

## Economist's Note

# Relieving Banks from Toxic or Impaired Assets: The EU State Aid Policy Framework

Yassine Boudghene\* and Stan Maes\*\*

## I. Introduction

The financial crisis which started in July 2007 has led to major strains in the global banking system. This 'credit' 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.

Given the extent of the problems in the banking sector, policy-makers quickly put in place a package of policy measures to accommodate the liquidity and solvency strains on banks. EU Member States dealt with liquidity and solvency problems in the banking sector mainly through four—interrelated—sets of state aid measures in the 2007–2012 period:

- (i) injecting Tier 1 capital to improve banks' solvency ratios;
- (ii) guaranteeing a broad range of bank funding instruments,<sup>1</sup> allowing continued access to capital market funding at reasonable cost;
- (iii) providing direct liquidity to financial institutions;
- (iv) granting 'asset relief' measures in favour of selected banks for a broad range of ('toxic') assets, thereby improving their solvency ratios and supporting their access to capital market funding.

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

## Key Points

- The financial crisis has demonstrated that banks may end up holding toxic or impaired assets that harm their perceived solvency and liquidity.
- To address that difficulty, the European Commission has issued policy guidelines defining to what extent such banks can be relieved from impaired assets under the rules on State aids.
- An important question in that regard is the assessment of whether any assistance from governments may distort competition between financial institutions.

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 State aid control rules.

In this paper we present an in-depth discussion of asset relief measures<sup>2</sup> (one of the four above-mentioned tools) within the EU Competition Policy framework. For more general reviews of the State aid rules as applicable in the financial crisis, see the papers by Quigley and by Baudenbacher and Bremer.<sup>3</sup> For recent overview papers with a broader and global scope, see the working papers by Borio *et al.* and Laeven and Val-

\* Lecturer, Brussels School of Economics and Management (Solvay), Université Libre de Bruxelles. Email yassine.boudghene@ulb.ac.be. When the paper was drafted, the author was affiliated with the Financial Crisis Task Force at DG COMP (European Commission).

\*\* European Commission, DG Internal Market and Services, 2 Rue Spa, 1000 Brussels, Belgium. Email stan.maes@ec.europa.eu, and Catholic University of Leuven, Faculty of Business and Economics. When the paper was drafted, the author was a member of the Chief Economist Team at DG COMP (European Commission).

The authors have been involved as valuation experts in several asset relief cases. We would like to thank DG Competition staff for useful comments and suggestions on an earlier draft of this paper. However, the analysis, opinions, and findings of this article represent our own views and do not reflect the official position of the European Commission.

1 Including guarantees on Emergency Liquidity Assistance (ELA) provided by national central banks.

2 For an overview of all individual asset relief measures, see Y Boudghene and S Maes 'Empirical review of EU asset relief measures in the period 2008–2012', (2012) European State Aid Law Quarterly forthcoming.

3 C Quigley, 'Review of the temporary State aid rules adopted in the context of the financial and economic crisis', *Journal of European Competition Law and Practice*, doi: 10.1093/jeclap/lps017; C Baudenbacher and F Bremer, 'European state aid and merger control in the financial crisis—From negative to positive integration', (2010) 1:4 *Journal of European Competition Law and Practice* 267–85.

encia.<sup>4</sup> Section II sketches the general context, the state interventions, and the relevant European Union's State aid control rules. Section III defines asset relief and discusses the relative merits of the different approaches to asset relief. Section IV discusses the policy objectives and lists the main concerns from a financial stability, competition policy, and fiscal policy perspective. Section V describes the main principles set forth by the European Commission's main guidance paper on asset relief, the so-called Impaired Assets Communication (IAC). A summary of the Commission-approved valuation methodologies is also provided. Section VI recalls the lessons learned with respect to asset relief in the EU that have been implemented since the start of the crisis. Section VII concludes by giving the outlook for asset relief looking forward.

## II. Background

### A. A distressed EU banking system

The impaired liquidity and solvency of the banking sector lies at the centre of the global banking crisis of 2007–2012 and is in turn the result of numerous root causes, amongst others:<sup>5</sup>

- macroeconomic causes: global imbalances, loose monetary policy, generalised underpricing of risk;
- risk management failures: rise and collapse of the shadow banking sector, excessive complexity and opacity of securitisation (e.g. CDO squared);
- rating agency failures: conflicts of interest, risk model failures;
- corporate governance failures: ill-designed remuneration policy and incentives to engage in 'empire building';
- regulatory/supervisory flaws: procyclicality, absence of macroprudential supervision;
- global institutional weaknesses (imperfect coordination).

In the months preceding the Lehman Brothers collapse in September 2008, banks had already started to face critical liquidity issues as uncertainties around their

exposures to subprime assets increased and as creditors consequently showed more reluctance to maintain their exposure. Banks, having significantly stretched their balance sheet over 2004–2007 against a backdrop of easy credit conditions and loose monetary policy, saw their funding gradually evaporate, putting pressure on their refinancing. In particular banks that showed a high leverage and an over-reliance on wholesale and short-term funding faced more severe difficulties.

The situation deteriorated sharply when Lehman Brothers collapsed. Liquidity evaporated, banks became reluctant to lend to each other and to the real economy, money markets and bond markets went into gridlock, and funding costs increased dramatically over the entire term structure.

At the same time, banks were also facing solvency problems related to their holdings of poorly performing assets. The fast deteriorating performance of US residential mortgage loans, combined with falling market prices of structured credit securities, led banks to a first phase of write-downs.<sup>6</sup> In addition, an unprecedented wave of severe rating downgrades, in particular for structured credit securities, led to a material increase in risk-weighted assets (RWA) and decrease in Tier 1 capital. Finally, uncertainty around exposures, future rating migrations and earnings outlook led market participants to demand capital ratios that by far exceeded the minimum regulatory capital levels, putting further pressure on bank solvency ratios.

### B. Massive state interventions . . .

Given the size and scope of the above liquidity and solvency problems in the banking sector, governments had to intervene in order to contain the financial panic. They quickly put in place a host of measures to accommodate the liquidity and solvency strains on banks.

Table 1 summarises and aggregates the government interventions in the banking sector. *Committed* State aid amounts—capital injections, guarantees on bank debt, impaired asset relief measures, and liquidity and bank funding support measures—are massive and amount on average to 36 per cent of GDP for the

4 C Borio, B Vale, and G von Peter, 'Resolving the financial crisis: are we heeding the lessons from the Nordics?', BIS Working Paper No. 311, June 2010; L Laeven and F Valencia, 'Resolution of banking crises: the good, the bad, and the ugly', IMF Working Paper No. 10/146, 2010.

5 Many authors have reviewed the causes and dynamics of the crisis. See e.g. J de Larosière, 'Report by the High-level Group on Financial Supervision in the EU', 25 February 2009 <[http://ec.europa.eu/internal\\_market/finances/docs/de\\_larosiere\\_report\\_en.pdf](http://ec.europa.eu/internal_market/finances/docs/de_larosiere_report_en.pdf)>. ECB Financial Stability reports; IMF Global Financial Stability Reports; FSA, 'The Turner Review: A regulatory response to the Global Banking Crisis'

March. 2009; M Brunnermeier, 'Deciphering the 2007–08 Liquidity and Credit Crunch', (2009) 23:1 Journal of Economic Perspectives 77–100; and R Rajan, *Fault lines: How hidden fractures still threaten the World economy* (Princeton University Press 2010).

6 The IMF Global Financial Stability Review (April 2010) estimates a total of US\$2.3 trillion of write-downs for the global banking sector in the period 2007–2010. Euro area and UK banks are estimated to account for US\$1.1 trillion. Out of the latter US\$1.1 trillion, US\$0.77 trillion have already been written down.

**Table 1:** Public interventions in the EU banking sector in the years 2008–2010

	Used amounts		Approved amounts	
	In € billion	In % of GDP	In € billion	In % of GDP
Capital injection	287.81	2.35	563.78	4.60
Guarantees on bank liabilities	1111.84	9.06	3240.35	26.41
Relief of impaired assets	121.19	0.99	421.13	3.43
Liquidity and bank funding support	87.15	0.71	157.73	1.29
Total	1607.99	13.11	4382.99	35.73

Source: DG Competition (2011c), “Facts and figures on state aid in the EU Member States”, Staff Working Document, SEC(2011)1487, 1 December.

EU27. *Effectively used* measures represent 13 per cent of GDP, ie less than half of the committed amounts, but still enormous. Guarantees account for the bulk of the committed and effectively used State aid amounts.

In addition to Member State interventions, central banks in the EU provided additional liquidity to the banking system. For instance, the ECB provided enhanced support by (i) broadening the scope of eligible assets for central bank funding and setting up full allotment liquidity facilities for banks; (ii) undertaking refinancing operations at fixed and historically low rates; (iii) extending the maturity of central bank funding to a historical high;<sup>7</sup> and (iv) actively purchasing covered bonds.<sup>8</sup>

### C. The urgent need for adapted EU State aid control rules

Member State interventions have been necessary to stabilise the system, but may also entail competition distortions, between banks in the single market as well as between Member States, in a context where bank support primarily comes from national governments. This is the main reason why State aid control is an important part

of the EU competition policy enforcement mandate, all the more during an unprecedented financial crisis.

In the context of a ‘serious disturbance in the economy of a Member State’ as stipulated by Article 107(3)(b) TFEU,<sup>9</sup> the Commission issued six Communications<sup>10</sup> in which it provides guidance and limits its discretion as to how it assesses the State aid measures granted by Member States to their financial sector. These Communications reflect the objectives of ensuring financial stability while minimizing competition distortions and preserving a level playing field in the Single Market.

More particularly, regarding asset relief measures, the European Commission’s main guidance paper is the so-called Impaired Assets Communication (IAC hereafter).

## III. What are asset relief measures?

### A. Definition and main tools

Generally speaking, asset relief measures are government support measures aiming at ‘relieving’ banks from assets which are broadly considered as ‘toxic’ or ‘impaired’. Initially, impaired assets were understood as (i) assets whose intrinsic value is perceived to lie significantly

7 The maturity was extended to 36 months in the context of two LTRO’s that took place in December 2011 and in February 2012.

8 This was later extended to sovereign bonds as well, under the Securities Market Programme (SMP).

9 This particular legal basis has been used only exceptionally in the past (in particular in the context of the Greek budgetary imbalance in the 1980s), as it refers to aid granted to ‘remedy a serious disturbance in the economy of a Member State’.

10 See the following publications from the European Commission: ‘The application of state aid rules to measures taken in relation to financial institutions in the context of the current global financial crisis’, Official Journal C 270, 25 Oct. 2008, which sets out the conditions under which State aid measures in favour of the banking sector can be considered compatible with the common market under the EU State aid rules; ‘The recapitalisation of financial institutions in the current financial crisis: limitation of aid to the minimum necessary and safeguards against undue distortions of competition’, Official Journal C 10, 15 Jan. 2009, which gives guidance on conditions for state recapitalisations of banks

(adequate remuneration, incentives for state capital redemption, recapitalisation of banks which are not fundamentally sound subject to the requirement of far-reaching restructuring); ‘On the Treatment of Impaired Assets in the Community Banking Sector’, Official Journal C 72, 26/03/2009, which sets out guidance on conditions for measures taken in order to relieve financial institutions of their impaired assets (see also Section V below); ‘The return to viability and the assessment of restructuring measures in the financial sector in the current crisis under the state aid rules’, Official Journal C195, 19 Aug. 2009, which sets out the conditions that need to be met in order for the Commission to authorise restructuring aid to banks; ‘The application, after 1 January 2011, of state aid rules to support measures in favour of banks in the context of the financial crisis’, Official Journal C329, 07 Dec. 2010 and ‘The application, from 1 January 2012, of state aid rules to support measures in favour of banks in the context of the financial crisis’, Official Journal C356, 06 Jan. 2011 which together revise and refine the crisis rules (in terms of restructuring plan triggers, pricing of aid, etc.).

above their market value, possibly due to dysfunctional markets (market failures). However, over time, impaired assets were understood as also 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 generated due to the increased funding cost for banks.

EU asset relief measures can be categorised according to the way the measure is set up and implemented.

Two stylized asset relief tools can typically be distinguished:

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

Both tools have their pros and cons but achieve similar economic effects. In particular, the downside risk for both tools, that is, that *ex post* losses will turn out to exceed *ex ante* expected losses, is typically borne by the state. Hence, both tools 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, as the capital 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 tools, which are elaborated below. In practice, Member States can combine elements of both stylised tools by using hybrid set-ups.

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).

## B. Asset purchase

As visualised in Figure 1, impaired assets are typically transferred from the balance sheet of the beneficiary bank to another entity, often a special purpose vehicle (SPV), fully or partially sponsored by the state. In return, the beneficiary bank either receives cash

upfront, or is paid later through a deferred payment (usually state-guaranteed receivables<sup>11</sup> booked in the assets of the beneficiary bank).

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, which is usually not state-guaranteed.

## C. Asset guarantee

Typically, the portfolio of impaired assets remains in the balance sheet of the bank, but losses on the portfolio are guaranteed by the state beyond a first tranche of losses fully borne by the beneficiary bank. The state covers the losses that exceed a first tranche either fully or partially. Different loss sharing mechanisms exist and, as represented in Figure 2, a distinction should 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 (iii) a third tranche of losses (optional, usually fully borne by the beneficiary bank again). Asset guarantee measures can be compared to writing put options. The maximum upside for the government is the (net present value or NPV of all) fee(s) that it receives. The maximum downside is the government's share in the losses minus the (NPV of all) fees.

## IV. Main policy objectives and concerns

By granting asset relief measures to banks, Member States generally aim to safeguard financial stability. However, such measures raise additional concerns as they may entail competition distortions and consume (significant) fiscal resources.

### A. Financial stability

Like recapitalisations and guarantees, asset relief measures aim to (i) restore the viability of beneficiary banks; (ii) underpin the supply of credit to the real economy;

<sup>11</sup> 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, as such

State-guaranteed receivables could enjoy a very low risk weight, while possibly using such receivables as collateral to access central bank funding.

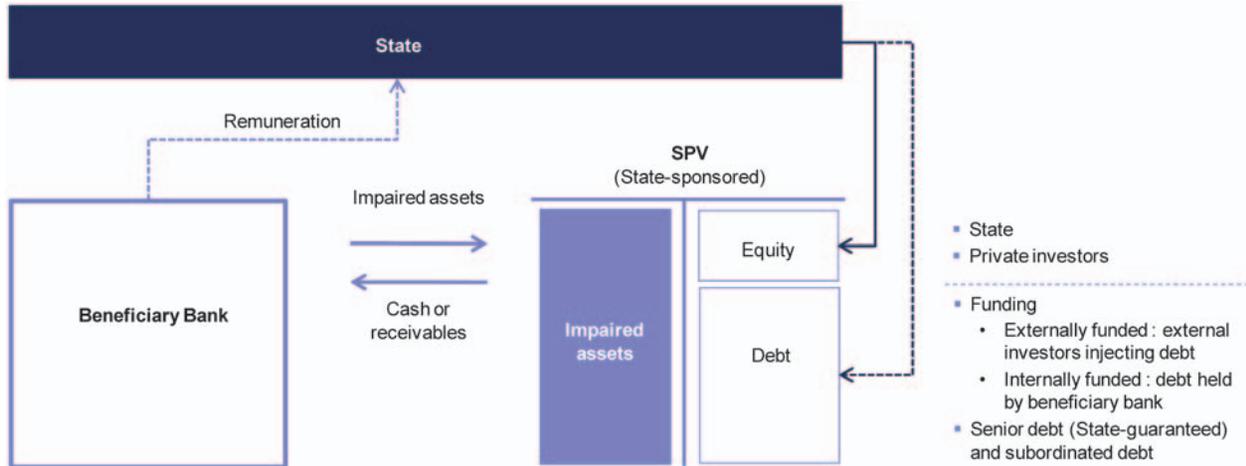


Figure 1: Asset purchase: a stylised example.

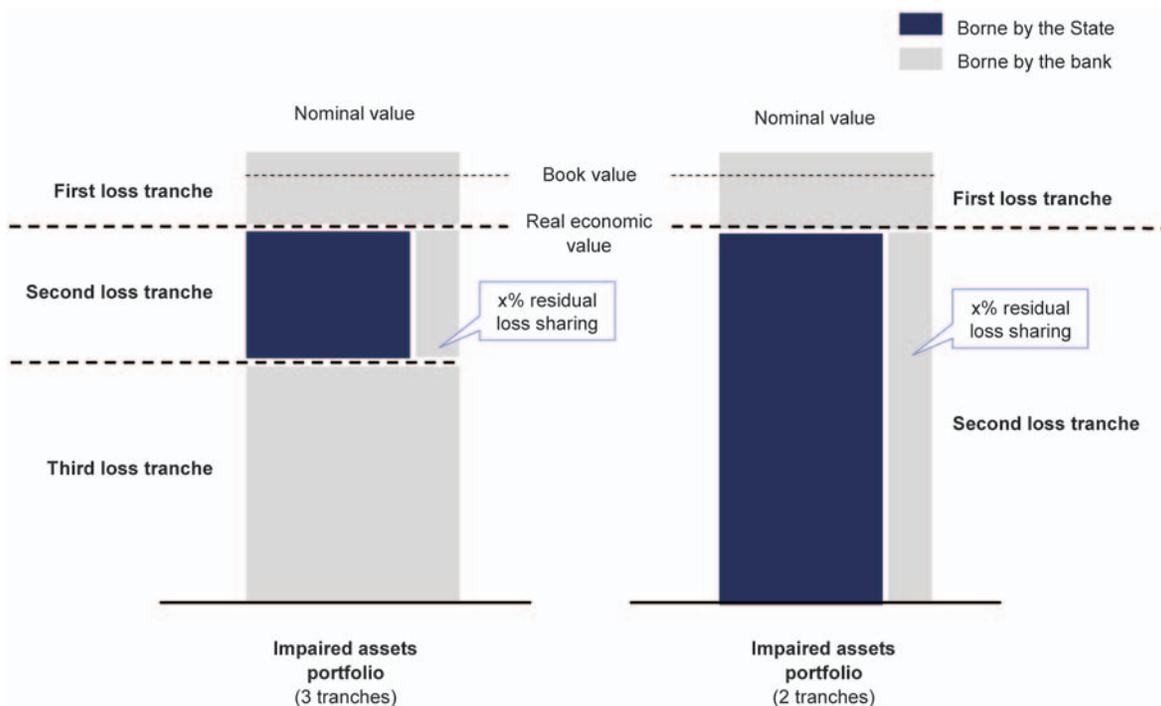


Figure 2: Asset guarantee: a stylised example.

and (iii) reduce counterparty risk and hence spur financial intermediation towards the real economy.

More particularly, the objective is to remove uncertainties around banks' impaired assets exposures (including their valuation, the size of future losses, and rating migrations) with the ultimate goal to improve banks' solvency position and access to market funding, and to avoid negative feedback loops, whilst increasing their lending to the real economy. Indeed:

- First, the complexity of several structured securities and the corresponding asymmetric information problems, the financial panic and the drying up of important funding channels led to excessively low market values, overshooting expected losses.<sup>12</sup>
- Second, despite capital injections, uncertainties regarding the exposure of banks continued to undermine confidence in the banking sector and weakened the effect of the government support measures.

<sup>12</sup> See D Diamond and R Rajan, 'Fear of fire sales, illiquidity seeking, and credit freezes', (2011) 126:2 The Quarterly Journal of Economics 557–91;

A. Krishnamurthy, 'How Debt Markets Have Malfunctioned in the Crisis', (2010) 24:1 Journal of Economic Perspectives 3–28.

- Third, for many securitised assets, Basel II rules impose sharp increases in risk-weighted assets and capital requirements following severe rating migrations, such as the ones observed in Q4 2008 and in Q1 2009.<sup>13</sup> The reason is that Basel II rules link risk weights and hence required capital to ratings in a highly non-linear way.
- Fourth, another market failure is the possible feedback loop between the real economy and the financial sector, which gives rise to contagion and second-round effects.<sup>14</sup> Given that banks target relatively stable capital and leverage ratios, a loss will reduce the available capital and hence tends to increase the leverage ratio. In the absence of private capital providers, banks will respond by selling assets or by not renewing or rolling over maturing loans in order to restore their original leverage levels, which will put downward pressure on the asset prices and a further round of losses, which may trigger yet another round of asset sales. The negative externalities between the real economy and the financial sector hamper the supply of credit to the real economy.

These objectives and the approach taken also follow from lessons learned in Sweden and Japan.<sup>15</sup> Both countries faced a severe banking crisis as a result of loan losses (amounting to roughly 12 per cent of GDP in Sweden and 20 per cent of GDP in Japan), but took very different approaches towards resolving their banking crisis.

Sweden acted swiftly and with determination. Sweden issued a blanket guarantee on liabilities (excluding common shares and perpetual subordinated debt) to stem bank runs and set up a dedicated recapitalisation scheme for banks with tough conditions attached. The latter was implemented and managed by a separate institution, the Bank Support Authority. A 'triage' of banks was performed *ex ante* and only those banks that could not stand on their own feet with the help of private capital received government support. All banks that needed support were required to write down their assets to realistic values. Banks were split into good and bad banks, whereby owners were not altered. Already in 1996, the blanket guarantee and the special legislation was abolished. Partially thanks to an

economic upturn, the bad banks were closed in 1997, having sold 98 per cent of their assets. In 2007, partially thanks to the privatisation of the nationalised bank and dividends on the remaining stake, Sweden had completely recouped the fiscal cost of rescuing its ailing banks.

Japan offers a very different picture. For many years it procrastinated. Japan only started to recapitalise its banks eight years after the bubble had burst, and this without performing a prior 'triage'. The recapitalisations were small (compared to loan losses) and repeated. Good money was thrown after bad money, in the sense that lending to zombie/insolvent firms was simply continued, now with government assistance.<sup>16</sup> Asset management companies were set up early on in the crisis, but again on a scale that was dwarfed by loan losses, whereby assets from insolvent banks were bought without mandatory bank and/or loan restructuring. Forbearance was prominent. Valuation was not transparent and underprovisioning was apparent and massive, scaring away private investors.

## B. Competition distortions

Massive state intervention in the banking sector possibly entails severe competition distortions: (i) creation of an uneven playing field (with respect to cost of capital and perception of safety and soundness); (ii) moral hazard (future excessive risk taking by the management and owners of the aided as well as non-aided banks); (iii) distortion of the dynamic incentives to compete of non-aided firms; (iv) long-term effects in market structure; and (v) protection of potentially non-viable institutions.

Therefore, asset relief measures should be designed in such a way as to limit competition distortions. More particularly, a level playing field between banks should be preserved and moral hazard (future excessive risk taking by the management and owners of the aided as well as non-aided banks) should be discouraged. Particular areas of concern are summarized in Table 2.

## C. Sustainability of public finances

In considering the design and implementation of asset relief measures, it is also essential that Member States consider their impact on the public finances. Estimates

13 See for example Moody's, 'Alt-A RMBS Loss Projection Update', Jan. 2009; 'Option ARMs RMBS Loss Projection Update', Feb. 2009; 'Subprime RMBS Loss Projection Update', Mar. 2009.

14 See T Adrian and H Shin, 'Liquidity and Leverage', (2010) 19:3 Journal of Financial Intermediation 418–37 and T Adrian and H Shin, 'The Changing Nature of Financial Intermediation and the Financial Crisis of 2007–2009', (2010) 2 Annual Review of Economics 603–18 for a discussion.

15 See Y Boudghene, M Scheicher, and S Maes, 'Asset relief measures in the EU: Overview and issues', SSRN working paper, Sept. 2010.

16 See R Caballero, T Hoshi, and A Kashyap, 'Zombie Lending and Depressed Restructuring in Japan', (2008) 98:5 American Economic Review 1943–77.

**Table 2:** Competition concerns related to the design and implementation of asset relief measures.

Issue	Examples of concerns that relate to competitiveness
Eligibility of banks	<ul style="list-style-type: none"> <li>• Is eligibility restricted to systemically important banks?</li> </ul>
How should systemically important banks be defined?	<ul style="list-style-type: none"> <li>• Is eligibility restricted to viable banks?</li> <li>• Are Member States restricted to opt for national schemes or can they implement ad hoc individual measures?</li> </ul>
Eligibility of assets	<ul style="list-style-type: none"> <li>• What is the scope of assets eligible for asset relief within the bank?</li> <li>• Is the scope limited to the minimum necessary?</li> <li>• How is the impaired asset portfolio selected? Does the asymmetric information not give rise to a lemons problem as in Akerlof (1970)?<sup>17</sup></li> </ul>
Transparency, valuation, and remuneration	<ul style="list-style-type: none"> <li>• What are the write downs and impairments recorded by the bank?</li> <li>• How large are the expected losses and how large is the uncertainty around the expected losses?</li> <li>• What is the intrinsic value of the assets?</li> <li>• What is the maximum transfer price to a bad bank? How large should the first loss tranche (borne by the bank) be?</li> <li>• What should be a fair remuneration for the state, given the risks taken?</li> </ul>
Burden sharing	<ul style="list-style-type: none"> <li>• Who bears the upside and downside risks, if asset valuations ex post turn out to be different than expected?</li> <li>• At which terms would the measure be at the same time not unduly expensive for taxpayers (which would be distortive as well), nor too unattractive to shareholders and creditors (as the latter may block the restructuring)?</li> </ul>
Management of assets	<ul style="list-style-type: none"> <li>• Who should manage the impaired assets and what are the incentives of the manager in terms of optimising the realised outcome?</li> </ul>

of total expected asset write-downs suggest that the fiscal costs—actual, contingent, or both—of asset relief could be substantial, both in absolute terms and relative to gross domestic product (GDP) in Member States. Government support through asset relief (and other measures) should not be granted on such a scale that it raises concerns about the sustainability of public finances (over-indebtedness may trigger debt roll-over problems). Such considerations are particularly important in the current context of deleveraging, weak growth, large budget deficits, rising public debt levels, and challenges facing sovereign bond issuance.

## V. EC impaired assets communication

### A. REV: a central concept in ensuring compatibility with State aid rules

In principle, any transfer to the state of assets above their market value constitutes State aid. Moreover, if the aid is not justified by public policy objectives, a transfer above market value would be incompatible with the Treaty. The general approach assumes that the market value reflects the intrinsic value of the assets under consideration. However, during the months following the collapse of Lehman Brothers in September

17 If the market price for an asset does not exist, then the bank/seller has an informational edge over the buyer. A bank will only transfer assets (to a 'bad bank') which have a value below the agreed-upon average price. See

G Akerlof, 'The market for "lemons": Quality uncertainty and the market mechanism', (1970) 84:3 *Quarterly Journal of Economics* 488–500.

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.

## 1. The Real Economic Value

### General principles

The IAC does not provide itself 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.<sup>18</sup>

The (base case) REV or intrinsic value of an asset (portfolio) can 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, where  $E_t[\ ]$  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 (eg 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 estimate 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.<sup>19</sup> 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 be different from the base case assumed by the bank in the framework of its risk management or restructuring plan projections.

### Establishing a base case REV in practice

Table 1 of Annex 3 of the Impaired Assets Communication classifies the impaired assets in two broad categories: structured finance / securitised products, and non-securitised loans.

The general approach to calculate the (base case) REV is the same for both categories and follows the approach set out above.

In the case of an asset purchase measure of non-securitised loans, the following steps could be undertaken:

- Step 1: Build the amortisation schedule of cash flows arising from the non-securitised loans (eg on a monthly basis).
- Step 2: Project default rates (probabilities of default or PDs) and loss severities (loss given default or LGDs) over the lifetime of the underlying assets and derive a schedule of expected losses<sup>20</sup> together with cumulative expected losses (eg on a monthly basis).
- Step 3: For each payment date, determine the expected cash flows, taking into account the expected losses.

18 See for example the following decisions : (i) Commission Decision of 12 May 2009 Additional aid for Fortis Banque, Fortis Banque Luxembourg and Fortis holding, in cases NN 255/2009 (Belgium) and N274/2009 (Luxembourg), OJ C 178/2009 of 31 Jul. 2009; (ii) Commission Decision of 31 Mar. 2009 Illiquid assets back-up facility for ING, in case C10/2009 (The Netherlands), OJ C 158/2009 of 11 Jul. 2009; (iii) Commission Decision of 30 Jun. 2009 Aid measures provided to LBBW, in case C17/2009 (Germany), OJ C 248/2009 of 16 Oct. 2009; (iv) Commission Decision of 26 Feb. 2009 Establishment of a National Asset Management Agency (NAMA): Asset relief scheme for banks in Ireland, in case N725/2009 (Ireland), OJ C 94/2010 of 14 Apr. 2010; (v) Commission Decision of 14 Dec. 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 C 119/2010 of 07 May 2010.

19 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 realisations that allows an assessment of the riskiness of the underlying portfolio (the uncertainty around the expected loss and the tail risk, ie the probability of ending up with very large losses).

20 Expected loss (in %) = Default rate (in %) × Loss severity (in %) = PD (Probability of default) × LGD (Loss given default). Expected loss (in EUR) = Default rate (in %) × Loss severity (in %) × Exposure at default (in EUR).

Step 4: Discount the set of expected cash flows using the approach and equation expressed above.

In the case of an asset purchase measure of securitised assets, a similar approach could be undertaken.

Given that the securitised assets' repayment capacity not only depends on the cash flow generation capacity of the underlying pool of assets, but also on parameters such as the level of credit enhancement, subordination, excess spread, reserve fund, the latter should also be considered.

In both cases, assumptions on default rates, loss severities, and prepayment rates are essential to determine the REV, and the principle of prudence, set out in Annex 4 of the IAC, should prevail.

Consistency checks are required. Benchmarking and comparing the retained assumptions with relevant available third-party research provides insightful information for the purpose of consistency checking.

In the case of an asset guarantee measure of non-securitised loans, the difference between the nominal value and the cumulative expected losses yields the REV.

### Stress testing the REV

Stress testing,<sup>21</sup> in the context of the Communication, refers to the practice of estimating losses under severe but still plausible assumptions. Projecting a stress case REV, next to base case values, can provide insightful information as it can communicate a range of plausible actual losses, which should in turn be useful in setting the transfer price and determining pricing arrangements between the bank and the Member State.

The stress case REV is the outcome resulting from the combination of stress case assumptions for each parameter that impacts the REV.

## 2. 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.

Figure 3 illustrates these concepts. Assume an impaired asset portfolio that is recorded in the balance sheet at 90 per cent of its nominal value. Assume, moreover, a market value of 50 per cent, a REV of 80 per cent, and an agreement between the bank and the state on a transfer price of 70 per cent. In such a situation, the aid amount would be 20 per cent (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 per cent (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.

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.

## B. Main principles of the IAC

The IAC sets out criteria for the compatibility of asset relief measures with the Treaty. These criteria aim at addressing the concerns expressed in section IV and are further detailed below.

### 1. Transparency and *ex ante* disclosure

The IAC requires that any beneficiary bank should (i) provide full *ex ante* transparency and disclosure of impairments on the assets to be covered by the measure and (ii) follow up any application to the measure by a full review of that bank's balance sheet

21 In BIS, 'Principles for sound stress testing practices and supervision', May, <<http://www.bis.org/publ/bcbs155.pdf>>, Basel Committee for Banking Supervision stress tests as performed by the banks and as imposed by the bank supervisors are criticised. The key findings of the report are as follows: 'The financial crisis has highlighted weaknesses in stress testing practices employed prior to the start of the crisis in four broad areas: (i) use of stress testing and integration in risk governance; (ii) stress testing methodologies; (iii) scenario selection; and (iv) stress testing of specific risks and products. . . Most bank stress tests were not designed to capture the extreme market events that were experienced. Most firms discovered that one or several aspects of their stress tests did not even broadly match actual developments. In particular, scenarios

tended to reflect mild shocks, assume shorter durations and underestimate the correlations between different positions, risk types and markets due to system-wide interactions and feedback effects. Prior to the crisis, "severe" stress scenarios typically resulted in estimates of losses that were no more than a quarter's worth of earnings (and typically much less). In sum, banks either applied the wrong scenarios (too weak), compartmentalized their application of those scenarios instead of applying them to the institution as a whole, and/or failed to address the reactions of specific product portfolios and their effects on others. In the IAC, the use of stress testing is recommended, but it is clear that stress tests should be state of the art and reflect the lessons learned and the above-mentioned criticism.

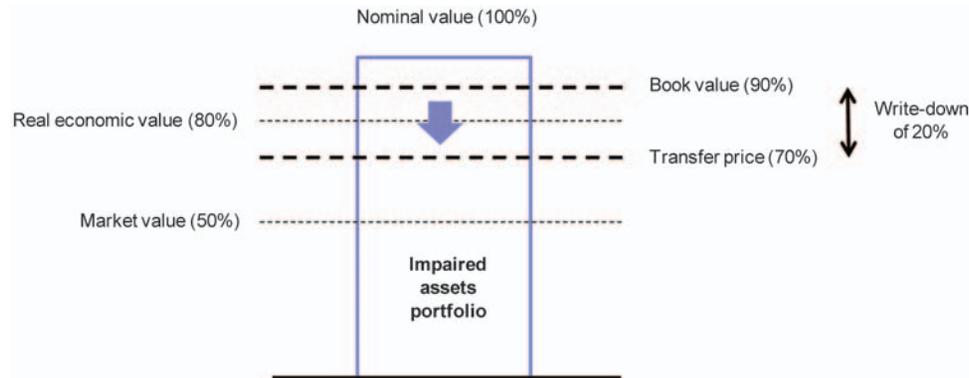


Figure 3: Real economic value versus transfer price for a portfolio of impaired assets.

with a view to assessing the bank's capital adequacy and prospect for a return to viability.

## 2. Eligibility of assets

Section 5.4 of the IAC provides that asset relief measures require a clear identification of impaired assets and that certain limitations in relation to eligibility must apply to ensure consistency and prevent undue distortions of competition. The IAC, however, further sets out that a balance needs to be found between meeting the objective of immediate financial stability and the need to ensure the return to normal market functioning, which would plead in favour of flexibility when identifying classes of assets. In particular, whilst the IAC cites as eligible assets those that have triggered the financial crisis (the IAC explicitly refers to US mortgage-backed securities), it also allows for the possibility to 'extend eligibility to well-defined categories of assets corresponding to a systemic threat upon due justification, without quantitative restrictions'.<sup>22</sup> In this respect, the scope of eligible assets is broad and includes both securitised assets and non-securitised assets, such as loans and plain-vanilla bonds.

## 3. Valuation

The IAC notes in section 5.5 that a correct approach to valuation is of key importance to prevent undue distortions of competition. The Commission should validate the valuation (REV) within the framework of its State aid assessments. All assumptions underlying the base case and stress case results should be realistic and prudent. The Commission's role is therefore to identify and rectify possible inconsistencies/flaws in the valu-

ation methodologies used and/or overly optimistic assumptions.<sup>23</sup>

Asset valuation depends crucially on the reference point in time with regard to which it is undertaken. Its credibility/reasonableness needs to be assessed on the basis of the information available at the time when the valuation was performed, irrespective of future developments. In other words, under State aid rules, it is not correct to assess the plausibility of a valuation exercise *ex post*, ie with hindsight.

Before it is notified to the Commission, the valuation (methodologies, assumptions, results) needs prior certification by recognised independent experts and validation by the relevant supervisor.

## 4. Remuneration and burden sharing

The principle of burden sharing as set out in the IAC requires that banks ought to bear the losses associated with impaired assets to the maximum extent. The idea is that banks should for sure bear the expected losses and asset relief measures should be designed in order to meet compatibility rules detailed in Section VB2 above.

In addition, the IAC spells out that burden sharing is achieved through an adequate remuneration to the state (explicit for asset insurance or implicit in the discount rate for asset purchases) in order for the bank to be insured against possibly higher than expected losses. Annex IV of the IAC stipulates in this respect that Member States' remuneration could be inspired by the remuneration that would have been required for recapitalisation measures to the extent of the capital relief generated by the asset relief measure. In the case of asset

<sup>22</sup> See point 34 of the IAC.

<sup>23</sup> In the ING and RBS cases, adjustments were made to the initial terms and conditions of the initially contemplated measures. See (i) Commission Decision of 18 Nov. 2009 Illiquid assets back-up facility for ING, in case C10/2009 (The Netherlands) and (ii) Commission Decision

of 14 Dec. 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 C 119/2010 of 07 May 2010.

purchase measures, such remuneration could be embedded in the discount rate and hence, the transfer price.

## 5. Management of assets

Section 5.6 of the IAC requires a clear functional and organisational separation between the beneficiary and its assets, notably as to their management, staff, and client base. The Communication states in that respect that this should prevent conflicts of interest.

## 6. Restructuring plan

Section 6 of the IAC states that a full review of the beneficiary's activities and balance sheet is necessary to properly assess capital adequacy and viability. Annex V to the IAC requires that a restructuring plan for each beneficiary has to be notified to the Commission within three months from its accession to an asset relief measure.

The restructuring plan focuses first and foremost on the restoration of the standalone (ie absent explicit state support) long-term viability of the financial institution (first requirement), but also on the contribution and burden sharing by the owners and incumbent managers (second requirement), as well as measures to limit the potential distortions of competition (third requirement).<sup>24</sup>

# VI. Main lessons learned with respect to asset relief

## A. On general policy objectives and concerns

### 1. Asset relief measures, alone, may require accompanying state aid measures . . .

Asset relief measures are useful to offer downside risk protection but may lead to an upfront capital shortfall or require state guarantees to ensure adequate funding. Therefore, to be efficient, they should be accompanied by recapitalisations or other aid measures.

24 For further evidence and elaboration, see DG Competition, 'The application of state aid rules to government guarantee schemes covering bank debt to be issued after 30 June 2011', Staff Working Document, June 2011; DG Competition, 'The application of state aid rules to government guarantee schemes covering bank debt to be issued after 30 June 2011', Staff Working Document, October 2011.

25 DG Competition, <[http://ec.europa.eu/competition/state\\_aid/legislation/phase\\_out\\_bank\\_guarantees\\_2011.pdf](http://ec.europa.eu/competition/state_aid/legislation/phase_out_bank_guarantees_2011.pdf)> Facts and figures on state aid in the EU Member States, Staff Working Document, SEC(2011)1487, 1 December 2011c.

### 2. Asset relief measures to banks in the EU have contributed to preserve financial stability in the short term, without leading so far to excessive competition distortions . . .

When designing asset relief measures, an adequate balance needs to be found between meeting the shorter-term objective of immediate financial stability and the medium to longer-term concerns of possible competition distortions and budget sustainability. The granting of asset relief measures to banks in the EU, next to other State aid measures (recapitalisations and guarantees) and central bank intervention, has been effective in preserving financial stability. On the other hand, it also appears that, so far, State aid measures granted in the context of the 2007–2012 crisis have not led to excessive competition distortions (see DG Competition (2011c)).<sup>25</sup> The structure of the European banking sector did not change materially, although concentration has increased in the banking sectors of several Member States. Given that the restructuring plans are still ongoing and given the numerous regulatory reforms and the lack of good and consistent recent data, the full effects on competition may not be assessed reliably.

### 3. Concerns remain, however, on the impact of such measures on Member States' public finances and debt levels . . .

Most asset relief measures have been designed to avoid a direct impact on public finances, since the bulk of them have been granted in the form of asset guarantees<sup>26</sup> and most asset purchase measures have been deconsolidated from Member States' budgets. However, asset relief measures shift contingent risks to Member States, as (*ex post*) losses may eventually exceed the size of the first loss tranche borne by the beneficiary bank.<sup>27</sup> The level of contingent risk can be very different from one case to the other, but overall, it raises the uncertainty of public finances and increases the perceived creditworthiness of Member States.<sup>28</sup> The ECB also highlights that the success of State aid to the banking sector came at the cost of 'government [having] assumed substantial fiscal costs and credit risks'.<sup>29</sup>

26 Boudghene and Maes, 'Empirical review of EU asset relief measures in the period 2008–2012' (n 2).

27 Boudghene and Maes, 'Empirical review of EU asset relief measures in the period 2008–2012' (n 2).

28 DG Competition, 'The application of state aid rules to government guarantee schemes' (n 24); DG Competition, 'The application of state aid rules to government guarantee schemes' (n 24); DG Competition, 'Facts and figures on state aid in the EU Member States', Staff Working Document, SEC(2011)1487, 1 December 2011.

29 ECB, Monthly Bulletin, July 2009 2010.

#### 4. Competition concerns, as reflected in the IAC, are also relevant for financial stability and fiscal discipline purposes . . .

The guidelines spelled out in the IAC obviously reflect competition concerns (State aid control), but also matter from a financial stability and fiscal point of view. For example, an overly generous valuation of impaired assets may appear positive for financial stability in the short term, but exposes Member States (in a later stage) to larger contingent risks, which in turn may raise doubts on Member States' budgetary resolve and may compromise financial stability. Similarly, the inclusion of too many banks (including non-viable banks) under the umbrella of asset relief measures, as opposed to an *ex ante* 'triage' between viable banks and non-viable banks (which should be orderly liquidated), raises comparable issues and fosters the existence of 'zombie banks' that hamper growth.

#### 5. More coordination is desirable going forward, not only between Member States, but also between the different regulatory bodies and governments, to be better prepared for the next crisis . . .

More coordination between Member States is desirable in the future. The sharing of best practices, addressing the areas of improvement (see next section), preparation of 'asset relief contingency plans', all constitute critical steps to improve the existing framework and to put forward more proactive solutions to the problem of toxic asset relief in the future.

### B. On specific issues

#### 1. Nature of covered assets: the Commission has been very flexible when assessing the eligibility of assets for asset relief. This remains a desirable approach going forward . . .

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 were also 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 generated due to the increased funding cost for banks.

The flexibility that the Commission has shown is key given the heterogeneity of possibly problematic

asset classes to which banks were exposed and country or bank-specific circumstances.

#### 2. Eligibility of banks: Important questions such as the rationale of the inclusion in asset relief measures (as opposed to orderly resolution) of non-systemic banks or non-viable banks remain to be addressed . . .

Bank eligibility was often left to Member States' discretion and different approaches have been observed from one country to another. This contrasts with the USA, where bank resolution powers have historically been given to the Federal Deposit Insurance Corporation (FDIC) which has seized, restructured, and auctioned off hundreds of small and medium-sized banks during the crisis to date. In the EU, bank crisis resolution powers are much more fragmented and diverse, as they lie with the Member States. Most of them did not have special resolution regimes for banks in place in the run-up to the crisis. Whilst some Member States have in the meantime set up special resolution regimes for banks, others are still awaiting the implementation of the recently launched pan-European initiative.<sup>30</sup>

In practice, in several Member States, asset relief measures have been granted before assessing the viability of the beneficiary bank, which may be suboptimal from a fiscal and a financial stability perspective. Going forward and conditional on there being a credible and effective resolution framework, performing an independent viability assessment of the prospective beneficiary institution might be desirable, and could ensure that State aid, including asset relief measures, is primarily channelled towards viable banks.

#### 3. Choice of asset relief tool: Member States have so far favoured guarantee measures over asset purchase measures, suggesting that the net advantages of guarantees outweigh the net advantages of purchases, from the perspective of the Member States and beneficiary banks. The revealed preference for guarantees is also consistent with the debt overhang theory . . .

What we observe in practice is that states are relying more on asset guarantees than on asset purchases. Indeed, 60 per cent of the total aggregate portfolio of asset relief measures in the EU is being covered by a (second loss) state guarantee, whereas 40 per cent has been purchased by the state.<sup>31</sup> Both approaches protect banks against the downside risk and could reduce risk-weighted assets, but an asset guarantee leaves the upside

30 In this respect, the European Commission issued, on 6 June 2012, a legislative proposal for bank recovery and resolution, setting out a series of steps and powers aiming at managing bank failures, while minimizing the cost for taxpayers and containing financial instability risks.

31 Boudghene and Maes, 'Empirical review of EU asset relief measures in the period 2008–2012' (n 2).

to the banks and does not require the first loss tranche to be fully written down, while an asset purchase usually secures funding for the bank. From the state's perspective, asset guarantees do not require funding and remain off-balance sheet, they are more flexible to unwind and provide incentives to maximise the portfolio value, while an asset purchase possibly generates an upside for the state.<sup>32</sup>

A 'debt overhang' reasoning may also give rise to a preference for an asset guarantee over an asset purchase, in particular in cases where the bank carries a lot of impaired assets.<sup>33</sup> 'Debt overhang' refers to the fact that banks are highly leveraged (to a much greater extent than typical industrial firms). In such a situation, shareholders will typically resist a bank recapitalization, because a bank recapitalisation increases the cushion for loss absorption and hence first and foremost benefits the debt holders of the bank. A sale of assets will be equally unattractive for the owners, as they would lose (i) the advantage of profiting from any upside return on the impaired assets as well as (ii) the advantage of the option to default if the return on the impaired assets is poor (in which case creditors or taxpayers would absorb the default losses).<sup>34</sup> As a result of these mechanics, the bank management (acting in principle as an agent for the shareholders) and incumbent shareholders may prefer that the bank asks the government to insure them against losses on impaired assets, instead of seeing their equity holding get diluted through a capital injection or instead of selling impaired asset portfolios.

**4. Individual measures versus national schemes:** Member States have so far favoured individual measures. This possibly reflects (i) the lack of a proactive approach of Member States, (ii) the unattractive features of certain national schemes when they have been introduced, and (iii) coordination difficulties between federal and regional levels or between Member States . . .

What we observe in practice is that 92 per cent of the total aggregate portfolio of impaired assets is being covered by individual asset relief measures, whereas only 8 per cent of the portfolio is being covered by a

national scheme. As of the beginning of the financial crisis, only Germany, Ireland, and Lithuania have introduced national schemes, and only the Irish scheme has been used.

The granting of individual measures and the limited use of granted national schemes can possibly be explained in three ways:

1. First, Member States may have been more reactive than proactive, by responding, probably under pressure, to ad hoc requests from individual banks, one after the other. The urgency of the individual situations may not have left enough time for proactive planning and for the design of national schemes.
2. Second, the limited use of effectively provided schemes may also reflect the design of certain national schemes that disincentivises participation. For example, Germany has been the biggest provider of asset relief measures and despite having set up a national scheme early in the crisis, the latter was not used, possibly because it was not designed to properly address the issues of concerned banks or because it was overly punitive for banks to participate.
3. Third, in the case of regional banks or banks primarily active in more than one Member State, certain coordination difficulties (eg regarding the burden sharing between regional and federal level, or between Member States) may explain the choice of ad hoc individual measures.

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

32 See Boudghene and Maes 'Empirical review of EU asset relief measures in the period 2008–2012' (n 2) for a more detailed discussion.

33 The problem of debt overhang was first illustrated by S Myers, 'The determinants of corporate borrowing', (1977) *Journal of Financial Economics* 147–76. Translated to the world of banks, it means that positive NPV loans may not be undertaken when the gains from those loans partially or primarily go to the existing creditors. Firms in financial

distress find it difficult to raise capital for new investments because the proceeds from these new investments mostly serve to increase the value of the existing debt instead of equity. See also main text.

34 D Duffie, 'Contractual methods for out-of-court restructuring of systemically important financial institutions', Submission requested by the U.S. Treasury Working Group on Bank Capital, 9 November 2009, Stanford University.

**5. Valuation:** The overall approach followed by the Commission seems appropriate given the experienced market disruption and the REV has been a central and useful pillar, not only to appreciate compatibility under competition rules, but also to address financial stability and budget discipline issues. Certain features of the REV calculation could however be further improved . . .

We will not discuss again the importance and merits of the REV in asset relief measures, as they have been thoroughly discussed in Sections VA and VB. We prefer, instead, to focus on certain difficulties and areas for improvement.

The difficulty of setting the right level of base case and stress case assumptions should be highlighted. The IAC requires realistic and prudent assumptions but does not give any specific guidelines. Even if the current paper has given more practical guidelines on how to establish the REV in practice, based on the Commission's practice, it remains very difficult to calibrate the appropriate level of underlying REV assumptions, and different experts will tend to come to different valuations because they may simply have different views on the underlying assumptions.

- Applying uniform haircuts in general or by asset class presents the advantage of being easy, but is not satisfactory given the strong heterogeneity and sometimes hybrid nature of the different asset classes.
- Benchmarking the retained assumptions with relevant available third-party research can provide insightful information but has very often showed limits such as information availability for the different asset classes, insufficient frequency of revision of the assumptions given the very fast deterioration of asset classes, and the independence of research estimates,

There will always remain a certain level of subjectivity in the assigned level of base case and stress case assumptions. However, by dedicating a limited and consistent team of internal and external experts, the Commission's approach has at least ensured consistency across cases when scrutinizing REV calculations.

Another challenge relates to the fact that valuation depends crucially on the reference point in time with regard to which it is undertaken, all else being equal. The same portfolio of assets, valued in December 2008, can show a materially different valuation three months

later, simply due to the very fast deterioration of the underlying portfolio and the need to revise the underlying assumptions. Under current State aid rules, the REV needs to be assessed on the basis of the information available at the time when the valuation was performed, irrespective of future developments. Adopting such an approach can be justified to comply with competition rules, but as highlighted earlier, asset relief measures should be designed not only to address competition concerns, but also financial stability and budget issues. In this respect, one can question to what extent Member States should not be encouraged to adopt a more conservative approach than what is foreseen under the IAC. In this respect, as highlighted by Boudghene and Maes,<sup>35</sup> 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.

**6. Remuneration:** The capital relief approach for setting the remuneration shows certain limitations. More practical guidelines are needed . . .

Annex IV of the IAC states that '*any pricing of asset relief must include remuneration for the State that adequately takes account of the risks of future losses exceeding those that are projected in the determination of the "real economic value"*' and that '*Identifying the necessary target return could be "inspired" by the remuneration that would have been required for recapitalisation measures to the extent of the capital effect of the proposed asset relief.*' In other words, beneficiary banks should adequately remunerate the State. The level of this remuneration should reflect the riskiness of the impaired assets and could be inspired by the level of remuneration required on a capital increase<sup>36</sup> corresponding to the capital relief effect of the asset relief measure.

While such an approach is appealing, in practice it reaches certain limits. First, it is difficult to evaluate the level of risk, for example measured by the volatility around expected losses, of the underlying impaired assets. For many of them (in particular those at the origin of the crisis), a sufficiently long historical series of default and performance statistics were missing,<sup>37</sup> making it difficult to build sufficiently robust loss

<sup>35</sup> Boudghene and Maes, 'Empirical review of EU asset relief measures in the period 2008–2012' (n 2).

<sup>36</sup> European Commission 'The recapitalisation of financial institutions in the current financial crisis' (n 8) gives guidance on conditions for state recapitalisations of banks (adequate remuneration, incentives for state

capital redemption, recapitalisation of banks which are not fundamentally sound subject to the requirement of far-reaching restructuring).

<sup>37</sup> This is also one of the reasons why such assets received abnormally strong ratings.

distribution curves and to estimate unexpected losses with a reasonable level of confidence. Second, linking the remuneration to the (regulatory) capital relief effect assumes that regulatory capital adequately reflects the risk of the impaired assets (in terms of unexpected losses). Basel III reforms partially correct risk weights, where they have proven to be inappropriate. Third, remuneration approaches are often linked to the credit rating of the assets under consideration. Ratings have proved to be excessively procyclical, too optimistic in the run-up to the crisis, and arguably too pessimistic when the crisis hit.

Formulating a proposal for the remuneration of asset relief measures goes beyond the scope of this paper. We would like, however, to list the 'ideal' properties of such remuneration.

- The remuneration should reflect the estimated riskiness (for example measured by its beta) of the underlying impaired assets. Indeed, the more volatile a certain asset class, the higher the likelihood of losses for the State and the higher the remuneration for the State.
- The remuneration should reflect the risk sharing features between the beneficiary bank and the State. In case the transfer price is equal to the market value, no remuneration would be needed. The more the transfer price exceeds the market price (and approaches the REV), the higher the remuneration.
- The remuneration should reflect the asymmetric nature of asset guarantees. Indeed, asset guarantees, as opposed to an asset purchase, give no unlimited upside to the State. This asymmetry should hence be reflected in the remuneration.
- The remuneration should reflect the funding cost of an asset purchase. Indeed, the latter usually provides (directly or indirectly) funding to the beneficiary bank. This is not the case of asset guarantees, in which assets remain in the beneficiary's balance sheet and should continue to be funded by the bank.
- In case beneficiary banks have the option to lift asset guarantees at their discretion before the agreed term to maturity, such an option should be valued and priced.
- The remuneration can be reflected in the (lowering of the) transfer price or can be paid gradually over time.

## VII. Conclusions

Asset relief is an important tool that Member States can employ in order to mitigate and correct the im-

portant market and regulatory failures that have surfaced in the financial crisis and compromised lending to the real economy. However, in the current EU institutional and political setting and given the complexity of the assets that need to be purchased or shielded against losses by the state, the risks for the common market in terms of an uneven playing field, competition distortions, subsidy races, negative externalities, and moral hazard are particularly large in the EU, when compared with the USA.

The European Commission with its State aid control rules and corresponding guidance papers has played an important role in limiting these risks to the common market. Only a principles-based, but flexible and case-specific approach can ensure that the European banking sector is being restructured efficiently and effectively. A competitive and resilient banking sector is the best guarantee for European consumers, SMEs, and corporates to benefit from a supply of adequately-priced, qualitative, and innovative financial services.

In this paper, we have described the European Commission's concerns and guidance with respect to asset relief. We draw the following lessons from our experience with asset relief so far:

- EU-wide coordination is key, not only between Member States but also between bank supervisors. This observation is valid for all State aid measures employed, but arguably it holds even more for asset relief, given the complexity and the long-term and structural impact of the measures.
- Asset relief measures may trigger the need for accompanying State aid measures, such as with recapitalisations, guarantees, and timely and thorough restructuring.
- Asset relief can contribute to preserving financial stability, without leading to excessive competition distortions, but can put additional strain on Member States' public finances. Member States should therefore act prudently when setting up the risk sharing features of the asset relief.

As always, the objective of short-term financial stability needs to be reconciled with medium-term objectives of competition policy. Asset relief can achieve this important balancing act. More generally, competition policy concerns are absolutely consistent and compatible with financial stability objectives and fiscal concerns.

The Commission practice has been appropriate with regard to the scope and eligibility criteria of covered assets and impaired assets valuation. More guidelines

on the eligibility criteria of beneficiary banks and the remuneration of asset relief measures would be welcome.

We would hope that Member States start using schemes more than they have been doing so far. Schemes allow better retention of a level playing field (at least at national level) and convergence towards best

practices across Member States. In our opinion, Member States also have ample room for further convergence in terms of asset relief design (valuation approaches, remuneration, balancing bank versus state insurance, eligibility of assets, etc.).

*doi:10.1093/jeclap/lps052*