BANK OF ENGLAND

Discussion of “Convertible bonds and bank risk-taking”

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BdF/TSE conference “Bailouts, bail-in, and financial stability”

All of the views expressed in this presentation are those of the discussant, and not necessarily those of the Bank of England.

Contingent Convertible Bonds

- This is a very topical paper.
- In H1 2014, European banks issued more than **GBP 29bn** worth of “AT1” instruments, which can broadly be described as CoCos.
- This has been neither fully voluntary nor fully forced:
- Under Basel III, Banks **can** satisfy part of their minimum capital requirements via CoCos.

The Model

- t=0: A bank has a risky asset with value 1, which will yield v$\in [1-\delta, 1+\delta]$ in t=1.

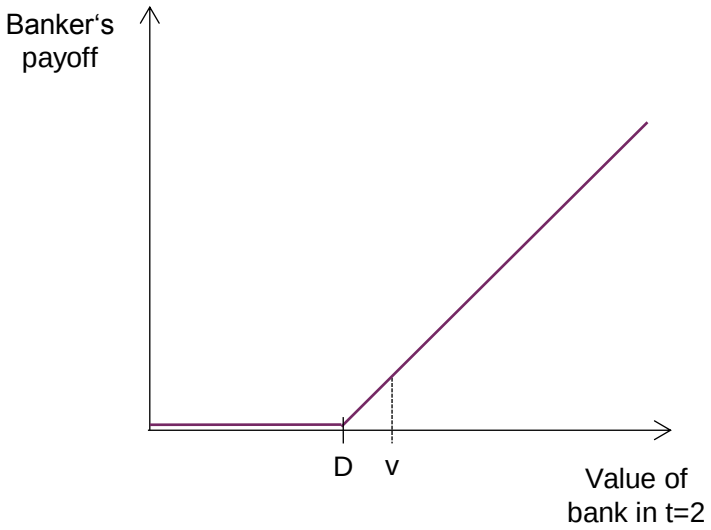
  The asset is financed by
  - » C of CoCos
  - » D-C of (costlessly insured) deposits
  - » 1-D of equity owned by the banker

- t=1: The banker observes v and chooses
  - » To invest in a safe „store of value“ with NPV 0
  - » To invest in a risk project with negative NPV

  If $v<v_T$ the CoCos convert from debt into equity
  - » They only do so with (exogenous) probability φ
  - » **For now, we will assume that φ=1**

- t=2: Bank is liquidated, creditors & shareholders are repaid

Period 1: Debt and equity but no (triggered) CoCos



- With debt financing, the banker does not internalize the full downside risk (limited liability).
- Hence, he may be choose to gamble.

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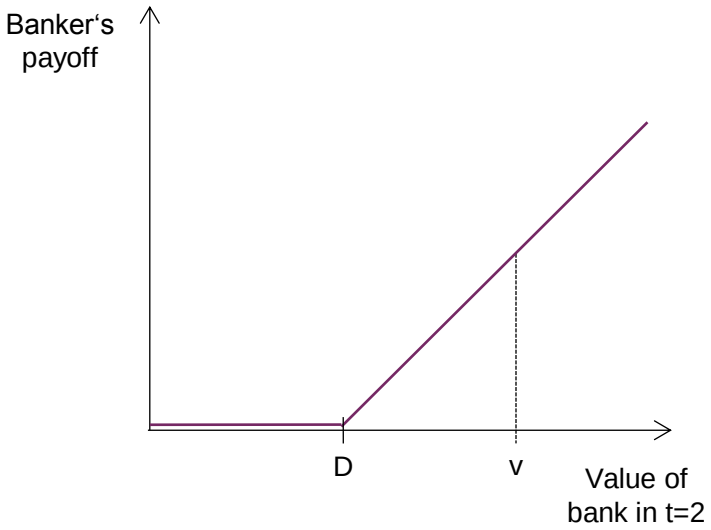
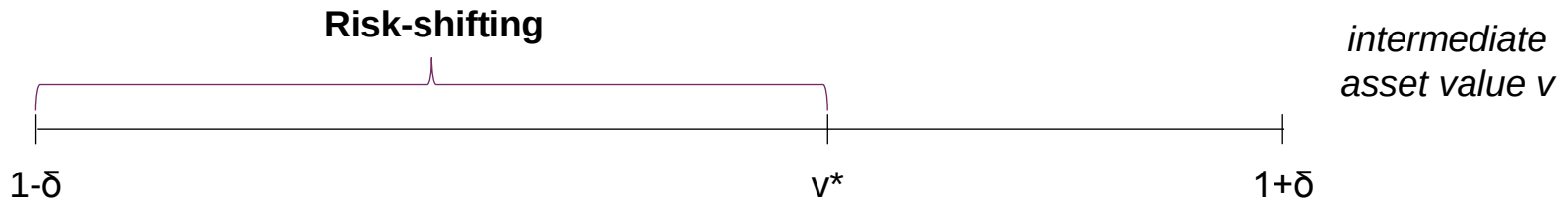


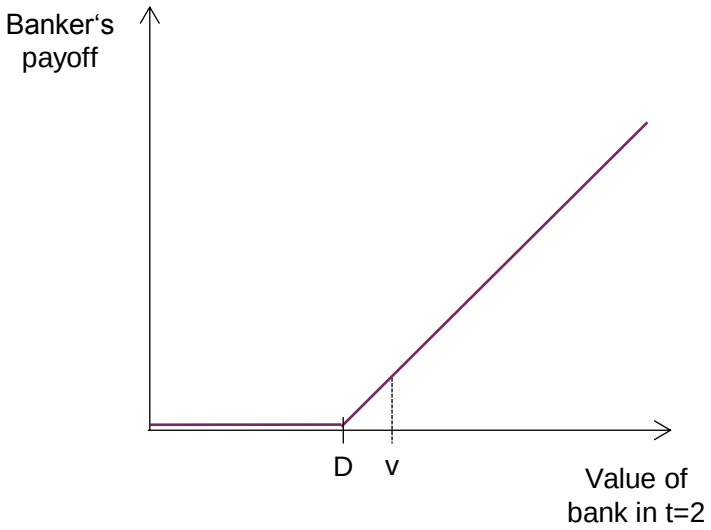
- With debt financing, the banker does not internalize the full downside risk (limited liability).
- Hence, he may be choose to gamble.
- But this is only a problem if he is close to the limited liability constraint (the ‘kink’)

Interim values and risk-shifting



- Hence, risk-shifting will be a problem if and only if the interim value of the asset is below some cut-off v*

Period 1: How can converting CoCos help?



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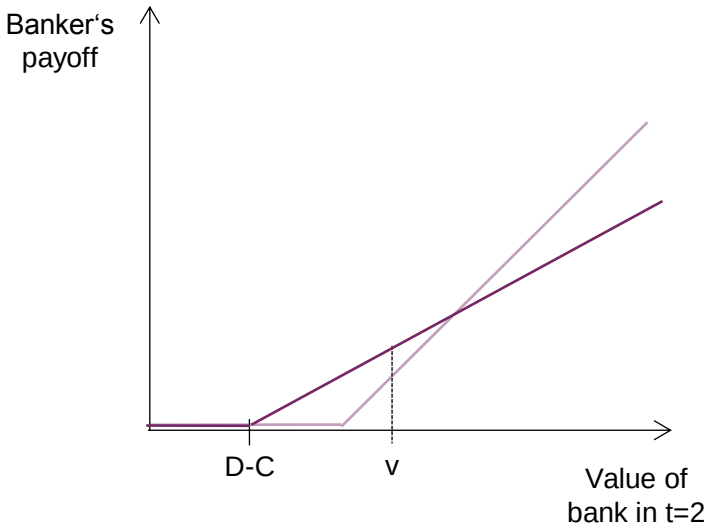
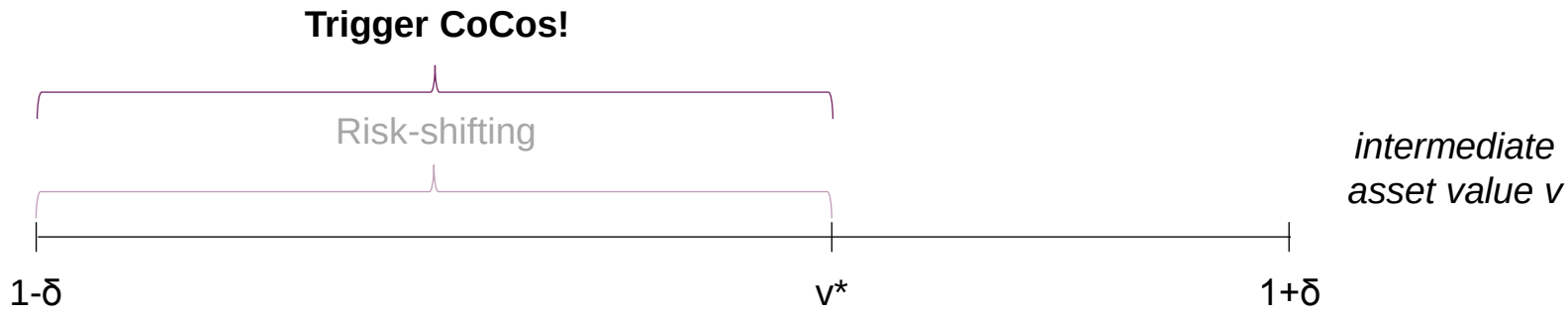


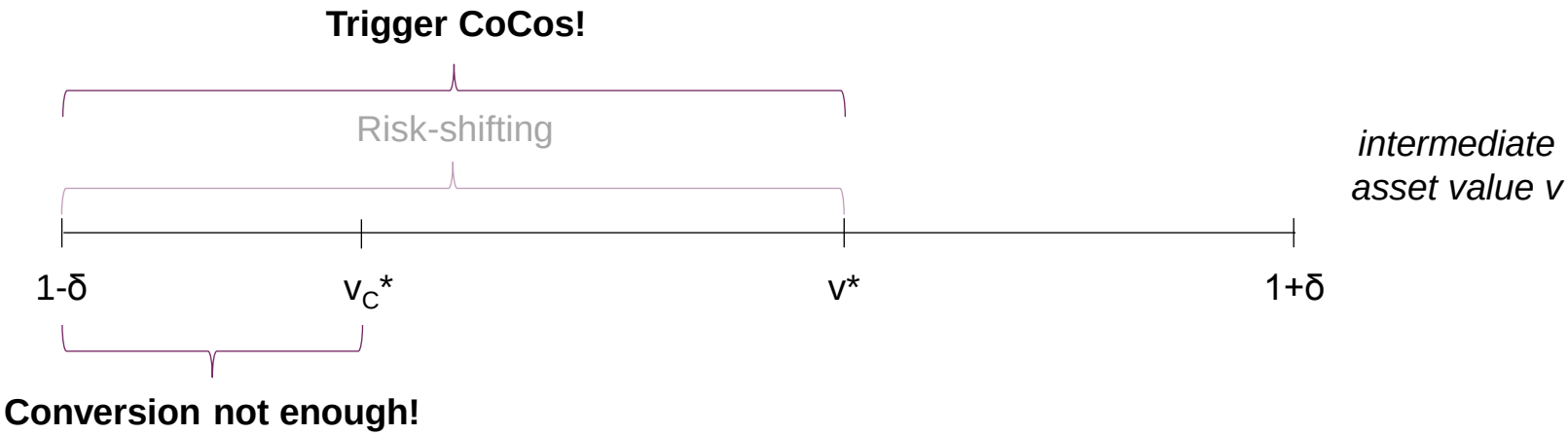
- If the banker knows that his CoCos will convert into equity he knows that
  - His shares will be diluted (lower upside potential)
  - He is further away from his limited liability constraint.
- The dilution effect does not affect the risk-choice: **the banker is simply a representative shareholder owning fewer shares.**
- So overall, this has a positive effect on incentives.

Interim values, triggers, and risk-shifting



- Hence, it is optimal to convert CoCos for all $v<v^*$: $v_T=v^*$
- We could even convert for $v>v^*$ but this makes no difference.

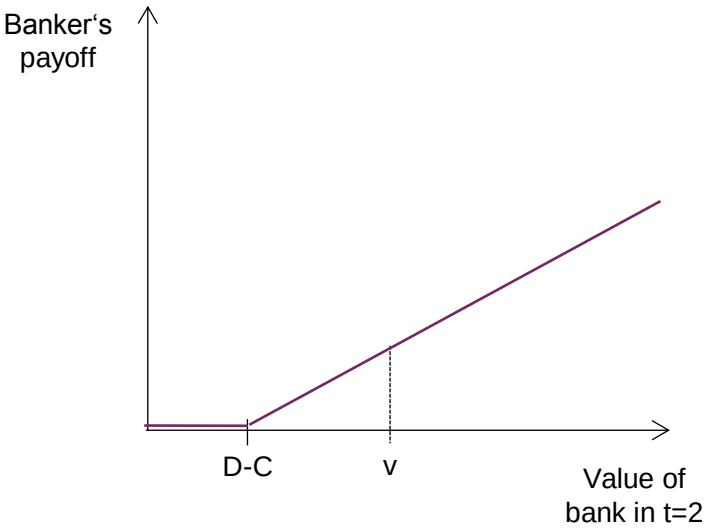
Interim values, triggers, and risk-shifting



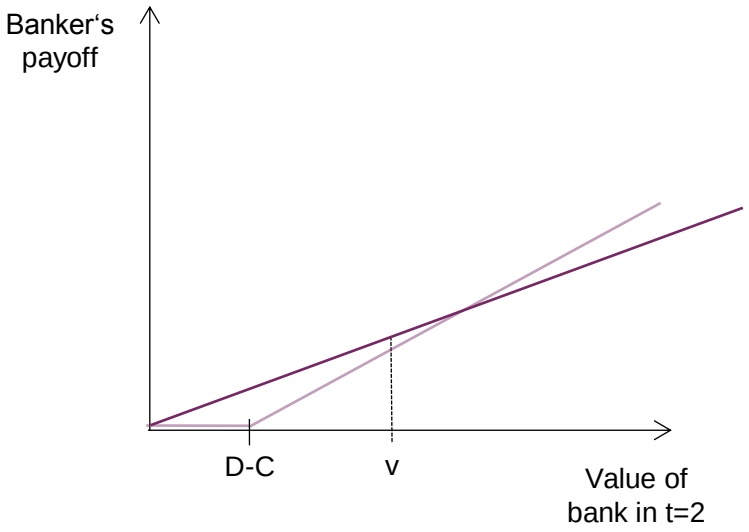
But:

- There are only so many CoCos we can convert. For very low interim values this is not enough: there is still risk-shifting!

Are more CoCos the solution?



Are more CoCos the solution?

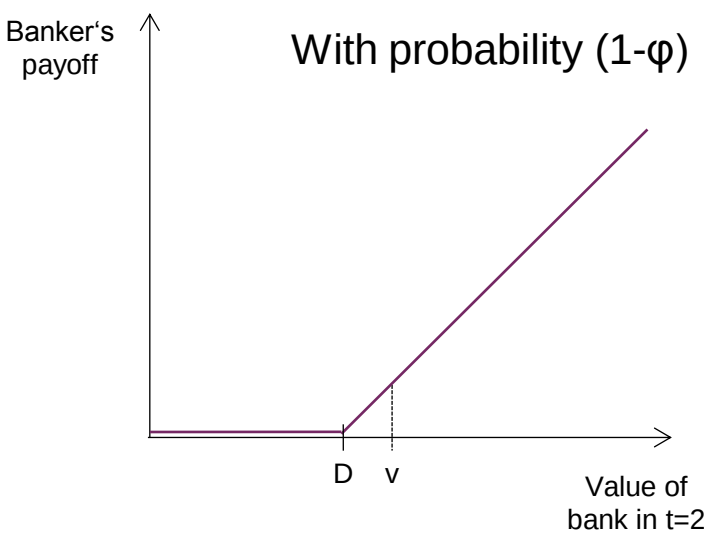


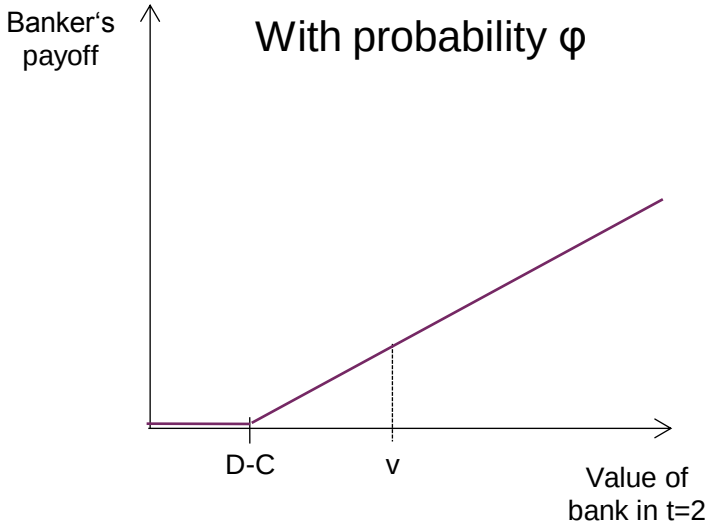
- In this very simple model: **yes**!
- We could set C=D (i.e. the "bank" does not take deposits).
- The limited liability constraint would not be an issue (no debt!).
- And dilution doesn't distort incentives.

BUT:

- This is **where φ<1 comes in!**

The case of uncertain conversion: optimal C





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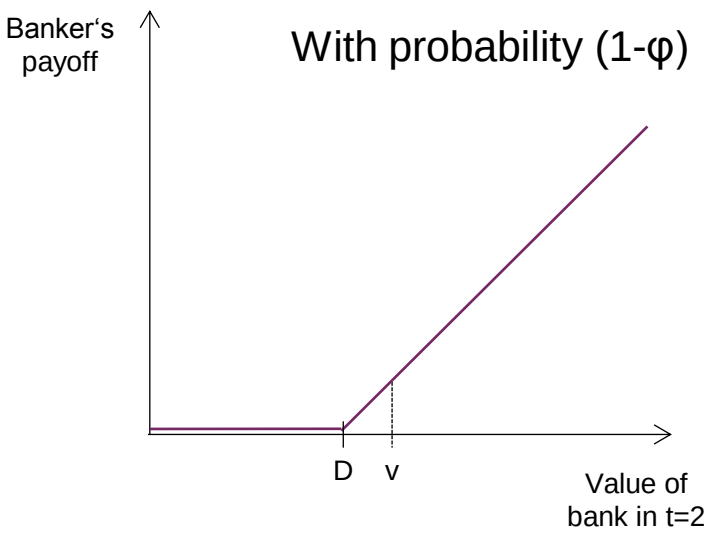

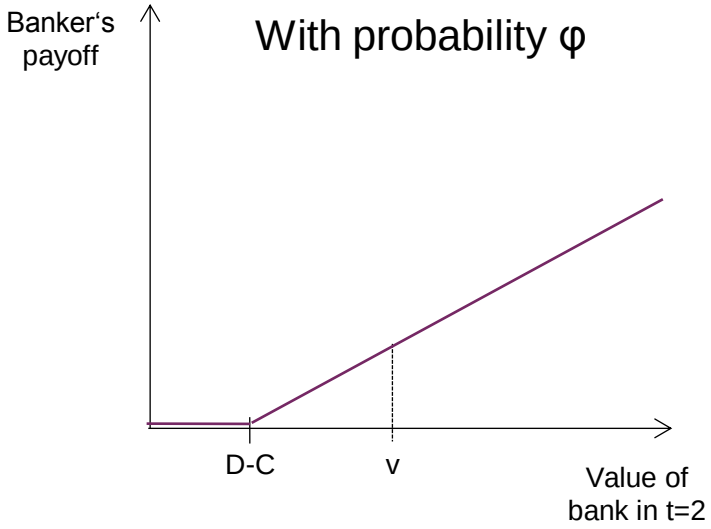

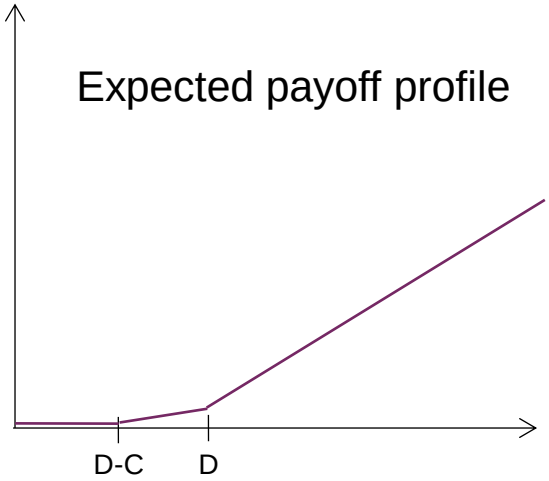

Uncertain conversion & optimal amount of CoCos

- Once we account for uncertain conversion, it is not clear that C=D is optimal.
- In fact, there is usually an **interior optimum for C**.

- Interesting since there are no obvious costs of CoCos:
  - No explicit cost of conversion
  - Deposits are not assumed to be socially valuable

- Also, uncertain conversion seems to be a plausible assumption!

CoCos and incentives

- Shareholders take all decisions.
- Hence, CoCos can only have effects if they convert while shareholders are still “in charge”.

- This is different from the rationale of **bailing in** creditors in resolution.
- So ensuring that creditors suffer losses (rather than being “insured”) in resolution may be induce them to exert “market dicipline”:
- (i.e. to make the cost at which they **roll over debt** a function of observed risk-taking.)

The trigger value and the conversion ratio

- The paper assumes that at $v=v_T$ there is no welath transfer from CoCos to shareholders. This requires the **"conversion ratio" to depend on v_T**
- As we move v_T we change the payoff profile of equity in states of the world where the CoCo triggers anyway
  - Some intuition on why setting $v_T = v_C^*$ is still optimal would be helpful

- In reality for many CoCos wealth transfers do occur at v_T
  - This causes **serious concerns**, in particular if wealth is transfered **to** shareholders!

CoCos versus other funding instruments

- The paper shows that banks don‘t issue CoCos voluntarily.
- This is driven by the assumption that debt only consists of **costlessly insured** deposits.

- Assume the bank has insured deposits and uninsured debt. Now, issuing CoCos have to counterveiling effects:
  - CoCos may replace uninsured deposits (privately costly)
  - But they reduce commitment problems w.r.t. risk-shifting (privately beneficial)