

DIRECTORATE-GENERAL FOR INTERNAL POLICIES

**POLICY DEPARTMENT**  
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**Eurosystem Collateral Policy  
and Framework**

**Monetary Dialogue  
November 2014**

**COMPILATION OF NOTES**





**DIRECTORATE GENERAL FOR INTERNAL POLICIES**  
**POLICY DEPARTMENT A: ECONOMIC AND SCIENTIFIC POLICY**

# **Eurosystem collateral policy and framework**

**Monetary Dialogue 17 November 2014**

## **COMPILATION OF NOTES**

### **Abstract**

The notes in this compilation assess and comment on various aspects of the collateral policy and framework of the Eurosystem. In particular, the notes consider the economic implications associated with the current ECB collateral policy for asset allocation and relative asset price developments in a cross-country perspective. The notes have been requested by the Committee on Economic and Monetary Affairs (ECON) of the European Parliament as an input for the November 2014 session of the Monetary Dialogue between the Members of the ECON Committee and the President of the ECB.

This document was requested by the European Parliament's Committee on Economic and Monetary Affairs.

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## INTRODUCTION

Collateral plays a central role in conducting monetary policy and its importance has increased in recent times due to the replacement of uncollateralised inter-bank borrowing by collateralised central bank lending and the resulting consequences for collateral availability and the need of high-quality assets.

Based on this development, the European Central Bank over the years has reacted with different measures to increase collateral availability, *inter alia* by changing the eligibility rules (e.g. reduction of rating thresholds for certain asset classes) or the extension of the eligible assets (e.g. allowing national central banks to accept bank loans as collateral).

The notes in this compilation by key monetary policy experts assess and comment on various aspects of the collateral policy and framework of the Eurosystem. In particular, the notes consider the economic implications associated with the current ECB collateral policy for asset allocation and relative asset price developments in a cross-country perspective. The main conclusions and policy options are summarised below.

The notes have been requested by the Committee on Economic and Monetary Affairs (ECON) of the European Parliament as an input for the November 2014 session of the Monetary Dialogue between the Members of the ECON Committee and the President of the ECB.

**Karl Whelan** (University College Dublin). While money creation by central banks may appear costless, there are both indirect and opportunity costs when central banks make loans to banks. Excessive money creation can trigger inflation while a bank defaulting on a loan from the central bank results in a loss relative to the case where the money was used to purchase a risk-free asset. For these reasons, the ECB has had a comprehensive risk assessment framework based on the requirement that banks must submit collateral from a list of eligible assets in order to obtain a standard loan from the Eurosystem. The Eurosystem's collateral framework has been adjusted in recent years to allow lower quality assets to be used as collateral and the riskiness of the collateral underlying the ECB's loans has increased substantially. However, the average haircut applied to collateral by the Eurosystem has increased substantially in recent years, moving from about 3 percent in 2008 to about 14 percent in 2013. In this sense, the ECB has taken increased precautionary actions in line with the increased risk. The small haircuts applied to lower-rated European sovereign debt in the Eurosystem's collateral framework combine with the regulatory treatment of sovereign debt in the EU's Capital Requirements Directive to strongly incentivise banks to invest in sovereign bonds at the expense of other assets. A better approach would be for both the ECB and EU to treat sovereign bonds in a similar manner to other marketable assets. One of the key complexities of collateral policy is how to deal with banks that seek loans but do not have any more eligible collateral. This has taken place in the Eurosystem under Emergency Liquidity Assistance (ELA) programmes. The experience of the Eurosystem's provision of ELA in recent years has not been a positive one. Numerous controversies have arisen and there are serious questions about how ELA programmes in Ireland, Cyprus and Greece have been started and how they were restricted. With the ECB taking over as a supervisor for all European banks, most of the previous arguments for the current system of ELA provision no longer hold. I propose that the ECB should be required to approve each and every ELA programme and that the risk associated with this lending should be shared among the Eurosystem central banks. As an independent regulator, the ECB should also be in a position to assess whether the liquidity problems for a bank applying for ELA reflect temporary problems or deeper structural issues. This should help with speeding up the process of restructuring problem banks, via recapitalisation or bail-in. A speedier response of this sort would help to avoid a repeat of

long-term ELA programmes in which Eurosystem funding is used to allow private creditors to gradually get their money safely out of insolvent banks.

**Guntram B. Wolff** *et al.* (Bruegel). All Eurosystem credit operations, including the important open market operations, need to be based on adequate collateral. This means that when extending loans, the central bank requires collateral (assets pledged as security) to protect its balance sheet against the risk of default by the borrower (credit risk). The collateral is accepted at market price subject to a haircut. The haircut is applied to insure against liquidity risk and downward corrections in the prices of the collateral. The Eurosystem has adapted its collateral framework in the course of the crisis to accept lower-rated assets as collateral. The adaption of the collateral framework was necessary to provide sufficient liquidity to banks in the euro area periphery in particular but also to some banks in the core. More than 80% of ECB's liquidity (MRO&LTRO) is provided to five countries (IT, ES, PT, IE, GR). Haircuts were increased to insure against the greater liquidity risk and greater price volatility of lower-rated assets. In crisis countries, special emergency liquidity assistance (ELA) was provided. ELA is provided by national central banks with approval of the ECB governing council against collateral that does not meet the ECB's collateral standard. Potential losses from ELA operations remain with the national central bank. In general, any collateral framework has an impact on prices and allocations. The ECB's framework aims to minimize this impact by taking collateral at market prices. Nevertheless, prior to the crisis, the ECB's collateral framework has been criticised as reducing liquidity risk premia and thereby contributing to the insufficient differentiation of sovereign risk. However, this effect has unlikely been substantial. In the crisis period, the ECB's collateral policy has been criticised on the ground that it would allow the funding of large current account deficits in the face of a balance of the payment crisis. While it is true that without ECB liquidity the adjustment of the current accounts in the periphery would have been more rapid, the ECB policy was still legitimate. In particular, the changes in the collateral framework were necessary for the ECB to fulfil its treaty-based mandate of providing liquidity to solvent banks and safeguarding financial stability. Without lowering the minimum required rating, banks in a number of countries would have been without access to the ECB liquidity window. Ultimately, the decision to stop granting liquidity to banks in one country of the monetary union is outside the scope of monetary policy. The creation of a banking union will mitigate some of the problems related to collateral policy. Overall, the ECB appropriately adapted its collateral framework and policy in the course of the crisis.

**Ansgar Belke** (University of Duisburg-Essen). Since the height of the financial crisis, banks have been able to borrow essentially unlimited amounts of money from the ECB. The only condition: they have to have adequate collateral. Since collateral is the only remaining limit on banks' access to the ECB vault, collateral policy has great practical as well as symbolic significance: it is the main indicator of whether the central bank is following uniform and therefore credible rules, or whether banks are always getting whatever amount of money they want. This note assesses and comments on various aspects of the Eurosystem collateral policy and overall framework. In particular, it examines the economic implications of the current ECB collateral policy for asset allocation and relative asset price developments from a cross-country perspective. It shows that the Eurosystem's collateral framework has produced two major but opposing effects over time. First, the Eurosystem reached its quantitative target of increasing the available quantum of collateral. Second, this in turn worsened the quality of the ECB's pool of collateral for refinancing credits. What is more, the much greater qualitative broadening of the collateral base since the collapse of Lehman Brothers compared to its quantitative extension stands in sharp contrast to calls for good collateral. The note argues that large parts of this pattern may be well explained by the lender of last resort function of the ECB. However, it also identifies specific technical

areas - such as the calculation of adequate haircuts - in which the ECB's procedure is not sufficiently transparent. As usual, the devil is in the details: issues for discussion in the context of the Monetary Dialogue include the problem of retained securities and own use of collateral, arbitrage possibilities in the collateral framework, the relationship between collateral framework and market functioning, the pivotal role of one small rating agency in determining the refinancing conditions of European banks as well as the relation between collateral policies and the scope of markets for risky assets. A general problem is that exiting from these exceptional collateral policies will be as difficult as exiting from unconventional monetary policies in general. This paper also identifies a trade-off between short- to medium-term efficiency of unconventional monetary policy effectiveness and risk aversion of the ECB in terms of collateral policy. One example of a governance challenge in the field of collateral policies is that national central banks have in the past sometimes been too lenient with respect to the valuation and the eligibility of collateral. There is the risk that both the NCBs and market participants try to circumvent the ECB and Eurosystem collateral rules. In this regard, the NCBs should be prevented from exploiting loopholes of the collateral framework with the intention to unduly promote their domestic commercial banks. The paper makes also some considerations about what the collateral framework in general will look like after the crisis.





**DIRECTORATE GENERAL FOR INTERNAL POLICIES**  
**POLICY DEPARTMENT A: ECONOMIC AND SCIENTIFIC POLICY**

# **The ECB's collateral policy and its future as lender of last resort**

**Karl WHELAN**

## **IN-DEPTH ANALYSIS**

### **Abstract**

The ECB has a comprehensive risk assessment framework based on the requirement that banks must submit collateral from a list of eligible assets in order to obtain a standard loan from the Eurosystem. This framework has been adjusted in recent years to allow lower quality assets to be used as collateral. However, the average haircut applied to collateral by the Eurosystem has increased substantially in recent years so the ECB has taken increased precautionary actions in line with this increased risk. The ECB's treatment of sovereign debt, however, is overly generous and should be revised. Beyond normal lending operations covered by eligible collateral, the experience of the Eurosystem's provision of Emergency Liquidity Assistance (ELA) in recent years has not been a positive one. I propose that the ECB should be required to approve each and every ELA programme and that the risk associated with this lending should be shared among the Eurosystem central banks.

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## EXECUTIVE SUMMARY

- While money creation by central banks may appear costless, there are both indirect and opportunity costs when central banks make loans to banks. Excessive money creation can trigger inflation while a bank defaulting on a loan from the central bank results in a loss relative to the case where the money was used to purchase a risk-free asset.
- For these reasons, the ECB has had a comprehensive risk assessment framework based on the requirement that banks must submit collateral from a list of eligible assets in order to obtain a standard loan from the Eurosystem.
- The Eurosystem's collateral framework has been adjusted in recent years to allow lower quality assets to be used as collateral and the riskiness of the collateral underlying the ECB's loans has increased substantially. However, the average haircut applied to collateral by the Eurosystem has increased substantially in recent years, moving from about 3 percent in 2008 to about 14 percent in 2013. In this sense, the ECB has taken increased precautionary actions in line with the increased risk.
- The small haircuts applied to lower-rated European sovereign debt in the Eurosystem's collateral framework combine with the regulatory treatment of sovereign debt in the EU's Capital Requirements Directive to strongly incentivise banks to invest in sovereign bonds at the expense of other assets. A better approach would be for both the ECB and EU to treat sovereign bonds in a similar manner to other marketable assets.
- One of the key complexities of collateral policy is how to deal with banks that seek loans but do not have any more eligible collateral. This has taken place in the Eurosystem under Emergency Liquidity Assistance (ELA) programmes.
- The experience of the Eurosystem's provision of ELA in recent years has not been a positive one. Numerous controversies have arisen and there are serious questions about how ELA programmes in Ireland, Cyprus and Greece have been started and how they were restricted.
- With the ECB taking over as a supervisor for all European banks, most of the previous arguments for the current system of ELA provision no longer hold.
- I propose that the ECB should be required to approve each and every ELA programme and that the risk associated with this lending should be shared among the Eurosystem central banks.
- As an independent regulator, the ECB should also be in a position to assess whether the liquidity problems for a bank applying for ELA reflect temporary problems or deeper structural issues.
- This should help with speeding up the process of restructuring problem banks, via recapitalisation or bail-in. A speedier response of this sort would help to avoid a repeat of long-term ELA programmes in which Eurosystem funding is used to allow private creditors to gradually get their money safely out of insolvent banks.

## 1. INTRODUCTION

The ability of a central bank to create money is a hugely significant power and it is important that it be used wisely. While the act of money creation may appear to be essentially costless, there are important indirect and opportunity costs that must be considered.

Large amounts of money creation can, under some conditions, create inflation, thus passing on indirect costs to the public. Even in the absence of an impact on inflation, it is important to consider the risk that is taken on by a central bank when creating money to purchase assets: If an asset purchase goes badly, there is an opportunity cost arising from the fact that the central bank could have purchased a different asset that could have generated positive returns which could then have been remitted back to central governments. In particular, the provision of credit to weak banks that are then unable to repay the loans provides a potentially unfair publicly-funded boost to the creditors of these banks.

For these reasons, it is important that central banks consider carefully the risks involved when purchasing assets or making loans to banks. Since its inception, the ECB has had a comprehensive risk assessment framework based on the requirement that banks must submit collateral from a list of eligible assets in order to obtain a standard loan from the Eurosystem. If a bank defaults on a loan provided by a National Central Bank (NCB), this collateral is then taken by the NCB. If the acquired collateral fails to cover the value of the original loan, the agreed procedure is that the losses incurred will be shared across all of the members of the Eurosystem.

The Eurosystem has always had a broad collateral framework, incorporating a large amount of assets of different types. The framework involves a risk assessment of each eligible asset with a "haircut" set so that, for example, if an asset has a 10 percent haircut, a bank that pledges a face value of €100 million of this asset as collateral will be entitled to a loan of €90 million.

The broad collateral framework adopted by the Eurosystem has always been an important strength of its operational approach. In particular, the ECB was in a better position in late 2008, during the early stages of the global financial crisis, to supply the liquidity required by the financial system than other central banks such as the Federal Reserve, which needed to design new programmes to allow for a broader pledging of collateral.

In this paper, I will provide a brief discussion of developments in the ECB's collateral framework and then focus in particular on two key issues.

Section 2 briefly describes some recent changes to the ECB's collateral framework and provides some quick comparisons of this framework with those used by other central banks. I describe how the additional risk taken on by the ECB in recent years has been matched by more caution in the application of haircuts. In addition, the ECB's framework appears to be more rigorous in dealing with risk than other central banks.

Section 3 discusses whether the ECB's collateral framework has an impact on the market valuation of various assets. I argue that, in general, it would be best for the ECB's haircuts to have a closer relationship with market assessments of risk than they currently do. More specifically, the ECB's collateral framework combines with aspects of the EU's regulatory approach for bank capital to provide distorted incentives for banks to hold sovereign debt.

Finally, Section 4 discusses the Eurosystem's role as a lender of last resort. There have been a number of important incidents in recent years in which banks have sought loans from the Eurosystem over and above the amount they could obtain using their eligible

collateral and have been granted credit via various Emergency Liquidity Assistance (ELA) programmes that are officially provided only by NCBs, with all risk incurred by the issuing central bank. That said, the ECB Governing Council can stop any ELA programme that it deems to be inconsistent with its monetary policy goals via a two-thirds majority vote.

The rules for the provision of credit via ELA, and the conditions required for agreement from the ECB Governing Council are not at all clear. Indeed they appear to be completely ad hoc, with decisions or threats to end ELA programmes producing a number of controversies in recent years. In this important sense, the Eurosystem does not really have a comprehensive collateral policy because when the most difficult cases occur, its standard rule-book goes out the window. Section 4 thus highlights a number of deficiencies in the Eurosystem's current approach to ELA and provides detailed illustrations of how ELA programmes were implemented in three countries.

Section 5 argues that now is a good time for this current approach to ELA to come to an end. With the ECB assuming the role of single supervisor of the euro area's banks, it is appropriate now that there also be a shared approach to the emergency provision of credit to banks. This new approach should focus on making this provision temporary and addressing the structural problems with the banks involved as quickly as possible.

## 2. CHANGES TO THE EUROSISTEM'S COLLATERAL RULES

One of the important challenges facing the countries involved in EMU related to putting together an operational framework for monetary policy in the euro area. The various central banks that became the components of the Eurosystem dealt with a very wide range of credit institutions and had significant differences in their collateral frameworks. One of the successes of EMU has been the creation of a single coherent eligible collateral framework featuring a large list of both marketable and non-marketable assets that meet a common set of euro-area-wide criteria.

This large list of eligible collateral meant that the Eurosystem was well-positioned to deal with the stresses in private funding markets that began in 2007 and intensified in 2008 without having to radically alter its operational framework. One important substantive change that the ECB made to its monetary policy framework was its switch to a "full allotment" policy in October 2008. To facilitate this policy and other subsequent monetary policy measures such as Long Term Refinancing Operations (LTROs), ensuring they were not undermined a shortage of collateral, the ECB has made a number of technical changes to its collateral framework in recent years.

The number of specific changes is too long to list here – ECB (2013) contains a detailed description – but a few are worth noting. The credit threshold required for most assets to qualify as eligible collateral has been lowered from A- to BBB-. Various adjustments have been made to make it easier for Asset-Backed Securities (ABS) to become eligible and new criteria were drawn up to allow NCBs to accept non-marketable bank loans (additional credit claims) as collateral.

This loosening of standards associated with eligible collateral has met with criticism from various commentators who have focused on the increasing risk associated with the Eurosystem's balance sheet. However, I do not share these concerns, for a number of reasons.

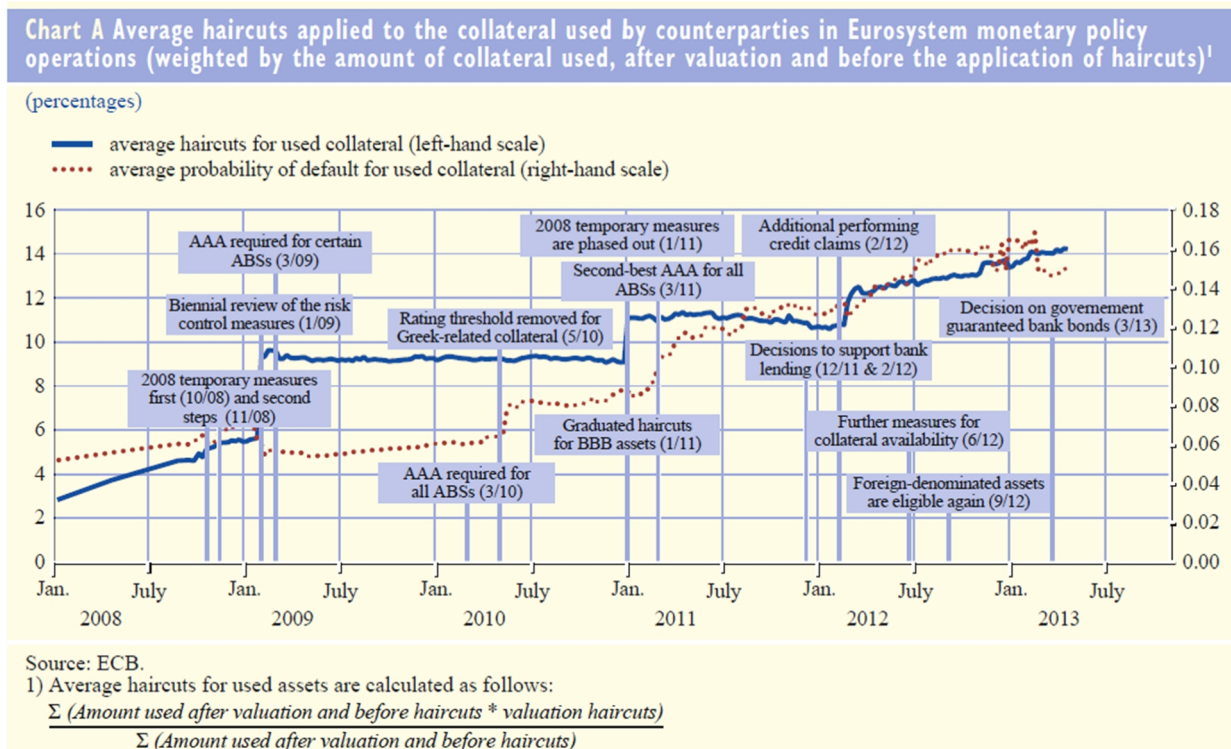
First, while there is little doubt that the riskiness of the collateral underlying the ECB's loans has increased substantially and that this increase largely reflects the conscious decisions of the Governing Council to accept riskier assets, it is also the case that the risk control framework has been adapted to deal with this development. In particular, Figure 1 shows a chart taken from ECB (2013) illustrating how the average haircut applied to collateral by the Eurosystem has increased substantially in recent years, moving from about 3 percent in 2008 to about 14 percent in 2013. In this sense, the ECB has taken increased precautionary actions in line with the increased risk.

Second, some of the concerns expressed about the newer lower quality assets fail to reflect the protective measures that the ECB has taken. For example, while the ECB is now allowing unmarketable bank loans to be used as collateral, the haircuts applied to these lower quality "additional credit claims" are considerable. They range from 17 percent for loans with a maturity of under one year to 65 percent for certain loans with a maturity of over 10 years.<sup>1</sup> In relation to ABS, the ECB has taken a number of steps to improve the transparency of these assets, establishing loan-by-loan information requirements for ABSs as an eligibility criterion.

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<sup>1</sup> These haircuts can be found at [https://www.ecb.europa.eu/press/pr/date/2013/html/pr130718\\_annex.pdf?3f96783ce223aba713f129ad1d7a8367](https://www.ecb.europa.eu/press/pr/date/2013/html/pr130718_annex.pdf?3f96783ce223aba713f129ad1d7a8367)

**Figure 1: Average Haircuts Have Increased in Recent Years**



Third, international comparisons suggest that the Eurosystem is generally more aggressive in its risk control measures than other major central banks. Figure 2 presents a table from ECB (2014) illustrating how various central banks apply haircuts to different assets. It shows that the ECB makes a greater distinction between the riskiness of assets when applying haircuts than the other central banks. In addition, its average haircuts are generally higher, most notably for lower-rated assets.

While arguments for protecting central banks against losses via higher average haircuts (or even haircuts that rise during recessions) may exist, it is also important that borrowing from central banks not be done on terms that are seen as highly unattractive, particularly during financial downturns. This could lead to borrowing from the central bank being seen as something only undertaken by banks in serious trouble. During financial crisis, it can be important that banks that borrow from the central bank do not suffer reputational damage as this can lead to banks choosing to forego the option of central bank borrowing. This can lead to banks focusing more aggressively on deleveraging efforts that have negative knock-on effects on financial markets and the wider economy.

These arguments suggest a potential trade-off between the narrow goal of having the central bank avoid losses and its wider goals of maintaining macroeconomic and financial stability.



**Figure 2: ECB Haircuts Are Relatively High**

Table 7 Overview of haircuts applied by selected central banks											
Debt instruments issued by	Maturity	Eurosystem <sup>1)</sup>			Bank of England (BoE) <sup>2)</sup>	Federal Reserve System <sup>3)</sup>		Sveriges Riksbank <sup>4)</sup>	Bank of Japan (BoJ)		Swiss National Bank (SNB)
		AAA TO A-	BBB+ TO BBB-	No distinction by rating <sup>3)</sup>	U.S. denominated	Foreign denominated	No distinction by rating is made <sup>3)</sup>	JGBs	Foreign		
• Central Governments	<1y	0.5	5.5	0.5	1.0-3.0	8.0	3.0	1.0-2.0	3.0	0.0	
• Central banks	1-5 yrs	1.5-2.5	6.5-7.5	1.5-2.0	1.0-3.0	8.0	3.0-4.0	1.0-2.0	3.0		
	5-10 yrs	3.0-4.0	8.0-9.0	3.0	3.0-5.0	10.0	5.0-6.0	3.0-4.0	5.0		
	>10 yrs	5.5	10.5	4.5-7.5	4.0-6.0	11.0	7.0	3.0-10.0	5.0-8.0		
• Local and regional governments	<1y	1.0	6.0	0.5-3.0	2.0	8.0	3.0	2.0-3.0		0.0	
• Agencies	1-5 yrs	2.5-3.5	10.5-15.5	1.5-6.0	2.0	8.0	3.0-5.0	2.0-3.0			
• Supranationals	5-10 yrs	4.5-5.5	18.0-19.5	3.0-8.0	4.0	10.0	7.0-10.0	4.0-5.0			
• Credit institutions (jumbo covered bonds)	>10 yrs	7.5	20.0	4.5-15.0	5.0-10.0	11.0-13.0	15.0	4.0-8.0			
• Credit institutions (covered bank bonds)	<1y	1.5	8.0	3.0-30.0	3.0-5.0	9.0	3.0	3.0-4.0		0.0	
	1-5 yrs	3.0-5.0	18.0-25.5	5.0-33.0	3.0-5.0	9.0	3.0-5.0	3.0			
• Nonfinancial corporations and other issuers	5-10 yrs	6.5-8.5	28.0-29.0	8.0-35.0	5.0-7.0	11.0	7.0-10.0	5.0			
	>10 yrs	11.0	29.5	10.0-42.0	6.0-8.0	12.0	15.0	5.0-8.0			
• Credit institutions (unsecured)	<1y	6.5	15.0	N/A	3.0-5.0	9.0	8.5	3.0-4.0		0.0	
	1-5 yrs	8.5-11.0	27.5-36.5		3.0-5.0	9.0	8.5-11.0	3.0			
• Financial corporations other than credit institutions	5-10 yrs	12.5-14.0	38.5-39.0		5.0-7.0	11.0	15.0-20.0	5.0			
	>10 yrs	17.0	39.5		6.0-8.0	12.0	35.0	5.0-10.0			
• Asset-backed securities	<1y	16.0	Not eligible	12.0-15.0	2.0-11.0		Not eligible	3.0		Not eligible	
	1-5 yrs			17.0-18.0	2.0-11.0			3.0			
	5-10 yrs			20.0	5.0-16.0			5.0			
	>10 yrs			22.0-27.0	8.0-18.0			5.0-8.0			

1) The Eurosystem haircuts have been updated (1 Oct 2013), but the haircuts of September 2013 have been kept for comparative reasons.  
2) A haircut add-on is applied to allow for currency volatility when securities are non-sterling denominated.  
3) Federal Reserve System haircuts apply to a "duration buckets" instead of "maturity buckets". The stated margins apply to collateral pledged for discount window or payment system risk purposes. Other margins apply for other Federal Reserve System programmes.  
4) A haircut for foreign exchange risk will be made if a security is issued in a currency other than Swedish krona.

Source: ECB (2014)



### 3. MARKET IMPLICATIONS OF COLLATERAL RULES

While the primary purpose of central bank collateral rules is to avoid unnecessary risk to the public in monetary policy operations, it is important for central bankers to keep in mind that these rules can have implications for how various assets are priced in financial markets.

Eligibility for use as collateral with a central bank is a positive property for an asset to possess. It means that the asset can be easily used to obtain short-term funding that can address liquidity needs or purchase other assets. Moreover, unlike private repo markets, where terms and conditions tend to be unstable over time, the terms of central bank repo operations tend to be stable and predictable. These features can allow an asset that is itself illiquid, or perhaps only traded in illiquid markets, to be priced by financial markets closer to other assets that are innately more liquid.

Because a central bank's decision to allow an asset to be eligible collateral can confer a benefit on the issuer of the asset, there are strong arguments for having a collateral framework that is broad in nature, rather than one that provides a publicly-sanctioned benefit to a small number of issuers. In this sense, the ECB's broad approach is consistent with fairness and transparency.

That said, even with a broad collateral list, the *terms* on which the central bank chooses to provide credit can bestow special benefits on certain kinds of assets. In particular, relative to other assets, the ECB's treatment of sovereign bonds via low haircuts has consistently been more generous relative to market evaluations of risk. Low haircuts play a role in boosting bank demand for sovereign bonds because every euro spent on these bonds can translate into a larger amount of central bank funding. Alternatively, for any given amount of central bank funding, the use of assets that have lower haircuts results in the bank having a smaller "encumbrance" problem, meaning less of its assets will end up going to the Eurosystem in a wind-up situation and more going to creditors. A bank that is perceived as having a problem with encumbrance may end up having to pay more for market funding because creditors view themselves as being at greater risk.

Further boosting the demand from banks for sovereign bonds is the European Union's treatment of such bonds as risk-free in its Capital Requirements Directive (CRD). The ECB's operational procedures allow banks to operate a profitable carry trade in which balance sheets can be expanded with low interest ECB funding on the liability side and higher-yielding sovereign debt on the asset side. The CRD regulations allow this trade to be performed without increasing risk-weighted-assets, so it has no impact on the bank's riskiness as measured by its headline capital ratios.

Prior to the sovereign debt crisis, it was argued by Buiter and Sibert (2006) and others that the additional demand for European sovereign debt generated by the ECB's procedures and the EU's regulatory treatment were responsible for financial markets effectively pricing all European sovereign debt as though it was risk-free, despite substantial differences in underlying debt positions.

During the crisis, the fear of widespread default became the dominant factor influencing prices for sovereign debt in the euro area and large risk spreads on sovereign bonds emerged. However, with the ECB's Outright Monetary Transactions programme (OMT) having reduced fears of sovereign defaults, it seems likely that the operational and regulatory factors noted here are again acting to cause a compression of sovereign bond yields.

While these developments may be welcomed by taxpayers who are relieved to be paying lower interest on their public debt, there may be an important hidden cost, which is that

European banks are now funnelling larger amounts of depositor funds towards governments rather than households or businesses. Thus, these rules may be indirectly exacerbating the ongoing credit crunch in the euro area.

My preference would be for the ECB and EU to revise their implicit policies of encouraging European banks to purchase sovereign debt. These features weaken the policy frameworks of which they are a part (risk control in the case of the ECB's collateral framework and sound micro-prudential regulation on the part of the CRD) and strengthen the well-known vicious circle between banks and sovereigns. In their place, it would be better to have a framework in which both central bank haircuts and regulatory risk weights are closer aligned with market risk.

This may appear to be a relatively hard-line stance that ignores the ECB's role in maintaining financial stability. Two specific issues arise here.

First, if banks become less enthusiastic about purchasing European sovereign bonds, we may be more likely to see sovereign debt crises involving self-fulfilling expectations about default. The ECB's OMT programme is effectively a sovereign lender of last resort programme in which it is willing to lend to governments that it views as solvent provided they co-operate with a programme of measures designed to restore market confidence. I support the OMT programme as a necessary part of the euro area's policy architecture. Indeed, I believe it is best to remove policies that artificially boost the market for sovereign bonds so that, with an unbiased market view available, the ECB can implement OMT if it believes that market evaluations of sovereign risk are misplaced or causing financial stability problems.

Second, a stricter approach to haircuts for poorly-rated sovereign bonds raises the possibility that banks may run out of eligible collateral and this, in turn, raises the possibility of bank runs and financial system instability. This question – how to deal with banks that have run out of eligible collateral – is the subject of the final section of this paper.

## 4. THE ECB'S EXPERIENCE WITH ELA

In modern times, monetary policy is seen as the principal task of central banks and discussions about collateral policy generally relate to the conduct of regular open market operations designed to regulate the supply and cost of liquidity. However, in earlier times, the principal task of central banks was their role as a lender of last resort in times of crisis.

Indeed, perhaps the most famous discussion of collateral is Walter Bagehot's discussion of lender of last resort policy in *Lombard Street* (1873) – a discussion summarised by former Bank of England Deputy Governor Paul Tucker (2009) as

*to avert panic, central banks should lend early and freely (i.e. without limit), to solvent firms, against good collateral, and at "high rates".*

Tucker's speech noted that Bagehot was concerned that

*the Bank of England should acknowledge its role in stemming panics, and set out its principles for doing so: "The Bank has never laid down any clear or sound policy on the subject."*

Somewhat incredibly, this is exactly the situation the European Central Bank is in today. It has no clear or sound policy on how to stem panics. The reason for this is that despite its clear (though adjustable) policies on eligible collateral for monetary policy operations, the ECB has no clear procedures for dealing with banks that have used all of their eligible collateral but that still wish to borrow from the Eurosystem. This position is unsatisfactory and has been very damaging to the reputation of the ECB.

In this section, I briefly outline what is known about the Eurosystem's ELA procedures and then discuss three examples of where ELA has been used.

### 4.1. The Eurosystem's ELA procedures

Banks can still receive credit from the Eurosystem using non-eligible collateral. These loans are called Emergency Liquidity Assistance (ELA). Despite the existence of numerous ELA programmes in the Eurosystem since 2008, the ECB Governing Council has been extremely tight-lipped in its discussions of these programmes. Only in October 2013 did the Governing Council provide an official description of how ELA programmes work and this description is quite terse.<sup>2</sup>

Based on this description and other sources, my understanding is that ELA programmes operate as follows.

- ELA is not a Eurosystem programme. It can be issued by any NCB without consulting the ECB Governing Council.
- However, procedures exist that require any NCB issuing ELA to inform the ECB within two business days after the operation is carried out and provide detailed information on the nature of the lending, including the collateral pledged.
- The ECB Governing Council can decide, via a two-thirds majority vote that ELA operations interfere with the objectives and tasks of the Eurosystem. After such a vote, the Governing Council can order the NCB to restrict its ELA programme.
- Unlike regular Eurosystem liquidity-providing operations, all risk associated with ELA falls on the central bank that grants the loans.

<sup>2</sup> This document can be found at [https://www.ecb.europa.eu/pub/pdf/other/201402\\_elaprocedures.en.pdf?e716d1d560392b10142724f50c6bf66a](https://www.ecb.europa.eu/pub/pdf/other/201402_elaprocedures.en.pdf?e716d1d560392b10142724f50c6bf66a)

These rules are pretty vague. They don't describe the circumstances under which the ECB considers ELA to be appropriate nor do they make clear the criteria by which the ECB arrives at a decision that an ELA programme "interferes with the objectives and tasks of the Eurosystem." In general, vague rules lead to confusion and controversy and this is exactly what has happened in recent years.

## 4.2. Three examples of ELA programmes

Here, I briefly discuss three examples of Eurosystem ELA programmes from recent years. In each case, arbitrary (or at least secret) criteria have been used to decide on when such programmes can be allowed or curtailed.

### Ireland

From the beginning of Ireland's banking crisis in late 2008, it was clear that Anglo Irish Bank, which had specialised in commercial property lending, was in serious trouble. The bank was nationalised in early 2009 and was suffering from substantial deposit withdrawals when the Central Bank of Ireland agreed in March 2009 to provide it with €11.5 billion in ELA. As the sovereign debt crisis intensified through 2010, the pace of deposit withdrawals from Anglo Irish intensified and its ELA borrowings moved up sharply. See Figure 3 for a graph of regular Eurosystem lending as well as ELA to the six Irish banks that had been provided with a near-blanket liability guarantee by the Irish government in September 2008.

Over the course of 2010, the other main Irish banks also came under pressure from deposit outflows. The September 2008 guarantee had been put in place for two years and the covered banks had issued a large amount of bonds that matured prior to September 2010. As September 2010 came and went, they failed to find new sources of private sector funding. Thus, these banks increased their reliance on ECB funding and eventually also applied for ELA.<sup>3</sup>

ECB officials had spent much of 2010 publicly discussing their plans to implement an "exit strategy" from their fixed-rate full allotment policy. The developments at Ireland's banks were clearly working against this plan. In September 2010, ECB officials including Jean-Claude Trichet began making public statements about their unhappiness with (unnamed) "addict banks" that were reliant on Eurosystem funding.<sup>4</sup>

Based on the recent release of letters by the ECB, we know now that Jean-Claude Trichet sent a letter to Ireland's Finance minister, Brian Lenihan, on October 15, 2010 which warned<sup>5</sup>

*I would like to re-emphasize that the current large provision of liquidity by the Eurosystem and the Central Bank of Ireland to entities such as Anglo Irish Bank should not be taken for granted as a long-term solution. Given these principles, the Governing Council cannot commit to maintaining the size of its funding to these institutions on a permanent basis.*

By November 2010, total Eurosystem funding for the Irish banks had reached about €140 billion which was around 85% of Irish GDP and almost a quarter of total Eurosystem lending. At this point, the ECB played a crucial role in Ireland's application for a bailout from the EU and IMF. Jean-Claude Trichet sent a letter to Brian Lenihan threatening to cut

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<sup>3</sup> See Whelan (2014) for a more detailed discussion of Ireland's banking crisis.

<sup>4</sup> See for example, the Financial Times article from September 13, 2010 "Fears grow over banks addicted to ECB funding" <http://www.ft.com/intl/cms/s/0/580109dc-bf43-11df-a789-00144feab49a.html>

<sup>5</sup> This letter is available at [https://www.ecb.europa.eu/press/shared/pdf/2010-10-15\\_Letter\\_ECB\\_President\\_to\\_IE\\_FinMin.pdf?05f2367e74897b4aa2641f31d639d1c3](https://www.ecb.europa.eu/press/shared/pdf/2010-10-15_Letter_ECB_President_to_IE_FinMin.pdf?05f2367e74897b4aa2641f31d639d1c3)

off ELA funding unless the Irish government submitted a formal request to the EU for an adjustment programme.<sup>6</sup> The specific wording of this part of the letter was as follows.

*It is the position of the Governing Council that it is only if we receive in writing a commitment from the Irish government vis-a-vis the Eurosystem on the four following points that we can authorise further provisions of ELA to Irish financial institutions:*

- 1) The Irish government shall send a request for financial support to the Eurogroup;*
- 2) The request shall include the commitment to undertake decisive actions in the areas of fiscal consolidation, structural reforms and financial sector restructuring, in agreement with the European Commission, the International Monetary Fund and the ECB;*
- 3) The plan for the restructuring of the Irish financial sector shall include the provision of the necessary capital to those Irish banks needing it and will be funded by the financial resources provided at the European and international level to the Irish government as well as by financial means currently available to the Irish government, including existing cash reserves of the Irish government;*
- 4) The repayment of the funds provided in the form of ELA shall be fully guaranteed by the Irish government, which would ensure the payment of immediate compensation to the Central Bank of Ireland in the event of missed payments on the side of the recipient institutions.*

Ireland applied for financial assistance and its EU-IMF bailout programme began in late 2010. Deposits continued to flow out of the Irish banking system for a number of months and ELA actually increased significantly over those months, from €43 billion in November 2010 to €68 billion in February 2012. However, the banking system began to stabilise after the release of official stress tests and a large recapitalisation. Ireland's ELA programme ended in February 2013 when Anglo's successor organisation, the Irish Bank Resolution Corporation was put into liquidation.

The ECB's actions in relation to its interactions with the Irish banking system raise many questions.

- Given the size of the emerging solvency problem at Anglo Irish Bank in Spring 2010, why did the Governing Council approve such a large initial ELA programme?
- If the ECB were relying on the Irish state's backing for Anglo as reassurance that the bank's solvency would be maintained, at what point did doubts about the state's ability to provide this assistance emerge?
- If the solvency of the Irish banks was required for continuing ELA programmes, why did the ECB not limit itself to a demand for recapitalisation of these banks? Almost certainly, the Irish government would have had to apply for an official programme to meet this demand. But why not let the government make this decision instead of insisting on "decisive actions in the areas of fiscal consolidation, structural reforms". Where in the ECB's mandate is its right to demand fiscal consolidation and structural reforms as a condition to supply funding to individual banks?

<sup>6</sup> The November letter from Trichet to Lenihan is available at [https://www.ecb.europa.eu/press/shared/pdf/2010-11-19\\_Letter\\_ECB\\_President\\_to%20IE\\_FinMin.pdf?83824135ba733b6091e930d3a25314c9](https://www.ecb.europa.eu/press/shared/pdf/2010-11-19_Letter_ECB_President_to%20IE_FinMin.pdf?83824135ba733b6091e930d3a25314c9)

Mario Draghi deserves credit for releasing these letters. However, the ECB's response to the release has completely avoided the important questions about ELA programmes that the letters raise.

## Cyprus

If anything, the ECB's role in providing and subsequently restricting ELA to banks in Cyprus is even more murky and problematic.

While the situation with Cyprus's two largest banks became known to the wider European public in March 2013, it was clear to closer observers from early 2012 that these banks were in severe difficulties. Due to ill-advised purchases of Greek government bonds, poorly-timed expansions into the Greek market and a weakening Cypriot economy, both Bank of Cyprus (BoC) and Laiki Bank were effectively insolvent from early 2011 onwards.

The restructuring of Greek sovereign bonds sharply reduced Laiki's stock of assets that could be used as collateral for regular Eurosystem monetary policy operations. In October 2011, Laiki applied to the Central Bank of Cyprus (CBC) for emergency liquidity assistance (ELA) which is a form of central bank funding on non-standard terms. By November 2011, Laiki had €2.5 billion in ELA funding from the CBC and the amount of this funding increased significantly over the first seven months of 2012.

Because no other bank in Cyprus appears to have been receiving ELA at the time, we can track the evolution of Laiki's ELA in late 2011 and 2012 using publicly-available information on the CBC's balance sheet. This balance sheet recorded ELA under the heading "Other Assets" until April 2013 when it began recording it under "Other Claims". (There have been some small other items recorded under these entries but they are tiny relative to the ELA funding.)

In February 2012, the European Banking Authority (EBA) communicated that Laiki needed a recapitalisation of €1.97 billion while BoC required €1.56 billion. The government of Cyprus was effectively shut out of the sovereign bond market at this point and against a background of a worsening economy, it was not possible for BoC and Laiki to raise the private investment required to meet the EBA's core equity requirements by June 2012.

In May 2012, the government of Cyprus agreed to underwrite a €1.8 billion capital raising exercise for Laiki. On June 25, 2012, Fitch became the final ratings agency to downgrade Cyprus to below investment-grade. On the same day, the government of Cyprus submitted an application for financial assistance from the Eurozone's bailout funds. Two days later, BoC requested state aid of €500 million to allow it to meet its EBA core equity requirements.

During the period following the application for financial assistance and the final agreement on this assistance in March 2013, the capital position of the Cypriot banks continued to worsen. BoC booked new provisions for bad loans of €2.3 billion in 2012 and by the end of the year, the bank was insolvent with core equity of minus €407 million. The EBA assessed Laiki's accounts again in June 2012 and found an additional capital shortfall of €1.1 billion. Laiki did not publish year-end accounts for 2012 but their final published results for the first nine months of the year showed an additional €1.67 billion in losses, again leaving the bank on the brink of balance sheet insolvency.

As information circulated on Laiki's capital shortfall and its failure to obtain any private equity, deposit outflows increased, particularly at its Greek branches. The CBC's "Other Claims" series shows an increase from €3.9 billion in April 2012 to €5.9 billion in May 2012 and €8.2 billion in June 2012. (See Figure 4 for a graph of lending from the Central Bank of Cyprus).



The increase in ELA in May 2012 reflected deposit outflows. The June increase, however, also reflected decisions by the ECB that further reduced Laiki's ability to take part in normal Eurosystem operations. Its Greek covered bonds were downgraded and deemed ineligible as collateral while Fitch's downgrade of Cypriot government bonds led to these bonds also being taken off the ECB's collateral list. As a result of these decisions, regular Eurosystem lending by the CBC declined by €1 billion in June 2012.

In July 2012, the ECB removed Laiki from its list of eligible counterparties due to concerns about its solvency, a decision that it can take on the basis of the rules governing its risk control framework. By the end of July 2012, Laiki had no regular Eurosystem funding and its ELA was about €9.6 billion. This seems to have been about as much ELA as the Eurosystem was willing to lend the bank. The former Governor of the CBC, Panicos Demetriades, has explained that "after the Eurogroup of 21 January 2013, Laiki Bank's ability to raise emergency liquidity reached a plateau due to the reduction in the value of its available collateral."<sup>7</sup>

After a long period of delay, which included an election in February 2013, a financial assistance package for Cyprus was agreed in March under extremely stressed circumstances.

At a meeting of the Eurogroup of finance ministers that ended in the early hours of March 16, the ECB's representative Jörg Asmussen stated that the Governing Council was unwilling to continue authorising ELA to Cypriot banks unless these banks were restored to solvency by the end of March via writing down the value of customer deposits. It had been established by this point that the euro area member states and the IMF were only willing to provide €10 billion in funding which meant there was not enough money available to finance Cyprus's fiscal deficits and sovereign bond rollovers and also recapitalise its banks.

The final deal that was agreed with the Cypriot government required that the large amounts of ELA provided to the insolvent banks and deposits at Greek branches of the Cypriot banks be repaid in full: These requirements greatly increased the size of the "haircut" for depositors with the Cypriot banks. Laiki Bank was wound down and the large amount of ELA owed by Laiki was transferred to BoC.

While the deposit write-downs restored BoC to solvency, the ECB then placed hard limits on the amount of Eurosystem funding for this bank. This refusal to provide further funding for the bank has been a key factor in the continued extension of capital controls that are preventing people from transferring their money out of banks in Cyprus to elsewhere in the EU. These controls violate the principle of free movement of capital that is intended to be a pillar of the single European market.

The ECB's decisions in relation to the Cypriot banks raise a number of questions

- Did the ECB realise that Laiki was heading towards being highly insolvent when it provided it with ELA in late 2011?
- As the ECB provided more funds to Laiki in 2012, were they assuming the Cypriot government would provide the funds that would restore the bank to solvency? In the end, the government did not have the capacity to do this.
- On what grounds did the ECB delay its demand for a recapitalisation of the Cypriot banks until after the 2013 election?
- At what point did ECB and the European authorities decide that the recapitalisation in Cyprus should take place via deposit write-downs?

<sup>7</sup> Introductory statement before the Investigation Committee on the Economy, 13 August 2013. [http://www.centralbank.gov.cy/nqcontent.cfm?a\\_id=12928&lang=en](http://www.centralbank.gov.cy/nqcontent.cfm?a_id=12928&lang=en)

- Why did the wind-down of Laiki bank not see the Central Bank of Cyprus take the underlying collateral that had been pledged? In other words, why was the Laiki's ELA transferred to be the responsibility of another bank?
- Did the ECB play a role in the decision to limit deposit write-downs to customers in Cyprus while leaving depositors in Greece protected?
- Given that Bank of Cyprus is now solvent, why does the ECB continue to place limits on its ELA funding, limits that have the repercussion of keeping international capital controls in place?

It is to be hoped that, as with the Irish case, the ECB will also release documents that will explain its actions in Cyprus. I suspect, however, we may be waiting a long time for such a release.

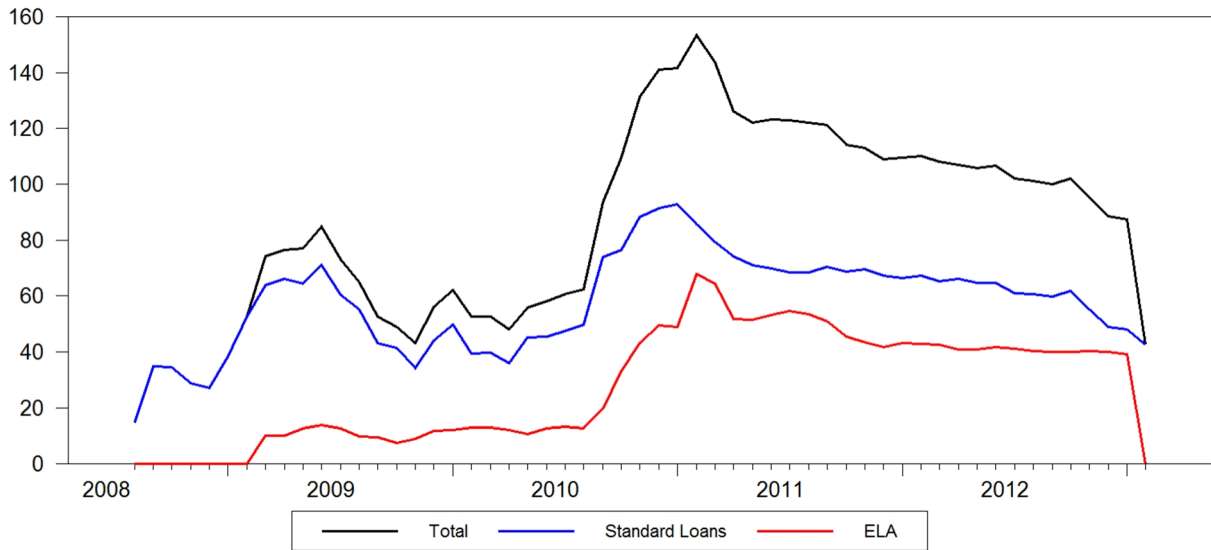
## **Greece**

A consistent theme of the Greek debt crisis was the ECB's regular threats (either implicit or explicit) to withdraw funding from the Greek banking system and thus trigger a full-scale banking crisis. Greek government bonds were regularly withdrawn and then added again to the eligible collateral list and while they were withdrawn, the Greek banks relied on Emergency Liquidity Assistance from the Bank of Greece.

These ELA programmes were constantly reviewed by the ECB Governing Council and could be cancelled at short notice if the Council decided. It was this power to threaten the Greek banking system (rather than legal issues relating to monetary financing) that lay behind the ECB's ability to carry through on its refusal to participate in the debt restructuring that took place in 2012.



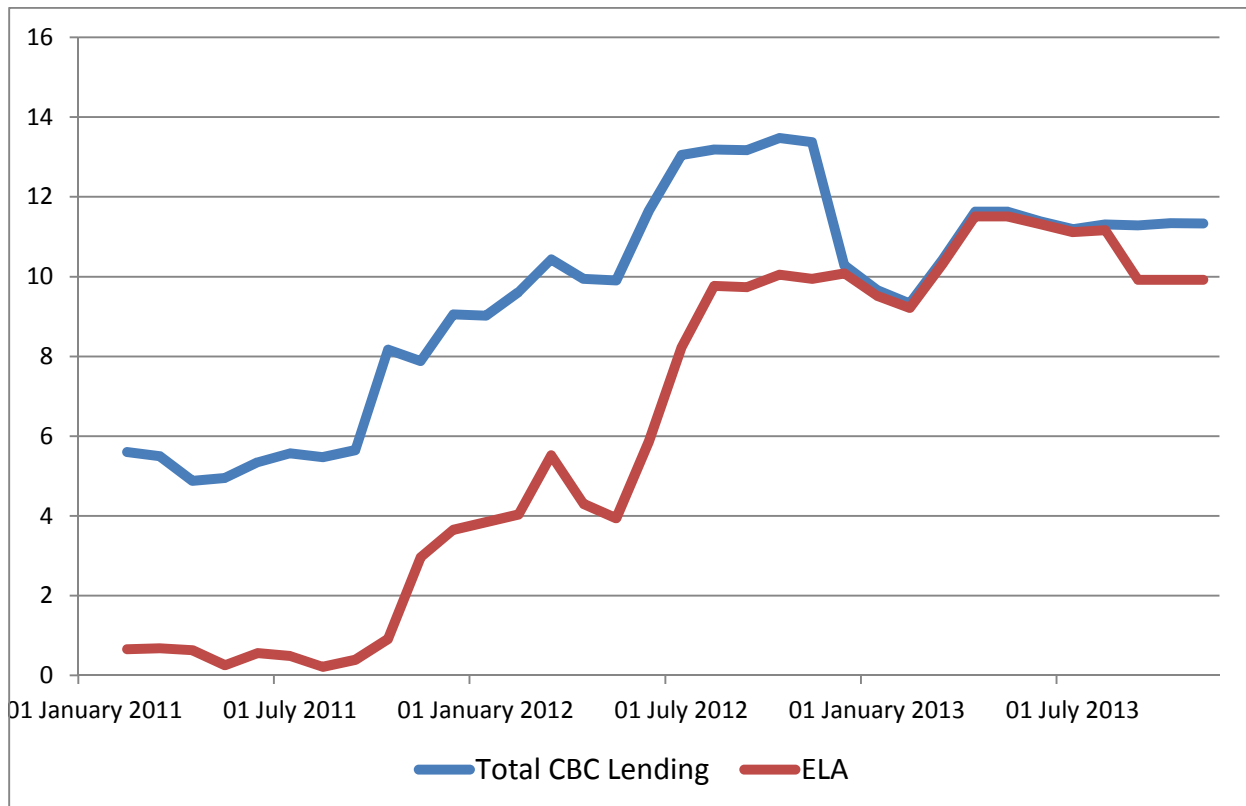
**Figure 3: Central Bank Lending to Irish Banks from 2010 to February 2013  
(Billions of Euro)**



**Source:** Central Bank of Ireland

**Note:** The chart relates to the six banks guaranteed by the Irish government in 2008.

**Figure 4: Lending by Central Bank of Cyprus from 2011 to October 2013  
(Billions of Euro)**



**Source:** Central Bank of Cyprus

## 5. THE EUROSISTEM'S FUTURE AS A LENDER OF LAST RESORT: A PROPOSAL

Central banks were put on this earth to be lenders of last resort. Dealing with complex situations in which banks are running out of liquidity and may or may not be solvent should be a core part of every central bank's tasks. The ECB, however, does not seem ready to undertake this role in a coherent and comprehensive manner.

Consider this recent ECB statement in response to New York Times story that revealed leaked minutes of the ECB's discussion of the Cypriot banking situation.<sup>8</sup>

*The ECB neither provides nor approves emergency liquidity assistance. It is the national central bank, in this case the Central Bank of Cyprus, that provides ELA to an institution that it judges to be solvent at its own risks and under its own terms and conditions. The ECB can object on monetary policy grounds; in order to do so at least two thirds of the Governing Council must see the provision of emergency liquidity as interfering with the tasks and objectives of euro area monetary policy.*

So the ECB's official line is that it doesn't provide or approve ELA but also that it sort of does. This is a recipe for the kinds of incoherent policy that we have seen in recent years.

Now is a very good time to develop a completely new approach for the ECB as lender of last resort. The ECB has taken over as the supervisor of the euro area's banks. This removes most of the previous arguments that were in place for the current system of ELA provision. Previously, banks were overseen by national supervisors. As such, it could be argued that those banks that got into trouble and required ELA were the responsibility of national central banks and that the risk associated with lending to these banks should be borne at a national level.

This point no longer holds. Once all of the euro area's banks have complied with the capital raising requirements from the comprehensive assessment, then they will all have an official diagnosis of good health from the ECB. If further problems arise, they should be considered the joint responsibility of all central banks in the Eurosystem.

For this reasons, I believe it is time to change the system in which lending against eligible collateral is a Eurosystem concern while ELA is a national concern. The ECB should be required to approve each and every ELA programme and have the risk shared among the Eurosystem. As an independent regulator, the ECB should also be in a position to assess whether the liquidity problems for a bank applying for ELA reflect temporary problems or else reflect deeper structural issues (it is usually the latter). This should help with speeding up the process of restructuring problem banks, via recapitalisation or bail-in. A speedier response of this sort would help to avoid a repeat of long-term ELA programmes in which Eurosystem funding is used to allow private creditors to gradually get their money safely out of insolvent banks.

Of course, this proposal will mean the ECB will have to take on more explicit responsibility for dealing with financial instability. But the two-thirds majority voting on ELA at Governing Council has already meant that the ECB is effectively taking on this responsibility already.

One complication with this proposal is that many of the NCBs have been given a financial stability responsibility to provide emergency lending to banks that is enshrined in national law. I would argue that the ECB should establish a protocol that all ELA programmes are centrally approved and subsequently request amendments to national central bank legislation if this is required.

<sup>8</sup> The ECB statement can be found at [http://www.ecb.europa.eu/press/pr/date/2014/html/pr141017\\_1.en.html](http://www.ecb.europa.eu/press/pr/date/2014/html/pr141017_1.en.html)

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# NOTES

# **Eurosystem collateral policy and framework: Was it unduly changed?**

**Guntram B. WOLFF, Alvaro LEANDRO**

## **IN-DEPTH ANALYSIS**

### **Abstract**

All Eurosystem credit operations, including the important open market operations, need to be based on adequate collateral. Liquidity is provided to banks against collateral at market price subject to a haircut. The Eurosystem has adopted its collateral framework in the course of the crisis to accept lower-rated assets as collateral. Higher haircuts are applied to insure against liquidity risk as well as the greater volatility of prices of lower-rated assets. The adaption of the collateral framework was necessary to provide sufficient liquidity to banks in the euro area periphery in particular. In crisis countries, special emergency liquidity assistance was provided. More than 80% of ECB's liquidity (MRO&LTRO) is provided to banks in five countries (IT, ES, PT, IE, GR). The changes in the collateral framework were necessary for the ECB to fulfil its treaty-based mandate of providing liquidity to solvent banks and safeguarding financial stability. The ECB did not take on board excessive risks.

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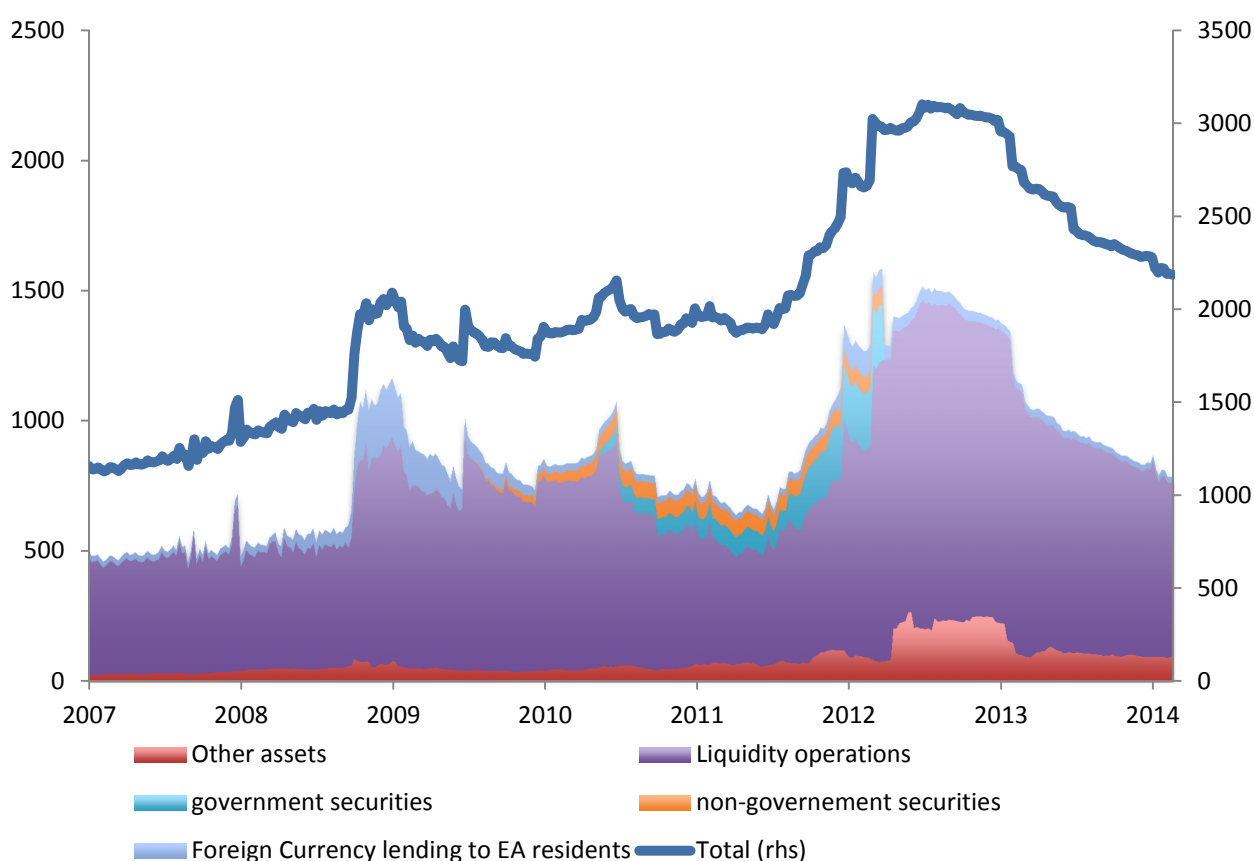
## EXECUTIVE SUMMARY

- All Eurosystem credit operations, including the important open market operations, need to be based on adequate collateral. This means that when extending loans, the central bank requires collateral (assets pledged as security) to protect its balance sheet against the risk of default by the borrower (credit risk). The collateral is accepted at market price subject to a haircut. The haircut is applied to insure against liquidity risk and downward corrections in the prices of the collateral.
- The Eurosystem has adapted its collateral framework in the course of the crisis to accept lower-rated assets as collateral. The adaptation of the collateral framework was necessary to provide sufficient liquidity to banks in the euro area periphery in particular but also to some banks in the core. More than 80% of ECB's liquidity (MRO&LTRO) is provided to five countries (IT, ES, PT, IE, GR). Haircuts were increased to insure against the greater liquidity risk and greater price volatility of lower-rated assets. In crisis countries, special emergency liquidity assistance (ELA) was provided. ELA is provided by national central banks with approval of the ECB governing council against collateral that does not meet the ECB's collateral standard. Potential losses from ELA operations remain with the national central bank.
- In general, any collateral framework has an impact on prices and allocations. The ECB's framework aims to minimize this impact by taking collateral at market prices. Nevertheless, prior to the crisis, the ECB's collateral framework has been criticised as reducing liquidity risk premia and thereby contributing to the insufficient differentiation of sovereign risk. However, this effect has unlikely been substantial. In the crisis period, the ECB's collateral policy has been criticised on the ground that it would allow the funding of large current account deficits in the face of a balance of the payment crisis. The argument of Sinn and Wollmershäuser (2011) is thus that the ECB liquidity – as a result of the changed collateral policy – had an impact on allocation of consumption and investment.
- While it is true that without ECB liquidity the adjustment of the current accounts in the periphery would have been more rapid, the ECB policy was still legitimate. In particular, the changes in the collateral framework were necessary for the ECB to fulfil its treaty-based mandate of providing liquidity to solvent banks and safeguarding financial stability. Without lowering the minimum required rating, banks in a number of countries would have been without access to the ECB liquidity window. Ultimately, the decision to stop granting liquidity to banks in one country of the monetary union is outside the scope of monetary policy. The creation of a banking union will mitigate some of the problems related to collateral policy. Overall, the ECB appropriately adapted its collateral framework and policy in the course of the crisis.

## 1. INTRODUCTION

Open market operations represent the key monetary policy instruments used by the ECB. All Eurosystem credit operations, including open market operations, need to be based on adequate collateral. This means that when extending loans, the central bank requires collateral (assets pledged as security) to protect its balance sheet against the risk of default by the borrower (credit risk). Monetary policy in the euro area is largely operated through lending central bank money to banks with fixed maturities and at a certain interest rate against collateral. Among the most important examples are the main refinancing operations (MRO) and longer-term refinancing operations (LTROs)<sup>1</sup>. Banks pledge collateral against these loans. Figure 1 below shows the composition of the ECB balance sheet. The main driver of changes in the size of the balance sheet are liquidity operations, for which collateral is needed.

**Figure 1: Assets of the European Central Bank (EUR bn)**



**Source:** ECB and Bruegel calculations

<sup>1</sup> According to the "Guideline of the ECB of 20 September 2011 on monetary policy instruments and procedures of the Eurosystem" all Eurosystem credit operations (i.e. liquidity-providing monetary policy operations and intraday credit) have to be based on adequate collateral. Liquidity-providing monetary policy operations include the main refinancing operations and the longer-term refinancing operations. The Eurosystem has developed a single framework for eligible collateral common to all Eurosystem credit operations (also referred to as the 'Single List').



The definition of what is eligible as collateral is therefore of central importance for the implementation of monetary policy in the euro area. The Eurosystem introduced a single list of eligible collateral in January 2007.<sup>2</sup> A collateral framework consists of a number of central considerations. Its central aim is to protect the balance sheet of the ECB and thereby the shareholders and ultimately the tax payers against undue risks. In the liquidity operations, the counterpart to the ECB is the bank that receives liquidity. The bank is required to return the liquidity after a certain period to the ECB, at which point it will recover the collateral. Only when the bank is unable to re-pay the liquidity it previously received, the ECB can use the collateral to prevent making a loss. The value of the collateral should therefore reflect the amount of liquidity given to the bank. The aim of the collateral framework is to define a framework that provides adequate protection against losses to the Eurosystem while at the same time defining enough eligible collateral so that solvent banks can access enough central bank liquidity. The framework is defined in the document "The implementation of monetary policy in the euro area: General documentation on Eurosystem monetary policy instruments and procedures"<sup>3</sup> and subsequent updates.

Adequate access to ECB liquidity is of vital importance for banks and for the implementation of monetary policy. Banks need access to central bank liquidity for their daily operations. In particular, when interbank markets are under stress, the banking system relies heavily on central bank liquidity. The way the ECB regulates the access to central bank liquidity is, in turn, a central part of monetary policy. The collateral framework plays an important role in this regard.

The collateral framework of the Eurosystem is from time to time subject to political and academic critique. Buitert and Sibert (2004) have perhaps been among the most vocal and early critiques arguing that the collateral treatment of sovereign debt by the Eurosystem was at least in part responsible for the small sovereign yield differentials in the euro area. In particular, they argue that despite the differences between triple A and single A rating, all sovereign debt was accepted as collateral at the same haircut. By not properly differentiating the liquidity risk, the Eurosystem would implicitly weaken fiscal discipline. More recent critique focussed on the role of the collateral system in allowing to finance capital withdrawals from the euro area periphery during the recent balance of payment crisis.

In this note, we review the collateral framework of the Eurosystem and how it has developed throughout the crisis. We then add some considerations as regards the potential impact of the collateral framework on pricing and asset allocations before concluding.

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<sup>2</sup> Before that date, the collateral framework was divided in two tiers. The first tier consisted of marketable debt instruments that have uniform eligibility criteria for the euro area countries set by the ECB. Tier 2 consisted of assets that were of particular importance for national financial markets. The eligibility criteria were set by the national central banks. In January 2007, the Eurosystem moved to a single collateral list. German banks were keen on including bank loans in the definition of collateral. See Bundesbank, monthly bulletin, April 2006 [http://www.bundesbank.de/Redaktion/EN/Downloads/Publications/Monthly\\_Report\\_Articles/2006/2006\\_04\\_eligible\\_collateral.pdf?\\_\\_blob=publicationFile](http://www.bundesbank.de/Redaktion/EN/Downloads/Publications/Monthly_Report_Articles/2006/2006_04_eligible_collateral.pdf?__blob=publicationFile)

<sup>3</sup> Guideline ECB/2011/14

## 2. THE CHANGING COLLATERAL FRAMEWORK OF THE ECB

The main parameters for a collateral system are the definition of which assets are acceptable as collateral, what is the required rating of assets that to be accepted as collateral, and what is the imposed haircut on the market value of the asset. In the course of the crisis, the ECB adapted all three criteria of the collateral framework.

Table 1 summarizes the asset classes that the Eurosystem and other major central banks accept as collateral. The ECB accepts a greater variety of assets than other central banks. The Fed, for example, only accepts central government bonds and bonds of public sector institutions other than central governments. This is sufficient for the Fed to provide liquidity to the US banking system. In the euro area, in contrast, the banking system is not only much larger than in the US, it is also much more heterogeneous and embedded in 18 different national (legal and historical) systems. A broader definition of collateral is therefore necessary.

**Table 1: Asset-classes eligible as collateral for major central banks**

Collateral	Eurosystem	BoE	Riksbank	SNB	Fed	BoJ
<b>Marketable assets</b>						
Debt instruments issued by:						
Central governments	•	•	•	•	•	•
Central banks	•	•	•	•		
Public sector institutions other than central governments	•	•	•	•	•	•
Supranational institutions	•	•	•	•		•
Credit institutions (covered bonds)	•	•	•	•		
Credit institutions (excluding covered bonds)	•	•		(•)		
Corporations (other than credit institutions)	•	•	•	•		•
Asset-backed securities (ABS)	•	•				•
Equities						
Money market funds						
Gold						
<b>Non-marketable assets</b>						
Credit claims (bank loans)	•					•
Non-marketable retail mortgage-backed debt instruments	•	•				
<b>Cash as collateral</b>						
Cash including fixed-term deposits from eligible parties	•					

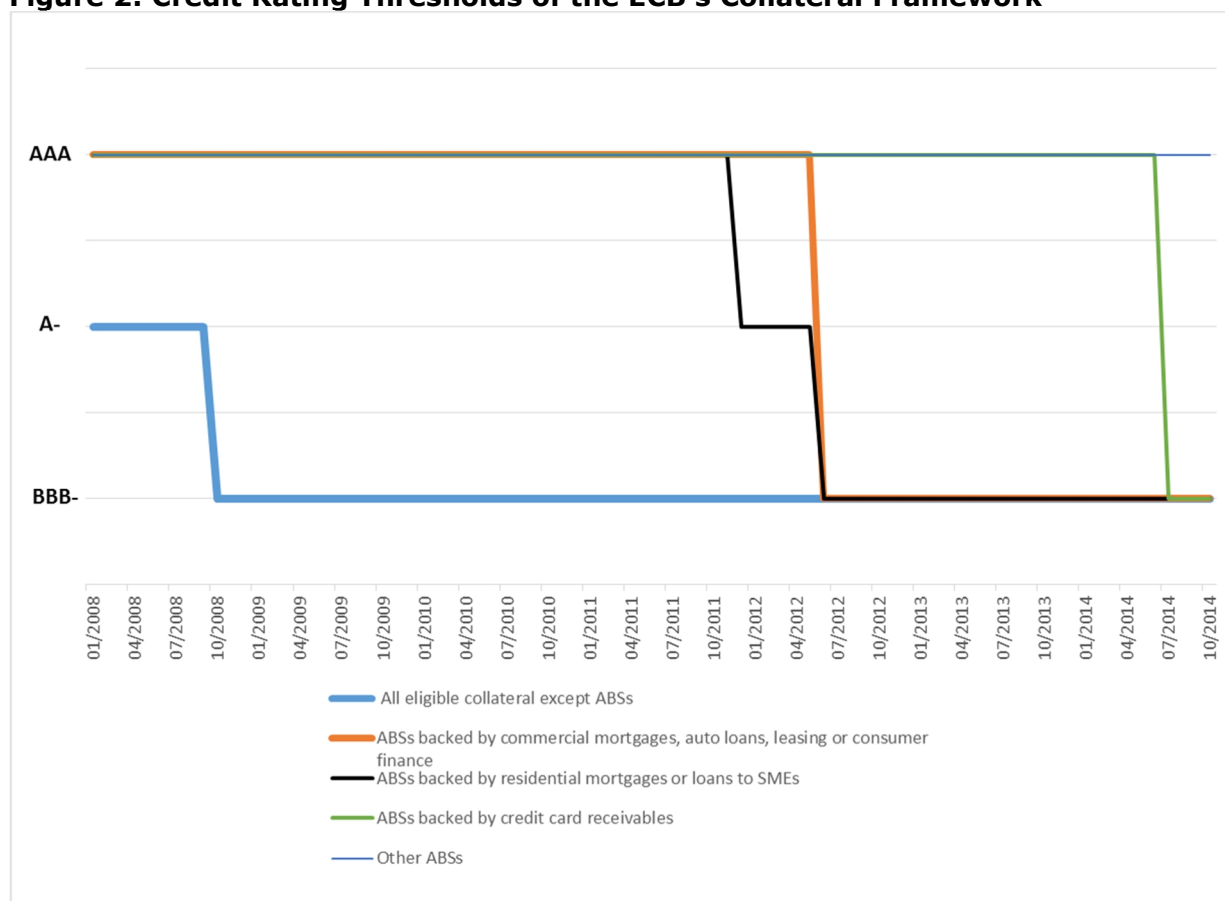
**Source:** ECB (2013), Collateral eligibility requirements: a comparative study across specific frameworks, July 2013 (<http://www.ecb.europa.eu/pub/pdf/other/collateralframeworksen.pdf>)

The basic idea of the collateral framework is that lower-rated collateral is only accepted against higher haircuts. While liquidity is only provided at the market value of the asset, thereby taking into account higher default risks as priced in the markets, the larger haircut for lower rated collateral compensates for the larger risk of changes in valuation that lower-rated collateral represents for the Eurosystem as well as the higher liquidity risk of these assets.

The tables A1 and A2 in the annex describe the different categories of collateral according to rating and liquidity and the haircut that is applied to the different assets. As can be seen, the lower the rating, the bigger the haircut. For example, central government debt with the best rating and a maturity of 3-5 years would only be subject to a minimal haircut of 1.5-2.5%. Government debt rated between BBB\* and BBB-, in contrast, would be subject to a haircut of 9-10%.

In the course of the crisis, the Eurosystem substantially adapted its collateral framework to ensure adequate access to liquidity. The ECB had to adapt the collateral standards in order to be able to provide sufficient liquidity to banks that were experiencing liquidity shortages. In particular, when the interbank market froze, the ECB had to fulfil its role as a lender of last resort and provide the banking system with adequate liquidity.

More specifically, the ECB adapted its rating standards as well as the haircuts that are applied to collateral. As the availability of top-rated collateral in the banking system fell, the ECB lowered the minimum required rating. To compensate for the increasing riskiness (i.e. increased volatility during the crisis), the ECB also increased the applied haircuts.

**Figure 2: Credit Rating Thresholds of the ECB's Collateral Framework**

**Source:** European Central Bank

**Note:** Credit ratings following Fitch and Standard and Poor's rating system

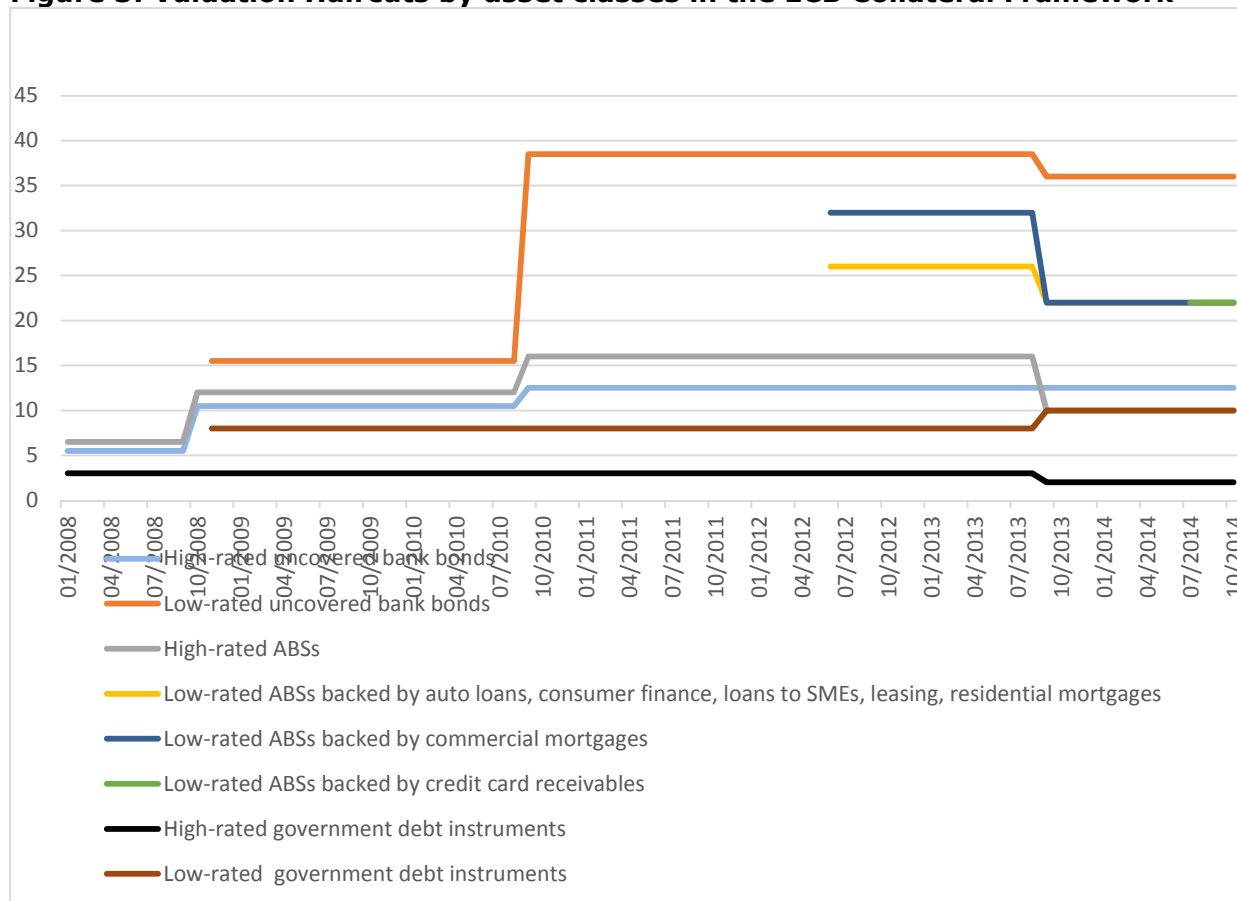
Figure 2 shows the developments of credit rating thresholds of the ECB's collateral framework since 2008 for a number of assets. The following major steps can be noted:

- At the start of the crisis:
  - All eligible collateral except ABSs: credit rating threshold at A-
  - All ABSs: credit rating threshold at AAA
- 22 October 2008: credit rating threshold of all eligible collateral except ABSs lowered to BBB- as a temporary measure. It was decided on 8 April 2008 that this measure was to be made permanent (ECB/2011/14)
- 8 December 2011: credit threshold of ABSs whose underlying assets include either only residential mortgages or only loans to SMEs reduced to A- at issuance and at any time subsequently (ECB/2011/25)
- 20 June 2012: credit threshold of ABSs whose underlying assets include auto loans, leasing, commercial mortgages, consumer finance, residential mortgages or loans to SMEs reduced to BBB- at issuance and at any time subsequently
- 9 July 2014: credit threshold of ABSs whose underlying assets include auto loans, leasing, commercial mortgages, consumer finance, residential mortgages, loans to SMEs or credit card receivables reduced to BBB- at issuance and at any time subsequently (ECB/2014/31)

The ECB significantly changed the haircuts it applies to several types of collateral. Figure 3 shows the changes in the haircut for a number of marketable assets. The haircut for high rated uncovered bank bonds (with 5-7 residual maturity) and ABSs was increased by about 150% to a haircut of 12.5% and 16% respectively in September 2010. As already

mentioned, the credit threshold of all eligible collateral except ABSs was lowered to BBB- in 2008, conditional on an additional 5 % haircut. Certain types of low-rated ABSs became eligible as collateral only in 2012 or later. With the recent improvement in market sentiments, the size of the haircuts applied to uncovered bank bonds, high-rated ABSs and some types of low-rated ABSs was lowered again.

**Figure 3: Valuation Haircuts by asset classes in the ECB Collateral Framework**



**Source:** European Central Bank

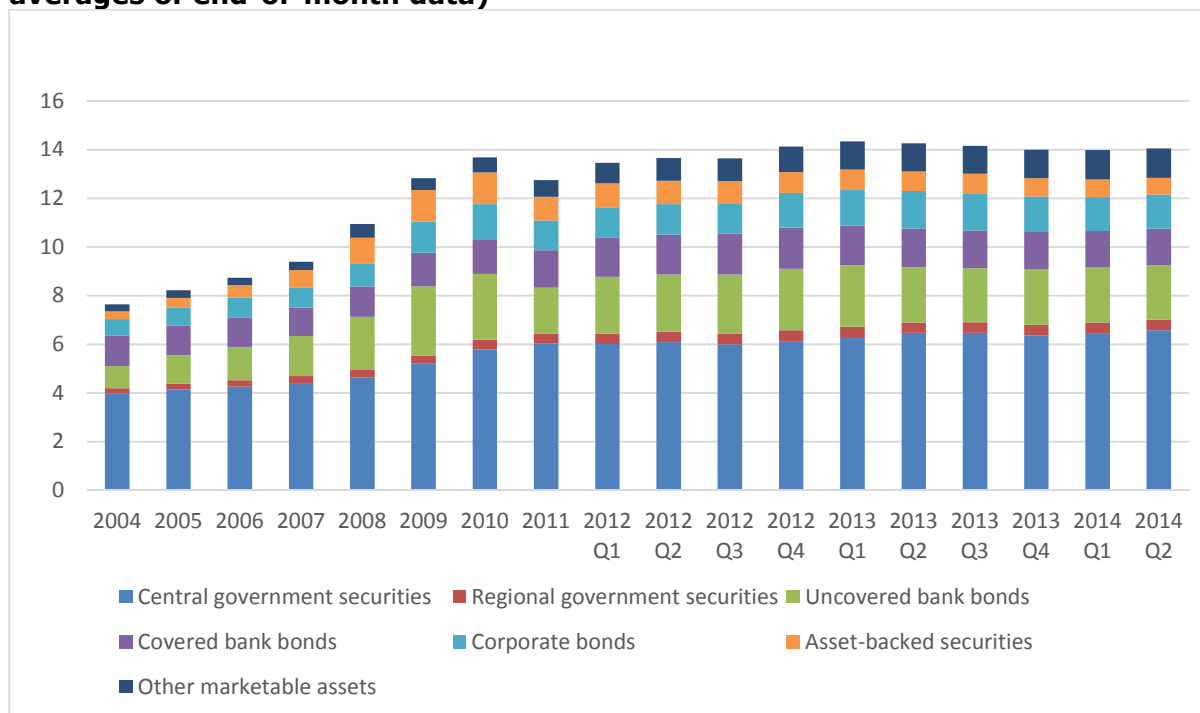
**Notes:** The haircuts of uncovered bank bonds and government debt instruments shown are those for assets with a residual maturity of 5-7 years. Haircuts shown are for fixed coupon assets. High-rated: AAA to A-. Low-rated: BBB+ to BBB-. Lines are not continuous because those asset classes were not eligible as collateral beforehand. Individual asset-backed securities, covered bank bonds (jumbo covered bank bonds, traditional covered bank bonds and other covered bank bonds) and uncovered bank bonds that are theoretically valued in accordance with Section 6.5 of the "Guidelines on monetary policy instruments and procedures of the Eurosystem" are subject to an additional valuation haircut. This haircut is directly applied at the level of the theoretical valuation of the individual debt instrument in the form of a valuation markdown of 5 %

For government bonds, the Eurosystem modified the applied haircuts only slightly. At the start of the crisis only high-rated government debt instruments were accepted as collateral (remember that the minimum threshold on all marketable assets except ABSs was A-). These were given a valuation haircut of 3% for assets with a 5-7 year residual maturity. When lower-rated government bonds became eligible this was at an additional 5% haircut, at 8%. These haircuts remained constant until September 2013 when the haircuts of high-rated and lower-rated government bonds were changed to 2% and 10% respectively. However, for crisis countries, the ECB changed its collateral framework a number of times to allow government debt to become accepted as collateral again. Greek government bonds became eligible despite being below the BBB- minimum rating subject to a special haircut

in December 2012.<sup>4</sup> In May 2013, a similar decision was taken for Cypriot debt, a decision that could be reversed already in July thanks to the rating upgrade.<sup>5</sup>

Figures 4 and 5 show the availability and use of collateral in the Eurosystem. As can be seen, the eligible collateral amounts to 14 trillion euros, the largest part of it being central government bonds.

**Figure 4: Eligible marketable assets by asset type (EUR tn, nominal amounts, averages of end-of-month data)**

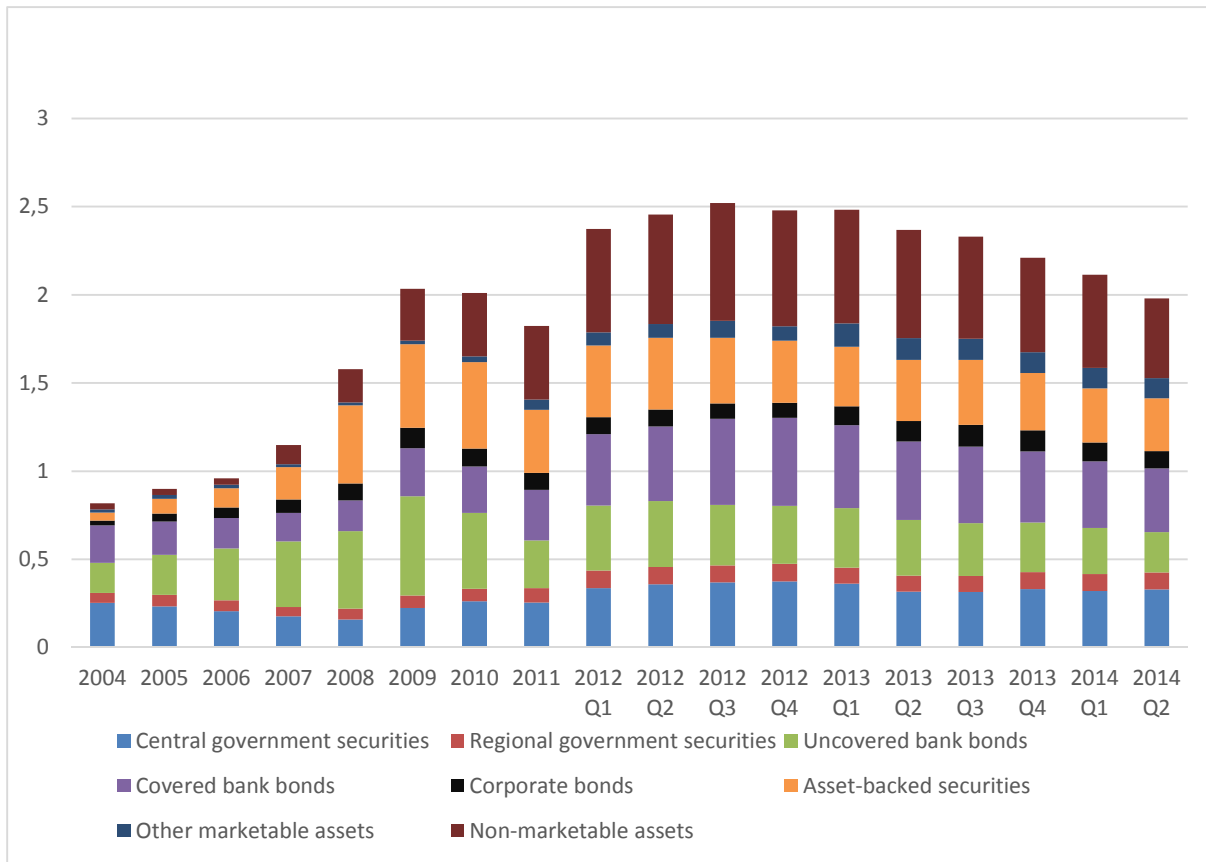


Source: European Central Bank

<sup>4</sup> In the case of Greece, Greek government bonds were falling below the rating threshold necessary to be accepted as collateral. The ECB therefore announced a change to the eligibility criteria for Greek government debt specifically and applied a special haircut on 19 December 2012. See <http://www.ecb.europa.eu/press/pr/date/2012/html/pr121219.en.html>

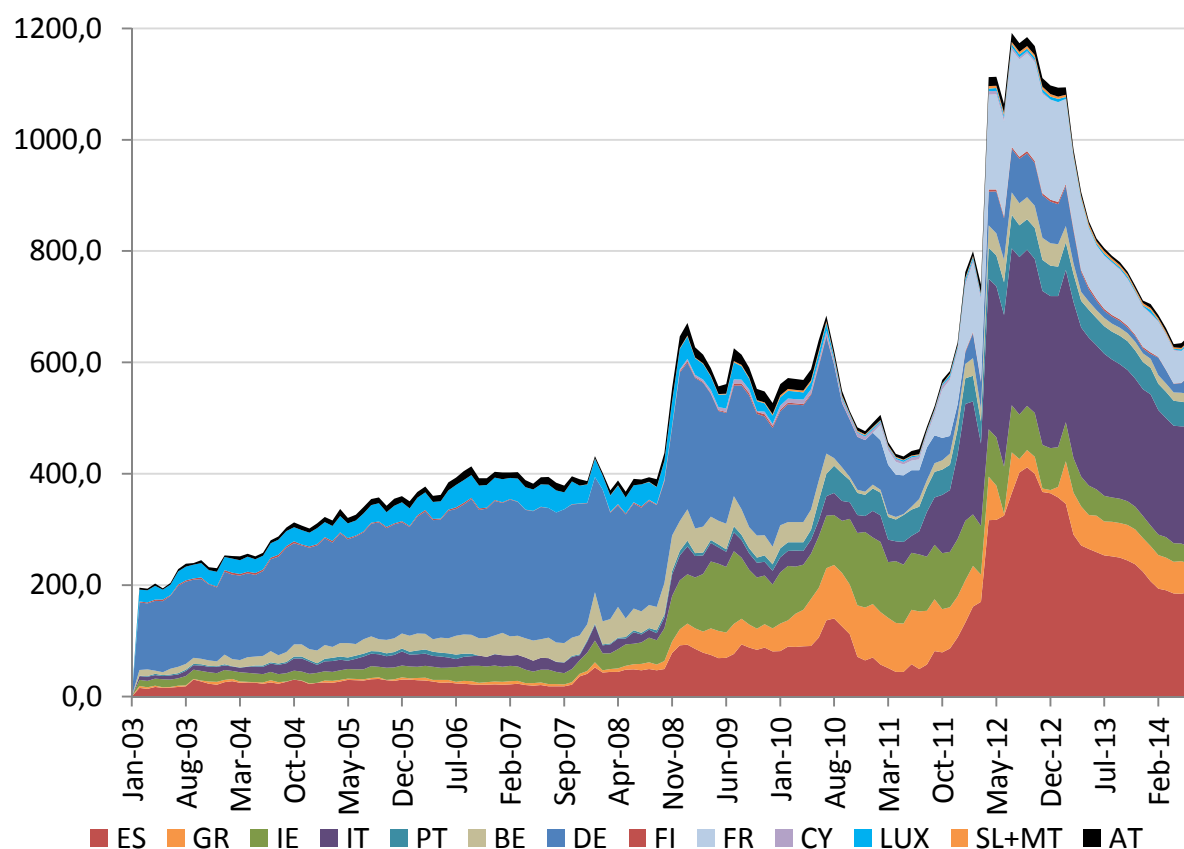
<sup>5</sup> [https://www.ecb.europa.eu/press/pr/date/2013/html/pr130502\\_3.en.html](https://www.ecb.europa.eu/press/pr/date/2013/html/pr130502_3.en.html) and <https://www.ecb.europa.eu/press/pr/date/2013/html/pr130705.en.html>

**Figure 5: Use of collateral by asset type (EUR tn, after valuation and haircuts, averages of end-of-month data)**



Source: European Central Bank

In the course of the crises, the allocation of ECB liquidity across countries changed substantially. More and more ECB liquidity went in the banking systems of weaker countries. Figure 6 shows that the amount of liquidity in those countries increased substantially until the summer of 2012 when the announcement of the OMT programme calmed markets. The share of liquidity of banks in five countries of the euro area (IT, ES, PT, IE, GR) in total ECB liquidity currently exceeds 80% of the total liquidity.

**Figure 6: Country Use of Eurosystem Main and Longer-Term Refinancing Operations (in EUR bn, 01/2003-07/2014)**

**Source:** updated from Pisani-Ferry and Wolff (2012) using data from the ECB and national central banks.

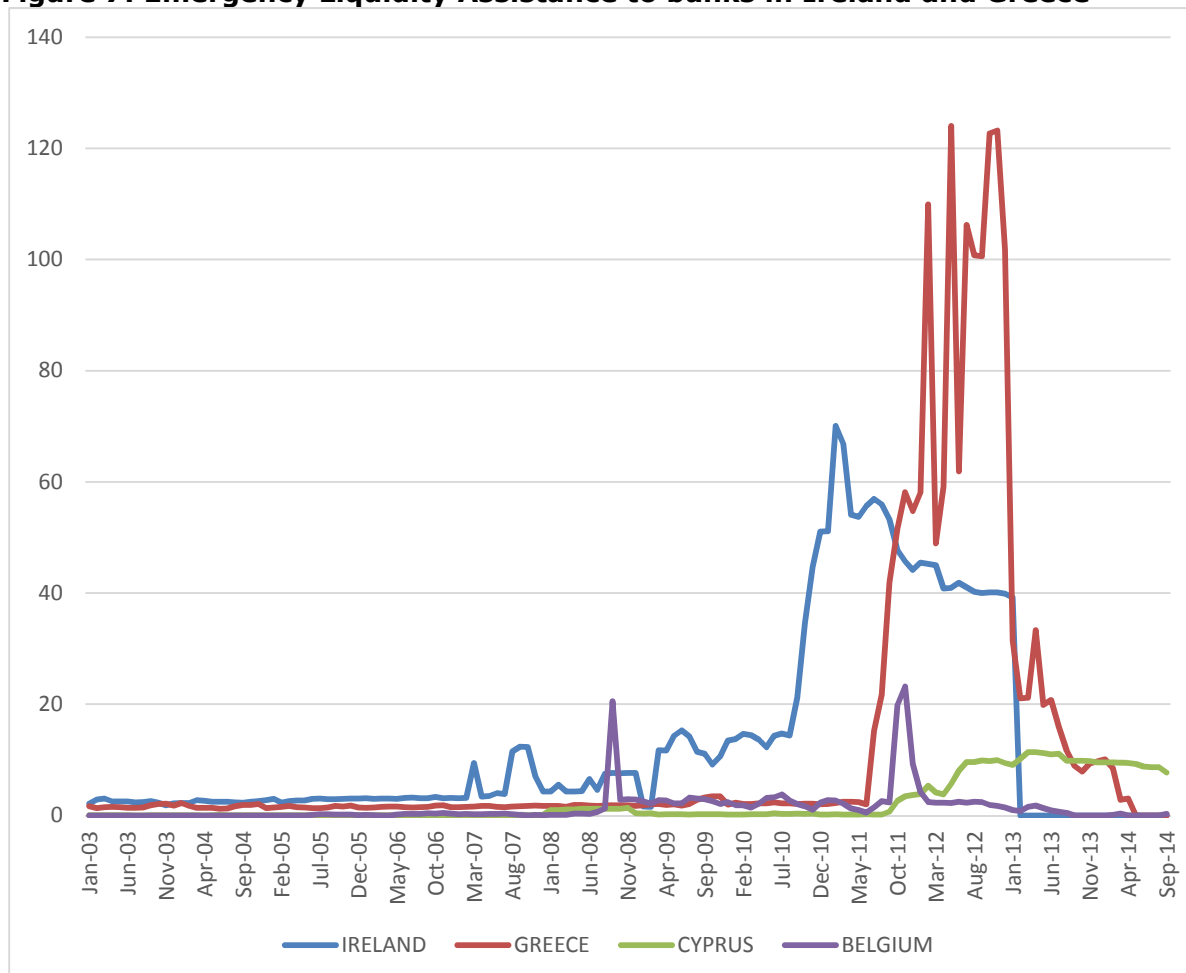
In the crises countries, the Eurosystem was experiencing the particular difficulty of having to provide liquidity to banks of countries that were at the brink of insolvency and had to ask for financial assistance. In these countries, the rating of assets that were held by the banking system often dropped significantly, which put severe limits on the ability of these banks to access ECB liquidity directly. At the same time, the ECB did not want to lower collateral standards even further as it was feared that the ECB would take too much risk on board. The solution to this problem was the so-called "ELA", or "Emergency Liquidity Assistance".

Emergency liquidity assistance (ELA) needs to be approved by the ECB governing council. The approval of the governing council is needed as ELA operations influence the amount of liquidity available in the euro area and therefore the monetary policy stance. ELA is essentially provided because of lack of available appropriate collateral for normal monetary policy operations. In ELA, the liquidity is given by the national central bank to banks resident in the country against lower quality collateral. For example, the collateral could be below-credit-threshold sovereign bonds for example. If the bank that had received liquidity is unable to redeem the liquidity to the national central bank, then the national central bank uses the low quality collateral to avoid losses. If there are losses, those losses remain with the national central bank and are not losses of the Eurosystem.



Figure 7 shows the developments of ELA to banks in Ireland, Greece, Cyprus and even Belgium, which needed special liquidity during its banking crisis. As can be seen, the amounts of liquidity used with the instrument were quite substantial at the height of the respective crises. This also reveals that the collateral framework did impose limits on the standard access to liquidity in a number of countries.

**Figure 7: Emergency Liquidity Assistance to banks in Ireland and Greece**



**Source:** Bank of Greece, Central Bank of Ireland, Central Bank of Cyprus, Central Bank of Belgium

*Note: Since ELA operations aren't very transparent, the amounts of Emergency Liquidity Assistance are proxied by the category "Other Assets" in the respective national central banks' balance sheets before April 2012, and the category "Other claims on euro area credit institutions denominated in euro". This change was due to a harmonisation of data publication in the Eurozone. In the case of Belgium we proxy ELA operations only by the "Other claims on euro area credit institutions denominated in euro" category.*

### 3. THE IMPACT OF COLLATERAL FRAMEWORK ON ASSET ALLOCATIONS AND PRICES: CONCLUDING REMARKS

Only a small literature discusses the impact of the collateral framework on asset allocation and prices in the euro area. In general, collateral is influencing market prices as in an exchange between two parties, the collateral will reduce information uncertainties. Geanakoplos and Zame (2007) show that, in a general equilibrium model, the availability of collateral in an economy with default possibilities affects the prices in a number of markets as well as the allocation of assets. Brumm et al (2013) argue along similar lines. Chapman et al (2011) develop a general framework for central bank haircut policy and argue that the haircut provides an insurance against two types of risk: insurance against liquidity risk and insurance against downside risk of the price of the collateral. Setting a haircut involves a trade-off between the liquidity needs of the counterparties and portfolio choices. The Bank of Canada (2011) described how the collateral system is based on the mark-to-market principle and on applied haircuts. The report argues that haircuts can affect asset allocations and that during extreme crises, the central bank should actually lower haircuts in order to mitigate the shortage of liquidity.

In principle, the aim of the collateral framework of the Eurosystem is to avoid distorting prices and allocation. The basic idea is that assets are priced in markets and that the collateral framework does not alter the prices. The former chief economist of the ECB, Issing (2005), argued that

*"All financial assets offered as collateral, including government bonds, are valued daily at market prices. In its collateral policy, the ECB therefore relies on the judgment of the market to distinguish among government bonds and, implicitly, the fiscal behaviour of member states. Moreover, the ECB sets credit standards for the eligibility of assets as collateral and is bound by the Treaty not to distinguish between government and private issuers in the implementation of these standards."* Issing therefore argues that markets decide on the prices of private as well as public assets and the ECB provides liquidity only against the market price of those assets.

Buiter and Sibert (2005) contradict this view and argue that the fact that all sovereign debt at the time was placed in the same category not only suggested to markets that sovereign debt has equal solvency but also that it has equal liquidity. As the Eurosystem is a large player in the Euromarkets, this signal in fact increased the liquidity of Greek and other bonds substantially and thereby lowered spreads. The artificial liquidity enhancement, they argue, would matter for the valuation and the valued credit risk of sovereign debt. While such a liquidity effect is possible, it is doubtful that this was one of the main drivers of low sovereign bond spreads prior to the crisis. In fact, liquidity risk premia are estimated to be rather small compared to the more important solvency risk premia. The low differentiation of sovereign yields is therefore rather a sign of a market assessment that solvency risks were comparable.

With the downgrade of a number of sovereign debt instruments in the course of the crisis, the Eurosystem had to adapt its collateral framework in order to allow banks to have sufficient eligible collateral and keep access to liquidity. Several sovereign debt instruments are now subject to larger haircuts than the top-rated sovereign debt instruments to reflect their lower liquidity and their greater market price volatility.

Anecdotal evidence from rating agencies suggests that the collateral framework as such does not influence the rating of banks. However, banks that rely on large amounts of ECB

liquidity receive a worse rating *ceteris paribus*.<sup>6</sup> This should not, however, be confounded with the impact of the collateral framework as such. On the contrary, the lowering of collateral standards was done in order to support banks in their access to liquidity.

The ECB had to significantly adapt its collateral framework when banks in the euro area periphery found it increasingly difficult to access liquidity in the interbank markets. This was particularly the case when the sovereign debt crisis was at its peak and investors and banks did not only fear that governments could default on their debt but also feared that countries could leave the euro and re-introduce national currencies again. In fact, when sovereign ratings fell below A-, a change in the collateral framework was necessary as most other assets in the same economy would have a rating below the government debt rating. In this particular situation, the ECB acted according to its treaty-based mandate, namely to provide liquidity to the banking system and prevent a financial crisis. It did so in a prudent manner by accepting collateral only at market price and applying a larger haircut for less credit-worthy assets. Limits on collateral availability would have implied limits on Target 2 balances<sup>7</sup>, which would have meant that even solvent banks would have had to default due to unavailable liquidity.<sup>8</sup> This would have violated a fundamental principle of central banking, which is to provide abundant liquidity to solvent banks in order to prevent financial crises. Limits on liquidity provisioning would thus not only have resulted in bank defaults, but could have triggered a major financial crisis with possible exits of countries from the euro.

The adaptation in the collateral framework was necessary in order to allow access to finance during the severe balance of payments crisis of the euro area periphery during 2010-12. This policy has been criticized by for example Sinn and Wollmershäuser (2011) as a de-facto fiscal bail-out. The authors argue that the ECB liquidity provisioning in fact permitted a slower adjustment of current accounts – in other words, the collateral policy has an impact on consumption, investment and allocation. Merler and Pisani-Ferry (2012) also interpret the capital outflows as a balance of payments crisis and argue that a tightening of collateral standards could have limited the Target 2 increases. However, such a step could not have been undertaken quickly without endangering the stability of the financial system.

The altered distribution of liquidity in the Eurosystem can, however, also be interpreted as a normal liquidity operation providing funds to banks that experience a liquidity run. As the banks are judged to be solvent by the relevant supervisor, such liquidity provisioning is a normal part of central bank action. Some evidence suggests that banks with questionable solvency used the collateral framework for continued access to liquidity with a view of delaying insolvency recognition. For example, Monte dei Paschi issued state guaranteed bonds that were then repurchased to be used as collateral for transactions with the Eurosystem. This example shows that the Eurosystem faced a very difficult situation as it had to rely on local supervisor's assessment of the solvency of banks in its liquidity operations. The creation of a common supervision was therefore of great importance not least for the liquidity operations of the ECB.

Overall, the ECB fulfilled its treaty-based mandate as a central bank for the entire euro area by adapting its collateral framework during the crisis. If it had acted differently, it would have put limits on access to liquidity and ultimately on the ability of countries to

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<sup>6</sup> See p. 37 of Standard and Poors (2011), *Banks: rating methodology and assumptions*, November 9 2011.

<sup>7</sup> The Target 2 system is the payment system of the euro area. During the crisis, large creditor and debtor positions built up for different countries of the euro area. These balances reflected the amount of liquidity provided by the central bank on which the local banking system had to rely.

<sup>8</sup> See Wolff (2011), *Lack of collateral will stop euro flows*, FT, June 8 2011, <http://www.ft.com/intl/cms/s/0/8079d8cc-9179-11e0-b1ea-00144feab49a.html?siteedition=intl#axzz3IUuQ8yWD>

remain in the euro – a choice that is outside its mandate.<sup>9</sup> With its changes in collateral policy, it did not unduly influence asset allocations and prices, nor did it take on board excessive risks thanks to haircuts and mark-to market policy. Completing the banking union is desirable to reduce the risk for the Eurosystem in its liquidity operations.

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<sup>9</sup> In the case of the Cypriot programme, the ECB arguably endangered the continuity of the euro by accepting capital controls with the aim to prevent a further built-up of Target 2 balances. For a critique, see Wolff (2013), Capital controls in Cyprus will put euro at risk, Financial Times, March 25, 2013, <http://www.ft.com/intl/cms/s/0/dc0159dc-9301-11e2-b3be-00144feabdc0.html?siteedition=intl> and “Capital controls in Cyprus: the end of Target 2?”, Bruegel Blog 23 March 2013, <http://www.bruegel.org/nc/blog/detail/article/1054-capital-controls-in-cyprus-the-end-of-target2/>

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## APPENDIX

### Table A1: The ECB's Liquidity Categories

Liquidity categories for marketable assets <sup>(1)</sup>

Category I	Category II	Category III	Category IV	Category V
Central government debt instruments	Local and regional government debt instruments	Traditional covered bank bonds	Credit institution debt instruments (unsecured)	Asset-backed securities
Debt instruments issued by NCBs <sup>(2)</sup>	Jumbo covered bank bonds <sup>(3)</sup>	Debt instruments issued by non-financial corporations and other issuers <sup>(4)</sup>	Debt instruments issued by financial corporations other than credit institutions (unsecured)	
Category I	Category II	Category III	Category IV	Category V
	Agency debt instruments <sup>(4)</sup>	Other covered bank bonds <sup>(5)</sup>		
	Supranational debt instruments			

Source: European Central Bank



**Table A2: Valuation haircuts applied to collateral****LEVELS OF VALUATION HAIRCUTS APPLIED TO ELIGIBLE MARKETABLE ASSETS**

		Haircut categories								
Credit quality	Residual maturity (years)	Category I		Category II (*)		Category III (*)		Category IV (*)		Category V (*)
		fixed coupon	zero coupon	fixed coupon	zero coupon	fixed coupon	zero coupon	fixed coupon	zero coupon	
Steps 1 and 2 (AAA to A-) (**)	0-1	0,5	0,5	1,0	1,0	1,0	1,0	6,5	6,5	10,0
	1-3	1,0	2,0	1,5	2,5	2,0	3,0	8,5	9,0	
	3-5	1,5	2,5	2,5	3,5	3,0	4,5	11,0	11,5	
	5-7	2,0	3,0	3,5	4,5	4,5	6,0	12,5	13,5	
	7-10	3,0	4,0	4,5	6,5	6,0	8,0	14,0	15,5	
	> 10	5,0	7,0	8,0	10,5	9,0	13,0	17,0	22,5	
		Haircut categories								
Credit quality	Residual maturity (years)	Category I		Category II (*)		Category III (*)		Category IV (*)		Category V (*)
		fixed coupon	zero coupon	fixed coupon	zero coupon	fixed coupon	zero coupon	fixed coupon	zero coupon	
Step 3 (BBB+ to BBB-) (**)	0-1	6,0	6,0	7,0	7,0	8,0	8,0	13,0	13,0	Not eligible
	1-3	7,0	8,0	10,0	14,5	15,0	16,5	24,5	26,5	
	3-5	9,0	10,0	15,5	20,5	22,5	25,0	32,5	36,5	
	5-7	10,0	11,5	16,0	22,0	26,0	30,0	36,0	40,0	
	7-10	11,5	13,0	18,5	27,5	27,0	32,5	37,0	42,5	
	> 10	13,0	16,0	22,5	33,0	27,5	35,0	37,5	44,0	

(\*) Individual asset-backed securities, covered bank bonds (jumbo covered bank bonds, traditional covered bank bonds and other covered bank bonds) and uncovered bank bonds that are theoretically valued in accordance with Section 6.5 of Annex I to Guideline ECB/2011/14 are subject to an additional valuation haircut. This haircut is directly applied at the level of the theoretical valuation of the individual debt instrument in the form of a valuation markdown of 5 %. Furthermore, an additional valuation markdown is applied to own-use covered bonds. This valuation markdown is 8 % for own-use covered bonds in CQS1&2 and 12 % for own-use covered bonds in CQS3.

(\*\*) Ratings are as specified in the Eurosystem's harmonised rating scale, published on the ECB's website at [www.ecb.europa.eu](http://www.ecb.europa.eu)

Source: European Central Bank

**Abbreviations:**

ABS: asset backed securities  
 ECB: European Central Bank  
 ELA: Emergency Liquidity Assistance  
 EU: European Union  
 LTRO: Long Term Refinancing Operation  
 MRO: Main refinancing operations  
 TLTRO: Targeted longer term refinancing operations





**DIRECTORATE GENERAL FOR INTERNAL POLICIES**  
**POLICY DEPARTMENT A: ECONOMIC AND SCIENTIFIC POLICY**

# **Eurosystem collateral policy and framework: Post-Lehman time as a “new collateral space”**

**Ansgar BELKE**

## **IN-DEPTH ANALYSIS**

### **Abstract**

Collateral plays a central role in monetary policy. In recent years, its importance has increased as uncollateralised inter-bank borrowing has gradually been replaced by collateralised central bank lending. This has in turn affected collateral availability and the need for high-quality assets. The European Central Bank has reacted to this development by creating a series of different measures to broaden collateral availability, including changing the eligibility rules (e.g., reducing rating thresholds for certain asset classes) or extending the eligible assets (e.g., allowing national central banks to accept bank loans as collateral). In the context of these developments, this note assesses and comments on various aspects of the Eurosystem collateral policy and overall framework. In particular, it examines the economic implications of the current ECB collateral policy for asset allocation and relative asset price developments from a cross-country perspective.

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## EXECUTIVE SUMMARY

Since the height of the financial crisis, banks have been able to borrow essentially unlimited amounts of money from the ECB. The only condition: they have to have adequate collateral - either securities or their own securitized loans - that they can sell to the ECB. Since collateral is the only remaining limit on banks' access to the ECB vault, collateral policy has great practical as well as symbolic significance: it is the main indicator of whether the central bank is following uniform and therefore credible rules, or whether banks are always getting whatever amount of money they want.

Collateral plays a central role in monetary policy. In recent years, its importance has increased as uncollateralised inter-bank borrowing has gradually been replaced by collateralised central bank lending. This has in turn affected collateral availability and the need for high-quality assets. The European Central Bank has reacted to this development by creating a series of different measures to increase collateral availability, including changing the eligibility rules (e.g., reducing rating thresholds for certain asset classes) or extending the eligible assets (e.g., allowing national central banks to accept bank loans as collateral). In the context of these developments, this note assesses and comments on various aspects of the Eurosystem collateral policy and overall framework. In particular, it examines the economic implications of the current ECB collateral policy for asset allocation and relative asset price developments from a cross-country perspective.

It shows that the Eurosystem's collateral framework has produced two major but opposing effects over time. First, the Eurosystem reached its quantitative target of increasing the available quantum of collateral. Second, this in turn worsened the quality of the ECB's pool of collateral for refinancing credits. What is more, the much greater qualitative broadening of the collateral base since the collapse of Lehman Brothers compared to its quantitative extension stands in sharp contrast to calls for good collateral. The note argues that large parts of this pattern may be well explained by the lender of last resort function of the ECB. However, it also identifies specific technical areas - such as the calculation of adequate haircuts - in which the ECB's procedure is not sufficiently transparent. As usual, the devil is in the details: issues for discussion in the context of the Monetary Dialogue include the problem of retained securities and own use of collateral, arbitrage possibilities in the collateral framework, the relationship between collateral framework and market functioning, the pivotal role of one small rating agency in determining the refinancing conditions of European banks as well as the relation between collateral policies and the scope of markets for risky assets. A general problem is that exiting from these exceptional collateral policies will be as difficult as exiting from unconventional monetary policies in general.

This paper also identifies a trade-off between short- to medium-term efficiency of unconventional monetary policy effectiveness and risk aversion of the ECB in terms of collateral policy. One example of a governance challenge in the field of collateral policies is that national central banks have in the past sometimes been too lenient with respect to the valuation and the eligibility of collateral. There is the risk that both the NCBs and market participants try to circumvent the ECB and Eurosystem collateral rules. In this regard, the NCBs should be prevented from exploiting loopholes of the collateral framework with the intention to unduly promote their domestic commercial banks. The paper makes also some considerations about what the collateral framework in general will look like after the crisis.

## 1. INTRODUCTION

Collateral plays a key role in monetary policy.<sup>1</sup> Since Lehman and the European debt crisis, its importance has increased even further as uncollateralised inter-bank borrowing has been replaced by collateralised central bank lending, which in turn has reduced collateral availability and increased the need for high-quality assets (Eberl and Weber, 2014, p. 1). Moreover, collateral policy determines the attractiveness of certain asset classes such as covered bonds and asset-backed securities which in turn are the (purchase) target of the ECB's most recent unconventional monetary policy measures (Altomonte and Bussoli, 2014).

Over the years, the European Central Bank (ECB) has reacted to this development by introducing a variety of *specific measures designed to increase the availability of collateral*. These have included *changing the eligibility rules* (e.g., reducing rating thresholds for certain asset classes) and *extending the eligible assets* (e.g., allowing national central banks to accept bank loans as collateral).<sup>2</sup>

The ECB database contains about 40,000 items of eligible collateral that have to be valued on a daily basis. This is partly for historical reasons: the broad collateral framework has been designed to make sure that commercial banks from all member countries are able to benefit from the Eurosystem's refinancing operations. Admittedly, this represents a big challenge, which could become particularly acute in a crisis (ECB, 2013).

How has ECB's collateral policy been developing in recent years? Has liquidity provision been effective? For the latter, the ECB had to ensure that banks were technically able to collateralize the refinancing credit which they obtained from their home country's NCB (Eberl and Weber, 2014, p. 1). Yet this has led to some *clustered shortages* of collateral, and in turn posed the risk of hampering the transmission mechanism in some regions (Åberg, 2013). Collateral criteria thus played a major role during the crisis (see Eberl and Weber, 2014, p. 1, Drechsler et al., 2013, and Bindseil, 2013). The scope of the ECB decision to maintain or even raise collateral availability was to favour those assets whose eligibility would *increase bank lending*, particularly to small- and medium-sized enterprises (SMEs) and private households, i.e. asset-backed securities (ABS) as a securitized form of claims and credit claims as a non-securitized form (Åberg, 2013).

In more general terms, collateral policy has three important aspects. First, when there is stress in the markets, the central bank can counter the threat of collateral scarcity through increasing the eligible assets pool and thereby framing the markets' process of identifying high-quality assets (Levels and Capel, 2012, and BIS Committee on the Global Financial System, 2013). Second, central bank lending (like all other lending) entails non-negligible risks which are in the end shouldered by the public sector and the tax payer. Lending merely in exchange to good collateral could mitigate this problem (Belke and Polleit, 2010, Eberl and Weber, 2014, p. 2, and Tucker, 2009). In the light of the increasing degree of collateral scarcity, the main risk faced by central banks is credit risk. They could therefore define less liquid assets also as eligible collateral. But this *trade-off between liquidity and credit risk* may restrict a central bank's flexibility by tying up parts of its balance sheet (Chailloux, Gray and McCaughrin, 2008b). Third, when policy rates reach the zero lower bound and central banks grant liquidity to an unlimited extent, the eligible collateral

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<sup>1</sup> See, for instance, Bindseil (2013), ECB (2011), pp. 93ff., Chaudron (2008) and Bundesbank (2013), chapter V "Geldpolitische Geschäfte".

<sup>2</sup> For earlier overviews see, for instance, ECB (2013b) and Hofmann (2011).

undoubtedly plays a decisive role in setting the limits of expansionary monetary policy (Bindseil, 2013, p. 26).<sup>3</sup>

Against this background, this paper discusses and assesses various aspects of the Eurosystem's collateral policy and overall framework. In particular, it considers the economic implications of the current ECB collateral policy for asset allocation and relative asset price developments in a cross-country perspective. Of course, an analysis spanning over multiple years cannot be comprehensively but must proceed from an examination of key examples. The collateral policy issues in the euro area are far too complex to be analyzed in a short paper. For a very comprehensive survey on Eurosystem collateral policy discussed in this Briefing paper, I recommend the paper by Eberl and Weber (2014).

The remainder of the paper is organised as follows. Section 2 assesses the guiding principles for the eligibility and use of collateral. Section 3 lists the measures used to increase collateral availability, distinguishing between changes in the eligibility rules and extensions of the set of eligible assets. **Error! Bookmark not defined.**Section 4 assesses the economic implications associated with the current ECB collateral policy. Section 5 concludes.

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<sup>3</sup> Since the start of the financial crisis, the increase in the number of market participants influences the availability of collateral, among them central banks through their outright purchases of high-quality collateral. See, for instance, several previous Briefing papers written by the author himself and Singh (2013).

## 2. ELIGIBILITY AND USE OF COLLATERAL: GUIDING PRINCIPLES

Contrary to its counterparts such as the US Federal Reserve Bank, which tends to work with a very small number of primary dealers, the ECB's monetary policy is decentralized, meaning that it interacts with numerous counterparties in the form of national central banks (NCBs) (Eberl and Weber, 2014, p. 4). To be eligible as counterparties, financial institutions must be financially sound.

Article 18.1 of the Statute of the ESCB demands that all Eurosystem credit operations shall be backed by "adequate collateral". This concept of adequacy is based on two basic notions. First, collateral has to preserve the Eurosystem *from losses* through the bank's credit operations. Second, there has to be sufficient collateral provided to enable the Eurosystem to carry out its tasks (Åberg, 2013, Eberl and Weber, 2014, p. 4, ECB, 2014). While the "Single List" of eligible assets constitutes the general framework, it is the ECB's collateral eligibility criteria for assets - the *general* and the *temporary eligibility rules* - that ensures collateral adequacy. Important eligibility criteria that were considered temporary were incorporated into the general framework or are in force without any expiration date (Drechsler et al., 2013, Eberl and Weber, 2014, pp. 6ff., and ECB, 2014).

The actual transaction behind a monetary policy operation to provide liquidity usually represents a reverse transaction such as a *collateralized loan or a repurchase agreement*.<sup>4</sup> In the latter case, the NCB claims the collateral in case the counterparty defaults. The adjusted market value of the assets which are provided as collateral has to exceed the liquidity provision's volume over the whole period used the reverse transaction. To figure out the collateral's adjusted market value, a haircut is applied to the market value of the financial asset used as collateral (Eberl and Weber, 2014, pp. 5 f., ECB, 2014). This haircut is calculated according to the liquidity and the maturity of the security and thus represents the ECB's risk control measure to protect its balance sheet (Eberl and Weber, 2014, Subsection 3.4.2., and Gros, Alcidi and Giovannini, 2012, p. 10).

Five general principles of the ECB's collateral framework are of central importance: (1) Close links between counterparties, (2) Provisions for controlling risk within the pool of collateral, (3) The valuation of eligible assets, (4) The European Credit Assessment Framework that the ECB uses to assess the eligible assets' credit quality, and (5) "Segmental pooling" (Eberl and Weber, 2014, pp. 10ff.).

### 2.1. Close links between counterparties

The non-eligibility of assets incorporating close links between counterparties was already contained in the initial General Framework dated 1 January 2001. If assets are guaranteed or issued by the counterparty submitting those, they were deemed ineligible (Directive 2000/12/EC). The most extreme case of close links is the own use of assets—for example, when an asset is issued and pledged by the same party (Eberl and Weber, 2014). However, strict eligibility rules have been watered down in the wake of the crisis (Eberl and Weber, 2014, pp. 10f.).

Starting in February 2009, for instance, all debt instruments which are defined by close links between counterparties, independent on whether they are marketable or non-marketable (or being own-use or not), have been treated as eligible, in case they are secured by a guarantee of a government of an EEA country and if they were in compliance

<sup>4</sup> The counterparty can either opt for the earmarking system, in which every pledged asset is earmarked for one specific transaction, or a pooling system, in which the collateral is made allowance for as a whole to collateralize a loan. See Eberl and Weber, 2014, p. 5.

with the general eligibility criteria. In addition, retail mortgage-backed debt instruments (RMBDs) with close links were deemed eligible. As of March 2015, the ECB also will no longer accept as collateral government-guaranteed uncovered bank bonds or covered bonds with close links between counterparties. Thus, uncovered bank bonds with close links between counterparties will not be accepted as collateral at all, while covered bank bonds will remain acceptable (Eberl and Weber, 2014, p. 35).

## **2.2. Risk control measures**

The risks incurred by the ECB when it conducts monetary policy operations comprise the risk of counterparty default, as well as liquidity and market risks specific to the collateral. The ECB applies a number of measures to control risk to marketable and non-marketable assets in an effort to mitigate such risks. From March 2004 on, the ECB's most frequently used risk control measures were "valuation haircuts" and "variation margins". Then, starting in 2010, the bank broadened its risk control framework to include the so-called "application of supplementary haircuts" and "limits in relation to the use of unsecured debt instruments" (Eberl and Weber, 2014, pp. 10ff.).

## **2.3. Valuation of assets eligible as collateral**

Valuation principles are very important because they establish rules for assessing assets that are used as collateral. The valuation assigned to assets forms the basis for the application of risk control measures and the granting of refinancing credits. Valuation principles were broadly formulated in the initial General Framework. As is the case with the framework as a whole, these principles were successively modified over time. The Eurosystem currently assesses the marketable assets' value on the basis of a representative price prevailing on the last business day before the valuation date. If two or more prices are quoted, the smallest price is used. If no such price is available, the last trading price is used. If the latter is not available or prices have not moved over the last five trading days, either the asset's theoretical value or, for reasons of simplicity, the outstanding amount is used. The Eurosystem applies additional valuation haircuts for the value of covered/uncovered bank bonds and ABSs not derived from a market price (Eberl and Weber, 2014, pp. 13f.).

Notably, errors in the valuation of collateral impose significant risks for the conduct of monetary policy and the ECB's balance sheet. If an asset were overvalued and thus did not mirror the true underlying risk, the value of the collateralised security might not be sufficient to cover ECB losses in case of the counterparty's default (Eberl and Weber, 2014, pp. 14).

## **2.4. European Credit Assessment Framework**

Since January 2007, the ECB has ensured that all assets considered as eligible match with uniform credit rating standards by establishing the Eurosystem Credit Assessment Framework (ECAF). The ECAF was created to evaluate the credit standing of collateral employing different credit assessment sources. The ECB had imposed a distinct hierarchy of credit ratings: type of issue comes first, followed by the issuer, and then the guarantor. NCBs are said to have occasionally violated this hierarchy classified assets in the wrong rating categories. For Spain, this was the case with short-term government securities, for France, with certain bank bonds. And every time NCBs erred in favour of the banks that submitted the securities (Brendel and Jost, 2013).

In September 2013, the ECB modified, i.e. watered down, the credit ranking, by the facto equating issuer and guarantor in the credit ranking hierarchy (Eberl and Weber, 2014, pp. 13f.).

## 2.5. Segmental pooling

The ECB employs its measures of risk control, usually “valuation haircuts”, to attenuate the risks inherent in granting refinancing credits. These haircuts do not increase with lower credit ratings, however, but differ by the coupon structure and the respective residual maturity and the liquidity categories assets are classified into (Eberl and Weber, 2014, pp. 11ff. and 19ff.).

Drechsler et al. (2013) report that, contrary to the private market, the ECB *subsidizes with its haircut policy some assets* to the disadvantage of others. In particular, they find out that *haircut subsidies turn out to be small for non-risky collateral but large in case of less safe collateral*. This makes plausible that the pooled haircut value relates to the risk profile of a fairly safe asset and not to that of the lowest-rated asset within each segment. This *subsidy on low-rated eligible collateral* in terms of requirements for refinancing credits constitutes an incentive for counterparties to progressively use riskier assets as collateral underlying the ECB’s refinancing credits (Eberl and Weber, 2014, pp. 16ff.).



### 3. MEASURES TO INCREASE COLLATERAL AVAILABILITY

The ECB has extended the list of assets eligible as collateral in the context of refinancing operations to facilitate banks' access to the Eurosystem's operations and reduce pressure on banks' balance sheets (ECB, 2014, Gros, Alcidi and Giovannini, 2012). The aim of this section is to assess both in quantitative and qualitative terms the extent to which the ECB's eligible collateral pool has been broadened during the crisis. It provides an overview of the chronological sequence of the changes, structured by asset classes, such as debt instruments issued/guaranteed by governments, debt instruments traded on non-regulated markets, bank bonds, asset-backed securities (ABSs) and corporate bonds.

From the onset of the financial crisis up to the end of 2013, the ECB has enlarged the pool of eligible collateral both qualitatively (section 2.1) and quantitatively (section 2.2).

#### 3.1. Changing the eligibility rules

A reduction of rating thresholds for certain asset classes is defined as a typical change in a collateral eligibility rule. The following two items are prominent examples of such changes (Eberl and Weber, 2014, p. 21).

##### Example 1

The ECB's effort to shape and bring into force a coherent collateral framework was brought to an abrupt halt in September 2008 by the Lehman collapse. In October 2008, the ECB reduced the minimum credit rating threshold for eligible assets (excluding ABSs) from "single A" to "triple B".<sup>5</sup> With this move, the ECB central bank initiated one of the most sweeping changes ever to its collateral framework. What is more, the ECB employed a uniform add-on haircut on all eligible assets which are rated lower than single A, in order to cope with the additional risk implied by such low-rated assets. This reduction was initially planned as a temporary measure, but has become permanent since January 2011, when the lowered minimum credit rating threshold became an ingredient of the General Framework.

##### Example 2

In February 2009, the ECB passed another amendment, which may at first appear minor but is highly significant in practice. The group of accepted External Credit Assessment Institutions (ECAIs) was expanded to include a fourth one, the Dominion Bond Rating Service (DBRS). Compared to the "big three" rating agencies—S&P, Moody's, and Fitch, which together hold a market share of about 95%— DBRS is a small Canada-based agency. Admittedly, taking into account one additional ECAI may spur competition and improve information on the collateral quality. If assessments among rating agencies differ, however, a tiny rating agency is granted the potential to affect refinancing conditions of European commercial banks. The experience with the four ECAIs' long-term credit ratings for Ireland, Italy, and Spain clearly reveal that DBRS's ratings have been pivotal (Eberl and Weber, 2014, pp. 14ff.).

#### 3.2. Expanding the set of eligible assets

Allowing national central banks to accept bank loans as collateral may be regarded as one of several measures expanding the set of assets eligible for collateral. Here we provide some examples.

<sup>5</sup> Note that "triple B" marks the last rating notch above junk status.

### **Debt instruments issued or guaranteed by governments**

Government guarantees for risky assets are important because they represent a risk for taxpayers in the default case and are able to impact the valuation and thus the credit rating of the collateral, and can thereby affect the refinancing conditions.

The minimum credit rating threshold for assets which are government-related had already been diminished to “triple B” when the minimum rating was lowered for all assets, except for ABSs, in October 2008. Nevertheless, several countries had to make strong efforts to reach even this threshold (Eberl and Weber, 2014, p. 25). In order to accept these debt instruments as collateral, the ECB decided to suspend the application of the minimum credit rating threshold for debt instruments guaranteed or issued by the governments of Greece (May 2010), Ireland (April 2011), Portugal (July 2011), and Cyprus (May 2013). At the same time, the ECB declared that it would review “the relevant risk control measures [...] on a continuous basis.” (ECB, 2011a).

However, since this decision, tenets for valuation haircuts have merely been altered for Cyprus and Greece but not for Portugal and Ireland. Hence, in the case of the latter countries, the ECB is effectively applying the same valuation haircut to, for instance, a “C”-rated bond (S&P) as to a “BBB+”-rated bond (Eberl and Weber, 2014, p. 26).

However, given that Greek debt was apparently accepted as collateral to raise market liquidity, it would be counterproductive to insist on a large haircut. Thus, it appears as if the ECB’s aim to promote the liquidity of Greek debt will necessarily increase the bank’s exposure to the risk of capital losses on exactly that type of debt. The ECB can thus at best hope to receive compensation for such losses, for instance through a (gradual) re-capitalisation by the euro area governments (Belke and Polleit, 2010, and Gerlach, 2010, p. 8).

The ECB broadened the eligibility of own-use assets to every asset with government guarantees in February 2009. This enabled market participants to securitize assets into bonds they retain. The latter are, however, never evaluated by a rating agency or the market per se. Due to the government guarantee, they can also still be employed as collateral for refinancing credits. What is more, the conditions for valuation haircuts would appear favourable to market participants if the rating of the government providing the guarantee is higher than that of the issuer. On the date the guidelines setting out the eligibility of own-use debt instruments which are government-guaranteed were implemented, new *issuances of bonds guaranteed by governments skyrocketed*. Declaring own-use government-guaranteed bonds eligible in combination with abandoning the minimum credit rating has thus pushed a significant share of these bonds into reverse transactions underlying refinancing credits at the ECB (Eberl and Weber, 2014, pp. 24ff.).

### **Debt instruments traded on non-regulated markets**

The initial General Framework has already incorporated the condition that marketable assets have to be permitted to be traded on accepted regulated and non-regulated markets.<sup>6</sup> The ECB has successively altered its eligibility criteria, thereby raising the quantity of non-regulated markets which are eligible over time (Eberl and Weber, 2014, p. 28).

When strict rules are applied for the admission of non-regulated markets to trading, the risk faced by the ECB for the eligibility of assets traded on those markets is approximately the same as for assets traded on regulated markets. But this assertion may be challenged

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<sup>6</sup> A market has to obey criteria defined by the Investment Services Directive (93/22/EEC) in order to be regarded as “regulated”.

for good reasons. On the one hand, the ECB itself explicitly denied to follow the goal of evaluating the intrinsic quality of non-regulated markets exhaustively. On the other hand, the three principles that the ECB established to accept non-regulated markets have not been applied in a consistent way and are thus of questionable effectiveness. In particular, transparency which is meant to grant the ECB “unimpeded access to information on the market’s rules of procedures and operations, the financial features of the assets, the price formation mechanism, and the relevant prices and quantities” (ECB/2005/2), has not only been suspended repeatedly (see above) but it has also not been applied rigorously (Eberl and Weber, 2014, pp. 29).<sup>7</sup>

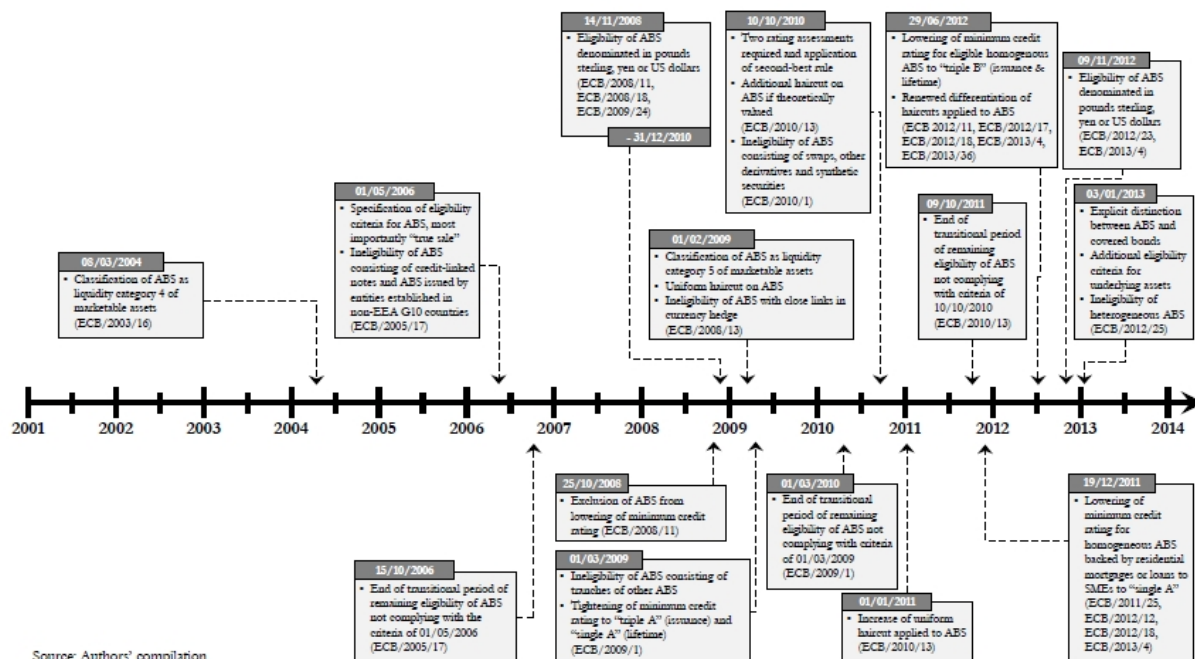
## Bank bonds

For reasons of space, this paper does not discuss comment further on bank bonds. Important details can be found in Eberl and Weber (2014), pp. 31-35.

## Asset-backed securities

Figure 1 summarises the evolution of Asset-backed Securities as eligible collateral over time.

**Figure 1 – Evolution of eligibility of Asset-Backed Securities (ABSs)**



Source: Authors’ compilation.

Source: Eberl and Weber (2014), p. 36.

To the question “(a)nd also what about the rating of the ABS you will buy, thinking specifically about those from Greece and Cyprus?”, Draghi (2014) replied that the ECB has *been accepting ABSs in its collateral for ten years. Hence, he argued, it was logical to go ahead with as much similarly as possible with standard collateral rules.* However, Draghi also clarified once more that that ABS purchases bear a larger risk than ABSs accepted as collateral in refinancing operations.

<sup>7</sup> For further details see Eberl and Weber (2014), pp. 28-31.

## Corporate bonds

The ECB has graded corporate bonds as “debt instruments issued by corporate and other issuers” (ECB/2003/16)<sup>73</sup>. They have always been eligible for collateral purposes under the condition that they comply with the general criteria for the eligibility of marketable assets. Corporate bonds have therefore also been subject to all the same general changes in the eligibility criteria applied to marketable assets (discussed at length in Eberl and Weber, 2014, pp. 19ff.), although no specific provisions have been established to date (Eberl and Weber, 2014, p. 40).

### 3.3. Main patterns of ECB collateral policies – stylised facts

Table 1 summarises the ECB’s most significant collateral policy actions during the period 2001 and 2013. Some additional, but less detailed information about the use of collateral by the ECB including the year 2014 can be found in Illing and König (2014), p. 21.

**Table 1 – Summary and classification of main actions in ECB’s collateral policy**

Date	Action	Classification	
		tightening	loosening
30/05/2005	Ineligibility of equities	•	
01/01/2007	Abolition of idiosyncratic eligibility criteria (introduction of Single List)	•	
15/09/2008	Collapse of Lehman Brothers		
25/10/2008	Lowering of minimum credit rating for all assets except ABSs from “single A” to “triple B”; eligibility of bank bonds traded in the STEP market		•
14/11/2008	Eligibility of marketable debt instruments issued in pounds sterling, yen or US dollars		•
01/02/2009	Eligibility of own-use government-guaranteed debt instruments; DBRS accepted as fourth ECAI		•
Date	Action	Classification	
		tightening	loosening
01/03/2009	Increase of minimum credit rating for ABSs from “single A” to “triple A” at issuance	•	
06/05/2010, 01/04/2011, 07/07/2011, 03/05/2013, 09/05/2013	Suspensions of minimum credit rating for debt instruments issued or guaranteed by the governments of Greece, Ireland, Portugal; later by governments under an EU/IMF program and Cyprus		•
19/12/2011	Idiosyncratic acceptance of credit claims by NCBs; lowering of minimum credit rating for specific ABSs from “triple A” to “single A” at issuance		•
29/07/2012	Lowering of minimum credit rating for all ABSs from “single A” to “triple B” at issuance and over lifetime		•
03/01/2013	Ineligibility of heterogeneous ABSs	•	

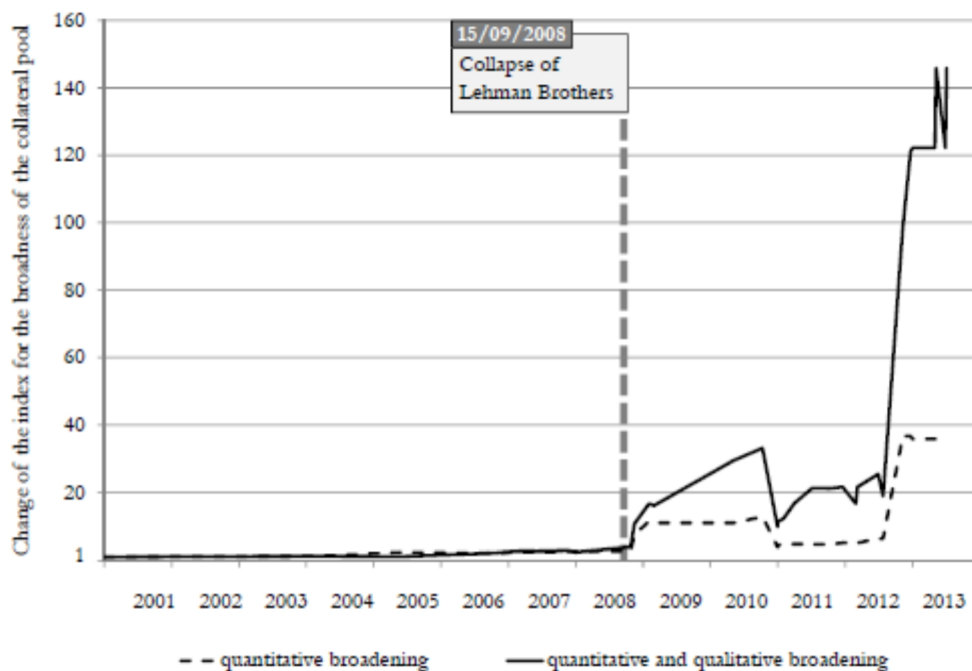
Source: Authors’ compilation.

Source: Eberl and Weber (2014), p.40-41.

Two crucial stylized facts emerge from the qualitative analysis above (Eberl and Weber, 2014, p. 41). The ECB *intensified its collateral policy activity first in response to the crisis since 2007 and then again in 2011*. The former was preponderantly targeted at *softening eligibility criteria* (intensive margin) while also *expanding the eligible collateral pool* (extensive margin).

The ECB enlarged the pool of eligible collateral *in quantitative terms*, i.e. at the extensive margin. The ECB's policy of full allotment of refinancing credit ensured banks' disposed of a critical mass of paper to collateralize their refinancing credit (Eberl and Weber, 2014, pp. 41). This process is sketched in Figure 2 with an index for the breadth of the collateral pool.

**Figure 2 – Broadening of the eligible collateral pool**



Source: Authors' compilation.

Source: Eberl and Weber, p. 44.

The index shows a quantitative increase in the breadth of the pool of collateral equivalent to a factor of 36 (Eberl and Weber, 2014, pp. 42f.). But the ECB also extended its pool of eligible collateral also *qualitatively*, i.e. at the intensive margin. This index displays a substantial qualitative enlargement of the collateral pool by a factor of 110. In other words, the quality standards for eligible collateral have been significantly lowered already at the end of 2013 (Eberl and Weber, pp. 44f.). The much greater qualitative broadening since the collapse of Lehman Brothers compared to the quantitative extension of the collateral base stands in sharp contrast to common calls for good collateral.

## 4. ECONOMIC IMPLICATIONS ASSOCIATED WITH THE CURRENT ECB COLLATERAL POLICY

This section takes a cross-country perspective in considering the *economic implications* of the current ECB collateral policy for asset allocation and relative asset price developments.

### 4.1. Implications for asset allocation in the euro area

The analysis presented in section 3 shows that the collateral framework has produced *two major but opposing effects over time*. First, the Eurosystem reached its quantitative target of increasing the available quantum of collateral. Second, this in turn worsened the *quality* of the ECB's pool of collateral for refinancing credits (Eberl and Weber, 2014, p. 18). The latter has been the most important element of the ECB's toolbox. It allows NCBs to grant large-scale special loans to their national commercial banks - as measured, for instance, by the TARGET balances (Illing and König, 2014, pp. 21f.). In order to guarantee the value of the collateral, the ECB started to buy collateral: after starting with 223 bn EUR purchases of sovereign bonds, the ECB has now committed itself to ABS purchases.

However, these measures will create an incentive for commercial banks to construct new ABS paper (which may become increasingly toxic) to clean up their balance sheets.<sup>8</sup> Moreover, the banks' equity capital will be artificially increased due to the increase in the value of the non-sold assets. Hence, policymakers should first check whether this kind of collateral policy represents a hidden fiscal rescue of commercial banks, and, if so, whether this was the intended aim. Secondly, policymakers should put under scrutiny whether this approach is compatible with the commonly formulated European target of closing the investment gap in the North of the euro area. It seems counterproductive to use the ECB's collateral policy to re-channel savings towards the South. Indeed, ABS purchases resulting from a too-lax ABS collateral policy bear the *danger that savings will be channeled in the periphery of the euro area*, with the risk of a similar destructive impact on both the public sector and the real estate sector in the years as before the euro crisis (Belke, Oeking and Setzer, 2014).

### 4.2. The cross-country perspective

Turning to a cross-country perspective, several papers have contrasted the collateral framework of various central banks. Chailloux et al. (2008a), for instance, evaluate major central banks' initial policy reactions to the financial crisis. They also assess the collateral policies implemented in parallel with various other measures employed in southern countries. Chailloux et al. (2008b) and Cheun et al. (2009) survey the principles that have shaped the collateral frameworks of central banks worldwide, explain adaptations of these principles during the first years of the crisis, and compare the degree of similarity among them.<sup>9</sup>

One major reason for the different responses of central banks in terms of collateral policy has been, among others, discussed by Gros et al. (2012): the first stage of the financial crisis 2007-2009 looked similar in the USD and in the euro area. As a consequence, policy responses turned out to be also quite similar. The second stage of the crisis is, however, unique to the euro area.

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<sup>8</sup> See, however, Draghi (2014a) who cites evidence in favor of much less risk in terms of default probabilities contained in euro area ABSs than in the US ABSs.

<sup>9</sup> Studies on these topics have also been provided by the ECB (2013a) and by the BIS Markets Committee (2013), which compares 16 central banks around the world.



### 4.3. Further issues

Relevant issues for discussion in the context of the Monetary Dialogue include (Åberg, 2013, and Bindseil, 2013):

- *Retained securities and own use of collateral*: from section 3.2 we know that the newly introduced eligibility of own-use government-guaranteed bonds joint with the suspension of the minimum credit rating has pushed a significant part of these bonds directly into reverse transactions for ECB refinancing credits.
- *Arbitrage possibilities in the collateral framework*: from section 3.2 we also know that in the cases of Portugal and Ireland, the ECB de facto deducts the same valuation haircut to a "C"-rated bond as to a "BBB+"-rated bond.
- *Relationship between collateral framework and market functioning*: scarcity of collateral for sound banks and other side effects on healthy parts of the euro area economy.
- *Pivotal role of small rating agency*: DBRS, a relatively small rating agency, was granted the potency to sweepingly influence the refinancing conditions of European commercial banks.
- *Relation between collateral policies and the scope of markets for risky assets*: collateral policy determines the attractiveness of certain asset classes which in turn are the target of the ECB's current purchases (asset-backed securities, covered bonds and maybe rather soon also corporate bonds). How to avoid the resulting incentives to unlock these asset markets to an excessive extent through loosening collateral standards?

A key problem is the permanent nature of the "crisis collateral framework", which was originally intended to remain in place only on a temporary basis. (Eberl and Weber, 2014, p. 7). Exiting from these exceptional collateral policies will be no less difficult than abandoning unconventional monetary policies in general: the ECB will be confronted with tricky questions of how to get rid of the purchased assets, as soon as the economic environment has improved (Gerlach, 2010, p. 8).

### 4.4. Policy tradeoffs

Finally, there seems to be a *tradeoff between short- to medium-term efficiency of unconventional monetary policy effectiveness and risk aversion* of the ECB in terms of collateral policy. Overall, the ECB has responded forcefully to the crisis through "credit easing", and is at the same time striving to minimize its own risk. This implies that its policy has not been and will not be entirely effective (Gros, Alcidi and Giovannini, 2012, p. 18).

In the same vein, there is now a danger that other ECB instruments might also be decreasing in their effectiveness. In case of the LTROs, the ECB did not limit itself to extend long-term funding against an extended pool of assets eligible as collateral. The bank significantly raised the haircuts applied to these assets, sometimes by 50 to 75 percent. This implies that *substantial overcollateralization* is needed to get access to, e.g., LTRO financing. For instance, commercial banks have to pledge assets with a market value somewhere between 2 and 4 times the loan received, which may make commercial banks more resilient to borrow from the central bank. Hence, in case of insolvency, the claims of unsecured creditors of banks will be met only to a minor extent. Private investors will thus hesitate even more to endow commercial banks with funding. As one dire consequence, the LTRO might not work fully in case it were attempted again (Gros, Alcidi and Giovannini, 2012, p. 18).

## 5. CONCLUSIONS

### 5.1. Governance challenges

NCBs have in the past sometimes been too lenient with respect to the valuation and the eligibility of collateral. There is the risk that *NCBs, but also market participants, try to circumvent the ECB and Eurosystem collateral rules* (ECB, 2013). Above all, NCBs should be prevented from exploiting loopholes present in the collateral framework with the intention to unduly promote their domestic commercial banks.<sup>10</sup>

As regards the ECB, a key governance challenge is to guarantee a strong commitment by the Governing Council in terms of collateral rules and their enforcement. Second, the valuation of collateral shall also be based on a systematic monitoring of market data. One of the main tasks (of the Governing Council) is the regular review of the risk control measures' adequacy in the collateral framework. The single collateral framework shall be applied in the same way by all central banks.

As long as the risks can be shifted from the taxpayers in one euro area member state to another through "collateral rule arbitrage" or other of the ECB's unconventional monetary policies, statements like "... All central banks must have the same interest: to reduce the risk stemming from our operations. If there is a loss it is a loss for all of us ..." (ECB, 2013) may be wishful thinking. In the same vein, one may question whether the unanimous agreement in the Governing Council to install a compliance unit and a collateral experts network at the ECB to search for inconsistencies and factual errors in the eligible asset database and report back (ECB, 2013) is a corroboration of the common will of the Governing Council. In addition, one may ask how non-partisan and non-biased the "collateral experts" are. Are they unaffected by the collateral policy choices of the ECB?

In the future, policymakers should strive for a *simplification of the collateral system and rules* as much as possible, while not forgetting that keeping collateral available to all counterparties in the euro area is crucial in allowing proper monetary policy implementation (ECB, 2013). And make sure (admittedly, a technically demanding task) that the increasing degree of complexity of the system does not induce the Eurosystem to overstretch its lending to financial institutions - even though it does not stop to stress that all operations have been over-collateralized.

### 5.2. What will the collateral framework in general look like after the crisis?

The overall aim of policymakers should be to *eradicate* all of the *temporary* measures instituted during the crisis as soon as the situation on the financial markets allows. One should not leave any of these assets in the permanent list, because they entail risks and this would fragment the framework for European monetary policy. The *general* collateral framework could be expanded if high creditworthiness standards were employed (ECB, 2013).

What should be strictly *avoided* is the treatment of collateral framework not only an instrument for risk control purposes, but also as a *monetary policy instrument*.<sup>11</sup> Collateral policy shall not address country-specific monetary policy issues. Applying country-specific

<sup>10</sup> And closely connected with that: a commercial bank may only obtain Emergency Liquidity Assistance (ELA) credit if its collateral pool is fully exhausted. But in this case, the bank tends to not only have a liquidity problem but a solvency problem as well. Illing and König (2014) discuss this issue in the context of a "constructive ambiguity" behavior of the Eurosystem which cannot prevent moral hazard.

<sup>11</sup> For instance, Bindseil (2013) assesses how the collateral framework can be interpreted beyond its essential aim of protecting the central bank, as a financial stability and unconventional monetary policy instrument.



collateral requirements would ultimately mean that financial risks would be redistributed between countries (ECB, 2013).

Things look more ambiguous with regard to problems related to shortage of collateral in specific countries. There is no unanimous consensus among economists on whether the two goals of repairing the monetary transmission mechanism via the expansion of the collateral framework and protecting the ECB from incurring into excessive risks can be both achieved (ECB, 2013).<sup>12</sup> Some of the arguments cited in the previous sections would at least suggest no.

According to some observers, the acceptance of, for instance, Greek debt instruments as collateral, accompanied by direct purchases of the same item in secondary markets, increases risks for the ECB's balance sheet. Others, argue that the ECB should not worry about risks and losses from its collateral policies because central banks can operate with negative equity capital (Belke and Polleit, 2010, and ECB, 2013). Technically and legally, the ECB could continue to operate with a negative equity. But this would in the end undermine its confidence and the trust in the euro. For these reasons, it should not be permitted.

One key question are: Who will review "the relevant risk control measures [...] on a continuous basis" and how. Are auditors like Wyman, Blackrock and Deutsche Bank sufficiently independent and capable bodies to contribute to the success of unconventional collateral policies (and the covered bond and ABS purchases through CBPP3 and ABSPP) which serve the benefit of the euro area as a whole? What is the operational power of the ECB compared to the 18 NCBs of the euro area which are doing the bulk of day-to-day work? As an example, the ECB has around 1,600 employees, about one-sixth of the number of people working for the Bundesbank. Can this relatively lean infrastructure effectively monitor the NCBs (see, for instance, Brendel and Jost, 2013)?

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<sup>12</sup> ECB representatives like Benoît Coeuré (ECB, 2013), however, tend to support this view.

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