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**Research Report**

## Bail-in to End the "Too Big To Fail" Dilemma

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## Bail-in to End the “Too Big To Fail” Dilemma

Sunjoo Hwang, Fellow at KDI

“Designed to resolve failed banks via loss-sharing by shareholders and creditors, bail-ins were introduced to substitute bailouts, which are known to create moral hazards in banks and a crisis in national finance. However, in cases wherein the majority of creditors are the general public, governments are still more inclined to bail out, despite the bail-in instruments being available. To increase the effectiveness of bail-ins, supplementary methods, such as depositor preference and contingent convertible bonds (CoCo bonds) with rule-based triggers, are needed.”

### I. Introduction

Banking crises have a detrimental long-term impact on both the national income and fiscal condition. Accordingly, preventative measures are vital, especially with the recent rise in household debt and concerns over the deteriorating quality of corporate debt. However, this demands not only the government's prudential regulation of banks but also

**Bailouts create moral hazards, and could lead to another banking crisis.**

\* Written based on Hwang, Sunjoo, “Bail-in, Implementability and Policy Implications,” Research Monograph 2016-03, Korea Development Institute, 2016 (in Korean) and Hwang, Sunjoo, “Does the CoCo Bond Effectively Work as a Bail-in Tool?” Working Paper, 2017.

the banks' own efforts to minimize the underlying risks.

Still, when there exists a belief in the market that there is a government safety net for large failed banks, financial institutions will be less inclined to manage their risks, i.e. the "too big to fail" dilemma. Indeed, moral hazards are created, wherein, for example, banks over-invest in risky assets. Moreover, the bailout program weighs heavily on government expenditure, and it is the taxpayers, not the stakeholders, who shoulder the burden; which raises the question of fairness.

**Bail-ins resolve failed banks by sharing the burden of loss between the shareholders and creditors.**

In an effort to resolve the dilemma in the aftermath of the global financial crisis, the international community adopted a new bank resolution regime, called "bail-in," at the 2010 G20 Seoul Summit. The regime mandates that the bank shareholders and creditors share the burden of loss in times of crisis, thus preventing the risks of fiscal instability and unfair treatment of taxpayers. Additionally, it rejects bailouts and emphasizes the responsibility of the shareholders, which would activate market discipline rather than government discipline.

**Italy's recent banking crisis shows that bail-ins can be futile.**

However, as evidenced by Italy's recent banking crisis, bail-ins may prove futile when the majority of the creditors are the general public. Italy had already legislated the bail-in regime but chose to bail out as burdening the creditors, who in this case were mostly local residents, would entail huge political drawbacks. From this perspective, Italy's experiences serve as a valuable lesson for Korea, as the majority of Korea's bank creditors are its citizens.

To avoid a similar fate, Korea's bail-in, scheduled for this year, will require additional institutional tools. Accordingly, this study first analyzes the factors influencing the implementability of bail-ins and then presents the institutional tools needed to enhance efficiency, for instance implementing depositor preference and issuing contingent convertible bonds designed with rule-based triggers.

## II . Bail-in Regime

**Deposits are applied to deposits, general bonds, CoCo bonds, etc.**

In principle, all unsecured and uninsured bank bonds can be bailed in, especially deposits, general bonds and special bonds—also known as contingent convertible (CoCo) bonds. Within a bail-in, the bank losses are shared by creditors in two essential ways: by discounting the principal and interest of bonds or by converting bonds into equity of the failed bank. Either way, it will result in a considerable loss for the creditors.

Bail-ins can be classified into "statutory" or "contractual," depending on who activates it. The former is decided by the government and applies to bank deposits and bonds while the latter is automatically triggered by pre-established conditions. The CoCo bond is a special bond adopted for contractual bail-ins and adds bail-in provisions to general bonds. In Korea, contractual bail-ins have been in operation since 2013, and the statutory bail-in

**<Table 1> Financing Structure of Korean Banks as of 3Q 2016**

		Average balance (trillion won)	Proportion (%)	Subject to a bail-in
Deposits <sup>1)</sup>	Total	1,308	58.6	
	- Insured deposit (below the protection limit)	412	18.5	N/A
	- Uninsured deposit (over the protection limit)	613	27.5	Depositor
	- Other deposits	283	12.6	-
Bank bonds		368	16.5	Creditor (bank bond holders)
Equity		180	8.1	Shareholder
Others		376	16.8	-
Total		2,232	100	

Note: 1) The Financial Statistics Information System does not provide deposit details. But, the data on deposit trends released by the Korea Deposit Insurance Corporation include the shares of other deposits and below-the-limit deposits, as of 2015. This table assumes that there was little change in the shares in 2016.

2) Blue denotes major instruments subject to bail-ins.

Source: Financial Statistics Information System.

will be legislated within this year.

Deposits are of the highest significance in terms of size among the major instruments. According to the international standards for bail-ins (FSB, 2014), deposits exceeding the depositor protection limit (50 million won in Korea) are subject to a bail-in. <Table 1> shows that deposits with a total volume that exceeds the limit account for the largest share (27.5%, 613 trillion won) of the total financing of Korean banks, as of 2016.

CoCo bonds are important in terms of the regulatory impact and implementability of a bail-in. Since the first issuance in 2014, CoCo bonds have grown rapidly in size, marking 14 trillion won as of late 2016; the trend is expected to continue. This is because, although CoCo bonds are a liability, they are actually recognized as capital in regulatory terms, according to Basel III. Thus, firms issuing CoCo bonds can meet regulatory capital requirements without diluting shareholder equity. In addition, loss-sharing via CoCo bonds is contract-based, which means that there are no conflicts with existing legal systems, unlike the law-based, statutory bail-ins. In this regard, CoCo bonds entail a relatively high implementability of a bail-in.

**CoCo bonds help banks meet the regulatory capital requirements without diluting shareholders' equity, and thus, issuance volume expands rapidly.**

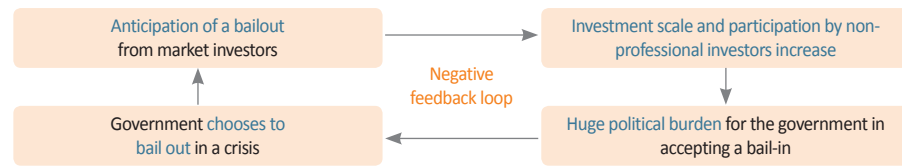
### III . Key Determinants of Bail-in Implementability:

#### Anticipation of a Bailout and Governmental Pressures of a Bail-in

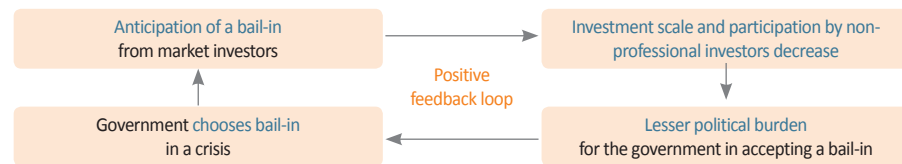
Italy is seeking a bailout resolution to deal with its failing banks, despite legislating the bail-in regime, because almost 46% (approx. 39 trillion won) of the subordinated bonds are held by roughly 60 thousand individual investors, as of July 2016. Indeed, subjecting these creditors, mostly comprised of non-professional investors, to a bail-in would have severe adverse political implications for the Italian government.

**Governments are more likely to bail out when the majority of creditors are the general public.**

[Figure 1] Bailout Anticipated → Bailout Chosen



[Figure 2] Bail-in Anticipated → Bail-in Chosen



The case of Italy shows that even under a bail-in regime, investors may still anticipate a bailout. In fact, in their investment prospectus on CoCo bonds, analysts from Korea's securities firms projected that in times of crisis, the government will bail out creditors before initiating any action for loss-sharing.<sup>1)</sup>

**When the market anticipates a bailout, the government will likely choose to bail out, and vice versa.**

Hwang (2016) theoretically confirms that the government will move in line with market expectations—that is, when the market anticipates a bailout, the government will most likely choose to bail out, and vice versa.

In the former case (Figure 1), investors assume that there is a low possibility of loss in interest and principal and over-invest in bank bonds, with non-professional investors actively participating. Under the circumstances, a crisis will take a huge toll on large-scale, non-professional investors if a bailout is not implemented. And, due to the sheer number of such investors, the political blowback for the government will also be immense. Ultimately, even with bail-ins, the government will decide to bail out.

In the latter case (Figure 2), investors do not over-invest on anticipations of a bail-in, and the size of investment is reduced. Therefore, the majority of non-professional investors become reluctant to invest, and the political strain of initiating loss-sharing will be alleviated—a bail-in can actually be activated.

This theoretical analysis suggests two methods to increase the implementability of a bail-in. The first entails the government actively promoting its commitment to bail-ins so that the market can anticipate it. In this case, however, the market may not fully trust the government's message because it is well aware of the fact that the government will choose to bail out large banks every time as they are too important to let fail.

A more effective method is to establish a system that could assuage the government's

1) Korea Investment & Securities, *Investment Strategy Daily*, Aug. 8, 2014, Mar. 19, 2015; NH Investment & Securities, "Write-down Incentive in CoCo Bonds: Focusing on the Government's Designation of Failed Financial Institutions," Sep. 22, 2014; and Hyundai Securities, "Banks' CoCo Bonds," Apr. 13, 2015 (in Korean).

&lt;Table 2&gt; Types of CoCo Bonds (Contractual Bail-in)

	Average balance (trillion won)	Subject to a bail-in
Triggers	Rule-based	Activated when the common equity tier 1 ratio falls below a pre-established level.
	Discretionary	Activated when the government designates the bank as an 'insolvent financial institution.'
Maturity and interest payments	Additional tier 1	It has no maturity date <sup>1)</sup> and its interest payment can be cancelled. <sup>2)</sup>
	Tier 2	It has a maturity date and its interest payment cannot be cancelled.

Note: 1) A perpetual bond with no maturity date, but most are issued with call options that permit early repayment.

2) Bank has the discretion to cancel interest payment, or the government can cancel it when retained earnings are small.

political burden, which would, in turn, enhance the market's faith in the government's commitment.

#### IV . Political Burden and Bail-in Implementability: CoCo Bonds

The following section examines whether a system to reduce the government's political burden could significantly increase the implementability of a bail-in. It must be noted here that the analysis is limited to statistics on CoCo bonds as Korea's bail-ins on CoCo bonds have been active since 2013 but that on deposits and general bonds is yet to be implemented. Indeed, as of September 2016, Korea is among the world's largest issuers of CoCo bonds; 3<sup>rd</sup> in the number of issuance (57) and 9<sup>th</sup> in size (approx. 14 trillion won). CoCo bonds are categorized into two types according to the trigger; 'rule-based' and 'discretionary' (Table 2). The former is activated when the common equity tier 1 (CET1) ratio falls below the pre-established threshold while the latter is activated when the government designates a bank as an 'insolvent financial institution,' at its discretion, meaning that the government directly determines the activation of a bail-in. The government can also regulate the admissible type of trigger.

Triggers may significantly affect the government's political burden. For example, rule-based types are not determined by the government, and hence do not entail a large political burden while discretionary types are directly determined by the government and carry a relatively heavy political burden.

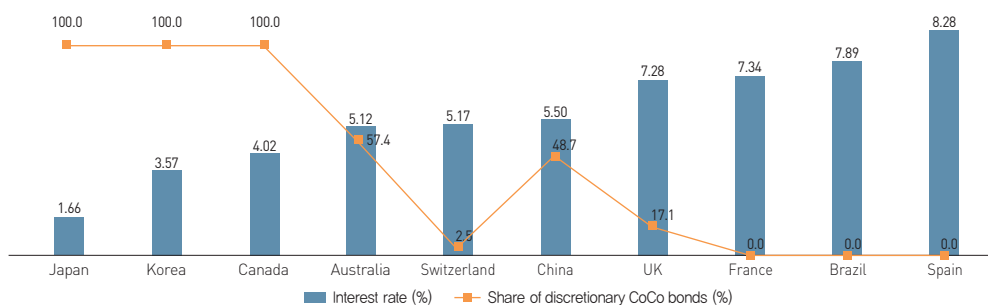
Accordingly, the theoretical analysis predicts that the interest rates of discretionary CoCo bonds are lower than that of rule-based types, because the difference in political burden allows investors to speculate that the government will provide more support to the former. Thus, more will invest in the former despite the relatively low interest rates.

[Figure 3] shows the relationship between interest rates and triggers in the world's ten largest CoCo bond issuers (value basis). Countries with a higher share of discretionary CoCo bonds have a lower interest rate (correlation: -0.88). In particular, Korea has the second

As for 'discretionary' CoCo bonds, the government directly determines the loss-sharing, hence the political burden is larger.

Due to the difference in political burden, 'discretionary' CoCo bonds tend to have a lower interest rate.

[Figure 3] Relationship<sup>1)</sup> between CoCo Bond Triggers and Interest Rates<sup>2)</sup> in 2010-2016



Note: 1) Switzerland has a very small share of discretionary types but not a high interest rate, apparently because the country has an exceptionally high total bank asset to government budget and thereby its prudential regulation intensity has long been above international standards.

2) 'Interest rate' here is defined as the average of coupon rates of CoCo bonds issued until September 2016 in each country. The "Share of discretionary CoCo bonds" refers to the share of CoCo bonds designed with discretionary triggers from all CoCo bonds issued in each country during the pertinent period.

Source: Constructed by author using Moody's Quarterly Rated and Tracked CoCo Monitor Database (2016 3Q) and Bloomberg's terminal data.

lowest interest rate after Japan, and this is not irrelevant to the fact that all CoCo bonds issued in Korea are discretionary, which represents a huge burden for the government.

To accurately identify the relationship between interest rates and triggers, it is necessary to comprehensively consider the relevant variables, such as the economic conditions in which the bonds were issued. In this regard, Hwang (2017) analyzed factors affecting interest rates, using the data on worldwide CoCo bond issuance.<sup>2)</sup> To improve the accuracy of the analysis, the following relevant variables were controlled: bank credit rating, CET1 ratio, government bond rate, sovereign default risk and detailed features of CoCo bonds.

The empirical analysis found that discretionary types—which carry a higher likelihood of a bailout—have a 1.72%p lower interest rate than rule-based types (Table 3). Given that the sample period (2010-2016) exhibits a low interest rate trend worldwide, this means that investors during the period placed significant emphasis on the distinction between the triggers.

Moreover, whether the issuer is a government-funded bank as well as the total assets are closely related to the implementability of a bail-in. According to the analysis, government-funded bank interest rates are 0.91%p lower than that of private banks. Also, a 1% increase in the total assets causes a 0.26%p decline in the interest rate. If investors believed CoCo bonds would serve as a loss-sharing instrument, they would have demanded higher interest rates based on the assumption that there was a low possibility of a bailout, regardless of whether the issuer was government-funded or a large bank. However, the analysis revealed the opposite, indicating that the market believes CoCo bonds will not function as designed. This has significant implications for Korea, wherein government-funded and large banks are the largest issuers of CoCo bonds.

2) 632 CoCo bonds totalling \$460 billion issued by 222 banks worldwide from Jan. 2010 to Sep. 2016. About 50% are discretionary. Constructed by the author using Moody's Quarterly Rated and Tracked CoCo Monitor Database (2016 3Q) and Bloomberg terminal data.

**A regression analysis finds that 'discretionary' CoCo bonds have a 1.72%p lower average interest rate.**

**<Table 3> Factors Affecting CoCo Bond Interest Rates<sup>1)</sup> and the Impact<sup>2)</sup>**

	CoCo bonds with discretionary triggers	Government-funded bank	1% increase in total assets	1%p increase in government bond rate	1% increase in face value
Change in interest rates (%p)	-1.72	-0.91	-0.26	+0.65	+0.48

Note: 1) 'Interest rate' here is defined as the average face value of all CoCo bonds included in the analysis. Figures in the 'change in interest rates' are statistically significant at the 1% level.

2) Little changes were observed after the robustness check.

Source: Hwang (2017).

## V. Policy Suggestions

The discussion thus far supports the necessity for institutional tools that can reduce the government's political burden in order to increase the implementability of bail-ins. The following section proposes and elaborates on specific tools: applying depositor preference; strengthening investor qualifications; and issuing 'rule-based' CoCo bonds.

### 1. Implementing depositor preference

Korean law stipulates that depositors and general creditors (such as bank bond holders) shall be paid on a pari-passu basis, i.e. equal footing, meaning that when a bail-in kicks in, no distinctions are made between the two. However, depositors are comprised of mostly the general public, as such, the government will face difficulties in demanding a sharing of the loss, due to the heavy political burden. In fact, the situation is the same when it comes to general creditors, given the principle of pari-passu.

On the other hand, depositor preference could increase the implementability of a bail-in. Indeed, the government could impose loss-sharing primarily on general creditors, who pose a relatively lesser burden, and thus the burden on the depositors would be alleviated or even eliminated. As the government's political burden is reduced, the market will be more likely to anticipate a bail-in and consequently, the implementability of a bail-in will increase.

However, depositor preference could be considered unconstitutional. In 2006, the Constitutional Court ruled Article 37 (2) of the Mutual Savings Banks Act, which recognizes depositor preference for savings bank deposits, unconstitutional. The ruling highlights the following: (1) depositor preference was originally legislated for the protection of special groups (small business operators under the same Act) in need of policy support; (2) unconditioned provision of depositor preference would lead to protecting even those who do not fall into the intended category, eventually undermining the property rights of general creditors; and hence (3) the type and amount of deposits shall be limited in line with the purpose of the Act.

The ruling implies that if depositor preference specifies who is to be paid first and limits

**Adopting depositor preference would help increase the implementability of bailing in general creditors.**



**<Table 4> Comparison of Depositor Preference: EU, Italy and Germany**

Country	Priority of preferential payments: uninsured deposits <sup>1)</sup>
EU (universal)	Retail deposit > wholesale deposit = general bonds
Italy (domestic law)	Retail deposit > wholesale deposit > general bonds
Germany (domestic law)	Retail deposit > wholesale deposit = a part of general bonds <sup>2)</sup> > remaining general bonds

Note: 1) 'A > B' means A is paid before B, and 'A = B' means equal priority.

2) Short-term bonds or bonds that are engaged with everyday operation at banks.

Source: EU BRRD; Moody's (2016).

how much is paid, it may not be challenged as unconstitutional. Such a perspective is also reflected in the Debtor Rehabilitation and Bankruptcy Act, which disciplines general debt payment issues, excluding that of banks. Article 218 of this Act stipulates that minor or SME creditors may be paid before others, as the case may be.

In the EU, Italy and Germany, where bail-ins are in full swing, deposits are classified into retail (individuals and SMEs) or wholesale deposits (large enterprises), requiring preferential payment to the former (Table 4).

The findings above show that to increase the implementability of a bail-in, it is necessary to adopt depositor preference while limiting the scope to specific depositors, such as individuals and SMEs, who are in need of government support as a safeguard for general creditors.

## 2. Strengthening investor qualification

**Strengthening qualifications of investors in general bonds and CoCo bonds could enhance the implementability of bail-ins.**

Italy's experience proves that the bail-in may be ineffectual if the government becomes heavily burdened by general creditors. In Korea's case, the government made every effort to save subordinated creditors during the savings bank crisis in 2011, even by attempting to legislate a special act, because they were mostly small business operators.

These cases show that strengthening investor qualification could enhance the implementability of bail-ins because if all creditors who are to be affected are professional investors, the government would feel less burdened when considering a bail-in.

## 3. Issuing 'rule-based' CoCo bonds

**Issuing 'rule-based' CoCo bonds could enhance the implementability of bail-ins.**

To increase the implementability of contractual bail-in bonds, it is necessary to issue 'rule-based' CoCo bonds. The EU and China, the world's largest CoCo bond issuers, have mandated that a certain type<sup>3)</sup> of the CoCo bond issued shall be 'rule-based.' Korea also

3) In China, the triggers of AT1 CoCo bonds should be rule-based while that of T2 CoCo bonds are discretionary. The EU CRD4 requires issuers to adopt rule-based triggers when issuing AT1 CoCo bonds; there are no specific provisions for T2 CoCo bond issuance.

revised the relevant regulations to approve the issuance of rule-based bonds, but CoCo bonds issued, until end-2016, are all discretionary.

The fact that ‘rule-based’ CoCo bonds are based on the CET1 ratio, an accounting metric, raises concerns about a potential gap between figures and reality. In fact, even when both government and market recognize a real crisis, indicators may not say so.<sup>4)</sup> If the required CET1 ratio is set higher, the gap will become narrower and more unlikely.

As an alternative, this study suggests a ‘mixed’ version which is set to activate loss-sharing measures when either of the two conditions are triggered; when the CET1 ratio falls below the threshold, or the government designates a bank as “insolvent.” The ‘mixed’ version could help reap in the benefits of both types of CoCo bonds, with the rule-based bonds lowering the possibility of a bailout and discretionary bonds narrowing the discrepancy between figures and reality.

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4) Or, the opposite is possible, but this case well caters for the purpose of the adoption of CoCo bonds which aims to improve banks’ financial structure by preemptively imposing loss-sharing on creditors in response to a crisis signal.