



DIRECTORATE-GENERAL FOR INTERNAL POLICIES

**POLICY DEPARTMENT**  
ECONOMIC AND SCIENTIFIC POLICY **A**

**Economic and Monetary Affairs**

Employment and Social Affairs

Environment, Public Health and Food Safety

Industry, Research and Energy

Internal Market and Consumer Protection



TARGET (im-)balances at record level: Should we worry? MONETARY DIALOGUE November 2017

**TARGET (im-)balances at record  
level: Should we worry?  
- Kiel Institute for the World  
Economy -  
MONETARY DIALOGUE  
November 2017**

In-depth analysis for the ECON Committee





DIRECTORATE GENERAL FOR INTERNAL POLICIES  
POLICY DEPARTMENT A: ECONOMIC AND SCIENTIFIC POLICY

# TARGET (im-)balances at record level: Should we worry?

IN-DEPTH ANALYSIS

## Abstract

Target2 balances have re-increased since late 2014 in parallel with extraordinary monetary policy measures. At first glance, the ECB's asset purchasing programme seems to contribute just mechanically to a widening of Target2 positions. However, excessive liquidity provision reduces the role of cross-border interbank markets, which could otherwise reduce Target2 imbalances. Also, other factors like heterogeneous country risk may also continue to play a role, but are concealed in the current monetary policy environment. After categorising the root causes of Target2 imbalances (current account financing, capital flight, or deposit flight) and the associated risks, we discuss possible reforms that would prevent the build-up of large Target2 imbalances.

This document was requested by the European Parliament's Committee on Economic and Monetary Affairs.

## **AUTHOR**

Salomon FIEDLER, Kiel Institute for the World Economy  
Stefan KOOTHS, Kiel Institute for the World Economy  
Ulrich STOLZENBURG, Kiel Institute for the World Economy

## **RESPONSIBLE ADMINISTRATOR**

Dario PATERNOSTER

## **EDITORIAL ASSISTANT**

Janetta Cujkova

## **LINGUISTIC VERSIONS**

Original: EN

## **ABOUT THE EDITOR**

Policy departments provide in-house and external expertise to support EP committees and other parliamentary bodies in shaping legislation and exercising democratic scrutiny over EU internal policies.

To contact the Policy Department or to subscribe to its newsletter please write to:

Policy Department A: Economic and Scientific Policy  
European Parliament  
B-1047 Brussels  
E-mail: [poldep-economy-science@europarl.europa.eu](mailto:poldep-economy-science@europarl.europa.eu)

Manuscript completed in November 2017

© European Union, 2017

This document is available on the internet at:

<http://www.europarl.europa.eu/committees/en/econ/monetary-dialogue.html>

## **DISCLAIMER**

The opinions expressed in this document are the sole responsibility of the authors and do not necessarily represent the official position of the European Parliament.

Reproduction and translation for non-commercial purposes are authorised, provided the source is acknowledged and the publisher is given prior notice and sent a copy.

## **CONTENTS**

<b>EXECUTIVE SUMMARY</b>	<b>4</b>
<b>1. INTRODUCTION</b>	<b>5</b>
<b>2. FINANCING MECHANISMS WITHIN THE MONETARY UNION</b>	<b>7</b>
<b>3. FACTORS BEHIND TARGET2 BALANCES SINCE 2014</b>	<b>11</b>
3.1. Trading Partners in the Asset Purchase Programme	11
3.2. Excess Liquidity: Lacking Incentives for Interbank Loans	12
3.3. Is this time different?	14
<b>4. APPROACHES TO REFORM THE TARGET2 SYSTEM</b>	<b>16</b>
4.1. Settlement and Adequate Compensation	16
4.2. A Strict Monetary Regime to Limit Target2-positions	17
<b>5. CONCLUSIONS</b>	<b>20</b>
<b>REFERENCES</b>	<b>21</b>

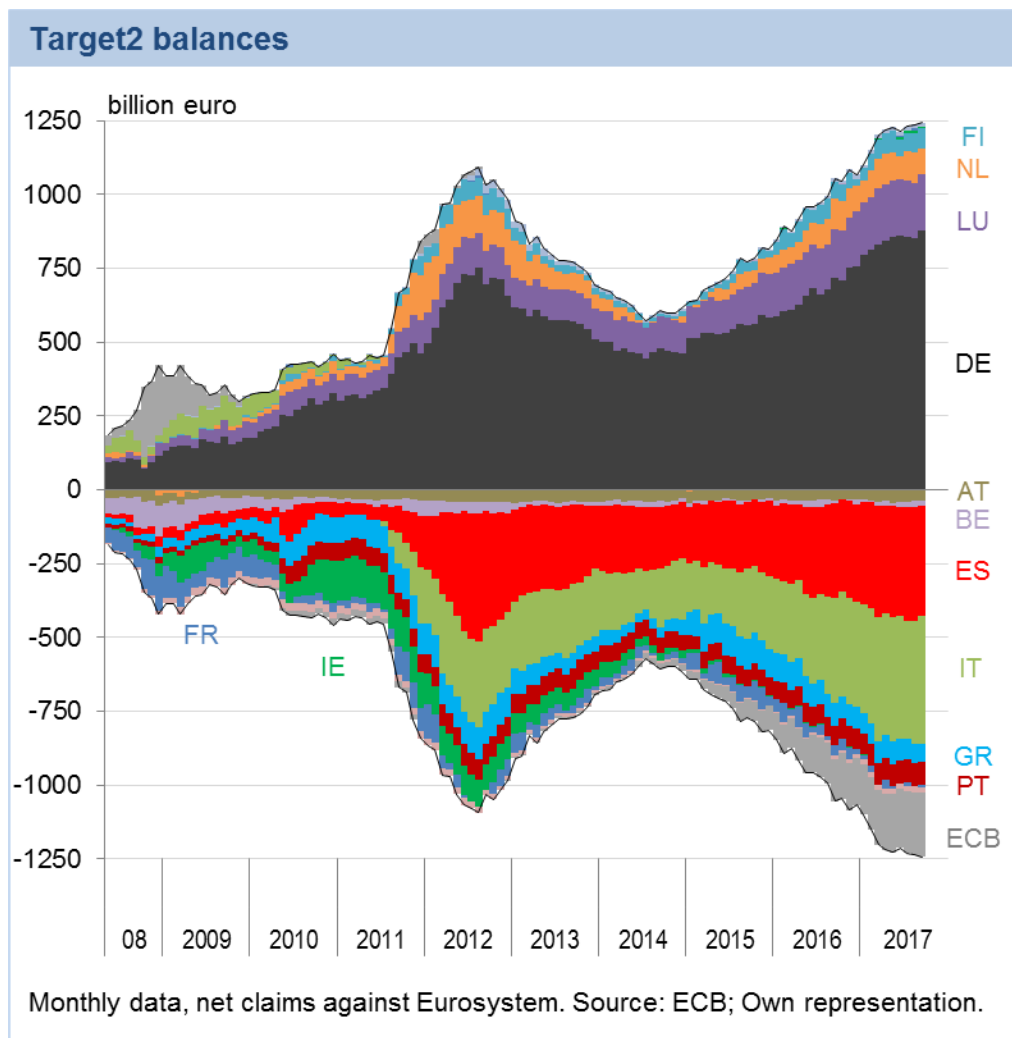
## EXECUTIVE SUMMARY

- We identify four cases of cross-border financial flows within the euro area: Current account financing via the capital market (case 1) is a desirable market-based outcome. In all other cases, the Eurosystem interferes which reflects in the Target2 balances of the involved National Central Banks: While the financing of current account deficits (case 2) and capital flight (case 3) via central bank interventions are highly problematic, Target2 imbalances resulting from deposit flight (case 4) are less of a concern. During the crisis of 2010-2012, cases 2 to 4 were relevant.
- Concerning the newly accumulating Target2 imbalances since 2014, the proximate cause seems to be the decentralized implementation of the Asset Purchasing Programme (APP). About 50 percent of counterparties that sell their assets to the Eurosystem are located outside of the currency union, and these market participants are typically connected to the Target2-system via NCBs of Target2 surplus countries. Therefore, newly issued central bank money that settles these deals flows asymmetrically to these NCBs, thereby widening Target2 positions. Moreover, portfolio rebalancing of euro area residents towards extra-EA securities also plays a role, as these foreign securities are often attained (again) through international banks.
- However, below the surface of this technical explanation, there are a number of economic factors which might drive the current accumulation of Target2 balances. For one, the provision of large amounts of excess liquidity by the Eurosystem has decimated the interbank markets, such that private financial flows no longer mitigate Target2 imbalances.
- Moreover, heterogeneous country risk may still be relevant for investment decisions, so the choice of holding deposits and other assets preferably in banking systems connected to Target2 surplus countries may not just be a (historical) coincidence, but reflect actual investor preferences. Extraordinary monetary policy measures are liable to conceal such heterogeneities as they tend to flatten yield curves, contribute to a levelling of country-risk premia, reduce debt burdens, cover up vulnerabilities and reduce incentives for necessary reforms.
- Target2 imbalances are associated with risks. First, the Eurosystem faces financial losses if a country with a Target2 deficit decides to leave the euro area and defaults on some of their obligations. This risk, depending on the scale of imbalances, may also influence political negotiations within the EU, as creditors (or their sovereigns) seek to avoid write-offs. Second, current account or capital flight financing via Target2 distort the market-based, efficient allocation of capital. Moreover, the Target2 system was not implemented for financing the Balance-of-Payments (BoP) and the ECB has no mandate to do so. Member states have never formally decided to install a mechanism that allows for automatic, uncollateralized, unlimited cross-border credit whose repayment is postponed to the indefinite future. Governments should either reform the system or formally legitimize the current setup.
- A possible reform of the Target2 mechanism could focus on settlement of Target2 positions and on introducing adequate compensation for risks taken by NCBs with Target2 claims.
- The monetary regime matters: Currently, NCBs can asymmetrically and excessively create liquidity to finance BoP deficits. If, in a stricter monetary regime, base money in the euro area was limited to a normal level (no excess liquidity) and NCBs were not allowed to create liquidity disproportionately, large Target2 positions could not arise.

## 1. INTRODUCTION<sup>1</sup>

Target2 is the second generation of a settlement system for cross-border payments between commercial banks in different member countries in the euro area (TARGET = "Trans-European Automated Real-time Gross settlement Express Transfer system"). Since inflows and outflows do not necessarily match exactly, remaining claims or liabilities are reflected in the Target2 balances. These balances constitute accumulated claims or liabilities of National Central Banks (NCBs) vis-à-vis the Eurosystem.<sup>2</sup>

**Figure 1: Evolution of Target2 Balances**



Before 2008, the sum of Target2 claims averaged at about 100 billion Euros (ECB 2015). With the onset of the Global Financial Crisis, Target2 balances increased to about 300-400 billion Euros (Figure 1). During the European sovereign debt crisis starting in 2010, Target2 balances further increased to more than 1,100 billion Euros. The fact that countries, which have been hit harder by the sovereign debt crisis, accumulated large Target2 liabilities, while other countries less affected by the crisis accumulated large Target2 claims, suggests that Target2 balances reflected shifts of assets and liquidity from periphery countries to core countries in this period. After the ECB announcement of the OMT programme, Target2 balances started to decline. However, since 2014, Target2 balances have been increasing again and have reached even new record levels recently. Major Target2 surplus countries

<sup>1</sup> The authors thank Nils Jannsen for highly appreciated comments and discussions.

<sup>2</sup> „Settlement“ of cross-border payments via Target2 does not imply, however, that accumulating claims and liabilities (after clearing of cross-border payments) are also settled between NCBs. See section 4.1.

are (in descending order) Germany, Luxembourg, the Netherlands, and Finland, whereas the highest Target2 liabilities are recorded for Spain, Italy, the ECB<sup>3</sup>, Portugal, and Greece.

Target2 imbalances can reflect current account financing, capital flight, or deposit flight between euro area member countries. As such, they symptomatically reflect problems rooted deeper in the economic system. Typically, the build-up of large Target2 positions is promoted by excessive liquidity provision in the euro area (e.g. full allotment policy, large-scale long-term refinancing operations, and asset purchase programmes).

Target2 balances are associated with several risks. The most obvious one is that the Eurosystem faces financial losses if a country with Target2 deficits decides to leave the euro area and defaults on its liabilities to the Eurosystem. While this risk is currently perceived to be low, it is not zero, as evidenced by increasing vote shares of parties that propose the exit of the euro area in several countries. Target2 balances may also, implicitly, affect political negotiations in the euro area, for example within the European Semester, because policy makers may be loath to recognize losses on these balances. Finally, if current account imbalances and capital flight flows are persistently financed via the Target2 system (rather than via capital markets), the Eurosystem becomes involved in Balance of Payments financing, even though the Target2 system was not implemented for this purpose and the ECB has no mandate to do so. In this case, the Eurosystem interferes with a market-based allocation of capital, and the longer large imbalances are in place, the more capital is potentially misallocated with negative consequences for economic growth.

In what follows, we discuss the various factors driving Target2 imbalances and the associated risks. We start with the theoretical foundations by explaining cross-border financing mechanisms and the role of Target2 within the Balance of Payments framework of euro area member countries (Section 2). This leads us to elaborate on the specific factors behind the increase in Target2 imbalances with a specific focus on the period since 2014 when balances started to increase again (Section 3). Given the magnitudes and risks, we discuss reform options that preserve the primary function of the Target2 mechanism to settle cross-border payments, while limiting the build-up of large persistent Target2 positions (Section 4). Finally, we summarize our results and conclude (Section 5).

---

<sup>3</sup> The ECB Target2 balance “reflects the net result of claims and liabilities stemming from activities carried out directly by the ECB” (ECB, 2015).

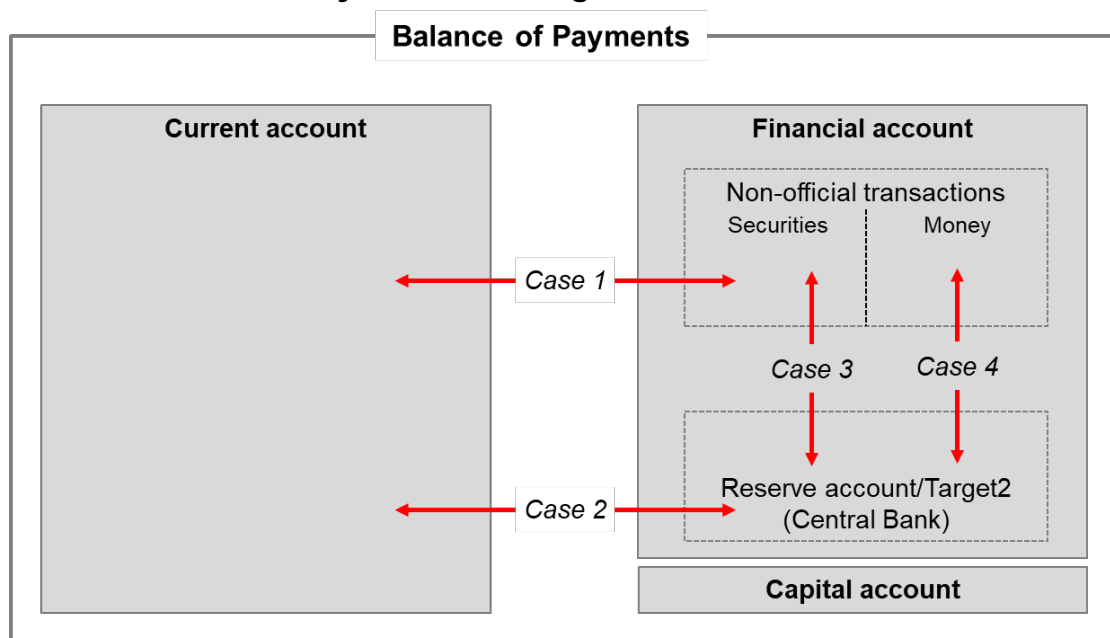


## 2. FINANCING MECHANISMS WITHIN THE MONETARY UNION

Economic transactions in a diversified economy typically lead to financing balances of several market participants that are cleared via capital market flows.<sup>4</sup> Via the capital market, parts of the production outcome are temporarily transferred from one market participant (creditor) to another (borrower), simultaneously creating financial claims and liabilities. In their role as borrowers, economic agents with a financing deficit are given access to a larger part of a period's production outcome than they could claim according to their contribution to value added net of public redistribution of income and wealth. In accordance with this demand for capital, they issue securities that are acquired by market participants with a financing surplus (supply of capital). Securities are all sorts of documents that promise future payments for getting access to present purchasing power (shares, bonds, credit claims, etc.). To satisfy this promise, a future reverse transaction in goods and services is necessary. Alternatively, tangible assets are to be relinquished by the borrower to the creditor.

What holds true for individual economic agents also applies to sectors and countries. On the country level, the relevant cross-border flows are recorded in the Balance of Payments (BoP). In this framework, all transactions referring to external trade in goods and services (exports and imports), the remuneration of foreign production factors (cross-border primary income flows) as well as current transfers (cross-border income redistribution) are reflected in the current account (Figure 2). Current account surpluses (deficits) are mirrored by deficits (surpluses) in the financial account showing how any balance in the current account is financed.<sup>5</sup> The technical term "non-official transactions" refers to all transactions in financial assets by all market participants excluding interventions of the central bank.<sup>6</sup> All interventions of the central bank in cross-border flows are recorded in the reserve account.

**Figure 2: Balance of Payments and Target2**



**Source:** Own Representation.

<sup>4</sup> For a comprehensive assessment of the Target imbalances, see Kooths and van Roye (2012).

<sup>5</sup> The capital account covers all capital transfers and the acquisition or disposal of non-produced, non-financial assets. As these transactions are beyond the center subject of this paper, they are not considered in more detail here.

<sup>6</sup> Thus, all financial transactions of the private sector, the general government, and the IMF are included in the – conceptually somewhat misleading – category of "non-official" transactions.

In a flexible exchange rate system, the central bank typically does not intervene in the foreign exchange markets. By contrast, it plays a prominent role in a fixed exchange rate system by defending the pegged rate via interventions that fill all gaps in the demand and supply of foreign currency that might otherwise occur from current account transactions or cross-border financial flows at the fixed exchange rate.

For an EMU-member country a distinction must be made between intra-EMU cross-border transactions (without any exchange rate) and all other transactions with the rest of the world outside the EMU (where a flexible exchange rate prevails). In the EMU, the monetary strategy is set by the ECB's governing council, but central bank money is operationally provided by the NCBs. Thus, from an accounting perspective, the ECB reduces to a clearing house for cross-border payments. Remaining balances are recorded in the NCBs' balance sheets as changes in their net position with the Eurosystem NPE ("Intra-Eurosystem claims/liabilities"). While cashless transactions affect the "Claims/liabilities on/towards the Eurosystem related to Target2", transactions in cash are recorded as "Claims/liabilities related to other operational requirements within the Eurosystem". From a BoP-perspective, changes in the NPE correspond to changes in a member country's reserve account with respect to the rest of the EMU. If the EMU was a fixed exchange rate regime, positive (negative) Target2-balances and net cash inflows (net cash outflows) would reflect inflows (outflows) of currency reserves, i.e. – technically – a reserve account deficit (reserve account surplus).

This framework allows to distinguish four BoP-relevant cases for intra-EMU cross-border transactions, three of them (case 2 to case 4) affecting the involved NCBs' Target2 positions (to simplify matters, we abstract from cross-border transactions in cash).

#### ***Case 1: Current account financing via the capital market***

This case describes the scenario of a smoothly functioning currency area where countries with a current account deficit (net debtors, called "country Y" in what follows) are financed on balance by those running current account surpluses (net creditors, "country X"). While buyers from debtor countries spend more money on goods and services from creditor countries, the opposite holds true in the securities markets where investors from creditor countries spend more money on securities from debtor countries than the other way around. As a result, there is no net outflow or inflow of money in all member states even if the current account constellation persists for longer.

It is mainly via interest rate incentives that this economic mechanism works: in a situation of insufficient financing for country Y, higher interest rates would trigger more financing flows from country X channelling more capital on a net basis from the creditor to the debtor countries (and, simultaneously, the net capital flow tends to equalize risk-adjusted yields in both countries). This situation has prevailed in the run-up to the European debt crisis. Thus, no large Target2 balances emerged during this period.

#### ***Case 2: Current account financing via the Eurosystem***

If debtors in country Y lose access to the capital market (i.e., "sudden stop" of capital flows because investors consider the securities of country Y as too risky) they can try to get additional credit from a domestic commercial bank to pay for imports. This lending necessitates that commercial banks can refinance themselves at their NCB. Otherwise, the commercial banks in country Y run the risk of lacking central bank money as soon as the newly created liquidity is used to process the cross-border payments for the net imports. Contrary to case 1, where the inflowing liquidity in country X is used to acquire securities from country Y, now savers in country X use

this liquidity to buy back domestic securities from their domestic banks (thus the extra money created in country Y is destroyed again in country X). Likewise, commercial banks based in country X demand less central bank money in refinancing operations with their NCB due to the inflow of central bank money from foreign banks. As a result, capital is transferred from country X to country Y although none of the savers in country X was willing to acquire securities from country Y. While the real sectors purchase back formerly sold domestic securities from the financial sector, the NCB in country X must passively accept an increase of its uncollateralized Target2 claims. These claims are backed implicitly by the collateral that was accepted in the refinancing operation with the NCB in country Y (i.e. securities from debtors in country Y).

This mechanism suspends the market-based allocation of capital. In its role as liquidity provider, the banking sector interferes in the cross-border capital market via the Eurosystem. This case requires that the central bank in country Y expands the money base, for otherwise, commercial banks would soon be unable to process further net payments for ongoing current account deficits. It remains an open question for which alternative purposes the goods and services would be used if the current account transaction was not financed via the Eurosystem. This case applies in particular to the early stage of the European debt crisis where debtor countries still ran current account deficits although market-based financing had already come to an end.

### ***Case 3: Capital flight financing via the Eurosystem***

So-called capital flight relates to cross-border transactions for relocating financial assets that had been accumulated in previous periods. This comes in two versions: Either investors from country X try to repatriate former capital exports (case 3a) or investors from country Y attempt to acquire assets from country X (case 3b).

An effective retrieval of former capital exports (case 3a) requires a current account reversal such that the exports of country Y exceed its imports. If this does not happen, foreign assets held by investors of country X can still be sold on financial markets. In this regard, we distinguish three subcases: (i) If the counterparty of such a sale is located domestically, a simple internal creditor swap in country X occurs that is irrelevant for the country's international investment position. (ii) If counterparties in country Y buy the assets, settlement of the deal requires central bank liquidity to flow from country Y to country X. As a consequence, not only do Target2 claims of country X and liabilities of country Y rise by the respective amount, but also liquidity flows out of the banking sector of country Y, so additional refinancing operations are necessary to fill the liquidity gap and restore the required monetary base in that country. A complication in the BoP context is that the market value at the time of the relocation deal might have fallen considerably below the acquisition value: In that case, the investor in country X realizes a partial loss that affects the capital account (capital transfer), whereas the realized trade enters the financial account. The default of a foreign debtor is a realized loss for the domestic investor that is booked entirely as a capital transfer in the BoP. (iii) If the asset to relocate is a direct non-tradable credit, or if the domestic investor intends to avoid realized losses, he could stretch the relocation to a piece-by-piece process at redemption dates. In this case, central bank money flows from country Y to country X in portions, thereby leaving a refinancing gap in the foreign banking sector that has to be filled via additional money creation.

Overall, like in case 2, the foreign commercial banks must be able to use additional refinancing with their NCB to carry out the cross-border payment via the Target2-system. In country X, the inflowing liquidity can be used by the domestic real sector

to buy back domestic securities from the domestic banking sector. Again, the commercial banks from country X reduce their excess reserves by decreasing their demand for central bank money in refinancing operations with their NCB. As a result, foreign securities formerly held by domestic savers are replaced by Target2-claims of the domestic NCB. While the domestic monetary base remains unchanged, its backing asset portfolio is shifted towards Target2-claims at the expense of domestic securities. From a euro area wide perspective, collateral for the euro monetary base shifts from creditor country securities to debtor country securities.

Beside repatriation of former capital exports (case 3a), the credit channel enables agents in country Y also to purchase assets of country X if commercial banks in country X create extra credit for doing so (case 3b). Regarding the monetary effects, the mechanisms are similar to those explained for case 3a. The process of repatriation of capital can be continued until the whole stock of the non-financial sectors foreign claims are transformed into Target2-claims of the NCB in country X. If case 3b applies, the process could go even beyond this point.

#### ***Case 4: Deposit flight***

If mistrust spills over to the commercial banking sector in country Y, households and firms there may withdraw their sight deposits and transfer them to a commercial bank in country X. Both commercial banks process this transaction via their central bank deposits, which are reduced in country Y and increased in country X. Now, commercial banks in country Y face the problem that their central bank deposits were reduced considerably. To fill this liquidity gap, they have to sell additional securities to their NCB. Reciprocally, the inflow of central bank deposits generates excess reserves of commercial banks in country X, so they can use these deposits to purchase bonds from their NCB.

As a result, not the total amount, but the composition of the monetary base in the euro area changes. However, this transaction cannot be considered as balance-of-payments financing, since the private sector in country Y still holds money. They have not yet used this money neither for the purchase of goods and services nor for the purchase of securities or other assets in country X. Shifting sight deposits abroad in the course of a national bank run is often also termed "capital flight", which is, as we have shown, not appropriate.

The cases 3 and 4 explain why Target2 balances have risen further during the sovereign debt crisis in the euro area even after the current account deficits in the distressed countries had disappeared.

As the cases 2 to 4 demonstrate, Target2 balances can arise for several reasons. Current account (case 2) and capital flight (case 3) financing via the Eurosystem are problematic as market mechanisms for capital allocation are distorted. Deposit flight is less problematic in this respect, but may still impair the quality of the collateral by which the overall monetary base in the euro area is backed. Thus, Target2 balances can be interpreted as a symptom for deeper underlying economic problems so there are good reasons to carefully observe them.

### 3. FACTORS BEHIND TARGET2 BALANCES SINCE 2014

The fluctuations in Target2 balances since the Global Financial Crisis may be due to different factors. There is a consensus in the literature that the increase until 2012 was mainly due to current account financing (case 2) and capital flight financing (case 3) via the Eurosystem. While Sinn and Wollmershäuser (2012) argue that current account financing was dominant, Bindseil and König (2012) argue that capital flight financing was more important. Overall, both factors contributed to the increase in Target2 balances until 2012 (Auer 2014, European Economic Advisory Group 2012), and both factors were related to the sovereign debt crisis in the euro area. In this regard, the OMT announcement of the ECB has contributed to the decline of Target2 balances since 2012, as it lowered the perceived risk of sovereign defaults and of a breakup of the currency union.

In this section, we discuss the driving forces behind the strong increase in Target2 balances since 2014. We start by presenting the factor that has been most frequently proposed, namely that counterparties selling government bonds to the ECB within the Quantitative Easing programme are disproportionately connected to the Target2 system via certain NCBs, which mechanically raises the Target2 of these NCBs (Section 3.1). We then elaborate on the link between excessive liquidity provision and Target2 balances as an underlying supporting factor (Section 3.2). Finally, we look at other potential reasons behind the growing imbalances (Section 3.3).

#### 3.1. Trading Partners in the Asset Purchase Programme

In recent publications, the ECB (2016, 2017) explains how the implementation of asset purchases mechanically leads to an increase of Target2 imbalances. NCBs may encounter trading partners who are connected to the Target2 system via a different NCB when buying assets within the asset purchase programme (APP). In such cases, central bank money flows from the purchasing NCB to the receiving NCB, which is then reflected in Target2 balances.

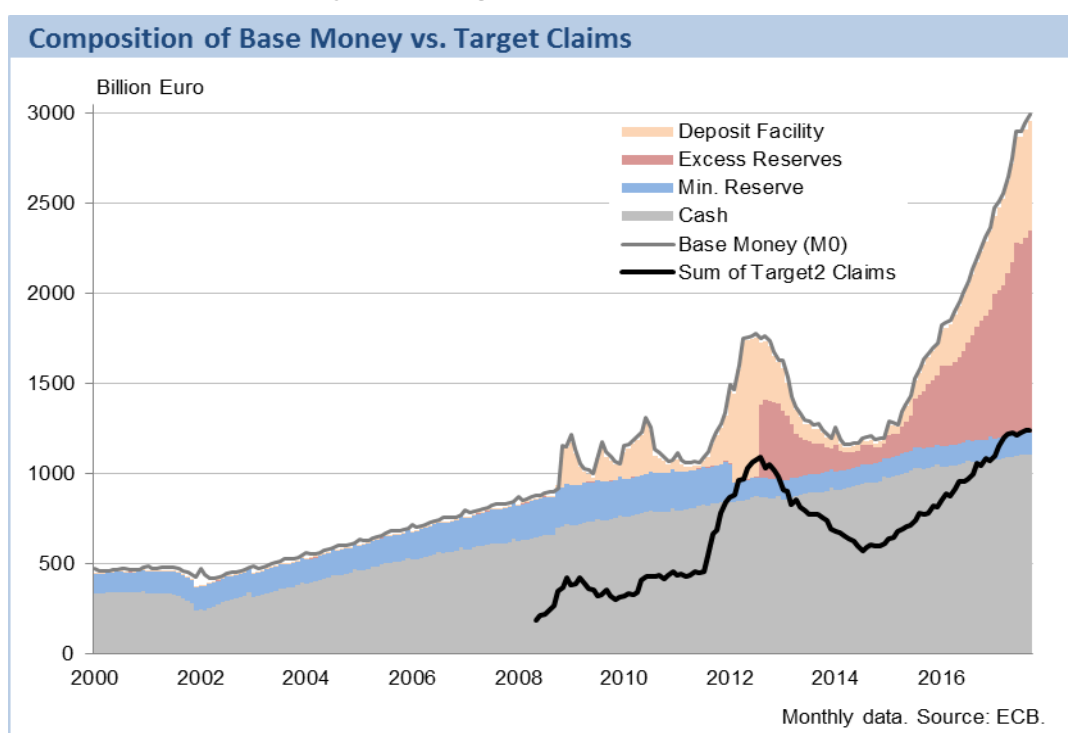
As it turns out, 80 percent of APP trading partners are located non-domestically, and 50 percent are located outside the euro area (ECB 2017). These external counterparties are often London-based international banks, and for historical reasons, most of them are connected to the Target2 system via the Bundesbank or NCBs of other financial centres in the euro area. For example, if the Bank of Italy buys an Italian government bond from such an international bank, liquidity is transferred from the Bank of Italy to the respective bank, which in turn leads to an increase in the Target2 position of the Bundesbank (or of NCBs of other financial centers) and to an increase of Target2 liabilities of the Bank of Italy. A simulation of cross-border flows of central bank money based on the distribution of APP trading partners shows that the increase of Target2 claims and liabilities is broadly in line with what can be expected given the APP implementation. The sum of balances is slightly below the simulated balance, indicating that cross-border liquidity flows unrelated to the APP do not give rise to a further increase of Target2 balances, and a comparison of BoP flows of Target2 surplus and deficit countries shows that recent developments are of an *"intrinsically different nature"* from those in previous episodes (ECB 2017). Indeed, the share of external non-banks among government bond holders has declined in correspondence to APP implementation (Arslanalp and Tsuda 2017).

Furthermore, interest rate differentials between the euro area and other currency areas led to portfolio rebalancing among market participants all over the euro area. The preferred foreign securities appear to be US government bonds, and these foreign securities are typically attained through "actors located in major euro area financial centres" (ECB 2017). Therefore, portfolio rebalancing of euro area residents also contributed to the rise of Target2 imbalances, even though this process does not qualify at all as capital flight within the EMU (case 3 in the classification of section 2).

### 3.2. Excess Liquidity: Lacking Incentives for Interbank Loans

Apart from explanations for a mechanical build-up of Target2 balances, there is another reason why large Target2 balances can build up: Excess liquidity. In normal times (i.e. until 2008), the quantity of base money (M0) used to be just sufficient to fulfil minimum reserve requirements and desired cash holdings in the euro area (Figure 3). Back then, the ECB provided no more than the required amount of central bank money, and interbank markets allocated it across countries. Since then, liquidity provision has been in excess of the required amount, particularly since 2014: At first, the Eurosystem started to purchase covered bonds and asset-backed securities in October 2014, and allotted additional liquidity in two auctions of targeted long-term refinancing operations (TLTROs) in late 2014 with a “relatively higher participation of banks in some countries with Target2 liabilities [...], as these operations tended to be more attractive for such counterparties” (ECB 2015). Then, in March 2015, the public sector purchase program (PSPP) was launched with asset purchases of initially 60 billion Euro per month.

**Figure 3: Excess Liquidity and Target2 Imbalances**

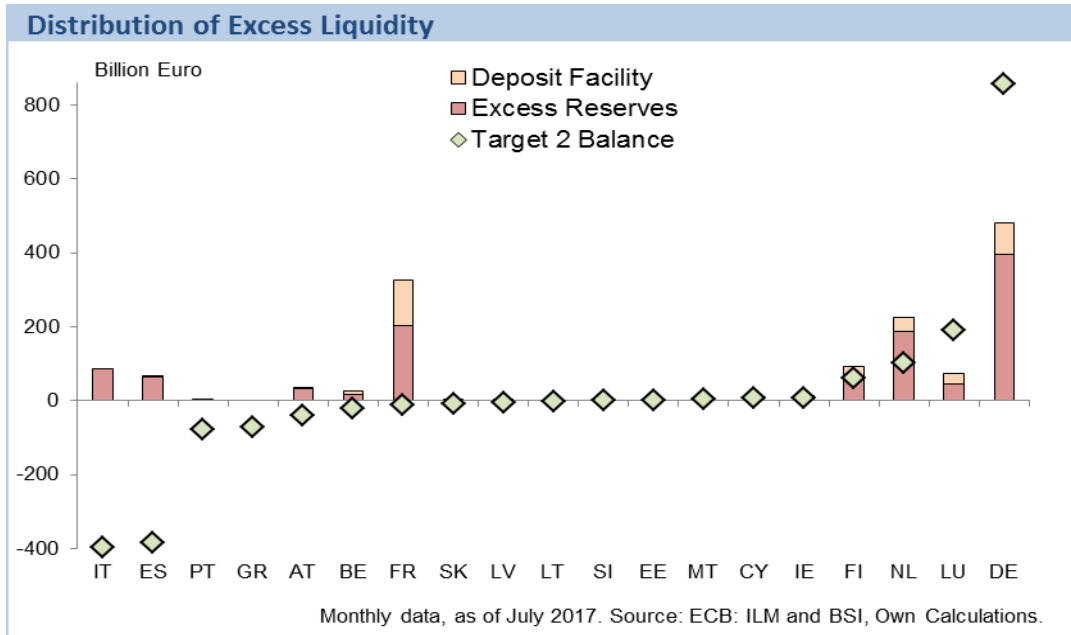


Recently, more than 50 percent of base money was in excess of the required amount, and holding this excessive liquidity earns a return rate of minus 0.4 percent – the deposit rate applies both to the deposit facility and reserves beyond the minimum reserve requirement. In normal times, there is an incentive to reallocate scarce central bank money between banks via interbank loans, because the return rate on excess liquidity is lower than the cost of borrowing new liquidity from the central bank via main refinancing operations (currently 0 percent). However, with large amounts of excess liquidity in most banks and available at very low cost (EONIA at -0.35 percent), the incentive to reallocate central bank money via interbank loans is low. Interbank loans, for example from German banks to Italian ones, would otherwise trigger flows of central bank money to the Italian banking system and thereby reduce Target2 imbalances, provided that liquidity was more abundant in the respective German banks. Thus, there is a close relationship between excessive liquidity provision and the sum of Target2 claims (Figure 3).

A closer look at the distribution of liquidity reveals that large parts of excess liquidity indeed accumulated in banking systems of Target2 surplus countries, and also in France

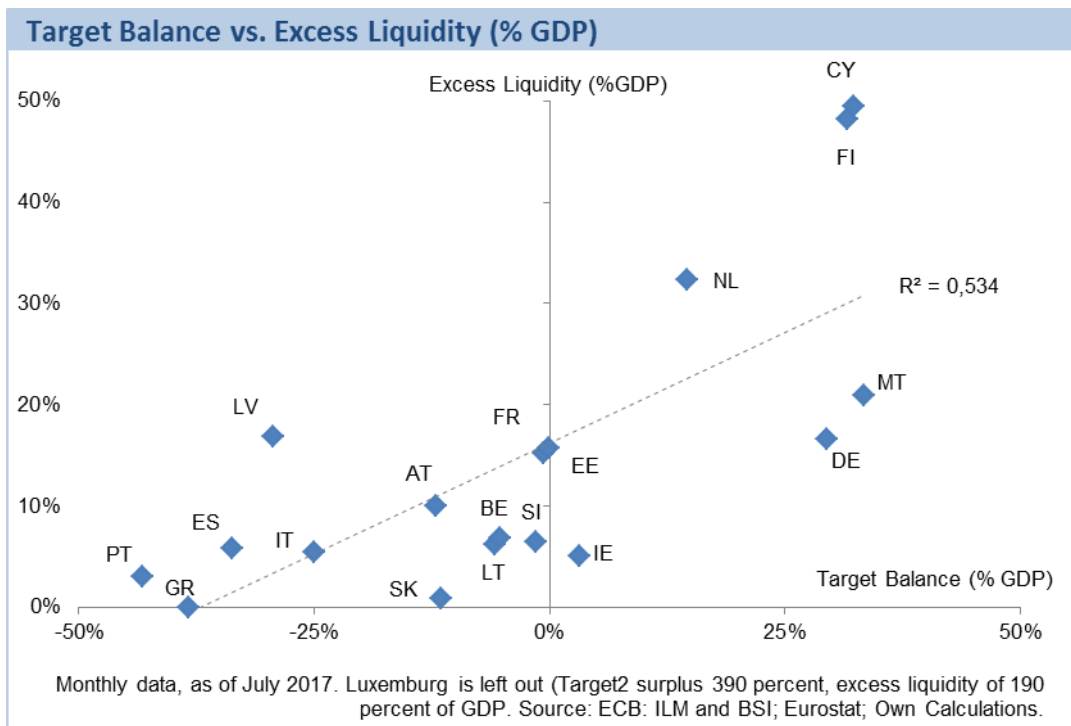
(Figure 4). Excess liquidity in the French banking system appears to be elevated at first sight, but merely corresponds the size of the French economy. Non-negligible amounts of excess reserves are also in Italian and Spanish banks, indicating that cross-border interbank loans are not required to satisfy their liquidity needs.

**Figure 4: Where is the Excessive Liquidity?**



For a further investigation of the relationship between Target2 balances and excess liquidity, taking into account the different size of countries, we related both measures to annual GDP (Figure 5). As it turns out, the positive correlation between both measures indicates that excess liquidity tends to be higher in countries with a Target2 surplus.

**Figure 5: Target2 balance vs. Excess Liquidity**



These results suggest that if the ECB would start to withdraw liquidity, the demand for additional central bank money would first increase in countries with Target2 liabilities. To the extent that central bank money would be reallocated from countries with Target2 surpluses to countries with Target2 liabilities via interbank markets, the withdrawal of liquidity would lead to a decline in Target2 balances. However, at present it is not clear whether this reallocation via the interbank market would take place or if financial markets are still too fragmented along national borders (Fiedler et al. 2016).

### 3.3. Is this time different?

The mechanical explanation of increasing Target2 balances by referring to technical or historical aspects in processing the APP and other QE programmes (described in Section 3.1) may hide other, more relevant economic causes. We can hardly expect the ECB to offer interpretations of Target2 developments that give rise to serious concerns. Recall that back in 2012, the ECB claimed Target2 imbalances to be entirely unproblematic: *“Target2 imbalances are normal, are inherent in a monetary union. [...] When funding conditions become stressed in some parts of the euro area, the countries that are not stressed accumulate claims vis-à-vis the countries that are under stressed conditions. But this does not imply any more risk for the so-called ‘creditor countries’. It is part of the normal functioning of a monetary area [...]”* (ECB 2012). Now, the ECB states that recent developments are *“of an intrinsically different nature”* compared to the dynamics from mid-2011 to mid-2012, when Target2 increases were *“triggered by a replacement of private sector funding of banks by central bank funding”* (ECB 2017). It appears that the ECB assessment of the 2012 episode became more critical in retrospective. Therefore, it is not obvious that recent increases are unproblematic side-effects of monetary policy implementation. There are good reasons to wonder, whether today’s Target2 increases are just by-products of monetary policy implementation which are not problematic at all.

First, the 2015 crisis in Greece may – at least temporarily – have contributed to the trend reversal of Target2 imbalances, when the macroeconomic situation of the Greek economy deteriorated markedly in autumn 2014. A Syriza victory in the general election by end-January 2015 was perceived a possible outcome and triggered a renewed capital and deposit flight from the Greek banking system (cases 3 and 4 in the classification of section 2). Between November 2014 and March 2015, the Greek Target2 deficit soared from about 40 to almost 100 billion Euros. When the Greek crisis peaked in mid-2015 and capital controls were installed to prevent further liquidity outflows, the risk of a breakup of the currency union was back on the agenda. Even if this breakup risk was limited to Greece in this situation, it may have shown depositors also in other countries that cohesion of the currency union is not for certain. Concerning the 2015 crisis in Greece, this episode was hardly different from the former episode of exploding Target2 balances in 2011-2012. Since then, the Greek Target2 deficit declined to about 70 billion, and since Greek government bonds are not eligible for ECBs asset purchases, the Greek deficit remained stable recently as the mechanical increase triggered by APP implementation does not apply (Auer and Bogdanova 2017).

Second, different country risk may still be an underlying factor. Liquidity from the sale of bonds is mostly held in banks connected to NCBs of Target2 surplus countries, and according to the ECB (2017) this reflects historically grown structures of financial markets characterized by strong ties between international banks to euro area financial centres. However, the question arises why Finland has a growing surplus, while Paris as a financial centre records no relevant inflows that are reflected in the French Target2 balance. Also, the connection of certain banks to the Target2 system via the Bundesbank may not be just accidental (for historical reasons), but reveal actual investor preferences. Imagine that someone who just sold Italian bonds to the Eurosystem could (for some reason) be paid with a deposit in an Italian bank – would he or she simply leave it there, or rather transfer



it to a bank in a country with a less fragile financial sector? The question where to hold deposits has become even more relevant since the Single Resolution Mechanism (SRM) has been put in place, which allows for a bail-in of bank creditors and large deposits. Thus, a decision to hold liquidity in banks connected to Target2 surplus countries may also reflect investor preference for banking systems in which bail-ins are perceived as less likely. Furthermore, in the extreme case of a breakup of the currency union, when each country would have to introduce its own currency, currencies of periphery countries would probably depreciate against those of core countries. Thus, deposit holders in core countries would be better off than deposit holders in periphery countries, since the purchasing power of their claims would increase (denomination risk). Even if this extreme scenario may not be a driving force for deposit flight any more, it could still make depositors feel comfortable to be connected to certain (core country) banking systems. This underlying factor in the investor choice deposit holdings and the corresponding build-up of Target2 imbalances would give rise to a tacit form of deposit flight (case 4 in section 2).

Third, the relevant counterfactual is unclear, so nobody knows what would have happened without extraordinary monetary policy measures and without BoP financing via Target2. Since the acute phase of the European debt crisis, a number of policy measures, such as Outright Monetary Transactions (OMT) and the Asset Purchase Programme (APP), have been introduced. These measures are credited with the reduction of default probabilities (and therefore risk premia) on peripheral countries' debt. This means that due to these measures, valuations of peripheral bonds are higher than they otherwise would be and probably exceed the levels that would be justified based on their inherent riskiness absent official interventions. This opens the door for a withdrawal of capital from the periphery financed through the Target2 system, because foreign investors can sell their bonds to the Eurosystem at inflated prices and get reserves in core countries in return (capital flight corresponding to case 3 in section 2). Furthermore, it is unclear how the other components of the balance of payments would have developed without these policy interventions: for example, it is quite possible that without financing via Target2 – made possible by the creation of large amounts of new central bank money in the peripheral countries – trade surpluses of the periphery would have been larger or that there would have been shifts in the investment pattern.

Heterogeneous country risk could simply be somewhat concealed or suppressed by extraordinary monetary policy measures, which temporarily supersede interbank markets, flatten yield curves, level country-risk premia, alleviate debt burdens, cover up vulnerabilities and reduce incentives for appropriate reforms. We do not know for certain what happens if monetary policy is normalized and excess liquidity is withdrawn from the system.

## 4. APPROACHES TO REFORM THE TARGET2 SYSTEM

Large Target2 balances are associated with several risks. First, the Eurosystem faces financial losses if a country with a Target2 deficit decides to leave the euro area and defaults on its Target2 liabilities. This risk may also influence political negotiations in the euro area or the European Union, since politicians from creditor countries may not want to recognize losses. Second, current account or capital flight financing via the Target2 system distort a market-based, efficient allocation of capital and thereby dampen economic growth in the longer run, even if short-run GDP effects in Target2 deficit countries may be rather beneficial. In this Section, we discuss approaches to reform the Target2 system or to adjust the current monetary regime that would reduce these risks, but would not affect the main purpose of the Target2 system, namely facilitating cross-border payments.

### 4.1. Settlement and Adequate Compensation

The financial risks from Target2 balances for creditor NCBs are due to at least three features of the current set up. These will be described in turn in this section, alongside proposals for how they might be alleviated.

First, since there is no settlement mechanism in place, all Target2 claims are loans whose repayment is postponed into the indefinite future. However, there is no principle reason why – in order to fulfil its function as a cross-border payment mechanism for private banks – Target2 must only clear (that is, tally up debts and credits and assign net amounts owed or owing to the participants) but not settle (bring these net balances to zero via transfers from debtors to creditors) financial flows between NCBs.

This is shown by the example of the Federal Reserve System in the United States where the Interdistrict Settlement Accounts fulfil a role similar to the Target2 accounts in the Eurosystem: The Federal reserve system contains twelve districts, each with a regional Federal reserve bank. As is the case with the National Central Banks in the euro area, banks in the different districts are connected to the Federal Reserve System via accounts at their regional reserve bank. Payments between banks in different reserve districts then also lead to the acquisition of claims in liabilities of the different regional Feds. In contrast to the Eurosystem, the Fed had, since its inception, a tradition of regularly settling imbalances between the regional reserve banks, even though the specific terms of settlement have changed over time (and the Fed also displayed some short-run flexibility in times of crisis): whereas in the early days of the Fed there was daily settlement in gold, nowadays settlement occurs once a year (Koning 2012). Every year in April, the average balances of the previous twelve months are settled by the transfer of ownership stakes in the System Open Market Account (SOMA). SOMA contains a variety of assets acquired by the Fed, but the bulk of it is made up of US central government debt.

While this shows that regular settlement between different members of a decentralized system of central banks is quite possible, a reform of Target2 would be more complicated than a straight-up copy of the approach taken by the Fed. For one, in the Eurosystem there is no single SOMA, but rather every member central bank (including the ECB and the various NCB's) has its own account of assets held for monetary policy purposes. Furthermore, each Member State controls its own fiscal policy, such that there is no common sovereign whose debt could be accepted as riskless by all individual NCB's, as the regional Feds do with Treasury debt. Therefore, a settlement system in the euro area needs to include the transfer of securities from Target2 debtors to creditors. Furthermore, creditors would need to be able to exercise some control over which securities can be used to settle, either by limiting the type of acceptable securities (for example only domestic

government debt<sup>7</sup>) or by being able to set different haircuts for accepting different securities. Since current creditors might be unable to, at least in the short run, provide a sufficient amount of acceptable securities, there might need to be some initial adjustment period over which the large Target2 balances already accumulated are reduced gradually. Collateral requirements that are not stringent enough for certain securities (for example if certain sovereign bonds are accepted at haircuts that are too low vis-à-vis their risk profile) can trigger collateral arbitrage: the Eurosystem would in effect subsidize risky bonds and end up with a disproportionately large amount of these bonds. Of course, it is no trivial task to determine the actual riskiness of a bond, especially when market prices are distorted by implicit and explicit guarantees (also by the Eurosystem, which causes problems of circular self-reference). It should be noted that within the Asset Purchase Programme, under which securities are purchased directly, there is no possibility to apply haircuts based on the riskiness of a bond.

Second, Target2 creditors are currently unable to effectively limit the size of imbalances that are built up. For example, not all decisions that can impact Target2 balances are subject to governing council votes. In the case of Emergency Liquidity Assistance, NCB's decide by themselves if and how much they want to provide. A two thirds majority in the governing council is needed to restrict the provision of Emergency Liquidity Assistance; and any such decision would usually only be able to come after an individual NCB already had taken action.

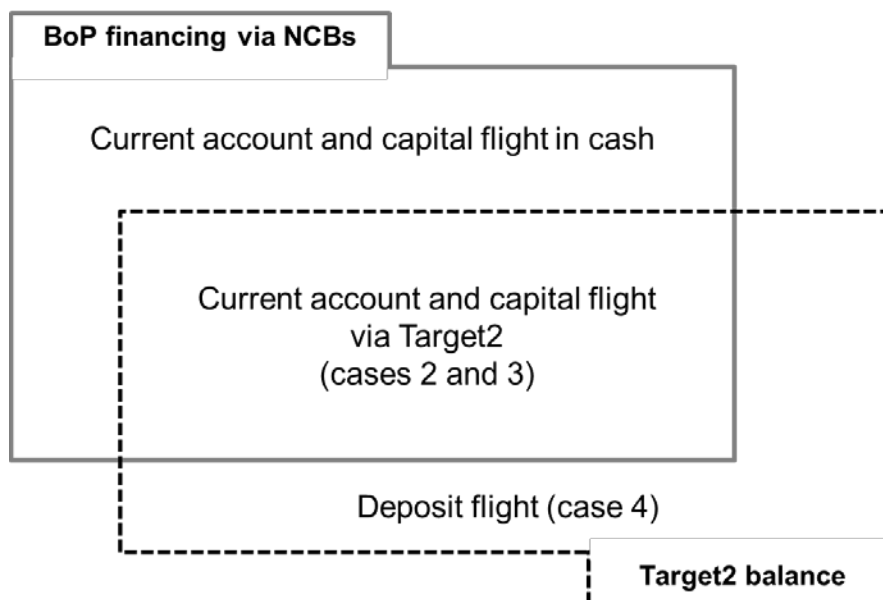
Third, Target2 creditors are not compensated for the risk they take on their balance sheets. While in a first step at least, Target2 balances are remunerated at the interest rate charged on the ECB's main refinancing operations (currently at zero percent), Whelan (2014) points out that due to the profit sharing arrangements in the Eurosystem, the size of an NCB's Target2 balances do not impact its individual earnings. The most appropriate way for reform regarding this issue is interdependent with the approach used to address the first point in this section (settlement of imbalances): for example, if foreign government bonds are to be accepted at haircuts below 100 percent, the receiving central bank would also need to keep some interest earnings to compensate for the remaining default risk.

#### **4.2. A Strict Monetary Regime to Limit Target2-positions**

Some observers have argued that limiting Target2 positions would bring the common currency to an end, because cross-border payments could then no longer be processed (Bindseil and König 2012). Of course, a circulating euro must be accepted as a means of payment everywhere in the currency area no matter where it was created. While this is technically true from an ex-post perspective, it leaves the causes of the Target2 dynamics unconsidered. The exploding Target2 positions during the acute phase of the euro crisis in the years 2010ff are the symptom, not the cause of the problem. It is the underlying monetary regime, not the cross-border payment settlement system that is to be blamed for increasing imbalances in these cases. This would become even more obvious if all payments were processed in cash. This would produce the same Balance of Payments effects without creating any Target2-imbalances (Figure 6).

---

<sup>7</sup> However, Voll (2014) cautions that requiring debtor central banks to obtain creditor country securities to settle Target2 deficits contributes to further deficits (since those securities might have to be bought from owners in the creditor country).

**Figure 6: BoP financing vs. Target2**

**Source:** Own Representation.

As illustrated by the cases 2, 3 and 4 in the above classification (section 2), disproportionate creation of money in the deficit countries may bring about persistent Balance-of-Payment deficits that are financed by the Eurosystem and that are processed mainly via Target2. Money creation in the deficit countries is disproportionate or excessive to the extent that they can simply create new liquidity as soon as existing liquidity flows out of the country. As a result, the money market and the capital market blur because liquidity is created to finance capital flows. During the crisis of 2010ff, ECB policies enabled NCBs to continue this process of disproportionate national money creation indefinitely. First, the Eurosystem's full allotment policy allowed the monetary base to expand beyond the amount required to fulfil cash holdings and minimum reserves requirements. If the overall monetary base was strictly limited to a normal level, commercial banks would have had to compete for central bank money leaving some of them empty-handed. Second, when the sovereign debt crisis undermined the credit rating of some member states, respective government bonds did not satisfy the Eurosystem's eligibility criteria for collateral in refinancing operations anymore, so the ability of banks and NCBs in these countries to create new liquidity was at stake. To avoid this situation, the ECB simply lowered eligibility criteria considerably. Third, when Greek government bonds were clearly out of range to be eligible as collateral in refinancing operations, emergency liquidity assistance (ELA) still allowed for additional money creation. Without these policies, exploding Target2 balances in the acute phase of the crisis would not have been possible. Or, put differently: a euro that is not created in country Y cannot flow out to country X and by so doing inflate Target2 balances.

Any attempt to limit the Target2-positions must restrict the disproportionate creation of central bank liquidity in the deficit countries that are the sine qua non of the observed Target2 dynamics. Once this is stopped, Target2 balances will stop swelling due to current account or capital flight financing. Concretely, the monetary base in the euro area would have to be limited to a normal level, and each NCB would be allowed to issue only a proportion of the overall monetary base. This proportion reflects the countries' economic size and may also reflect country-specific factors that determine the "normal" level of liquidity needs (like payment habits). Once a NCB reaches its proportion of issued base money (plus some supplement), the NCB is not entitled to engage in any additional refinancing operations. To the extent that BoP deficits continue for a while, central bank

---

money would further flow out of the deficit countries reducing their monetary base and increasing it in the surplus countries. The banking sector in a deficit country would have to rely on the capital market (interbank market) to fulfil its liquidity needs, and banks would have to offer higher interest rates to attract sufficient central bank money via market-based capital flows. By this, capital flows would be incentivized that offset former BoP deficits and surpluses, or alternatively, current account reversals would be initiated that enforce an adjustment of current accounts to the ongoing capital flows. The Target2 mechanism would cease to interfere with market-based capital flows, and Target2 imbalances would disappear. This would permanently reinstate the market mechanism in cross-border financial flows.

This leads to the question when capital flows within the EMU will entirely be determined by the market mechanism again, which would require large structural imbalances in the Target2 system to broadly return to zero. Even if the current setup of Target2 is assessed positive by some observers in its role of buffering shocks and trend reversals in the short run, the Target2 system was not implemented for this purpose and the ECB has no mandate to do so. Member states have never formally decided to install a mechanism that allows for automatic, uncollateralized, unlimited cross-border credit whose repayment is postponed to the indefinite future. Governments should either reform the current system or formally legitimize the current setup.

## 5. CONCLUSIONS

Target2 imbalances at record level – should we worry? Yes indeed, we should worry, even though the underlying dynamics and corresponding indicators for financial stress appear less dramatic today than in the acute phase of the sovereign debt crisis between mid-2011 and mid-2012. However, financial fragmentation could simply be concealed or suppressed by extraordinary monetary policy measures, which temporarily supersede interbank markets, flatten yield curves, contribute to a levelling of country-risk premia, reduce debt burdens, cover up vulnerabilities and reduce incentives for necessary reforms. We do not know for certain what happens if monetary policy is normalized at some point in time, and when excess liquidity is finally withdrawn from the monetary system. “Only when the tide goes out do you discover who's been swimming naked” (Warren Buffet).

Only if the ECB at some point manages to end extraordinary monetary policy measures and to normalize monetary policy conditions, we may learn whether interbank markets are workable again. If the interbank market indeed functions smoothly in relocating central bank money between national banking systems at similar collateral standards, Target2 imbalances will decline (or become irrelevant). Remaining Target2 positions could be further reduced, if countries with a Target2 deficit become attractive destinations for capital flows. In fact, transactions that would reduce both Target2 claims and liabilities are quite obvious: Market participants from Target2 surplus countries would simply have to buy assets – real or financial – in Target2 deficit countries. For example, German investors could buy houses, factories, hotels, bonds or stocks in Spain and Italy, and liquidity would flow from the German banking system to these Target2 deficit countries, thereby reducing Target2 imbalances. However, creating attractive investment and doing-business conditions in these countries is beyond both the reach of the ECB.

While Target2 imbalances persist, or grow even further there are good reasons to carefully evaluate the driving forces behind these numbers. The very reason for recording the Balance-of-Payments is that the numbers in this accounting system are economically meaningful. Very little in the realm of economics happens purely for technical or historical reasons. Even less so, when massive flows of funding are concerned. Therefore, it is worth the while to critically explore the incentives that might trigger BoP-financing via the Eurosystem as the associated risks are not trivial.

### Questions:

- Why are trading partners outside the Euro-area overrepresented as ECB counterparties? Why do particularly London-based investors sell their bonds?
- Do ECB counterparties (like London-based investors) actually hold Euro liquidity, or do they reinvest the money? Which market participants finally hold the bulk of injected central bank money?
- What are the reasons for the large home bias in government debt holdings? Do regulatory provisions contribute to this phenomenon?
- Should there some sort of a settlement mechanism to offset large Target claims and liabilities?

## REFERENCES

- Abascal, M., T. Alonso, and S. Mayordomo (2013). Fragmentation in European Financial Markets: Measures, Determinants, and Policy Solutions. BBVA Research, Working Papers No. 13/22, July 2013, Link: [http://www.bbva.com/wp-content/uploads/migrados/WP\\_1322\\_tcm348-394976.pdf](http://www.bbva.com/wp-content/uploads/migrados/WP_1322_tcm348-394976.pdf).
- Arslanalp S. and T. Tsuda (2017). Sovereign Investor Base Dataset for Advanced Economies. International Monetary Fund, Monetary and Capital Markets Department.
- Auer, R (2014). What drives TARGET2 balances? Evidence from a panel analysis", Economic Policy, vol 29, no 77, 2014, pp 139-97. Link: <https://academic.oup.com/economicpolicy/article-lookup/doi/10.1111/1468-0327.12024>
- Auer, R. and Bogdanova, B. (2017): What is driving the renewed increase of TARGET2 balances?. BIS Quarterly Review, March 2017. Link: [https://www.bis.org/publ/qtrpdf/r\\_qt1703u.htm](https://www.bis.org/publ/qtrpdf/r_qt1703u.htm).
- Bindseil, U. and König, P. (2012). Target2 and the european sovereign debt crisis. Technical report.
- ECB (2012). Introductory statement to the press conference (with Q&A), February 9, 2012. Link: <https://www.ecb.europa.eu/press/pressconf/2012/html/is120209.en.html>.
- ECB (2015). Publication of Target2 Balances. ECB Economic Bulletin, Issue 6 / 2015, Box 4. Link: [https://www.ecb.europa.eu/pub/pdf/other/eb201506\\_focus04.en.pdf](https://www.ecb.europa.eu/pub/pdf/other/eb201506_focus04.en.pdf).
- ECB (2016). Target2 Balances and the asset purchase programme. ECB Economic Bulletin, Issue 7 / 2016, Box 2. Available at: <https://www.ecb.europa.eu/pub/pdf/ecbu/eb201607.en.pdf>.
- ECB (2017). The ECB asset purchase programme and TARGET2 balances: monetary policy implementation and beyond. ECB Economic Bulletin, Issue 3 / 2017, Box 4.
- ECB (2017a). Introductory statement to the press conference (with Q&A). Link: <https://www.ecb.europa.eu/press/pressconf/2016/html/is160721.en.html>.
- European Economic Advisory Group (2012). The EEAG Report on the European Economy, Chapter 2, "The European Balance-of-Payments Problem", CESifo, Munich 2012, pp 57–81. Link: <https://www.cesifo-group.de/portal/pls/portal/docs/1/1215245.PDF>
- Fiedler, S., Gern, K., Raddant, M., Stolzenburg, U. (2016). Financial market fragmentation in the euro area: State of play. In-Depth Analysis prepared for the Monetary Dialogue of the European Parliament, September 2016.
- Fiedler, S., Kooths, S., Stolzenburg, U. (2017). Extending QE: Additional risks for financial stability? Briefing Paper, Monetary Dialogue - In-depth analysis for the European Parliament, February 2017.
- Kooths, S. and B. van Roye (2012). Euro Area: Single Currency - National Money Creation. Kiel Working Papers, No. 1787, Kiel Institute for the World Economy. Link: <https://www.econstor.eu/bitstream/10419/64831/1/726708348.pdf>.
- Koning, J.P. (2012): The Idiot's Guide to the Federal Reserve Interdistrict Settlement Account. Moneyness blog post, 5. Feb 2012. Link: <http://jpkoning.blogspot.de/2012/02/idiots-guide-to-federal-reserve.html>.

- Sinn, H.-W. and Wollmershäuser, T. (2012): "Target loans, current account balances and capital flows: the ECB's rescue facility". *International Tax and Public Finance*, 19: 468-508, 2012.
- Voll, S. (2014): "ISA vs. TARGET2: Ein Vergleich der Voraussetzungen für den effektiven Ausgleich von Zahlungsüberweisungssalden". *Working Papers on Global Financial Markets*, No. 51. Link: <http://hdl.handle.net/10419/94501>.
- Whelan, K. (2014): "TARGET2 and central bank balance sheets". *Economic Policy*, Volume 29, Issue 77, January 2014. Link: <https://doi.org/10.1111/1468-0327.12025>.



DIRECTORATE-GENERAL FOR INTERNAL POLICIES

## POLICY DEPARTMENT ECONOMIC AND SCIENTIFIC POLICY **A**

### Role

Policy departments are research units that provide specialised advice to committees, inter-parliamentary delegations and other parliamentary bodies.

### Policy Areas

- Economic and Monetary Affairs
- Employment and Social Affairs
- Environment, Public Health and Food Safety
- Industry, Research and Energy
- Internal Market and Consumer Protection

### Documents

Visit the European Parliament website:  
<http://www.europarl.europa.eu/supporting-analyses>



ISBN 978-92-846-2201-6 (paper)  
ISBN 978-92-846-2202-3 (pdf)

doi: 10.2861/221 (paper)  
doi: 10.2861/732702 (pdf)

