

## **Taking the moral hazard out of banking: the next fundamental step in financial reform**

RAINER MASERA \*

### **1. Financial Reform: the central role of SIFIs recovery and resolution mechanisms**

During the financial crisis, and after Lehman, governments decided that many banks were “too big to fail.” public support became the standard response<sup>1</sup> to save those banks in difficulty. These interventions heightened and broadened the moral hazard issue: subordinated debt, senior debt holders and large depositors were bailed out.<sup>2</sup> Still today, however, bank managers and debt investors continue to act as though some substantial part of the risk they take can be externalised to the taxpayers.

As already indicated in the *de Larosière Report*, the issue of crisis management and resolution of Systematically Important Financial Institutions (SIFIs) is of crucial importance for an effective new financial

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\* Guglielmo Marconi University (Rome) and member of the *de Larosière Group*. Email: r.masera@unimarconi.it.

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<sup>1</sup> “G-7 countries agreed to take decisive action and use all available tools to support systemically important financial institutions (SIFIs) and prevent their failure,” *G-7 Press Communique*, October 10, 2008.

“European leaders expressed their commitment that in all circumstances the necessary measures will be taken to preserve the stability of the financial system, to support the major financial institutions, to avoid bankruptcies,” *European Council Press Communique*, October 16, 2008.

<sup>2</sup> “The numerous public sector injections of capital during the crisis and other forms of public sector support have had the indirect consequence of ensuring that in many instances capital instruments issued by banks that have been bailed out have not taken any losses at all,” BIS, Basel Committee on Banking Supervision (2010b).

framework.<sup>3</sup> The policy relevance of this issue was clearly recognised by the Dodd-Frank Act, which enacted a framework for intervention.<sup>4</sup> As indicated in figure 1, the new US institutional financial framework is constructed around five building blocks. The crisis management and resolution scheme features a central role and interacts with the micro-surveillance of SIFIs, which has been entrusted to the Federal Reserve System (Fed).<sup>5</sup>

In Europe, in spite of early recognition in the *de Larosière Report* and identification of the problem in consultative documents by the Commission,<sup>6</sup> the emphasis was on the issue of sovereign debt, with the creation of the European Financial Stability Facility (EFSF). As figures 2 and 3 show, a crisis management and resolution procedure for banks should have represented a key feature of the new European framework for safeguarding financial stability, but has yet to be enacted because priority was given to the European facility to support Eurozone countries in financial difficulties. Policy efforts continue to be concentrated in this area and the European Council has agreed to establish a permanent European Stability Mechanism (ESM) that will take the role of the EFSF in June 2013. Thus, as will be detailed below, the most crucial element to overcome the moral hazard issue is still in the phase of consultation papers in the Eurozone.<sup>7</sup>

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<sup>3</sup> See the *de Larosière Report* (2009). This point has been amply recognized: see, for instance, Masera (2009a). Extensive references to the literature and to corrective proposals can be found in Forti (2010).

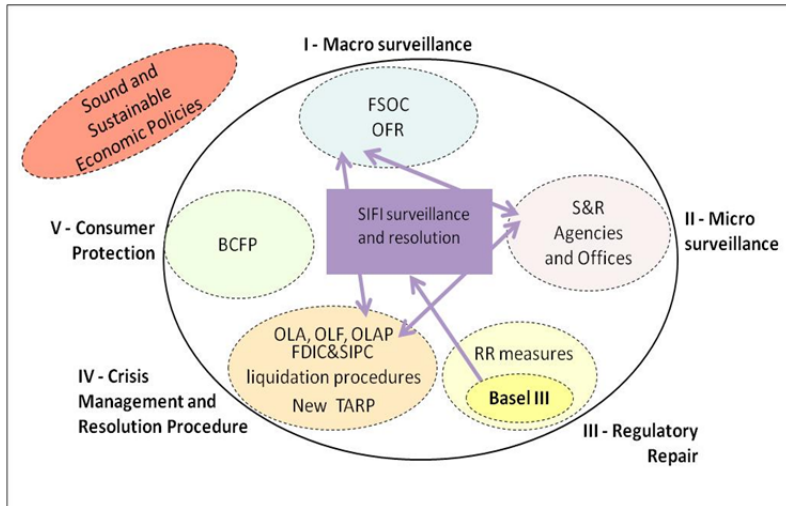
<sup>4</sup> See United States Congress (111<sup>th</sup>) (2010). Note that the FED is the micro-surveillance authority for SIFIs; the OLA and the FDIC are the delegated liquidation authorities; the OLA can intervene when the financial company “is in (or is in danger of) default;” a fee-related system is foreseen, whereby SIFIs pay according to their contribution to systemic risk creation; the Adrian and Brunnermeier CoVaR quantitative approach is used to identify SIFIs.

<sup>5</sup> See Masera (2010d).

<sup>6</sup> See European Commission (2009a).

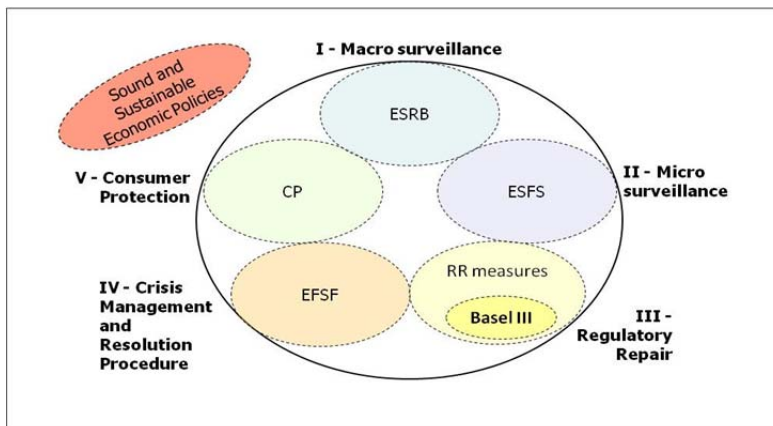
<sup>7</sup> See European Commission, DG Internal Market and Services (2010a).

Figure 1 – *The new US regulatory and supervisory framework for safeguarding financial stability.*



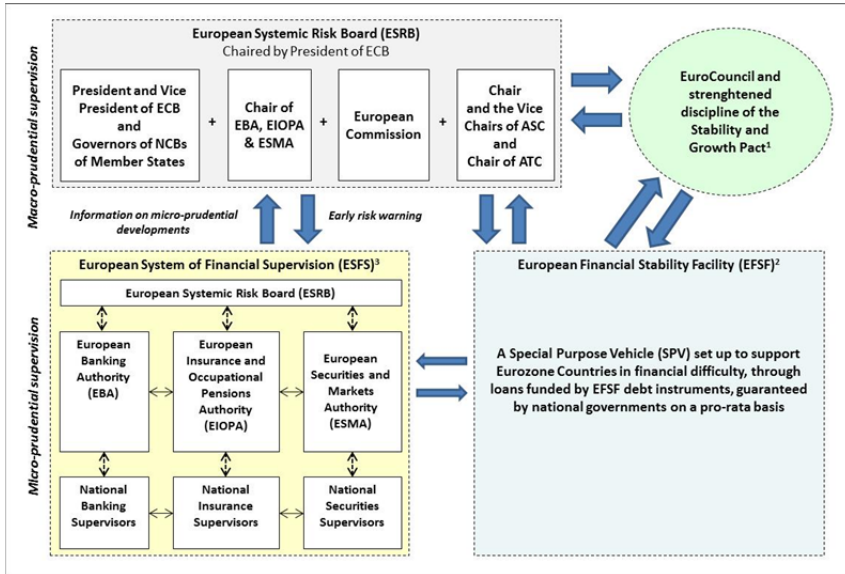
Notes: Acronyms: Financial Stability Oversight Council (FSOC); Office of Financial Research (OFR); Supervisory and Regulatory (S&R); Regulatory Reform (RR); Orderly Liquidation Authority (OLA); Orderly Liquidation Fund (OLF); Orderly Liquidation Authority Panel (OLAP); Federal Deposit Insurance Corporation (FDIC); Securities Investor Protection Corporation (SIPC); Troubled Asset Relief Program (TARP); Bureau of Consumer Financial Protection (BCFP).

Figure 2 – *The new European framework for safeguarding financial stability.*



Notes: Acronyms: European Systemic Risk Board (ESRB); European System of Financial Supervision (ESFS); Regulatory Reform (RR); European Financial Stability Facility (EFSF); Consumer Protection (CP).

Figure 3 – *The three new key institutional components of the European framework for safeguarding financial stability*



Notes: Acronyms: European Central Bank (ECB); National Central Banks (NCBs); Advisory Scientific Committee (ASC); Advisory Technical Committee (ATC).

1 - The European Council on March 25<sup>th</sup>, 2011 defined a new framework for macroeconomic surveillance and new stability growth pact. The new guidelines are broadened to countries currently outside the monetary union (Bulgaria, Denmark, Latvia, Lithuania, Poland and Romania). The final package should be formally adopted in June. See EUCO 10/11 CO EUR 6 CONCL.3.

2 - On March 24-25, 2011 the European Council agreed to establish a European Stability Mechanism (EMS) starting in June 2013 that will provide financial assistance to Euro Area Member States, thereby permanent assuming role of the EFSF. To this end, a new paragraph will be added to art. 136 of the Treaty (“The Member States whose currency is the euro ay establish a stability mechanism to be activated if indispensable to safeguard the stability of the euro area as a whole”).

3 - The board of ESFS comprises also the Joint Committee of the European Supervisory Authorities (Joint Committee).

The importance of the issue is now receiving full attention by policy makers. President Obama continues to stress the need to deal with the issue of banks “too big to fail” and to enact secondary legislation to

implement the Dodd-Frank provisions. At the G-20 Meeting of 27 January 2011 in Paris, the Chairman of the Financial Stability Board Mario Draghi recognised that bank bail-outs reinforced the moral hazard issue and stressed the need of immediate intervention. The Chairman of the Financial Stability Board (FSB) had already indicated in September 2010 that the moral hazard risk posed by “too big to fail” financial institutions had to be addressed by policy makers. He indicated that the new Basel III rules, aimed at strengthening banks’ capital buffers, were a positive step to help prevent future crises, by reducing the probability of the failure of large banks, but did not address the moral hazard problem.

## **2. Moral hazard: SIFIs and Sovereigns, a suggestion to break the vicious cycle in Europe**

In any event, after the bail-outs of 2007/2009, in most advanced economies, government finances would not permit – in the event of new bank defaults – contingent liabilities to become cash payments.

In the United States, the Dodd-Frank Act effectively prevents the US Treasury to use public money to save banks. No such legislation has been passed at the EU level, but many sovereigns must face the fact that saving creditors of domestic banks would greatly endanger their own credit standing. The Irish experience showed that attempts by the government to shelter senior unsecured bank debt brought down the rating of sovereign debt. In Denmark, instead, following the implementation of a Danish resolution scheme (Bank Package 3, May 2010), in February 2011 Amagerbanken filed for bankruptcy and bondholders became liable to haircuts (up to 100% on subordinated debt, and up to 41% on senior debt).<sup>8</sup> Bank Package 3 and “*Finansiel Stabilitet*” (a government-owned bank winding up company) were set up with the purposes of securing (i) a smooth winding up of distressed banks and (ii) that taxpayers do not pay for (or before) bondholders. As for other European countries, in the UK a bank resolution framework was enacted in 2009, which allows for

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<sup>8</sup> See Danske Bank (2011).

losses on unsecured debt in case of bank distress.<sup>9</sup> In Germany, a comprehensive Bank Restructuring Act came into effect in January 2011.<sup>10</sup> A Restructuring Fund Ordinance was issued in March 2011 by Germany's cabinet (and has now to be approved by the German parliament), with bank levies feeding into the fund, which will step in if banks get into difficulties.<sup>11</sup> The lack of a coordinated European approach is evident.

But the lessons may not have been fully understood: the renewed pressures in 2011 on Ireland's and Spain's public debt are also due to fears by markets and credit rating agencies that the two countries might again provide public support to ailing domestic banks. As for Portugal, the growing government deficit is seen in the context of medium term pressure on public finances exacerbated by the prospects of weaker economic growth than its EU peers.

In Europe, and notably in the Eurozone, a further loop of the moral hazard problem therefore presents itself. If sovereign debt is also considered to enjoy an implicit taxpayers' backing from the more virtuous EU countries (and taxpayers) the moral hazard issue is compounded and magnified. Beyond the direct correction stemming from the hardened discipline on EU countries' fiscal positions as a result of the new Stability and Growth Pact (SGP), the fact remains that SIFIs can easily exploit the very large volume of liquidity supplied by central banks and speculate on the yield differentials between sovereigns and ECB-determined money market interest rates, in order to increase short-term profits at apparently very low risk (a carry trade situation).

The problems are amplified by the seemingly very significant acquisitions by the ECB of state bonds of countries experiencing difficulties, held by systemic banks. It is reasonable to assume that some of these banks are issuing and trading credit default swap (CDS) on "weak countries" state bonds, thereby multiplying short-term profits and

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<sup>9</sup> See HM Treasury (2010).

<sup>10</sup> See Bundesrat (2010), Moody's (2011), Bingham McCutchen (2011), Debevoise and Plimpton (2010).

<sup>11</sup> See German Federal Ministry of Finance (2011), Cleary Gottlieb (2011). An approach along these lines had been suggested at European level by Masera and Mazzoni (2010; 2011).

risks.<sup>12</sup> This vicious cycle is made more dangerous by the trading-hedging strategies implemented by many large market operators. Government bonds and securities issued by “home” SIFIs are no longer treated as two different asset classes. Desks trade cash and derivative instruments written on governments and financials as complementary securities traded simultaneously to exploit arbitrage and relative value opportunities.

The specific issues facing Europe as a result of the intertwining of SIFIs and sovereign debt risk<sup>13</sup> must therefore be addressed. Two preliminary questions should be answered:

(i) Was the diagnosis incorrect? Is the cause of debt-to-income deterioration fiscal profligacy or is it excessive credit to the private sector and thus banks’ bail-outs? The case of Greece should not have been generalised, as was clearly explained by the Italian Finance Minister Tremonti (Emsden, 2011), who stressed that much of the sovereign debt crisis in the Eurozone countries did not have roots in “traditional” public sector spending, but in state aid for banks, and that Ireland and Spain had been praised for their tight fiscal policies and declining debt-to-income ratios.

(ii) Was the follow-up response misguided? The European Financial Stability Facility, conceived to bail-out countries in difficulty, crowded out the Resolution Fund for banks, whose current deadline is 2014 (although despite the determination of Commissioner Barnier many question marks remain). Moral hazard with respect to both sovereign debt and banks remains unresolved: even the simple idea that individual credit tranches that the EFSF borrows and passes on to recipient countries could be raised at different interest rate levels meets with considerable difficulties. In the meantime, the preferred creditor status created a vicious loop, as will be explained below, while Irish banks were again bailed-out with public money through the EFSF.<sup>14</sup> The bail-outs of

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<sup>12</sup> The need for introducing well-capitalised central clearing houses for CDS in the EU had been stressed in the de Larosière Report. The intertwining of systemic bank exposure to sovereign risk and the OTC sovereign CDS markets are examined by Oldani (2011).

<sup>13</sup> See Masera (2011).

<sup>14</sup> Only in February of this year did the issue of an increasing risk that the burden so far being borne by taxpayers will be shared by subordinated and senior bond holders through

Greece and Ireland also represented a rescue plan in disguise for some systemic banks, as suggested by available statistics published by the Bank for International Settlements (BIS) in Basel.

The outcome of the above considerations is that action must be taken simultaneously to overcome (i) governments' implicit guarantees for their banks; and (ii) the Eurozone's collective implicit and imperfect guarantee for all Euro-currency countries' public debt.<sup>15</sup> It is only through a simultaneous, coordinated approach that the linkage between bank debt and sovereign debt may be broken and the two-sided moral hazard issue resolved.

The approach outlined here is thus based on: (i) the EFSF, with enlarged and more flexible powers, and (ii) a new European bank resolution framework. Two restructuring and recovery frameworks would thus be set in place, to cope with the two sides of the moral hazard problem. The possibility of sovereign debt restructuring would not be excluded (sovereign credit event), also to contain the moral hazard of SIFIs investing in high-yield risky sovereign debt in the belief that they would be in any event "bailed-out." The enlarged powers of the EFSF would facilitate "voluntary" debt restructuring and comprise facilities and instruments of the Brady-bonds approach (1989), beyond those currently foreseen.

This would solve the issue of compatibility of the fund with the provisions of art. 103 of the Maastricht Treaty (the no-bail-out clause). It would also address the vicious circle of seniority requests (preferred creditor status) for official EFSF (and possibly ECB) financing, which signal that possible losses would be shifted to existing private holdings of government debt (GROS, 2010; and FITCH, 2011). The Brady bonds

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"a distressed exchange," with haircuts for the creditors, come into recognition. See for example *The Irish Times*, Saturday, February 12, 2011.

<sup>15</sup> A total absolute guarantee through the move to Eurobonds to replace national state debts would act as a full-coverage insurance against state insolvencies, and would thus represent an alternative answer. Eurobonds would represent the financial and fiscal equivalent of the single currency, but this would require a federal fiscal authority, i.e. abandonment of national fiscal sovereignty. This political option falls outside the scope of this paper.



scheme contained a large menu of options, and notably the possibility of outstanding debt rescheduling, and also the conversion of restructured debt into par and discount bonds (the former with a haircut on the interest rate). The haircuts could be made applicable to all large investors, thereby reducing their “sovereign” moral hazard. Needless to say, in the future the emphasis must be on pre-emptive supervision action and early controls to avoid the manifestation of adverse “credit events.”

The approach outlined here does not envisage hard default (HD), but considers solutions of a soft type (SD). A clear distinction should be made between the two models (see table 1). HD implies missing one or more debt payments. Technically this represents a legal bankruptcy on internal and external obligations. To draw an analogy with corporations, HD refers to an instance of “gone concern.” From a substantive point of view, it should be underlined that, if debt is issued in domestic currency and the central bank is not fully independent (domestic monetary sovereignty), outright default is very rare, because softer options are available.

SD represents a more complex process, which can take different forms and which can be assimilated to an instance of measures on a “going concern” basis.<sup>16</sup>

A first option consists of restructuring debt payments in terms of coupon payments and/or lengthened maturities.<sup>17</sup> In economic terms broader options present themselves, notably debt debasement through (surprise) inflation, external devaluation/depreciation, repeal of commodity,<sup>18</sup> and foreign currency links. More subtle forms of SD involve recourse by the relevant authorities to measures of “financial repression” such as portfolio constraints to prop up government bond holdings by banks, insurance companies and other institutional investors.

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<sup>16</sup> A very interesting note on this menu of options was prepared by the US Congressional Budget Office (CBO, 2010).

<sup>17</sup> Instances of this type are not rare. One example may be recalled here: the 1917 UK Government 5% War Loan 1947. In 1932 the coupon was unilaterally lowered to 3.5% and the original 30-year maturity was removed, so that the stock is still outstanding. Other schemes are based on “voluntary” acceptance by bondholders of new restructured securities.

<sup>18</sup> In 1971 the demise of the Bretton Woods system was accompanied by the unilateral decision to break the convertibility of officially-held US dollar balances into gold.

These measures, which can be complementary to debt debasement, artificially lower yields on public debt. They were popular and easy-to-implement in the past, within a framework of capital controls. The point has been expressed that, under current circumstances, internationally agreed regulations such as Basel III or Solvency II may de facto represent disguised forms of portfolio constraints in favour of public debt.<sup>19</sup>

A final point to be made is that, while HD necessarily implies activation of sovereign default swap clauses, this is not necessarily the case for SD.

### 3. From bank bail-outs to bail-ins and contingent capital

As indicated, the crisis brought to the fore the problems of huge moral hazard and of burden on taxpayers posed by SIFIs, which must be overcome. These issues can be declined as follows:

Table 1 – *Government debt default: a taxonomy*

<b>HD</b>	<ul style="list-style-type: none"> <li>▪ Hard default/legal sovereign bankruptcy. Unilateral failure to pay interest and/or principal outstanding debt obligations.</li> <li>▪ Activation of sovereign credit default swaps becomes inevitable.</li> </ul>
<b>SD</b>	<ul style="list-style-type: none"> <li>▪ Soft default. Main (non alternative) options:               <ol style="list-style-type: none"> <li>1. Agreed restructuring (coupon payments/maturities) of outstanding debt, possibly accompanied by (external) guarantees on restructured debt;</li> <li>2. Surprise inflation, to reduce the real burden of debt;</li> <li>3. External depreciation/repel of guarantee clauses (e.g. gold link);</li> <li>4. Financial repression (e.g. portfolio requirements).</li> </ol> </li> <li>▪ Activation of sovereign credit default clauses is not automatic.</li> </ul>

- (i) corporate governance of financial institutions and supervisors;
- (ii) distortion of competition among financial institutions;
- (iii) (contingent) liabilities of the public sector and of the private sector;
- (iv) political sustainability of the shift from “social” to “banks” welfare.

<sup>19</sup> See, for instance, Reinhart and Rogoff (2009) and Reinhart (2010).

To define a framework capable of solving the moral hazard issue of SIFIs resolution, the new Basel III capital rules will be examined in the light of Internal Capital Adequacy Assessment Process (ICAAP) and Supervisory Review and Evaluation Process (SREP). Contingent capital and bail-in processes and instruments will be utilised.

In this paper the emphasis is on very early intervention by firms and authorities to maintain the target credit ratings and capital adequacy ratios, as soon as difficulties begin to arise. This is perfectly consistent with the spirit (but not the practical application) of the Basel approach: raising capital when it does not meet desired and declared adequacy standards is the primary aim and the premise of a well-designed and implemented capital standard. The fact that most banks facing difficulties have failed to promptly recapitalise is an evident failure of corporate governance, of inadequate triggers and of delays in supervisory action.

### *3.1. The common approach under discussion to avoid bail-outs*

Two schemes are being explored, which often appear as alternatives: (i) bail-ins, where debts holders, and notably bondholders, take losses in ailing banks, even without an institution formally being declared bankrupt, and (ii) contingent convertible bonds, that typically convert to equity when pre-agreed levels of stress (triggering events), such as a bank's capital ratio, credit rating, price to book level stock or bond price are reached.<sup>20</sup>

A complex and difficult issue is posed by the trigger selected. The advantages of simplicity, transparency and time-to-market of market triggers must be weighed against the risk of speculative behaviour. The combination of buying a contingent convertible (Coco) bond and, for instance, a put down & in deep out the money option may lead, in a

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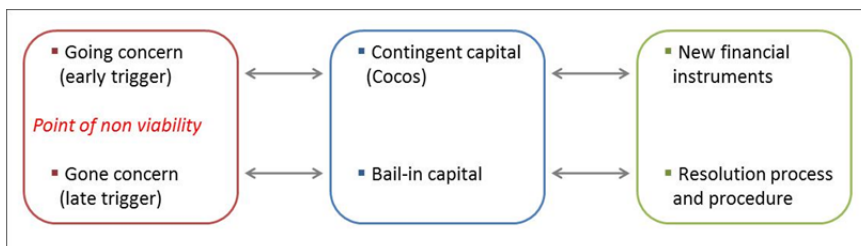
<sup>20</sup> The need for Cocos is predicated on the basis of the very large capital requirements imposed by Basel III. For detailed analytical and market characteristics and legal status of contingent capital instruments, reference is made to Standard & Poor's (2010) and Goldman Sachs (2011).

negative phase of the security price, to naked short sales, with further downward pressure on prices, but with gains to the “hedged” investor.<sup>21</sup>

A common goal of bail-ins and Cocos is that, beyond equity holders, creditors too must share in the losses to avoid recourse to taxpayers’ money (figure 4).

According to Black-Scholes Merton, the liabilities of a bank can be viewed as options. Equities are equivalent to call options – with strike prices given by the nominal value of debt – written on the market value of bank assets. Bondholders are the true owners of the company, but they have sold a put option on assets to equity holders. Shareholders are therefore not interested in transferring wealth to debt holders: the “debt overhang” problem. So far, markets have underpriced the risk of default

Figure 4 – *Going vs. gone concern and contingent vs. bail-in capital*<sup>22</sup>



faced by bank bondholders (the price of the embedded put in the Merton framework), because of the implicit bail-out promises. To reduce the moral hazard, the principle should therefore be that not only capital, but also debt (subordinated debt, hybrid capital and ordinary bonds) should be loss absorbing. Admittedly, traditional fixed-income investors have limited appetite for contingent capital instruments, because even senior unsecured debt holders were convinced of being disconnected from the

<sup>21</sup> For pros and cons see Flannery (2009), the *Squam Lake Report* (2010) and Herring (2011).

<sup>22</sup> See Lawson (2011), Siani (2011), Brierley (2011), Cross (2011), de Villeroché (2011), Ervin (2011), Lugaresi (2011) and Moore (2011).

state of the banks, as a result of the aforementioned bail-out promises. The necessary changes must therefore create a new, broad and liquid market primarily aimed at institutional investors.

A bail-in capital approach necessarily has five main components:

- (i) recapitalization (contingent capital/bail-in processes);
- (ii) writing down of assets;
- (iii) change of management;
- (iv) liquidity support;
- (v) writing down of liabilities.

The latter point is related to the fact that bondholders should be made to bear some of the losses.

In sum, a combination of market and institutional processes should be developed: contingent capital instruments and bail-in approaches represent very helpful tools, but the framework cannot be left exclusively or primarily to market forces. Implementation of both ideas would require appropriate and internationally consistent legislative changes. In particular, it appears highly desirable to differentiate the legal status of depositors and senior unsecured bondholders. As argued below, the two proposals are not alternatives but should instead be viewed as complementary. This is predicated on the assumption that bond transformation into equity should be engineered also at early stages in case of departure from desired and declared risk capacity of a bank.

### *3.2. Towards a more structured approach to keeping banks viable and, eventually, enabling orderly liquidation*

The approach developed in this paper is focused on very early action (normal going concern) by firms and supervisors alike to maintain credit rating and capital adequacy, as is indicated in the upper

half of figure 5, and as will be explained in detail in section 4.<sup>23</sup>

If, in spite of the early action of both firms and supervisors, a large bank encounters severe difficulties (vicinity to insolvency), a resolution framework becomes necessary. Even in this case, two formally very different situations must be envisaged. Preventive control and regulatory and supervisory oversight would imply both the legal power and the effective capability, coupled with the recognised credibility, of the supervisory authorities to keep crucial bank operations going in two adjacent, but formally very different situations (figure 5, lower half):

- (i) immediately before technical insolvency, i.e. when a bank enters in a position of “vicinity to insolvency;”
- (ii) immediately after the event of failure.

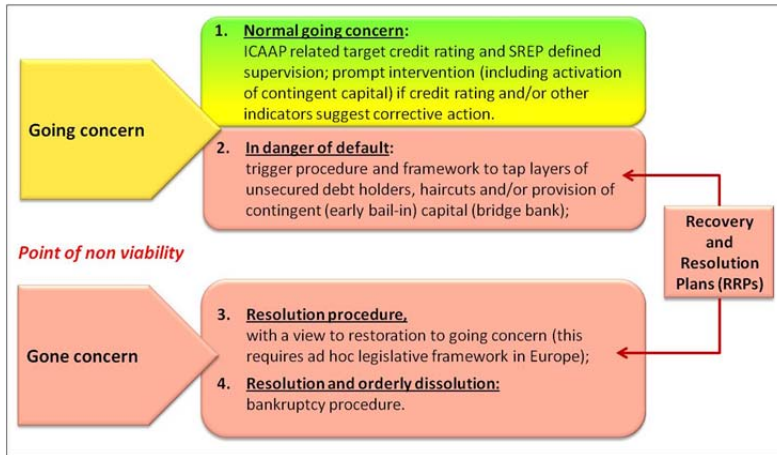
In terms of this “regulatory approach,” the competent authorities would, notably, have the power to allocate losses (haircuts) to bank creditors, including bondholders. In any event, bank secured debt (in particular, asset-backed securities and covered bonds) should have transparent, well-defined protection clauses. There are not two different approaches to reform with respect of SIFIs (“make failure impossible” vs. “make failure manageable”): in a market economy failure must be possible. No amount of capital and no level of regulation can prevent this. Indeed, the opposite is closer to the truth: excessive capital and overly stringent and complex regulation/supervision may endanger the viability of the financial institutions.

Bankruptcy should not be ruled out, but better firm governance, prompt micro-supervision, resolution funds, bridge banks and smaller, more focused, banking should be actively pursued, to minimise the likelihood of a SIFI failure, with its inevitable adverse spill-over effects.

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<sup>23</sup> The proposed approach is based on a tight interaction of the ICAAP and SREP processes within the Basel III global regulatory framework. It is therefore necessary to provide in the following paragraph a brief reference to the new capital standard.

Figure 5 – A four-partite framework of reference



#### 4. SIFIs Recovery and Resolution within a Basel III framework: a proposal

As already indicated, the new capital rules are closely intertwined with the issue of SIFIs, but the two problems should also be analysed separately. The Basel III standard is focused on strengthening and improving global banking supervision and is therefore necessarily aimed at preventing systemic bail-outs of important financial institutions.

The main features of the Basel III framework are synthesized in the figures 6 and 7 (for a critical analysis of Basel III see Masera, 2011). The relationships between Basel III and pillars 2 and 3, as defined in Basel II, have not yet been well clarified by the Basel Committee on Banking Supervision (BCBS). Tables 2 and 3 offer a possible innovative reconciliation process – based on the evolution from Basel II to the new Basel III framework – to deal simultaneously with the operation and resolution of SIFIs.

The changes in both ICAAP and SREP proposed here are significant and wide-ranging, but are consistent with the new broadened scope of Basel III. There is a clear need to redefine and enact the interaction

between ICAAP and SREP on a sounder basis. More specifically, the SREP should take into account the possible systemic relevance of its

Figure 6 – The new enlarged framework of Basel III

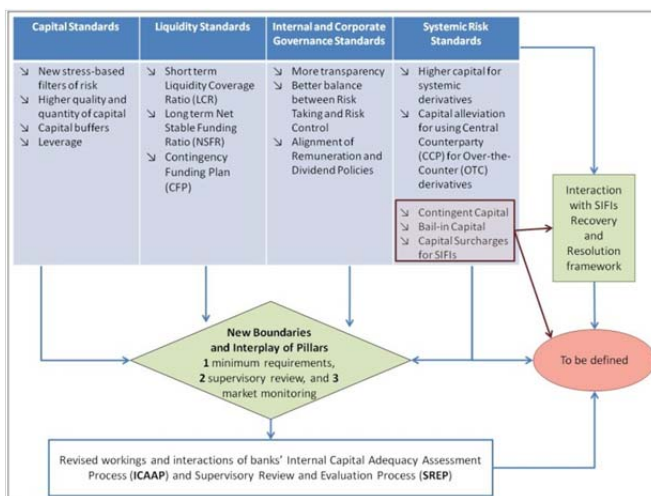


Figure 7 – The four-pronged tightening of capital requirements under Basel III

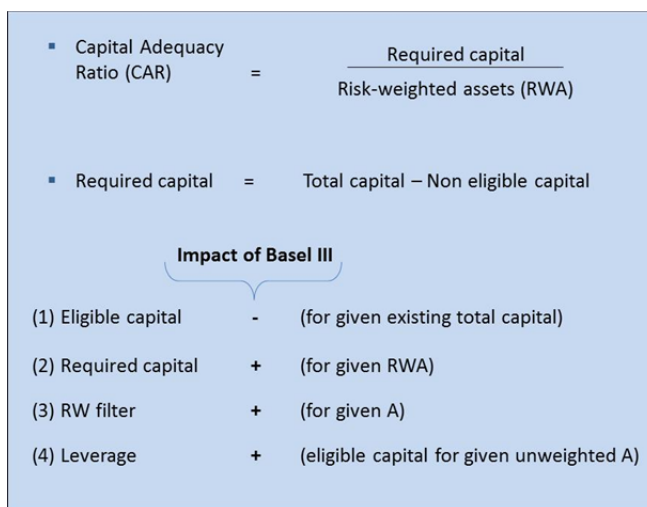




Table 2 – *The traditional approach to risk types and capital coverage*

Pillar I				Pillar II			
Credit	Counterparty	Market	Operational	Liquidity and funding	Systemic	Reputation and strategic	Other (including concentration and country)
Risk				Risk			

Table 3 – *Pillar II: The proposed interaction between the ICAAP and the SREP*

ICAAP Internal Capital Adequacy Assessment Process	SREP Supervisory Review and Evaluation Process
<ul style="list-style-type: none"> <li>↳ Proportional to the complexity and risk exposure, under varying severity of the anticipated economic environment.</li> <li>↳ Definition of Risk Strategy, Appetite and Capacity (e.g. AA rating).</li> <li>↳ Transparent indication of the firm risk appetite and desired credit rating to supervisory authorities and markets.</li> <li>↳ Time-to-market, comprehensive monitoring and assessment (VaR, economic capital, stress tests ...) of risk exposure.</li> <li>↳ Prompt corrective action in case of anticipation of/effective departure from desired and declared risk capacity.</li> </ul>	<ul style="list-style-type: none"> <li>↳ Proportional to the overall risk situation of financial institutions, account being taken of the severity of the economic environment and <u>the systemic relevance</u> of the financial firm.</li> <li>↳ The (micro)supervisory authority is tasked with: <ul style="list-style-type: none"> <li>▪ Review and evaluation of the firm's risk profile, account being taken of its systemic risk implication, official stress tests and their benchmarking;</li> <li>▪ Assessment of the adequacy and reliability of the firm's ICAAP, and therefore of the capital adequacy in relation to the risk strategy, capacity and effective profile of the firm, account being taken of its systemic importance and of the severity of the economic environment;</li> <li>▪ Power to intervene by activating resolution procedures;</li> <li>▪ Ensuring full disclosure and transparency, and thus effective market discipline, by taking out the implicit bail-out guarantee.</li> </ul> </li> </ul>

action. Thus, with specific reference to SIFIs in Europe, alignment of rules and prompt common action under the aegis of EBA should replace the rule of discretion typical of pillar 2 implementation under Basel II. The lead role of EBA is of paramount importance to oversee, with respect

to cross-border banks, the smooth functioning of subsidiaries and branch regimes in different countries and of home-host supervisors.

In this respect, the revised Capital Requirements Directive (CRD)<sup>24</sup> requires that the consolidating supervisor and supervisors of subsidiaries of a cross-border banking group do everything within their power to reach a joint decision on the application of the pillar 2 provisions related to the ICAAP and to the SREP.<sup>25</sup> This joint decision should cover the determination of the adequacy of the consolidated level of own funds held by the group with respect to its financial situation and risk profile, as well as the required level of own funds, above the regulatory minimum, applied to each entity within the group.

The supervisors shall carry out this task within the colleges of supervisors. According to the EBA guidelines, SREP should encompass the following three elements: (i) identification, review and evaluation of all material risk and control factors; (ii) assessment, review and evaluation of the ICAAP; and (iii) assessment, review and evaluation of compliance with the various minimum requirements of the CRD. The process designed by EBA defines some important principles and procedures. However, it must be stressed that in practice some important issues must be solved to achieve a prompt and efficient decision on the risk-based capital adequacy for a cross border institution:

- (i) the process is extremely articulated and may require a long time horizon before reaching a joint assessment on capital adequacy (6-12 months), in this way jeopardizing its utility for home and host supervisors;
- (ii) diversification of risk (intra and inter-risk) has not been explicitly considered by EBA guidelines. Group-wide economic capital is not given by the sum of idiosyncratic levels of capital, but cross-border groups' intra and inter risk diversification

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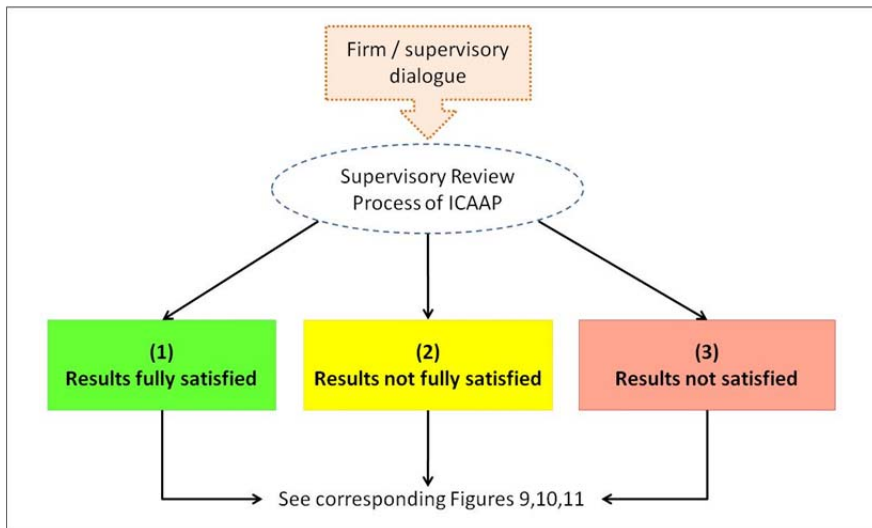
<sup>24</sup> Directive 2006/48/EC and Directive 2006/49/EC, amended in May 2009.

<sup>25</sup> In order to facilitate the joint decision process and to avoid inconsistencies in the approaches followed by the various colleges, the CRD required EBA to elaborate guidelines for the convergence of supervisory practices with regard to the joint decision process. See CEBS (2010).

benefits from different business lines located in different legal entities (under different jurisdictions) are very difficult to assess.

The scheme suggested here represents an evolution of the process designed by EBA, based on a time-to-market approach and on an active harmonising role of the European authority. In the interplay of ICAAP and SREP outlined in figure 8 the outcome of firm/supervisory dialectics can be: satisfactory, partially satisfactory, or not satisfactory. The corresponding prudential and internal corporate measures are described in figures 9, 10 and 11. The recovery and resolution procedures are detailed in figure 11, both before and after the point of non-viability.

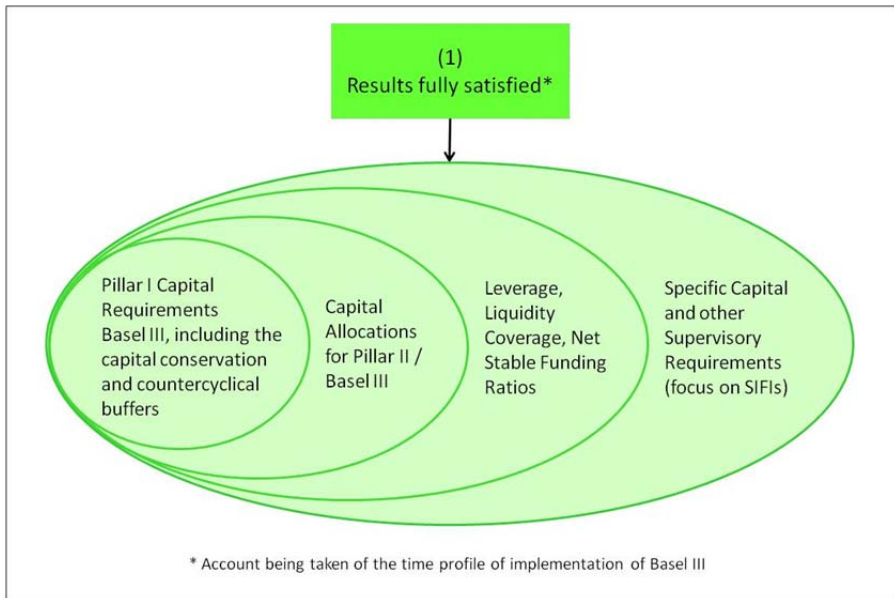
Figure 8 – *The supervisory review process of the ICAAP*



In all circumstances, the focus should be in the monitoring of firm-specific developments, rather than on mechanical data and model analyses. As to ICAAP, the emphasis should be put on transparency and time-to-market corporate response to adverse developments endangering

the target risk profile of the firm. Credit ratings and stock/bond price signals would determine prompt corrective actions, in close contact with and under the guidance of the supervisory authorities. An even more important adjustment should take place in the supervisory process. Previous emphasis on Principle Based Regulation (PBR), and more specifically on light touch supervision,<sup>26</sup> which placed great emphasis on firms themselves to behave responsibly, must give way to more attentive and firm-oriented coordinated supervisory action.

Figure 9 – *The supervisory review process of the ICAAP: results fully satisfied*



<sup>26</sup> This was consistent with the cultural approach based on the assumptions of markets' perfect rationality and efficiency, and hence on self-regulatory and corrective characteristics of markets and operators (Masera, 2009).

Figure 10 – *The supervisory review process of the ICAAP: results not fully satisfied*

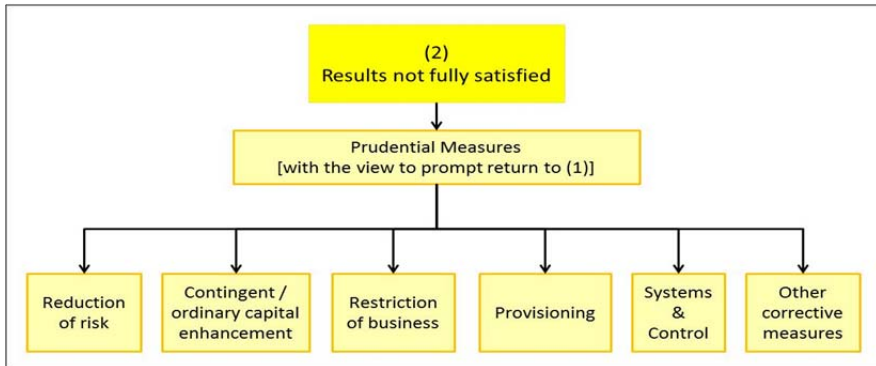
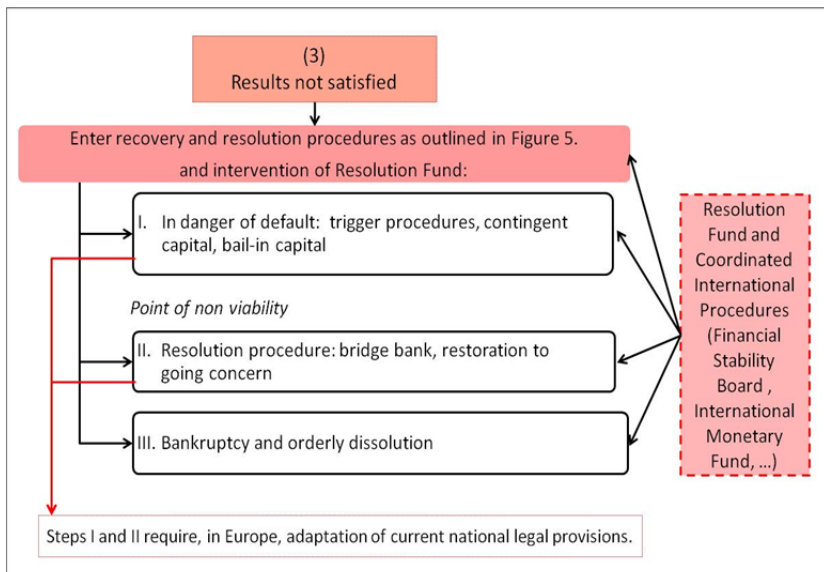


Figure 11 – *The supervisory review process of the ICAAP: results not satisfied*



## 5. Concluding remarks

In sum, the focus of the recovery and resolution framework for banks moves from bail-outs to early interventions with a view to:

- (i) contingent capital activation and maintenance of target credit rating;
- (ii) bail-ins within a resolution framework.

The process outlined is based on very early corporate, market and supervisory responses (phase 1). This is related to a reinterpretation, in the context of Basel III, of the ICAAP and SREP approaches, with a leading coordinating role assigned to EBA.

Normal intervention of supervisory authorities would be based on an on going review of the ICAAP process with special emphasis of maintenance of declared target credit rating and capital adequacy. Very early triggers related to credit rating, market price of equity and other leading indicators imply prompt company and supervisory responses, notably use of contingent capital instruments, to return rapidly to phase 1. Intervention of supervisory authorities with mandatory (special) powers can occur in phases 2, 3 and 4, and therefore also before the threshold of non-viability (as can happen under Dodd-Frank in the US).

The processes and procedures outlined are general in nature. In practice, they are being framed in different ways. In Europe, the frameworks are being enacted on a country-by-country basis, with significant differences with respect to the Dodd-Frank approach in the US. Given the relevance of G-SIFIs, there is an evident need to ensure a European common model and a globally coherent framework. Support from an insurance fund for systemic risk represents a contingent asset for insured banks (see Lugaresi, 2011), which would reduce the probability of default faced by equity/bondholders with different seniorities. Extra capital charges for systemic risk would be inappropriate. A more effective and analytically based approach would be represented by an insurance-based scheme funded by means of risk-sensitive fees based on co-risk measures (see Masera and Mazzoni, 2010).

Should the fund be public or private? The advantages of public solutions are both legal (special jurisdictions) and economic (access to base money financing), however private participation should be considered.

A further question arises: if the fund is public, should it also be the micro-supervisor of a SIFI? The pros and cons are fundamentally related to considerations of conflict of interest and division of responsibilities vs. efficacy of intervention: Guardian Angel vs. Terminator (Bair, 2009 vs. Maserà and Mazzoni, 2010).

Finally, the need for consistency between deposit insurance schemes and bail-in guarantees<sup>27</sup> (also depositors should face a senior risk for uninsured sums) should be stressed.

## Appendix

### **Perpetual bonds convertible into quasi-equity (preference shares): an example of early activation of contingent capital.**

The model outlined takes into account that ordinary capital of the European Investment Bank (EIB), by Statute, must be owned by EU member states and does not pay explicit dividends, and that the Bank is not listed. The model is based on the assumption that the capital base and thus the lending capacity of the Bank could be enhanced to sustain long-term investment and growth in Europe through the issue of “preference consols”, i.e. perpetual bonds convertible into preference shares, to maintain the AAA-rating of the Bank.

We recall that:

- (i) preference shares have preference over common equity in both payments of dividend and in the assets of the company, in the case of default;

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<sup>27</sup> See Carmassi *et al.* (2010) and Forti (2010).

- (ii) preference shares usually pay a fixed dividend and represent therefore a form of deeply subordinated debt (non cumulative and perpetual);
- (iii) preference shares would not carry voting rights.

The scheme proposed here, which may be regarded as an example of very early activation of contingent capital, is summarized below.

The new perpetual convertible bonds have the following features. They pay a fixed coupon at issue, when they enjoy a triple-A rating. If credit rating falls below triple-A, they become preference shares. As long as the credit rating stays below triple-A, negotiated fixed dividend amounts are paid (specified as a percentage of the par value or as a fixed amount; dividends on preferred shares might also be negotiated as floating). Dividends would be below market yields and could be suspended in a non-cumulative way.

Preference consols cannot trigger the default of the Bank if coupons/dividends are not paid. If default occurs, preference shares have preference only over ordinary shares. If the credit rating of the Bank regains triple A status, preference shares return to their original consol status and yield.

In sum, ordinary capital of the EIB would always and exclusively remain in the hands of European governments and maintain its current characteristics. Convertible perpetual bonds would allow to increase the capital base of the Bank and help sustain a greater volume of investment, for the given target rating. In principle, these securities should qualify as Tier-one capital even in the restrictive framework of Basel III. Corporate governance would not be changed in any substantive way, although it might be possible to allow for some form of representation for consol/preference share investors.

Preference consols would be issued in principle to select institutional investors, such as insurance companies, pension funds, sovereign wealth funds, and possibly members states. In this respect, the less discriminatory tax, accounting and capital standards suggested by the Long-Term Investors Club (Bassanini, 2011) would clearly facilitate the issue of these securities.



A formal simplified representation of the proposed model is sketched in this appendix.

### A.1. A simplified pricing framework

EIB assets,  $A$ , are assumed to evolve according to:<sup>28</sup>

$$\frac{dA}{A} = \mu dt + \sigma dz \quad (1)$$

The behaviour of EIB assets is not affected by any payouts (i.e. the shareholders must continuously pay coupon payments to bond holders. They can trigger the default of the EIB by stopping such payments).

### A.2. Model 1: EIB assets financed with equity $E$ and plain vanilla perpetual bonds ( $PB$ )

It is assumed that, at some time  $t = 0$ , shareholders hold  $E_0$  and issue an EIB plain vanilla perpetual bond,  $PB$ , paying continuously a coupon  $D$  ( $D$  is set such that the bond is issued at par: proceeds = nominal value =  $PB_0$ ). A portfolio of assets  $A_0$  is financed with  $E_0$  and  $PB_0$ .

EIB balance sheet: assets  $A$ , funded with  $E$  and  $PB$ . At any time, the value of the equity is given by:

$$E = A - PB \quad (2)$$

The value of the perpetual bond must satisfy the following ODE:

$$rA \frac{\partial PB}{\partial A} + \frac{1}{2} A^2 \sigma^2 \frac{\partial^2 PB}{\partial A^2} - rPB + D = 0 \quad (3)$$

where  $r$  stands for the risk-free rate. To price the  $PB$  we set the following boundary conditions:

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<sup>28</sup> I acknowledge Giancarlo Mazzoni's help in developing the pricing framework presented here.

- (i) “risk-free boundary”: if  $A \rightarrow \infty$ ,  $PB$  becomes risk-free and  $PB \rightarrow PB^* = \frac{D}{r}$
- (ii) “default boundary”: when  $A$  falls down to  $A_d$ , default is triggered and  $PB = A_d$  (assuming no loss of value in EIB’s assets when transferred to bond holders at default).

Solving the ODE above for  $PB$  gives:

$$PB = \frac{D}{r} \left[ 1 - \left( \frac{A}{A_d} \right)^{-2r/\sigma^2} \right] + A_d \left( \frac{A}{A_d} \right)^{-2r/\sigma^2} = PB^* - EL = PB^* - PB^* \times PD \times LGD = PB^* - PB^* \times PD \times (1 - RR) \quad (4)$$

where

$$PD = \left( \frac{A}{A_d} \right)^{-2r/\sigma^2}, \quad RR = \frac{A_d}{PB^*} \text{ and } PB^* = \frac{D}{r}$$

The value of the equity  $E$  is therefore:

$$E = A - PB = A - \frac{D}{r} \left[ 1 - \left( \frac{A}{A_d} \right)^{-2r/\sigma^2} \right] - A_d \left( \frac{A}{A_d} \right)^{-2r/\sigma^2} \quad (5)$$

**A.3. Model 2: EIB assets financed with equity  $E$  and a convertible perpetual bond (CPB) into quasi equity (preference shares)**

In this model we replace the plain vanilla perpetual bond  $PB$  with a convertible perpetual bond  $CPB$ . At issue it pays continuously a fixed coupon,  $D$ , when it enjoys a triple- $A$  rating. If credit rating falls below triple- $A$  (when EIB asset value touches some lower barrier  $A^*$ , with  $A^* > A_d$ ), the  $CPB$  will be converted into quasi equity (preference shares). Until the credit rating stays below triple- $A$ , negotiated fixed dividend amounts,  $\delta$  ( $\delta < D$ ) are continuously paid.

The value of the  $CPB$  satisfies the same ODE as the  $PB$ .  $CPB$  pricing formula will be given by:

$$CPB = \frac{D}{r} \left[ 1 - \left( \frac{A}{A^*} \right)^{-2r/\sigma^2} \right] + \frac{\delta}{r} \left[ \left( \frac{A}{A^*} \right)^{-2r/\sigma^2} - \left( \frac{A}{A_d} \right)^{-2r/\sigma^2} \right] + A_d \left( \frac{A}{A_d} \right)^{-2r/\sigma^2} \quad (6)$$

The value of the equity  $E$  is therefore:

$$E = A - CPB = A - \frac{D}{r} \left[ 1 - \left( \frac{A}{A^*} \right)^{-2r/\sigma^2} \right] - \frac{\delta}{r} \left[ \left( \frac{A}{A^*} \right)^{-2r/\sigma^2} - \left( \frac{A}{A_d} \right)^{-2r/\sigma^2} \right] + A_d \left( \frac{A}{A_d} \right)^{-2r/\sigma^2} \quad (7)$$

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