

Global Economics View

Is the Eurozone at Risk of turning into the Rouble Zone?

- On February 9, 2012, the ECB announced “*specific national eligibility criteria and risk control measures for the temporary acceptance of additional credit claims as collateral in Eurosystem credit operations*” for seven euro area national central banks (NCBs).
- After the use of emergency liquidity assistance (ELA), this is the second significant deviation from a single Eurozone monetary, credit, and liquidity policy.
- Unlike for ELA, the nation-specific collateral policy is not subject to explicit quantity limits by the centre. Like ELA, losses from nation-specific collateral operations are not pooled and shared with the rest of the Eurosystem.
- The ECB’s decision to allow nation-specific collateral eligibility criteria not only means the fragmentation of ECB monetary, credit and liquidity policy along national lines, it permits accelerating and mostly unchecked balance sheet growth of soft Eurozone NCBs, thus raising the spectre of gradual ‘Roublezoneification’ of the euro area.

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See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

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Is the Eurozone at Risk of Turning into the Rouble Zone?

Introduction

1a. From the Rouble Zone ...

In the Rouble Zone, allowing the national central banks freedom to create central bank credit at will precipitated hyperinflation

Following the collapse of the Soviet Union at the end of 1991, its monetary arrangements survived for a while. During the first half of 1992 all 15 independent successor states shared a monetary union using the rouble (the Rouble Zone). The minimal political cohesion and fiscal infrastructure to support a multi-country Rouble Zone was absent, however. In addition, there was a fatal design flaw in the monetary arrangements themselves. The Central Bank of Russia took over the State Bank of the USSR (Gosbank) and remained the only national central bank in the former Soviet Union to have the right to issue rouble currency (notes and coins). However, each of the 14 national central banks in the other former Soviet Republics (formerly the main branches of Gosbank in these Republics) could create central bank credit at will, without any central (or Russian) control over national and aggregate credit creation. This invitation to free-ride on the other members of the monetary union led to accelerating inflation and eventually hyperinflation in the former Soviet Republics. One by one, the non-Russian Rouble Zone member states peeled away or were pushed out and introduced national currencies. At the end of 1993, the Rouble Zone was de facto dead – some would argue that Russia too left the Rouble Zone when the Central Bank of Russia initiated, during July 1993, an exchange of banknotes just on Russian territory.

1b. ...to the Eurozone?

Before monetary union, the national central banks in the euro area had different operating procedures and practices

There is a warning in this episode for those in charge of the Eurosystem today.

When the Eurosystem (the European Central Bank (ECB) and the National Central Banks (NCBs) that had proceeded to full monetary union) started operating on January 1, 1999, there were 11 NCBs with different cultures, operating procedures and practices. There were different rules and conventions about the kind of collateral that would be acceptable in repurchase operations (repos) and other forms of collateralised lending, about the securities that could be purchased outright, about the terms and conditions on which repos and outright purchases could be conducted and about eligible counterparties in those transactions. Now there are 17 NCBs, but the Eurosystem has had 13 years to bed down. One would have hoped that by now a uniform set of rules, standards and practices would have emerged for the operational implementation of the common monetary, credit and liquidity policy. The opposite appears to be happening.

Eurozone monetary, credit and liquidity policy is supposed to have three key features:

- I) **a single, centrally decided interest rate and collateral policy**
- II) **decentralised operational implementation by the NCBs**
- III) **profit and loss sharing between all EA NCBs for all gains and losses arising from monetary policy operations.**

Eurozone monetary policy, credit policy and liquidity policy (MCL policy) is supposed to have three key features – features necessary for there to be a single Eurozone-wide monetary, credit and liquidity policy, rather than 17 national policies. First, interest rate policy, collateral policy (including the valuation of illiquid collateral and the terms and conditions applied to all collateralised lending and to open market operations generally), are decided centrally by the 23-member Governing Council (GC) of the ECB – the 17 NCB Governors and the 6 members of the Executive Board of the ECB. Most decisions are taken on a one person-one vote basis, with the Governor of the Central Bank of Malta having the same weight as the President of the Bundesbank. Decisions having to do with ECB and NCB capital and certain other profit-and-loss sharing matters between the ECB and the NCBs are decided by an equity-share-weighted voting rule, under which the Bundesbank has 27.06 percent of the vote and the Central Bank of Malta 0.09 percent.¹² Second, the operational implementation of the centrally decided MCL policy is left to the NCBs. Third, losses and profits made by the ECB and the NCBs in the implementation of the common MCL policy are shared among the NCBs in proportion to their share in the ECB capital.

The reality is somewhat different. Especially since the beginning of the financial crisis in August 2007, we think there has been creeping 'Roublezonefication' of Eurozone MCL policy. This creep may be about to turn into a trot.

ELA

Emergency liquidity assistance (ELA) may be granted by individual NCBs on terms different from regular Eurosystem operations, but is subject to a number of constraints set by the ECB Governing Council.

Emergency Liquidity Assistance (ELA) facilities can be created by national central banks when the counterparty banks in their jurisdictions can no longer fund themselves at the regular facilities of the Eurosystem, either because their creditworthiness has deteriorated too much or because the quality of the collateral they offer is too poor to be acceptable at the Eurosystem. The ELA facilities can, subject to a number of provisos, take collateral not acceptable at the Eurosystem from counterparties that are not sufficiently creditworthy to access the Eurosystem.

¹ <http://www.ecb.int/ecb/orga/capital/html/index.en.html>

² Article 10.3 of Protocol 4 states "For any decisions to be taken under Articles 28, 29, 30, 32 and 33, the votes in the Governing Council shall be weighted according to the national central banks' shares in the subscribed capital of the ECB. The weights of the votes of the members of the Executive Board shall be zero. A decision requiring a qualified majority shall be adopted if the votes cast in favour represent at least two thirds of the subscribed capital of the ECB and represent at least half of the shareholders. ... " Article 28 concerns the 'Capital of the ECB', Article 29 concerns the 'Key for capital subscription', Article 30 concerns the 'Transfer of foreign reserve assets to the ECB', Article 32 concerns the 'Allocation of monetary income of national central banks' and Article 33 the 'Allocation of net profits and losses of the ECB'.

- i) **the ECB has to approve the limit on the total size of the ELA facility**
- ii) **ELA terms and conditions are typically more onerous than for usual Eurosystem operations**
- iii) **ELA exposure is exposure of the NCB in question, not the Eurosystem. This 'safeguard' implies the fragmentation of Eurosystem monetary policy along national lines.**

First, the GC of the ECB determines the limit on the total size of the ELA facility.³ Second, the terms and conditions (interest rates, valuation, haircuts etc.) set by the ELA facility typically are more onerous than those available at the regular credit facilities of the Eurosystem. These terms and conditions too are subject to approval by the GC of the ECB.⁴ Third, although the liabilities of the ELA facility are Eurosystem liabilities (base money or non-monetary liabilities), the exposure of the ELA facility is not an exposure of the Eurosystem. Instead it is an exposure just of the NCB in question (see also Section 3 below). A full sovereign indemnity or guarantee by the national sovereign for this exposure of the NCB is supposed to be given. This protects the Eurosystem against losses that may be incurred by the ELA facility, as long as the loss-absorption capacity of the NCB and its sovereign are adequate. When the NCB in question has little or no conventional loss absorption capacity (capital plus reserves plus any capital gains it may be able to realise from its revaluation account) the fact that its credit creation capacity is controlled and capped by the GC of the ECB means that it cannot use seigniorage (the profits from the issuance of central bank money [base money]) to meet its commitments.⁵ The guarantee of the sovereign is not worth much if the sovereign itself is insolvent or at high risk of insolvency, as is the case, for instance, with Greece, Portugal and Ireland, in our view.

Details on ELA terms, procedures and total size are in general not publically available

The way in which NCBs account for the ELA activities is not standardised. From the published data it is difficult to extract a complete picture. Figure 1 represents our best effort at recovering the scale and scope of ELA activities by NCBs in the Eurosystem.

³ It is possible that the GC only has a veto over the size of the ELA facility, but does not actually set the size, that is, the NCB makes a proposal about the size of the ELA and the GC has the right to veto this.

⁴ We assume that, because profit-and-loss sharing arrangements are involved, the voting is weighted by the NCB's equity shares in the ECB.

⁵ See Buiter (2010, 2012).

Figure 1. Selected Countries – Emergency Liquidity Assistance (Bn EUR), 2007 – 2012

Date	Ireland	Germany	Belgium	Greece	Total
30/03/07	8				8
29/06/07	3				3
28/09/07	11				11
31/12/07	3				3
31/03/08	3	18			20
30/06/08	5	15			20
30/09/08	6	20	20		46
31/12/08	6	20			26
31/03/09	10				10
30/06/09	14				14
30/09/09	10				10
31/12/09	12				12
31/03/10	13				13
30/06/10	13				13
30/09/10	20				20
31/12/10	50				50
31/01/11	50				50
28/02/11	69				69
31/03/11	65				65
29/04/11	53				53
31/05/11	52				52
30/06/11	54				54
29/07/11	55			13	69
31/08/11	54			20	74
30/09/11	52			40	92
31/10/11	46		20	50	115
30/11/11	44		23	56	123
30/12/11	43		9	NA	NA
31/01/12	46		NA	NA	NA

Note: Amount outstanding is estimated based on available data and information provided by the relevant national central banks.

Source: National central banks and Citi Investment Research and Analysis

Based on the available data, the NCBs in Belgium, Germany, Greece and Ireland have used ELA.

ELA constitutes a breach of the principle of one Eurosystem monetary, credit and liquidity policy.

As far as we can tell, only 4 Eurozone countries have used ELA facilities thus far: Ireland, Germany, Belgium and Greece. Germany only used its ELA facility during 2008, when the financial crisis first struck. Irish use of its ELA facility peaked in February 2011 at €68.5 bn. At the end of January 2012, Ireland's ELA use amounted to €45.5bn. Greece has rapidly increased the use of its ELA facility since July 2011. At the end of November 2011, Greek use of its ELA facility stood at €56.2 bn. Total ELA use in that month (the latest for which we have data) was €123.3bn.

To summarise: we think the existence of ELA on a country-by-country basis undermines the monetary union by allowing different monetary, credit and liquidity policies in different member states of the Eurozone. The damage is not (yet) fatal, because the GC of the ECB sets the upper limit on the size of the credit an ELA facility can extend and because the GC also has a veto over the terms on which this credit is extended. As noted, the 'protection' offered to the Eurosystem by the denial of loss sharing for ELA exposure is only effective if the central bank and sovereign backing the ELA exposure have sufficient loss-absorption capacity. In addition, if effective, the denial of loss sharing for ELA exposure undermines the monetary union because it constitutes a breach of the principle of one monetary, credit and liquidity policy on uniform terms and conditions for the whole Eurosystem. NCBs and sovereigns willing and able to subsidise their domestic banks by offering them ELA access undermine the financial level playing field in the Eurozone.

Loss Pooling and Sharing

According to the normal profit and loss sharing arrangements for the Eurosystem, the profits and losses of the ECB and the profits and losses of the NCBs incurred as part of their implementation of the (supposedly common) monetary, credit and liquidity policy determined by the ECB, are shared by the NCBs according to their paid-in capital shares in the ECB⁶. The capital shares are shown in Figure 2. The Capital key % column adds up to just under 70% because the non-Eurozone member states of the EU account for just over 30% of the subscribed capital of the ECB. The Adjusted capital key % represents the actual profit and loss shares of the 17 Eurozone NCBs.

Figure 2. Selected Countries – NCB shares in ECB capital as of 28 Dec 2011

NCB of:	Capital key %	Adjusted capital key %
Belgium	2.4256	3.47
Germany	18.9373	27.06
Estonia	0.179	0.26
Ireland	1.1107	1.59
Greece	1.9649	2.81
Spain	8.304	11.87
France	14.2212	20.32
Italy	12.4966	17.86
Cyprus	0.1369	0.2
Luxembourg	0.1747	0.25
Malta	0.0632	0.09

Note: Adjusted capital key adjusts for the capital share of national central banks in the European System of Central Banks (ESCB) which are shareholders in the ECB, but are not part of the Eurosystem.

Source: ECB and Citi Investment Research and Analysis

Article 32.4 and 14.4 of the ECB Statute contain mechanisms for establishing exceptions to the profit and loss sharing rule that applies to Eurosystem operations.

There is a potential exception to the pooling and sharing of losses incurred as a result of monetary policy operations undertaken for the Eurosystem, however, that is allowed in Article 32.4 of Protocol 4 ('On the Statute of the European System of Central Banks and of the European Central Bank'), second paragraph, which reads: *"The Governing Council may decide that national central banks shall be indemnified against costs incurred in connection with the issue of banknotes or in exceptional circumstances for specific losses arising from monetary policy operations undertaken for the ESCB. Indemnification shall be in a form deemed appropriate in the judgment of the Governing Council; these amounts may be offset against the national central banks' monetary income."*⁷

⁶ The net profits and losses of the ECB are allocated among the euro area NCBs in accordance with Article 33 of the Statute of the European System of Central Banks and of the European Central Bank (Protocol 4).

Allocation of net profits and losses of the ECB

33.1. The net profit of the ECB shall be transferred in the following order:

- (a) an amount to be determined by the Governing Council, which may not exceed 20% of the net profit, shall be transferred to the general reserve fund subject to a limit equal to 100% of the capital;
- (b) the remaining net profit shall be distributed to the shareholders of the ECB in proportion to their paid-up shares.

33.2. In the event of a loss incurred by the ECB, the shortfall may be offset against the general reserve fund of the ECB and, if necessary, following a decision by the Governing Council, against the monetary income of the relevant financial year in proportion and up to the amounts allocated to the national central banks in accordance with Article 32.5.

Article 32.5 states: The sum of the national central banks' monetary income shall be allocated to the national central banks in proportion to their paid up shares in the capital of the ECB, subject to any decision taken by the Governing Council pursuant to Article 33.2.

⁷ See Protocol 4, On the Statute of the European System of Central Banks and of the European Central Bank;

http://www.ecb.int/ecb/legal/pdf/en_statute_from_c_11520080509en02010328.pdf.

A further wedge can be driven between the NCBs that together with the ECB make up the Eurosystem because of Article 14.4. of Protocol 4, which says: *“National central banks may perform functions other than those specified in this Statute unless the Governing Council finds, by a majority of two thirds of the votes cast, that these interfere with the objectives and tasks of the ESCB. Such functions shall be performed on the responsibility and liability of national central banks and shall not be regarded as being part of the functions of the ESCB.”* This Article not only permitted the creation of the ELAs (the thin end of the wedge that could destroy the principle of a common, uniformly implemented monetary, credit and liquidity policy for the entire Eurozone), it also permits the NCBs to act as agents for their sovereigns, putting their balance sheets at risk to pursue tasks and objectives that have nothing to do with monetary, credit and liquidity policy. The fact that such functions are performed on the responsibility and liability of national central banks and (one hopes, only with a full indemnity/guarantee from the national sovereign involved) does not give much comfort when the loss absorption capacity of the NCB and the solvency of the sovereign are in doubt. The fact that it takes a two-thirds majority in the GC of the ECB to *stop* an NCB from engaging in extra-curricular activities is worrying indeed, especially if it is the one-person-one vote version of the full GC rather than the capital-weighted NCB Governors alone that vote.

Collateral

On February 9, 2012, the ECB Governing Council approved for seven NCBs specific national eligibility criteria and risk control measures for the temporary acceptance of additional credit claims as collateral in Eurosystem credit operations.

On February 9, 2012, the ECB's GC approved, for seven NCBs (of Ireland, Spain, France, Italy, Cyprus, Austria and Portugal) *“... specific national eligibility criteria and risk control measures for the temporary acceptance of additional credit claims as collateral in Eurosystem credit operations”*.⁸ This was not a new procedure or precedent. Inevitably, the Eurozone started out with very different sets of eligible collateral in the constituent nation states, and much of this initial heterogeneity was grandfathered. What is surprising is how little progress has been made in evolving common intermediation principles and practices in the Eurozone since its inception in 1999. This latest decision represents a significant step backwards from a common monetary, credit and liquidity policy in the euro area (EA) and from an integrated financial market in the EA.

According to ECB President Draghi around EUR600-700bn of additional collateral would become available as a result of the new collateral rules.

In the Press Conference and Q&A following the ECB GC meeting of February 9, 2012, Mr. Draghi mentioned that around €600bn to €700bn of loans would be available in the seven member states mentioned above and that the new eligible credit claims would be subject to valuation haircuts of around 2/3. The valuation to which this haircut would be applied was not specified. Because individual corporate loans are almost impossible to value by third parties, we assume that for loans that are current, the valuation will be at par. This suggests that banks might be able to obtain around €200bn at the February 29 3Y LTRO amid the widening of the eligible collateral pool.

The Eurosystem is the operational version of the ESCB as long as some EU member states do not take part in the full EMU.

⁸ ECB Press Release, 9 February 2012,
http://www.ecb.int/press/pr/date/2012/html/pr120209_2.en.html

The decision to allow nation specific eligibility criteria could be disastrous, particularly given that the ECB does not have any control (beyond the aggregate size limits) over the total size of the resulting operations.

We consider this to be a dangerous and potentially disastrous decision. Not because it means a relaxation of collateral requirements in the Eurozone, but because it introduces this relaxation in only part of the Eurozone – the soft part, consisting of 5 of the 6 EA periphery countries (only Greece is missing – we assume because it was not permitted by the GC to participate) and two of the three ‘soft core’ EA member states (only Belgium is missing). The bifurcation of the Eurozone into a soft Eurozone and a hard Eurozone is accelerating. If it is true that there will be no loss pooling for these additional credit claims, that would be a further nail in the coffin of a single MCL policy for the Eurozone and a further step towards the re-emergence of national MCL policies and, eventually, national currencies.

In fact, we think the February 9 decision brings the Eurozone much closer to the position of the Rouble Zone following the collapse of the Soviet Union. This is because, in contrast to the ELAs, there is no centrally controlled (set by the GC of the ECB) ceiling on the amount of credit an NCB can extend to its national counterparty banks against the new lower-grade collateral. It is true that there may be a limit on the amount of qualifying private loans that a national financial system can create to be repoed for liquidity with the NCB, but history shows us astonishing examples of eligible collateral leveraging even when the NCB was not actively (or even passively) co-operating.

Anne Sibert (2010a,b) shows how Icelandic banks, leading up to the collapse of the Icelandic banking system in September-October 2008, repoed ‘love letters’ with the Central Bank of Luxembourg, where they had subsidiaries. This was an arrangement where Bank A and Bank B swapped their debt and Bank A then offered Bank B’s debt as collateral at the Central Bank of Luxembourg with Bank B offering Bank A’s debt as collateral. When this arrangement was uncovered and forbidden, one of the Icelandic banks involved (bank L, say) took its love letters to the Central Bank of Iceland. It used its borrowing from the Central Bank of Iceland to purchase Icelandic-krónur denominated Icelandic government or government-guaranteed debt. It then set up a company called Avens B.V.. The assets of this company were the Icelandic sovereign or sovereign-guaranteed debt and Icelandic bank accounts; its liabilities were euro-denominated debt. Bank L appears to have then successfully presented this euro-denominated debt as collateral in further borrowing from the Central Bank of Luxembourg.⁹

If such a remarkable debasement of the quality and potential enlargement of the stock of collateral is possible when the NCB involved is neither actively nor passively complicit (albeit not very competent), one could easily surmise that there would be few limits to the size of the stock of repo-eligible collateral that could be generated if the NCB in question actively supports the endeavour.

Again, unlike the ELAs, for which the cost of borrowing is subject to approval by the GC of the ECB (and therefore typically significantly higher than the cost of borrowing from the Eurosystem through its regular repo facilities), the full resources of the next 3-years LTRO (to be conducted on February 29, 2012) are available to banks in the seven countries that constitute the soft part of the Eurozone. Full allotment at a rate indexed to the refi rate against any collateral that does not quite move when you prod it, represents a cheap source of funding indeed.

⁹ Central Bank of Iceland news report, 15 May 2010. Either the CBL was overly trusting and did not look too closely at what it was being offered or it did not consider the correlated risks. The Icelandic banks had assets that were about 11 times Icelandic GDP. If the banks failed, Icelandic-krónur denominated Icelandic government or government-guaranteed debt was unlikely to retain its value.

The absence of loss pooling is, as we noted in connection with the ELAs, not an effective constraint on excessive credit issuance by any NCB in the soft Eurozone if the sovereign backing the NCB in question is itself insolvent or at material risk of insolvency. Greece – admittedly not (yet) part of the easy collateral group (EAG) – Portugal and Ireland are in that boat, in our view.

Only very limited control was exercised by the centre (ultimately the GC of the ECB) over the qualification of corporate loan collateral for the upcoming LTRO as regards the terms and conditions on which the inferior collateral will be accepted. Central control was confined to the exclusion of Greece from participation in the collateral relaxation exercise and, presumably, to the imposition of an average haircut of two thirds. Outside Greece, this still leaves room for wide national discretion as to what is accepted as collateral.

Conclusion: Threat and Remedies

The recent measures to soften the common monetary, credit and liquidity policy of the Eurosystem risks its 'Roublezonefication'

The Eurozone is not the Rouble Zone yet, but it is at risk, because of a sequence of bad decisions, to continue on a road at whose end awaits the complete Roublezonefication of the common monetary, credit and liquidity policy into 17 different national policies and, ultimately, a fracturing of the monetary union into multiple independent national monetary regimes. The defining property of a viable monetary union is that the size and composition of the assets and liabilities of the central bank (not just the ECB, but the entire Eurosystem) are centrally determined.¹⁰ Central control must apply to the size and composition of the balance sheet and the off-balance sheet liabilities and assets of the ECB and of each of the NCBs. All losses and profits incurred or earned as part of the implementation of the common MCL policy are pooled and shared – that is what it means for there to be one and only one central bank. Included in this is the requirement that the terms and conditions for credit extended by the ECB and by the NCBs are centrally determined and applied uniformly across all counterparties, regardless of which NCB they happen to deal with as a consequence of the historical accident of the operational decentralisation of monetary, credit and liquidity policy in the Eurozone, through legacy NCBs that otherwise have no meaningful role to play any longer in the design, setting and implementation of monetary policy, credit policy or liquidity policy.

First, the ELAs undermined the principle that the same terms and conditions for credit be enforced throughout the Eurozone. Central control over the total credit expansion achieved through the ELAs was, however, retained, as was central control over the terms and conditions on which the ELAs could make credit available. The ELAs also undermined the principle that profits and losses incurred as a result of MCL operations are fully pooled and shared. Because most NCBs that will avail themselves of an ELA facility on a large scale are likely to be poorly capitalised and dependent on guarantees from sovereigns that are themselves insolvent or near-insolvent, any significant losses associated with the operation of the ELA facilities are likely to be pooled and shared ex-post by the rest of the Eurosystem after all.

¹⁰ In the Eurosystem, this was only true in the most general sense. The details of the (now) 17 national collateral regimes always differed. Credit claims (loans etc.) were always accepted as a collateral class, and the NCBs were responsible for the procedures to approve them at the national level, subject to the approval of the ECB. This left huge scope for NCB discretion and persistent heterogeneity of standards. What is surprising is that so little has been achieved by way of harmonisation and the development of common procedures and practices since 1999.

Article 32.4 of Protocol No 4 undermines the principle that losses incurred in the implementation of monetary policy in the Eurozone be pooled and shared. Article 14.4 of Protocol No 4 permits NCBs to act as agents of the national sovereign and indeed to undertake all manner of activities not directly related to the implementation of monetary, credit and liquidity policy. As a result, when we look at the balance sheet of any Eurozone NCB, we cannot tell which assets are Eurosystem assets, on which profits and losses are shared, and which assets represent an exposure of the NCB itself but not of the Eurosystem - an exposure that is, most likely, guaranteed by the national sovereign (like the ELA facilities).

Unlike with ELA, the ECB does not control the amount of credit granted through nation-specific collateral policies which are therefore even more dangerous

Finally, the recent decision to allow the non-uniform application of collateral standards not just in ELAs but in the Eurosystem's own repo operations accelerates the slide of the Eurozone towards Rouble Zone status, we believe. This is because, unlike with the ELA facilities, the NCBs making use of the weaker collateral criteria are no longer subject to central control either as regards the total quantity of credit extended or as regards the terms and conditions on which the inferior collateral is accepted.¹¹ The uptake at the forthcoming 3-year LTRO on February 29, and at any future full-allotment Eurosystem liquidity auctions, is demand-determined. These funds are heavily subsidised, even when the tougher collateral standards of the 10 members of the hard Eurozone are applied. They represent an even larger subsidy when the new weaker collateral requirements are applied in the 7 soft Eurozone member states. It is unlikely that the ECB or the NCBs of the hard Eurozone can effectively monitor the terms and conditions on which the NCBs of the soft Eurozone make credit available to their national counterparties against the wider collateral pool now available in the soft Eurozone.¹²

This means that, through the combination of a selective relaxation of collateral standards (for the soft Eurozone only), the de facto absence of central control over the terms and conditions on which the inferior collateral will be accepted, the availability of cheap Eurosystem funding on demand through the 3-year LTRO (and likely future ones to come) and the absence of central control over the size of the balance sheets of the NCBs in the soft Eurozone, all the ingredients for a Rouble Zone 'light' emerging in the Eurozone are satisfied.

To some, this may not necessarily be a bad thing, given the realistically available alternatives. If a mild Roublezonification of the Eurozone were to result in a desirable relaxation of the credit crunch in the soft Eurozone, would that not be worth the price of a (most likely temporary) interference with the principles and practice of a single monetary, credit and liquidity policy for the entire Eurozone? If the risk to price stability in the Eurozone is more likely to come from a deflationary than from an inflationary threat, is a greater than intended (by the GC) growth of the balance sheet of the Eurosystem really something to worry about?

Accelerated balance sheet growth of the NCBs in the soft Eurozone runs the risk of alienating NCBs – and voters – in the hard Eurozone

The answer depends in part on how seriously one takes the breaking of the rules of the game in an emergency. For all but the very high-minded, this would probably depend on what the response would be, in the hard Eurozone, to this subversion of the letter and spirit of the monetary union. It is possible that at least some of the nations making up the hard Eurozone (most likely Germany, the Netherlands and Finland) would respond quite strongly to the accelerated growth of the balance sheets of the NCBs in the soft Eurozone that is made possible by the selective relaxation of collateral standards.

¹¹ The only way the ECB can limit the use of the facility is by not approving the widening of the collateral pool.

¹² It ought to be possible to ascertain whether the agreed upon valuation haircuts have been applied. Whether the loans (inevitably valued at par as long as they are performing) to which these haircuts are applied indeed meet the criteria approved by the ECB cannot, in practice, be verified by parties other than the NCB directly involved.

Exit from the Eurozone by the members of the Greater DM Zone would not, we believe, be in anyone's interest, but it would be a risk if popular and political sentiments were to be inflamed by the subversion of the rules of the game of a monetary union under way in the Eurozone.

The Bundesbank and other national central banks from the hard Eurozone currently try to protect themselves against the likely financial fall-out from the relaxation of collateral standards in the soft Eurozone not by exit, but by demanding an end to loss sharing. If they are successful, they preserve their bottom line but still damage the monetary union by creating multiple independent profit and loss centres. In any case, as noted earlier, forcing NCBs in the 7 countries of the soft Eurozone to be responsible for any losses incurred on the weaker collateral they accept only provides protection to the NCBs in the hard Eurozone if the NCBs in the soft Eurozone and their sovereigns are solvent.

We propose the following to remedy the undesirable status quo of Eurosystem collateral operations and procedures:

- i) **either end ELA or make their establishment mandatory for all NCBs, with uniform standards and criteria**
- ii) **enforce uniform collateral standards for all Eurosystem NCBs**

So what is to be done? The objective should be to restore adherence to the rules of the game of a monetary union, and then to choose the right degree of Eurozone-wide monetary, credit and liquidity accommodation to minimize the impact of the credit crunch on the Eurozone as a whole. With that in mind, we propose the following.

First, end the ELA facilities or make their establishment mandatory for all NCBs. If the second option (universal ELA facilities) is adopted, ensure that uniform standards and criteria are employed in their operation.

Second, enforce uniform collateral standards for all Eurosystem NCBs. No more easier collateral standards for a subset of the Eurozone member states. We do not want to prejudge the issue as to whether the common collateral standards should be weaker or tougher than they were until the recent selective relaxation. We do insist that they should be the same all through the Eurosystem.¹³ This will require fundamental changes in the intermediation procedures of some national banking systems – changes that we think are long overdue.

The current crisis has made it clear that 'banking union' involving a very limited amount of fiscal union is a prerequisite for survival of the EMU. Banking union means: (1) a single EA-wide regulator-supervisor with no independent role for national regulators and supervisors of banks and other sifis; (2) a single EA-wide resolution authority for banks and other sifis; (3) a single EA-wide recapitalisation authority, jointly and severally guaranteed by the EA member states and (4) a single EA-wide deposit insurance regime and fund. A nice symbolic touch would be to require every EA bank or other sifi to be incorporated as a *Societas Europaea*, that is, incorporated under EU statute. Only with full banking union will the survival of banks be decoupled from the solvency of national sovereigns with very different degrees of solvency. Only with full banking union can there be safe passporting of banking licenses throughout the EA. With free entry into the entire EA banking market, the standardisation of collateral standards and intermediation practices will no doubt be accelerated. Care must be taken that a standardisation of collateral requirements and the eventual emergence of a uniform collateral list does not precipitate a credit crunch in some member states, but that ought not to be beyond the ken of the EA monetary and financial authorities.

¹³ Our own preference is both for lower interest rates (a refi rate at zero by mid-year would be desirable, in our view) and for a Euro-zone wide relaxation of collateral standards with continued full loss pooling and sharing by the NCBs.

- iii) **Insist on profit and loss sharing for all NCB monetary, credit and liquidity policy activities**
- iv) **Transfer all NCB tasks other than those necessary for the common monetary, credit and liquidity policy to other agencies legally separate from the NCBs**

Permitting any eligible counterparty of the Eurosystem to access the Eurosystem at any point rather than only through the NCB in its location of incorporation would aid preventing the fragmentation of MCL policy in the Eurozone

Ultimately, a Treaty revision that transfers ECB equity from the NCBs to the National Treasuries would be desirable

Third, insist that all profits and losses incurred in the implementation of the common monetary, credit and liquidity policy be fully pooled and shared.

Fourth, insist that NCBs in the Eurozone perform no other tasks than those necessary for the implementation of the common monetary, credit and liquidity policy of the ECB. If currently an NCB fulfils a regulatory, supervisory or national debt management function, transfer these to other agencies, legally separate from the NCB. Do not permit an NCB to act as an agent for its sovereign or for any other agency of the state. Responsibilities in bank supervision and regulation should preferably be transferred to an EA-wide regulator-supervisor as already noted.

If it comes to a Treaty revision, repeal Article 14.4 and the second paragraph of Article 32.4.

Even without a Treaty revision, uniform terms and conditions for central bank credit throughout the Eurozone can be achieved easily by permitting any bank that is an eligible counterparty of any NCB in the Eurosystem to be a counterparty for repos and other collateralised loans with any other NCB in the Eurosystem. The current convention tying Dutch banks to the Dutch central bank, Greek banks to the Greek central bank etc. (unless they have a subsidiary in some other Eurozone member state) aids and abets the continued balkanisation of monetary, credit and liquidity policy throughout the Eurozone.

Ultimately, a Treaty revision that ends the anomaly of the Eurosystem NCBs being the shareholders of the ECB is necessary. The equity should be transferred to the national Treasuries or Ministries of Finance that are, even today, the effective beneficial owners of the ECB. Going one step further and turning the NCBs into the national branches of the ECB, by taking away the legal personalities of the NCBs would be an important symbolic step emphasizing that the Eurosystem is not a confederation of national central banks but an arrangement for the decentralised but uniform implementation of a single monetary, liquidity and credit policy for the entire Eurozone. That way, the Rouble Zone will never reach Frankfurt.

No doubt many of these changes will take at least 3 to 5 years to achieve. They are therefore unlikely to help much in the current crisis. They will, however, reduce the likelihood of and mitigate the severity of future crises.

References

Buiter, Willem H. (2010), "Games of chicken between the monetary and fiscal authority: Who will control the deep pockets of the central bank?" (long version) , *Citi Economics, Global Economics View* , 21 Jul. 2010.

Buiter, Willem H. (2012), "[The Role of Central Banks in Financial Stability: How Has it Changed?](#)", paper presented at the Fourteenth International Banking Conference organised by the Federal Reserve Bank of Chicago and the European Central Bank in Chicago, Ill., on November 10-11, 2011. CEPR Discussion Paper No. 8780, January 2012.

Sibert, Anne C. (2010a), "[Love Letters from Iceland: Accountability of the Eurosystem](#)," *VoxEU.org*, 18 May 2010.

Sibert, Anne C. (2010b), "[Accountability and the ECB](#)," Paper for the Central Bank of Austria's 38th Economics Conference, "Central Banking after the Crisis: Responsibilities, Strategies, Instruments," Vienna, 31 May 2010. Response ([page 1](#), [page 2](#)) from the Central Bank of Luxembourg

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Appendix A-1

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