**Lender of last resort in a monetary union – the cases of EMU and CMA**

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**Abstract**

The global financial crisis and regional follow-ups led to renewed attention towards the last resort lending function of central banks. Whilst the South African Reserve Bank considers last resort lending as one of its main responsibilities, derived from its mandate for financial stability, the European Central Bank does not mention last resort lending as a responsibility. The aim of financial stability is largely ignored by its statutes. The paper analyses the institutional framework for last resort lending in EU and CMA. The paper sets the institutional setting against the requirements for effective last resort lending. It then empirically evaluates the presence of last resort lending during recent crisis episodes. The effectiveness of last resort lending is compared and reform proposal given for both of the jurisdictions.

**Content**



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## 1. Introduction

The global financial crisis and regional follow-ups led to renewed attention towards the last resort lending function of central banks. It became obvious that monetary unions' ability to react to banking crisis has been limited. The paper tries to identify weaknesses in the framework of last resort lending in two monetary unions to derive recommendations for reform.

A basic business of banks is to accept deposits that usually have short maturities and lend out loans with longer maturities. This transformation of maturities is one of the main functions of banks. If however, bank deposits are not totally covered by reserves, it makes banks vulnerable to bank runs. It seems to be rational for depositors to withdraw, if any kind of disturbance might make them feel that the risk of a bank default is increasing. This is the more so, since depositors can be sure, that no bank will be able to pay out all of the taken deposits on short notice, even very solvent banks. Thus, as can be observed in resent bank runs, e.g. in Greece, depositors try to withdraw as soon as possible, causing bank runs, leading to illiquidity of banks and finally bank closures. The phenomenon is not limited to single bank institutions but usually spread rapidly to large parts of the banking system. This disturbs the socially preferred allocation of resources and, thus, causes social costs.

This kind of market failure has been known to central banks and academics long time. The first authors proposing a solution to this issue have been Henry Thornton (1802) and Walter Bagehot (1873). They proposed a lender of last resort function for central banks. The central bank should lend freely to banks with short term liquidity problems. If the lender of last resort function is credibly installed, bank runs could be avoided, since depositors are assured that the central bank (with unlimited capacity to provide liquidity) will support banks in such situations.

Since that time central banks adopted lender of last resort functions as one of their core responsivities. The main elements of that function that have been prevailing till today's central banking are fourfold: 1) The lender of last resort should provide unlimited liquidity, 2) against under normal conditions good collateral, 3) at high interest rates, 4) on short notice.

The first element is that of free lending as already proposed by Thornton (1802) and Bagehot (1873). For the functioning of last resort lending, it is required that the lender can provide an amount of liquidity that could eventually be used to pay for all of the deposits. Since this sum of liquidity can usually not be provided by and private agent, e.g. an insurance company and can also not provided by government (with no control over money creation), central banks are the natural institution to be able to fulfil the lender of last resort function.

The second element of the lender of last resort function is less straight forward. The idea to lend only against good collateral rests on the aim that last resort lending should benefit banks with short term liquidity problems but not banks that are insolvent. Thus, if a bank can provide good collateral (e.g. securitised loans or government bonds), it is signalling that it is solvent but just illiquid and the lender of last resort could lend freely. However, the value of collaterals is endogenous to the last resort lending function. Also assets that are hold by banks face the problem of multiple equilibria (compare Calvo, 1988, Gärtner & Griesbach, 2012). If for example government bonds have to pay relatively low yields, because the risk of default is low, it is very likely that government is able to repay its debt. If interest rates that have to be paid on public debt are very high, because the risk of default is considered to be high, it is very likely that government will default. There might be a range between these two extremes, where the likelihood of default depends on the existence of a lender of last resort. If, for example, the lender of last resort decides to accept government bonds as good collateral during a banking crisis, this would allow the bank to keep these assets in stock. If the lender of last resort would not accept government bonds as collateral, the bank would be forced to sell the bonds in order to pay out depositors. These fire sales would lead to declining prices for government bonds and therefore to higher yields. Thus, if the lender of last resort does not accept certain assets because it considers them to be no-good, it might trigger them to become no-good. The acceptance of the government bond as collateral might in turn lead to lower yields and therefore no default of the government. This counts the more for assets that are less liquid than government bonds. In times of crises, with a high degree of uncertainty among market participants, the lender of last resort should be able to differentiate between collateral that would be good in normal times and collateral that is not good also in normal times and it should accept all collateral that would be good under normal circumstances.

The third element of the lender of last resort function is that of high interest rates that has already been proposed by Bagehot (1873). At the time of his writing, during the gold standard period, there has been the fear that extensive lending at low rates would lead to outflows of gold and put the fixed exchange rate at risk (Bignon et al. 2012). Additionally, high interest rates on last resort lending would encourage banks to lend form and to each other and therefore stimulate the interbank money market, that is usually down during banking crises. Only later 'high interest rates' have been interpreted as 'penalty rates' that could hempen moral hazard. Last resort lending might be subject of moral hazard, since it has similar effects like an insurance for banks. That might encourage banks to more risky behaviour. If banks have to pay penalty rates for last resort lending, they have to bear at least parts of the additionally taken risk, which might reduce the willingness to take additional risks. There are, however, doubts with regard to moral hazard created by the lender of last resort function.

The fourth element of the lender of last resort function is, that lending should be available quickly, before contagion effects can spread a banking crisis to the system (Solow, 1982). Thus, it should be ensured that lender of last resort resources are available on short notice and do not require a long administrative process of implementation.

If these prerequisites are met, a lender of last resort can be assumed to work effectively. In what follows, I therefore look at the institutional setting of last resort lending in EMU and CMA in chapter two. In chapter three I am using a very simple empirical approach to check for the existence of last resort lending in the recent past. In chapter four, I am using the findings of the previous chapters to derive some policy recommendation for increasing the effectiveness of last resort lending. Chapter five concludes.

## 2. The legal framework for last resort lending

While the basic functions of a lender of last resort apply in general, the institutional framework for the operating of the lender of last resort it obviously different in different jurisdictions. Therefore, the chapter deals with both of the region in separate subsections.

### 2.1. In the EMU[2]

The lender of last resort function is not explicitly mentioned in the contract of the EU nor in the statutes of the ECB or the euro system. However, some of the regulations hint to safeguard functions of the ECB. The Lisbon Treaty of the European Union rules in Art. 127 (2) similar to the Statute of the euro system: "The basic tasks to be carried out through the ESCB [European System of Central Banks, short: euro system] shall be: ... to promote the smooth operation of payment systems.". Additionaly, Art. 127 (5) reads: "The ESCB shall contribute to … the stability of the financial system.". These regulations state

[2] The whole chapter draws heavily on Lastra (2012).

that the euro system is at least contributing to financial stability, which might include the stability of the banking sector. Furthermore, the euro system is responsible for the provision of liquidity to the banking system. Art. 127 (2) of the Lisbon Treaty: "The basic tasks to be carried out through the ESCB shall be: to define and implement the monetary policy of the Union". Art. 18 of the Statute of the euro system provides more details: "the ECB and the national central banks may: … operate in the financial markets by buying and selling outright (spot and forward) or under repurchase agreement and by lending or borrowing claims and marketable instruments …, as well as precious metals; … with lending being based on adequate collateral." Liquidity provision is, however limited to sound banks: "Counterparties must be financially sound." Chapter 2.1 (b) of the Implementation of Monetary Policy in the Euro Area.[3] This prohibits the ECB from last resort lending, since banks in crisis can hardly be defined as "financially sound".

Besides the ECB, the euro system also consists of the still existing national central banks. According the euro systems statutes (Art. 14 (4)) the national central banks might be able to fulfil the task of last resort lending: "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 gives the national central banks some room to act as a lender of last resort, at least as long as the ECB has no objections. More details on the framework for last resort lending by national central banks in the euro area are provided by the ELA (Emergency Liquidity Provision) Procedure.[4] Accordingly ELAs might be provided to "to a solvent financial institution, or group of solvent financial institutions, that is facing temporary liquidity problems". Further, "Responsibility for the provision of ELA lies with the NCB(s) concerned. This means that any costs of, and the risks arising from, the provision of ELA are incurred by the relevant NCB." The limits of the operation of the national central banks are spelled out as: "However, … the Governing Council of the ECB [has the] responsibility for restricting ELA operations if it considers that these operations interfere with the objectives and tasks of the Eurosystem."

A short summary of the above is, that the ECB is responsible for the liquidity provision of financially sound banks. The ECB has only a shared responsibility for financial stability. The ECB has no mandate for operating as a lender of last resort (at least based on a conservative interpretations of the Treaty). Within the Eurosystem, national central banks are responsible for last resort lending. The instrument used is called Emergence Liquidity Assistance (ELA) and it is limited by the veto of the ECB, while all risks and costs are left with the national central bank in action.

### 2.2. In the CMA

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## 3. Effectiveness of last resort lending

The institutional framework provides just one hint to the actual functioning of last resort lending. Even if legal limitations to the function are existing, for an evaluation of the effectiveness it is interesting to

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[3] http://www.ecb.europa.eu/pub/pdf/other/gendoc2008en.pdf.

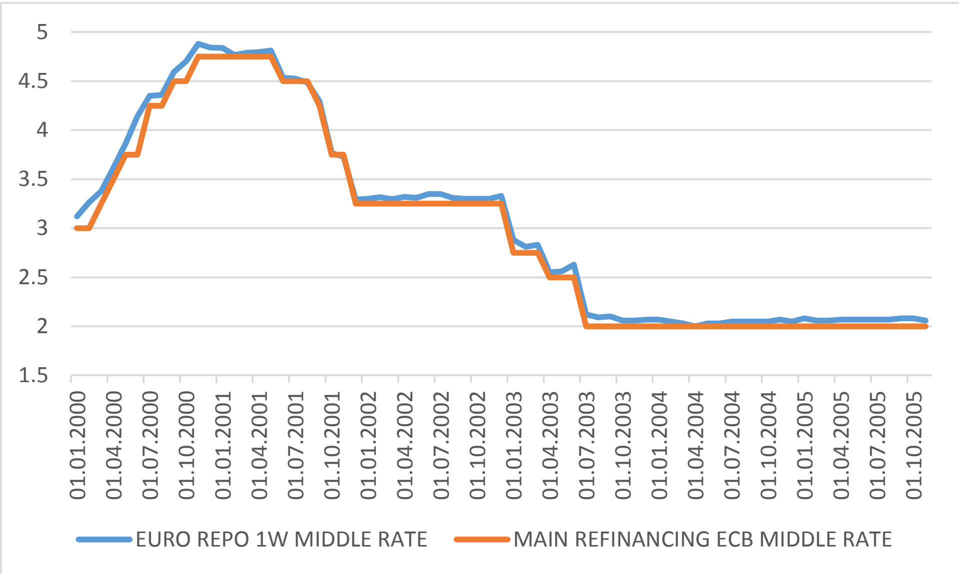
[4] https://www.ecb.europa.eu/pub/pdf/other/201402_elaprocedures.en.pdf?e716d1d560392b10142724f50c6bf66a.

empirically check on whether the monetary unions did engage in last resort lending. To this end the chapter uses a very simple empirical technique, proposed by Bignon et al. (2012). The underlying thought is, that in normal times banks can choose to refinance themselves yia the interbank money market or via the central bank. If both sources of refinancing are substitutes, the central banks refinancing rate should be very closed to the money market rates (for the same maturity). However, banks tend to have a small preference for money market refinancing, because that way they can demonstrate independence from the central bank. Thus, in normal times, the money market rate should be somewhat higher than the central banks refinancing rate. If now, in the case of a banking crisis, banks are excluded from the interbank market, but at the same time receive liquidity from the central bank (thus, the central bank is accepting collateral that the commercial banks refuse to accept), we have the case of last resort financing. In that case, we would assume that the refinancing rate exceeds the money market rate. This finding can be exploited to check for the presence of last resort lending.

### 3.1. In the EMU

In the EMU we find, as expected that money market rates developed very much in line with refinancing rates, while money market rates have been somewhat higher before the crisis (see fig. 1).

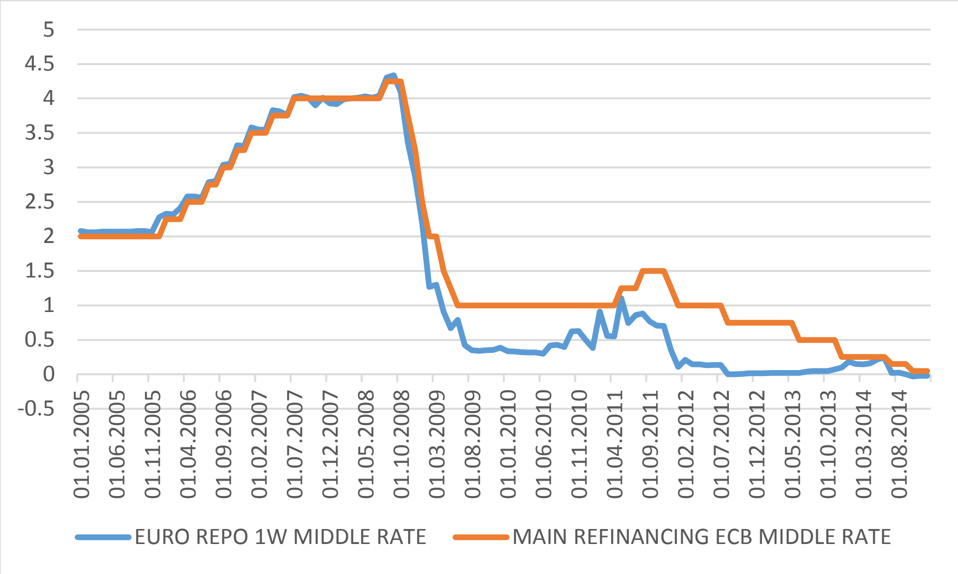
**Figure 1: Money market rates and refinancing rates (1 week maturity) before the crisis in EMU in percent**




Source: own presentation, Data: ECB, Datastream

In the cause of the crisis, refinancing rates have been observed to be higher as compared to money market rates (see figure 2). This provides evidence for the ECB acting as a lender of last resort during the financial crisis and the resulting banking crises in Europe.

**Figure 2: Money market rates and refinancing rates (1 week maturity) during the crisis in EMU in percent**




Source: own presentation, Data: ECB, Datastream

The beginning of the period of lower money market rates is coincident with the implementation of full allotment policy by the ECB (October 2008). With that policy, commercial banks could borrow at the given rate and against a defined set of collateral any amount of central bank money they wish. It seems that the ECB accepted collateral that would not have been accepted on inter-bank markets or dealt with banks with no access to inter-bank money markets at all. The period with declining differences between money market rates and refinancing rates has been coincident with the announcement of rescue mechanisms (end of 2010: EFSF (European Financial Stability Facility), early 2011: ESM (European Stability Mechanism)), which seem to have restored confidence in bank soundness.

It seems that the ECB acted as a lender of last resort, even if its mandate to do so is rather limited. Evidence to this result is also provided by Eichler and Hielscher (2012) using a different method. The remaining question is then, whether or not the ECB did so effectively. According the above defined criteria for effective last resort lending, the ECB should do so 1) at unlimited amounts, 2) against under normal conditions good collateral, 3) at high interest rates, and 4) at short notice. With its full allotment policy the ECB provided unlimited amounts of central bank money. It did so at high interest rates (higher as money market rates) and it did so quickly by its regular weekly tenders and its overnight facilities. The only problematic criterion is that of “good collateral at normal times”.

The ECB accepts a long list of marketable instruments as collateral (at the time of writing about 11,000). Each listed paper comes with an individual haircut. For example, at the time of writing, German government bonds go with haircuts of about 2 percent, while Cypriote governments go with haircuts of about 40 percent. The level of the haircut depends on: the kind of the instrument, the issuer, and the rating of the instrument. Haircuts based on ratings are problematic for the lender of last resort function, because they lead to a pro-cyclical liquidity provision. In tranquil periods, the usually high ratings and low haircuts on government bonds, lead to an over-accumulation of this type of assets at banks (Whelan, 2014). In times of crisis, large haircuts might amplify the downward-spiral of banking and public debt crises. With relying on ratings for haircuts, the ECB is violating the principle of last resort lending: “against good collateral at normal times”. Rating agencies do not and cannot differentiate between situations of illiquidity and insolvency. They have to consider the current risk of default and not the value of the instrument “at normal times”.

Thus, the collateral accepted by the EBC do not fulfil the requirements for last resort lending. What the ECB does, is providing liquidity in unlimited amounts to the banking system, but not (sufficiently) to banks in need. Bilateral loans to individual banks (holding currently non-tradable asset that would be sound under normal conditions) are not available from the ECB. Some authors argue (e.g. Bordo, 2012) that indeed a lender of last resort should act that way. It is argued, that it would be sufficient to just provide liquidity to the market and let the allocation of the liquidity to the market mechanism. Others argue (e.g. Bignon et al., 2012) that this not sufficient, since banks in a competitive environment have no interest in a socially optimal allocation of liquidity, but rather prefer to kick weak competitors out of the market. Thus, predatory lending occurs and the lender of last resort function cannot be fulfilled by just lending to the market. I am going to agree with later statement for the further judgement of the effectiveness of last resort lending.

Besides the ECB, the Eurosystem also includes the national central bank, which can provide Emergency Liquidity Assistance (ELA) to banks in needs. Besides the general outline of procedure of ELAs, there is very limited information available about the conduct of this policy, since national central banks keep their ELA lending usually secret. What is known, is that crisis countries in Europe used this instrument quite heavily during the various banking crises. Also with regard to ELAs, the question is, whether they provide for effective last resort lending or not. ELAs have a high interest rate attached and are provided by national central banks on short notice. The problem with ELAs is twofold. First, the liquidity provision is limited by ECB intervention, as for example in current decisions against increasing the volume of EAL lending towards Greek banks. Second, the limited transparency of ELA operations does not allow to judge the quality of the accepted collateral. It might have been the case, that national central banks accepted collateral that would not have been good even under better circumstances, and thus provided liquidity to insolvent banks. This would have been beyond last resort lending and basically a fiscal task (e.g. if a government decides to recapitalise and insolvent bank). The problem in the institutional framework regarding ELAs is, that the ECB is allow to limit the amount of liquidity provision by national central banks only based on “that these operations interfere with the objectives and tasks of the Eurosystem”, as cited above. If small countries’ central banks’ lending heavily against bad collateral, this will hardly impact to overall tasks and objectives of the ECB, e.g. the inflation target. Since all of the other responsibilities are with the national central bank only, the ECB has no right to interfere, say if it detects that a national central bank is indeed lending to insolvent banks. As it is impossible for the stake of this study to gain insights in the procedure of ELA lending in all single member states, it has to be concluded that last resort lending by national central banks is also not effective.

Summing up, both, the ECB and national central banks in the EMU are acting as lenders of last resort. However, both of them do this with limited effectiveness. One central problem constitutes the valuation of collateral. This gives rice to some proposals for reform.

### 3.2. In the CMA

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## 4. Proposals for reform

There is a range for reform proposals for the lender of last resort function in the EMU around in economic literature. Firstly, there are proposals of last resort lending that are rather of fiscal nature and address the dealing with insolvent banks, e.g. installing and European Monetary Fund (Kopf, 2011) or providing a banking licence to the European Stability Mechanism (Illing and König, 2014). While these proposals have their relevance, they do not address the type of the classical lender of last resort function discussed in this paper.

The second and probably most prominent stand of reform proposals deals with a lender of last resort function of the ECB towards governments. The idea there is, that since we have to observe the vicious cycles between public debt and banking crises, the ECB should buy government bonds of countries in need and thus push the market into the good equilibrium, assuming that multiple equilibria are possible on markets for government bonds (e.g. Buiter and Rahbari, 2012; De Grauwe, 2013; Fuertes at el., 2015). Further proposals suggest the centralisation of ELAs to the ECB (Goodhart and Schoenmaker, 2014; Lanoo, 2012) as well as installing a market maker of last resort (Buiter and Sibert, 2007).

Trying to provide a synthesis of the above mentioned proposals, all of them have in common the assumption of existence of multiple equilibria (e.g. on banking markets and government bond markets). Also all them assume that a lender of last resort would be able to turn the market into the good equilibrium. I am using the very same assumptions to get to a very simple recommendation that in my view, would solve the issues addressed by most of the proposals.

Coming back to the current problems of last resort lending in the EMU, it was found that the ECB does not accept a sufficient range of collateral with an appropriate haircut, and national central banks can only lend at limited capacity and do so (maybe) against bad collateral. Without creating any new instruments, the problem could be solved by making the ECB to do its own ratings for the accepted collateral based on the requirement of a lender of last resort (being good under normal conditions). If the ECB would provide liquidity against this kind of collateral, sticking to full allotment policy, it would perfectly fulfil the requirements for last resort lending. The policy change should be communicated accordingly, to allow the market participants to adjust their behaviour. Institutionally it might be sufficient to change "Counterparties must be financially sound." In Chapter 2.1 (b) of the Implementation of Monetary Policy in the Euro Area into "Counterparties must be financially sound under normal circumstances."

With this policy in place, it seems that there is no need for an additional lender of last resort for governments. If government bonds come under pressure because of fire sales of banks, which cannot use these bonds as collateral with the ECB, than the acceptance of these government bonds as collateral for ECB refinancing would already stop the vicious cycle. This policy can, of course only be conducted as long as the government is not insolvent. For insolvent governments in currency unions, other measures should be taken (compare Holtemöller and Knedlik 2011).

With this policy in place, there would also be no need for additional bilateral lending to banks facing a bank run. The ECB is conducting business with an already large number of individual banks (2014: 150 banks). If individual banks have access to the ECB, predatory lending by competing banks can be avoided.

## 5. Conclusions

The ECB and national central banks are already acting as lenders of last resort in the EMU, even if the treaties and statutes do not spell out that function explicitly. However, both of them do not fulfil the last resort lending function sufficiently. A relatively small change in the institutional setting, namely to require the ECB to do its own rating of accepted collateral, could provide a solution for the limitations of the functioning of last resort lending in the EMU and might be able to avoid far reaching changes in the legal setting that have been proposed by other authors.

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