

Bad Banks: A Preliminary International Assessment of Government-Initiated Asset Support Schemes for Banks as Remedy in the Financial Crisis:

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Abstract: The financial crisis induced various kinds of crisis intervention by the state in the banking sector. This article deals with government-initiated bad banks. There is no generally accepted definition of a bad bank. In the context of the financial crisis, a bad bank could be defined as an institutional arrangement to relieve bank balance sheets from problematic assets, usually with participation of the state. Problematic assets are assets whose valuation has become particularly difficult during the course of the crisis, e.g., securities for which there has been trading activity before the crisis, but that market now has disappeared.

This article briefly summarizes some general aspects of bad banks. It focuses on the description and analysis of bad-bank structures in five countries, i.e., Germany, Ireland, Switzerland, U.K., and USA. The comparison reveals that there are many options how to structure bad banks. Evaluating the structures in the five countries on a conceptual basis, all of the bad-bank structures, with some minor limitations, seem to be suitable to stabilize the asset side of the balance sheets of participating banks while at the same time they do not seem to generate negative incentives for the mid- and long-term perspective beyond an acceptable extent. However, this evaluation can only be preliminary in nature since most bad-bank structures are not fully applied in practice yet. The actual operation of bad banks in practice will determine whether the rather positive judgment at the conceptual level stands the test of reality.

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A. Introduction

The banking sector plays a prominent role in the current financial and economic crisis when it comes to analyzing the causes of the crisis as well when looking for footholds for government interventions to solve it. The following article does not look at the former aspect, but concentrates on those measures, governments are applying to improve the state of the banking sector.

State interventions can either apply to the liabilities' side of the balance sheets, i.e., capital infusions by the state or state guarantees for capital raised by the bank, or to the assets' side, i.e., asset support schemes.¹ Again, this article is focused on a single aspect, i.e., asset support schemes which are often called bad banks in public.

There is no generally accepted definition of a bad bank. In the context of the financial crisis, a bad bank could be defined as an institutional arrangement to relieve bank balance sheets from problematic assets, usually with participation of the state. The analysis of existing bad-bank structures will demonstrate that bad banks need not necessarily be a bank in a regulatory sense. Moreover, it will become evident that problematic assets which are object of a bad-bank transaction even do not have to leave the original bank² in the course of that transaction. Two broad categories of asset support schemes can be differentiated: asset purchases and asset insurance.³ But, as will become obvious in the following sections, there is great variety within these categories as well.

Problematic assets are assets whose valuation has become particularly difficult during the course of the crisis, e.g., securities for which there had been trading activity before the crisis, but that market now has disappeared. Note, that assets the value of which has fallen, but can be determined easily, are not problematic assets in our context. The important characteristic is that there is a severe uncertainty about the current market value, particularly for external observers. A mere reduction in asset values should be easily compensated by raising new capital as long as the bank is still solvent, otherwise it should fail. If a bank disposes of a considerable amount of problematic assets, solvency of that bank becomes uncertain. As a consequence, access to funds might be restricted for that bank and it might experience withdrawal of capital.

This article only deals with government-initiated bad banks. A general question is whether the state should intervene in the banking sector during the crisis. This article is not the place to deal with such a general question. A short answer would be that state intervention in the banking sector is common practice even in non-crisis periods, only Basel II needs to be mentioned in this context. The reasoning behind this intensive regulation is that a stable and well functioning financial system is important and beneficial for the whole economy. However, such a stable and well functioning financial system features some characteristics of a public good. Thus, there is a tendency to underproduction. Banks benefit from a stable and well functioning financial system as well, nevertheless, they are always tempted to take a free-rider position and not to care for financial system stability. Everybody who accepts this foundation of state intervention in non-crisis times surely has to accept state intervention in this severe crisis.

What goals does government pursue with the formation of bad banks? In the short term, the goal is to stabilize the participating banks and thus stabilizing the whole banking sector. The

¹ For instance, European Central Bank, "Financial Stability Review", December 2009, p. 98, uses this distinction of three kinds.

² In what follows, the term "original bank" is used for the bank with the problematic assets.

³ This distinction is, e.g., applied in Bank for International Settlements, "79th Annual Report", 2009, p. 103.

measure is clearly of an interventionist character. But the mid- and long-term perspective is at least as important: In a longer term perspective, today's interventions' effect on future incentives of banks have to be considered, i.e., they are important for future crisis prevention efforts. In particular, at all costs, market participants must not get the impression that a business strategy of privatizing the gains and socializing the losses might be successful. This is a fundamental issue.

Having these considerations in mind, what basic principles should be adhered to when forming a bad bank? (1) Pricing of state services as part of the bad-bank structure has to be market-based. (2) After formation of the bad bank, the risk takers of the bank, i.e., the shareholders in first line, but this group also comprises professional lenders, should still bear the consequences connected to the economic success of the bank, i.e., gains as well as losses, to the largest extent possible, including the problematic assets. If a bad-bank transaction reduces risk exposure of these groups, they should pay a premium in line with the market for any reduction of their exposure. (3) The risk of the tax payer has to be small. A bad-bank structure according to these principles should be able to achieve short-term stabilization of the asset side without generating unwanted incentives for the mid and long term.

Before looking at concrete bad-bank constructions, it is necessary to be aware of its limitations. Formation of a bad bank alone usually cannot solve the problems of a bank. If the bad bank follows the principles stated above, the bank which sells some problematic assets⁴ usually will face a loss, diminishing equity in its balance sheet even further.⁵ The bad-bank transaction in isolation might make it easier for capital market participants to evaluate the state of the bank because assets whose value was highly uncertain have disappeared from the balance sheet. This effect might alleviate raising new capital for the bank, including a revitalization of the interbank market. Moreover, there might be a regulatory effect, as the amount of risk-weighted assets reduces considerably; capacity in regulatory equity becomes available and could be used for other business. If the bank is not able to raise new capital even after the bad-bank transaction, a combination with capital infusion by the state might be necessary.

After this brief introduction, the main part of the article compares bad-bank structures in five countries, i.e., Germany, Ireland, Switzerland, U.K., and USA. The comparison is divided into two subparts, description and analysis. The closing remarks necessarily must be preliminary in nature, as of January 2010 most bad-bank structures are still in an early stage of realization or even in conceptual stage.

[Add: new B. Lessons from Recent Financial Crises]

⁴ The great variety of bad-bank structures in reality will show that relieving a bank from problematic assets does not necessarily involve the sale of these assets.

⁵ In case the selling bank realizes a gain, it is highly probable that the selling price is not market-driven, but reflects a state support hidden in the selling price.

B. Comparison of Bad-Bank Structures in Five Countries

I. Description

Germany

At the beginning of July 2009, the law regulating bad banks passed the two chambers of parliament.⁶ The law offers two legal settings for a bad bank, the special-purpose-vehicle model (SPVM; Zweckgesellschaftsmodell) and the consolidation model (Konsolidierungsmodell). In both cases, the bad banks are no banks in a legal sense. With respect to the eligible assets, the SPVM is confined to structured securities, whereas the consolidation model applies to all kinds of assets including complete business divisions of a bank. In both cases, assets must have been owned by the bank on December 31, 2008. Private banks are the main addressee of the SPVM, the consolidation model mainly aims at state-related banks.

Special-Purpose-Vehicle Model (SPVM)

Application of the SPVM requires the following steps:

The bank who wants to relieve its balance sheet from some structured securities finds a special purpose vehicle (SPV). The bank transfers the structured securities to the SPV, usually at a 10% discount of the book value as of June 30, 2008 (transfer value). The transfer value must not exceed the book value on March 31, 2009.

To refinance the assets, the SPV issues a bond which is state guaranteed. This bond is transferred to the bank, which then has a state-guaranteed bond instead of problematic securities on the asset side of its balance sheet. Payment obligations of the bond (interest payments and redemption) will be taken from the cash flows of the transferred securities.

The bank has to undergo some special state interventions, e.g., a stress test, demonstration of a sustainable business model, state influence on pecuniary incentives to employees and on top management remuneration.

In addition to the transfer value, a fundamental value of the structured assets reflecting the realistic value will be determined by experts. If, as to be expected, the fundamental value is lower than the transfer value, the transferring bank has to pay the difference to the SPV (compensatory amount; Ausgleichsbetrag). Payments are made in equal annual installments over the lifetime of the SPV, which is determined by the maturities of the transferred securities and is not allowed to exceed 20 years. Funds for the payments are taken from the funds ready to be distributed to the bank owners; the claim of the SPV ranks higher than that of incumbent owners. The compensatory amount is intended to grant the state some protection from being obliged to make guarantee payments.

When the last structured security has matured or has been sold, the SPV will be liquidated. If there is a gain at the SPV, it will be transferred to the bank. If there is a loss which is covered by the compensatory amount, the remainder of the compensatory amount will be transferred to the bank. In case the loss of the SPV exceeds the compensatory amount, the bank is obliged to pay the remainder to the state including interest (post liability; Nachhaftung). As long as such obligation exists, the bank is not allowed to pay out funds to its owners. Instead, funds

⁶ German Financial Market Stabilization Fund Act (Finanzmarktstabilisierungsfondsgesetz). Further information in German can be found on the website of the ministry of finance; www.bundesfinanzministerium.de/DE/Buergerinnen_und_Buerger/Gesellschaft_und_Zukunft/finanzkrise/130509__BadBank.html; visited October 12, 2009. Some information in English are provided by the German Financial Market Stabilization Fund at www.soffin.de; visited January 19, 2010.

ready to be distributed to the owners will be used to cover the losses temporarily taken by the state.

Since both kinds of compensation for losses caused by the transferred assets are paid out of funds ready to be distributed to the owners, they are — from an accounting perspective — not to be considered as liabilities on the original bank’s balance sheet. Therefore, actual and potential losses related to the problematic assets vanish from the balance sheet of the transferring bank. At least, this seems to be sure for German-GAAP, but, however, there is uncertainty with respect to IFRS.⁷

The bank has to pay a risk-adequate fee for the state guarantee of the bonds which is reported to usually amount to 7%.⁸ According to Hildebrandt and Müller, “risk-adequate” implies that the guarantee should not only reflect the risk of the transferred assets, but also the risk that the bank becomes insolvent, because only the combination of both factors correctly signals the probability that the state has to bear losses from transferred assets.⁹

Law sets a time limit for setting up a bad banks following the SPVM which ends on January 22, 2010. Just a few days before that time limit it seems that no bank has established such a bad bank.

A simple numerical example will highlight the main characteristics: A bank transfers structured securities to an SPV. Book value as of June 30, 2008: 111.11 EUR; transfer value (90% of book value) 100 EUR; fundamental value (determined by experts) 90 EUR. Compensatory value (book value – transfer value) amounts to 10 EUR, resulting in an annual payment of the bank to the SPV of 0.5 EUR, assuming SPV is to last 20 years. At liquidation of the SPV after 20 years, the following scenarios depicted in the table could happen; interest and other expenses are neglected:

| total result of SPV at liquidation | profit/loss of bank; benchmark: transfer value | profit/loss of state |
|------------------------------------|--|---|
| 110 EUR | + 20 EUR (+ 10 EUR + 10 EUR compensatory amount) | 0 EUR |
| 105 EUR | + 515 EUR (+ 5 EUR+ 10 EUR compensatory amount) | 0 EUR |
| 100 EUR | + 10 EUR (0+ 10 EUR compensatory amount) | 0 EUR |
| 90 EUR | 0 (compensatory amount collected by state) | 0 EUR (compensatory amount collected by state) |
| 80 EUR | - 10 EUR (compensatory amount collected by state, additional post liability of 10 EUR) | 0 EUR (compensatory amount collected by state, additional post liability of 10 EUR) |

⁷ Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung, “Die Zukunft nicht aufs Spiel setzen”, annual expert opinion 2009/2010, November 2009, p. 126f.

⁸ Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung (fn. 7), p. 125.

⁹ Hildebrandt, Burghard and Uwe Müller, “Das Bad-Bank-Gesetz als Eckpfeiler der Finanzmarktstabilisierung”, Finanz Betrieb, vol. 11 (2009), p. 741-750, p.745.

Consolidation Model

The legal framework of the SPVM is much more specific than that of the consolidation model. The rules concerning the SPVM very much suggest a structure like that sketched above. In contrast to that, there are more degrees of freedom how to construct a bad bank according to the consolidation model. Nevertheless, it can be stated, that the bottom line of the consolidation model resembles that of the SPVM very much: The original banks gain time by letting the problematic assets disappear from their balance sheets. But they have to pay for this service, and at the end they fully have to bear gains or losses connected to the problematic assets.

A major dividing line within the consolidation model is whether shares of the original bank are held by dispersed or closed ownership. In case of dispersed ownership, the consolidation model resembles very much the SPVM, because liability for losses of the bad bank stops at the original bank and the funds ready to be distributed to its owners, but liability does not extend beyond to the owners of that bank. Moreover, the law explicitly stipulates that the valuation of the assets to be transferred should be conducted as prescribed for the SPVM and the terms for compensatory amount and post liability apply to the consolidation-model bad bank as well.

Other, less specific rules apply if ownership of the original bank is closed, as it is the case for state related banks, which are the main addressees of the consolidation model. For this case, there are no explicit rules with regards to valuing the assets to be transferred. Instead, it is up to the bad bank to set up the details. As extreme cases, the bad bank could either acquire the problematic assets at the book value used by the transferring bank, thus postponing all coverage of losses into the future. Or the bad bank follows the SPVM and calculates a compensatory amount which is an immediate compensation for (potential future) losses. A second major distinction of the bad bank when ownership of the original bank is not dispersed compared to a bad bank connected to an original bank with dispersed ownership is that owner liability in the former case does not end at the funds ready to be distributed to the original bank's owners, but extends to the wealth of the owners themselves. In practice, such owners would be the state and savings banks.¹⁰

As the structure of bad banks according to the consolidation model is rather vague, it does not make sense to employ a numerical example for illustrative purposes. However, the sole bad bank that actually has been realized in Germany so far has been founded by the WestLB and can be classified as bad bank according to the consolidation model with closed ownership at the original bank. Thus, the structure of this bank can be described as an example.¹¹ Problematic assets and non-strategic business fields with a book value of 85.1 bn EUR will be transferred from West LB to the bad bank. The bad bank will be equipped with 3 bn EUR equity, provided by the West LB, and additional guarantees amounting to 1 bn EUR, which will be provided by the incumbent owners of the West LB, i.e., the federal state of North Rhine-Westphalia and the savings banks of this federal state. If losses of the bad bank exceed this cushion of 4 bn EUR, the incumbent owners have to cover these losses; the share of the savings banks is limited to 4 bn EUR. A component of the formation of the first bad bank is that the German government, represented by a state agency, has injected 3 bn EUR fresh equity into the West LB.

¹⁰ There are further differentiations in the law which distinguish between the liability of the state compared to the liability of savings banks, and which distinguish whether the bad bank is directed by the federal government and its agency or by a federal state. As these distinctions are not important for the purpose of the analysis conducted in this article, they are omitted.

¹¹ In contrast to the SPVM, there is no time limit for application of the consolidation model in the law. It is general expectation that the Hypo Real Estate (HRE) will also apply the consolidation model in the near future.

United States of America

The U.S. Treasury has developed the Public-Private Investment Program (PPIP).¹² According to PPIP, private investors, encouraged by financial support provided by the government, should purchase problematic assets from banks. The assets irrevocably leave the banks. In addition, PPIP aims at revitalizing the markets for those problematic assets.

The PPIP approach is divided into two subprograms: the PPIP for legacy securities (S-PPIP) and the PPIP for legacy loans (L-PPIP). Both programs share most of their basic characteristics, but there are also some differences. Starting point of both programs are private funds which are ready to be invested as equity in problematic assets. The amount of equity is doubled by funds invested by the U.S. Treasury. Moreover, state-supported debt contributions enlarge buying capacity even further.

S-PPIP (Public-Private-Investment Program for Legacy Securities)

The specific characteristics of the S-PPIP are as follows: The program is applicable to mortgage- and asset-backed securities originated prior to 2009 with a rating of AAA at origination. In summer 2009, the U.S. Treasury selected nine qualified fund managers for S-PPIP funds from a much larger number of applying fund managers. The fund managers' main duties are to raise private money and invest in problematic securities to be purchased from banks. A small example clarifies the structure: Suppose, a fund manager has been able to raise 100 USD equity from private investors. Then, the U.S. Treasury adds further 100 USD equity to the fund. Moreover, the U.S. Federal Reserve will add a loan of at least 100 USD, possibly even 200 USD to the fund, demanding a certain lending rate. Thus, a private investment of 100 USD could be leveraged up to a total investment volume of 400 USD. Management of the portfolio is under the sole responsibility of the private fund manager.

Assuming an interest rate of 0%, the distribution of the fund's result at liquidation in the simple example would be as follows:

| fund result | debt repayment to U.S. Federal Reserve | payback equity to U.S. Treasury | payback equity to private investors |
|-------------|--|---------------------------------|-------------------------------------|
| 600 USD | 200 USD | 200 USD | 200 USD |
| 400 USD | 200 USD | 100 USD | 100 USD |
| 200 USD | 200 USD | 0 USD --> loss | 0 USD --> loss |
| 100 USD | 100 USD --> loss | 0 USD --> loss | 0 USD --> loss |

In total, the U.S. Treasury is willing to invest 30 bn USD. As of November 30, eight out of the nine S-PPIP funds have been closed. They have raised 8.8 bn USD of private equity. U.S. Treasury has added 26.7 bn USD which consist of about 8.8 bn USD equity and about 17.8 USD loans. These figures underline, that U.S. Treasury is willing to leverage private funds

¹² Information is summarized on a special website of the U.S. Department of the Treasury, www.financialstability.gov; visited January 20, 2010.

with public funds as much as possible. Thus, the initial private investment of 8.8. bn USD yields a total purchasing power of up to 32.1 bn USD.¹³

L-PPIP (Public-Private-Investment Program for Legacy Loans)

Investment object of the L-PPIP are bank loans, usually pools of loans. The funds are expected to bid for such pools at banks willing to sell; the bidder with the highest bid will buy the assets. Leverage is higher than with problematic securities. If we apply the simple numerical example for the S-PPIP to the L-PPIP as well, as before, 100 USD private equity are augmented by 100 USD equity contributed by the U.S. Treasury. The fund can use debt for additional financing. The loan is guaranteed by the Federal Deposit Insurance Corporation (FDIC), which demands a fee. Leverage, defined as debt-equity ratio, can amount up to 6, i.e., in the example the loan could be as large as 1.200 USD and total investment as large as 1.400 USD.

Assuming again an interest rate of 0%, the distribution of the fund's result at liquidation in the simple example would be as follows:

| fund result | debt repayment | payback equity to U.S. Treasury | payback equity to private investors |
|-------------|--------------------|---------------------------------|-------------------------------------|
| 1.700 USD | 1.200 USD | 250 USD | 250 USD |
| 1.500 USD | 1.200 USD | 150 USD | 150 USD |
| 1.400 USD | 1.200 USD | 100 USD | 100 USD |
| 1.200 USD | 1.200 USD | 0 USD --> loss | 0 USD --> loss |
| 1.100 USD | 1.100 USD --> loss | 0 USD --> loss | 0 USD --> loss |

As of November 30, 2009, the “Congressional Oversight Panel” assumes this program to be dormant and regards it as unlikely, that the program as described above will ever become active.¹⁴

Add AIG, Citigroup, Bank of America

United Kingdom

In January 2009, the U.K. government announced the “asset protection scheme” (APS) as part of its comprehensive financial stability package.¹⁵ Large banks are eligible institutions of the APS. Like an insurance, the APS saves the participating bank from losses in assets covered by

¹³ Congressional Oversight Panel, “December Oversight Report, Taking Stock: What Has the Troubled Asset Relief Program Achieved?”, December 9, 2009; available at <http://cop.senate.gov/reports/library/report-120909-cop.cfm>; visited January 18, 2009, p. 24-26, 74-80, 179. See also Wall Street Journal, “Toxic-Asset Rescue Funds Start”, October 7, 2009; available at online.wsj.com/article/SB125475553527964757.html; visited October 12, 2009.

¹⁴ Congressional Oversight Panel, “December Oversight Report, Taking Stock: What Has the Troubled Asset Relief Program Achieved?” (fn. 13), p. 24, 179.

¹⁵ The British government provides some information on the website of the Asset Protection Agency: <http://www.hm-treasury.gov.uk/apa.htm>. Additional information can be found in a statement of the Chancellor (www.hm-treasury.gov.uk/statement_chx_260209.htm; visited October 13, 2009) and in a speech delivered by Financial Services Secretary Paul Myners (www.hm-treasury.gov.uk/press_54_09.htm; visited October 13, 2009). See also Panetta, Fabio et al., “An Assessment of Financial Sector Rescue Programmes”, Bank for International Settlements, BIS Papers No 48, July 2009, p. 10. 26f., 29; available at <http://www.bis.org/publ/bppdf/bispap48.pdf>; visited January 18, 2010.

this insurance. The goal of the APS is to reduce uncertainty about the value of the banks' assets by reducing extreme downside risk substantially.

In February and March 2009, the U.K. Treasury and Royal Bank of Scotland (RBS) and Lloyds Banking Group, resp., arrived at in-principle agreements on the participation of both banks in the APS. Further negotiations took place until November 2009. In November 2009, the U.K. Treasury and Lloyds agreed that financial soundness of Lloyds had been restored to an extent that it could leave the candidate status in the APS and need not participate in the APS. Since the mere announcement and availability of APS already had a stabilizing effect on the British banking system in 2009, Lloyds had to pay an exit fee of 2.5 bn GBP for benefiting from this effect. In addition, other restrictions apply to Lloyds. In contrast to Lloyds, RBS is participating in the APS as the single member. The U.K. Treasury and RBS agreed on the conditions that apply to RBS participation in the APS also in November 2009.

Since the purpose of this article is to analyze and compare bad-bank structures, it is not only interesting to investigate the APS conditions that actually apply to RBS, but to consider also the framework that has originally been developed for RBS and Lloyds. For this reason, we will look at both APS draft and APS realized.

APS Draft

The basic structure of APS was planned as follows: Basically, APS is an insurance scheme. The British government was to insure the two banks against a considerable percentage of potential losses which might be caused by problematic assets. The assets considered for inclusion into APS amounted to 585 bn GBP (RBS: 325 bn GBP, Lloyds: 260 bn GBP). Eligible assets comprised an encompassing set of problematic asset types. Assets must have been in the banks' balance sheet as of December 31, 2008; thus book value as of year-end 2008 served as reference. As with an ordinary insurance, the banks had to pay an insurance premium (RBS: 13-19.5 bn GBP, Lloyds: 15.6 bn GBP)¹⁶, the banks would have to bear a first loss on the insured assets alone (RBS: 19.5 bn GBP or 6% of insured assets, Lloyds: 25 bn GBP or 9.6% of insured assets)¹⁷, and they would have to bear 10% of the losses occurring in excess of the first loss; the remaining 90% would have to be borne by the state. Thus, the maximum net loss — i.e., without considering the insurance fee — of the government amounted to 275 bn GBP (RBS) and 211.5 bn GBP (Lloyds), resp.

APS Realized

The terms of the APS that actually apply to RBS have changed substantially in comparison to the draft. The pool of insured assets has decreased from 325 bn to 282 bn GBP (values as of RBS's balance sheet at the end of 2008), the first loss to be borne by RBS has increased from 19.5 bn to 38.3 bn GBP (13.6% of insured assets),¹⁸ and the insurance fee has changed from

¹⁶ For RBS, the insurance premium amounted to 6.5 bn GBP in non-voting shares; in addition, RBS gave up existing and newly arising U.K. tax credit. In Lloyds' case, the Treasury should have used the fee to buy B shares of Lloyds; Panetta et al. (fn. 15), p. 26f.

¹⁷ Government and government officials often mention higher amounts (RBS: 42.2 bn GBP, Lloyds: 35.2 bn GBP; cf. speech delivered by Myners, see fn. 15). It seems that these higher numbers include write-downs and impairments on the book values which have already been reflected in the book values as of December 31, 2008, i.e., *before* announcement of the APS. Therefore, the lower amounts seem more appropriate to describe the first loss to be borne by the banks *as part of the APS*. Panetta et al. (fn. 15), p. 30, also mention those figures used in this paper.

¹⁸ According to U.K. government, the first loss to be borne by RBS amounts to 60 bn GBP after 42 bn GBP in the draft. Again, this figure includes historic impairments; see fn. 17. According to RBS, these historic impairments amount to 21.3 bn GBP; RBS, "RBS Agrees Key Terms of Asset Protection Scheme ("APS")"; available at <http://www.londonstockexchange.com/exchange/prices-and-news/news/market-news/market-news->

6.5 bn GBP upfront fee to be paid in B-shares and forgoing of tax losses and allowances of up to 13 bn GBP to an annual fee of 0.7 bn GBP in the first three years followed by 0.5 bn GBP per annum for the life of the APS. RBS cannot leave the APS without the government's approval, and exit terms prescribe that the minimum total fee of RBS amounts to 2.5 bn GBP. The sharing rule for losses exceeding the first loss to be borne by RBS has remained unchanged, i.e., RBS takes 10% and the government takes 90% of these losses. In comparison with the draft, the maximum downside risk of the taxpayer has been reduced to 199.5 bn GBP, but the same is true for the fee unless the APS is active for more than three decades (ignoring interest rate effects on the time value of payments).

APS Draft and APS Realized

Again, a simple numerical example will illustrate how profits and losses are distributed when the insured asset matures or is sold. We assume a portfolio with a value of 1.000 GBP at the start of APS and an interest rate of 0%, the insurance fee is excluded from the analysis. For the first loss to be borne by the bank, we apply the percentages of RBS in the draft and in the realized APS, i.e., 6% and 13.6% of insured assets, resp.

| liquidation value of portfolio | APS draft | | APS realized | |
|--------------------------------|------------------|-----------------|------------------|-----------------|
| | profit/loss bank | loss government | profit/loss bank | loss government |
| 1.200 GBP | 200 GBP profit | 0 GBP | 200 GBP profit | 0 GBP |
| 1.100 GBP | 100 GBP profit | 0 GBP | 100 GBP profit | 0 GBP |
| 1.000 GBP | 0 GBP | 0 GBP | 0 GBP | 0 GBP |
| 940 GBP | 60 GBP loss | 0 GBP | 60 GBP loss | 0 GBP |
| 900 GBP | 64 GBP loss | 36 GBP loss | 100 GBP loss | 0 GBP loss |
| 864 GBP | 67.6 GBP loss | 68.4 GBP loss | 136 GBP loss | 0 GBP loss |
| 800 GBP | 74 GBP loss | 126 GBP loss | 142.4 GBP loss | 57.6 GBP loss |
| 700 GBP | 84 GBP loss | 216 GBP loss | 152.4 GBP loss | 147.6 GBP loss |

Switzerland

Among the bad-bank constructions described in this article, the Swiss scheme was the earliest to be realized. This is partly due to the fact, that the Swiss National Bank (SNB) started as early as in autumn 2007 to prepare various measures to stabilize banks and intensified this activity after the collapse of Bear Stearns in spring 2008.¹⁹ In October 2008, SNB offered both large Swiss banks — Union Bank of Switzerland (UBS) and Credit Suisse Group (CS) — to purchase problematic assets. CS refrained from making use of that offer, but UBS decided to sell problematic assets.

Originally, the basic structure was planned to be like this:²⁰ The problematic assets were to be sold to a special purpose vehicle called SNB StabFund (stabilization fund). SNB StabFund was to purchase a total volume of problematic assets of 60 bn USD. SNB StabFund should be

[detail.html?announcementId=10257526](#), visited January 19, 2010. Therefore, the first loss to be borne by the banks *as part of the APS* must be equal to $60 - 21.3 = 38.7$ bn GBP.

¹⁹ Swiss National Bank, Annual Report 2008, p. 77.

²⁰ The Swiss National Bank summarizes the incidents in its Annual Report 2008, p. 77-85. Other documents can be found on SNB's website www.snb.ch, search term "SNB StabFund"; visited October 13, 2009.

equipped with 6 bn USD equity (10% of total volume) which UBS had to provide. Although UBS had to supply all of SNB StabFund's equity, the fund is owned and controlled by the SNB. The 6 bn USD payment by UBS can be interpreted as the *initial* fee UBS pays for SNB's services. SNB StabFund bought problematic assets at their book value as of September 30, 2008 or at the value determined by experts, whichever was lower. Debt of SNB StabFund was provided by SNB at LIBOR + 250 basis points.

How are profits after full repayment of debt including interest and final liquidation of SNB StabFund distributed? UBS disposes of an option to purchase SNB StabFund at an exercise price of 1 bn USD plus 50% of the value of SNB StabFund's equity. If losses of SNB StabFund exceed equity, SNB would have a claim on up to 100 million shares in UBS shares as compensation for losses on its loan. As the value of these shares is unknown at the moment, it is only safe to say that the maximum loss of SNB could amount to 54 bn USD minus the value of 100 million shares in UBS. As the banking sector has stabilized since autumn 2008, SNB StabFund actually only had to purchase assets with a value of 38.7 bn USD and not 60 bn USD. Therefore, the other numbers have to be adjusted proportionally.

Since the option arrangement is complex, a numerical example will help to demonstrate the distribution of profits and losses among SNB and UBS. For the purpose of this calculation, profit and loss of SNB assumes a 0 USD investment, i.e., reductions in SNB StabFund's equity are not interpreted as losses of SNB. However, there are good reasons to argue that at least *some* of that reductions should be interpreted as losses as the endowment of SNB StabFund with equity of 6 bn USD by UBS can be regarded as *initial* fee for SNB's services. But due to the option's complex arrangement, the *actual* fee is difficult to determine at the starting date of SNB StabFund. Since the profit of the SNB without consideration of the initial fee amounts to 4 bn USD in case the transferred assets can be liquidated at their purchase value, it seems reasonable to conclude, that the initial fee must range between 0 and 4 bn USD.

Interest rates and operating costs are assumed to be zero. We further assume the originally intended size of SNB StabFund of 60 bn USD which would have required an equity provision by UBS amounting to 6 bn USD.

| value of SNB StabFund at liquidation | value of SNB StabFund's equity | exercise price of UBS's call option on SNB StabFund | profit/loss of SNB | profit/loss of UBS |
|--------------------------------------|--------------------------------|---|---|--|
| 63 bn USD | 9 bn USD | 5.5 bn USD | 5.5 bn USD | 3.5 bn USD [- 6 bn USD initial equity provision] |
| 62 bn USD | 8 bn USD | 5 bn USD | 5 bn USD | 3 bn USD [- 6 bn USD] |
| 60 bn USD | 6 bn USD | 4 bn USD | 4 bn USD | 2 bn USD [- 6 bn USD] |
| 57 bn USD | 3 bn USD | 2.5 bn USD | 2.5 bn USD | 0.5 bn USD [- 6 bn USD] |
| 56 bn USD | 2 bn USD | 2 bn USD | 2 bn USD | [- 6 bn USD] indifference concerning option exercise |
| 55 bn USD | 1 bn USD | 1.5 bn USD | 1 bn USD | [- 6 bn USD] |
| 54 bn USD | 0 bn USD | 1 bn USD | 0 bn USD | [-6 bn USD] |
| 53 bn USD | 0 bn USD [-1 bn USD] | 1 bn USD | -1 bn USD + up to 100 million shares in UBS | [- 6 bn USD] – issuance of up to 100 million shares in UBS |

Ireland

In the middle of September 2009, the Irish government announced in detail its concept how to relieve five Irish banks from problematic loans.²¹ The vehicle founded for this purpose is called National Asset Management Agency (NAMA).²² NAMA should buy loans, mainly land and property development loans, with a nominal value of 77 bn EUR from five banks at a price of 54 bn EUR. In aggregate, there is a discount of 30%, but discount varies very much between banks. Means of payment used by NAMA will mainly consist of government bonds or state-guaranteed bonds issued by NAMA. Current market value of the assets in question is estimated to be at 47 bn EUR, i.e., there is a kind of subsidy of 7 bn EUR. The valuation methodology "... will not require banks to accept 'fire-sale' values."²³ "Valuations by NAMA ... will be based on the current market value of the underlying collateral, adjusted to reflect a longer term economic value which the underlying asset could reasonably expected to attain."²⁴

²¹ The Irish department of finance provides some information on its website www.finance.gov.ie; visited October 14, 2009, use search terms "National Asset Management Agency" or "NAMA".

²² The internet site of NAMA is at www.nama.ie; visited January 19, 2010.

²³ Statement by Minister of Finance on the NAMA legislation draft paper, p. 3; available at www.finance.gov.ie/viewdoc.asp?DocID=5875; visited October 14, 2009.

²⁴ Statement by Minister of Finance on the NAMA legislation draft paper (fn. 23), p. 4.

Downside risk will remain with the banks. For about 5% of the transaction volume, payment by NAMA will have the form of subordinated bonds issued by NAMA *without* guarantee. This part is linked to the performance of NAMA.²⁵ Thus the banks would be the first parties to bear losses of NAMA, the amount would be limited to 2.7 bn EUR (5% of 54 bn EUR). Further losses would also be ascribed to the entirety of the participating banks. They would have to pay a tax surcharge on bank profits to cover a loss after NAMA wind-up. The contribution of each bank would be determined by its share in the NAMA portfolio.²⁶ Asset transfer from the banks to NAMA is assumed to start not before end-January 2010 and is expected to be completed by end-July 2010.

A numerical examples highlights profit and loss distribution. We assume that NAMA purchases a loan from a certain bank at a price of 100 EUR. NAMA pays 95 EUR in government bonds or state-guaranteed bonds issued by NAMA, and 5 EUR in subordinated bonds issued by NAMA. Interest and other expenses are not considered. This loan is the only asset held by NAMA, thus the loan value at maturity directly translates into the value of the subordinated bond.

| loan value at maturity | profit/loss of NAMA | profit/loss of selling bank |
|------------------------|---|--|
| 110 EUR | + 10 EUR | 0 EUR |
| 105 EUR | + 5 EUR | 0 EUR |
| 100 EUR | 0 EUR | 0 EUR |
| 99 EUR | 0 EUR | - 1 EUR |
| 95 EUR | 0 EUR | - 5 EUR |
| 94 EUR | 0 EUR (- 1 EUR, to be borne by banks) | - 6 EUR (5 EUR sub debt and 1 EUR NAMA losses) |
| 90 EUR | 0 EUR (- 5 EUR , to be borne by banks) | - 10 EUR (5 EUR sub debt and 5 EUR NAMA losses) |

Netherlands

Add ING.

France

Add Dexia?

²⁵ Government of Ireland — Department of Finance, National Asset Management Agency, Second Stage Speech, p. 6; available at www.finance.gov.ie/viewdoc.asp?DocID=5986; visited October 14, 2009.

²⁶ Sec. 225 National Asset Management Bill 2009.

II. Analysis

The bad-bank structures described in the preceding section differ in many respects. The following analysis will apply some questions to compare the different approaches chosen by the governments in the five countries.

The first question is whether the problematic assets de facto leave the original bank definitely. The point here is not whether the problematic assets disappear from the original bank's balance sheet and appear in the balance sheet of another company, but whether the original bank still is exposed to the future development of the problematic assets' value, i.e., future profits and losses.

There is no uniform practice in the analyzed countries. In the U.K. with its asset-insurance approach, it is obvious that the problematic assets have not left the original bank. There is also some variation among the countries following the asset-purchase approach: In the case of the USA, it is apparent that the problematic assets have not only left the original bank, but that the original bank is no longer exposed to the problematic assets' future development at all. In the three remaining countries, intermediate solutions have been realized: The problematic assets have been transferred to another legal body, but there is still a smaller or larger exposure of the original bank.

As follow-up question the next aspect to be investigated is how does the exposure of the original bank to the future development of the problematic assets' value look like? Is there a difference between upside and downside participation?

Germany and the USA are the most extreme cases. In the USA, there is no exposure of the original bank after the transaction. The parties exposed are the state and its private partner. In Germany, exposure of the original bank remains at 100%. The bad bank buys time, up to 20 years in the case of the SPVM, to grant the original bank time to recover, but — apart from the fee — it still fully participates in the profits and losses of the problematic assets. There is just a temporary relief for the original bank. In the case of the SPVM and in the case of the consolidation model applied by an original bank with dispersed ownership, funds eligible to be distributed to the bank owners are the only eligible source of funds for payments from the original bank to the bad bank. Due to this conditional payment obligation, losses of the bad bank need not be shown in the original bank's balance sheet.²⁷ Nevertheless, economically, it is a weight to be carried by the shareholders which will be reflected in the market valuation of the bank.

The U.K, Ireland, and Switzerland are positioned between the full-exposure approach in Germany and the zero-exposure approach in the USA. In the U.K., the original bank fully participates in upside potential and has limited participation in downside risk, i.e., 100% participation in first loss and 10% of the losses occurring in excess of the first loss. Each Irish bank selling assets to NAMA disposes of no upside potential, but faces full downside risk for NAMA losses in general, i.e., liability is not confined to those assets that the original bank under consideration has transferred to NAMA, but comprises the total NAMA loss caused by the entirety of assets delivered by all participating banks. Finally, UBS in Switzerland has a share in upside potential slightly below 50%. Turning to downside risk, UBS disposes of a non-linear share in SNB StabFund's equity if SNB StabFund makes a loss but does not deplete its equity completely. Moreover, UBS would have to compensate the Swiss state for losses exceeding SNB StabFund's equity with up to 100 million shares. Liability of UBS does not go beyond the 6 bn USD initial outlay and the issuance of 100 million shares.

How does the profit-loss profile of the banks' counterparty, i.e., the state, look like?

²⁷ However, for IFRS it is not sure whether this procedure is permitted.

The following comparison assumes that the original bank does not fail. Under this assumption, only the German state does not participate at all in the future development of the problematic assets, neither on the downside nor on the upside. Regarding downside risk, the position of the Irish government is similar, but even stronger. The Irish government does not participate in any losses, but it can make a claim on the entirety of the participating banks to cover NAMA's losses. This in contrast to the German case where each participating bank is only liable for the losses caused by its own problematic assets. The British state does not dispose of a participation in upside potential, but bears 90% of downside risk exceeding first loss. In Switzerland and the USA, the state has equity and debt at stake. In Switzerland, government participation rate in equity is difficult to determine. As mentioned in the descriptive part above, it depends on whether one assumes a 0 USD investment of SNB — in this case SNB cannot bear losses in equity by definition — or whether it is assumed that part or all of the 6 bn USD payment made by USB should be considered as equity exposure of SNB. Turning to SNB StabFund's debt provided by the Swiss state, the Swiss state has a participation rate of 100% for losses which fully exhaust SNB StabFund's equity and furthermore exceed the value of 100 million UBS shares. Finally, the equity investment of the U.S. government features a 50% participation in gains and losses. However, for downside risk it has to be considered additionally that the U.S. government bears a 100% loss participation for debt used to purchase problematic assets.

Another important issue in evaluating bad-bank structures is whether they include some kind of obvious or hidden subsidies for the original bank.

This point is difficult to assess because the answer usually depends on whether the problematic assets and/or the state support have been valued in line with the market. However, these market values are unknown. In this situation, the structures in Germany, Switzerland, and the U.K. are particularly difficult to judge. In the German case, there are no subsidies as long as the fee for state support is in line with the market. The same is true for Switzerland. In this case, the fee consists of the upfront fee for state support, i.e., the equity endowment of SNB StabFund provided by UBS, which could diminish if asset value develops favorably, and the fee due if equity is exhausted, i.e., the issuance of up to 100 million UBS shares. The same statement also holds for the U.K.; there are no subsidies, if the insurance premium and the valuation of the problematic assets, which determines the exercise price of the insurance, reflect market conditions. In Ireland, there is an obvious subsidy of 7 bn EUR, i.e., the excess of the announced purchase price over estimated current market value. There might be a hidden subsidy in addition, if the estimate of the current market value of 47 bn EUR is too optimistic. However, in case of Ireland and the U.K. it has to be added, that the main beneficiaries of state subsidies would be the state as well as the state holds, due to its crisis interventions, considerable equity stakes in most of the banks which might make use of bad-bank solutions in these two countries. In contrast to the four other countries, there is no direct *original bank* subsidy in the USA. Commentators criticize that private investor support to encourage these parties to revive the markets for problematic assets is exaggerated. In particular, they point at the huge leverage which could turn, in the most extreme variant, 1 USD private investment into 8 USD total investment under control of the private investor. Critics fear that this huge leverage could result in incentives on the side of the private investors which are similar to those that are often mentioned as a cause for the financial crisis.²⁸ If state support for private investors in problematic assets would be too generous this

²⁸ See in particular the contributions made by Bebchuk: Bebchuk, Lucian A., *Buying Troubled Assets*, working paper, April 2009, available at www.ssrn.com; visited October 15, 2009. The paper also reviews other commentators' views on the PPIP. Moreover, the reader is referred to Bebchuk's contributions distributed via the blog of The Harvard Law School Forum on Corporate Governance and Financial Regulation at www.blogs.law.harvard.edu/corpgov.

might cause the private investors to bid high prices that are not in line with market conditions; through this channel, there could develop an indirect state subsidy of original banks.

As defined above, the characteristic that distinguishes problematic assets from unproblematic assets is that the former cannot be valued with sufficient reliability because their markets have dried up or even disappeared during the crisis. As a result, valuation of problematic assets is a crucial issue in bad-bank transactions. Therefore, the next characteristic to be compared is whether and how problematic assets are valued in the various bad-bank structures.

The U.S. approach stands out as it directly aims at reviving the asset markets by strongly encouraging private investments. The valuation of the problematic assets is result of the negotiations between the original bank and the bidding, privately-led investment funds. In the remaining four countries, revival of the markets for problematic assets would be at best a side effect of the bad-bank structures. This side effect would happen if willingness to trade such assets increases in banks after participation in bad-bank transactions. The values of the problematic assets applied in these four countries are no true market values; as a consequence, there is a danger that these values contain a political component. However, there are also market-value linked components in the bad-bank arrangements, as in all four countries participating banks continue to be exposed to the problematic assets' future value. However, size and nature of exposure varies between countries considerably. As a rule of thumb it can be stated that future market valuation acts the more as a correctional factor of policy-induced valuations at the outset of bad-bank transactions, the stronger the original banks remain exposed to downside risk of the problematic assets. Seen this way, the political component in problematic asset valuation in the four countries should be the smallest in the German model.

Add concluding survey table.

Add single example for all bad-bank structures feasible?

Add participation rates, reasons for low rates, and thoughts in mandatory participation.

Add broader perspective including lenders, market discipline (third pillar).

C. Conclusion

As of mid-January 2010, the Swiss SNB StabFund actually has become reality. In the USA, private PPIP managers have been selected and these managers have collected funds to invest, but actual transactions in problematic assets are just about to begin. The legal structure for bad banks is available in Germany since July 2009, but it has been just in December 2009 that the first bank actually founded a bad bank. In the U.K., it took about nine months until November 2009 that the terms have been fixed that apply to RBS's participation in the APS. Finally, in Ireland, the legislative process has been closed and the actual transfer of problematic assets is scheduled to start not before end-January 2010. Therefore, the conclusion mainly has to be based on concepts declared in acts as there are only few *working* bad-bank structures yet.

Having these limitations in mind when concluding, are the five bad-bank concepts adequately designed to reach the goals stated in the introduction? In the short-term perspective, all concepts stabilize the asset side of the balance sheets of participating banks. Though on different paths, all concepts manage to reduce uncertainty of participating banks' asset values. Again, it has to be underlined, that a bad-bank concept possibly needs support by state interventions applying to the equity and liabilities' side of the balance sheet. Need could even

be larger for well-designed bad-bank programs since such programs would not contain a subsidizing component and might therefore reduce the participating banks' equity. The mid- and long-term incentive effects, which are at least as important as the short-term stabilization effect, are difficult to evaluate. According to the principles stated in the bad-bank regulations, market adequacy of valuations, fees, etc. is declared. It remains to be seen whether this general line will be adhered to in practice. Accordingly, there are, apart from this detail in the Irish case²⁹, no obvious 'presents' distributed to the original risk-takers³⁰ of the participating banks.³¹ If the market-based view stated in concepts and laws will actually be realized, the incentive effects should be favorable. Moreover, tax money would not be wasted. However, as for the short-term view, this evaluation is clearly preliminary in nature and has to be updated when more evidence is available.

²⁹ An obvious deviation from this general line can be found in Ireland with the purchase price exceeding the estimated current market value. In the Irish case, this effect is weakened by the fact, that the state has become a major shareholder in most banks eligible for participation in the bad-bank program.

³⁰ This article has only dealt with the shareholders who are of course the most prominent group among the risk-takers. However, a more encompassing analysis should also consider some kinds of lenders as risk-takers, e.g., holders of subordinated bonds or of ordinary bonds issued by banks.

³¹ There might be some 'presents' for the private investors in the PPIP-structure in the USA.