source of risk capital is the credit risk of the insurance provider. Yet, such concerns can be allayed through trust-based collateralized insurance. S&P, for example, gives 100% capital recognition to reinsurance facilities in which collateral is posted in a third-party trust account and pledged to the insurance purchaser. The collateral, moreover, must be invested in Treasuries, AAA-rated money market funds, or cash, and must be marked to market daily (with any shortfalls rectified by the reinsurer).

Kashyap, Rajan, and Stein propose a dual-trigger capital insurance facility for banks that is essentially fully collateralized dual-trigger insurance.⁶⁵ They envision a structure in which investors such as pension plans deposit low-risk collateral into a trust account that writes a capital insurance policy collateralized by the trust investments. The bank would then have purchased what amounts to dual-trigger capital insurance from the trust.

Insurance and reinsurance companies, however, typically shy away from providing fully collateralized insurance because it reduces their leverage and risk-adjusted return on capital. Fully funded or collateralized structures thus are usually associated with insurance provided by capital market participants.

Indeed, as Kashyap, Rajan, and Stein note, their proposed structure is more similar to an insurance-linked note (ILN) than a traditional insurance facility. In a typical ILN, the proceeds of the note issuance are invested in high-grade

60. Glover, *op. cit.*

61. See, e.g., Flannery (2009), *op. cit.*

62. Dudley, *op. cit.*, p. 6.

63. J. A. Rosenberg et al., "The Systemic Risk of Contingent Capital," *Bank of America Credit Strategy Research* (October 23, 2009).

64. See Culp and O'Donnell, *op. cit.*

65. A. K. Kashyap, R. G. Rajan, and J. C. Stein, "Rethinking Capital Regulation," *Federal Reserve Symposium on "Maintaining Stability in a Changing Financial System"* (September 2008).

assets to collateralize a (re-)insurance policy (often based on natural catastrophe P&C insurance losses—hence, the term “cat bond” that is often used to describe ILNs). ILN investors receive the insurance premium plus the return on the collateral as long as there are no insurance claims, but any claims reduce investors’ interest (and perhaps principal) by corresponding amounts.

One of the difficulties with ILNs is investing the proceeds of the note issue in collateral that is liquid and safe and yet still earns enough of a yield to attract investors. Investing the note proceeds in Treasuries, for example, necessitates a much higher insurance premium to pay the interest rate that investors will demand, which can render the structure unattractive to the insurance purchaser. Alternatively, investing in higher-yielding but riskier assets can expose both the insurance purchaser and investors to market risk.⁶⁶

Conclusion

Although contingent capital has been successfully used by both banks and insurance companies, the amounts required to recapitalize the banking sector in the wake of the credit crisis far exceed the sizes of previous facilities. Nevertheless, successful and innovative contingent capital facilities of the past provide some useful insights into how such facilities might be designed in the current environment.

Indeed, it is striking that most of the recent proposals have departed so radically from the contingent capital facilities that have actually been used to date and have instead focused almost exclusively on the CRC structure.⁶⁷ As Darrell Duffie has emphasized, CRCs do not generate new *cash* for a bank at the time of conversion and thus are unlikely to stop a liquidity crisis once it has begun.⁶⁸ More traditional contingent capital facilities, by contrast, *do* put cash in the hands of the issuer at the time the facility is drawn. Indeed, the existence of such facilities in a bank’s capital structure may itself provide an important signal to the market that the bank has access to loss-absorbing capital *and* liquidity during times of crisis.

Yet, CRCs do have potential benefits. They create strong incentives for banks to avoid ever needing to use the conversion facility; and, in the event the triggers are pulled, they help confine the recapitalization of banks to private investors (and thus keep governments and taxpayers out of the picture).

The challenge of making CRCs work, however, is well-illustrated by the Lloyds initiative. Either a bank must issue new subordinated debt or hybrids to gain access to contingent equity—which is unlikely unless the bank needs to issue new securities anyway—or it must replace existing securities with CRCs through a successful exchange offering. In that regard, it may be unwise to expect many other institutions to imitate the structure of the Lloyds offering. The fact that LBG was prohibited by the EC from making discretionary coupon or dividend payments on existing securities almost certainly increased the willingness of many of the holders of those securities to accept a more subordinated interest in the firm in return for slightly higher coupon rates and, perhaps equally important, the actual payment of those coupons.

Future issuers of CRCs, however, are likely to struggle with the pricing of CRCs. Persuading existing investors to take a more subordinated position in a bank’s capital structure *and* write a put option to the bank on its own stock will be neither cheap nor easy. And, indeed, several European banks have indicated that they considered CRCs but did not deem the market for the securities to be economically viable.⁶⁹ Perhaps the more traditional solutions used to date would have more success, though arriving at a price that helps issuers and satisfies investors will be a challenge for those structures as well.

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66. For a general discussion of how recent ILN issues have addressed this collateral investment conundrum, see Standard & Poor’s, “Latest Nat Cat Bond Transactions Seek Solutions for Managing Investment Risk,” *RatingsDirect* (June 11, 2009).

67. Kashyap, Rajan, and Stein, *op. cit.*, are an exception.

68. Duffie, *op. cit.*

69. Nixon, *op. cit.*