Basel Bail-In Capital Requirements: Challenges for Asia[#]

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Abstract

The Basel 3 introduction of "bail-in" requirements for eligibility of non-equity regulatory capital for banks has created a new and growing asset class of complex, hybrid bank securities being issued by banks in Europe and Asia. This poses a number of challenges for regulators of Asian banks (which did not have the "bail-outs" prompting these new standards during the financial crisis). One is an investor protection issue. A second is the determination of appropriate calibration and composition of bank capital regulations. A third, prospective challenge surrounds effective implementation of bail-in should that be required. This paper examines how Asian jurisdictions are approaching the design of "bail-in" requirements, the use of bail-in securities by banks in Asia, and argues that more reliance on common equity as bank capital is preferable to use of "bail-in" securities.

KEYWORDS: Basel 3, Bank Capital Requirements, Bail-in, CoCos, Asia

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Introduction

> "The challenges of embracing a globally uniform set of banking standards are highlighted by the differing economic and industry risk factors characterizing Asia-Pacific banking." (Gunning, 2015).

The changes to Basel Capital requirements introduced in 2011 as part of Basel 3 included a requirement that any non-equity securities eligible for inclusion in regulatory capital would be required to have a "bail-in" feature. This involves such securities being mandatorily converted into equity (according to some pre-specified rule) or written down (or written off) if the issuing bank reaches some point of financial weakness. There has been significant growth worldwide in recent years in the issuance of such securities, and further growth can be expected. One reason is the need for banks to replace existing, maturing (or only transitionally eligible), bank hybrid capital instruments which do not meet the Basel 3 requirements. Another is the gradual implementation of TLAC (total loss absorbency capacity) requirements for domestically or globally systemically important banks.

A number of Asian jurisdictions have introduced bail-in requirements, and a number of regional banks have issued significant amounts of such securities. Indeed, Asian banks have been significant contributors to the growth of bail-in (or "coco") securities markets, along with European banks. (There has not been such requirements imposed in the USA and so, despite many such securities being issued in USD into the US capital markets by foreign banks, USA banks have not been issuers of such securities)[1]. Even though the Basel bail-in requirements were a response to the experiences with troubled banks in Europe and the USA, which were not replicated in Asia, Asian jurisdictions which are members of the Basel committee (and some others) have implemented those requirements.

In this paper, following an outline of the characteristics of bail-in securities[2], an overview of the range of requirements for, and usage of, bail-in securities in the Asian region is provided. Potential

[1] US Banks have not issued Basel 3 compliant securities for essentially two reasons. First, for larger banks, the minimum leverage ratio of 6 per cent of assets (based on common equity) makes the 6 per cent Tier 1 RWA requirement of Basel and use of AT1 instruments in meeting that, redundant. Second, US tax law means instruments which have no defined maturity or specific maturity value, as is the case with Basel compliant securities will not be eligible for tax deductibility of interest paid. In such circumstances, there is little incentive to meet the Basel requirements with AT1 securities rather than with common equity. Moreover, the Dodd-Frank Act makes the likelihood of AT1 securities being eligible securities for regulatory capital somewhat remote.

[2] Chennells and Wingfield (2015) provide more detail.

issues for the design and operation of such securities arising from increased financial integration, such as the Asean Banking Integration Framework, perceptions of likely government support for banks in various jurisdictions, and investor protection issues are considered. The structures of regional banking markets, such as bank size distribution and ownership, are examined to assess the likely future use of, and complexities in using, bail in securities. Then, the potential problems facing regulators from the growth of such securities is considered. It is argued that problems arise from complexity of the structures, credibility of the bail-in threat, and efficacy of the bail-in mechanism in resolving troubled banks.

1. Basel 3 Bail-In Securities

Since the introduction of the Basel 1 capital standards in 1988, a range of hybrid securities issued by banks have been allowed to supplement common equity as regulatory capital, on the grounds that they provided either a "going concern" or "gone concern" capital buffer to protect depositors. The experience of the Global Financial Crisis demonstrated that hybrid securities permitted as part of bank regulatory capital did not effectively fulfil their intended role of loss-absorbency to protect depositors in the event of bank failure.[3] Instead, governments intervened to protect depositors (beyond the levels required by explicit deposit insurance schemes) and ensure the survival of "too big to fail" banks and associated financial sector disruption. These "bail-outs" meant that investors in such hybrid securities were not exposed to losses from default which would otherwise have occurred, and which instead fell upon taxpayers. Looking ahead, perceptions of implicit guarantees by governments being exercised in similar circumstances meant that these forms of regulatory capital would not be likely to absorb losses as required unless specific requirements were put in place to prevent bail-outs, either completely, or without some prior absorption of losses by providers of regulatory capital.

The offset this concern, the Basel 3 standards now specify that securities other than common equity must meet specified "loss absorbency" requirements to count towards regulatory capital requirements. For securities to classify as Additional Tier 1 (AT1) capital, which is described as "going concern" capital, they must have a mandatory "bail-in" requirement. In the original Basel 3 proposals, for securities to qualify as Tier 2 ("gone concern") capital, a bail-in requirement was not necessary, but revisions to the framework in mid 2011 introduced such a requirement.

[3] Indeed, even if failure occurred, unless there was depositor preference (seniority) such hybrid securities unless specifically subordinated, would not necessarily provide a buffer to protect depositors. It should be noted, however, that there were some instances in which coupon payments on such securities were suspended thus providing some form of loss absorption.

Bail in means that if a "trigger", reflecting some measure of financial weakness of the bank involved is hit, some or all of the eligible securities must be converted into equity or written down (partially or fully) thus achieving a recapitalisation of the bank. This recapitalisation, via a forced reduction in non-equity liabilities, is planned to obviate the need for government financial support of a troubled bank, and facilitate resolution of the bank. Depending on the nature and terms of the bail-in, shareholders (via dilution of their interests) and/or investors in the bail-in securities may experience losses (beyond those already incurred from a reduced value of assets).[4] In a write down situation, holders of the bail-in securities bear the loss (although in some cases they may be entitled to recovery of value lost at some later date if the bank returns to good health).

The Basel standards allow for two types of "triggers" which might prompt mandatory bail-in. In the original version of the standards an undefined but "objective" pre-specified trigger was a requirement for AT1 securities which are classified by accounting standards as liabilities (BCBS, 2011a, p11). Such a trigger is a specified minimum risk-weighted CET1 ratio being reached, which is set in a number of jurisdictions at 5.125 per cent.[5] Subsequently (BCBS, 2011b) the minimum requirement for both AT1 and Tier 2 securities has been deemed to be inclusion in the contract terms of a "subjective" point of non-viability (PONV) trigger requirement (unless the national laws independently provide the regulator with powers to force a write down). A declaration by the regulator that the bank is at a PONV could be expected to occur at a CET1 ratio above any specified objective trigger (such as 5.125 per cent) unless the ratio had unexpectedly declined below that value prior to the regulator becoming aware of the situation.

Consequently, most AT1 securities will involve both an objective capital ratio trigger and a PONV trigger. For securities to be eligible for inclusion as Tier 2 capital, only the PONV trigger is required. Bail-in of AT1 securities would occur prior to any bail-in of Tier 2 securities. Whether all of a class of securities would be bailed-in, or only sufficient of them to achieve some desired CET1 ratio is potentially at the discretion of the regulator (or may be specified contractually).

Other design requirements (which vary slightly between AT1 and Tier 2 instruments) are specified for eligibility. These include such characteristics as: subordination to other liabilities; unsecured status; perpetual for AT1 (but not Tier 2) instruments, with no incentives for redemption, but possibly callable (with regulatory approval and requirement to replace with at least equivalent quality capital) after five years; cancellable dividends/coupons which are not linked to the bank's

[4] The terms may, for example, require that a $100 security may convert into greater or less than $100 worth of shares.

[5] The figure of 5.125 represents the situation where the bank has reached a capital conservation buffer of only 25 per cent of the 2.5 per cent applied on top of a 4.5 per cent CET1 minimum (and at which no distributions are permitted).

credit standing, minimum term at issue (five years) before the bank has any option to call (redeem) the securities (and replace with new issues).[6]

National regulators thus have some discretion in the requirements they apply for AT1 and Tier 2 eligibility. And issuers can design preference share securities in ways which determine whether they are classed as liabilities under accounting standards or not, and thus whether an objective trigger needs to be specified.[7] Complications also exist for the design of bail-in securities for mutual/cooperative banks where absence of traded equity typically leads to a write down rather than conversion feature. Similarly, for government owned banks, conversion would involve part privatisation and regulators may face political impediments to "pulling the trigger".

One regulatory issue associated with AT1 and Tier 2 instruments is the extent to which their distributions are affected by the Basel 3 capital conservation buffer requirement. This requirement limits the ability of a bank to pay dividends and bonuses should its CET1 ratio fall below the level implied by the conservation buffer add-on to the minimum CET1 ratio. Korea, for example, introduced at the end of 2015 requirements which prevents a bank with retained earnings, but insufficient current profits from making distributions on such securities when not meeting the capital conservation buffer.

The following section provides some background on how various Asian jurisdictions have applied the Basel 3 bail-in requirements.

Regional Bail-In Regulations

Jurisdictions which have adopted Basel 3 are required to impose minimum capital requirements which involve a common equity tier 1 (CET1) minimum capital ratio (to risk weighted assets (RWA)) of at least 4.5 per cent, a tier 1 minimum ratio (which includes eligible additional (AT1) securities as well as common equity) of at least 6 per cent, and a total minimum capital adequacy ratio (CAR), which can include eligible Tier 2 securities, of at least 8 per cent. An additional capital conservation buffer of common equity of 2.5 per cent is also prescribed which if not met means that distributions are restricted. Jurisdictions which are members of the Basel Committee are required to implement

[6] Many securities involve a date (often around 8 years after issue) for mandatory conversion into equity (if not called prior). This is generally expected to lead to banks' exercising the call option (often specified as around 6 years after issue), such that investors and analysts treat the securities as having an expected life of that term.

[7] IAS 32 provides an illustration "If an entity issues preference (preferred) shares that pay a fixed rate of dividend and that have a mandatory redemption feature at a future date, the substance is that they are a contractual obligation to deliver cash and, therefore, should be recognised as a liability. [IAS 32.18(a)] In contrast, preference shares that do not have a fixed maturity, and where the issuer does not have a contractual obligation to make any payment are equity. In this example even though both instruments are legally termed preference shares they have different contractual terms and one is a financial liability while the other is equity." http://www.iasplus.com/en/standards/ias/ias32

such standards, although the USA has not yet done so – at least in terms which would induce issuance of regulatory capital with explicit pre-bankruptcy "bail-in" conditions. (The use of a minimum leverage requirement involving only equity, in effect provides the binding capital constraint rather than the Basel RWA approach). European banks have been the predominant issuers of bail-in securities meeting the AT1 or Tier 2 eligibility conditions, with Asian banks also being major issuers.

Some Asian regulators have imposed higher minimum CET1 requirements, and in some jurisdictions (China, Japan) the largest banks are also classified as G-SIBs which means that an additional common equity buffer of between 1 and 3.5 per cent is also applied. Four Chinese and three Japanese banks are classified by the Financial Stability Board as G-SIBs with either a 1.0 or 1.5 percentage point capital buffer add-on. Some regulators (Australia and Singapore are examples) also apply (or intend to apply) an additional common equity buffer to banks which are classified as D-SIBs.

Table 1 shows the minimum capital requirements of those Asian countries which have adopted the Basel 3 standards – including the date at which full compliance with those standards was, or will be, required. A number of Asian countries have not implemented Basel 3, with Vietnam, Laos, Cambodia, Myanmar, Sri Lanka and Brunei all operating under either Basel 2 or Basel 1 standards.

Table 1: Basel 3 Capital Requirements in Asia

	Min CET1	Min T1	Min CAR	Compliant by
BCBS	4.5	6	8	Jan-15
China	5	6	8	Jan-13
Hong Kong	4.5	6	8	Jan-15
Taiwan	7	8.5	10.5	Jan-19
Australia	4.5	6	8	Jan-13
Singapore	6.5	8	10	Jan-15
Indonesia	4.5	6	8	Jan-14
Malaysia	4.5	6	8	Jan-15
Thailand	4.5	6	8.5	Jan-13
Philippines	6	7.5	10	Jan-14
India	5.5	7	9	Mar-15
Korea	4.5	6	10.5	Jan-19
Japan	4.5	6	8	Jan-15
New Zealand	4.5	6	8	Jan-13
Vietnam			9	

Source: Moody's (2014)

As can be seen from Table 1, several jurisdictions (particularly Taiwan, Philippines, Korea, Singapore) have imposed higher minimum capital requirements than the Basel 3 standards. But several of the

other jurisdictions have a number of large banks that have been designated as either G-SIBs or D-SIBS and are thus required to have higher capital buffers than the minimum requirements.[8]

The design of bail-in features for AT1 and Tier 2 securities also differs by jurisdiction. Table 2 provides some details. Australia appears to stand out from other countries by virtue of generally having conversion into equity (rather than write down) as the default bail-in method. As well as the inclusion of bail-in conditions in the contract terms of AT1 and Tier 2 securities (which could conceivably be challenged in the courts), the existence of statutory bail in powers (which may extend to other creditors as well) for the regulator of a bank is an important consideration in bank resolution arrangements. Table 2 also shows which Asian countries had such powers at June 2016

Table 2: Bail-in loss absorption methods in Asia

	Basel 3	Likely Loss Absorption	CET1 trigger (%) for AT1	PONV	Statutory Bail In Resolution powers
China	Y	Write-down	5.125	Contractual, regulator discretion	No
Japan	Y	Write-down	5.125	Contractual, regulator discretion	No
Australia	Y	Equity conversion	5.125	Regulator discretion	No
South Korea	Y	Full / permanent write-off	n.a.	Insolvency	No (under consideration)
Singapore	Y	Write-down	7	Contractual, regulator discretion	No (under consideration)
India	Y	either	5.5 (6.125 after 2019)	Contractual, regulator discretion	No (under consideration)
Malaysia	Y	CET1 trigger – conversion; PONV-write down	5.125	Contractual, regulator discretion	
Hong Kong	Y	Write down	n.a.	Contractual, regulator discretion	Yes
Taiwan	Y	Pari passu with equity		Low triggers such as 2% CAR	
Indonesia	Y	Equity conversion /write down		Contractual, regulator discretion	Yes
Thailand	Y	Equity conversion /write down		Emergency capital injection by regulator	
Philippines	Y	Write down		Contractual, regulator discretion	
New Zealand	Y	Equity conversion / write off	5.125	Regulator discretion	Yes

Source: Fitch (2016), FSB (2016), author

[8] It should, however, be noted that jurisdictional differences in the calculation of eligible capital and setting of risk weights make these ratios not directly comparable across countries.

Bank Size and Bail-In Issuance

Issuing bail-in securities is unlikely to be feasible for small banks given the issuance costs associated with capital market issues and need for sufficiently high profile to attract an investor base. But based on experience to date, there are a significant number of banks in the Asian region of sufficient size to make such issues.

Australian experience provides some guidance, although the existence of a large funds management sector with investors including high net worth individuals and self managed superannuation funds could be expected to make issuance into the domestic market relatively easier than in some other Asian countries. Several smaller Australian banks with assets of around USD 50 billion have made issuance of AT1 securities into the domestic market. The size of those issues has been around the USD 200 - 250 million mark. In India, Vijaya Bank with assets of USD22 billion made three issues in early 2015 of Indian Rupee denominated AT1 securities of sizes ranging from USD 16 – USD 65 million.

Table 3: Size Distribution of Asian Banks (Number in each country classified by total assets in USD Billion, 2016)

	>1,000	500-1000	250-500	100-250	50-100	30-50
China	7	7	5	8	6	2
Japan	5	1	1	5	22	16
Australia		4		1	3	1
South Korea			6	1	1	2
Singapore			2	1		
India			1	4	5	8
Russia			1	1	1	3
Malaysia				2	2	1
Hong Kong				1	1	
Taiwan				2	4	2
Indonesia					2	2
Thailand					4	
Philippines						3
Vietnam						3

Source: www.relbanks.com

It can be seen from Table 3 that there are potentially many banks in the Asian region which are of a sufficient size to issue bail-in securities. However, it should also be noted that for many such banks, they have common equity well in excess of the Basel minimum CET1 requirements, which thus also contributes to meeting Tier 1 and Total capital requirements. For such banks there is no imperative

to issue bail-in securities[9]. However, there are many banks in the region which have previously relied on AT1 and Tier 2 securities which will no longer be eligible as regulatory capital once transitional arrangements cease, and will thus need to issue Basel 3 compliant securities.

Basel 3 Hybrid Issuers in Asia

There does not appear to be any comprehensive global database of Basel 3 securities generally available, but from various sources it is apparent that Asian banks are substantial contributors to the global stock of such securities.[10] In some cases, issuance has been significant, even though CET1 ratios and total capital ratios are well above minimum requirements, although high capital ratios for many banks have made issuance unnecessary.

Table 4 shows data available from Fitch Ratings which shows issues of AT1 and Tier 2 securities which are rated by Fitch. This is only a subset of the amounts issued into global or domestic markets[11], but it shows that approximately 1/3 of the global issuance is by Asian banks, dominated by the Chinese banks.

While the market in bail-in securities appeared to slow down significantly in early 2016 (after concerns about Deutsche Bank ability to make coupon payments on its securities) large issues in August 2016 of over USD 2 billion each by RBS and Standard Chartered (with CET1 triggers of 7 per cent), with investor demand in the book build at 8-10 times the issue amount, indicate that the market has considerable growth potential. Within Asia, the early 2016 concerns did not appear to have any marked effect on spreads, but issuance rates slowed.

[9] A potentially testable hypothesis is whether there is an inverse relationship between CET1 buffers and the use of bail-in securities. A relevant consideration affecting that relationship is the relative funding cost of using common equity or bail-in securities to meet the minimum capital requirement. In Australia, for example, the ability of banks to tap the domestic investor market through issue of AT1 securities with attractive tax credits attached has been one driver of use of AT1 issues).

[10] I am grateful to Fitch Ratings and CreditSights for provision of data on issues of Basel AT1 and Tier 2 securities.

[11] For example, none of the global ratings agencies provide ratings of AT1 securities issued domestically by Australian banks and which are targeted at primarily retail investors.

Table 4: AT1/Tier 2 issues rated by Fitch

Country	Number of issues	Currency	Amount (USD bill)
China	21	17 CNY, 3USD,1 EUR	68
Japan	9	JPY	10.6
Hong Kong	2	USD	0.6
India	8	RP	0.9
Malaysia	1	USD	1.1
Australia	3	AUD	1.4
Singapore	5	SGD	2.7
Global Total	**212**		**240**

Source: Fitch Ratings

More detail including omissions from Table 2 are contained in the country information below.

Australia[12]

Australian banks (and several insurers) have been significant issuers of bail-in securities, both in international markets and as domestic listed securities. At mid 2016 there had been 30 issues of bail-in securities listed on the Australian Stock Exchange, raising approximately AUD 30 billion (USD 22 billion), directed largely at both retail and "sophisticated" domestic investors. As well as these issues, which had tax features making them less attractive to foreign investors[13], banks had issued a number of AT1 and Tier 2 securities into the international capital markets, bringing total issuance to over AUD 40 billion. For the four major banks, AT1 and Tier 2 securities constitute between 10 and 15 per cent of total capital.

Japan

Japanese banks have also been significant issuers of Tier 2 securities which are not included in Table 4 (as well as AT1 securities). Mizuho Financial Group, for example, has made 2 issues of USD 1.5 billion and USD 0.75 billion Tier 2 securities as well as 15 issues of Yen denominated Tier 2 securities. It has made 3 AT1 Yen issues, including two Yen 230 bill and a Yen 300 bill (USD 2.45 bill) AT1 issues. Table 5 provides some information on capital positions and capital issues by large Japanese banks.

[12] For more detail on Australian use of bail-in securities see Davis and Saba (2016)

[13] Some part of the coupon payment comprised imputation tax credits which are of value to domestic investors but of no value to foreign investors.7

Table 5 Japanese Large Bank Capital Instruments

Bank	Mitsubishi UFJ Financial Group	Japan Post Bank	Mizuho Financial Group	Sumitomo Mitsui Financial Group
Date	31/12/2015	30/09/2016	30/09/2016	30/09/2016
CET1 amount (Yen, mill)	12,753,763	8,556,994	6,769,396	7,832,687
AT1	1,726,618	-	1,213,132	1,101,651
Number of AT1 issues	2		3	3
T2	3,360,774	-	1,785,339	2,419,523
Number of T2 issues	n.a	-	17	20 (incl 7 sub loans)
CET1%	11.2	23.2	11.0	12.0
T1	12.8	23.2	12.9	13.7
CAR	15.7	23.2	15.8	17.5

Source: Basel 3 Capital Disclosures of banks included

Sumitomo Mitsui Financial group provides an interesting case study in terms of actual and potential scale of issuance. It has (at June 2016) transitional AT1 Instruments on issue of Yen 928,869 mill and qualifying AT1 instruments of Yen 300,000 mill. It has issued three compliant AT1 securities which each have a CET1 5.125% trigger with bail in involving either full or partial write down which may be temporary or permanent. The securities were for: Y bill 130 (issued July 2015); Y bill 85 (July2015); Y bill 85, (July 2015).

It also has transitional T2 instruments on issue of Yen 1,165,472 mill and qualifying T2 instruments on issue of Yen 883,592 mill. It has issued a large number of compliant T2 instruments which have a PONV trigger and full and permanent write down (some of which take the form of loans rather than subordinated bonds). Table 6 provides information. Given the scale of transitional T2 instruments on issue, it can be expected that significant more T2 instruments will need to be issued to maintain the existing capital ratio.

Table 6: Sumitomo Mitsui Financial Group Tier 2 Issues

Amount	Type	Issue Date	Amount	Type	Issue Date
USD bill 1.75	Bond	April 2014	Ybill 33	Bond	May 2015
Ybill 100	Bond	Sept 2014	Ybill 20	Bond	May 2015
Ybill 35	Bond	sept 2014	Ybill 8	Subordinated Loan	June 2015
Ybill 35	Bond	Sept 2014	Ybill 99	Bond	Sept 2015
Ybill 8	Subordinated Loan	Dec 2014	Ybill 81	Bond	Sept 2015
Ybill 3	Subordinated Loan	Mar 2015	Y bill 10	Subordinated Loan	Feb 2016
Ybill 5	Subordinated Loan	Mar 2015	Ybill 10	Bond	June 2016
Ybill 5	Subordinated Loan	Mar 2015	Ybill 20	Bond	June 2016
Ybill 10	Subordinated Loan	Mar 2015	Ybill 55	Bond	June 2016
Ybill 42	Bond	May 2015	Y bill 65	Bond	June 2016

Source: Sumitomo Mitsui Financial Group, basel 3 Capital Disclosures

Korea

In Korea, there have been (at least) seven issues of bail-in securities by 4 different banks, commencing in 2014. Woori Bank (asset size USD 268 billion, 40th largest in Asia) has made 3 USD issues totalling USD 2 billion. KEB Hana (asset size USD 284 billion) has made 2 issues each of USD 300 million, while Shinhan Bank (asset size USD339 billion) has made one issue of USD 500 million, and Busan Bank (BNK Financial Group) with asset size USD 91 billion, has also made one issue of USD 250 million

Singapore

In Singapore, OCB (asset size USD 294 billion) has made 2 issues each of USD 1 billion, UOB (asset size USD 239 billion) has made 3 USD issues totalling USD 2.1 billion and 3 SGD issues totalling SGD 1.85 billion. DBS has 2 AT1 Basel 3 securities on issue (of SGD 0.8 bill and USD 0.75 bill) and 2 other transitional AT1 securities totalling SGD 2.3 billion which will need replacing, and 3 compliant Tier 2 issues and 3 transitionally compliant issues totalling SGD 2 billion and USD 0.75 billion.

Malaysia

One feature of Basel 3 AT1 and Tier 2 requirements is that they can be met by Shariah compliant securities. The first Basel 3, AT1 sukuk was issued in November 2012 and the first Tier 2 Sukuk in December 2013. Several Malaysian banks have made issues of Shariah compliant bail-in securities. Maybank (asset size USD 181 billion) has made one issue of USD 500 million in 2016. As at June 2016 Maybank had CET1 ratio of RM 13.8%, Tier 1 15.5%, and total 19.2%. It had AT1 capital securities on issue of 6.2 RM bill; and T2 subordinated of 13.8 RM bill.[14]

China

The Chinese banks have been significant issuers into the global markets. Tier 2 issues have write down provisions with PONV at the discretion of the CBRC or other regulatory body. AT1 issues have both a 5.125 CET1 and PONV trigger and involve conversion. The Bank of Communications (asset size USD 1.2 trillion) has made an EU 500 million Tier 2 and a USD2.45 billion AT1 issue. The Bank of China (asset size USD 2.7 trillion) has made one CNY 39.940 billion (USD 5.895 billion) AT1 issue and USD 3 billion Tier 2 issue.. The Industrial and Commercial Bank (asset size USD 3.6 trillion) has made one USD 2.94 billion and one EU 600 million issue. China Construction Bank (asset size USD 2.98 trillion) has made ine USD 3.05 billion issue. Huishang Bank (asset size USD 105 billion) has made one USD 888 million issue, and China Cinda Asset Management has made one USD 3.2 billion issue.

The situation of ICBC and Agricultural Bank of China (two of the largest banks) shown in Table 7 illustrates the potential growth of the market. While both have significant CET buffer capital, both

[14] http://www.maybank.com/en/investor-relations/investing-in-maybank/debt-investors/capital-debt-issuance.page?

have relatively large amounts of Tier 2 securities on issue which are only eligible as regulatory capital over the transition period.

Table 7: Large Chinese Bank Capital Instruments (Amounts in RMB billion)

Bank	ICBC	Agricultural Bank China
Date	31/12/2015	31/12/2015
CET1 amount	1,701,495	1,124,690
AT1	79,567	79,902
T2	231,041	267,028
CET1%	12.9	10.24
T1 %	13.5	10.96
CAR %	15.2	13.4
Notes 1	4 Preference share issues:2RMB, 1 USD, 1 EU, total 79.5 RMB	Preference shares 79,899
Notes 2	3 RMB Tier 2 bonds, 2USD and 1RMB, 36RMB total, 144 of non-transitional instruments	Tier 2 capital bonds 30,000, Transitional amount 105,000 (remainder of T2 is loan loss provisions)

Sources: http://v.icbc.com.cn/userfiles/Resources/ICBCLTD/download/2016/CBRC20160331.pdf
http://www.abchina.com/en/investor-relations/Regulatorycapital/captialadequacy/201604/W020160406493184469078.pdf

Taiwan

Even though Taiwan is not a G20, FSB or Basel Committee member, it included bail in provisions for AT1 and Tier 2, with phase out of old security eligibility from 2013.[15] In January 2016, Taiwan also allowed foreign banks to sell dollar-denominated Tier 2 bonds domestically, which if listed on the Taipei exchange are classified as domestic investments for life insurers.[16] Many of the Taiwanese banks are government owned or controlled, and government support of troubled banks is widely expected.

Taiwanese banks have made some issues of bail-in securities even though their CET1 ratios are generally relatively high. Moody's reported that at end 2014, CET1 ratios were: First Commercial Bank (9.10%); Hua Nan Commercial Bank (9.02%); Chang Hwa Commercial Bank (?); Land Bank of Taiwan (6.75%).

[15] http://www.cbc.gov.tw/public/Attachment/3111211161771.pdf
[16] Global Capital|AsiaMoney, 29 September 2016.

Bail-in: Investor Clientele Issues

It is clear that the market for bail-in securities is a global market, with Asian banks issuing in both domestic and international markets (in both domestic and foreign currencies). This raises a number of issues.

One concern is the growth of European and other banks issuing bail-in securities denominated in Asian (or other) currencies to investors from those domiciles (Tu and Hong, 2016). Since bail-in triggers, and likelihood of exercise of such triggers differs across jurisdictions, investors are then faced with a heterogeneous set of securities where appropriate premia for bail-in risk (if calculable – see later) are likely to be quite different. This raises the issue of whether investment in such securities should be restricted to eligible/registered/sophisticated investors. Asian countries differ substantially in investor protection arrangements. In many nations, the absence of a deep capital market or investor base may induce banks to issue bail-in securities into other Asian markets such as Singapore or China.

In that regard, it is a relatively widely held view that government support for troubled banks is likely to occur in many Asian countries – particularly when in many cases a number of banks are (partially) government owned. (Gunning, 2015). Thus, even though the Basel standards are designed to require that bail-in occurs before any government injection of funds, that outcome is not necessarily expected by many Asian investors – particularly in the case of Japan (where the legal situation allows government injections before PONV), Korea (where the trigger is a Tier 1 ratio of 1.5%, Taiwan (a 2% capital ratio), and China. In such situations, investors may discount the likelihood of bail-in, such that banks are able to issue such securities without significant premium for bail-in risk.

One risk issue relates to the potential cancellation of coupons on bail-in securities. Here a clear difference exists between Europe and Asia. In Europe regulations require publication of Pillar 2 CET1 requirements specific to each bank (in addition to the standardised Pillar 1 requirements) such that investors can assess the "distance to MDA". The MDA (maximum distributable amount) indicates the flexibility which a bank has to make distributions in the form of dividends and coupons on bail-in securities, and thus impacts perceived AT1 payment risk. Such disclosure is not required in Asian jurisdictions.

One concern for financial markets and regulators should be the use of bank AT1 securities as the basis for construction of highly levered, high yield structured securities by investment banks. Bloomberg reports that UBS, Goldman Sachs etc have marketed significant amounts of structured

products based on Chinese bank USD issuance of AT1 securities.[17] With investors searching for higher yields, and doubtful that governments will "pull the trigger", these securities have been popular.

Bail-in: Is it Appropriate[18]

Even without the bail-in conditions, the risks involved in typical AT1 or Tier 2 Basel 3 securities are complex and hard to assess. For example, many are perpetual but with mandatory conversion (subject to some conditions being met) at a specified future date (such as 8 years after issue). The mandatory conversion arrangements typically involve conversion of a $100 security into either $100 (or slightly more) value of ordinary shares with the value based on the average price over the previous five days, or into a fixed number of shares if the issuer's share price has fallen below some critical level. That critical level is often half of the issue date share price, and the fixed number of shares means that the holder gets an increasingly smaller value of shares as the share price falls further below the critical level.

In practice, financial engineers can assess the effect of these risks on the fair pricing (ie the appropriate yield which should be offered) of such securities, and also some of the other risks. For example, the issuer will typically have an option to redeem the securities at par value several years prior to the mandatory conversion date. This option can be valued as also can be the effect of the securities having non-cumulative distributions. [19]

However, assessing the impact of the bail-in conditions is extremely complicated because they involve substantial uncertainty over and above the type of stochastic risks that financial engineers typically model and work with. The uncertainty involved is that it is not feasible to realistically estimate either the probability of bail-in occurring at some future date nor the consequences of a bail-in on the value of the investor's position.

Assessing the probability of bail-in is stymied by the specification of the bail-in triggers. One such trigger is that bail-in occurs if the bank's CET1 ratio (common equity as a ratio to risk weighted assets) falls below some specified figure (5.125 per cent is relatively common). Because this involves accounting variables rather than market values it is not amenable to the usual stochastic modelling

[17] http://www.bloomberg.com/news/articles/2016-09-27/leveraged-bets-on-china-bank-bonds-lure-investors-with-15-yield

[18] This section draws on Davis (2016)

[19] In practice, analysts typically assume that banks will call the securities at the first call date, and thus value them (taking into account risk features) as a security with that maturity date. The reason for doing so is that it is assumed that banks will call the securities and replace with a new issue, rather than allowing them to subsequently be converted into common equity (which is viewed as being a more costly source of funding).

techniques of financial engineers, and banks generally report their CET1 ratio only quarterly (with a lag) at best. Moreover, bank management can take actions to change the ratio (such as by raising new equity or altering risk weighted assets) if the CET1 ratio is approaching the trigger value, and there is little in the way of theory or evidence to provide guidance on likely actions.

The second trigger creates even greater problems. That trigger is a declaration by the regulator that the bank is at a point of non-viability and thus requires an injection of equity or write down of liabilities. Exactly what this means is far from clear, and regulators generally have given no guidance on what situation would be likely to lead it to make such a declaration. And "pulling the trigger" is likely to cause market confidence reactions (such as a "run" of uninsured depositors which could cause the death of the bank), even though the objective is to ensure an orderly resolution which enables the bank's essential operations to continue or be transferred to another entity. Consequently, the will of the politicians of the day to endorse such a declaration, probably necessitating introduction of a government guarantee over uninsured deposits (and also imposing losses on retail investors such as self managed super funds), rather than use some alternative "bail-out" option (such as an assisted merger with a healthy institution), also comes into play.

Adding further complexity is the lack of clarity on likely losses if bail-in occurs. Such losses could occur from either conversion into equity or write down/write off. The conversion formula often used (such as in Australia) involves receipt of a specified value of shares equal to the security's par value ($100), subject to a maximum number of shares being received. In this case that maximum is based on 20 per cent of the issue date share price, and is thus more than in the case of mandatory conversion as discussed earlier. In principle, financial engineers can deal with that complexity, but here again practical issues create additional uncertainty.

The first of these practical complexities is that the value of shares received is calculated on the average share price over the five days prior to the announcement and implementation of the conversion. It is extremely unlikely that such an announcement would not have a significant negative effect on the bank share price, such that the actual market value of shares received is well below the value specified in the conversion formula. (A $100 bail-in security would, for example, convert into 5 shares if the average price prior to the announcement had been $20. But any recipient then trying to sell the shares would likely find that the market price would be well below $20). As earlier, there is little or nothing in the way of theory or experience to assess how much that fall in market value would be. The second complexity is that the trigger event may lead to conversion of particular securities involving some or all (or perhaps even none) of an investor's holdings. Two factors cause this further uncertainty. First, the amount of "bail-in" securities to be converted is, in many cases, not well specified. Rather some unknown amount must be converted to restore "viability". Second,

the bank is able at future dates to issue further bail-in securities which may rank equally or below those subscribed to the investor, reducing the need for, or amount of, bail-in of that investor's securities. This also makes it impossible to specify with any degree of confidence what the effect of a trigger event would be on the value of the investor's position. (Both the value of shares received would be less than the face value of the securities converted, and the market price of any remaining holdings of bail-in securities could be expected to fall). Similarly, in the case where write-down or write-off is the bail-in mechanism, the amount of write-down is *a priori*, impossible to know (unless complete write-off is specified).

Countries around the globe have (courtesy of the Basel bank capital standard setters) entered into a major experiment involving regulatory inducements for banks to issue extremely complex, hard (possibly impossible) to confidently value bail-in securities. Banks prefer to meet regulatory capital requirements by issuing such securities rather than by issuing more equity, because they perceive it as a cheaper form of funding.

There is something paradoxical in regulatory requirements inducing banks to issue extremely complex and difficult to value securities – particularly when a large part of the target market in some countries is retail investors. Their ability to assess the likely future outcomes (uncertainty/risk) and determine a fair return is undoubtedly questionable. Even if "sophisticated" investors ultimately determine market prices to give, for their circumstances, a "fair" return, retail investors may remain unaware of what risks they are taking on. In the UK, the Financial Conduct Authority (FCA) has limited the ability of banks to market bail-in securities to retail investors.

That cost might be socially justifiable if the benefit was that the existence of bail-in securities would either enable orderly resolution of troubled banks or strengthen market discipline and reduce the risk of banks becoming troubled. The latter (market discipline) effect requires that market prices of bail-in securities provide signals of impending trouble at the bank – but if the securities are virtually impossible to properly value that would seem to be a forlorn hope. (Increasing likelihood of a bail-in might encourage bank management to take remedial actions, but this is not obviously a different or superior type of incentive effect to increased likelihood of breaching an equity capital requirement).

Likewise, the chances that a bail-in will, on its own, facilitate orderly resolution appear very slim. Yes, the bank will be recapitalised by the bail-in, but will depositors or other creditors feel confident that there is no other bad news yet to be revealed? A "run" is highly likely. To prevent that, and to enable an orderly resolution, it would seem likely that a government guarantee of uninsured depositors and other creditors would be required. Of course, if the bail-in has adequately recapitalised the bank, the

taxpayer may not suffer any eventual cost from provision of that guarantee. But the guarantee still has to be unwound at some time, perhaps when a takeover by another bank can be arranged.

Conclusion

Reliance on bail-in securities as part of bank capital regulation is an experiment, which has been taken on by regulators in a significant number of Asian jurisdictions. It is an alternative to requiring higher equity capital. It may work to facilitate orderly resolution of troubled banks, but there is no certainty that it will, while general expectations that many Asian governments will support troubled banks suggests that investors view bail-in as a low probability event. But what is certain is that should bank failure and bail-in occur, some part of the losses will fall on holders of bail-in securities – who, because of the complexity and problems in valuing bail-in securities, may not have received adequate compensation for bearing that potential risk. It must be asked: why should regulation promote the growth of such complex financial "quasi-equity" instruments, rather than simply requiring higher levels of equity capitalisation of banks?

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