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The lender of last resort in court

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The Lender of Last Resort in Court

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Abstract

Is the OMT program in violation of the ECB's mandate? This paper applies the economic argumentation put forth by the OMT's opponents and supporters before the Federal German Constitutional Court [Bundesverfassungsgericht] to the full allotment policy practiced by the ECB since October 2008. The comparison shows that if the OMT violates the ECB's mandate, the same holds for the full allotment policy. Ultimately, therefore, the ECB is not in court because of monetary financing, but rather as a lender of last resort. Accordingly, a court decision against the OMT would endorse an economic reasoning which contradicts 150 years of modern central bank history and would expose the euro area to the instabilities of financial markets. Such a monetary union is neither sustainable nor desirable.

Key words: lender of last resort, OMT program, full allotment policy

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1. Introduction

The survival of the euro has been the most hotly debated topic in monetary economics over recent years. Policy measures taken by euro area leaders, such as the European Stability Mechanism (ESM), steps towards a European banking union, and most importantly the ECB's Outright Monetary Transaction Program (OMT) have been either hailed (e.g. Rajan 2013) or strongly criticized (Stark 2013).¹ In Germany, for example, these policies have triggered several contradictory "open letters" from economists to the general public (Merz et al. 2011, Krämer 2012, Fratzscher et al. 2013, *Wall Street Journal* 2013). Most prominently, however, on 11 and 12 June 2013 several economists as well as representatives of the ECB and the Bundesbank exchanged arguments in the ESM/ECB hearings before the Federal German Constitutional Court in Karlsruhe. In essence, the question was whether the OMT program, as well as other measures such as TARGET 2, falls within the mandate of the ECB.

This paper analyzes the economic reasoning that lies behind the arguments presented in favor of and against the OMT program in court (Asmussen 2013, Deutsche Bundesbank 2012, Fratzscher 2013 a,b, Fuest 2013, Konrad 2013, Schorkopf 2013, Sinn 2013, Weidmann 2013c, Uhlig 2013). It is motivated by the singularity of the event, namely an exchange of economic views before a constitutional court, and by the overriding importance of the issue at hand, the future of the euro. However, it is also motivated by the aim of demonstrating that the heated debate in Germany reflects the fact that a majority of German economists assess monetary policy from an ordoliberal perspective.² Moreover, they interpret several 'constituent principles' of *Ordnungspolitik* as being inherently inconsistent with any "lender of last resort" activity of central banks as laid out by Bagehot (1873).³

The analysis is based on a comparison, as we use the example of the full allotment policy as a benchmark for the arguments provided in favor of and against the OMT. By doing so, we are able to show that the economic logic underlying the arguments in favor of and against the OMT can also be applied to measures taken by the ECB during the global financial crisis.⁴ Indeed, if the economic logic of the OMT opponents is

¹ Balanced views, such as Hellwig (2013), who "grudgingly" supports the OMT, are an exception.

² The principles of ordoliberalism are summarized in Oliver (1960). Weidmann (2013a) explicitly links his views on the euro crisis to ordoliberal principles.

³ See also Winkler (2013c). The ordoliberal school also has a dominant influence on many business journalists in Germany, the media coverage of the euro crisis, for example in newspapers like the *Frankfurter Allgemeine Zeitung* or the *Handelsblatt*, has a strong bias against the OMT and other measures taken by the ECB and euro area governments to fight and contain the crisis.

⁴ In the proceedings before the Federal German Constitutional Court, apparently no comparison to other monetary policy instruments was drawn. The author is not aware, in any event, of any instance

a guide for the proper conduct of monetary policy, the ECB has been acting outside its mandate since late 2008. However, this also implies that its mandate – as interpreted by the OMT opponents – is fundamentally incompatible with the role of a central bank as a lender of last resort – historically speaking, the *raison d'être* of central banks (Goodhart 1988).⁵ By contrast, the economic reasoning of the OMT supporters is consistent with the views expressed by the ECB and the Bundesbank in defending monetary policy measures taken during the global financial crisis. Thus, the OMT program clearly pursues monetary policy aims and falls within the ECB's mandate, as it merely carries over the rationale which applies to one source of base money supply – loans to the banking system – to another source of base money supply, namely the purchase of sovereign bonds. We conclude from this that the ECB is not in court because of monetary financing, as argued by the OMT opponents, but rather in its role as a lender of last resort.⁶

The paper is structured as follows: After a brief description of the OMT program, Section 2 explores the economic logic of the expert testimonies which assess the OMT program as a violation of the ECB's mandate. To this end, we also make use of closed system of accounts in order to clarify whether and to what extent the OMT can be interpreted as an instrument of fiscal policy. Section 3 demonstrates that the economic logic applied to the OMT case also applies to other monetary policy crisis measures, notably the full allotment policy. Section 4 – by way of digression – focuses on the interpretation of TARGET2 balances. While in court, TARGET2 balances were mainly discussed by Sinn (2013), they have been at the heart of the debate on euro rescue policies over the last years. We show by way of a thought experiment that TARGET balances may arise as a result of a full allotment policy implemented to fight a financial crisis even within a nation state. Thus, TARGET balances are by no means a specific feature of the euro crisis, but rather a normal monetary policy phenomenon in periods of financial turmoil. Section 5 explains that the similarities between the OMT program and the full allotment policy reflect the fact that the use of both is grounded on the same theoretical basis, namely the central bank as a lender of last resort. Moreover, it shows that this theory inherently contradicts the logic of the OMT's critics linked to German ordoliberalism. Section 6 summarizes the paper's key findings and draws conclusions.

in which the judges confronted the OMT critics with the question as to whether their argumentation might not equally apply to other monetary policy crisis measures adopted since 2007.

⁵ The question as to whether the ECB's mandate includes the lender of last resort function was already raised by Folkerts-Landau and Garber (1992).

⁶ Thus, the analysis leads to the same message contained in Giavazzi et al. (2013).

2. The OMT Program as a Violation of the ECB's Mandate

The OMT program essentially consists of a) the announcement of unlimited purchases of sovereign bonds which b) are traded on the secondary market, c) have a maturity of up to three years and d) have been issued by a euro area member state with an ESM program in place. An ESM program is a necessary prerequisite, but not sufficient by itself, since the ECB reserves the right to decide for itself whether it chooses to make unlimited purchases of a country's sovereign bonds or not.

With the OMT program, the ECB pursues the aim of repairing the monetary transmission mechanism for the euro area as a whole that had been disrupted by turbulences in the market for sovereign bonds. In the ECB's view, these turbulences, in turn, did not only reflect solvency risks of individual countries, but were unleashed by concerns about an involuntary break-up of the euro area (Asmussen 2013).

The OMT program would represent a clear violation of the ECB's mandate if

- a) the ECB were prohibited in principle from acquiring government bonds in the secondary market;
- b) the government bond market did not play any significant role in terms of the transmission mechanism for monetary policy.

Proponents and critics of the OMT program agree that neither is the case.

Re a): Under the statutes of the Eurosystem, purchases of sovereign bonds in the secondary market are "not excluded" (Weidmann 2013c)⁷ and may serve as a monetary policy instrument "to provide liquidity for the euro area or to influence long-term reference rates" (Weidmann 2013c).⁸ The purchase of government bonds is therefore, alongside lending to banks and the purchase of foreign exchange reserves, one of the three principal sources of base money. This holds even though such purchases are as much "monetary financing" of the government as lending to banks constitutes "monetary financing" of banks. However, in neither case does the central bank pursue this purpose; rather, it seeks to send a monetary policy signal.⁹ If government bond pur-

⁷ Fuest (2013) and Sinn (2013) express similar views. Fuest (2013) describes the purchase of sovereign bonds on the secondary market as "permissible by the ECB if the step is taken as a monetary policy measure and the prohibition against the provision of public-sector finance is not being circumvented." Sinn (2013, 18) notes that bond purchases are not explicitly permitted, but at the same time are not explicitly prohibited.

⁸ This suggests that a policy of quantitative easing, as pursued by the Federal Reserve, is compatible with the ECB's mandate; see also Deutsche Bundesbank (2012, 11f.).

⁹ The same considerations apply to the third source of base money, namely the purchase of foreign exchange reserves. It is usually used by central banks that issue a currency which is pegged to another currency via a fixed exchange rate or a tightly managed float. Foreign exchange reserves usually consist of government bonds of the country issuing the currency to which the domestic currency is pegged. For example, China's foreign exchange reserves probably consist to a considerable extent of US government bonds. However, the Chinese authorities do not purchase these bonds with the

chases did not qualify as a monetary policy instrument, the Federal Reserve would not have been conducting monetary policy over the last sixty years, as purchases and sales of government bonds have been the primary monetary policy tool used in steering the federal funds rate.¹⁰

Re b): The market for sovereign bonds is an important part of the monetary transmission mechanism (Deutsche Bundesbank 2012, 4, Sinn 2013, 57f.). It is a part of those money, credit and capital markets whose functioning is a “prerequisite for the implementation of monetary policy measures” (Weber 2009a, 5). This means that fundamental disruptions in this market can justify the intervention of a central bank pursuing price stability (Figure 1).

Figure 1: Monetary policy and monetary transmission in the euro area prior to the crisis



Source: Author's compilation

Critics of the OMT program respond by arguing that the purchase of sovereign bonds does not per se violate the ECB's mandate. However, sovereign bond purchases under the OMT program do not serve a monetary policy purpose, including repairing a disrupted transmission process, but constitute monetary financing.

goal of financing the US budget deficit although, *de facto*, this is what they do. Rather, they purchase these bonds in order to achieve their monetary policy goal, namely a certain level of the exchange rate.

¹⁰ However, in the global financial crisis, when the Federal Reserve observed that the transmission process was impaired as its interest rate signal was no longer reaching key credit markets, e.g. the “commercial paper market and the market for securities backed by loans to households and small businesses” (Bernanke 2009), it considerably expanded its array of monetary policy instruments by lending directly to banks and other financial institutions via “targeted lending programs” (Bernanke 2009). It did so in order to directly influence those market segments which are significant in terms of monetary transmission and in “normal” times can easily be influenced by changes in the federal funds rate (for details see Madigan 2009). Thus, these programs served the same purpose as the OMT because they represent an expansion of the set of monetary policy instruments in response to a disruption of the monetary policy transmission mechanism. Programs were terminated, or ran out, once confidence of market participants returned and the transmission mechanism was restored. The comparison reveals that it is misleading to compare the OMT, a measure designed to ensure a smooth monetary policy transmission, with quantitative easing, which is a substitute for a further reduction in the federal funds rate, the usual monetary policy signal, under the zero lower bound constraint.

This position is based on four arguments:

1. Euro area government bond markets were never disrupted, but rather were functioning smoothly.¹¹ Accordingly, there was no need for monetary policy measures to smooth the transmission mechanism. Most importantly, the ECB argument that the monetary policy transmission process was impaired due to systemic risks, specifically: implicit exchange rate risks, is not supported by evidence. Thus, it is merely providing a monetary policy motivation for *de facto* monetary financing of euro area governments (Deutsche Bundesbank 2012, 7). A proper analysis would have revealed that rising bond spreads reflected concerns about the solvency of individual euro area member states. Indeed, these concerns materialized in the Greek case (Weidmann 2013c). Accordingly, rising government bond spreads have been a normal market reaction to solvency risks, which the OMT is suppressing (Sinn 2013, 5, 36).¹²
2. "Implicit exchange rate risks" do not constitute an argument for monetary policy actions, because it is not the ECB but euro area governments that are called upon to combat those risks and ensure the integrity of the euro area (Deutsche Bundesbank 2012, 9). Moreover, an exit of a member state would mainly affect financial stability rather than price stability. By contrast, the promise to do "everything it takes to preserve the euro" makes the ECB vulnerable to "blackmail" and thus entails "massive risks for price stability" (Fuest 2013, 3, similarly Deutsche Bundesbank 2012, 10).
3. The OMT program pursues the aim of "ensuring that the highly indebted member states continue to have access to the capital market and lowering their financing costs" and "facilitating their return to the capital market. These are clearly fiscal policy outcomes." (Fuest 2013, 2.) The ECB position, that the OMT program primarily pursues monetary policy aims, is therefore "not convincing" (Fuest 2013, 3). Accordingly, such a program can be pursued only through fiscal policy, and thus in the European context through the ESM (Fuest 2013, 3; Sinn 2013, 20ff., 47; Weidmann 2013c). The ESM can provide participating countries with the necessary funds by borrowing on the capital markets. Monetary policy itself cannot be part of the stabilization of sovereign bond markets.

¹¹ Sinn (2013) argues that capital markets had not been functioning properly prior to the crisis because investors – misled by regulatory measures and a no-bail-out clause that lacked credibility – had provided capital to the private and public sectors of the crisis countries without charging "risk-adjusted premiums". In the crisis investors acknowledged the mistakes made before and the market was functioning smoothly again.

¹² In a similar vein, the Securities Markets Program (SMP), which expired with the announcement of the OMT program, constituted monetary financing as well.

Figure 2 illustrates this argument on the basis of a closed accounting system¹³ of the euro area made up of the balance sheets of the private non-bank sector (NBS), the banking sector, the ECB, as well as the governments of the crisis countries (i.e. Greece, Ireland, Portugal, Spain, Italy) and the governments of the non-crisis countries (all other countries, in particular Germany). In the crisis period, the European Stability Mechanism (ESM) is added. To simplify, the private NBS holds only three types of financial assets: cash (C), deposits (D) and government bonds (B), concretely government bonds of the crisis countries (B_{CC}) and non-crisis countries (B_{NCC}). In addition, the banking sector holds minimum and excess reserves with the central bank. Minimum reserves correspond to the minimum reserve ratio (r) multiplied by the deposits of the private NBS held with the banks.

In line with monetary policy practice, the ECB supplies base money in the pre-crisis period (Figure 2, Table 1a) solely by lending to the banking sector. Crisis and non-crisis countries finance the acquisition of physical capital (schools, infrastructure, military equipment, etc.) produced by the NBS by issuing sovereign bonds which the NBS voluntarily acquires. Since the maturity of government bonds is shorter than the useful life of the physical capital they finance euro area governments engage in maturity transformation (Giavazzi and Pagano 1990, Cole and Kehoe 1996, Buiters and Rahbari 2012).

During the crisis (Figure 2, Table 1b) the NBS wants to sell or refuses to roll-over outstanding bonds of the crisis countries due to solvency concerns. This is represented by the shock $-b_{CC}$. The shock leads either to a rise in interest rates or to a complete loss of market access. The newly established ESM prevents this by providing funds in the amount of b_{CC} which crisis countries use to repay their debt to the original NBS creditors.¹⁴ The ESM receives these funds from the NBS because (and as long as) its solvency is beyond doubt. The ESM thus becomes an intermediary between the NBS and the crisis countries. As a result the gross balance sheet of the euro area governments, i.e. crisis and non-crisis countries, increases by b_{CC} . On net terms, however, the balance sheet remains unchanged, because the ESM merely serves as a redistribu-

¹³ The closed system of accounts ensures that there is a corresponding liability for every asset. Loans from the household sector to the corporate sector intermediated by the banking sector are recorded as assets and liabilities in the balance sheet of the NBS. Thus, they lengthen the balance sheet but do not affect the net creditor position (i.e. equity) of the private NBS. Overall, the system reflects the standard assumption of modern macroeconomic models, namely that the representative household owns the representative firm that produces goods and services. For further details on the methodology the system of accounts is based upon, see Bindseil and Winkler (2012, 2013).

¹⁴ Thus, without the intervention of the ESM, the NBS would not be repaid, because due to the maturity transformation the crisis countries have engaged in they are not in a position to generate these funds without a new issue of sovereign debt.

tion mechanism of risk from the NBS to the governments of the non-crisis countries. On a consolidated basis, outstanding debt of all euro area governments remains unchanged. None of these activities have an impact on the balance sheet of the ECB.

Under the OMT program (Figure 2, Table 1c), the ECB would become part of the public sector intermediation between the NBS and the crisis countries if the ECB purchased sovereign bonds of the crisis countries. In comparison to intermediation purely by the ESM, the gross balance sheet of euro area governments grows only by that part of the shock (α) which is offset by the ESM. The size of the ECB balance sheet remains basically unchanged, as sovereign bond purchases, $(1-\alpha)b_{CC}$, are sterilized by a corresponding drop in lending to the banking sector.¹⁵ Overall, the closed system of accounts demonstrates that with the OMT “the boundaries of monetary and fiscal policy become blurred.” (Weidmann 2013c).

Figure 2: ESM and OMT as measures to stabilize sovereign bond markets

Table 1a: The pre-crisis situation: All euro area governments finance themselves via the market

Private non-bank sector			
Real capital	$K - B_{CC} - B_{NCC}$	Equity	K
Bonds of crisis countries	B_{CC}	Loans from banks	$D + C$
Bonds of non-crisis countries	B_{NCC}		
Deposits	D		
Cash	C		

Banks			
Loans to the private NBS	$D + C$	Deposits of the private NBS	D
Minimum reserves	rD	Loans from the ECB	$C + rD$

ECB			
Loans to banks	$C + rD$	Cash	C
		Minimum reserves	rD

Crisis countries			
Real capital	B_{CC}	Bonds of crisis countries	B_{CC}

Non-crisis countries			
Real capital	B_{NCC}	Bonds of non-crisis countries	B_{NCC}

¹⁵ Indeed, the ECB balance sheet only expands because the NBS now holds bank deposits subject to a minimum reserve requirement instead of sovereign bonds of the crisis countries.

Memo: Consolidated balance sheet of euro area governments

Euro area governments			
Real capital	$B_{NCC} + B_{CC}$	Bonds of all Member States	$B_{NCC} + B_{CC}$

Table 1b: Crisis management: the ESM as sole intermediary between the private non-bank sector and the crisis countries

Private non-bank sector			
Real capital	$K - B_{CC} - B_{NCC}$	Equity	K
Bonds of crisis countries	$B_{CC} - b_{CC}$	Loans from banks	$D + C$
Bonds of non-crisis countries	B_{NCC}		
ESM bonds	b_{CC}		
Deposits	D		
Cash	C		

Banks			
Loans to the private NBS	$D + C$	Deposits of the private NBS	D
Minimum reserves	rD	Loans from the ECB	$C + rD$

ECB			
Loans to banks	$C + rD$	Cash	C
		Minimum reserves	rD

Crisis countries			
Real capital	B_{CC}	Bonds of crisis countries	B_{CC}

Non-crisis countries			
Real capital	B_{NCC}	Bonds of non-crisis countries	B_{NCC}

ESM			
Bonds of crisis countries	b_{CC}	ESM bonds	b_{CC}

Memo: Unconsolidated balance sheet of euro area governments

Euro area governments			
Real capital	$B_{NCC} + B_{CC}$	Bonds of all Member States	$B_{NCC} + B_{CC}$
Bonds of crisis countries	b_{CC}	ESM bonds	b_{CC}

Memo: Consolidated balance sheet of euro area governments

Euro area governments			
Real capital	$B_{NCC} + B_{CC}$	Bonds of all Member States	$B_{NCC} + B_{CC}$

Table 1c: Crisis management: ESM and ECB as intermediaries between the private non-bank sector and the crisis countries

Private non-bank sector			
Real capital	$K - B_{CC} - B_{NCC}$	Equity	K
Bonds of crisis countries	$B_{CC} - b_{CC}$	Loans from banks	$D + C$
Bonds of non-crisis countries	B_{NCC}		
ESM bonds	ab_{CC}		
Deposits	$D + (1-\alpha)b_{CC}$		
Cash	C		

Banks			
Loans to the private NBS	$D + C$	Deposits of the private NBS	$D + (1-\alpha)b_{CC}$
Minimum reserves	$r(D + (1-\alpha)b_{CC})$	Loans from the ECB	$C + r(D + (1-\alpha)b_{CC}) - (1-\alpha)b_{CC}$

ECB			
Loans to banks	$C + r(D + (1-\alpha)b_{CC}) - (1-\alpha)b_{CC}$	Cash	C
Bonds of crisis countries	$(1-\alpha)b_{CC}$	Minimum reserves	$r(D + (1-\alpha)b_{CC})$

Crisis countries			
Real capital	B_{CC}	Bonds of crisis countries	B_{CC}

Non-crisis countries			
Real capital	B_{NCC}	Bonds of non-crisis countries	B_{NCC}

ESM			
Bonds of crisis countries	ab_{CC}	ESM bonds	ab_{CC}

Memo: Unconsolidated balance sheet of euro area governments

Euro area governments			
Real capital	$B_{NCC} + B_{CC}$	Bonds of all Member States	$B_{NCC} + B_{CC}$
Bonds of crisis countries	ab_{CC}	ESM bonds	ab_{CC}

Memo: Consolidated balance sheet of euro area governments

Euro area governments			
Real capital	$B_{NCC} + B_{CC}$	Bonds of all Member States	$B_{NCC} + B_{CC}$

Source: Author's compilation.

4. With the purchase of sovereign bonds by the ECB – just as in the case of such purchases via the ESM – solvency risks are redistributed among euro area taxpayers (Weidmann 2013c). Specifically, the German taxpayer incurs liability risks in an amount of 27%, i.e. the German share in the equity capital of the ECB, multiplied by the amount of sovereign bonds of crisis countries the NBS

sells to the ECB (i.e. $0.27 \cdot (1-\alpha) b_{CC}$, Figure 2, Table 1c). In contrast to the ESM, under which the German taxpayer also incurs liability risks in the amount of Germany's share of ca. EUR 190 billion, however, these liability risks have not been authorized by parliament and – due to the announcement that sovereign bonds will be purchased to an "unlimited" extent if necessary – are also not limited,¹⁶ since neither the amount of b_{CC} nor of $(1-\alpha)$ is fixed. The ECB is thus encroaching on the budgetary authority of the German Federal Parliament [*Bundestag*], because the ECB – as an independent institution – is deciding on an autonomous basis how many sovereign bonds it purchases.

3. The OMT – An Analysis with the Full Allotment Policy as Benchmark Case

In court the OMT program was defended as an instrument with a clear monetary policy purpose (Asmussen 2013, Fratzscher 2013 a,b, Schorkopf 2013). Hence, it complies with the ECB's mandate. To clarify which view is correct, we compare the OMT with other instruments the ECB has employed with the explicit intention to ensure a smooth monetary transmission process. Concretely, we compare the OMT with the full allotment policy. The instrument has been in use since October 2008 as a direct response to the turbulences on the interbank market after the collapse of *Lehman Brothers*. Since then the ECB issues loans to the banking system in an unlimited amount at a fixed interest rate set by the ECB.¹⁷ Figure 3 compares the monetary policy of the ECB and the monetary transmission mechanism in "normal" times with monetary policy and the transmission mechanism during the global financial crisis.

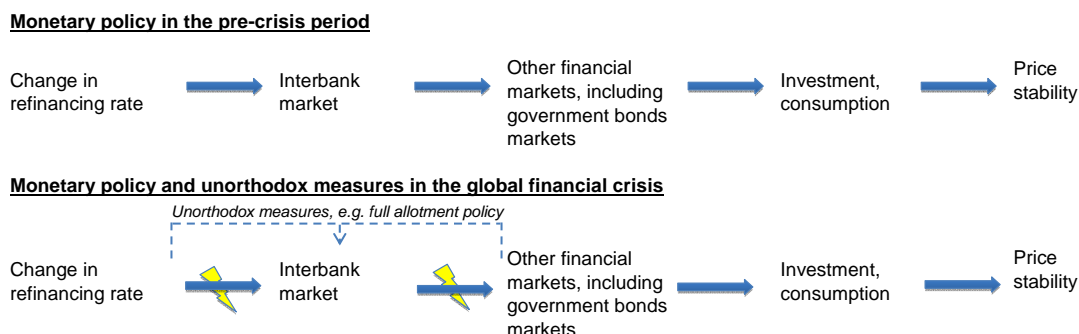
In contrast to the OMT, the full allotment policy has not been challenged as a violation of the ECB's mandate.¹⁸ Thus, we ask whether the full allotment policy has been justified by the ECB and the Eurosystem with the same arguments as the OMT, and whether the full allotment policy is open to the same criticism as put forward against the OMT. If this were the case, it can be argued that the OMT presents no more a violation of the ECB's mandate than the full allotment policy.

¹⁶ During the proceedings, there were questions and clarifications as to what "unlimited" means. Since this paper is concerned solely with an economic assessment of the issues, this aspect will not be addressed. In the following, therefore, "unlimited" is interpreted literally, also because this reflects monetary policy practice under the full allotment policy discussed below.

¹⁷ Other measures explicitly designed to ensure that changes in the main refinancing rate are transmitted to the real economy in order to maintain price stability are listed and explained in Weber (2009b, 9f.), Weber (2010a, 4f.), Trichet (2010), as well as Cour-Thimann and Winkler (2012).

¹⁸ It can be argued that Sinn (2013) implicitly views the full allotment policy as being in violation of the ECB's mandate, because it is indirectly responsible for the emergence of the TARGET2 balances, which he has strongly criticized (Sinn and Wollmershäuser 2011). We will return to this issue in Section 4.

Figure 3: European monetary policy and monetary transmission in the pre-crisis period and during the global financial crisis



Source: Author's compilation

We conduct our analysis by transferring the OMT-controversy from the sovereign bond market to the inter-bank market. In several instances this is done literally as we rephrase testimonies of OMT supporters and critics in such a way that they fit the full allotment policy context. Concretely, rephrasing means that the focus shifts from conditions prevailing in government bond markets to conditions prevailing in the inter-bank market.¹⁹ Moreover, the main counterpart of monetary policy when conducting the full allotment policy is financial market policy, and not fiscal policy like in the OMT case. We find that this change of perspective can be applied with almost no problem to the four major arguments against the OMT referred to above.²⁰

We start with a review of the arguments that defend the OMT program as a legitimate monetary policy instrument with the goal of ensuring that the monetary transmission mechanism continues to function. The very same argument has been made when defending the full allotment policy. For example, Deutsche Bundesbank (2009b, 94) argues that without this policy there would have been “an undesirably high effective increase in the central bank refinancing rate for credit institutions” (Deutsche Bundesbank 2009b, 94), i.e. the overall interest rate level would have been too high to maintain price stability. Moreover, like in the OMT case, the unintended increase would have come about as a result of a market dysfunctionality, which characterized the in-

¹⁹ We amend original quotes – translated from German to English by the author, if applicable – as follows: we openly delete the references to the OMT program, sovereign bonds, governments and fiscal policy and replace them – marked in italics – by the corresponding references to the full allotment policy, the inter-bank market, banks and financial market policy. The sources of the quotations are identified and attention is drawn to them by noting “formulation in line with...”. By doing so we provide the reader with an opportunity to decide herself whether we are right in claiming that the economic rationales of the OMT program and the full allotment policy are identical and hence also the arguments that can be put forward to criticize or defend both programs.

²⁰ Significant problems arise only when the nation-state and macroeconomic implications in connection with the OMT program are discussed.

ter-bank market. As a result, the monetary policy transmission process was disrupted and the ECB faced the “risk that the classic monetary instruments will fail to reach the intended recipients.” (Weber 2009a, 5). Facing this risk, the ECB compromised on the allocation function of the interest rate in order to ensure that the rate correctly reflects the monetary policy stance. It opted to do so because the allocation function was impaired due to market distortions.

The evidence on which this argument was based referred to “a lack of confidence”, (Deutsche Bundesbank 2009b, 93). Banks which were willing to pay higher interest rates for inter-bank loans did not encounter a greater supply because the higher interest rate was interpreted by market participants as a signal that these banks were in difficulties (Freixas and Rochet 2008, 243). As a result, market supply declined or vanished completely. Moreover, banks with a liquidity surplus did not lend to banks with a liquidity deficit out of concern that they could run into liquidity difficulties themselves. They were demanding base money *per se*, the main characteristic of a “real” – as compared to a “pseudo” – financial crisis (Schwartz, 1986). Thus, there was a “general wave of flight from risk and drying up of liquidity” (Weber 2009b, 5f.). Formulating in line with Asmussen (2013), the 2007/2008 turbulences on the interbank market were triggered by fears of an involuntary breakup of the financial system as a whole. Interest rate spreads between banks or a complete loss of market access by some banks did not only reflect solvency risks of individual institutions.

Full allotment policy and OMT have also in common that they need the involvement of a third party in order to ensure the success of the policy approach (Figure 4). In the case of the full allotment policy, this refers to financial market policy of the member states, “such as guarantees for bonds, strengthening equity capital or assuming risk positions as well as (planned) adjustments to banking supervision and accounting rules” (Deutsche Bundesbank 2009b, 98). In the case of the OMT monetary policy needs support from the ESM and other fiscal policy measures, e.g. the Fiscal Compact. In both cases supporting policies are needed to ensure that the central bank lends to solvent institutions only. Finally, both programs are characterized by the same maximum maturity of lending, namely three years.

A difference between the full allotment policy and the OMT refers to the source of base money the programs touch upon, banks versus governments. Moreover, the interest rate the ECB charges under the full allotment policy is fixed at the level of the main refinancing rate, while the rate is not specified under the OMT program.²¹ Fi-

²¹ Thus the example which Bundesbank President Weidmann used, as reported in the *Frankfurter Rundschau* on 15 June 2013, page 15, in order to illustrate his skepticism about the OMT would be much more applicable to the full allotment. It went: “If we say that we will buy every liter of beer for ten euros, then a liter of beer is worth ten euros. Does that say anything about the real value of the beer?” For the ECB sets a fixed price only for the assets it acquires under full allotment policy, while

nally, bank lending is collateralized but has no other conditions attached to it while any purchases of government bonds under the OMT program are subject to conditionality, i.e. having an ESM program in place, but are not collateralized.

Figure 4: Fixed-Rate Tender with Full Allotment versus OMT – Similarities and Differences

	Fixed-Rate Tender with Full Allotment	OMT
<i>Similarities</i>		
Policy goal	To ensure the functioning of the transmission mechanism	To ensure the functioning of the transmission mechanism
Involvement of third parties	Stabilization funds, financial market policy of the member states	ESM, fiscal policy of the member states
Maturity	2009: up to 1 year 2011: up to 3 years	Up to 3 years
<i>Differences</i>		
Source of the base money	Bank lending	Purchases of government bonds
Interest rate	Refinancing rate	Undefined
Collateral	Yes	No
Conditionality	No	Yes

Source: Author's compilation

Given the similarities between full allotment policy and OMT, the arguments that the OMT opponents have put forth against the program apply equally to the full allotment policy.

1. After the default of Lehman Brothers, the inter-bank market was never dysfunctional. Indeed, it continued to function efficiently throughout. Rising interest spreads among banks did not reflect a “loss of confidence” (Weber 2009a, 5), but rather solvency risk premia of selected banks. It is undisputed “that with the outbreak of the ~~sovereign debt crisis~~ *global financial crisis* the financing environment ~~for the credit institutions~~ *for businesses and households* deteriorated, because the declining creditworthiness of individual ~~member states~~ *banks* leads to a number of potentially disadvantageous effects ~~for the respective banking system~~ *for the cus-*

with regard to the OMT the ECB does not give the market any information regarding the price at which it is prepared to buy government bonds.

tomers of these banks. ... Higher financing costs for the private sector for these businesses and households can thus reflect higher national fiscal policy bank-specific risks. This would not [however – *author's note*] be a trend which must be counteracted by means of monetary policy measures, but rather by the national fiscal policies undertaken by euro area governments under their own responsibility the business policy for which each bank itself is responsible. In light of this, differing market interest rates for banks within the euro area are not in contradiction to a uniform monetary policy.” (Formulation in line with Deutsche Bundesbank 2012, 7).²² Thus, the full allotment policy, like the OMT, lacks “clear quantification and unequivocal classification and interpretation of individual risk components, i.e. an analytical breakdown of risk premiums.” As a result, the assessment of market conditions on which the full allotment policy has been based was arbitrary, i.e. it has been conducted in a way that it was “possible to justify any interpretation, and the recommendations derived from it, by making the assumptions which appear to support it.” (Deutsche Bundesbank 2012, 7).

If a proper analysis had been conducted on the sources of the inter-bank market turmoil it would have been observed that the inter-bank market crisis in 2008/2009 was a reflection solely of solvency problems of individual banks, as the example of the German *Hypo Real Estate* (HRE) illustrates. Like in the case of Greek and German bonds two years later, interest rate spreads between loans to HRE in comparison to loans to Deutsche Bank were justified on pure solvency grounds. Indeed, Deutsche Bundesbank (2009b) openly admits that only banks with (supposed) solvency problems benefitted from the full allotment policy. For during the crisis, three categories of bank emerged (Deutsche Bundesbank 2009b, 95): the category of banks “considered a good risk”, which have access to the market at favorable terms,

1. the category of banks for which “the market is uncertain about its credit outlook” and which therefore cannot meet their liquidity needs in full via the market, and
2. the category of banks which “is not perceived as having a sufficiently good credit standing and lacks adequate collateral for interbank transactions. Therefore it is virtually impossible for these banks to obtain money either in the unsecured or the secured interbank market. The banks in this group are therefore largely dependent on Eurosystem operations.” (Deutsche Bundesbank 2009b, 95).

²² Thus, the arguments of Deutsche Bundesbank (2012), transferred to the inter-bank market, imply that the “non-monetary effects” of a financial crisis as analyzed in Bernanke (1983), namely that financial disruptions reduce the efficiency of the credit allocation process; and that the resulting higher cost and reduced availability of credit acts to depress aggregate demand either do not exist or do not provide an argument for monetary policy actions.

Thus, the provision of liquidity by the Eurosystem to cover the financing needs of HRE was just as problematic as the provision of liquidity for Greece, because it implies the assumption of financial market policy tasks (in the OMT case: fiscal policy tasks) by monetary policy (Deutsche Bundesbank 2012, 15). The alleged disruption reflected an efficient functioning of the market (formulation in line with Sinn 2013, 57). The good banks and the depositors recognized the error they had made in lending to the crisis banks in the years before and wanted to correct this error. By introducing the full allotment policy the ECB intervened in free pricing with the goal of selectively financing certain banks (argumentation in line with Sinn 2013, 55) rather than counteracting “dysfunctionalities”.

The distorting effects of the full allotment policy are comparable to the distorting effects of the OMT: “When the ESCB purchases all of the ~~bonds issued by an individual euro area member state~~ *inter-bank liabilities of a bank* or announces that it will make such purchases, the ESCB influences the market for ~~government bonds~~ *inter-bank loans*. ~~The individual member state~~ The bank whose debts are acquired on the secondary market thus obtains an advantage... . The purchases are additional demand. In the normal course of private demand, a higher price arises, i.e. a lower lending rate for the purchased instruments. Due to the close substitutability between ~~sovereign debt instruments~~ *short-term liabilities of the same individual member state of the same bank*, this lower interest rate spills over to ~~the individual member state's~~ *the bank's* financing costs ~~on the primary market on the deposit market~~. The lower borrowing rate leads to lower interest expenses ~~in the budget for liabilities~~ and thus relieves ~~the budget of the individual member state in question~~ *the profit and loss statement of the bank in question*. This shows that through targeted purchases of ~~government bonds of an individual member state or a group of individual member states~~ *liabilities of a bank or group of banks*, the ESCB gives ~~these member states~~ *these banks* an economic advantage and increases the ~~budgetary leeway for the individual member states in question~~ *the profit of the banks in question*. ... “The extent of the advantage does not depend on the actual scope of the purchase of ~~government bonds~~ *bank liabilities*. For example, the ESCB can provide very substantial interest-rate relief to ~~a crisis state~~ *a crisis bank* without actually acquiring debt instruments if it manages to change the expectations on the part of the private sector. ~~An individual member state~~, *A bank*, for example, which is close to insolvency and would only be able to obtain financing at exorbitant rates can post billions in profits thanks to the ~~OMT announcement~~ *full allotment policy* without a single debt title having been purchased by the central banks of the ESCB.” (formulation in line with Konrad 2013, 436)²³

²³ Konrad (2013, 437) goes on to note a reduction in the interest rates for crisis countries (or analogously: for crisis banks) tends, in consequence, to trigger “an increase in borrowing rates for ... rela-

Overall, it can be concluded that the full allotment policy violates core principles of a market economy as there is not “any legitimation for a government authority to undertake an assessment of what the market interest rate is supposed be” (formulation in line with Sinn 2013, 54).²⁴ Therefore, in the crisis period 2008/2009, the full allotment policy did exactly what monetary policy is being accused of doing in connection with the OMT program, namely helping the crisis banks (in the OMT context: the crisis countries) to evade “the higher, risk-appropriate interest rates which investors were now demanding for new ~~loans~~ *inter-bank loans* by obtaining, with the approval of the ECB, substitute loans from their local central banks.” (Formulation in line with Sinn 2013, 5). Thus, monetary policy departed from the clearly defined framework, established for it on a binding basis, which gives legitimacy to the notion of its independence. Moreover, it gave in to the external pressure which built up due to a possible breakup of the financial system due to illiquidity (formulation in line with Deutsche Bundesbank 2012, 12).

The full allotment policy remains as much of a violation of established market economy principles as the OMT program even if taking into account that under the full allotment policy, the ECB lends to the banks against collateral (while it does not take any collateral from crisis governments when purchasing their bonds). For a secured inter-bank money market functioned smoothly during the crisis, and even gained in importance, because solvency risk played a greater role in trading decisions than it had in the period prior to the crisis (Deutsche Bundesbank 2009b, 92). Accordingly, only those institutions demanded funds from the ECB whose collateral was deemed to be insufficient or of inferior quality, and which therefore would either have had to pay higher interest rates or have failed to receive any credit at all. Moreover, the ECB adjusted its demands on collateral quality in order to be able to provide liquidity to those institutions which were unable to obtain loans on the secured market (or were only able to obtain them at a

tively solvent member states” (analogously: banks). “The announcement of the OMT program therefore also has a direct impact on Germany’s financing costs and thus on the volume of funds available for the German federal budget.”

²⁴ Deutsche Bundesbank (2009b) does not use the same wording as Sinn (2013), but does essentially endorse the view that the full allotment policy neutralizes the market mechanism. Deutsche Bundesbank (2009, 92f.) also adheres to the view exposed in Sinn (2013, 2ff., 36) that the crisis is a result of the inadequate functioning of the inter-bank market in the period prior to the crisis: “The efficiency and smooth functioning of the unsecured money market before the crisis were ultimately based on the limited availability or inadequate use of information on counterparty credit risk in interbank trading.” In other words: Prior to the crisis, the risks were wrongly assessed. In spite of this, in 2008/2009 the ECB and the Bundesbank saw it as their task to underbid “the credit supply of the capital markets for the ~~countries of Southern Europe and Ireland~~ *crisis banks, including banks in Germany*, systematically with fresh money from the electronic printing press” (Formulation in line with Sinn 2013, 36) to ensure a smooth functioning of the transmission process.

high rate of interest).²⁵ Finally, banks mainly provide sovereign bonds as collateral when borrowing from the ECB. Thus, lending to banks under the full allotment policy is based to a considerable extent on the creditworthiness of the respective governments.

2. A rise in interest rates, allegedly triggered by “liquidity risks”, on debt issued by selected banks does not constitute an argument for monetary policy action because it is not the task of the ECB, but rather of the governments, to prevent the failure of banks and thus to ensure financial stability. In Germany this took the form of the Financial Market Stabilization Fund (*Sonderfonds Finanzmarktstabilisierung, SoFFin*) and the Federal Agency for Financial Market Stabilization (*Bundesanstalt für Finanzmarktstabilisierung*).²⁶ The full allotment policy must therefore be rejected, as the collapse of selected banks has an impact primarily on the “financial stability” objective, but it hardly affects “price stability”. Just like the potential exit of individual states from the monetary union, the potential exit of individual banks from the financial system does not justify a monetary policy response. Reference to “the overarching importance of banks in the financial system of the euro area “ (Weber 2009b, 10), which is to be taken into account in designing monetary policy, is no more convincing than reference to the significance of sovereign bond markets for a smooth monetary transmission process (Asmussen 2013).

²⁵ It should be noted that not only the ECB, but also other central banks softened the collateral constraint on central bank lending (see for example Madigan 2009). Indeed, modifications in collateral policy represent an important element in any successful strategy of financial crisis management by central banks in the past (see Bindseil and Winkler 2012).

²⁶ The *SoFFin* itself, like the ESM, constitutes a collectivization of liability risks and “therefore sets serious perverse incentives for the ~~fiscal policy~~ *business policy* of the ~~individual member states~~ *banks*. Individual ~~governments~~ *banks* have incentives to expand their debt, openly or covertly, beyond the scope that they would choose when the full costs of their ~~national debt~~ *debt* were to be charged to them. In addition, should ~~individual governments~~ *banks* thus maneuver themselves into extreme ~~fiscal~~ *distress*, they can hope to receive aid from ~~the community of governments~~ *the government*, to the extent that ~~the community of governments~~ *the government* ~~in their entirety~~ remains creditworthy. This ... advantage in the event of overindebtedness further strengthens the perverse incentive. As a logical consequence of these perverse incentives, situations could develop in which several ~~governments of the euro area~~ *banks in Germany* arrive at the brink of insolvency and thus overstretch the capacity of those who jointly assume liabilities. The result is a government debt crisis or a possible insolvency ~~of the euro area as a whole~~ *of the German government*. ... With the ~~ESM~~ *SoFFin*, an institution is created which achieves stabilization of the financial markets in the short term, but at the same time reinforces the mismanagement in ~~financial policy~~ *the business policy of the banks* and on the capital markets. Financial assistance flows to ~~countries~~ *banks* with ailing ~~government finances~~ *loan portfolios*. The cost of this financial assistance is borne by the taxpayers ~~in countries with more solid state finances~~. This removes incentives for ~~politicians~~ *bank managers* to prevent debt and financial crises, both in the ~~countries~~ *banks* which receive aid and in the ~~countries~~ *banks* which ~~provide assistance~~ *master the crisis without assistance*. The conditionality stipulated for the ~~recipient countries~~ *recipient banks* in connection with the assistance do little to change this. Moreover, private investors retain a false risk behavior. This facilitates the much-lamented socialization of losses and privatization of profits.” Formulation in line with Konrad (2013, 432 and 434).

The promise to do everything necessary to ensure financial stability makes the ECB vulnerable to “blackmail” and thus entails “massive risks for price stability” (formulation in line with Fuest 2013, 3).²⁷ These risks were referred to in the course of 2009 when several Eurosystem representatives expressed concerns that the ECB could be maneuvered into a situation in which it was forced to choose between financial stability and price stability (see Weber 2009a, 7). Against this background, the participation of the SoFFin in the bailout measures was welcome, because it makes clear that the government and the banking supervisory authority will be more closely monitoring those banks which can obtain loans on the inter-bank market only at extremely high interest rates, or have lost access to the inter-bank market entirely, and will demand adjustments in the banks’ business policy. However, the risk remains that in spite of this, “consolidation and reform efforts will stagnate and the credibility of monetary policy as a means of maintaining price stability will vanish.” (formulation in line with Weidmann 2013c) Accordingly, the full allotment policy violates as much the ECB’s mandate as the OMT.

3. The full allotment policy pursues the goal of “maintaining the access of highly indebted banks to the inter-bank market and reducing their financing costs” and “facilitating their return to the inter-bank market. These are clearly financial market policy outcomes.” (Formulations in line with Fuest 2013, 2.) The full allotment tender therefore does not primarily pursue monetary policy goals. In turn, this means that such a program should only be carried out by financial market policy, as for example in Germany in the form of the Financial Market Stabilization Fund after the collapse of Lehman Brothers.

Figure 5 illustrates the argument using the system of accounts established above. Since the focus of observation is on the global financial crisis after the collapse of Lehman Brothers, we divide the banking sector along the lines of (future) crisis banks and (future) non-crisis banks. Moreover, as in its early phase the financial crisis was a symmetrical one in which banks of all euro area member states were more or less equally affected, the delimitation between the two types of banks

²⁷ “Through the comprehensive assumption of risk by the Eurosystem in connection with the ~~OMT purchases full allotment policy~~, it becomes increasingly difficult to reverse these measures, while ~~fiscal policy financial market policy~~ can feel excused from duty. Tasks such as assessing the appropriateness of a ~~country-specific bank-specific~~ risk premium, the assumption of risk in connection with financial assistance measures (...) and in connection with possible false assessments of future ~~economic and political developments in a country~~ *business developments of a bank* are much more the province of ~~fiscal policy financial market policy~~. This is also the case because it is ~~financial policy financial market policy~~ which ultimately decides on the program modalities in a specific case ... and because ~~fiscal policy financial market policy~~ is subject to the direct control of the parliaments. If monetary policy is employed for this task, it might fall under the dominance of ~~fiscal policy financial market policy~~, and the stability goal can thus be jeopardized.” (Formulation in line with Deutsche Bundesbank 2012, 10f.)

crosses national boundaries.²⁸ Therefore, in Germany as well, there are both crisis banks (e.g. HRE, various state banks [*Landesbanken*] and Commerzbank) and non-crisis banks (e.g. the savings and loan institutions [*Sparkassen*], cooperative banks [*Genossenschaftsbanken*] and Deutsche Bank). In addition, the ESM is replaced by the stabilization funds or similar institutions, which were founded by various euro area member states in order to combat the crisis. In Germany's case, this is the *SoFFin*, the Financial Market Stabilization Fund, which was equipped by the German Bundestag in October 2008 with a "financial framework of EUR 480 billion for the rescue and stabilization of financial institutions" (FMSA 2013). All other sectors remain unchanged.

Figure 5: Stabilization Funds and Full Allotment Policy as Measures to Stabilize the Inter-Bank Market

Table 1a: Starting situation prior to the crisis – All banks finance themselves via the market

Private Non-bank sector			
Real capital	$K - B$	Equity	K
Government bonds	B	Loans from banks	
Deposits at crisis banks	D_{CB}		$D_{CB} + D_{NCB} + C_{CB} + C_{NCB}$
Deposits at non-crisis banks	D_{NCB}		
Cash	$C_{CB} + C_{NCB}$		

(Future) Crisis banks			
Loans to the private NBS		Deposits of the private NBS	D_{CB}
	$D_{CB} + C_{CB} + IBL$	Loans from non-crisis banks	IBL
Minimum reserves	rD_{CB}	Loans from the ECB	$C_{CB} + rD_{CB}$

(Future) Non-crisis banks			
Loans to the private NBS		Deposits of the private NBS	D_{NCB}
	$D_{NCB} + C_{NCB} - IBL$	Loans from the ECB	$C_{NCB} + rD_{NCB}$
Loans to crisis banks	IBL		
Minimum reserves	rD_{NCB}		

ECB			
Loans to crisis banks	$C_{CB} + rD_{CB}$	Cash	C
Loans to non-crisis banks		Minimum reserves crisis banks	rD_{CB}
	$C_{NCB} + rD_{NCB}$	Minimum reserves non-crisis banks	rD_{NCB}

²⁸ Of course, this is a simplification as the banking sectors of some euro area Member States, i.e. the Irish banking sector, were more affected than the banking sectors of other euro area Member States.

Euro Area Member States			
Real capital	B	Bonds	B

Table 1b: Crisis management: Stabilization funds as the sole intermediaries between the private non-bank sector and non-crisis banks on one side and crisis banks on the other side

Private Non-bank sector			
Real capital	$K - B$	Equity	K
Government bonds	B	Loans from banks	
Deposits at crisis banks	$D_{CB} - d_{CB}$		$D_{CB} + D_{NCB} + C_{CB} + C_{NCB}$
Deposits at non-crisis bank	$D_{NCB} + d_{CB}$		
Cash	$C_{CB} + C_{NCB}$		

Crisis banks			
Loans to the private NBS		Deposits of the private NBS	$D_{CB} - d_{CB}$
	$D_{CB} + C_{CB} + IBL$	Loans from non-crisis banks	$IBL - ibl$
Minimum reserves	$r(D_{CB} - d_{CB})$	Loans from stabilization funds	$d_{CB} + ibl$
		Loans from the ECB	$C_{CB} + r(D_{CB} - d_{CB})$

Non-crisis banks			
Loans to the private NBS		Deposits of the private NBS	$D_{NCB} + d_{CB}$
	$D_{NCB} + C_{NCB} - IBL$	Loans from the ECB	$C_{NCB} + r(D_{NCB} + d_{CB})$
Loans to crisis banks	$IBL - ibl$		
Bonds of stabilization funds	$d_{CB} + ibl$		
Minimum reserves	$r(D_{NCB} + d_{CB})$		

Stabilization funds			
Loans to crisis banks	$d_{CB} + ibl$	Bonds	$d_{CB} + ibl$

ECB			
Loans to crisis banks		Cash	C
	$C_{CB} + r(D_{CB} - d_{CB})$	Minimum reserves crisis banks	$r(D_{CB} - d_{CB})$
Loans to non-crisis banks		Minimum reserves non-crisis banks	$r(D_{NCB} + d_{CB})$
	$C_{NCB} + r(D_{NCB} + d_{CB})$		

Euro Area Member States			
Real capital	B	Bonds	B

Table 1c: Crisis management: Stabilization funds and the ECB as intermediaries between the private non-bank sector and non-crisis banks on one side and crisis banks on the other side

Private Non-bank sector			
Real capital	$K - B$	Equity	K
Government bonds	B	Loans from banks	
Deposits at crisis banks	$D_{CB} - d_{CB}$		$D_{CB} + D_{NCB} + C_{CB} + C_{NCB}$
Deposits at non-crisis bank	$D_{NCB} + d_{CB}$		
Cash	$C_{CB} + C_{NCB}$		

Crisis banks			
Loans to the private NBS	$D_{CB} + C_{CB} + IBL$	Deposits of the private NBS	$D_{CB} - d_{CB}$
Minimum reserves	$r(D_{CB} - d_{CB})$	Loans from non-crisis banks	$IBL - ibl$
		Loans from stabilization funds	$\alpha(d_{CB} + ibl)$
		Loans from the ECB	$C_{CB} + r(D_{CB} - d_{CB}) + (1-\alpha)(d_{CB} + ibl)$

Non-crisis banks			
Loans to the private NBS	$D_{NCB} + C_{NCB} - IBL$	Deposits of the private NBS	$D_{NCB} + d_{CB}$
Loans to crisis banks	$IBL - ibl$	Loans from the ECB	$\max(0, ((C_{NCB} + r(D_{NCB} + d_{CB})) - (1-\alpha)(d_{CB} + ibl)))$
Bonds of stabilization funds	$\alpha(d_{CB} + ibl)$		
Minimum reserves	$r(D_{NCB} + d_{CB})$		
Excess reserves	$\max(0, -((C_{NCB} + r(D_{NCB} + d_{CB})) - (1-\alpha)(d_{CB} + ibl)))$		

Stabilization funds			
Loans to crisis banks	$\alpha(d_{CB} + ibl)$	Bonds	$\alpha(d_{CB} + ibl)$

ECB			
Loans to crisis banks	$C_{CB} + r(D_{CB} - d_{CB}) + (1-\alpha)(d_{CB} + ibl)$	Cash	C
Loans to non-crisis banks	$\max(0, ((C_{NCB} + r(D_{NCB} + d_{CB})) - (1-\alpha)(d_{CB} + ibl)))$	Minimum reserves crisis banks	$r(D_{CB} - d_{CB})$
		Minimum reserves non-crisis banks	$r(D_{NCB} + d_{CB})$
		Excess reserves non-crisis banks	$\max(0, -((C_{NCB} + r(D_{NCB} + d_{CB})) - (1-\alpha)(d_{CB} + ibl)))$

Euro Area Member States			
Real capital	B	Bonds	B

Source: Author's compilation

In the period prior to the crisis (Table 1a), base money is issued via the variable-rate tender. Banks' demand for reserves is limited to minimum reserve requirements. Crisis banks issue loans to the NBS, which they finance using customer deposits and interbank loans from non-crisis banks. Accordingly, the latter use deposits not only as a funding source of loans to businesses and households, but also of loans to banks. All banks perform maturity transformation.

In the crisis (Table 1b), the NBS withdraws deposits from the crisis banks and transfer them to the non-crisis banks. This is illustrated by the shock $-d_{CB}$. Moreover, the inter-bank market dries up as indicated by the shock $-ibl$. This leads either to rising interest rates on deposits held with the crisis banks or to a complete loss of market access. Stabilization funds, i.e. in the German case the *SoFFin*, prevent these adjustments in quantity and prices by providing funds to the crisis banks in the amount of $(d_{CB} + ibl)$.²⁹

The stabilization funds borrow from the NBS and the non-crisis banks because (and as long as) their solvency is beyond doubt. The funds thus become an intermediary between the NBS and the non-crisis banks on one side, and the crisis banks on the other. By performing the intermediation function they redistribute risk from the private NBS and the non-crisis banks to the public sector. Moreover, the size of the banking system's balance sheet increases by $(d_{CB} + ibl)$. By contrast, the ECB's balance sheet is basically not affected. However, due to a higher volume of deposits ($+d_{CB}$), the non-crisis banks have to hold higher minimum reserves, while the opposite holds for the crisis banks.

Under the full allotment policy, the ECB intervenes in the intermediation between the NBS and the non-crisis banks on one side and the crisis banks on the other (Table 1c). Thus, the stabilization funds absorb only a part (α) of the deposit and interbank market shocks, while the remaining part is absorbed by the ECB. As long as the demand of the crisis banks for ECB funds remains below the ECB's original volume of lending to the non-crisis banks $(C_{NCB} + r(D_{NCB} + d_{CB})) > (1-\alpha)(d_{CB} + ibl)$, the only effect on the ECB's balance sheet is a regrouping on the assets side: The expansion of loans to crisis banks is accompanied by a corresponding reduction in loans to non-crisis banks. If, however, $(C_{NCB} + r(D_{NCB} + d_{CB})) < (1-\alpha)(d_{CB} + ibl)$ the ECB's balance sheet expands. Moreover, ECB assets consist of loans to crisis banks only, as non-crisis banks change sides: Due to the additional liquidity received from the private NBS and the cessation of inter-bank lending to crisis banks, the non-crisis banks accumulate excess reserves. In both

²⁹ Without these interventions, the NBS and the non-crisis banks would have been unable to withdraw their funds, because the crisis banks – due to maturity transformation they had engaged in – had been unable to generate these funds without issuing new debt instruments.

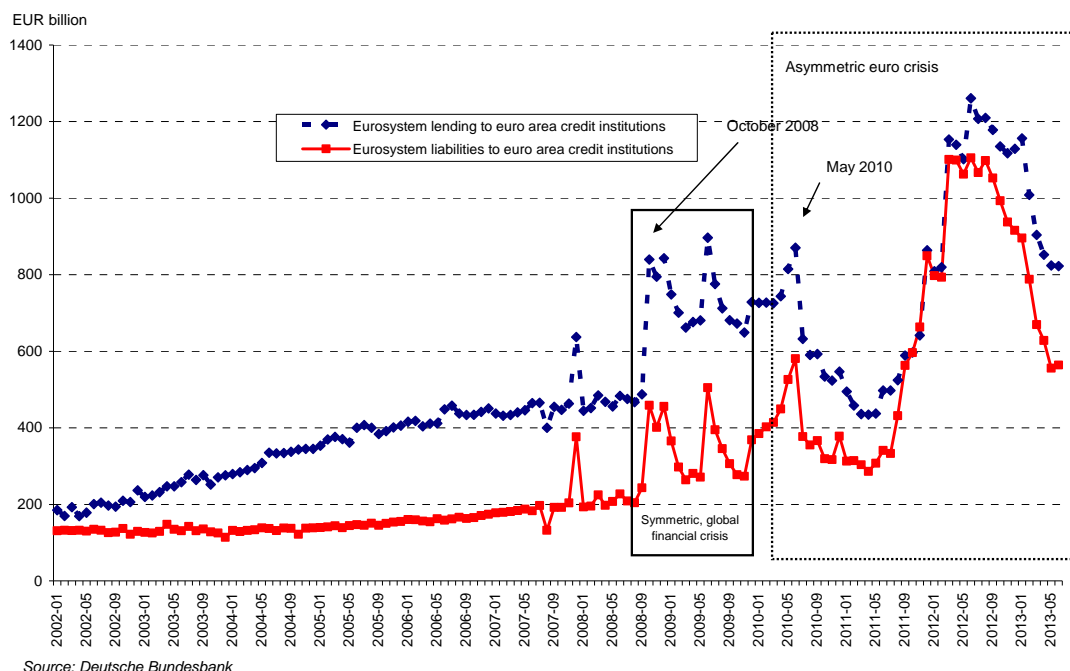
cases, however, the ECB becomes part of the risk redistribution mechanism from the private NBS and the non-crisis banks to the public sector.

In the global financial crisis, the ECB and the Bundesbank – the latter as a part of the Eurosystem – were forced to intervene to such an extent at the interbank market that their balance sheets expanded considerably as the non-crisis banks accumulated excess reserves (Figures 6a and 6b), supporting the view that the global financial crisis was a symmetric one involving not only banks from euro area periphery countries but also German banks (Box 1). This changed in the euro crisis when banks based in Germany (and in other non-crisis countries) have no longer been among the crisis banks which mainly come from the crisis countries, i.e. Greece, Ireland, Portugal, Spain, Italy, Cyprus. Accordingly, only those banks are the counterparties with regard to ECB lending to euro area credit institutions. As a result, the share of Bundesbank lending to euro area credit institutions in Eurosystem lending to euro area credit institutions drops from 33% in 2008 to 1.5% in June 2013.³⁰

The system of accounts illustrates that the OMT opponents, e.g. Sinn (2013, 68), are correct in stating that in the euro crisis base money has been basically created through ECB loans to crisis banks. However, it also shows that this is a regular feature of any financial crisis, such as the global financial crisis of 2008. The system of accounts thereby demonstrates that monetary policy responded in exactly the same way to the crises of 2008 and 2012/2013. It is not monetary policy but the country composition of banks borrowing from the ECB that differs in 2012/2013 compared to 2008. At the same time, figures 6a and 6b show that non-crisis banks hold excess reserves in crisis times. Again, however, in the global financial crisis the built-up of excess reserves was spread among banks located in many euro area Member States. In the euro crisis non-crisis banks were mainly located in non-crisis countries. As a result, the significance of the Bundesbank as a counterparty for liabilities to euro area credit institutions rose substantially, since German banks have been seen as a “safe haven” by depositors and accordingly have recorded a huge liquidity surplus. Within the Eurosystem this led to the TARGET2 balances of the various national central banks in the euro area. However, as illustrated in Section 4, this again reflects the asymmetric nature of the crisis within the euro area rather than a specific monetary policy reaction to a crisis.

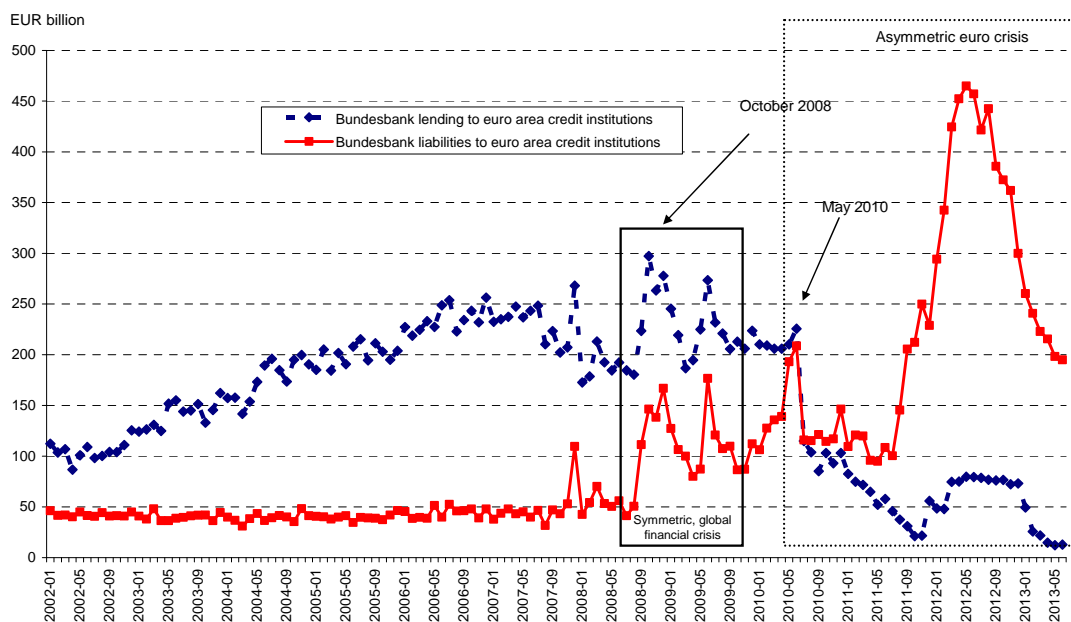
³⁰ Prior to the global financial crisis, there had been several years when German banks accounted for up to 50-60% of Eurosystem lending to euro area credit institutions. Thus, at that time, the ECB was redistributing risks from the German taxpayer to taxpayers in the other euro area Member States.

Figure 6a: Lending to / Liabilities to euro area credit institutions related to monetary policy operations denominated in euro (Eurosystem)



Source: Deutsche Bundesbank

Figure 6b: Lending to / Liabilities to euro area credit institutions related to monetary policy operations denominated in euro (Bundesbank)



Source: Deutsche Bundesbank

Overall, the system of accounts shows that the full allotment policy, enacted in 2008/2009, came to substitute (partly) for financial market policy, represented by the stabilization funds. As a result, the boundaries between the responsibilities of monetary policy and those of financial market policy were blurred, like in the case of the OMT and with respect to monetary and fiscal policy. Moreover, monetary policy makers were aware of this. However, in 2008/2009, the full allotment policy was considered not an encroachment on financial market policy's terrain, but rather a necessary monetary policy response to a liquidity squeeze in the interbank market. Thus, the starting point for the analysis depicted in Figure 5 was not the need for credit on the part of the crisis banks, but rather the liquidity needs of the non-crisis banks. The non-crisis banks wished to acquire excess reserves. It is out of this demand for excess reserves that the additional credit demand of the crisis banks arose which then was covered by the ECB. In meeting this demand, the ECB, as any other central bank in a comparable situation, incurs a solvency risk, because it does not know whether crisis banks that need to borrow from the central bank are only illiquid, or insolvent.

Financial market policy alone would have been unable to fight the 2008 crisis, as the non-crisis banks did not wish to acquire bonds from stabilization funds such as the *SoFFin* but rather excess reserves at the ECB. The funds therefore were not in a position to take over the intermediation function to the extent necessary. Hence, central banks, here: the ECB, were not interfering in the rescue operations mounted by financial market policy (or under the OMT: fiscal policy). Instead, the character of the relationship between financial market policy and monetary policy was such that monetary policy needs the financial market policy, i.e. the government – for example in the form of the stabilization funds³¹ –, as a partner in combatting the crisis (see for example Weber 2009a) by protecting the central bank from solvency risks (Goodhart 1999).

The economic reasoning as applied by the OMT critics lead to a different conclusion as they implicitly or explicitly reject the notion of illiquidity that does not imply insolvency. Thus, in their view in the crisis capital markets are efficiently functioning and any sign of illiquidity is a sign of insolvency. As a result, the full allotment policy represents a “socialization of debts”. By lending to insolvent banks, such as Hypo Real Estate in September 2008 (Box 1), “the ECB [thus] oversteps its mandate. The decision as to whether debts should be socialized or

³¹ Indeed, this protection goes far beyond the emergency measures taken and extends all the way to the entire complex of issues associated with banking regulation and supervision, as discussed, for example, in the framework of the Basel process, and pursuing the aim of ensuring the solvency of the banking system on a long-term basis. In other words: financial market policy is needed to fight “financial dominance” (Weidmann 2013d) for the same reasons that are called upon when addressing the risks of fiscal dominance (Weidmann 2013b) for the conduct of monetary policy.

not and which ~~countries~~ banks should belong to ~~the monetary union~~ the financial system can be taken only by the democratically elected representatives of ~~the community of euro area Member States~~ of a country and not by a committee of experts who are only supposed to carry out monetary policy and keep prices stable. It does not make any difference when such fundamental decisions are hastily assigned to the realm of monetary policy so that the experts can be said to have been authorized to take them.” (Formulation in line with Sinn 2013, 64). In other words: The ECB and the Bundesbank should have provided liquidity to HRE only after the establishment of the *SoFFin*, at the earliest, and after appropriate guarantees had been provided or other measures taken by the *SoFFin* (see also Box 1). In principle, however, the ECB and the Bundesbank should never have been involved in financing HRE.

Box 1: The Interplay of Financial Market Policy and Monetary Policy in the Bailout of the Hypo Real Estate Group

Immediately after the collapse of Lehman Brothers Hypo Real Estate Group experienced a “liquidity squeeze which threatened the continued existence of the company” (HRE 2009, 67). Maturity transformation based on short-term borrowing on the inter-bank market, carried out by its Irish subsidiary Depfa PLC on a massive scale (in the first quarter of 2008 the volume of money market transactions with maturities of less than a year amounted to EUR 160 billion – HRE 2009, 67), was no longer possible. In order to prevent the bank’s collapse, the Bundesbank issued to the HRE Group a special liquidity line in the amount of EUR 35 billion. On the basis of a guarantee provided by the Financial Market Stabilization Fund, the HRE was able to obtain further special liquidity assistance from the Bundesbank in the amount of EUR 15 billion. In November 2008, both measures “were replaced by credit lines in the amount of EUR 50 billion issued by the Bundesbank and the German banking and insurance sector.” (HRE 2009, 37). In 2009, the liquidity support provided by *SoFFin* and the Bundesbank reached a peak of EUR 102 billion. Moreover, the Group’s annual report emphasized that the bank was still dependent on “...the Financial Market Stabilization Fund and the Bundesbank continuing their liquidity support and possibly providing further liquidity assistance.” (HRE 2010, 181)

In 2010, HRE was split up into a “good bank” and a “bad bank”, with the latter operating under the name “*FMS Wertmanagement*”. FMS’s annual reports show that the Eurosystem’s outstanding loans to FMS (initially indirectly via the HRE Group) amounted to EUR 93.3 billion as of the end of 2010. The Eurosystem therefore financed almost 28% of the FMS balance sheet volume of EUR 333.3 billion. If this financing was provided solely by the Bundesbank, then as of the end of 2010, 90% of the Bundesbank’s lending related to monetary policy operations (such lending totaled EUR 103.1 billion as of the end of 2010) consisted of loans to HRE’s bad bank. In the course of 2011, the liabilities of FMS Wertmanagement vis-à-vis the Bundesbank declined to EUR 35.2 billion; in the first quarter of 2012, they were wound up in their

entirety, because the bank regained access to capital markets (FMS Wertmanagement 2012, 2013).

The financing of the HRE Group and of FMS Wertmanagement by the Bundesbank was carried out without any formal involvement of the Bundestag (or any other parliaments of the euro area Member States). However, lending by the Bundesbank barely created additional liability risks for the German taxpayer, because the bulk of the Bundesbank lending was backed by guarantees or papers issued by *SoFFin* or other government authorities (HRE 2010, 25).

4. With the full allotment policy, private solvency risks are transferred to the ECB and – to the extent that the ECB’s balance sheet volume grows – new risks are incurred as the German government is liable for 27% of the ECB’s liabilities, the amount of Germany’s share in the ECB’s capital. In contrast to *SoFFin*, however, in which the German government also assumes private solvency risks in a total amount of EUR 480 billion, the assumption of liability risks by the ECB has not been authorized by parliament. Moreover, because the limits of ECB lending are determined by the banks’ demand for liquidity, the risks are unlimited as well (i.e. neither $(d_{CB} + ibl)$ nor $(1-\alpha)$ is fixed). The ECB is thus encroaching on the budget authority of the Bundestag, because it is deciding on an autonomous basis how many loans it will extend to banks.³² This holds irrespective of the receiving banks location. For the German government and taxpayer, it is irrelevant whether the liability risk connected with an ECB loan derives from loans to German or Greek crisis banks. The case in point is that the risk arises, and that it is incurred without a parliamentary resolution. When lending related to monetary policy operations of the ECB (or the Bundesbank, as an executing body of the Eurosystem) in the framework of the full allotment policy rise from EUR 467 billion (EUR 184.5 billion) in August 2008 to EUR 843.2 billion (EUR 277.7 billion) as of the end of December 2008, at the height of the global financial crisis (Figure 6b), the liability risk of the German taxpayer rises by EUR 101.6 billion ($0.27 \cdot (843.2 - 467)$). The fact that EUR 93.2 billion of this amount results from additional loans to banks in Germany does not play any role, because there is no parliamentary resolution authorizing the increase in the liability. This is in contrast to *SoFFin*, whose lending to banks, provision of guarantees etc. has been duly authorized. Thus, “decisions regarding the volume and form of assistance to be provided to ~~member states~~ banks in need of aid [have] to be taken, as a matter of principle, in the framework of the ~~ESM/EFSE~~ of the stabilization funds. The decision

³² “In addition, the entire financial sector was underpinned by means of extended guarantees for bank deposits, the provision of large amounts of liquidity and substantial central bank rate cuts. These measures, some of which transferred risks from the financial sector to the government sector, helped ease tensions in the capital markets somewhat.” (Deutsche Bundesbank 2009a, 23).

would thus fall within the jurisdiction of the national governments and parliaments, in order to prevent the dividing line between ~~fiscal policy~~ *financial market policy* and monetary policy from becoming any further blurred and to ensure the ability of monetary policy to act effectively by reinforcing its primary goal of price stability.” (Formulation in line with Deutsche Bundesbank 2012, 29). Again: The full allotment policy, just like the OMT program, should never have been enacted.

There is one qualification to this result. If the Eurosystem were to acquire, in exchange for lending to crisis banks, sovereign bonds as collateral “the structural breakdown of which is strictly oriented to the breakdown of shares in the capital of the ESCB” (Konrad 2013, 436), the full allotment policy would not lead to any redistribution of solvency risks among national euro area taxpayers without parliamentary consent. For example, Germany would not be exposed to any new risks if 27% of the lending to banks under the full allotment policy (in Table 1c, Figure 5: $(1-\alpha)(d_{CB} + ibl)$) were collateralized by German sovereign bonds. For this risk has been authorized by a parliamentary resolution in Germany, since the sovereign bonds had been issued on the basis of such a resolution.

The same consideration applies for every euro area member state. Thus, a full allotment policy without any unauthorized risk redistribution requires that every euro which the ECB lends to crisis banks must be collateralized by a sovereign bond portfolio, structured to correspond to the countries’ shares in the ECB’s capital, as ultimately the national budgets of the Member States are connected with the Eurosystem (Deutsche Bundesbank 2012, 29). It would be easiest to achieve this if the ECB were to give up the provision of base money via lending to banks in favor of provision of base money via the purchase of sovereign bonds whose allocation by country corresponds to the country shares in the capital of the ECB. The ECB would then be following the example of the Federal Reserve in providing base money by purchasing government bonds, in the case of the Eurosystem: by a bond portfolio that reflect ownership positions of the euro area Member States in the ECB.³³

³³ What would have happened if the ECB had responded to the global financial crisis solely by purchasing sovereign bonds of the euro member states in proportion to their shares in the ECB capital? It could be argued that such a policy might have prevented the euro crisis as investors would have concluded, based on this form of base money provision, that bonds of euro area Member States do not carry any liquidity risk. However, this is unlikely given the strong current account imbalances within the euro area reflecting private sector borrowing and lending (Truman 2012). Having said this, large imbalances can be observed in almost any financial crisis as there are almost always some individual banks and markets that are more strongly affected than others. This makes it necessary for the central bank to support some individual banks and markets more strongly than others if it wishes to prevent

4. TARGET2 Balances and Financial Crises – A Thought Experiment

TARGET2 balances have become a controversial topic in the debate on European monetary policy.³⁴ Sinn and Wollmershäuser (2011) have interpreted them as a rescue package put together by the ECB for banks and (indirectly) governments of crisis countries without a parliamentary resolution by creditor countries. The automatic refinancing of capital flows out of the crisis countries is seen, moreover, as an invitation to crisis banks and governments to let up on their reform efforts, since they can count on subsidized and permanent (re)financing by the ECB. Accordingly, the ECB has been called upon to limit the TARGET2 balances and to introduce policy measures that will counteract any further expansion of TARGET2 balances. Sinn (2013), in his testimony before the Federal Court, reiterates this interpretation.

In the following, we will show that this interpretation of TARGET2 balances would hardly have been adopted in the case of an asymmetrical financial crisis within a nation state.³⁵ To this end, it is assumed that the euro was never introduced. In Germany, the Deutsche Mark would therefore be the official currency, just as it was prior to 1999. Monetary policy is set by the Bundesbank with the goal of price stability. As the result of an internal organizational reform, however, the Bundesbank system consists of only two regional central banks [*Landeszentralbanken - LZB*]:³⁶ *LZB North* in Hannover and *LZB South* in Munich. In addition, the Bundesbank operates a payment system, TARGET D, with characteristics corresponding to those of TARGET2. In this system, *LZB North* is responsible for the processing of all payments from and to savings and loan institutions [*Sparkassen*], cooperative banks [*Genossenschaftsbanken*] and Deutsche Bank; *LZB South* transfers payments from and to state banks [*Landesbanken*], Commerzbank, HRE and all other banks. Prior to the crisis, the general public is hardly aware of TARGET D's existence as the TARGET D balances of the LZBs with the Bundesbank headquarter in Frankfurt are roughly zero. This is the case, although the banks connected to *LZB South* engage much more aggressively in lending to the private NBS than do the banks connected to LZB North. They obtain the necessary funds from the banks of LZB North via the inter-bank market. The relationships

the collapse of the system as a whole. It cannot – contrary to an opinion held prior to the global financial crisis (Goodfriend and King 1988, with a critical view then provided in Goodhart 1999, Rochet and Vives 2004) – restrict itself to an expansion of liquidity for the system as a whole. The example of Northern Rock illustrated this, as the Bank of England's attempt to combat the crisis solely through a general expansion of liquidity failed after only a few days.

³⁴ Cour-Thimann (2013a) provides an overview on the debate.

³⁵ I used this example for the first time in Winkler (2011a).

³⁶ Prior to 2002, the Bundesbank system consisted of nine *Landeszentralbanken*, largely reflecting the federal structure of Germany.

are again shown in a closed accounts system corresponding to Figures 2 and 5 (Figure 7, Table 1a).

On 15 September 2008 *Lehman Brothers* declares bankruptcy. As in other mature economies, the inter-bank market in Germany comes to a halt (Figure 7, Table 1b). Savings and loan institutions, cooperative banks and Deutsche Bank – the non-crisis banks linked to *LZB North* – stop lending to the crisis banks linked to *LZB South* due to rising counterparty risks (*-ibl*). Moreover, the crisis banks report substantial withdrawals of deposits (*-d_{South}*). By contrast, the non-crisis banks connected to *LZB North* are seen as a safe haven and receive an inflow of funds (*+d_{South}*).

Figure 7: TARGET D balances within Germany – a thought experiment

Table 1a: Starting situation prior to the crisis – All banks finance themselves via the market

Private Non-bank sector			
Real capital	$K - B$	Equity	K
Government bonds	B	Loans from banks	
Deposits LZB South	D_{South}		$D_{North} + D_{South} + C_{North} + C_{South}$
Deposits LZB North	D_{North}		
Cash	$C_{North} + C_{South}$		

German Government			
Real capital	B	Bonds	B

Banks LZB North			
Loans to the private NBS		Deposits of the private NBS	D_{North}
	$D_{North} + C_{North} - IBL$	Loans from LZB North	$C_{North} + rD_{North}$
Loans to banks LZB South	IBL		
Minimum reserves held at LZB North			
	rD_{North}		

Banks LZB South			
Loans to the private NBS		Deposits of the private NBS	D_{South}
	$D_{South} + C_{South} + IBL$	Loans from banks LZB North	IBL
Minimum reserves held at LZB South		Loans from LZB South	$C_{South} + rD_{South}$
	rD_{South}		

LZB North			
Loans to banks LZB North		Cash	C_{North}
	$C_{North} + rD_{North}$	Minimum reserves banks LZB North	
TARGET D Claims	0	TARGET D Liabilities	0

LZB South	
Loans to banks LZB South $C_{South} + rD_{South}$	Cash C_{South}
TARGET D Claims 0	Minimum reserves banks LZB South rD_{South}
	TARGET D Liabilities 0

Bundesbank	
Loans to banks LZB South $C_{South} + rD_{South}$	Cash $C_{South} + C_{North}$
Loans to banks LZB North $C_{North} + rD_{North}$	Minimum reserves banks LZB South rD_{South}
	Minimum reserves banks LZB North rD_{North}

Figure 7, Table 1b: The emergence of TARGET D balances during the crisis

Private Non-bank sector	
Real capital $K - B$	Equity K
Government bonds B	Loans from banks
Deposits at banks LZB South $D_{South} - d_{South}$	$D_{North} + D_{South} + C_{North} + C_{South}$
Deposits at banks LZB North $D_{North} + d_{South}$	
Cash $C_{North} + C_{South}$	

German Government	
Real capital B	Government bonds B

Banks LZB North	
Loans to the private NBS $D_{North} + C_{North} - IBL$	Deposits of the private NBS $D_{North} + d_{South}$
Loans to banks LZB South $IBL - ibl$	Loans from LZB North 0
Minimum reserves held at LZB North $r(D_{North} + d_{South})$	
Excess reserves held at LZB North $-((C_{North} + r(D_{North} + d_{South})) - (d_{South} + ibl)) > 0$	

Banks LZB South	
Loans to the private NBS $D_{South} + C_{South} + IBL$	Deposits of the private NBS $D_{South} - d_{South}$
Minimum reserves held at LZB South $r(D_{South} - d_{South})$	Loans from banks LZB North $IBL - ibl$
	Loans from LZB South $C_{South} + r(D_{South} - d_{South}) + (d_{South} + ibl)$

LZB North	
Loans to banks LZB North	0
TARGET D Claims	$(d_{South} + ibl)$
Cash	C_{North}
Minimum reserves of banks LZB North	$r(D_{North} + d_{South})$
Excess reserves of banks LZB North	$-((C_{North} + r(D_{North} + d_{South})) - (d_{South} + ibl)) > 0$

LZB South	
Loans to banks LZB South	$C_{South} + r(D_{South} - d_{South}) + (d_{South} + ibl)$
Cash	C_{South}
Minimum reserves of banks LZB South	$r(D_{South} - d_{South})$
TARGET D Liabilities	$(d_{South} + ibl)$

Bundesbank	
Loans to banks LZB South	$C_{South} + r(D_{South} - d_{South}) + (d_{South} + ibl)$
Loans to banks LZB North	0
Cash	$C_{South} + C_{North}$
Minimum reserves banks LZB	$r(D_{South} - d_{South})$
Minimum reserves banks LZB North	$r(D_{North} + d_{South})$
Excess reserves banks LZB North	$-((C_{North} + r(D_{North} + d_{South})) - (d_{South} + ibl)) > 0$

Source: Author's compilation

Like the ECB in 2008, the Bundesbank responds to the crisis by enacting a full allotment policy with the view of ensuring a smooth monetary policy transmission across Germany. *LZB South* issues unlimited credit to the crisis banks, and a negative TARGET D balance arises accordingly. At the same time, the non-crisis banks become excess reserve holders, as they record a liquidity inflow via deposits from the private sector ($+d_{South}$) and the termination of inter-bank lending to the *LZB South* banks ($-ibl$) that exceed the original ECB funding of these banks ($-((C_{North} + r(D_{North} + d_{South})) - (d_{South} + ibl)) > 0$). In consequence, *LZB North* becomes a net debtor vis-à-vis its banks, because these banks are no longer dependent on financing from the Bundesbank via *LZB North*. Netting occurs in the form of TARGET D claims on the Bundesbank in corresponding amounts. TARGET D balances of the system as a whole necessarily remain at zero, but the Bundesbank's balance sheet expands in the amount of excess reserves held by the non-crisis banks.

The thought experiment illustrates that the emergence of balances in a TARGET2-like system depends solely on three factors: 1) an asymmetric financial crisis, 2) the introduction of a full allotment policy and 3) a decentralized organization of the central bank which reflects the asymmetry among banks, i.e. the dividing line between the

non-crisis banks (here: the banks connected to *LZB North*) and the crisis banks (here: the banks connected to *LZB South*). No relationship to the balance of payments is necessary.³⁷ It arises only when the difference between non-crisis and crisis banks on the one hand, and the decentralized structure of the central bank on the other, reflect geographical boundaries, meaning that both the shocks and the TARGET balances arising from them represent cross-border capital flows. Of course, within a country no cross-border flows arise.³⁸ Moreover, if the *LZBs* are equally responsible for both non-crisis and crisis banks and these banks are roughly the same size, then no TARGET balances will arise despite the country experiencing an asymmetric crisis to which the central bank responds by introducing a full allotment policy. In such a scenario, the crisis will be reflected – given the size of the shock – solely in an increase in the Bundesbank balance sheet volume.³⁹

With the allocation of the two *LZBs* to the crisis and non-crisis banks, the financial crisis in Germany in the years 2008/2009 can then be analyzed in the same framework as put forth by Sinn (2013) in its testimony for the Federal Court. The cause of the crisis is the misconduct of the crisis banks connected to *LZB South*, which massively expanded their lending activities in the period prior to the crisis and, at a time when liquidity was plentiful, financed their lending activities via short-term deposits and inter-bank loans. They were supported in doing so by the capital-providing (exporting) banks connected to *LZB North*, which did not charge appropriate risk *premia* because they assumed that in a crisis the Bundesbank and the German government would organize a bailout to ensure financial stability. With the lending boom, the banks connected to *LZB South* created a bubble which burst in 2007/2008 when the subprime lending crisis in the US reached the German banks. For as a consequence of the Lehman collapse, doubts arose as to the creditworthiness of certain *LZB South* banks which either lost market access or could obtain loans or deposits only at very high interest rates.

³⁷ Cour-Thimann (2013b) shows this for the US in the global financial crisis.

³⁸ In the Bundesbank example above, cross-border capital flows could be simulated by artificially splitting Germany in *North* and *South*. TARGET balances reflecting cross-border capital flows would then arise if *LZB North* were responsible for all German banks north of the Main River, while *LZB South* were to be responsible for all banks south of the Main River. The northern banks would stand for the non-crisis banks, while the southern banks would correspond to the crisis banks.

³⁹ Uhlig (2013, 444) summarizes the role of TARGET2 balances as follows: “Where there is smoke, there is fire, but the fire is the cause.” Thus, the TARGET balances are not part of the crisis, but a symptom of the crisis. Indeed, it is easy to show (see Burda 2013) that the euro area could be subject to the same crisis it has suffered over the last years without any TARGET balances arising, if the boundary lines drawn by the crisis did not correspond to the spheres of responsibility of the respective national central banks in the TARGET system. In such a case TARGET balances would be a “bad smoke detector”, as they would continue to be close to zero despite the crisis

The intervention of the Bundesbank thus leads

- to a “shifting of the forces of economic growth through free insurance coverage” (Formulation in line with Sinn 2013, 36). Only it is not the German savers within Europe, but rather certain savers within Germany – i.e. the savers holding accounts at the savings and cooperative banks – who are led astray by an “artificially created investment guarantee” of the Bundesbank for the banks connected to *LZB South* and who continue to finance these banks or begin financing them again.
- to an expropriation of savers; for “underbidding the capital market with the printing press significantly ~~reduced~~ *reduces* the interest rates of ~~the governments and the private sectors of the southern countries~~ *the banks connected to LZB South* compared to what the market would have charged. ... It could be countered that the savers *with the banks of LZB North* now, in compensation, receive a guaranteed return [which they would not have received without the full allotment policy, for it is the full allotment policy which enables the savings and loan institutions and the cooperative banks to reduce their loans to the crisis banks without losses – *author’s note*] and thus do not have to pay a risk premium reflected in the interest rate. ... However, it is in fact the savers in their function as taxpayers who provide the guarantee, because they have to assume responsibility for the losses of the ~~ECB Bundesbank~~ and of the ~~ESM SoFFin...~~ .” (Formulations in line with Sinn 2013, 40f.).
- ⊖ to “policies becoming path dependent”, because policy makers “no longer have the scope to act freely in making decisions regarding the bailout packages ~~provided by euro area governments for the banks~~ and the acceptance of ~~the purchases of government bonds~~ *of the full allotment policy of the ECB Bundesbank*. Rather, the situation created by the decisions taken ~~by the ECB’s Governing Council~~ *by the Bundesbank* ~~left~~ leaves almost no alternatives. The German Federal Chancellor ~~was~~ *is* thus right in making this statement.” (Formulations in line with Sinn 2013, 38).

Following the argumentation of the TARGET2 (and OMT) opponents, the Bundesbank, in the scenario set forth, should never have adopted the full allotment policy, because the *SoFFin* alone was responsible for crisis management. Moreover, the Bundesbank would have had to limit the TARGET D balances by following the example of the US. Thus, it should require *LZB South* to annually balance its TARGET D deficit vis-à-vis *LZB North* by “giving up ownership rights to the open market portfolio” (Sinn 2013, 49) of the Bundesbank. This is needed to provide an adjustment incentive for *LZB South* and the crisis banks connected to it, i.e. to reduce the excessive lending which led to the crisis in the first place. This collateralization of TARGET D debts would also have the advantage “that the ~~creditor central banks~~ *LZB North* would receive bonds which would in principle remain valuable even if ~~the dollar~~ *the Deutsche*

Mark were to be phased out. ... The fatal path dependence of the policies – in which, in every new crisis, the respective next steps in the sequence of rescue operations always appear to have no alternative – would be reduced, and the ~~ECB~~ *Bundesbank* would no longer have the option of prejudicing or even compelling actions of the parliament through free access to the printing press [*i.e. the automatic extension of loans by the Bundesbank to LZB South, which had not been approved by the Bundestag – author’s note*].” (Formulation in line with Sinn 2013, 49).

Would the Bundesbank under the given scenario really have stopped lending to the crisis banks in order to limit TARGET D balances if doing so had meant risking the bankruptcy of (one of) the crisis banks connected with *LZB South*? Would the crisis banks really have been put under pressure to adjust their behavior? It is highly unlikely that any such steps would have been taken because no such steps were taken in the 2008/2009 global financial crisis. Rather, it was deemed a success of the combined efforts of monetary policy and government interventions that a contraction in lending, a “credit squeeze”, could be avoided (Weber 2010a, 9).⁴⁰

Moreover, as long as a central bank issues base money mainly via lending to commercial banks (rather than by purchasing sovereign bonds), it is simply not possible to adopt the offsetting mechanism for TARGET2 balances as practiced in the US among the regional Federal Reserve Banks – neither in Germany under the pre-1999 set-up nor in the euro area after 1999. This is because neither the Bundesbank nor the ECB holds sovereign debt instruments which could be transferred from one *LZB* (national central bank) to another *LZB* (national central bank) (Deutsche Bundesbank 2012, 23). On top of this, in the case of the euro area, there is no central euro area government that could issue sovereign bonds that could be used as collateral: euro bonds do not exist. Thus, paradoxically from the perspective of the OMT critics, balancing TARGET2 balances along the lines of the US example would require a) the creation of a euro area government which issues euro bonds, and b) a switch in the form of base money provision from lending to banks to the purchase of euro bonds.

However, even without introducing these measures neither the euro area nor the Eurosystem are at a structural disadvantage compared to the US or the Federal Reserve System. As long as euro area governments agree that they will jointly assume and offset possible losses the ECB might suffer from lending to euro area credit institutions related to monetary policy operations there is neither a need to change the way

⁴⁰ Indeed, adjusting behavior of German crisis banks benefitting from government rescue packages was strongly criticized by the very same observers that in the euro crisis have continuously asked for an (even) stronger adjustment by the crisis banks in the euro area periphery: “One goal of the state assistance for banks is to prevent a credit squeeze. So it is a scandal that even state-owned banks which have been bailed out by the government do not want to extend any further loans to corporate clients.” (Steltzner 2008)

the ECB provides base money nor a need to introduce euro bonds. Only if there are doubts about such an agreement there is a need to reflect on TARGET2 balances, because these doubts run counter to the fundamental principle that base money represents a government liability (Goodhart 1998, Richter 2013).

5. OMT, Full Allotment Policy, and the Lender of Last Resort

The ECB's full allotment policy can be assessed by the same arguments which the opponents and supporters of the OMT program have put forward before the Federal German Constitutional Court in order to demonstrate that the program is outside of or within the limits of the ECB's mandate. This suggests that both instruments are based on the same theoretical footing. This common ground is the theory of the lender of last resort as developed in Bagehot (1873). Thus, OMT and full allotment policy represent classical lender of last resort policies. The comparison between both instruments has shown that lender of last resort policies, regardless of the market in which they are practiced – and according to Bagehot (1873), they can and should be deployed in every market showing signs of distortions⁴¹ – are characterized by the following features:

1. Lender of last resort policies violate market principles by definition, i.e. they run counter to the established order of a market economy. This is because the lender of last resort only lends when all other market participants withdraw from the affected credit market.
2. The lender of last resort can never prove beyond doubt that it is only combatting illiquidity, because in a crisis situation especially, it is extremely difficult to distinguish between illiquidity and insolvency (Goodhart 1999). This being the case, every decision to initiate lender of last resort policies is by nature a subjective one. It is precisely for the purposes of this decision that central banks were founded, however (Goodhart 1988).⁴² To take the decision away from them would be to reject almost 150 years of central bank history.
3. The lender of last resort is always a risk redistribution mechanism, because it always acquires claims on borrowers whose solvency is in doubt. This is

⁴¹ The relevant passage in Bagehot (1873, 51 – quoted from Madigan 2009) reads: “the holders of the cash reserve must be ready not only to keep it for their own liabilities, but to advance it most freely for the liabilities of others. They must lend to merchants, to minor bankers, to this man and that man, whenever the security is good.” Thus, the interpretation that the lender of last resort should focus on banks only (Issing, 2013) is inconsistent with Bagehot.

⁴² Support from the lender of last resort “is a privilege, not a right” (Freixas and Rochet 2008, 244). This implies that it is not possible to specify any fixed rules that determine lender of last resort actions in advance. The OMT reflects this insight as the ECB has full discretion on its choice to make unlimited purchases of a country's sovereign bonds or not, even if all program prerequisites are met.

the case regardless of whether borrowers are from the private or the public sector. The lender of last resort takes on the liability risk – which, due to the role defined for it, “to lend freely”, is unlimited – without a formal parliamentary resolution.

4. Like all insurance – and the lender of last resort represents an institution that insures against illiquidity (Brunnermeier and Sannikov 2012) – lender of last resort activities are prone to moral hazard risk (Goodhart 1999), i.e. they set negative incentives, because invariably only the weak borrowers and lenders benefit from them directly, including those who were acting “irresponsibly” prior to the crisis. Regulation and monitoring are necessary to counteract these moral hazard effects.
5. At the same time, it is precisely the strong borrowers and lenders who were acting responsibly prior to the crisis that have an interest in a lender of last resort that can take quick and decisive action. Because if such action were not taken, they would have to fear that they themselves would be driven into illiquidity, and thence into bankruptcy, through contagion effects.⁴³
6. The *lender of last resort* requires a partner that will bear the solvency risk that it incurs due to points (2) – (4). The partner of a central bank in its role as lender of last resort is the government. Only with the government as partner can the central bank be certain that the function of the lender of last resort, which is to combat liquidity risks, will not be undermined by possible solvency risks (Goodhart 1999), or, to put it more generally: that the goals of financial stability and price stability do not come into conflict. The government agrees to this allocation of roles because widespread bankruptcies of borrowers suspected of insolvency in a general financial crisis imply costs for the real economy which considerably exceed the cost of the assumption of solvency risk which can be assessed once the crisis has ebbed.⁴⁴ Accordingly, in an acute crisis situation, lending to an insol-

⁴³ The emergence and the functioning of the commercial banks clearing houses in the US, which performed the lender of last resort function prior to the founding of the Federal Reserve, demonstrate the interest of strong banks in lender of last resort activities; see Gorton and Mullineaux (1987) and, for an analysis in comparison to the euro crisis, Winkler (2011b).

⁴⁴ The stabilization funds created in 2008/2009 reflect this interplay between the two partners in the global financial crisis in institutional form. Only in light of SoFFin’s existence Stark (2009) is right when stating that the ECB avoided “illiquidity on the part of solvent banks” by carrying out its massive liquidity injections. For several of the banks which the ECB financed were not in fact solvent, as has since become apparent. Accordingly, the losses of insolvent banks had to be taken over by SoFFin, i.e. by the German taxpayer. The cumulative amount since SoFFin’s foundation comes to about EUR 21.5. That is a large amount. It is small, however, compared to the increase in government debt as a result of the 2008 crisis, i.e. the collapse of Lehman Brothers. According to Bundesbank statistics, Germany’s government debt rose by EUR 400 billion, from EUR 1,652.6 billion as of the end of 2008 to EUR 2,056.1 billion as of the end of 2010. This might serve as an indication of the costs if no stabilization funds had been established and no rescue operations been carried out.

vent borrower is the lesser of two evils compared to an unchecked wave of insolvencies, in light of the possible contagion effects (Goodhart 1999).⁴⁵ The lender of last resort policy therefore inherently contradicts basic principles of mainstream ordoliberalism. It (1) violates market principles, (2) without being able to prove the necessity of doing so beyond any doubt, (3) redistributes risks from the private sector to the government, or – in the case of the euro crisis – from government to government, without a parliamentary resolution, (4) triggers negative incentive effects and (5) blurs the boundaries between monetary and fiscal policy. Accordingly, any argumentation following this interpretation of ordoliberal principles must come to the conclusion that the OMT program represents a violation of the ECB's mandate. But the very same arguments suggest that the full allotment policy represents a violation of the ECB's mandate as well.⁴⁶ This is because any lender of last resort activity contradicts these ordoliberal principles. It therefore follows that: Either the lender of last resort logic is rejected in principle, in which case both the full allotment policy and the OMT program are in violation of the ECB's mandate; or the lender of last resort role of the central bank is accepted as part of monetary policy, in which case the full allotment policy and the OMT program are both in keeping with the ECB's mandate, though they violate established market economy principles. A line of argument which accepts the lender of last resort logic for one market – the inter-bank market in 2008/2009 – but rejects it for the sovereign bond market as from 2010 is inconsistent.

⁴⁵ The fact that the ECB did not participate in the haircut for Greece is thus in keeping with the lender of last resort principles. The government – in this instance the governments of euro area member states – must protect the *lender of last resort* in order to ensure that it can credibly combat liquidity risks. The ECB's policy vis-à-vis the Cypriot banks also consistently followed the logic of the lender of last resort function. As long as it could be assumed that Cyprus would be covered by an ESM program, the ECB was combatting a liquidity problem by lending to Cypriot banks (just as, in September/October 2008, it continued lending to Hypo Real Estate in the justified hope that the German government would prevent Hypo Real Estate from going bankrupt). When the first rescue package for Cyprus failed, a new situation arose in which it was unclear whether the country would really be able to obtain an ESM program. The ECB responded to the situation correctly by noting that further financing of Cypriot banks would no longer be possible because the banks were insolvent: "The prerequisite for participation in the financing transactions of the Eurosystem is... the solvency of the counterpart in the transaction..." (Deutsche Bundesbank 2012, 25) If this prerequisite is not met, then no lender of last resort support can take place.

⁴⁶ It should be noted that in 2008 there were a number of German economists and commentators who opposed the monetary policy measures taken in response to the Lehman Brothers collapse on the basis of the same arguments put forth by the OMT program's opponents, and who were prepared to bear the consequences (which, from their point of view, would be positive at least in the medium to long term, because the principles of a market economy would have been adhered to); see, for example, Starbatty (2008). Among the general public in Germany, therefore, the "bank rescue" was just as unpopular as the "euro rescue".

6. Summary and Conclusions

Is the OMT program in violation of the ECB's mandate? The economic arguments put forth by the OMT program's opponents refute the view held by the ECB that the program serves to ensure the smooth functioning of the monetary transmission mechanism. Instead, it

- 1) violates the principles of a market economy,
- 2) cannot be shown to be necessary beyond a reasonable doubt,
- 3) redistributes risk among the euro member states without a parliamentary resolution,
- 4) creates negative incentives, and
- 5) blurs the boundaries between monetary and fiscal policy.

According to these arguments, the OMT program is in violation of the ECB's mandate. However, the same arguments also suggest that the full allotment policy represents a violation of the ECB's mandate. The full allotment policy, however, is clearly acknowledged to be a monetary policy measure. No controversy has arisen, no open letters have been exchanged among economists, no court has been called upon to return a verdict on the full allotment policy. The latter policy has been in use since October 2008, and its implementation was mainly motivated by the goal of ensuring a smooth monetary policy transmission process in the global financial crisis. Moreover, at that time the full allotment policy was defended by those responsible with arguments which correspond to those put forward before the Federal German Constitutional Court to justify the OMT program as a monetary policy measure.

This leads to the conclusion that the economic arguments of the OMT program's opponents do not show that the OMT violates the ECB's mandate because it represents monetary financing of government deficits. Rather, the economic arguments of the OMT opponents identify the OMT as a violation of the ECB's mandate because these arguments fundamentally reject the need for and the usefulness of a lender of last resort. They do so because they are grounded in the mainstream ordoliberal tradition and because a lender of last resort must, by definition, violate these principles, including those which constitute a central bank's mandate. However, this conflict between ordoliberalism and modern central banking is not new. Indeed, it has been around since the first central banks assumed the lender of last resort function in the course of the 19th century. It comes to the fore with the OMT because many ordoliberal economists have somehow accepted the need for a lender of last resort – even though it clearly violates ordoliberal principles – as long as its activities are linked to banks and financial markets (Stark 2009, Issing 2013). With the OMT, however, the same activi-

ties are applied to governments and the government bond market. Ignoring the fact that they have accepted the violation of ordoliberal principles in the global financial crisis, the opponents base their case against the OMT on arguments that – if accepted in court – will reject 150 years of central bank history.

There might be valid arguments suggesting that the right policy response to turbulences in the interbank market does not necessarily represent the right policy response to turbulences in government bond markets.⁴⁷ However, no such arguments are presented, with the exception of Sinn (2013, 64) and Weidmann (2013c), who basically argue that the ECB cannot act as a lender of last resort for euro area governments because there is no common euro area government which is democratically authorized to take over the solvency risks associated with the ECB's lender of last resort activity. In making this case, however, they overlook the fact that first steps towards a common euro area government have already been taken in the form of the ESM, to which the OMT program is explicitly linked. Indeed, as shown in Sections 2 and 3, the ESM plays the same role in the euro crisis which the SoFFin and other stabilization funds played in the global financial crisis: In both cases, the funds are not primarily concerned with “rescuing” a bank or a country (although in fact they do both), but rather with “stabilizing financial markets” and “safeguarding the financial stability of the euro area as a whole”. Moreover, both funds are limited in volume. There are therefore good reasons to see the ESM as the same kind of partner to the ECB in managing the euro crisis as SoFFin and other stabilization funds were in combatting the global financial crisis. If this is so, however, then the OMT program is based on the same institutional design as the full allotment policy was in 2008/2009.

In terms of democratic legitimacy, it has to be noted that by linking eligibility for an OMT program to an ESM program, the ECB is placing the decision as to whether the program can be activated at all in the hands of the ESM. Thus, it is not a “committee of experts” (Sinn 2013, 64) within the ECB which decides whether a “systemic crisis” has occurred (as opposed to a financial crisis of an individual euro area member state), but rather an institution granted its powers through due democratic process, and

⁴⁷ Winkler (2013a) discusses in detail four arguments that might justify a different assessment of a lender of last resort for banks compared to governments, namely: a) In the euro area, the ECB lacks a central government as partner which would allow it to play the role of lender of last resort; b) The lender of last resort is the right policy instrument in an acute, short-term crisis situation. Such a situation arose in the months after the collapse of Lehman Brothers. The euro crisis, on the other hand, has been dragging on for years, and thus the lender of last resort role is no longer appropriate; c) The example of the United States shows that a monetary union does not need a lender of last resort for its sub-states; d) Economic history, particularly in Germany, shows that central bank purchases of government bonds ultimately always cause inflation. Overall, it can be concluded that none of these arguments is convincing.

founded by the parliaments of the member states with the explicit goal of maintaining the financial stability of the euro area as a whole.⁴⁸

Indisputably, the OMT program leads to liability risks for the ECB and thus for the ECB's owners. These risks are being managed, however, in the same way that they were in the financial crisis in 2008/2009. Moreover, the risk entailed in failing to act must be taken into account, and it is never mentioned in the critical statements of the OMT's opponents.⁴⁹ It is these costs, and not any compulsion created by ECB actions, that moved governments and parliaments of euro area member states to found the ESM with the goal to "safeguard the financial stability of the euro area as a whole". Financial stability is a public good (Goodhart 1999) which is produced jointly by the central bank and the government.

Of course, it is correct to argue that the Maastricht Treaty did not provide for any institutions and instruments enabling the production of the public good "financial stability" (Buiter and Rahbari 2012, Obstfeld 2013). Therefore, the design of European monetary union has failed, although the euro has kept the promise made in Maastricht: to ensure price stability for the common currency area. With the ESM (and with the envisaged banking union), Europe is in the process of correcting this structural defect. The OMT program plays a key role in the process, because it combats in the short and medium term the instability connected with the financial crises. Both are necessary: Without the ESM and steps towards fiscal union, there is a risk of a permanent bailout, which would lead to persistent slow growth, and ultimately inflation as well; without the OMT program, there is a risk of a return of the euro crisis. Both scenarios constitute a monetary union which is neither functional nor desirable.

⁴⁸ This does not mean that the decisions of the ESM always have to be endorsed from an economic point of view, because its decisions probably reflect political concerns to some extent. But the same applies to the decisions taken by SoFFin. Accordingly, the comparison is merely intended to show that with the OMT program, the ECB is using an arrangement which was applied in the 2008/2009 financial crisis as well and whose consistency with the ECB's mandate was never called into question.

⁴⁹ It is not necessary to go as far as Weber (2009b), who describes the rescue of Hypo Real Estate as being "without alternatives" because "the collapse of a further institution which was too big to fail would have led to serious upheaval within the German financial system" (Weber 2009b, 6). It is also not necessary to agree with Eichengreen (2010) when he envisages the collapse of the euro as the mother of all financial crises. But there is no question that the costs of a euro area break-up would be extremely high.

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