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The Unconvertible CoCo Bonds

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1. Introduction

The original concept of a CoCo (contingent convertible) bond was to act as a precommitted equity injection upon bank distress. Its intellectual foundation (Flannery 2005; Kashyap, Rajan, and Stein 2008) was to induce conversion as "going concern," ensuring deleveraging at the most delicate moment, when default risk is heightened and risk-taking incentives highest.

This is its core difference from conventional bail-inable debt, which has very poor risk incentives, because it affects payoffs in default, and thus has no direct effect on decision making shareholders and bankers.

It is on this base that CoCo debt has been promoted as a form of equity, a flexible instrument accepting lower returns upon difficult times. CoCo bonds were designed to resemble equity by being perennial (though callable in some circumstances away from default), having noncumulative coupons and by being automatically converted in equity or written down upon a high leverage trigger event.

On this basis, they were accepted as "partial equity" in the additional Tier 1 buffer. They were heralded as one of the two component of Basel III rules (traditionally fixed norms) that had a preventive effect, next to the counter cyclical capital buffer.

CoCos have taken off in Europe and the Asia Pacific region but in the United States, as they were deemed insufficiently debt-like to make their coupons tax deductible for the issuer. In practice, this interpretation appears quite far from reality. CoCo bonds have been issued at lower trigger levels than contemplated in early proposals. Low trigger CoCo bonds have very little equity content, as they convert only upon a final breach of the core capital requirements or even at the point of non-viability.

Recent developments raise concerns that the equity-like role of CoCos will in practice be minimal. The danger is that they will be reduced to an overly complex version of bail-in debt, enabling tax deductibility as debt (at least in Europe) while only pretending to be equity. The key driver of this change is that regulators appear unprepared to encourage preventive risk absorption through CoCo conversion. While actual conversion should have been welcome as a sign that the instrument is performing its preventive function, it has been passionately resisted.

The market panic around Deutsche Bank's CoCo bonds in early 2016 illustrates this point. Given their low trigger levels there was no chance of conversion. However, mildly negative news on Deutsche Bank's profitability reminded market participants of the mere possibility

that the bank may not be allowed to make the annual coupon payment. This possibility had been ignored and thus not properly assessed, the market overreacted. Yet missing a coupon speaks very much to the very point of CoCo design: an equity-like claim reduces fixed obligations when profits falter.

It is very much the task of regulators to publicly defend this role, as it is critical to CoCo's risk absorbing function. Instead, regulatory attention turned to restoring confidence to bond markets. Regulatory adjustments were rushed in to empower banks to pay coupons in more circumstances. The net result has been a weakening of the equity component in CoCo bonds. The danger we now face is that there will be no risk absorption before default, nor any preventive effect. An unconvertible CoCo is pure debt, and as such does not belong to an equity buffer.

Another regulatory choice that limited the equity content of CoCo debt was to discourage the use of (joint) market price triggers for conversion. Since all outstanding CoCos are designed to convert on accounting ratios alone, the result is that conversion to equity is subject to regulatory discretion, implicitly or explicitly. In a climate where regulators fear any market reaction, conversions appear a most unlikely outcome, opening the door to regulatory forbearance. Market participants are taking on the clue. There appears to be increasing indications among market participants and some empirical evidence (Afdjiev et al. 2015) that CoCo values are pricing in little if any risk of losses due to conversion (Bank of England 2013, p.11).

These developments leave the CoCo experiment at risk. If CoCos cannot provide going concern contingent capital, they are rather conventional bonds. They should not qualify for partial equity status if there is no equity left in them.

In the rest of this article, we examine these issues in greater detail. Section 2 reviews events leading to commotion in the CoCo market in early 2016. Section 3 describes the current split in the market between conversion and write-down CoCos. Section 4 discusses triggers, and Section 5 summarizes a market-based measure of the credibility of the European bail-in regime.

2. The CoCo Commotion of 2016

The prices of CoCos issued by several European banks fell sharply in early 2016, even as these banks generally maintained capital ratios substantially in excess of their CoCo triggers. The market was responding to fears of a missed coupon, rather than conversion or write-down – the main risks associated with holding these convertible instruments. In particular, Deutsche Bank's CoCo's trigger at a common equity Tier 1 (CET1) capital ratio of 5.125%, and the bank's ratio over the first quarter declined from 11.1% to 10.7%, staying well above the trigger.

The commotion in the market was caused, at least in part, by confusion around a technical point in regulations, detailed in Mesnard and Magnus (2016). Under the European Union's Capital Requirements Directive, a bank must meet a common equity Tier 1 (CET1) capital requirement before it can pay dividends or discretionary coupons, including coupons on

CoCos that qualify as additional Tier 1 (AT1) instruments. Banks that fail to meet the required CET1 level are constrained by a "maximum distributable amount" (MDA) in their ability to pay coupons.

The ambiguity concerned the CET1 level required for a bank to avoid the MDA constraint. The required level includes the minimum Pillar 1 CET1 level of 4.5% and additional buffers, including a capital conservation buffer and countercyclical buffer. In December 2015, the European Banking Authority released a legal opinion stating that Pillar 2 requirements imposed on individual banks must also be met in determining whether a bank is constrained by a maximum distributable amount. Combined with weak earnings, this opinion raised fears that some banks might skip or reduce payments on CoCos with noncumulative coupons.

Bank-specific Pillar 2 capital levels include capital *requirements* and capital *guidance.* Guidance becomes a requirement if not consistently met. Nevertheless, in March, the European Commission subsequently clarified that the guidance portion of Pillar 2 capital would be excluded from the MDA threshold, effectively making it easier for banks to pay their CoCo coupons. The clarification of the MDA rules was ultimately a retreat.

What can be learned from these events? Banking regulation during the financial crisis has been rightly criticized for allowing banks to pay dividends when they needed capital. The MDA threshold is an important tool for capital conservation, particularly in combination with the noncumulative coupons of CoCo debt. Yet the sharp market reaction in the first quarter of 2016 suggests that investors had underestimated the risks in CoCos, and the softening of the threshold suggests that even regulators may be unprepared for a skipped coupon. CoCos that are "unskippable" as well as "unconvertible" cannot provide going concern capital.

Mesnard and Magnus (2016) offer a more optimistic interpretation. They see the reduced CoCo issuance in 2016 and the adjustment in prices as indicating that the market has corrected and that investors now have a better appreciation of the risks in these instruments. This interpretation will be tested the next time a bank comes close to skipping a noncumulative coupon.

3. Write-Down or Conversion?

As the name "contingent convertible" implies, CoCos were originally conceived as debt that converts to equity. An early exception was a 2011 Rabobank issue with a principal write-down rather than conversion; that alternative structure was necessary because Rabobank was a cooperative with no publically traded equity.

But the issuance of write-down CoCos has since outstripped the issuance of CoCos that convert to equity. Figure 1 shows data from Moody's CoCo Monitor (Ainswroth et al. 2016), which provides data on CoCos rated by Moody's. As of the end of the third quarter of 2016, the monitor covers 530 instruments.

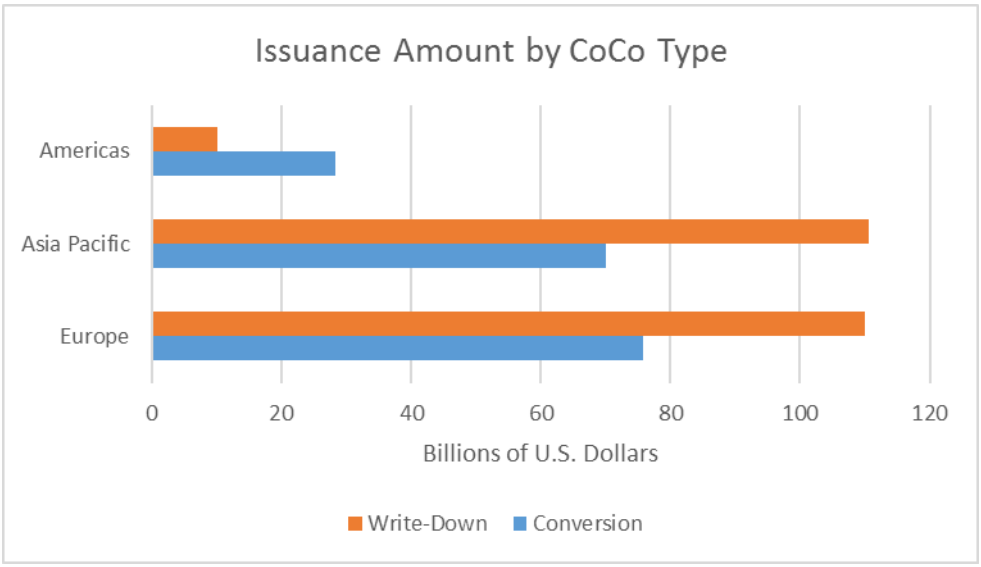

Figure 1 Comparison of CoCo issuance by structure (write-down or conversion) and by region. Source: Moody's CoCo Monitor data and authors' calculations.

The figure shows that issuance of write-down CoCos substantially exceeds that of convertible CoCos in Europe (including the United Kingdom) and in the Asia Pacific region. The pattern is reversed in the much smaller Americas market, mainly because all the Canadian bonds are convertible and the Latin American bonds are write-down claims.

There is no research consensus on the relative merits of the two types of structures. Afdjiev et al. (2015) find empirically that banks' credit default swap spreads decrease more in response to the issuance of a convertible CoCo than a write-down CoCo, but they find little response in share prices in either case. They conclude that the market perceives convertible CoCos as providing greater loss absorption, but that neither type affects bank risk-taking. The result could be interpreted as suggesting a greater risk reduction for equity conversion CoCos, but such conclusion would require a more precise calibration to control for each bond's equity content. Martynova and Perotti (2015) argue that *ceteris paribus*, write-down CoCos may offer better incentives for banks to reduce risk. While both forms of conversions reduce leverage and thus help reduce risk shifting, convertible CoCos dilute shareholder return, creating stronger incentives to gamble through riskier, lower return investments.

While attention to date has focused on the effect of the CoCo conversion feature, the issue becomes insignificant if CoCos (of any type) become unconvertible. Special attention should be paid to assess which type of conversion the market is better able to absorb, as the answer is not obvious. Conversion to equity, if properly structured, should in principle be a smoother choice because it offers some compensation to CoCo investors. However, the segmentation of investors between fixed-income and equity markets may substantially reduce the value of equity at conversion to CoCo investors and may even make a principal write-down less disruptive to the market.

3. Triggers

Perhaps no issue has received greater attention in the research literature on CoCos than the choice of trigger. The question can be divided along several dimensions: high trigger (going concern) or low trigger (gone concern); mechanical or discretionary; accounting-based or market-based.

Figure 2 shows the distribution of CET1 capital-ratio triggers for more than 95% of the CoCos in the Moody's database. (The remaining instruments have triggers that do not fit in any of the categories in the chart.) By far the largest category, measured either in dollars or by number of banks issuing, specifies conversion at the point of non-viability (PONV), which is decidedly gone-concern capital. The smallest category has a high trigger at a CET1 capital ratio of 7% or higher. The pattern clearly signals a minor role for the notion of CoCo debt as going-concern contingent capital. An instrument with a PONV trigger is effectively bail-in debt. This confirms the impression of a general failure of the equity component of CoCo debt via going concern conversion, and more generally of its risk preventive role ahead of default.

In the United States, requirements for total loss-absorbing capital (TLAC) rely on bail-in debt and equity, and no U.S. banks have issued CoCos. In this sense, including U.S. banks in Figure 2 would tilt the distribution even more.

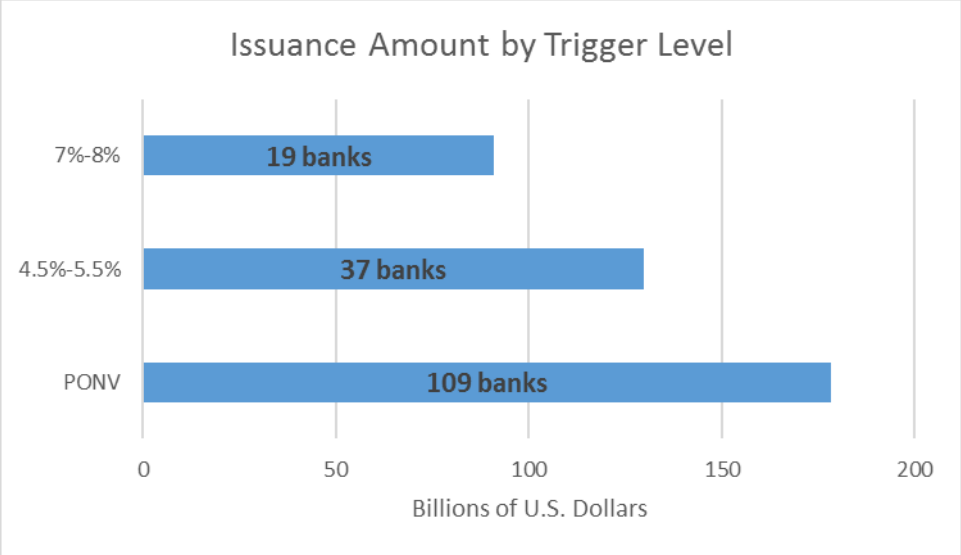

Figure 2 Distribution of issuance amounts and numbering of issuing banks by trigger level. Triggers in percent refer to CET1 capital ratios. "PONV" abbreviates "point of non-viability." Source: Moody's CoCo Monitor data and authors' calculations.

The failure of CoCos in the U.S. was not a foregone conclusion. The Dodd-Frank Act mandated a study of contingent capital by the Financial Stability Oversight Council. The FSOC report (FSOC 2012) was inconclusive, but it highlighted concerns around the trigger mechanism. It also stated that there would be "substantial challenges to characterizing such instruments as debt for U.S. income tax purposes," a finding that would make CoCos unattractive to issuers. By some accounts, serious consideration of a CoCo requirement in the U.S. ended with a speech by then Treasury Secretary Timothy Geithner on June 6, 2011, in which he stated that "given the other protections available here, including our resolution

authority, we do not need to impose on top of that requirement any of the three other proposed forms of additional capital – convertible, bail in, contingent capital instruments, or counter cyclical capital requirements", although bail-in debt and counter-cyclical buffers have been adopted.

Most academic research that considers the issue argues for higher, not lower, CoCo triggers. Calomiris and Herring (2012), Martynova and Perotti (2015), and Pennacchi (2011) argue for higher triggers to reduce bank risk-taking. In a model with endogenous default, Chen et al. (2015) argue that a high trigger is necessary to avoid a phenomenon they call "debt-induced collapse," in which the cost of debt service on CoCos drives the default boundary above the conversion boundary. In a very different setting with a market-based trigger, Glasserman and Nouri (2016) show that a high trigger ensures the internal consistency of a trigger based on a bank's stock price and the impact of conversion on the stock price.

Academic work generally favors mechanical conversion over conversion that is subject to supervisory discretion, as there is a widespread concern that authorities are generally reluctant to trigger conversion. In other words, a discretionary trigger is likely to make CoCos more "unconvertible."

Figure 3 shows the breakdown of CoCos in the Moody's rated universe by type of trigger – mechanical or discretionary. Most of the "other" category consists of instruments with both mechanical and discretionary features – for example, a CoCo with mechanical conversion at a CET1 trigger and discretionary conversion at non-viability.

The figure shows that worldwide issuance with discretionary triggers now exceeds issuance with strictly mechanical triggers – a trend that may undermine the original purpose of CoCos. But the split by region is very uneven, with discretionary triggers predominant in the Asia Pacific region, Canada, and Latin America, and mechanical triggers predominant in Europe (including the United Kingdom).

The distinction between discretionary and automatic triggers is however tenuous in practice, as automatic conversion can only occur once a bank admits to failing to satisfy the minimal capital requirement. Such a step is practically impossible without the explicit agreement of its regulators, rendering the automatic triggering *de facto* a discretionary regulatory decision.

One way to reduce regulatory discretion and the limitations of accounting-based capital ratios is to use a market-based trigger, tied to a bank's share price or credit default swap spread. Flannery's (2002) original proposal called for a trigger based on a bank's share price, on the view that market prices aggregate information from many sources and are forward-looking, whereas accounting-based measures are backward looking. Arguments for market-based triggers can also be found in Calomiris and Herring (2013), Hart and Zingales (2011), and McDonald (2013). Some concerns about market-based triggers raised in Sundaresan and Wang (2015) are addressed in Glasserman and Nouri (2016) and Pennacchi and Tchistyi (2015). But regulators have resisted suggestions to include any sort of market signal in a CoCo conversion trigger, and no CoCo issued to date includes a market-based trigger. With an accounting-based trigger and no role for market information, even a high-

trigger CoCo may convert too late to provide going concern capital if the regulatory accounting numbers fail to reflect the bank's true condition.

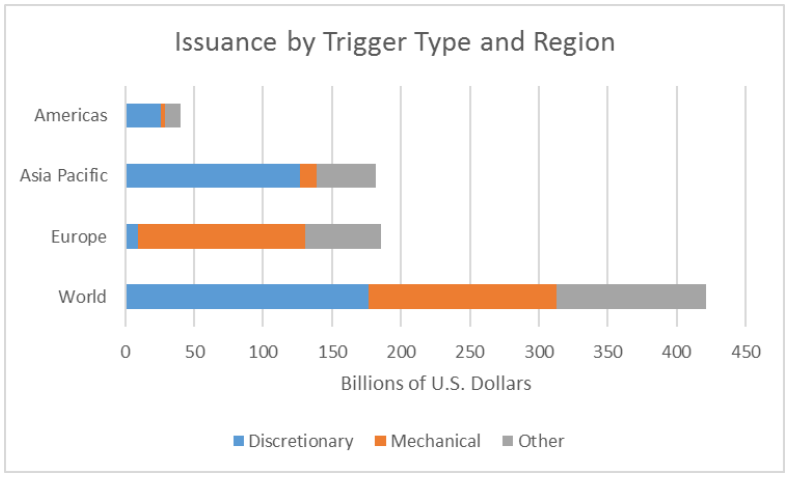

Figure 3 CoCo issuance broken down by type of trigger (discretionary or mechanical) and region. The "other" category mainly consists of instruments with both discretionary and mechanical features. Source: Moody's CoCo Monitor data and authors' calculations.

Figure 4, reproduced from Haldane (2011), offers a troubling overview of the effectiveness of accounting ratios in discriminating among distressed and stable banks. First, no CoCo debt with an accounting trigger would have been converted during the recent crisis. Second, banks that experienced distress were on average better capitalized according to their accounting ratios before and during the crisis. In contrast, equity prices were able to identify the distressed intermediaries, and would have produced a more reliable signal for conversion.

We would argue in favor of a double trigger, a combination of an "enabling" market trigger that would be activated by a low share price and a second "confirming" regulatory trigger at the discretion of regulatory authorities. This approach would avoid any excess conversion due to market manipulation or market overreaction, while adding useful market information and countering the inclination to regulatory forbearance. While reluctance to impose losses naturally arises from a concern to avoid market stress, it also undermines the post crisis determination to act preventively and in a timely manner to avoid excess risk taking by overleveraged intermediaries, and ensuring risk absorption by financial markets rather than taxpayers.

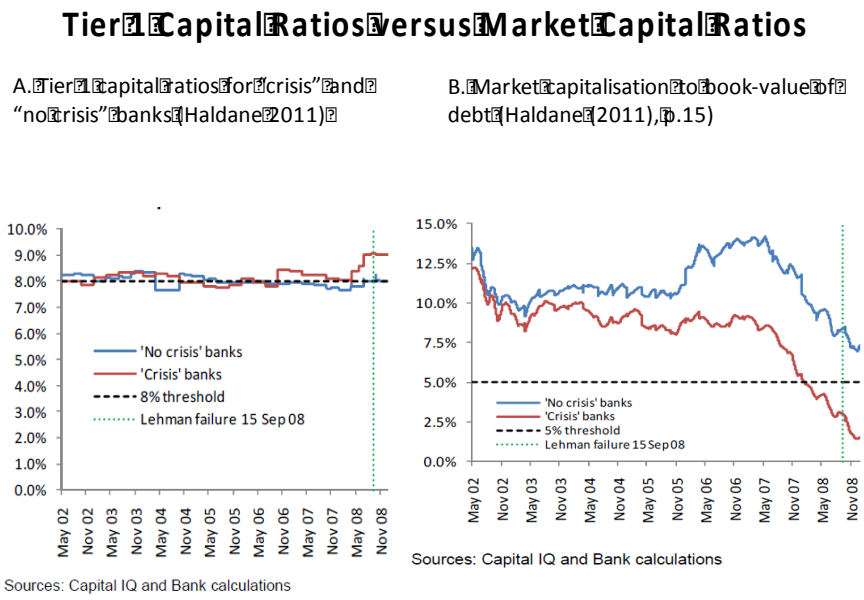

Figure 4 A comparison of regulatory capital ratios and market-based capital ratios from Haldane (2011).

4. The Credibility of Bail-In

As we noted in Figure 2, gone-concern CoCos now exceed going-concern CoCos. The question of whether CoCos are "unconvertible" thus leads us to consider the credibility of bail-in regimes. In the U.S., the Federal Reserve's recently finalized TLAC rules confirm its approach to bank resolution based on bailing in long-term debt; and the adoption of the Bank Recovery and Resolution Directive (BRRD) commits European countries to bailing in bond holders before providing public support for failing banks.

Neuberg et al. (2016) exploit a change in the CDS market to gauge the credibility of bail-in, as perceived by the market, under the BRRD. In 2014, the International Swaps and Derivatives Association, the industry body that defines CDS contracts, introduced new definitions that include payments to protection buyers in case of certain "government intervention" events that were not covered under the earlier definitions. The types of interventions addressed in the new definitions cover certain bail-in events, in which a government intervention imposes losses on bond holders (particularly holders of subordinated debt) without triggering a conventional default or restructuring. The new definitions were prompted, in part, by the nationalization of SNS Bank in the Netherlands in 2013, and the 2014 takeover of Banco Espiritu Santo by the Portuguese government.

For 20 large European banks, CDS spreads continue to be available under the old and new definitions. The difference between the two spreads measures the market price of protection against certain bail-in events. Neuberg et al. (2016) argue that the difference in spreads relative to the new spread is a measure of the credibility of a bail-in, conditional on a bank entering distress. They document a decline in this relative basis since the introduction of the new contracts in 2014. They argue that this decline reflects increased credibility of the bail-in regime introduced through the BRRD.

One of the anomalies in their panel of 20 banks is Banca Monte dei Paschi di Siena, which deviates from a pattern that holds across most of the other banks. In the second half of 2016, CDS spreads for Monte dei Paschi point to a decreasing likelihood of a bail-in, conditional on distress, and a decreasing likelihood that senior creditors would suffer losses if CDS were triggered on the bank's subordinated debt.

As of this writing, reports indicate that the Italian government will do anything in its power to avoid imposing losses on retail investors holding the bank's junior debt. The government has proposed converting the retail debt to shares but then swapping the shares for senior debt, effectively bailing out retail investors and creating a conversion in name alone. The operation will be supported by a huge equity infusion by the government, marking a setback to the goal of ensuring private risk bearing.

All of this brings us to our final point about "unconvertible" CoCos. Since conversion is likely to remain subject to supervisory discretion, it is essential that 1) authorities clearly signal a determination to enabling risk bearing by private investors ahead of default, and 2) CoCo debt issuance be restricted to investors that will not be shielded politically from the consequences of conversion.

More generally, regulatory forbearance in its many form is at risk of undermining the careful design of preventive tools that have emerged from Basel III. Allowing subordinated debt to be marketed as a safe claim to small savers rather than to sophisticated or long term investors produces the short term benefit to enable weak banks to save on the cost to fulfil requirements, as these investors were unaware of the associated risks. Ex post it naturally proves politically unpalatable to have such instruments take losses upon default, undermining the very principles on which they were predicated.

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