



Reading Material: G-SIBs, D-SIBs and Contingent Capital

1. The G-SIB Rules

The G-SIB rules published by the Basel Committee on Banking Supervision (BCBS) in November 2011 were updated and replaced in July 2013 by the document “Global systemically important banks: updated assessment methodology and the higher loss absorbency requirement”. The BCBS has published MPG Data Collection Exercise for end-2012 and for end-2013 which contains details of the data required for assessment of G-SIBs. The Instructions for the MPG Data Collection Exercise for end-2012 (published in April 2013) were updated for the end-2013 data collection exercise in January 2014.

1.1 The indicator-based measurement approach

The G-SIB rules prescribe that the global systemic importance of banks should be assessed using 12 individual indicators related to five categories: cross-jurisdictional activity, size, interconnectedness, substitutability/financial institution infrastructure and complexity. Each category is given a weight of 20% in determining the overall score of a bank. Some categories have more than one indicator, in which case the weight of 20% is spread equally across all of the indicators in the category. The 12 indicators (grouped by category) and their weights are shown in Table 1.

1.2 Cut-off point and bucketing approach

The methodology was applied for the first time in 2011 based on data obtained for end-2009 from 73 banks (which constituted the then sample of banks). In 2011 the BCBS initially identified 29 G-SIBs, including two banks that were added based on supervisory judgement applied by the home supervisor. A tentative cut-off point was set between the 27th and 28th banks, based on the clustering of scores produced by the methodology. The list of G-SIBs was updated in November 2012.

Table 1			
Indicator-based measurement approach			
Category (and weighting)	Individual Indicator	Indicator Weighting	Denominators for end- 2012 G-SIB exercise (Euro)
Cross-jurisdictional activity (20%)	Cross-jurisdictional claims	10%	16,498,115,035,100
	Cross-jurisdictional liabilities	10%	16,093,124,462,531
Size (20%)	Total exposures as defined for use in the Basel III leverage ratio	20%	69,158,725,307,224
Interconnectedness (20%)	Intra-financial system assets	6.67%	8,918,054,432,043
	Intra-financial system liabilities	6.67%	8,162,462,456,211
	Securities outstanding	6.67%	11,221,392,343,225
Substitutability/financial Institution infrastructure (20%)	Assets under custody	6.67%	98,100,909,211,865
	Payments activity	6.67%	1,664,159,892,820,090
	Underwritten transactions in debt and equity markets	6.67%	4,547,081,105,541
Complexity (20%)	Notional amount of over-the-counter (OTC) derivatives	6.67%	651,933,169,050,368
	Level 3 assets	6.67%	643,920,283,937
	Trading and available-for-sale securities (excluding high quality liquid assets for LCR)	6.67%	5,603,879,593,861

In November 2013, the list of G-SIBs was updated using end-2012 data. One bank (Industrial and Commercial Bank of China Limited) has been added to the 2012 list, increasing the overall number of G-SIBs from 28 in 2012 to 29 in 2013. The number of G-SIBs is expected to evolve over time as banks change their behaviour in response to the incentives of the G-SIB framework as well as other aspects of Basel III and country specific regulations.

Banks identified as G-SIBs are allocated into buckets with varying levels of higher loss absorbency requirement. The G-SIB rules prescribe four buckets of equal size between the cut-off score and the maximum score. In addition, an empty bucket is placed on top of the highest populated bucket as a disincentive for banks to become more systemically important.

1.3 Supervisory judgment

The G-SIB Rules prescribe that supervisory judgment can support the results derived from the indicator-based measurement approach. The supervisory judgment process, however, is only meant to override the results of the indicator-based measurement approach in exceptional cases and is subject to international peer review to ensure consistency in its application. To guide the application of supervisory judgment, the BCBS has developed the following four principles:

- The bar for judgmental adjustment to the scores should be high: in particular, judgment should only be used to override the indicator-based measurement approach in exceptional cases. Those cases are expected to be rare;
- The process should focus on factors pertaining to a bank's global systemic impact, i.e. the *impact* given the bank's distress/failure and not the *probability* of distress/failure (i.e. the riskiness) of the bank;
- Views on the quality of the policy/resolution framework within a jurisdiction should not play a role in this G-SIB identification process; and
- The judgmental overlay should comprise well-documented and verifiable quantitative as well as qualitative information.

Furthermore, the BCBS has identified a number of ancillary indicators relating to specific aspects of the systemic importance of an institution that may not be captured by the indicator-based measurement approach alone. These ancillary indicators (listed in Table 2) can be used to support the judgemental overlay.

In addition, supervisory judgement can also be based on qualitative information. This is intended to capture information that cannot be easily quantified in the form of an indicator, for example, a major restructuring of a bank's operation. Qualitative judgements should also be thoroughly explained and supported by verifiable arguments.

1.4 Magnitude of higher loss absorbency

The G-SIB rules prescribe that the magnitude of higher loss absorbency for the highest populated bucket should be 2.5% of risk-weighted assets, with the requirement for the empty top bucket set at 3.5%. The minimum magnitude of higher loss absorbency has been set at 1.0% of risk-weighted assets. Based on the bucketing approach, the magnitude of higher loss absorbency for each bucket is shown in Table 3.



Table 2 Ancillary Indicators (end-2013 data collection exercise) ¹	
14a)	Total liabilities
14b)	Retail funding
14c)	Wholesale funding dependence ratio (the difference between items 14a and 14b, divided by 14a)
14d)	Foreign net revenue
14e)	Total net revenue
14f)	Total gross revenue
14g)	Gross value of cash lent and gross fair value of securities lent in securities financing transactions (SFTs)
14h)	Gross value of cash borrowed and gross fair value of securities borrowed in SFTs
14i)	Gross positive fair value of over-the-counter (OTC) derivatives transactions
14j)	Gross negative fair value of OTC derivatives transactions
14k)	Number of jurisdictions

Table 3 Bucketing Approach		
Bucket	Higher loss absorbency requirement (Common equity as a percentage of risk-weighted assets)	Cut off score and bucket thresholds used for end-2012 G-SIB exercise*
5 (empty)	3.5%	530-629
4	2.5%	430-529
3	2.0%	330-429
2	1.5%	230-329
1	1.0%	130-229

* The cut-off score for end-2012 exercise was 130 bp and all bucket sizes were equal at 100 bps. Banks' scores are an average of the five category sub-scores with substitutability/infrastructure capped at 500 bps, and these scores are rounded to the nearest whole basis point before banks are allocated to buckets. The bucket thresholds above, together with the cap, will remain fixed for at least the end-2013, end-2014 and end-2015 G-SIB assessments.

1.5 Capital instruments to meet the higher loss absorbency requirement

The aim of the higher loss absorbency requirement is to ensure that G-SIBs have a greater share of their balance sheets funded by instruments that are capable of fully absorbing losses while the bank remains a going-concern entity. Taking into account this objective, the G-SIB Rules require that Common Equity Tier 1 (CET1) should be used for meeting the higher loss absorbency requirement. The BCBS has also reasoned that CET1, being the

¹ Two ancillary indicators (i) Peak equity market capitalisation and (ii) Unsecured settlement/ clearing lines provided, which were included in the end-2012 MPG Data Collection Exercise were removed from the end-2013 exercise.

costliest form of capital, would help in levelling the playing field in the banking sector by reducing the funding advantages of G-SIBs.

BCBS will continue to review contingent capital, and support the use of contingent capital to meet higher national loss absorbency requirements than the global requirement, as high-trigger contingent capital could help absorb losses on a going-concern basis. High-trigger contingent capital refers to instruments that are designed to convert into common equity whilst the bank remains a going-concern (i.e. in advance of the point of non-viability).

1.6 Interaction with other capital buffers

The G-SIB Rules require national supervisors to implement the higher loss absorbency requirement through an extension of the capital conservation buffer. If a G-SIB breaches the higher loss absorbency requirement, it will be subject to further supervisory actions such as a capital remediation plan, limitations on dividend pay-out, etc.

2. D-SIB framework

The BCBS' framework for domestic systemically important banks (D-SIB framework) takes a complementary perspective to the G-SIB regime by focusing on the impact that the distress or failure of banks (including by international banks) will have on the domestic economy. As such, it is based on the assessment conducted by the local authorities, who are best placed to evaluate the impact of failure on the local financial system and the local economy. In order to accommodate the structural characteristics of individual jurisdictions, the assessment and application of D-SIB policy tools should allow for an appropriate degree of national discretion. This contrasts with the prescriptive approach in the G-SIB framework. The D-SIB framework establishes a minimum set of principles, which ensures that it is complementary with the G-SIB framework, addresses adequately cross-border externalities and promotes a level-playing field. Principles 1 to 7 focus mainly on the assessment methodology for D-SIBs and Principles 8 to 12 focuses on HLA for D-SIBs.

2.1 BCBS principles for D-SIBs

Assessment methodology

Principle 1: National authorities should establish a methodology for assessing the degree to which banks are systemically important in a domestic context.

Principle 2: The assessment methodology for a D-SIB should reflect the potential impact of, or externality imposed by, a bank's failure.

Principle 3: The reference system for assessing the impact of failure of a D-SIB should be the domestic economy.

Principle 4: Home authorities should assess banks for their degree of systemic importance at the consolidated group level, while host authorities should assess subsidiaries in their jurisdictions, consolidated to include any of their own downstream subsidiaries, for their degree of systemic importance.

Principle 5: The impact of a D-SIB's failure on the domestic economy should, in principle, be assessed having regard to bank-specific factors:

- a. Size;
- b. Interconnectedness;
- c. Substitutability/financial institution infrastructure (including considerations related to the concentrated nature of the banking sector); and
- d. Complexity (including the additional complexities from cross-border activity).



In addition, national authorities can consider other measures/data that would inform these bank-specific indicators within each of the above factors, such as size of the domestic economy.

Principle 6: National authorities should undertake regular assessments of the systemic importance of the banks in their jurisdictions to ensure that their assessment reflects the current state of the relevant financial systems and that the interval between D-SIB assessments not be significantly longer than the G-SIB assessment frequency.

Principle 7: National authorities should publicly disclose information that provides an outline of the methodology employed to assess the systemic importance of banks in their domestic economy.

Higher loss absorbency

Principle 8: National authorities should document the methodologies and considerations used to calibrate the level of HLA that the framework would require for D-SIBs in their jurisdiction. The level of HLA calibrated for D-SIBs should be informed by quantitative methodologies (where available) and country-specific factors without prejudice to the use of supervisory judgement.

Principle 9: The HLA requirement imposed on a bank should be commensurate with the degree of systemic importance, as identified under Principle 5.

Principle 10: National authorities should ensure that the application of the G-SIB and D-SIB frameworks is compatible within their jurisdictions. Home authorities should impose HLA requirements that they calibrate at the parent and/or consolidated level, and host authorities should impose HLA requirements that they calibrate at the sub-consolidated/subsidiary level. The home authority should test that the parent bank is adequately capitalised on a stand-alone basis, including cases in which a D-SIB HLA requirement is applied at the subsidiary level. Home authorities should impose the higher of either the D-SIB or G-SIB HLA requirements in the case where the banking group has been identified as a D-SIB in the home jurisdiction as well as a G-SIB.

Principle 11: In cases where the subsidiary of a bank is considered to be a D-SIB by a host authority, home and host authorities should make arrangements to coordinate and cooperate on the appropriate HLA requirement, within the constraints imposed by relevant laws in the host jurisdiction.

Principle 12: The HLA requirement should be met fully by Common Equity Tier 1 (CET1). In addition, national authorities should put in place any additional requirements and other policy measures they consider to be appropriate to address the risks posed by a D-SIB.

3. Contingent Convertible Capital Instruments (CoCos)²

During the recent financial crisis the governments bailed out large financial institutions by injecting capital to mitigate the negative externalities arising out of their disruptive insolvency. The bailouts impose a burden on taxpayers and can undermine banks' incentives not to take

² This material draws extensively from the paper "CoCos: a primer" by Stefan Avdjiev, Anastasia Kartasheva and Bilyana Bogdanova, published in the BIS Quarterly Review, September 2013.



excessive risk in the future. Contingent convertible capital instruments (CoCos) offer a way to address this problem.

CoCos are hybrid capital securities that absorb losses in accordance with their contractual terms when the capital of the issuing bank falls below a certain level. Then debt is reduced and bank capitalisation gets a boost. Owing to their capacity to absorb losses, many authorities permit the use of CoCos as a form of regulatory capital. The structure or design of CoCos should meet the following requirements. First, CoCos need to automatically absorb losses prior to or at the point of insolvency. Second, the activation of the loss absorption mechanism must be a function of the capitalisation levels of the issuing bank. Finally, their design has to be robust to price manipulation and speculative attacks.

Triggers

CoCos have two main defining characteristics:

1. The Loss absorption mechanism. CoCos can absorb losses either by converting into common equity or by suffering a principal write down.
2. The Trigger that activates the loss absorption mechanism. A CoCo can have one or more triggers. In case of multiple triggers, the loss absorption mechanism is activated when any trigger is breached.

Generally there could be two types of triggers

- a. Mechanical (i.e. defined numerically in terms of a specific capital ratio). The mechanical triggers could be based on (i) book-value triggers or (ii) market-value triggers.
- b. Discretionary (i.e. subject to supervisory judgment)

Book-value triggers, also known as accounting-value triggers, are typically set contractually in terms of the book value of Common Equity Tier 1 (CET1) capital as a ratio of risk-weighted assets (RWA). The effectiveness of book-value triggers depends crucially on the frequency, at which the above ratios are calculated and publicly disclosed, as well as the rigour and consistency of internal risk models which can vary significantly across banks and time.

The book-value triggers could be:

- (i) **Low trigger: CoCos with low triggers** (sometimes also termed as resolution CoCos) convert to equity just before a bank's capital situation falls below the minimum requirements (eg CET1 ratio of 5% as prescribed under Swiss SIFI framework. CET1 ratio of 4.5% is the minimum Basel III requirement). The low-trigger CoCos have lower loss absorbing capacity. As a result they are less expensive to issue but may not be eligible to qualify as Additional Tier 1 capital. Nevertheless, the low-trigger CoCos may allow banks to boost their Tier 2 capital in a cost effective manner. Some authorities (eg Swiss) may require that all CoCos must satisfy the criteria for Tier 2 capital. The low-trigger CoCos generate capital necessary to implement crisis management measures, may prevent the bank from being put in receivership and, in a worst case scenario, provide funds for an orderly resolution.
- (ii) **High trigger: CoCos with high triggers** (sometimes also termed as recovery Cocos) convert when a bank's capital situation is deteriorating, but the bank is still well above the minimum requirements (eg when the CET1 ratio is at 7%). High-trigger CoCos enhance the loss absorbing capacity of a bank as a going concern thereby contributing to the bank's resilience and to systemic stability.



The risk premium of high-triggering CoCos is nearer to that of equity and is expected to be substantially higher than the risk premium of non-convertible debt instruments. The high-trigger CoCos may be eligible to be classified as Additional Tier 1 Capital. The pros and cons of high trigger contingent capital are given in Annex.

Market-value triggers could address the shortcoming of accounting valuations. These triggers are set at a minimum ratio of the bank's stock market capitalisation to its assets. As a result, they can reduce the scope for balance sheet manipulation and regulatory forbearance. However, market-value triggers may be difficult to price and could create incentives for stock price manipulation. Under certain circumstances, holders of Conversion-to-Equity (CE) CoCos may have an incentive to short-sell the underlying common stock in order to generate a self-fulfilling death spiral and depress the share price to the point at which the market-value trigger is breached.

The discretionary triggers, or point of non-viability (PONV) triggers, are activated based on supervisors' judgment about the issuing bank's solvency prospects. In particular, supervisors can activate the loss absorption mechanism if they believe that such action is necessary to prevent the issuing bank's insolvency. PONV triggers allow regulators to trump any lack of timeliness or unreliability of book-value triggers. However, unless the conditions under which regulators will exercise their power to activate the loss absorption mechanism are made clear, such power could create uncertainty about the timing of the activation.

Loss absorption mechanism

The loss absorption mechanism is the second key characteristic of each CoCo. A CoCo can boost the issuing bank's equity in one of two ways:

1. A conversion-to-equity (CE) CoCo increases CET1 by converting into equity at a pre-defined conversion rate.
2. By contrast, a principal write-down (PWD) CoCo raises equity by incurring a write-down.

For CoCos with a CE loss absorption mechanism, the conversion rate can be based on

- (i) The market price of the stock at the time the trigger is breached. This option could lead to substantial dilution of existing equity holders as the stock price is likely to be very low at the time the loss absorption mechanism is activated. But this potential for dilution would also increase the incentives for existing equity holders to avoid a breach of the trigger.
- (ii) A pre-specified price (often the stock price at the time of issuance). Basing the conversion rate on a pre-specified price would limit the dilution of existing shareholders, but also probably decrease their incentives to avoid the trigger being breached or
- (iii) A combination of (i) and (ii). Setting the conversion rate equal to the stock price at the time of conversion, subject to a pre-specified price floor, preserves the incentives for existing equity holders to avoid a breach of the trigger, while preventing unlimited dilution.

The principal writedown of a PWD CoCo could be either full or partial. Most PWD CoCos have a full writedown feature. However, there are exceptions. For example, in the case of the CoCo bond issued by Rabobank in March 2010, holders of CoCos would lose 75% of the face value and receive the remaining 25% in cash. One criticism of this type of loss absorption mechanism is that the issuer would have to fund a cash payout while in distress.

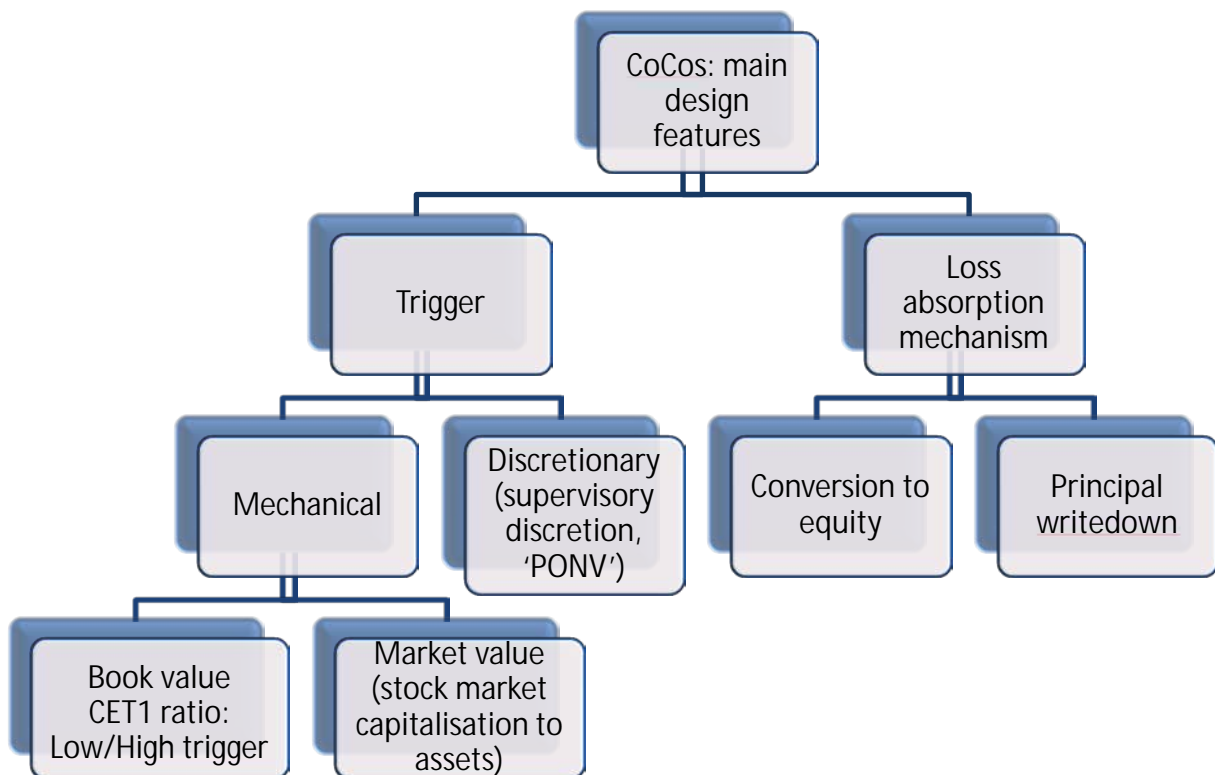


CoCo issuance

Currently the CoCo market is still relatively small, but it is growing. Banks have issued approximately \$70 billion worth of CoCos since 2009. By comparison, during the same period they have issued around \$550 billion worth of non-CoCo subordinated debt and roughly \$4.1 trillion worth of senior unsecured debt. Nevertheless, CoCo issuance volumes are showing an increase over time.

The bulk of the demand for investment in CoCos has come from retail investors and private banks in Asia and Europe. They have been enticed primarily by the relatively high nominal yield that CoCos offer in the current low interest rate environment. The second group consists of US institutional investors that look for alternative investment classes. European non-bank financial institutions represent a third investor group that has shown substantial interest in CoCos.

Design features of CoCos



Annex: Pros and Cons of high trigger contingent capital

High-trigger going-concern contingent capital has a number of similarities to common equity:

- (a) *Loss absorbency* – Both instruments are intended to provide additional loss absorbency on a going-concern basis before the point of non-viability.
- (b) *Pre-positioned* – The issuance of either instrument in good times allows the bank to absorb losses during a downturn, conditional on the conversion mechanism working as expected. This allows the bank to avoid entering capital markets during a downturn and mitigates the debt overhang problem and signalling issues.
- (c) *Pre-funded* – Both instruments increase liquidity upon issuance as the bank sells the securities to private investors. Contingent capital does not increase the bank's liquidity position at the trigger point because upon conversion there is simply the exchange of capital instruments (the host instrument) for a different one (common equity).

Pros of going-concern contingent capital relative to common equity:

- (a) *Agency problems* – The debt nature of contingent capital may provide the benefits of debt discipline under most conditions and help to avoid the agency problems associated with equity finance.
- (b) *Shareholder discipline* – The threat of the conversion of contingent capital when the bank's common equity ratio falls below the trigger and the associated dilution of existing common shareholders could potentially provide an incentive for shareholders and bank management to avoid taking excessive risks. This could occur through a number of channels including the bank maintaining a cushion of common equity above the trigger level, a pre-emptive issuance of new equity to avoid conversion, or more prudent management of “tail-risks”. Critically, this advantage over common equity depends on the conversion rate being such that a sufficiently high number of new shares are created upon conversion to make the common shareholders suffer a loss from dilution.
- (c) *Contingent capital holder discipline* – Contingent capital holders may have an extra incentive to monitor the risks taken by the issuing bank due to the potential loss of principal associated with the conversion. This advantage over common equity also depends on the conversion rate. However, in this case the conversion rate would need to be such that a sufficiently low number of shares are created upon conversion to make the contingent capital holders suffer a loss from conversion. The conversion rate therefore determines whether the benefits of increased market discipline could be expected to be provided through the shareholders or the contingent capital holders.
- (d) *Market information* – Contingent capital may provide information to supervisors about the market's perception of the health of the firm if the conversion rate is such that contingent capital holders suffer a loss from conversion (i.e. receive a low number of shares). There may be incremental information here if the instruments are free from any too-big-to-fail (TBTF) perception bias in other market prices. This could allow supervisors to allocate better their scarce resources and respond earlier to make particular institutions more resilient. However, such information may already exist in other market prices like subordinated debt.
- (e) *Cost effectiveness* – Contingent capital may achieve an equivalent prudential outcome to common equity but at a lower cost to the bank. This lower cost could enable banks to issue a higher quantity of capital as contingent capital than as common equity and thus generate more loss absorbing capacity. Furthermore, if banks are able to earn higher returns, all else equal, there is an ability to retain those earnings and generate capital internally. This, of course, depends on other bank and supervisory behaviours relating to capital distribution policies and balance sheet growth. A lower cost requirement could also reduce the incentive for banks to

arbitrage regulation either by increasing risk transfer to the shadow banking system or by taking risks that are not visible to regulators.

Cons of going-concern contingent capital relative to common equity:

(a) *Trigger failure* – The benefits of contingent capital are only obtained if the instruments trigger as intended (i.e. prior to the point of non-viability). Given that these are new instruments, there is uncertainty around their operation and whether they would be triggered as designed.

(b) *Cost effectiveness* – While the potential lower cost of contingent capital may offer some advantages, if the lower cost is not explained by tax-deductibility or a broader investor base, it may be evidence that contingent capital is less loss absorbing than common equity. That is, the very features that make it debt-like in most states of the world and provide tax-deductibility, e.g. a maturity date and mandatory coupon payments prior to conversion, may undermine the ability of an instrument to absorb losses as a going concern. For example, contingent capital with a maturity date creates rollover risk, which means that it can only be relied on to absorb losses in the period prior to maturity. Related to this, if the criteria for contingent capital are not sufficiently robust, it may encourage financial engineering as banks seek to issue the most cost effective instruments by adding features that reduce their true loss-absorbing capacity. Furthermore, if the lower cost is entirely due to tax deductibility, it is questionable whether this is appropriate from a broader economic and public policy perspective.

(c) *Complexity* – Contingent capital with regulatory triggers are new instruments and there is considerable uncertainty about how price dynamics will evolve or how investors will behave, particularly in the run-up to a stress event. There could be a wide range of potential contingent capital instruments that meet the criteria for regulatory capital with various combinations of characteristics that could have different implications for supervisory objectives and market outcomes. Depending on national supervisors' own policies, therefore, contingent capital could increase the complexity of the capital framework and may make it harder for market participants, supervisors and bank management to understand the capital structure of G-SIBs.

(d) *Death spiral* – Relative to common equity, contingent capital could introduce downward pressure on equity prices as a firm approaches the conversion point, reflecting the potential for dilution. This dynamic depends on the conversion rate, e.g. an instrument with a conversion price that is set contemporaneously with the conversion event may provide incentives for speculators to push down the price of the equity and maximise dilution. However, these concerns could potentially be mitigated by specific design features, e.g. if the conversion price is pre-determined, there is less uncertainty about ultimate creation and allocation of shares, so less incentive to manipulate prices.

(e) *Adverse signalling* – Banks are likely to want to avoid triggering conversion of contingent capital. Such an outcome could increase the risk that there will be an adverse investor reaction if the trigger is hit, which in turn may create financing problems and undermine the markets' confidence in the bank and other similar banks in times of stress, thus embedding a type of new "event risk" in the market. The potential for this event risk at a trigger level of 7% Common Equity Tier 1 could also undermine the ability of banks to draw down on their capital conservation buffers during periods of stress.

(f) *Negative shareholder incentives* – The prospect of punitive dilution may have some potentially negative effects on shareholder incentives and management behaviour. For example, as the bank approaches the trigger point there may be pressure on management to sharply scale back risk-weighted assets via lending reductions or assets sales, with potential negative effects on financial markets and the real economy. Alternatively, shareholders might be tempted to 'gamble for resurrection' in the knowledge that losses incurred after the trigger point would be shared with investors in converted contingent instruments, who will not share in the gains from risk-taking if the trigger point is avoided.