Review of Political Economy

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/crpe20

ECB policies Since the Financial Crisis: A Monetary Circuit and a Post-Keynesian Perspective

Domenica Tropeano

To cite this article: Domenica Tropeano (31 Mar 2025): ECB policies Since the Financial Crisis: A Monetary Circuit and a Post-Keynesian Perspective, Review of Political Economy, DOI: 10.1080/09538259.2025.2477548

To link to this article: https://doi.org/10.1080/09538259.2025.2477548

Published online: 31 Mar 2025.

Submit your article to this journal

Article views: 6

View related articles

View Crossmark data

Full Terms & Conditions of access and use can be found at
https://www.tandfonline.com/action/journalInformation?journalCode=crpe20

REVIEW OF POLITICAL ECONOMY
https://doi.org/10.1080/09538259.2025.2477548

Routledge
Taylor & Francis Group

Check for updates

ECB policies Since the Financial Crisis: A Monetary Circuit and a Post-Keynesian Perspective

Domenica Tropeano

University of Macerata, Macerata, Italy

ABSTRACT

Post-Keynesian economists have consistently argued that central banks intervene on a daily basis by injecting or removing reserves as needed to keep the benchmark interest rate on target. This has been referred to as the central bank's 'defensive role'. This defensive role is not visible in the daily operations of the European Central Bank. As no reflux mechanism exists, bank balances at the central bank increase or decrease with no reversions. At the same time, the reciprocal debts and credits between national central banks belonging to the Eurosystem increase without being settled TARGET (Trans-European Automated Real-time Gross settlement Express Transfer) balances. This article aims to connect the literature on monetary policy and long-term monetary operations with that on target balances. The main conclusion will be that TARGET imbalances of relevant size are expected to persist in the future quite independently of the pattern of trade flows within the eurozone. They are related to eurozone financial problems (interbank market problems, lack of sufficient integration between banking and the money market, structural differences in banking systems) rather than to balance of payments problems.

ARTICLE HISTORY
Received 10 December 2024
Accepted 4 March 2025

KEYWORDS
Reflux; TARGET balances; European Central Bank; circuit; long-term refinancing operations

JEL CODES
E58; B50; E42

1. Introduction

This article provides an assessment of European Central Bank (ECB) policies since the financial crisis and focuses in particular on the relevance of long-term bank refinancing monetary operations. They are peculiar features of the ECB's monetary policy and, unlike other types of unconventional monetary policy, have not been replicated anywhere else. Most central banks in the world following the quantitative easing policy have been announcing weekly or monthly purchases of securities, which have enormously increased the stock of reserves in the banking system. The European System of Central Banks injected equivalent reserves before starting the actual bond purchase programme through the granting of refinancing of an unlimited amount and with a very long duration.

This article also aims to reconsider the defensive role of central banks. Rochon and Rossi (2007) distinguished the defensive role of the central bank from the accommodative role usually discussed in the debate between horizontalists and verticalists. This

CONTACT Domenica Tropeano domenica.tropeano@unimc.it University of Macerata, Macerata, Italy
© 2025 Informa UK Limited, trading as Taylor & Francis Group

article discusses whether the defensive role of the central bank within the theory of the monetary circuit, as described by Rochon and Rossi, can be maintained in the current circumstances.

Finally, this article aims to contribute to the debate on the nature of TARGET (Trans-European Automated Real-time Gross settlement Express Transfer) imbalances in the eurozone. Whether TARGET imbalances can last forever or must be reversed at a certain point is the subject of ongoing debate. In this regard, many conflicting opinions have been expressed (Cesaratto 2013, 2015; Febrero, Uxó, and Bermejo 2016, 2018; Lavoie 2015a, 2015b). Some scholars have argued that TARGET imbalances cannot continue indefinitely because they represent debts owed by some central banks to other Eurosystem members and therefore must be settled. Others have interpreted these imbalances as a feature of the normal functioning of the euro payments system rather than an obstacle to it (Febrero, Uxó, and Bermejo 2016, 2018). Still others have attributed the persistence of TARGET imbalances to a design flaw in the European System of Central Banks (Rossi 2021, 2025). According to Rossi (2021, 2025 forthcoming), the European system of central banks would not be a genuinely federal system and therefore would not allow the final settlement of payments between the banks themselves.

This article aims to verify whether, in the current conditions, i.e., within the framework of monetary policy from the financial crisis to the present day, negative TARGET balances can increase without limit. The debate on this issue so far has ignored this change in the way the central bank refinances other banks. The introduction of full-allotment auctions and very long-term financing has been a game-changer. These financing methods, initially adopted to deal with the global financial crisis and so-called sovereign debt crisis, were later included in the central bank's toolkit and have become the new norm. Given this change in rules, the debate should be resumed. Given the central bank's position as a stable long-term lender to other banks, the outlook changes. The answer to the question of whether imbalances can last forever is thus that they can last as long as the central bank refinances other banks, a situation that depends on the solvency of these banks. Monetary policy's current stance, however, may blur the distinction between illiquidity and solvency. In practice, refinancing may be halted for political reasons. In this institutional context, the thesis that payments between central banks are not final payments comes close to reality. A different way of saying the same thing is that the central bank's money circuit may not close.

It will be argued in the rest of this article that the circuit can close if the central bank intervenes in the secured market for borrowing reserves. A circuit in which central bank money can be destroyed at the end is possible even under current circumstances. This will not require the creation of large reserves. In addition, this type of policy would stabilize the spread between the government bond yields of central and periphery countries of the eurozone. In the current situation, whereby asset purchase programmes have halted and the central bank's balance sheet is slowly shrinking in size, this type of intervention matters.

2. ECB monetary Policy Since the 2007–08 Financial Crisis

In many jurisdictions, some relevant aspects of monetary policy have changed since the financial crisis of 2007–08. New tools were employed to cope with the financial crisis and

thereafter new policies have changed, permanently, the way in which monetary policy is enacted. Minor incremental changes have resulted in a paradigm shift. Post-Keynesian economics has contributed to the debate on the effects of this paradigm shift (Lavoie 2010) and has redefined endogenous money theory within this new institutional context. The greatest change has been that most central banks have adopted a floor rather than a corridor model. According to the endogenous theory of money, the central bank sets an interest rate in order to target another rate, usually the overnight interbank interest rate. Then, through arbitrage, the interbank interest rate affects long-term maturity rates. In the corridor model, the central bank sets a lending rate to banks that is higher than the deposit facility rate (the floor of the corridor) and lower than another lending rate (the ceiling of the corridor). Before the crisis, most central banks set the interest to target an interbank rate that should lie at the centre of the corridor, near the policy rate. After the crisis, most central banks adopted a floor model targeting an interbank rate equal to or higher than the deposit facility rate.

While these developments have been largely discussed, other issues have been neglected in the post-Keynesian literature on monetary policy. The adoption of a floor model means that the central bank injects into the system a larger amount of reserves than would be required by the need to satisfy other banks' demands arising either from regulatory prescriptions or settlement. The central bank may decide how many reserves to create quite independently of the interest rate it sets, so-called 'decoupling' (Borio and Disyatat 2009, 5). Given the abundance of central bank money, the central bank is less engaged with foreseeing the demand for reserves by banks and, as a consequence, reacting to changes in autonomous factors, such as those in government balances, in order to avoid the interbank rate deviating from the target. This everyday central bank task is, in post-Keynesian terms and according to Eichner, 'defensive'. Rochon and Rossi (2007) describe how the central bank exercises this defensive action in everyday life, thus allowing banks to settle their accounts using central bank money. They highlight how the central bank creates both money and credit, and describe a monetary and financial circuit of central bank money that allows newly created money to be destroyed at the end of the process.

Much earlier than other central banks, the ECB started decoupling at the beginning of the 2010s as the interbank interest rate stayed at the floor of the corridor. At that time, no quantitative easing had been implemented so the abundance of central bank money was simply due to normal refinancing operations that had become, by 2008, full allotment and fixed price. These features, together with the introduction of long-term refinancing operations that enjoyed the same framework (full allotment and fixed price), explain the sliding of the interbank rate to the bottom of the corridor. Long-term refinancing operations continued throughout 2008–22, though the modalities of implementation varied according to the circumstances and the rate to be paid for these loans was also fixed and involved different conditions. Initially, long-term refinancing operations paid an interest rate equal to the rate set by the main refinancing operations; that is, in the last issue, in certain pre-specified conditions, the interest rate was equal to that of the deposit facility (−0.40). A new long-term refinancing operation was also implemented to deal with the pandemic. Long-term refinancing operations have become a standard feature of the ECB's monetary policy, which is in contrast to the practices of the other major central banks throughout the world.

In 2019, the central bank changed its target, replacing the average interbank overnight interest rate (European overnight interest rates average, EONIA) with another benchmark, the European short-term rate. The European short-term rate differs from the previous benchmark because it is not strictly an interbank rate as it includes the price of unsecured lending and borrowing transactions of both banks and large (wholesale) non-bank financial institutions with an overnight maturity. The new target as the old EONIA lies at the floor of the corridor. The central bank acknowledges the irrelevance of the interbank market by choosing the new benchmark.

This change reflects the evolving nature of the interbank market. The interbank market in the form of overnight unsecured borrowing and lending between banks has almost disappeared since 2008, in particular, the overnight segment. Most borrowing occurs in the secured segment and banks are also increasingly financed by non-banks such as investment companies and insurance pension funds (Cœuré 2019; ECB 2021a, 2021b).

The central bank's most important rate is the one it charges on its own refinancing operations rather the interbank rate that should be its target. This is why central bank long-term refinancing operations have largely replaced the market. They are also more convenient than market borrowing for regulatory reasons. New regulatory metrics such as the liquidity coverage ratio and the net stable funding ratio penalize short-term unsecured borrowing from banks and non-bank financial institutions (Tropeano 2018). Actually, most central bank refinancing comprises long-term refinancing operations rather than main refinancing operations (Baglioni 2021, p. 115). Main refinancing operation consist of one-week liquidity-providing operations in euro.

This institutional framework requires a re-visitation of the endogenous theory of central bank monetary circuits, as proposed by Rochon and Rossi (2007). They make a distinction between the post-Keynesian theory that mainly discusses the accommodative role of the central bank as the lender of last resort to the aggregate banking system and the theory of the defensive role of the central bank (pp. 542–543), as suggested by Eichner. Rather than the central bank acting as lender of last resort in exceptional circumstances, such as in a financial crisis, it would behave defensively on a daily basis; that is, it would aim 'to offset all daily flows by leaving the total amount of bank reserves unchanged' (p. 543). Rochon and Rossi add that 'both the accommodative and the defensive roles need to be at the centre of post-Keynesian and monetary circuit theories of modern central banking'; thus, 'the daily operation of central banking [whilst operating defensively] guarantee[s] financial stability to the economy' (ibid.). It can be inferred that, unless long-term refinancing operations are conducted very often or on a daily basis, they cannot be considered defensive. Explained differently, it is unlikely that, in order to cope with a sudden unforeseen shortage of reserves, the central bank will have to grant a secured loan with a maturity of several years.

The circuit of central bank money illustrates how the central bank acts to avoid excessive bilateral debt positions by intermediating between banks. This intervention must be prompt and in real time to avoid disturbances in the payment system as a result of rollover difficulties. As Reale (2023) observes, post-Keynesian theory does not usually take that risk into consideration. Rollover risk was, however, an important element in the development of the 2007–08 financial crisis.

Final payments of inter-bank debts depend on two endogenous circuits. Rochon and Rossi explain that the central bank has two main tasks: creating the means of settlement among banks and creating credit so that they can make final payments. In a situation of only two banks, after the payment has been settled using central bank money, the central bank has a claim on one bank and a debt towards the other. That claim and debt have to be cancelled using the financial market. Rochon and Rossi stress that, 'the financial market intervenes here as a necessity, and not as a hypothesis, in order for Bank B1 finally to pay its debt to the central bank, which can thereby settle its own debt to Bank B2' (p. 549).

The second circuit involving the financial market is described as follows:

> The second circuit amounts therefore to a purchase of financial assets by Bank B2, which, in so doing, disposes of the central bank deposit to which it is entitled as a result of the first circuit. On the whole, being led to spend on the financial market the amount of central bank money that it receives on the money market, Bank B2 contributes to ensure the orderly working of the payment system — although, generally speaking, banks are not necessarily aware of this effect of their financial operations and are actually moved by a profit-seeking rationale (to wit, they substitute interest-bearing financial assets for non-interest-bearing central bank deposits). (ibid.)

Alternatively, in a system with many banks and many financial assets, the central bank can buy an asset from the debtor bank and sell another asset to the creditor bank to close the circuit.

This circuit could have represented the conduct of the ECB before the financial crisis of 2007–08, when it lent to banks under repurchase contracts in which the collateral required was valued in the same way regardless of the state that issued it (Gabor 2016, p. 984). As stated by Gabor and Ban (2016, p. 627), the ECB created a euro general collateral basket that included all EMU government bonds in the same liquidity category, encouraging private repo actors to do the same. However, it protected itself from fluctuations in the value of securities in the market through the marking-to-market of securities received as collateral and the use of margin calls if their value decreased.

This scenario changed radically after the global financial crisis. The second circuit, the financial circuit, disappeared because, in a system with many banks, bank B would not buy from the central bank any asset that the latter might have purchased from bank A. This is also due to the modification of the ECB's collateral framework. Although the ECB had expanded the set of securities acceptable as collateral for access to refinancing operations, it had nevertheless maintained the valuation of securities issued by different states on the basis of their external rating. This resulted in dizzying increases in the haircuts required by repurchase contracts between private individuals, which affected the prices of the securities, thus creating a perverse spiral.

The ECB decided that sovereign collateral rated BBB + and lower would incur higher haircuts. This decision increased the cost of using low-rated government bonds as collateral (Gabor and Ban 2016, p. 630) This induced clearinghouses such as LCH Clearnet to announce increase in haircuts proportional to the spread on government bonds (p. 631).

In addition, in the stress tests applied to banks in December 2011, the European Banking Authority used mark-to market values for government bonds to calculate the potential losses of the banks of periphery countries and their capital needs. Based on

those calculations, the European Banking Authority recommended a fast recapitalization in the middle of a financial crisis. As the stock of questionable assets sitting on the balance sheets of large banks in core countries could not be marked-to-the market given the inexistence of such a market,[1] they were omitted from the exercise. This criterion for the evaluation of assets had never been used in the past nor would it be used again in the future (Tropeano 2022).[2]

All these measures have practically annihilated the second circuit. This, we believe, explains why the central bank has introduced refinancing operations with very long maturities in which repayment occurs at maturity. This situation means that the central bank does not have to depend on the highly segmented financial markets to finance the rollover of short-term loans (Tropeano 2019). This type of financing is now the norm and, as announced in March 2024, will remain as a permanent instrument for conducting monetary policy (ECB 2024).

So, the defensive role played by the ECB is not visible in its daily operations because the quantity of reserves is steadily increased and no circuit of the type represented in Rochon and Rossi (2007) in the financial markets allows the accounts to be balanced. So, what happens is that liquidity increases without any relation to a supposed target interbank rate and the debtor and creditor positions of single banks or banking systems with the central bank persist for a long period without being settled through the financial circuit. As no reflux mechanism exists, bank balances at the central bank increase with no reversion. At the same time, the reciprocal debts and credits between national central banks belonging to the Eurosystem increase without being settled (TARGET balances).

TARGET imbalances endogenously arise from the changed structure of financial markets, in particular the fragmentation of financial markets in the eurozone and the parallel intervention by the ECB to replace short-term financial market financing with long-term central bank loans. This deals with rollover risk but is not sufficient to deal with counterparty risk, which has remained high in the years following the global financial crisis. This could explain why TARGET imbalances have persisted for European financial markets beyond the crucial years of the crisis, that is, 2011–12.

3. TARGET Imbalances and the Theoretical Debate 2007–22

TARGET imbalances rose to very high levels during the global financial crisis and the subsequent eurozone crisis and failed, subsequently, to return to pre-crisis levels. We argue that the missing reflux mechanism accounts for that feature.

During the crisis, imbalances were linked to disturbances in the interbank market, which, in turn, justified long-term refinancing operations. A lively discussion ensued regarding whether or not this situation hid a balance of payments crisis (Cesaratto 2013, 2015; Febrero, Uxó, and Bermejo 2018; Lavoie 2015a, 2015b). In particular, Cesaratto (2013) argued that a balance of payments crisis was possible even within a currency union, while Lavoie (2015) expressed the opposite: that, given the existence of the

[1]They were contracted privately, over the counter.

[2]The credit crunch that followed recapitalization and the non-performing loans resulting from the fiscal contraction imposed on the Italian government have frozen the balance sheets of Italian banks for years and created negative credit growth rates (Tropeano 2018).

TARGET system, for some aspects similar to Keynes's international clearing union, such a crisis could not occur within a currency union. The accumulation of TARGET imbalances was due only to the dysfunctional architecture of the European Monetary Union, in particular the design of the central bank.

Cesaratto (2013, p. 365) argued that the TARGET system, though providing liquidity, could not solve problems related to bank and state solvency. He concluded that a flawed currency union still experiences foreign currency constraints that are not present in a sound currency union with fiscal transfers among members. The European Monetary Union lacks the resolution mechanisms for banks and states that would make the system viable. The same interpretation of Cesaratto's thesis is given by Febrero, Uxó, and Bermejo (2018).

When Cesaratto was writing, neither a common of supervision and resolution of banks nor a European stability mechanism to deal with states' financial problems existed. He concluded (2013) that there were deeper problems related to the flawed nature of the economic institutional architecture of the eurozone. TARGET imbalances were not a solution to those problems and insolvency had to be dealt with one way or another. TARGET imbalances could not last forever.

Lavoie (2015a, 2015b) argued that, within a currency union, there can be no balance of payments crisis and that TARGET imbalances may persist due to the institutional features of the banking system and to the way in which the eurosystem operates. Febrero, Uxó, and Bermejo (2016), meanwhile, argued that the imbalances were related to the payments system within a currency union; that is, they are a feature not a bug. If those imbalances were missing, the payment system in the eurozone would cease to work because banks in one country could not transfer funds to banks in other countries.

Febrero et al. (2016, 2018) further argued that reconciliation of these two positions was not possible because the eurozone was endowed with both a unique currency and a unique central bank and thus a balance of payments crisis could not exist when there was an outflow of capital.

The main points made by Febrero, Uxó, and Bermejo (2018) and Febrero, Uxó, and Dejuán (2015) are related to the central bank's endogenous supply of reserves:

> The ECB had no choice but to provide reserves to countries experiencing a massive capital outflow. Otherwise: (i) it would have lost control over the overnight interest rate; (ii) the payment system would have collapsed because deposits in euros in the periphery could not have been used as means of payment in the whole EZ; and (iii) it could not deny the provision of reserves to banks holding eligible collateral. (p. 229)

According to Febrero, Uxó, and Bermejo (2016):

> It should be noted that whilst (*i*) holds that the ECB accommodates the demand for reserves in a defensive reaction, as held by post-Keynesian endogenous money theorists, (*ii*) invalidates the BoP [balance of payments] view. If the ECB withholds the provision of central bank reserves to peripheral EZ banks, this means the end of the euro. (p. 12)

The point made by Febrero et al. (2016) that the central bank accommodates the demand for reserves in a defensive reaction to target an interbank rate may not reflect the changes the institutional context since 2008 with the central bank injecting huge amount of reserves through LTRO for years so not needing to act defensively on an every day's

basis. In addition, the interbank rate was at the floor of the corridor so the central bank did not need to conduct defensive operations if the decoupling principle worked.

Further, Cesaratto (2021, 376) argues that the banks of periphery countries face limits in terms of creating credit for their depositors and states. Obviously, those limits exist. They are related to central bank refinancing, which, if a country is a member of the eurozone, must be granted if the banks have adequate collateral, are deemed to be solvent, comply with regulations on capital and pass stress tests.[3] Febrero et al. (2016, 2018) and Lavoie (2015a,b) also support this position. The only limit to that refinancing would be a bank's lack of collateral or insolvency as ascertained by the supervisory authorities. The institutional frame is now different to that in the initial years following the global financial crisis because there is a common supervisory system and a common assessment of insolvency.

Wray (2011) clearly explains the limits of central bank refinancing of insolvent banks:

> Out in the real world, banks clear accounts using a third party liability — the reserves provided by the central bank. The central bank can lend reserves to the bank facing a clearing drain — enabling it to clear accounts even where it is insolvent. While a real world central bank would act as lender of last resort to allow the deposits to clear, it should quickly move to resolve the insolvent bank. Otherwise, it will be throwing 'good money' after 'bad' — and although its claims on the insolvent bank will match its own new liabilities it cannot count on sufficient 'reflux' as the reserves accumulate in the balances of solvent banks due to adverse clearing against the insolvent bank. Like the insolvent bank, the central bank's money IOUs would not be destroyed at the end of any circuit that included insolvent banks. (p. 7)

The same applies if the bank is not actually insolvent but is suspected to be so. The situation would be the same if, rather than a single bank, all banks located in a country or group of countries in a currency union were suspected to be insolvent or illiquid. As Wray observes, the central bank money circuit would not close. Within the eurozone, the reserves would accumulate in the banks of core countries without being transferred to those of periphery countries. However, if the reflux mechanism is excluded and central bank IOUs are not destroyed at the end of the circuit or are destroyed only to be replaced by IOUs of the same entity, the problem does not arise.

Even without clear insolvency, the ECB may use its administrative power in terms of the collateral framework (Viterbo 2016) to stop refinancing in particular situations, as was the case during peripheral country crises. The limit is political rather than economic. The economic rationale for not continuing to financing banks considered, rightly or wrongly, to be insolvent was explained by Wray: there would be no reflux of central bank money. That missing reflux has now become a feature of the system so it cannot act as a limit.

TARGET imbalances have persisted and are still the subject of heated debate. According to some scholars (Minenna, Dosi, and Roventini 2018), they are the result of capital flight from periphery to core countries prompted by the fear of a collapse of the euro currency; others, meanwhile, state that they are merely a reflection of how the Asset purchase programme (APP) works (Terzi 2018) and, given the effect of the APP on the exchange rate, simply reflect a portfolio rebalancing towards non-eurozone securities

[3]The way in which capital regulation and stress tests are designed, however, could create difficulties for the banks of periphery countries, which would incur higher compliance costs (Tropeano 2022) and need to pass them on to the cost of lending.

with higher yields. Minenna et al. also argue that, given the prevailing domestic share of Italian government bonds holders, the thesis that TARGET imbalances are generated by the APP programme does not hold. If the central bank had purchased Italian government bonds proportional to their holdings, which are mostly domestic, it would have purchased them from foreign entities to only a very limited extent. This theme has been explored in depth by Dor (2019) and Febrero, Uxó, and Álvarez (2022). So, those purchases should not negatively affect Italy's TARGET balances.

Terzi (2018) dismisses that objection as he points out that the central bank does not buy bonds in proportion to their domestic or foreign holdings but from dealers that offer the lowest price. In addition, he criticizes Minenna, Dosi, and Roventini's (2018) decomposition of TARGET imbalances into their balance of payments components.

Terzi makes another observation. If the intermarket market has dried up, then it is obvious that TARGET imbalances may be registered even under normal conditions without a financial market crisis. Surely, important changes have occurred in the interbank market since the global financial crisis? In the last few years, most banks have financed themselves from non-bank financial institutions or foreign entities. This is acknowledged by the new benchmark that replaces the EONIA, the euro short-term rate, which is the cost of wholesale lending and borrowing transactions between both banks and non-banks. This, in turn, may indicate a growing segmentation within interbank funding across both business models and countries (Baldo et al. 2017; Cœuré 2019). Most large banks, mainly but not exclusively located in core countries, finance themselves from non-banks or external entities (ECB 2021a). Most retail banks in periphery countries finance themselves either in the local unsecured interbank market, in the eurozone secure segment or directly from the ECB.

However, another, more structural, reason can be identified for the lack of circulation of reserves throughout the eurozone. As is also stressed by Alves, Millaruelo, and del Río (2018), even if TARGET imbalances simply reflect the decentralized purchases of government bonds due to the APP, afterwards the reserves should have circulated across jurisdictions. For example, if a foreign entity had sold an Italian government bond to the Bank of Italy through a commercial bank in Germany, this would result in a TARGET credit for the Bundesbank and a TARGET liability for the Bank of Italy. However, if, as the second move, the foreign financial institutions bought a corporate bond issued by an Italian entity, the TARGET credit and liability would be precisely reversed.

The failure to redistribute liquidity among eurozone banks may be due to mistrust among eurozone banks, given the incompleteness of the banking union and problems with the implementation of common bank resolution legislation, as well as a lack of financial integration (Bassens and Lindo 2023; Katsikas 2025; Mäkipää, Howarth, and James 2025; Tropeano 2018, 2020).

The evolution of the banking and financial sector in the eurozone since the global financial crisis has been very different in different geographical areas. Stress tests carried out in 2014 penalized the banks of periphery countries (Tropeano 2022). The macroeconomic scenario underlying the tests conflicted with the reality of interbank markets at that time and thus penalized banks in periphery countries (ibid.). In addition, due to the recession that followed the common contractionary fiscal policy, many banks in periphery countries were burdened with non-performing loans. On the other hand, many large banks in core countries continued to behave as shadow banks long after

the crisis and thus still carried high risks (pp. 136–139). Changes in capital regulation have thus not mitigated the systemic risk faced by the banks of core countries (Tropeano 2018, pp. 127–133). Almost all banks experienced poor profitability, albeit for different reasons.

The persistence of imbalances in TARGET accounts could be due to the lack of financial integration and poor banking integration.[4] So, some periphery countries see inflows of debt that finance foreign investment outside the eurozone (Dor 2016, 2019; Febrero, Uxó, and Álvarez 2022).

4. How the Central Bank Circuit Could Close

Here, we present an alternative way in which the central bank might proceed, which could ensure the destruction of central bank money at the end of the circuit and, simultaneously, preserve the role of financial markets in the financing of banks.

The central bank creates credit in central bank money, as the theory of endogenous money states, but this is no longer linked to everyday payment settlements; rather, it is a long-term credit. Since the credit is long term, the reflux should happen when loans expire, which would involve the financial circuit. However, until now the central bank has not followed this pattern.

Instead, the reflux mechanism was based on newly issued central bank money. So, the central bank lends the debtor banks the money to repay itself. At the same time, the central bank does not sell anything to the creditor banks and the financial circuit is thus totally discarded. Instead of being defined as either accommodative or defensive, that policy seems to be a transfer of newly created bank credit to commercial banks, which may use it for their needs with little need to repay it, given that the sequence of long-term refinancing operations amounts to a continuous refinancing of the same credit. The only risk linked to refinancing of loans is that credit conditions may change and the servicing of the debt may become more difficult.

This pattern of financing is not linked to qualitative easing (QE). It predates QE and continues despite its demise. Actually, QE was simply another way to give banks the funds they needed to repay old long-term loans that had expired. However, because the central bank had bought government bonds from all banks rather than only those owing it, the reflux mechanism could not work. In fact, banks that were net creditors of the central bank saw their claims on it increase rather than decrease.

Figure 1 is a graphical representation of a possible solution to the problem of closing the circuit, based on the work of Rochon and Rossi (2007). The circuit would close if the central bank bought, with a repo from banks A, the securities that banks B did not wish to buy and, simultaneously, sold to banks B other securities that they wished to buy. This would see the central bank engaging in reverse repo operations with creditor banks. In the eurozone, the central bank should buy the bonds of periphery countries with a repo from the banks of periphery countries, and then sell the bonds of core countries

[4]The recent merger attempt between Unicredit and Commerzbank bears witness to this situation. The German authorities met this attempt with scepticism and argued that allowing UniCredit to acquire Commerzbank might threaten economic and financial stability in Germany. If a financial crisis occurred in Italy, the low budgetary stability of the Italian government could affect UniCredit, affect Germany's liquidity and possibly even require a bailout of the Italian bank financed by the German federal budget (Cuomo and Nicolaides 2025, p. 3).

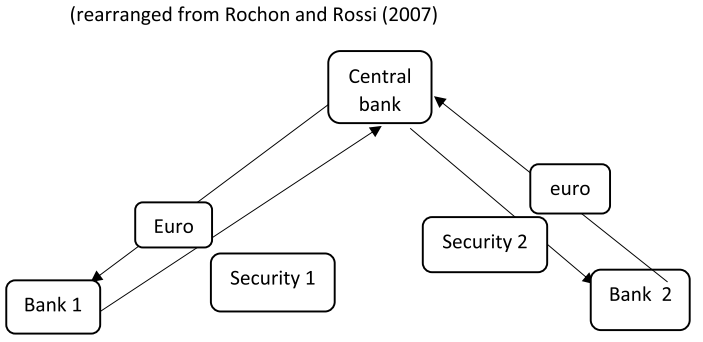

Figure 1. The central bank engaging in a repo with periphery country bank and a reverse repo with a core country bank. Rearranged from Rochon and Rossi (2007).

to the banks of core countries with a reverse repo. In addition, last but not least, this would stabilize the spread.

This policy could be justified in the same way that the APP programme aimed to ensure the smooth transmission of monetary policy across the eurozone. As the main interbank market is no longer unsecured and the secured interbank market is much larger than the unsecured one, then stabilizing the spread would allow smooth transactions in the secured market, which is now the main interbank market, without penalizing the bonds of periphery countries as collateral. This in turn would require a revised target for monetary policy, from the interbank unsecured rate to the secured rate.[5]

Instead of such a policy, the ECB has switched from the unsecured interbank rate (EONIA) to the euro short-term rate (ESTR), which is a rate of the average wholesale unsecured lending and borrowing by and from banks and other financial institutions. The reason may be that it would be tricky to target a repo rate in a jurisdiction in which there is no unique safe asset in the form of a common government bond whose liquidity is ensured by the central bank. Actually, the interest on secured interbank lending depends on the collateral. There is a dispersion of rates that correspond to that situation. The central bank would not have a unique rate to target. A solution to this problem might be to target the differential between the rates of government bonds of periphery countries and those of core countries, or more simply that of Germany. The yield differential itself would become the target. This central bank intervention could be conceived as a monetary policy that targets the yield curve or wants to influence a particular point on the curve rather than leaving it to the market to determine the shape of the curve itself. Some economists propose such a stance in monetary policy following quantitative easing and the post-pandemic asset purchase programme (Toporowski 2024; Michell and Toporowski 2019). In the context of the eurozone, where there is no single yield curve because there is no single government bond market, but there are many, each relating to each member country, the central bank's goal could be to limit divergences between the same point on different curves.

[5]The change in the target of monetary policy from an unsecured to a secured repo rate has been proposed in other institutional settings such as the United States. There, the central bank, though not officially changing its target, a federal funds rate range, has established a new standing repo facility.

Another possibility would be to return to the pre-financial crisis collateral framework whereby the central bank valued government bonds presented as collateral for financing in the same way, without distinguishing between issuers. The central bank at the time did not apply different haircuts to government bonds. A further step would be to forgo mark-to-market and margin calls. These also appear to be unwarranted, given the long-term nature of loans and the absence of survival constraints for a central bank.

Instead, the central bank has decided to maintain the collateral framework that leaves creditworthiness to external agencies and so-called markets to decide and introduce long-term structural operations. Since such transactions are formally repos with a very long duration, they continue to be subject to market discipline in theory. In practice, however, the bank has wide discretion in terms of changing the collateral framework and therefore, rather than market discipline, the maintenance of these conditions becomes a political tool to deny or grant liquidity to banks in various countries.

As Gotti and Papadia (2024, pp. 30–31) note, however, the cost of these long-term refinancing operations remains unknown. If they were linked to the MRO rate, the system would not qualify as a floor system. Instead, they propose that it be an average of the deposit facility rate over the duration of the loan with the addition of a maturity premium:

> [Full] allotment could be combined with a cost derived from the weighted average of the [deposit facility rate] DFR over the duration of the operation. Of course, this would make borrowing from the LTRO cheaper than repeated borrowing granted at the MRO rate. However, applying the MRO rate to the LTROs would inevitably attract market rates towards that level, in contrast with the desire to have the DFR as the policy rate. Still, to reflect the longer maturity, the cost of the LTROs could be increased by a maturity spread derived from the market. So, banks would put forward at auction a demand combined with a quantity and would commit to pay the average of the DFR plus a spread, and all demands would be satisfied. (p. 31)

In this proposal, the nature of LTROs as bonds is even more obvious. That nature contradicts their classification as repurchase agreements with margin calls, haircuts and mark-to-the-market. In this proposal, it emerges that the monetary policy transmission mechanism is based on the LTRO rate, so both the short-term euro rate and the MRO rate lose importance.

The relevance of LTROs has also been stressed by Schnabel (2024):

> Putting our refinancing operations at the centre of liquidity provision ensures that liquidity reaches all corners of the euro area. By contrast, liquidity provided through asset purchases has tended to be concentrated among a small number of larger financial institutions, which are predominantly located in a few member countries. Specifically, about 40 per cent of banks, in terms of total assets, are holding the entire excess liquidity from asset purchases, the highest share being held in Germany. Lending operations tend to lead to a more even distribution of reserves across banks and countries.

If Gatti and Papadia's (2024) proposal to add a maturity premium to the cost of borrowing was to be accepted, the central bank, rather than setting the short-term rate and leaving it to the market to determine the slope of the yield curve, would set a medium-term rate. It would be the beginning of yield curve control. To avoid such an outcome, however, Gotti and Papadia (p. 31) propose that the maturity premium charged to banks should be equal to that set by the market.

5. Conclusions

The article attempted to address several open issues. The first considers the defensive role played by the central bank in contrast to its accommodating role. The defensive role of the central bank does not matter in the current policy setting. As long as the central bank sets the policy rate at the same level as the deposit facility rate, there is no reason to intervene to contrast deviations from the target. The decoupling principle, according to which the size of the balance sheet and the interest rate are completely disconnected, applies here.

As a corollary of this principle, the circuit of central bank money and the financial circuit are totally discarded. On the one hand, this can be considered a positive situation as banks do not have to rely on financial markets in order to be able to repay their loans to central banks. In the eurozone in particular, those financial markets have experienced crises in the past due to the scarce liquidity of collateral. Disturbances in government bond markets and volatile bond valuations could hinder the smooth process of central bank money destruction. On the other hand, this increases the financial risk faced by the central bank. Under normal circumstances, refinancing of solvent banks should be unlimited, yet it may suddenly be interrupted for political reasons if countries do not accept conditionality. The role of the central bank thus evolves from the entity that provides other banks with the means to settle the debts of long-term creditors with the informal power of recalling such credit at any time.

In this environment, both long-term refinancing and TARGET imbalances can extend without limit. As to the TARGET imbalances debate, I endorse the views of Lavoie and Febrero, that is, the European monetary union is a currency union in which no balance of payments crisis is possible. Being a currency union, TARGET imbalances can grow without limits as long as refinancing through LTROs continues. In theory, this depends on the solvency of banks; however, in practice, the discretionary action of the central bank uses the collateral framework to exercise political power. Unlike Febrero et al.'s (2013, 2016, 2018) view, however, it seems unlikely that, in enlarging LTRO refinancing, the ECB is enacting a defensive policy aimed at maintaining the interbank rate at the desired target level. This type of policy has been dismissed since the introduction of full allotment and long-term refinancing operations with the interbank rate lying at the floor of the corridor long before launch of the public sector purchase programme in 2015.

In this article I have suggested a means to close the financial circuit. The central bank should purchase the bonds of periphery countries governments to cancel their banks debt whilst simultaneously selling the government bonds of core countries to cancel their banks credits. In this way, the central bank money circuit *and* the financial circuit would be reinstated. This would stabilize the yield differential between core and periphery government bonds and mitigate volatility in the secured interbank rate, which is much larger than the unsecured interbank rate. This could be interpreted as an intervention to influence the yield curve and therefore an abandonment of the policy of targeting the short-term interbank rate. Within the institutional context of the eurozone, an intervention involving the yield curve should be translated into an intervention aimed at mitigating differences between the same point on the curve, for example the yield on a 10-year government bond, between yield curves of government bonds issued by different states in the eurozone.

Acknowledgements

I would like to use this opportunity to acknowledge and thank the reviewers who reviewed this article and aided in its publication. I wish to thank Louis-Philippe Rochon and two anonymous referees who have contributed with interesting observations and criticisms to improving the article. The ususal disclaimer applies.

Disclosure Statement

No potential conflict of interest was reported by the author.

References

Alves, P., A. Millaruelo, and A. del Río. 2018. The Increase in TARGET Balances in the Euro Area Since 2015, *Economic Bulletin* 4/2018, Analytical Articles, Banco de España.

Baglioni, A. 2021. L*e frontiere della politica monetaria*. Milano Hoepli.

Baldo, L., B. Hallinger, C. Helmus, N. Herrala, D. Martins, F. Mohing, F. Petroulakis, et al. 2017. The Distribution of Excess Liquidity in the Euro Area, Occasional Paper No 200, European Central Bank.

Bassens, D., and D. Lindo. 2023. 'Stuck in 2012: The Hesitant Geographies of European Financial Integration Since the Eurozone Crisis.' *European Urban and Regional Studies* 31 (3): 209–229. doi:10.1177/09697764231201571.

Borio, C., and P. Disyatat. 2009. Unconventional Monetary Policies: An Appraisal, Bank for International Settlements Working Paper n. 292.

Cesaratto, S. 2021. *Sei lezioni sulla moneta*, Diarkos.

Cesaratto, S. 2013. 'The Implications of TARGET2 in the European Balance of Payments Crisis and Beyond.' *European Journal of Economics and Economic Policies: Intervention* 10 (3): 359–382.

Cesaratto, S. 2015. Unlimited TARGETs? Some Pointers" Blog Entry: http://nakedkeynesianism.blogspot.it/2015/10/unlimited-TARGETs-some-pointers.html.

Cœuré, B. 2019. A tale of two money markets: fragmentation or concentration speech held in Frankfurt 12-11-2019.

Cuomo, A., and P. Nicolaides. 2025. *The European Banking Union Also Means Cross-Border Bank Consolidation: EU Law as a Bulwark Against National Political Interference in the UniCredit-Commerzbank Tie-Up, VerfBlog*,2024/11/25, https://verfassungsblog.de/banking-union-cross-border-consolidation/.

Dor, E. 2019. *The Financial Fragmentation of the Euro Area is the Main Challenge for the ECB and the Sustainability of the Monetary Union*. Paris: IESEG School of Management Paris.

Dor, E. 2016. *Explaining the Surge of TARGET2 Liabilities in Italy: Less Simple Than the ECB's Narrative*. Paris: IESEG School of Management Paris.

ECB. 2021a. Non-Bank Financial Intermediation In The Euro Area: Implications For Monetary Policy Transmission And Key Vulnerabilities, Occasional Paper System.

ECB. 2021b. Study 2020. *Euro Money Market*.

ECB. 2024. ECB Announces Changes To The Operational Framework For Implementing Monetary Policy, Available at https://www.ecb.europa.eu/press/pr/date/2024/html/ecb.pr240313_1%7Ea3a50a9add.en.html.

Febrero, E., J. Uxó, and Ó. Dejuán. 2015. 'The ECB During the Financial Crisis. Not so Unconventional!.' *Metroeconomica* 66 (4): 715–739.

Febrero, E., J. Uxó, and F. Bermejo. 2016. *The Financial Crisis in the Euro Zone. A Balance of Payments Crisis with a Single Currency?* University of Castilla-La Mancha Working Paper.

Febrero, E., J. Uxó, and F. Bermejo. 2018. 'The Financial Crisis in the Euro Zone. A Balance of Payments Crisis with a Single Currency?' *Review of Keynesian Economics* 6 (2): 221–239.

Febrero, E., J. Uxó, and I. Álvarez. 2022. 'Target2 Imbalances and the ECB's Asset Purchase Programme: An Alternative Account.' *Panoeconomicus* 69 (1): 73–98.

Gabor, D. 2016. 'The (Impossible) Repo Trinity: The Political Economy of Repo Markets.' *Review of International Political Economy* 23 (6): 967–1000.
Gabor, D., and C. Ban. 2016. 'Banking on Bonds: The New Links Between States and Markets.' *Journal of Common Market Studies* 54 (3): 617–635.
Gotti, G., and F. Papadia. 2024. *The European Central Bank's Operational Framework and What it is Missing', Working Paper* 17/2024. Bruegel.
Katsikas, D. 2025. 'From Bailouts to Bail-Ins: Political Economy Constraints to Effective Crisis Resolution in the EU.' In *Finance, Growth and Democracy: Connections and Challenges in Europe and Latin America in the Era of Permacrisis. United Nations University Series on Regionalism*, edited by D. Katsikas, M. A. Del Tedesco Lins, and A. Ribeiro Hoffmann, 133–145. Cham: Springer.
Lavoie, M. 2010. 'Changes in Central Bank Procedures During the Subprime Crisis and Their Repercussions on Monetary Theory.' *International Journal of Political Economy* 39 (3): 3–23.
Lavoie, M. 2015a. 'The Eurozone: Similarities to and Differences from Keynes's Plan.' *International Journal of Political Economy* 44 (1): 3–17.
Lavoie, M. 2015b. 'The Eurozone Crisis: A Balance-of-Payments Problem or a Crisis Due to a Flawed Monetary Design?' *International Journal of Political Economy* 44 (2): 157–160.
Mäkipää, M., D. Howarth, and S. James. 2025. 'The European Failure to Tackle 'Too-Big-to-Fail' Banks.' In *Finance, Growth and Democracy: Connections and Challenges in Europe and Latin America in the Era of Permacrisis. United Nations University Series on Regionalism*, edited by D. Katsikas, M. A. Del Tedesco Lins, and A. Ribeiro Hoffmann, 113–128. Cham: Springer.
Michell, J., and J. Toporowski. 2019. *Can the Bank of England Do It? The Scope and Operations of the Bank of England's Monetary Policy*. Progressive Economic Forum Working Paper.
Minenna, M., G. Dosi, and A. Roventini. 2018. 'ECB Monetary Expansions and Euro Area TARGET2 Imbalances: A Balance-of-Payment-Based Decomposition.' *European Journal of Economics and Economic Policies: Intervention* 15 (2): 147–159.
Reale, J. 2023. 'Merchants of Debt at the Extreme Overnight: Re-Considering Monetary Theories via Rollover-Induced Interbank Frictions.' *Review of Political Economy* 37 (1): 165–182. doi:10.1080/09538259.2023.2190015.
Rochon, L.-P., and S. Rossi. 2007. 'Central Banking and Post-Keynesian Economics.' *Review of Political Economy* 19 (4): 539–554.
Rossi, S. 2021. 'Rethinking the Euro as a Common Currency for Europe: Keynes's Plan Revisited.' *Revista De Economía Crítica* 1 (27): 86–99. Available at https://revistaeconomiacritica.org/index.php/rec/article/view/215.
Rossi, S. 2025 forthcoming. 'Transforming the European Central Bank Into an International Settlement Institution: The Keynes Plan Revisited.' In *The Future of the European Central Bank*, edited by E. Citera, L. Sau, and D. Tropeano. Edward Elgar.
Schnabel, I. 2024. The Eurosystem's Operational Framework. Speech at the Money Market Contact Group meeting.
Terzi, A. 2018. 'The Rise of National Central Banks' TARGET Balances in the Euro Area: A Comment.' *European Journal of Economics and Economic Policies: Intervention* 16 (2): 161–168.
Toporowski, J. 2024. Monetary Policy and Illiquidity, Institute for New Economic Thinking Working Paper n. 218.
Tropeano, D. 2018. *Financial Regulation in the European Union After the Crisis. A Minskian Approach*. London and New York: Routledge.
Tropeano, D. 2019. 'Negative Rate of Interest in the Eurozone.' *Review of Keynesian Economics* 7: 233–246.
Tropeano, D. 2020. 'Does the BRRD Affect the Retail Banking Business Model in the Euro Area?' *Economic Notes* 49: e12162. doi:10.1111/ecno.12162.
Tropeano, D. 2022. 'The Interplay of Macro-Prudential Regulation and Microeconomic Financial Regulation in the European Union in 2011–2014.' *International Journal of Political Economy* 51 (3): 229–245.
Viterbo, A. 2016. Legal and Accountability Issues Arising from the ECB's Conditionality, *European Papers* www.europeanpapers.eu ISSN 2499-8249 Vol. 1, 2016, No 2, pp. 501-531.
Wray, L. R. 2011. "Is There Room for Bulls, Bears, and States in the Circuit?," Economics Working Paper Archive wp_700, Levy Economics Institute.