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Empirical Review of EU Asset Relief Measures in the Period 2008-2012

*Yassine Boudghene and Stan Maes**

With this article, we empirically review the asset relief measures for the roughly € 1 trillion of “toxic assets” that have been implemented by EU Member States since the start of the crisis. We summarise their main features with regard to nature of the covered assets, asset relief tool (asset guarantee versus asset purchase), risk sharing features between the beneficiary bank and the State, State remuneration, etc. Our findings are the following: (i) the bulk of covered assets consists of loans, (ii) the use of asset guarantees swamps that of asset purchases, and (iii) the second loss tranche in asset guarantee measures borne by the State substantially exceeds the first loss tranche borne by the originating bank, in particular for some banks, which subsequently risk exposing corresponding Member States to losses. We conclude by drawing important lessons from our experience with asset relief so far.

I. Introduction

The financial crisis which started in July 2007 has led to major strains in the global banking system. The crisis became systemic when Lehman Brothers filed for bankruptcy in September 2008, at which point governments and central banks had to intervene on an unprecedented scale to contain the severe impact of the crisis on the real economy.

The European Commission plays a central role in the control of State aid granted by Member States to their respective banks. The Treaty on the Functioning of the European Union (TFEU) requires Member States to seek the Commission’s approval for any

rescue and restructuring aid before it can be implemented. Often, the aid measures need to be adapted in order to obtain approval under the rules of State aid control. EU State aid rules aim at safeguarding a level playing field between banks in the single market as well as between Member States, in a context where bank support primarily comes from national governments.¹

Significant amounts of State aid have been granted to the EU financial sector. Asset relief is only one of the tools that have been used by Member States, next to bank recapitalisations and guarantees on newly issued bank debt. The sometimes complex structural features of asset relief measures granted by Member States raise a number of challenges in valuation, quantification and assessment of State aid. In a companion paper,² we describe and discuss the general policy framework of the European Commission with respect to asset relief. The purpose of this paper is to empirically review and summarise the numerous asset relief measures that have been approved and implemented to date. To the best of our knowledge, such a comprehensive and up-to-date overview is not available yet. Section II defines asset relief, discusses the relative merits of the different asset relief approaches, describes the main principles and valuation concepts set forth by the European Commission’s main guidance paper on asset relief (the so-called Impaired Assets Communication,³ IAC hereafter), and discusses compatibility issues of asset relief measures with State aid rules. Section III presents summary statistics across cases and high-

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1 See Ahlborn/Piccinin, *The Application of the Principles of Restructuring Aid to Banks during the Financial Crisis*, EStAL, 2010, Number 01.

2 See Boudghene/Maes, *Dealing with impaired assets: The EU policy framework*, 2012 (forthcoming).

3 Communication from the Commission on the Treatment of Impaired Assets in the Community Banking Sector, 25 Feb. 2009, OJ 2009 C 72/01.

lights the main insights from reviewing the individual asset relief measures. Section IV concludes.

II. Asset relief measures

1. Definition and main features

Generally speaking, asset relief measures are government support measures aiming at “relieving” banks from assets which are broadly considered as “toxic” or “impaired”. The notion of “impaired asset” has broadened over time. Initially, impaired assets were understood as (i) assets whose intrinsic value is perceived to lie significantly above their market value, possibly due to dysfunctional markets (market failures). However, over time, impaired assets have come to also be understood as including (ii) assets that incorporate relatively high expected losses and even (iii) long-term assets without high expected losses (“good safe assets”), but that still need to be hived off the balance sheet, because of the negative carry they generate due to increased funding costs for banks. In the following, one can understand impaired assets to include both securitized assets, such as RMBS, CMBS, CDO, CLO, ABS, and non-securitized assets, such as loans, CDS and plain-vanilla bonds.⁴

EU asset relief measures can be categorised according to the way the measure is set up and implemented. Two stylized asset relief approaches can typically be distinguished:

- The first approach is an asset purchase measure, whereby the bank is allowed to hive off impaired assets through a sale;
- The second approach is an asset guarantee measure, whereby the bank keeps the assets but where the State (merely, and possibly only partially) insures the bank against credit losses that may materialize within the ring-fenced portfolio of impaired assets.

Both approaches have their pros and cons (see below) but achieve similar economic effects. In particular, in both approaches, the downside risk – i.e. that ex post losses will turn out to exceed ex ante expected losses – is typically borne by the State. Hence, both approaches allow the bank to remove uncertainty about possible future losses on a given portfolio of impaired assets and further rating migrations and hence to free up capital, which no longer needs to be held to the same extent in order to cover possible

unexpected losses. There are still a number of differences between the two approaches, which are elaborated below. In practise, Member States can combine elements of both stylized approaches by using hybrid measures.

Regarding the actual implementation of the measure, Member States have the choice between individual measures (granted to individual banks) and national schemes (characterised by pre-determined pricing parameters and accessible by all banks that meet the eligibility conditions).

2. Asset purchase

Typically, impaired assets are transferred from the balance sheet of the beneficiary bank to another entity, often a special purpose vehicle (SPV), fully or partially sponsored and/or guaranteed by the State. In return, the beneficiary bank either receives cash up front, or is paid later through a deferred payment (usually state-guaranteed receivables⁵ booked in the assets of the beneficiary bank). (see Figure 1)

The SPV typically finances the purchase of the impaired assets portfolio by issuing equity and debt. In most cases reviewed in this paper, the State sponsors the SPV by injecting equity (solely or jointly with private investors, including the beneficiary bank) and/or guaranteeing a significant fraction of the debt. Debt financing can be raised externally, from external investors, or internally, from the beneficiary bank. Next to (typically State-guaranteed) senior debt, the SPV can also issue subordinated debt (usually not State-guaranteed).

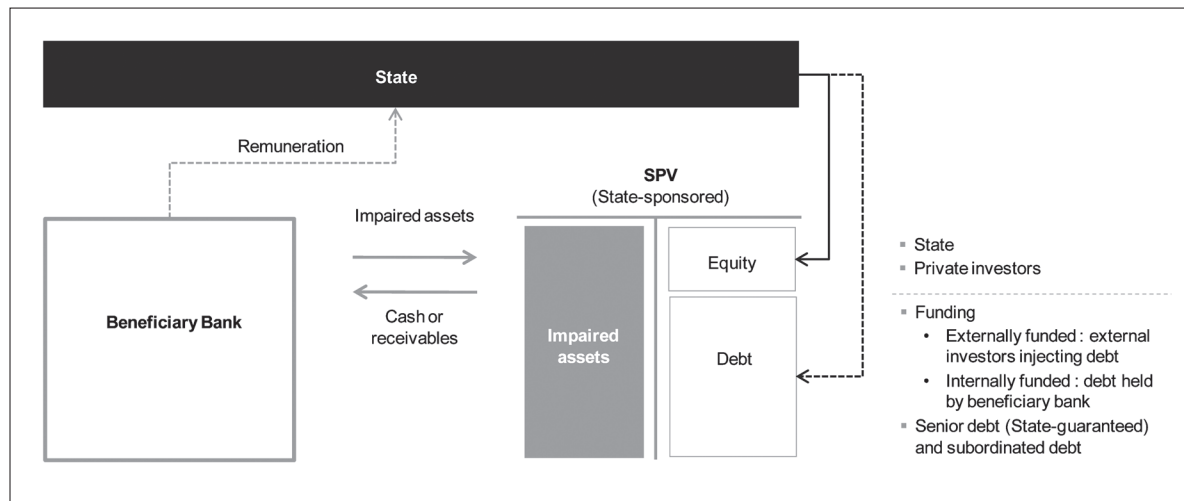
3. Asset guarantee

Typically, the portfolio of impaired assets remains on the balance sheet of the bank, but losses on the portfolio are guaranteed by the State beyond a first

⁴ For an explanation of these acronyms and their regulatory treatment, see the glossary and other annexes in Boudghene, Maes, and Scheicher, Asset relief measures in the EU – Overview and Issues, SSRN working paper, 2010.

⁵ Such receivables can take the form of a loan facility or a bond. The State guarantee on such receivables usually enables the beneficiary bank to significantly reduce risk-weighted assets and free up capital, while possibly using such receivables as collateral to access central bank funding.

Figure 1: Asset purchase by means of a SPV



Source: Author's own display

tranche of losses fully borne by the beneficiary bank. The State commits to cover the losses that exceed a first tranche either fully or partially, and typically up to a certain level. Different loss sharing mechanisms exist and, as represented in the figure 2 below, a distinction can be made between (i) a first tranche of losses usually fully borne by the beneficiary bank, (ii) a second tranche of losses usually borne to a large extent by the State (the beneficiary bank sometimes sharing a certain percentage of losses in the second tranche), and, optionally, (iii) a third tranche of losses usually fully borne by the beneficiary bank again. Asset guarantee measures are similar to writing put options. The maximum upside for the State is the net present value (or NPV) of all fee(s) that it contractually receives. This scenario materializes in case impaired asset losses are moderate and hence fully borne by the beneficiary bank. The maximum down-

side for the State is the NPV of the losses that it bears minus the NPV of all fees. (see Figure 2)

4. The concept of Real Economic Value and compatibility

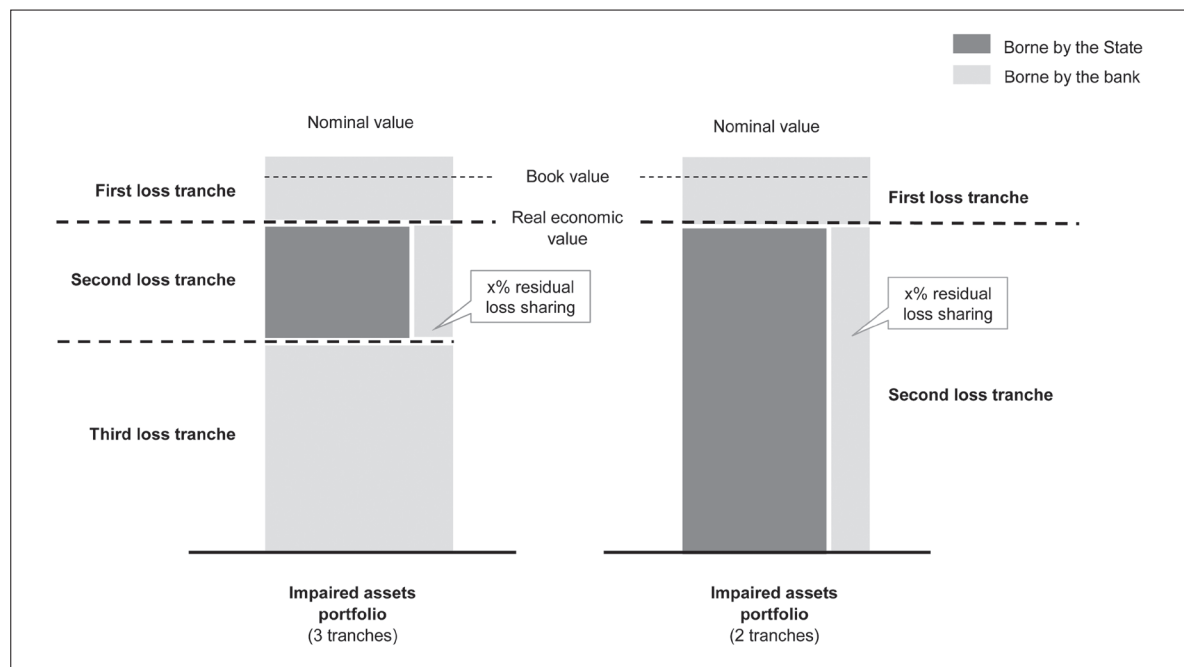
In principle, any transfer to the State of assets above their market value constitutes State aid. Such approach assumes that the market value reflects the intrinsic value of the assets in question. Before the financial crisis, no general guidelines existed that identified such aid as compatible, and if it was not justified by other objectives, such a measure would be incompatible. During the months following the collapse of Lehman Brothers in September 2008, important market dysfunctions occurred as a result of which market prices failed to adequately reflect intrinsic value. In order to deal with this market failure, the IAC introduced the notion of intrinsic value or Real Economic Value ("REV"), which is defined below. Under the IAC and State aid rules, the REV plays a central role in the appreciation of the compatibility of the asset relief measure, as discussed in Section 2.4.2 of the IAC.

a. The Real Economic Value

The IAC itself does not provide a detailed guidance on the calculation of the REV but sets out the main valuation principles. The following paragraphs are based on methodologies approved by the Commission in decisions dealing with impaired assets.⁶

6 See for example Commission Decision of 12.05.2009 Additional aid for Fortis Banque, Fortis Banque Luxembourg and Fortis holding, in cases NN 255/2009 (Belgium) and N274/2009 (Luxembourg), OJ 2009 C 178; Commission Decision of 31.03.2009 Illiquid assets back-up facility for ING, in case C10/2009 (The Netherlands), OJ 2009 C 158; Commission Decision of 30.06.2009 Aid measures provided to LBBW, in case C17/2009 (Germany), OJ 2009 C 248; Commission Decision of 26.02.2009 Establishment of a National Asset Management Agency (NAMA): Asset relief scheme for banks in Ireland, in case N725/2009 (Ireland), OJ 2010 C 94; Commission Decision of 14.12.2009 Restructuring of Royal Bank of Scotland following its recapitalisation by the State and its participation in the Asset Protection Scheme, in cases N422/2009 and N621/2009 (United Kingdom), OJ 2010 C 119.

Figure 2: Loss sharing under a guarantee scheme



Source: Author's own display

The (base case) REV or intrinsic value of an asset (portfolio) could be estimated as the sum of the discounted expected cash flows that follow from holding the asset (portfolio) until maturity. Put differently, the REV corresponds to the Net Present Value (NPV) of the stream of expected cash flows, reflecting losses that can reasonably be expected over the remaining life of assets but ignoring market failures related, for example, to excessive product complexity, confidence crises resulting in a lack of liquidity, or excessive risk aversion.

Mathematically, for a simple fixed rate instrument, the (base case) REV can be expressed as follows, whereby $E_t[\cdot]$ stands for the expectations operator at time t , CF_{t+i} reflects the (stochastic) cash flow at time $t + i$, r_f stands for the appropriate risk free rate, r_p reflects the appropriate risk premium to compensate for (e.g. credit and interest rate) risk in normalized conditions, and N the number of years to maturity:

$$REV_t = \frac{E_t[CF_{t+1}]}{(1+r_f+rp)^1} + \frac{E_t[CF_{t+2}]}{(1+r_f+rp)^2} + \dots + \frac{E_t[CF_{t+N}]}{(1+r_f+rp)^N}$$

Note that merely knowing the expected cash flows (interest payments, principal payments, losses on interest and principal payments, etc.) is not sufficient for conducting a valuation exercise. One needs to esti-

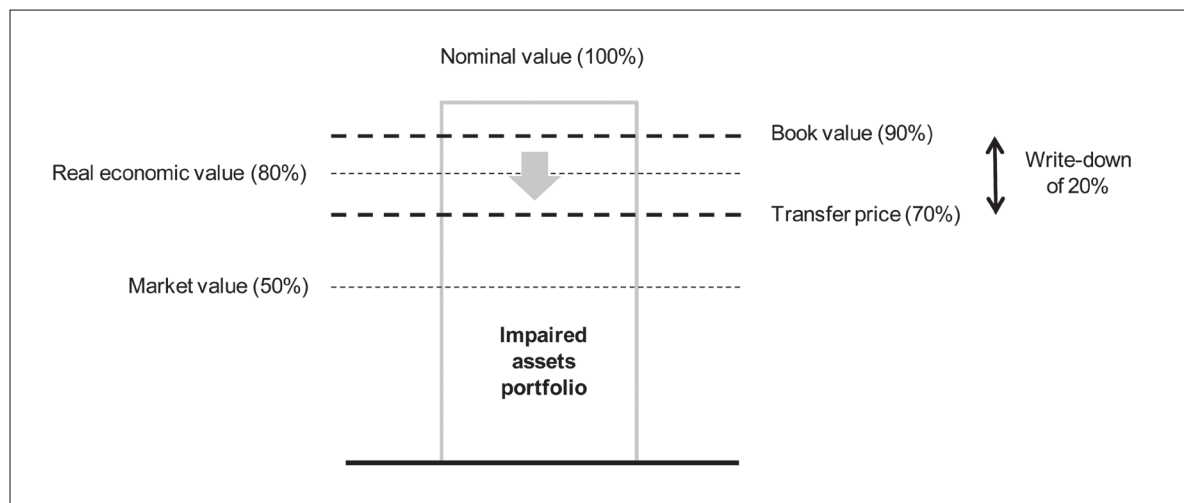
mate the volatility around the expected cash flows as well. Indeed, the appropriate discount rate (and risk premium) will be determined by the width of the distribution around the expected value of the portfolio.⁷ In general, when cash flows are uncertain and risky, a discount rate equal to the sum of the appropriate risk free rate and an appropriate risk premium should be used to discount the stream of cash flows.

In sum, expected losses enter in the numerator of the discounted cash flow computation, whereas the riskiness of potential outcomes around expected payoffs enters through the discount rate in the denominator in a discounted cash flow valuation exercise.

Note also that such a valuation approach, as opposed to (simply) observing market values, is justifiable only if it can be established that the market for the assets in question is dysfunctional. Importantly, the "base case" referred to above and the underlying assumptions may differ from the base case assumed

⁷ Conceptually, the REV can be estimated by averaging the net present value over a long list of possible scenarios (for example generated using a Monte Carlo simulation). The different outcomes of the scenario analysis effectively constitute a distribution of possible realizations that allows to assess the riskiness of the underlying portfolio (the uncertainty around the expected loss and the tail risk, i.e. probability of ending up with very large losses).

Figure 3: Quantification of compatible State aid in an asset purchase



Source: Author's own display

by the bank in its risk management or restructuring plan projections.

b. Compatibility under State aid rules

In asset purchase measures, any transfer to the State of assets above their market value constitutes State aid and the aid amount equals the difference between the transfer price and the market value. The State aid would remain compatible with the Treaty, in general, as long as the transfer price is lower or equal to the (base case) REV.

As an illustration (see figure 3), assume an impaired asset portfolio that is recorded in the balance sheet at 90% of its nominal value. Assume, moreover, a market value of 50%, a REV of 80%, and an agreement between the bank and the State on a transfer price of 70%. In such a situation, the aid amount would be 20% (transfer price minus market value) and the aid would be deemed compatible (as the transfer price does not exceed REV). Upon implementation of the asset purchase, the bank records (additional) write-downs of 20% (write down from

book value to transfer price), but avoids a scenario in which it would have to write down the portfolio to the current market value. (see Figure 3)

In asset guarantee measures, the bank keeps the assets on the books but the State (partially) insures the bank against losses that may materialize within the portfolio of impaired assets, usually beyond a first tranche of losses borne by the beneficiary bank. The asset guarantee measure would then be compatible with the Treaty as long as the nominal value minus the first tranche of losses borne by the bank is at most equal to the (base case) REV.

In the exceptional case that such conditions are not met (be it for asset purchase or asset guarantee measures), a "claw back" of the difference ("incompatible aid"), usually in combination with additional restructuring (or even liquidation), is typically required from the bank.

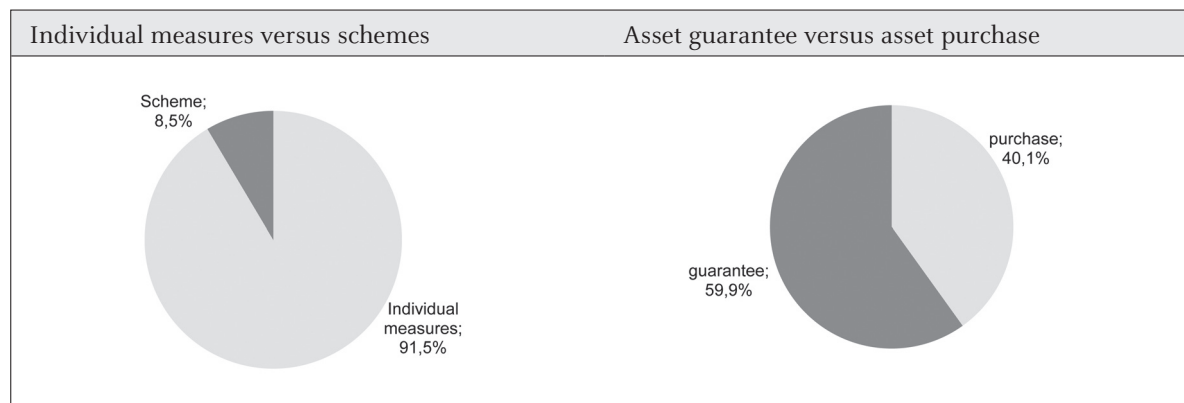
III. Empirical review of asset relief measures in the EU

1. Summary statistics and stylised facts of EU bank asset relief measures⁸

Asset relief measures for a total amount of € 965 billion (in nominal value) have been granted by 9 Member States. As of the beginning of the financial crisis, 9 Member States (Austria, Belgium, France, Germany, Ireland, Lithuania, the Netherlands, Spain, United

⁸ This review of asset relief measures is based on publicly available information with 28 February 2012 as cut-off date. Asset relief measures that have been notified to the Commission, but where the Commission decision is still pending, are not covered in the current paper. Likewise, asset relief measures that do not refer to the Impaired Asset Communication (see main text) are excluded from the scope of this paper (Bradford & Bingley, Dumfermline and Northern Rock (United Kingdom), Roskilde Bank and Fionia Bank (Denmark), and Kaupthing Luxembourg (Luxembourg)). Otherwise, this review is comprehensive up to the above cut-off date.

Figure 4: Basic classification of EU asset relief measures (nominal value)



Source: Commission Services – Author calculations

Kingdom) asked for approval of asset relief measures. In total, € 965 billion of assets in nominal value⁹ have been approved. Alternatively, € 590 billion of assets have been effectively purchased or guaranteed by the State.¹⁰ The underlying measures are reviewed in Sections III.2 and III.3.

Member States have so far favoured individual measures over national schemes and asset guarantee measures over asset purchase measures. As can be seen in the left hand side pie chart in Figure 4, 92% of the total aggregate portfolio of impaired assets is being covered by individual asset relief measures, whereas only 8% of the portfolio is being covered by a national scheme. Indeed, as of the beginning of the financial crisis, only Germany, Ireland and Lithuania introduced national schemes. No specific amount was allocated to the German scheme which expired at the end of January 2010 without having been effectively used, while the total volume of asset relief interventions approved under the Irish scheme and the Lithuanian scheme amounts to respectively € 82.5 billion and € 0.87 billion in nominal value. So far, only the Irish scheme has been actively used.

The right hand side pie chart below suggests that Member States favoured asset guarantee measures over asset purchase measures. Indeed, 60% of the total aggregate portfolio is being covered by a (second loss) State guarantee, whereas 40% has been purchased by the State. (see Figure 4)

Germany, the United Kingdom, and Ireland have so far been the biggest providers of asset relief measures, and RBS, Hypo Real Estate and WestLB have been the largest beneficiaries.¹¹

Non-securitized assets make up, with 72%, the bulk of covered assets in asset relief measures. As displayed in Figure 5, the aggregate portfolio of impaired assets consists of 72% non-securitized assets and 28% securitized assets (primarily RMBS and ABS, but also CDO, CLO and CMBS). This may seem counter-intuitive, as securitized assets, often called structured credit securities, are often mentioned as being at the origin of the financial crisis. Non-securitized assets covered in such measures are primarily loans.

(see Figure 5)

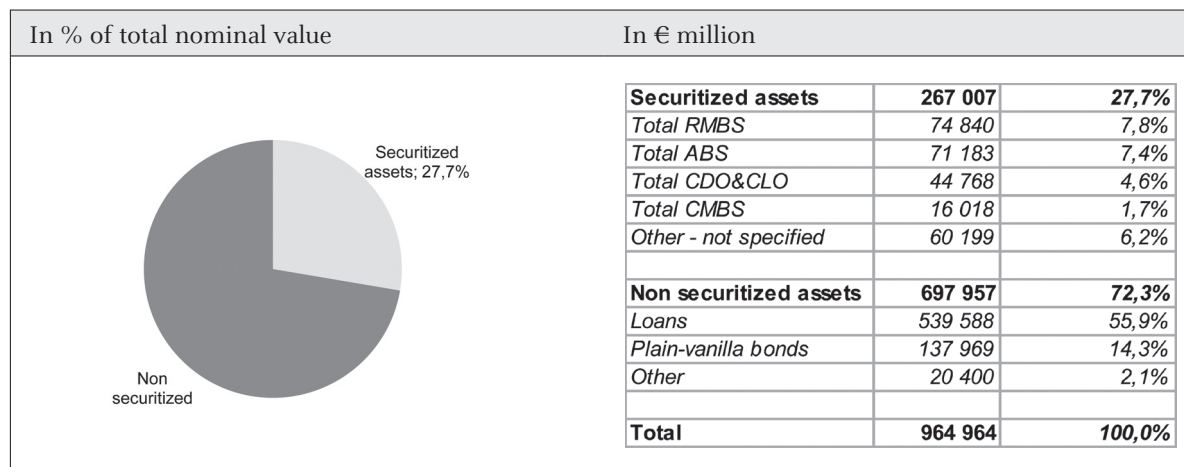
The first loss tranche (borne by the beneficiary bank) amounts to 14% of the nominal value when averaging across cases (equal weighting), while the second loss tranche (borne predominantly by the State) is, on average across cases, more than 4 times as large as the first loss tranche. When expressed as a percentage of the nominal value, the (unweighted) average first loss tranche (borne by the beneficiary bank) amounts to 13.6%. The average second loss tranche (borne predominantly by the State) is on average 4.5 times as large as the first loss tranche and amounts to 64.2% of the nominal portfolio amount. When we

9 Derivatives are excluded.

10 This corresponds to the transfer price of assets for asset purchase measures, and to the second loss tranche (net of any loss sharing by the bank in the second tranche if any) for asset guarantee measures.

11 Only effectively purchased or guaranteed amounts by the State were considered (and not the total nominal value of the portfolio of covered assets). This corresponds to the transfer price of assets for asset purchase measures, and to the second loss tranche (net of any loss sharing by the bank in the second tranche if any) for asset guarantee measures.

Figure 5: Nature of covered assets in EU asset relief measures



Source: Commission Services – Author calculations

correct the second loss tranche for the co-insurance by the bank, the average second loss tranche exclusively borne by the State still amounts to 61.0% of the nominal portfolio amount on average. The banks once again are fully at risk for any remaining losses that would exceed the second loss tranche.

However, a large differentiation has been observed across banks in practice. The above-mentioned levels of first loss tranche and second loss tranche concern aggregates and averages. However, there is actually quite a bit of differentiation across banks in terms of (i) how large the first loss tranche is as a percentage of the nominal portfolio amount, and (ii) how large the second loss tranche is, expressed as percentage of the first loss tranche and after correction for the co-insurance by the beneficiary bank.

The scatter plot in Figure 6 maps the individual asset relief measures according to these two metrics. Two groups of banks emerge, according to their position to the average first loss tranche and the average second loss tranche ratio: (i) one group that can be characterised by a relatively large first loss tranche borne by the bank in combination with a relatively small second loss tranche borne by the State, and (ii)

another group that has an inverse characterisation, namely a relatively low own risk shield in combination with a relatively large State-offered risk shield.

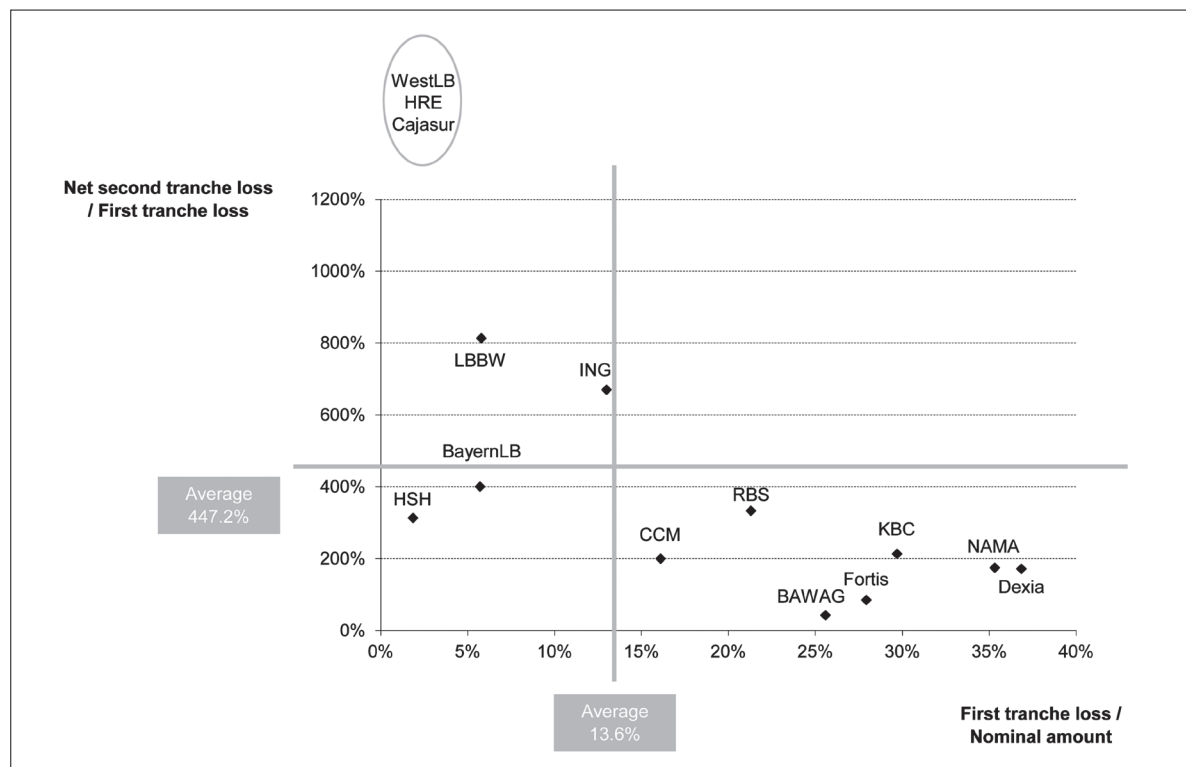
Caution should prevail when interpreting the above-mentioned differentiation. Based on the above scatter plot, one could be tempted to conclude that the Commission has not been successful at aligning¹² the numerous asset relief measures. However, such a conclusion would be overly simplistic and not justified at least for the following reasons:

- The portfolios of the beneficiary banks consist of very different asset classes, with different levels of expected losses and different levels of risk. The levels of first loss (borne by the bank) usually reflect the levels of expected losses embedded in the portfolios and are therefore naturally different from one bank to another;
- The scatter plot ignores any claw-back mechanism agreed between the State and the bank, and does not integrate the effects of an additional required restructuring of the beneficiary bank nor of differences in asset relief remuneration;
- Last but not least, some States may impose stricter conditions than the minimum required by the Commission, which also suggests that some banks share more in terms of burden sharing than other banks.

¹² In this respect, it needs to be stressed that the Commission is unable to actively steer Member States in their choice and precise design of aid instrument. The role of the Commission in State aid control of impaired asset relief measures is to ensure that the proposed measures adhere to the principles as expressed in the TFEU and the relevant guidelines.

At first sight, the first loss tranche seems, on average, sufficient to absorb expected losses and to avoid losses for Member States. A relevant question is whether States are likely or not to be exposed to losses, following the granting of such asset relief measures.

Figure 6: Who bears the losses – the beneficiary bank or the State?



Source: Commission Services – Author calculations

The measure-specific real economic values and expected loss rates are known by the Commission services but are confidential information and hence cannot be disclosed.¹³ Table 1 summarises the limited number of expected loss ranges that are publicly available in the Commission decisions. We have gathered the ranges of expected losses and then expressed them as a percentage of the nominal amount of the impaired assets portfolio. We then confronted the expected losses with the first loss tranches of the separate measures. (see Table 1)

Based on this analysis, it seems that Member States, in aggregate and on average, are not expected to be exposed to losses or to the triggering of their asset relief guarantees. Indeed, on average (equally weighted, not volume-weighted), the lower end and the higher end of the range of expected losses represent respectively 21% and 25% of the nominal amount,¹⁴ while the average level of the first tranche borne by the bank is 25% (not volume-weighted), suggesting indeed that from an aggregate point of view, the Member States are not expected to face losses on asset relief measures.

When looking at individual measures in Table 1, we can observe that in most cases the level of first loss borne by the bank is equal to or larger than the average of the range of expected losses. In some measures, the level of the first tranche borne by the bank is not high enough to absorb expected losses and the guarantee of one or several Member States is expected to be triggered. However, in these cases the State in question would not necessarily lose money as some additional claw-back mechanisms are usually foreseen (typically in combination with additional restructuring) and the (cumulative) remuneration paid by the bank to the Member State for benefiting from the asset relief were ignored.

In addition, a mechanical application of the cumulative loss rates as reported by IMF (2010)¹⁵ on the different types of covered assets in asset relief

¹³ In the non confidential versions of decisions, a range of expected losses and a range of REV can be communicated.

¹⁴ The undisclosed value lies therefore between these two values. The average of the range would suggest a cumulative loss rate of 22.8%.

¹⁵ IMF, Global Financial Stability Review, April 2010.

Table 1

Range of expected losses on selected asset relief measures, for which such information is publicly available, and comparison with the level of first tranche borne by the banks (both expressed as a % of the nominal portfolio value, average is not volume-weighted)					
	Lower range	Upper range	Average	First loss	Claw-back mechanism ?
Dexia	16,4%	24,6%	20,5%	36,9%	No
Fortis	16,1%	17,1%	16,6%	27,9%	No
ING	13,0%	13,0%	13,0%	13,0%	No
KBC	29,7%	38,1%	33,9%	29,7%	No
LBBW	14,3%	20,4%	17,4%	5,8%	Yes
NAMA	35,3%	35,3%	35,3%	35,3%	Yes
Average	20,8%	24,8%	22,8%	24,8%	

Source: Commission Services – Author calculations

measures suggests a similar conclusion. Indeed, as mentioned in Table 2, a mechanical application of these loss rates would result in a total portfolio loss estimate of € 56.4 billion. This amounts to an average 5.9% cumulative loss rate. Although an expected loss of € 56.4 billion may seem like a large number, it is clear that it is being dwarfed by the aggregate first loss tranche borne by the banks, which amounts to € 131.7 billion (corresponding to a first loss of 13.6%). The average expected losses of 22.8% inferred from the Commission decisions by far exceeds the 5.9% estimate projected by the IMF. Therefore, based on IMF loss rate projections, it seems at first sight that the States, in aggregate, are not likely to be exposed to losses. (see Table 2)

Last but not least, some Member States have been more cautious and eventually revised the terms of the asset relief measures with beneficiary banks. This is for example the case of the United Kingdom, which further increased the size of the first loss tranche and reconsidered the scope of covered assets of the asset relief measure in favour of the Royal Bank of Scotland. In Ireland, in the context of the NAMA scheme, the transfer price of impaired assets has eventually been materially lower than the initially estimated level. Some Member States have even terminated asset relief measures. This is for example the case of Austria, which terminated the measure in favour of BAWAG. Belgium and France have also partially

terminated the measure in favour of Dexia following the sale of a material fraction of the initially covered impaired assets.

However, again, the situation can be very different from one case to the other, and there remains a lot of uncertainty around the actual performance of the covered assets over time. Firstly, as shown in the scatter plot (Figure 6), some cases expose Member States to higher levels of risk than others, given the sometimes extremely low level of first loss borne by beneficiary banks. A case-by-case approach remains necessary and generalisations should be avoided.

Secondly, IMF's loss rates may give a biased picture for the purpose of our exercise, as the loss rates apply to the entire universe of securitised and non-securitised assets of Euro area and UK banks,¹⁶ whereas (i) we are looking here at a particular and ring-fenced sub-portfolio of a selected number of banks only, (ii) the loss rates are not reported for all categories of assets (in particular ABS, CDO and CLO), (iii) the quality of the impaired asset portfolios of the EU banks that have required State assistance may be worse than the overall average portfolio quality across all banks, as published by the IMF, and (iv) a material proportion of non-securitised covered in asset relief measures are sovereign or quasi-sovereign exposures, for which the perceived credit risk materially deteriorated after asset relief measure implementation.

Thirdly, eventually, the level of losses that Member States may experience very much depends on the actual performance of the covered assets over time, which in turn depends on the actual performance of a series of other factors like the shape of the real estate market in Europe and in the US, GDP growth, the soundness of the banking system, etc. Given the

16 Note that the entire portfolio of Euro area and UK bank loans and securities amounts to USD 31 trillion according to IMF (fn. 15), hence the aggregate portfolio under consideration represents only a tiny fraction.

Table 2: Expected losses on the aggregate portfolio of impaired assets (for illustration only)

	Nominal amount	IMF loss rate	Implied losses
	In € million	In %	In € million
Securitized assets			
Total RMBS	74 840	10,8%	8 083
Total ABS	71 183	15,0%*	10 677
Total CDO&CLO	44 768	15,0%*	6 715
Total CMBS	16 018	15,0%	2 403
Other - not specified	60 199	15,0%*	9 030
Non securitized assets			
Loans	539 588	2,8%	15 108
Plain-vanilla bonds	137 969	2,8%**	3 863
Other	20 400	2,8%**	571
Total	964 964	5,9%	56 451

* No specific loss rate was estimated by IMF on ABS and CDO/CLO. The highest loss rate in the category of securitized assets was selected.

** No specific loss rates were estimated by IMF on plain-vanilla bonds. The loss rate of loans was selected.

Source: Commission Services, IMF (2010), – Author calculations

high uncertainty surrounding the evolution of such factors, it may be premature to draw conclusions on the adequacy of the first loss tranche in asset relief measures.

2. Individual measures

A summary of all individual measures is presented in Table 3.

3. Schemes

a. German Bad Bank Scheme

On 25 May 2009, Germany notified its intention to amend the Financial Market Stabilization Fund Act of 17 October 2008, in order to introduce asset relief into its rescue package for financial institutions. The scheme allows financial institutions to transfer structured securities (typically ABS, CDO, CLO, RMBS, CMBS) to a SPV established for each beneficiary in exchange for State-guaranteed bonds.

The securities can be transferred at 90 % of the book value as of 31 March 2009, 90% of the book value as of 30 June 2008, or at their real economic

value, whichever value is the highest. An additional haircut for further future losses has to be applied to the real economic value, leading to the so-called “fundamental” value. The difference between the transfer price and the fundamental value has to be repaid in annual installments (for up to 20 years), depending on the availability of distributable profits of the beneficiary institutions.

The measure enables banks to limit write downs and provisioning, to free up regulatory and economic capital and to provide the banks with liquidity (as State-guaranteed bonds received in exchange of the transferred assets can be used to receive collateralized funding). The risk of future losses is spread out over time, but shall ultimately be borne by the banks and their shareholders.

The remuneration of the State is embedded in the haircut from the real economic value to the fundamental value, and is equal to 475 bp per annum on the corresponding capital relief effect.

The scheme was approved by the European Commission on 31 July 2009.¹⁷ It has never been used and the Commission approval expired on 31 January 2010.

¹⁷ Commission Decision of 31.07.2009 German asset relief scheme, in case N314/2009 (Germany), OJ C 199/2009 of 25.08.2009.

Table 3

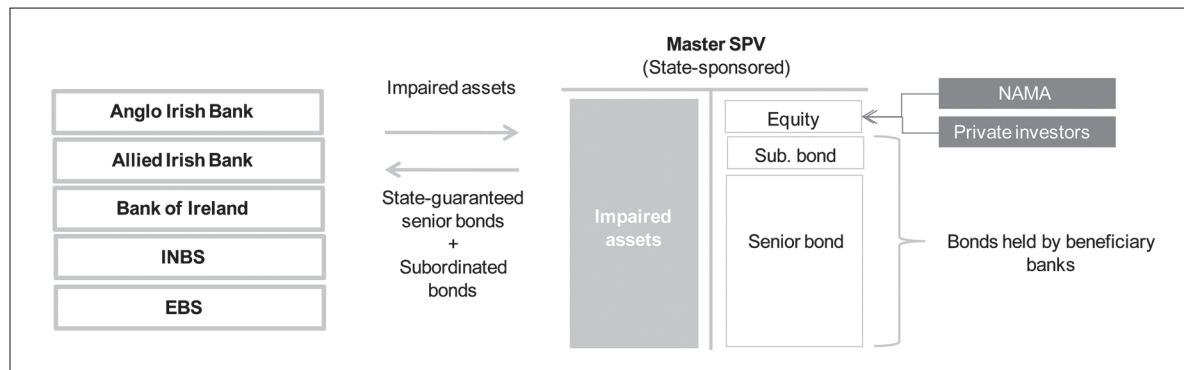
	BAWAG	BayernLB	Caja Castilla-La Mancha	Cajasur
Country	Austria	Germany	Spain	Spain
Summary profile	Universal banking (retail, commercial, corporate, investment) #5 in Austria	Landesbank #2 Landesbank in Germany	Caja de ahorros (saving bank) Around 1% market share	Caja de ahorros (saving bank)
Balance sheet size (EUR bn, 2008)	41.8	421.4	25.0 (2009)	29.6
Structure of asset relief measure	Asset guarantee	Asset guarantee	Asset guarantee	Asset guarantee
Nominal value NV of covered assets (EUR bn)	Not public (0.75-1.25 for book value)	21	7.70	5.54
Nature of covered assets	Securitized assets (structured credit)	Securitized assets (structured credit)	Non securitized assets (loans)	Non securitized assets (loans)
Risk-sharing (EUR bn)				
First loss (bank)	Not public	1.20 (5.7% of NV)	1.24 (16.1% of NV)	0.00 (0.0% of NV)
Second loss	0.40	4.80 (22.9% of NV)	2.47 (32.1% of NV)	0.43 (7.8% of NV)
- Borne by state	0.16	4.80	2.47	0.39
- Borne by bank	0.24	0.00	0.00	0.04
Third loss (bank)	Not public	15.00 (71.4% of NV)	3.99 (51.8% of NV)	5.11 (92.2% of NV)
Remuneration	Highest of (i) 50 bp + 5Y senior CDS of BAWAG p.a.; or (ii) 300 bp p.a.	50 bp p.a.	Not public	Not public
Current status	Temporarily approved, then terminated	Temporarily approved	Approved and ongoing (with far-reaching restructuring)	Approved and ongoing (with far-reaching restructuring)

	Dexia	Fortis	HSH Nordbank	Hypo Real Estate
Country	Belgium, France	Belgium	Germany	Germany
Summary profile	Public sector, retail, #3 in Belgium, #1 in Belgium and France for public sector	Universal banking (retail, commercial, corporate, investment) #1 in Belgium	Landesbank #5 Landesbank in Germany	Public sector, real estate
Balance sheet size (EUR bn, 2008)	651.0	871.0 (2007)	208.3	419.6
Structure of asset relief measure	Asset guarantee	Asset guarantee and asset purchase	Asset guarantee	Asset purchase
Nominal value NV of covered assets (EUR bn)	9.48	41.41	150-200 (exact value not public)	170.79
Nature of covered assets	Securitized assets (structured credit)	Securitized assets (structured credit)	Mostly non securitized assets (loans)	Mostly non securitized assets (bonds and loans), but also securitized assets
Risk-sharing (EUR bn)				
First loss (bank)	3.50 (36.9% of NV)	11.57 (27.9% of NV)	3.20 (2.1-1.6% of NV)	0.00 (0.0% of NV)
Second loss	5.98 (73.1% of NV)	13.57 (32.7% of NV)	10.00 (6.7-5.0% of NV)	170.79 (100.0% of NV)
- Borne by state	5.98	9.79	10.00	170.79
- Borne by bank	0.00	3.78	0.00	0.00
Third loss (bank)	0.00	16.27 (39.4% of NV)	136.80-186.80 (91.2-93.4% of NV)	0.00 (0.0% of NV)
Remuneration	113 bp p.a.	Not public	400 bp p.a. on 2 nd loss tranche	EUR 1.59 billion
Current status	Approved, then partially terminated	Approved and ongoing	Temporarily approved, then recently amended (terms not yet public)	Approved and ongoing (with far-reaching restructuring)

	ING	KBC	Kommunalkredit	LBBW
Country	The Netherlands	Belgium	Austria	Germany
Summary profile	Universal banking (retail, commercial, corporate, investment) #1 in the Netherlands	Universal banking (retail, commercial, corporate, investment) #2 in Belgium	Public sector, infrastructure #7 in Austria	Landesbank #1 Landesbank
Balance sheet size (EUR bn, 2008)	1,331.7	355.2	37.4	447.6
Structure of asset relief measure	Asset guarantee	Asset guarantee	Asset purchase	Asset guarantee
Nominal value NV of covered assets (EUR bn)	24.00	23.90	11.68	32.70
Nature of covered assets	Securitized assets (structured credit)	Securitized assets (structured credit)	Mostly non securitized assets (bonds)	Securitized assets (structured credit)
Risk-sharing (EUR bn)				
First loss (bank)	3.12 (13.0% of NV)	7.10 (29.7% of NV)	1.13 (9.6% of NV)	1.90 (5.8% of NV)
Second loss	20.88 (87.0% of NV)	16.80 (70.3 % of NV)	10.55 (10.4% of NV)	15.45 (47.2% of NV)
- Borne by state	20.88	15.12	10.55	15.45
- Borne by bank	0.00	1.68	0.00	0.00
Third loss (bank)	0.00 (0.0% of NV)	0.00 (0.0% of NV)	0.00 (0.0% of NV)	15.35 (47.0% of NV)
Remuneration	55 bp p.a.	Expected amount of EUR 2 billion paid over 6 years	Not public	EUR 336 million year 1, decreasing gradually over time
Current status	Approved and ongoing	Approved and ongoing	Approved and ongoing	Approved and ongoing (with claw-back)

	RBS	WestLB
Country	United Kingdom	Germany
Summary profile	Universal banking (retail, commercial, corporate, investment) #1 in the UK	Landesbank #3 Landesbank in Germany
Balance sheet size (EUR bn, 2008)	2,476.4	287.7
Structure of asset relief measure	Asset guarantee	Asset purchase
Nominal value NV of covered assets (EUR bn)	284.67	77.50
Nature of covered assets	Mostly non securitized assets (loans)	Securitized and non securitized assets
Risk-sharing (EUR bn)		
First loss (bank)	64.80 (22.8% of NV)	3.10 (4.0% of NV)
Second loss	219.87 (77.2% of NV)	74.40 (96.0 % of NV)
- Borne by state	197.88	74.40
- Borne by bank	21.99	0.00
Third loss (bank)	0.00 (0.0% of NV)	0.00 (0.0% of NV)
Remuneration	GBP 700 million years 1-3 and GBP 500 million thereafter	Not public
Current status	Approved and ongoing, with certain amendments	Temporarily approved

Figure 7: Irish NAMA scheme



Source: Author's own display

b. NAMA (Irish bad bank scheme)

The Irish authorities established the National Asset Management Agency (NAMA), with the mandate to arrange and supervise the purchase of up to € 82.5 billion worth of land, development property and associated commercial loans from five financial institutions in Ireland for an initial purchase price estimate of around € 53 billion, which was the estimated real economic value. The purchase price is paid through the issuance by NAMA of State-guaranteed senior debt securities for 95% of the purchase price and the issuance of (not State-guaranteed) subordinated debt securities for 5%. The issued securities are held by the participating credit institutions pro rata their share in the assets transferred to NAMA and could be used as collateral to secure central bank funding, helping to improve the liquidity position of these banks.

(see Figure 7)

Assets are transferred by “impaired borrower” exposures across all participating institutions, i.e. (i) Anglo Irish Bank, (ii) Allied Irish Bank, (iii) Bank of Ireland, (iv) Irish National Building Society and (v) Educational Building Society.

The remuneration of the State is embedded in the discount factor used to discount the loan cash flows when determining the bank asset’s real (or “long-term”) economic value. A discount rate equal to the Irish government bond yield (as of 21 December 2009) with the same maturity as that used to determine the assets cash flows plus a spread of 170 bp. This corresponds to a total expected remuneration of the State of € 4.6 billion.¹⁸

The scheme was approved by the European Commission on 26 February 2010.¹⁹ Eventually, the transfer price of impaired assets has eventually been materially lower than the initially estimated level and the scope of covered assets has been amended.

c. Lithuanian bad bank scheme

In April 2009, Lithuania notified an asset relief scheme, whereby beneficiary banks would be allowed to transfer certain categories of assets (typically non securitized assets) to AB Turto bankas²⁰ against cash or government bond. The minimum haircut is 20%. The total estimated budget does not exceed € 870 million. The scheme was approved by the European Commission on 5 August 2010. It has not been used so far.

18 Assuming an average life of the loan portfolio of 5 years, the expected remuneration was calculated by HSBC, the State’s advisor, as the result of the following: 54 billion x 1.70% x 5 = 4.59 billion.

19 Commission Decision of 26.02.2010 Establishment of a National Asset Management Agency (NAMA): Asset relief scheme for banks in Ireland, in case N725/2009 (Ireland), OJ 2010 C 94.

20 AB Turto bankas was established in 1996 and is fully state-owned. Its activities were initially concentrated on the financial restoration of the State-controlled banks that failed during the 1995 banking crisis (and their privatization) and on the liquidation or resolution of failing commercial banks.

IV. Conclusions

We have empirically reviewed and summarised the asset relief measures that have been implemented to date. We find that asset relief approaches differ substantially across Member States and banks, that individual bank measures seem more popular than schemes at Member State level, that the design, implementation, and remuneration of asset relief meas-

ures are often complex, and that asset guarantee measures are more common than asset purchase measures. Moreover, we find substantial cross-sectional variation in the relative size of the first loss tranches borne by the bank, as well as the relative size of the loss tranche borne by the State.

What are the lessons to be drawn from our experiences with asset relief so far?

- EU-wide coordination is key. This observation is valid for all State aid measures employed, but arguably holds even more for asset relief, given the complexity and the long term and structural impact of the measures.
- In principle, the State aid should reflect a true (albeit risky) investment and should not merely be a grant or subsidy from the taxpayers to the owners and creditors of the aided banks, for budgetary as well as moral hazard reasons.
- The asset relief approach matters. Asset purchases and asset guarantees have different implications, advantages and disadvantages. We observe a preference towards asset guarantees rather than asset purchases, probably for budgetary, flexibility, and incentives reasons.²¹
- The scope of eligible assets for asset relief is very broad. It does not only include securitised assets, which were broadly considered as “toxic” and at the epicentre of the financial crisis, but it also (and mostly) includes non securitised assets such as loans or plain-vanilla bonds. The scope of eligible assets should remain broad and flexible enough as to address the specificities of each beneficiary bank business model.
- Valuation matters. When markets partially break down, consistency and coherence of the modelling approach chosen is of utmost importance. A credible valuation also allows to generate clarity about the amount of State aid granted to and restructuring efforts required from financial institutions. The European Commission guidelines on asset relief measures have been structured to avoid that the State expects to lose money from the asset purchase or sees its guarantee triggered, based on the information available at the time of

the measure (ex post the State may of course gain or lose money, depending on the specific scenario that will materialise). This is typically achieved by setting a correct and credible transfer price (equal to or lower than the REV) or a correct and credible level of first loss tranche borne by the bank (at least equal to expected losses). When this is not possible, the measure is complemented with a claw-back mechanism and an additional restructuring (or possibly liquidation). Based on publicly available information, the likelihood of a loss or a guarantee trigger for the EU Member States that have granted asset relief to their banks appears moderate on average. Certain cases risk exposing Member States to more losses than others, in particular those showing a very low level of first loss borne by the beneficiary banks, even when taking the nature of underlying assets into consideration.

- Remuneration matters. In order not to discourage States to offer asset relief and in order to avoid arbitrage across different aid measures, the remuneration of asset relief should be appropriate and consistent.

As always, the objective of short term financial stability needs to be reconciled with medium-term objectives of competition policy. Asset relief, when based on credible, ex-ante valuation and appropriate pricing and when combined with bank restructuring can achieve this important balancing act.

Going forward, albeit the discretion lies with the Member States, we would hope that Member States start using national schemes more than they have been doing so far. This allows to better retain a level playing field (at least at the national level) and to converge towards best practices across Member States. In our opinion, Member States have ample room for further convergence in terms of asset relief design (valuation approaches, remuneration, balancing bank versus State insurance, eligibility of assets, etc.).

²¹ See Boudghene/Maes, *Dealing with impaired assets: The EU policy framework*, 2012 (forthcoming).