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Friedrich Schiller University Jena

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ESBies as a Basis for a TARGET2 Settlement Mechanism

Markus Pasche¹

Friedrich Schiller University Jena
School of Economics and Business Administration
Carl-Zeiss-Straße 3, D-07743 Jena

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Abstract

The broadly discussed TARGET2 imbalances in the European Monetary Union result from the fact that there is no settlement mechanism such like the Interdistrict Settlement Accounts (ISA) in the Fed system. The proposal of Brunnermeier et al. (2011, 2017) of so-called European Safe Bonds (ESBies), although designed for different purposes, could be used as a remedy of this problem. In this brief note I suggest to use ESBies as a standardized safe asset for settling cross-border transfers of deposits.

Keywords: TARGET2 imbalances; ESBies; ISA

JEL Classification: F45, F32, F33, F36, E42

1 The TARGET2 imbalances

In case of cross-border payments within the European Monetary Union (EMU), deposits are transferred from a commercial bank in country A to another bank in country B. On the assets side, also the corresponding reserves move from one bank to the other. However, the reserves of a bank are a claim against the National Central Bank (NCB), and have their counterpart on the liability side of the NCB's balance sheet. Due to this transaction, country A has an outflow of reserves while the asset side of the NCB's balance sheet is unchanged. This means that now the NCB of country A has a liability against the Eurosystem while the NCB in the receiving country B has a corresponding claim against the Eurosystem, the TARGET2 (or short: T2) balance (see Appendix, panel I for a simplified accounting record).

Such balances occur by construction and are a necessary consequence of the fact that the Eurosystem should facilitate any money transfer even across borders without any frictions (Bindseil/König 2011). Permanently increasing T2 positions are an indicator of imbalances in the balance of payment of a country. These might stem from unbalanced trade accounts but might also be driven by capital flight. Basically, sustaining large T2 positions indicate macroeconomic disparities across the EMU member states.

¹markus.pasche@uni-jena.de

There has been (and is still going on) a debate in the literature how to interpret these imbalances. According to Sinn/Wollmershäuser (2011) they are seen as a sort of credit which “finances” the trade deficit (see also Sinn 2012a, 2012b). Other authors contradict (see Bindseil/König 2011, see Burgold/Voll 2012 for a critical discussion). It is not the purpose of this paper to contribute to this debate. I would only like to remark that with a slightly different construction of the EMU, namely with an ECB but without National Central Banks, no T2 imbalances could occur, and there would never have been such a debate about its interpretation as “debt” – although the underlying economic transactions would probably be the same.

While I support the ECB’s view that T2 (im)balances are more a technical issue rather than an economic one – but of course the reasons which drive the T2 imbalances are a big economic concern –, there are nevertheless two problems for the EMU: *Firstly*, country A which has an outflow of reserves will typically have a liquidity problem. If commercial banks want to back deposits by reserves due to liquidity considerations, the ratio between deposits and reserves is then worse after the outflow. They need more reserves, and the NCB will have to accommodate this in order to facilitate domestic monetary transactions. That means that the country which experiences a trade deficit and outflow of capital will produce more central bank money (see Appendix, panel I, accounting record 2). Contrary, in country B there is less need for reserves so that its NCB might eventually reduce the balance sheet size. The focus of the money base creation process thus moves to the weak countries. As this is driven by the domestic liquidity needs, the ECB has not much leeways to reduce this effect. *Secondly*, in case that country A leaves the Eurozone there are still claims of the Eurosystem against the NCB of country A. It is not clear what will happen in that case as it is not regulated in statutes. As the claims are denominated in Euro, a return to a (strongly devalued) national currency implies that the real value of the Euro liabilities increase and perhaps have to be written off in case of sovereign default. Technically this would affect mainly those NCBs with positive T2 claims against the Eurosystem, such like the Deutsche Bundesbank.

The US Fed system is constructed in a different manner. Also the Fed system is based on different districts with own central banks. In this brief policy note I should not discuss in detail the technical and legal differences, but it is worth to point out the main difference: the Interdistrict Settlement Account (ISA) system is based on an asset (SOMA portfolio) which is jointly used in all districts, and which can be used for a settlement of claims of one district CB against another (for details see Wolman 2013, Voll 2014). For the Eurosystem, H.-W. Sinn also suggested to introduce a similar instrument, the so-called European Standard Bill (EEAG 2012, Sinn 2012a) which is used for a sort of “European ISA”. These bills are placed by the national government in a structured and supervised manner, and they are backed by collaterals (e.g. future tax payments) so that all bills have the same risk properties and the same rating. However, there is another, more elaborated proposal by Brunnermeier et al (2011, 2017) which also aims to create a standardized safe asset, the ESBies. The aim of this instrument is not the settlement of T2 claims but to make use of the benefits of pooling and tranching in order to create a common safe and liquid asset which has the power, e.g. to break the “diabolic loop” between the sovereign risk and the solvency risks of banks which hold primarily national sovereign

debt papers (Brunnermeier et al. 2015). I just propose to use this instrument also for a settlement for T2 claims as well.

2 The ESBies proposal

In a nutshell, the proposal by Brunnermeier et al (2011, 2017) makes use of the benefits of financial intermediation, namely pooling and tranching. It suggests that an agency (e.g. European Debt Agency, EDA) buys national sovereign bonds based on specific portfolio considerations. The pooling effect implies that the risk of the portfolio is less than the average risk of the particular papers in the pool as it is not very likely that several papers default at the same time, even when taking spillover effects into account. The next step is to securitize this portfolio and issue a synthetic asset which is fully backed by this portfolio. Furthermore, the proposal suggests to split this ABS by constructing a senior tranche (ESBie) with primary claims, and a junior tranche (EJBie) with secondary claims. That means that in case of a default of one or several papers, first the claims of the senior tranche are served. Therefore the splitting point can be chosen such that the senior tranche is (at least, as the authors say) as safe as the best rated asset in the portfolio, e.g. a German bond. Correspondingly, the return and risk of the junior tranche is of course higher.

The authors run a couple of simulations for a portfolio where the composition is based (among other criteria) on country risks as expressed by rankings, and they conduct simulations for “normal times” as well as for adverse scenarios. Also country spillover effects are taken into account. They prove by these numerical simulations that the ESBies will be safe even in case of adverse scenarios. The main advantages of such an ESBie is that it is a standardized cross-country safe and highly liquid asset. If it is used as a standard instruments in commercial bank’s liquidity management, the problem of the “diabolic loop” might be resolved (Brunnermeier et al. 2015). This loop describes the positive feedback mechanism between sovereign risk of default, the corresponding fall of prices of domestic bonds which harms the banks which predominantly hold these domestic bonds, and which then have eventually be rescued by the national taxpayers – which again fuels the sovereign debt problems.

Moreover, the ECB and NCBs would have a common instrument for open market operations, and the ESBies could also serve as the standard collateral for central bank loans. Although the emitting institution (EDA) absorbs existing sovereign bonds, the emission of ESBies is at least as high as the AAA-rated papers included in this portfolio because due to pooling and tranching also some slightly less rated papers now contribute to the ESBies. That’s one of the benefits of intermediation. A further advantage is that a common instrument rather than a variety of more or less high ranked papers reduces market segmentaion and enhances liquidity (reducing liquidity premia). Therefore, also the problem of “flight-to-safety” in case of financial turmoils should be reduced.

Two points should be very clear: (a) ESBies are not an additional source of funding public expenditures. No government can issues ESBies as it is a synthetic paper based on bonds of all governments. The permanent creation of ESBies requires that papers are purchased, pooled, and tranced. The portfolio composition and the

tranching depends on eventually varying default risks. As a government will have an interest in a stable market where they can place their bonds, and where the EDA will be one of the big demanders, they shall have an interest in good ratings. In case of significantly increasing sovereign risk or even a default, the papers will not be considered for securitization anymore. So this proposal will not be detrimental for fiscal discipline. (b) By construction of the ABS there is no joint liability for the debt. If a state defaults, the own bonds as well as the EJBies will be affected (as ESBies have primary claims) but no other government has to step in. Of course this depends on a proper management of the portfolio and correctly adjusted portfolio weights in order to secure the ESBie holders from such adverse scenarios. In contrast to Eurobonds which explicitly have a joint liability (which should make such a bond attractive to investors), ESBies will thus not contribute to Moral Hazard problems as Brunnermeier et al. (2011) point out. As a variant one could think about an additional collateralization of ESBies according to similar rules as in the European Standard Bill proposal by EEAG (2012). This would imply that countries contribute to the collateral according to their sovereign risk (see also Gopal/Pasche (2012) for a similar approach).

It has been discussed already that ESBies might also be used for an exit strategy from the massive QE programme of the ECB (Braunberger 2017). Also the ECB could sell a part of their assets to the EDA agency and receive ESBies instead, which then could be sold more easily (e.g. to commercial banks). Moreover, the creation of ESBies might include some maturity transformation. As suggested in the following chapter, they can also be used for a settlement of T2 claims. This would contribute to the advantages of this proposal. However, it should be clear, that the ESBies proposal is not a remedy, i.e. it will not automatically solve the European sovereign debt crisis, it will not solve structural problems, and it will not solve the problems of a misconstructured EMU system.

3 Basic settlement mechanisms

3.1 Transfer via NCB

The simple idea is that T2 positions are settled by a transfer of ESBies to the Eurosystem. A NCB with an outflow of reserves has to back them by transferring ESBies (shortening of the balance sheet), while the receiving NCB will not only receive reserves but also ESBies (extension of the balance sheet). The accounting records can be seen in panel II in the Appendix. The details when such a settlement has to take place (e.g. on a monthly, quarterly, or yearly basis) will not be discussed here.

Central banks therefore always need enough ESBies on their asset side. This means that such a settlement system implies that monetary policy is at least partially conducted via the purchase of assets (ESBies) by open market operations. As NCBs do not buy domestic sovereign bonds but ESBies, there is no direct nexus between the NCB's and the domestic government's balance sheets. If a NCB does not have enough ESBies for settlement it has to buy them from their banking system. This

enlarges the monetary base in that country. But this is not a specific disadvantage because even in the existing system the outflow of reserves and deposits requires that the domestic banking system demands more liquidity which has to be accommodated by the NCB (see accounting record 2 in panel II in the Appendix).

Such a settlement mechanism has the advantage that in case of an exit of country A from the Eurozone there are no open claims of the Eurosystem against the NCB of that country. This might be a prerequisite for a future structured mechanism of a regulated (temporary) exit from the European Monetary Union.

However, the problem that the banking system in country A has increased liquidity needs which shifts the central bank money creation process to the countries with a trade deficit or capital flight, is still unresolved in this proposal. It has to be remarked that this additional money creation might, on the one hand, be an obstacle, but on the other hand, NCBs have a function as the lender of last resort, and they have to accommodate the domestic needs for liquidity in order to maintain the functioning of money transactions. A settlement mechanism should not just prevent NCBs from doing so as this could be detrimental for the domestic banking system. As Konings (2012) critically remarks to Sinn's proposal of a European ISA mechanism, a *settlement* mechanism should be accompanied with a *balancing* mechanism, accommodating the disparate needs of liquidity. Otherwise, in our example, if NCB in country A would not fully accommodate the bank's reserve needs, the commercial bank's liquidity position is weakened and could therefore reinforce the flight of deposits to country B, leading to destabilization. Therefore, the ESBies settlement proposal should account for the liquidity needs of the banking system.

3.2 Direct interbank transfer

Any deposit transfer within the domestic banking system implies that also reserves are transferred from one bank to the other. The net position of the entire banking system against the NCB does not change as the sum of reserves remains the same. But in case of cross-border transfers, the T2 balances occur. However, one might think about a substantial change of the rules in this case: if a cross-border transfer of deposits is not backed by reserves but by a standardized asset like ESBies, the net position of the national banking systems against their NCBs will not be affected by the transfer. The situation is displayed in panel III in the Appendix.

However, the deposit receiving bank then has an additional demand for reserves which has to be accommodated by the NCB (see accounting record 2 in panel III in the Appendix). But in contrast to the current system, the additional money base is created in the deposit *receiving* country. Moreover, in the example that deposits should be backed by 10% reserves, the absolute amount of additionally created money is much lower than in the current system. However, the next section shows that a further reduction of additional money creation is possible.

3.3 Combined transfer

Once, when cross-border deposit transfers could be backed by ESBies instead of reserves, also combinations of ESBies and reserves are possible. As the receiving

bank needs to back the additional deposits by reserves while the sending bank could reduce their reserve holding accordingly, the transfer could be backed by a *bundle* of ESBies and reserves such that – in the best case – no further liquidity demand occurs which has to be accommodated by any NCB (see panel IV in Appendix).

In this case the reserve transfer is handled like in panel II, namely the NCB of country A has to settle it by an ESBies transfer so that no T2 balance will occur. A pressure on additional money creation might occur only if the liquidity management of both banks is different, e.g. that one bank wishes to hold 5% of their deposits as reserves while the other bank wants to hold 10%. In case of discrepancy one might think about a rule how to solve that problem, e.g. the bundle of ESBies and reserves has to be designed such that (i) it suits for the bank with the higher reserve demand, or (ii) it leads to an additional reserve demand in the receiving country. But in any case the problems of unsettled NCB claims and liabilities is solved, and the pressure on additional money creation is minimized.

4 Conclusion

The main obstacles come from the legal side: the implementation of such a proposal requires significant changes of the legal rules as well as some changes in the monetary policy operations:

- The general legal and organizational issues regarding the creation of ESBies are discussed by Brunnermeier et al. (2011, 2017) and should not be repeated here. The proposal in this paper requires that ESBies are used as a standard instrument of monetary policy so that it is on the balance sheet of each commercial bank as well as on the NCB's balance sheets. Monetary policy therefore has at least partially be conducted by purchasing such assets (beside repo transactions).
- In cross-border transactions ESBies have to be treated as a standard asset which has to be accepted for settling T2 claims.
- In case of direct or combined transfers, cross-border deposit transfers between commercial banks, in contrast to intra-country transfers, are backed by ESBies or a bundle of reserves and ESBies. This is a major difference which requires adaption of the legal conditions.

The advantages of this proposal are clear: risks of writing off unsettled claims in case of an exit from the Eurozone can be avoided, and pressure on the creation of additional central bank liquidity is minimized and could be loacted into the core instead of the periphery of the Eurozone.

In case that the ECB as well as the NCBs sell a significant part of their sovereign bonds to the EDA and receive ESBies instead, the securitization process could be used to settle already existing large T2 balances. E.g. a NCB with T2 liabilities would receive less ESBies which thus reduces or eliminates their T2 liabilities. Accordingly, NCBs with T2 claims would receive more ESBies which then substitute these T2 claims.

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Appendix

In the subsequent table the following conventions and assumptions hold true:

D	deposits
R	reserves
$T2$	TARGET2 balance
C	central bank credit
E	ESBies

We assume that a bank in country A transfers deposits of value 100 to a bank in country B (accounting record 1). Moreover, each bank wants to back their deposits by 10% reserves (required plus excess reserves) as a result of their liquidity management. We assume that additional liquidity needs of a bank will be accomodated by the NCB (accounting record 2). We neglect that a reduction of deposits could eventually lead to a reduction of reserves. We focus only on the pressure to additional money creation.

The ECB's balance sheet is not displayed. Henceforth, the $T2$ balances should not be interpreted that NCB B has a direct claim against NCB A after the transfer (but against the Eurosystem).

Panel I	Current system with TARGET2
Panel II	System with immediate settlement with ESBies
Panel III	Interbank deposit transfer backed by ESBies instead of reserves
Panel IV	Interbank deposit transfer backed by a mixture of ESBies and reserves, where reserve transfers are settled with ESBies (mix of panel II and III)

Accounting Record	Bank A		NCB A		NCB B		Bank B	
	assets	liabilities	assets	liabilities	assets	liabilities	assets	liabilities
Panel I								
1)	$\Delta R = -100$	$\Delta D = -100$	-	$\Delta R = -100$		$\Delta R = +100$	$\Delta R = +100$	$\Delta D = +100$
2)	$\Delta R = +90$	$\Delta C = +90$	$\Delta C = +90$	$\Delta R = +90$	$\Delta T2 = 100$	$\Delta T2 = 100$		
Panel II								
1)	$\Delta R = -100$	$\Delta D = -100$	$\Delta E = -100$	$\Delta R = -100$	$\Delta E = +100$	$\Delta R = +100$	$\Delta R = +100$	$\Delta D = +100$
2)	$\Delta R = +90$	$\Delta C = +90$	$\Delta C = +90$	$\Delta R = +90$				
Panel III								
1)	$\Delta E = -100$	$\Delta D = -100$					$\Delta E = +100$	$\Delta D = +100$
2)					$\Delta C = +10$	$\Delta R = +10$	$\Delta R = +10$	$\Delta C = +10$
Panel IV								
1)	$\Delta R = -10$	$\Delta D = -100$		$\Delta R = -10$		$\Delta R = +10$	$\Delta R = +10$	$\Delta D = +100$
	$\Delta E = -90$		$\Delta E = -10$		$\Delta E = +10$		$\Delta E = +90$	