

Target Balances and the German Financial
Account in Light of the European
Balance-of-Payments Crisis

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Abstract

As shown in Sinn and Wollmershäuser (2012a), during the European balance-of-payments crisis, inter-governmental credit and Target credit granted by core-country central banks have replaced private international capital flows in financing the crisis countries' current account deficits, and even compensated for outright capital flight. This article offers a closer look at the components of this reversal of capital flows for the case of Germany. Its main finding is that most of the reversal materialized in the decline in foreign claims of German commercial banks. The inflow of foreign flight capital into Germany is small by comparison, with purchases of German government bonds increasing substantially, in particular by Spanish and Irish investors. Some foreign capital even left Germany. In net terms, over the years 2008, 2009 and 2011 foreigners withdrew credit they had previously provided to German financial institutions. However, in 2012, foreign credit flows to German financial institutions surged, while the flow of credit redemptions paid to German financial institutions came to a halt.

JEL-Code: E500, E580, E630, F320, F340.

Keywords: monetary union, balance of payments, financial account, capital flight, Target.

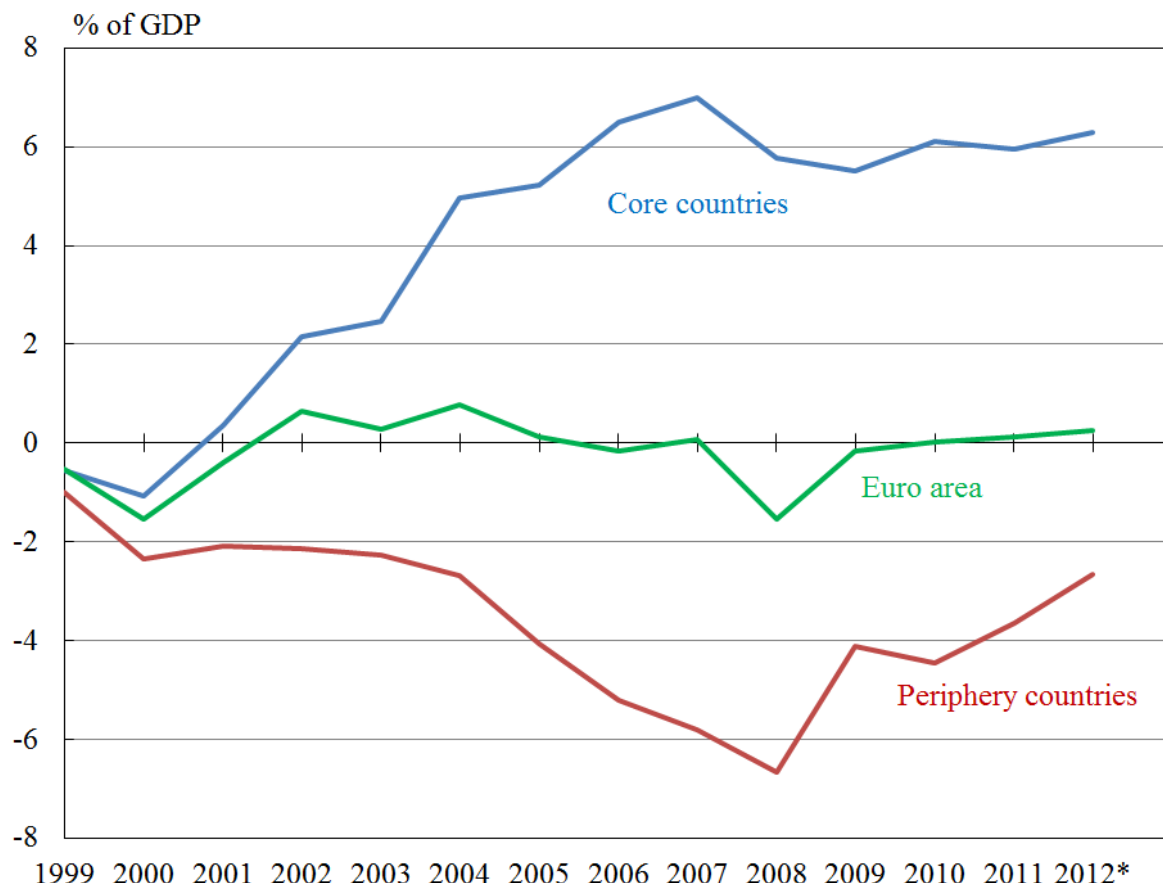
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1. Introduction¹

The European Monetary Union is experiencing a serious balance-of-payments crisis. Up until 2007 the current account balances of EU member states drifted steadily apart (see Figure 1). While ever-growing surpluses emerged in Germany, Austria and the Netherlands, current account deficits grew significantly in the periphery countries like Greece, Ireland, Spain, Portugal and Italy. The Eurozone's overall current account balance was more or less balanced, amounting on average to a small deficit totaling 0.3% of GDP. This meant that current account imbalances within the monetary union were financed to a large extent by the transfer of private savings from the core countries to the periphery. The boom in the periphery was largely financed by private and public sector borrowing from the core countries of the Eurozone.

Figure 1: Current account balances in the European Monetary Union



Note: Core countries: Austria, Germany, the Netherlands; periphery countries: Greece, Italy, Ireland, Portugal, Spain. 2012*: first half of 2012.

Sources: National Statistics Offices, European Central Bank.

The financial crisis changed the flow of capital significantly. Current account surpluses in the core countries stopped rising and current account deficits in the periphery

¹ This article builds upon H-W. Sinn and T. Wollmershäuser (2012b). For research assistance we thank Paul Kremmel, Lisa Giani-Contini und Julio Saavedra.

countries shrank without disappearing though. Since investors were reluctant to finance the current account deficits and began to withdraw the funds previously lent out, the periphery countries were plunged into a crisis through falling investment and other credit-financed expenditure, while in the core economies were boosted by rising investment. Both of these phenomena reduced current account balances due to the income dependency of imports.

However, because of a lack of a realignment of goods prices, the deficits have not yet disappeared. In 2011, most of the periphery countries (with the exception of Ireland) still had current account deficits that were as large as they were on average during the first five years of the single monetary policy. Given that the capital markets shunned the periphery countries the question is how these deficits were actually financed. The increase in the current account deficits of Italy and France makes this question all the more pressing.

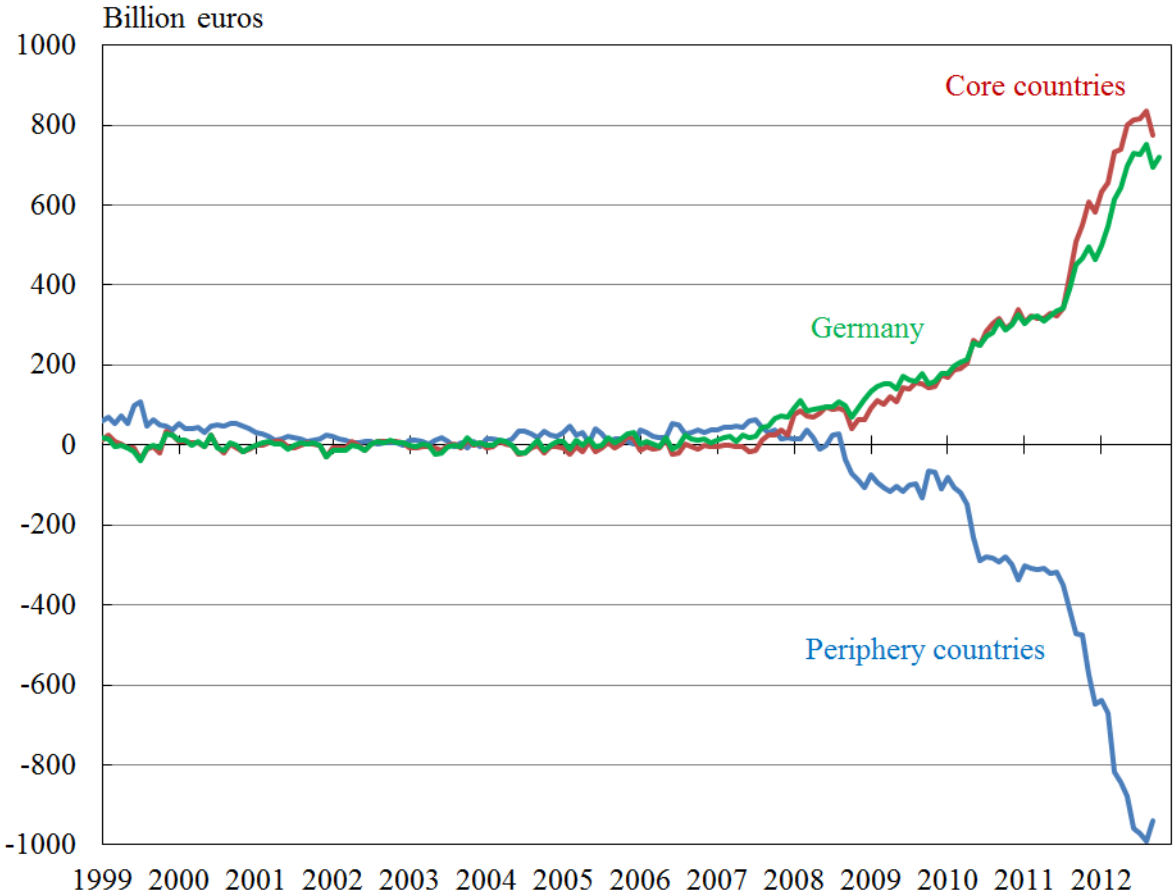
Sinn (2011a,b, 2012a) and Sinn und Wollmershäuser (2012a) explain this phenomenon primarily with Target credit. This type of credit is an overdraft in international payment transactions arising because the national central banks of the periphery countries asked their core-country counterparts to carry out more international payment orders for them than vice versa. The payment orders to the core countries were related to the purchase of goods and assets, as well as repayment of debts and other financial transactions. In net terms, the Bundesbank alone has honored payment orders amounting to over 700 billion euros for other central banks, in effect granting these central banks credit. The credit is posted as an claim on the ECB in the Bundesbank's balance sheet and as a liability to the ECB in other national central banks' balance sheets. In other monetary systems, like the Bretton Woods system or the internal US payment settlement system, it was customary to settle such debts with gold or safe, interest-bearing securities. Only the Eurosystem allows debts to be chalked up in the balance sheets and carried forward year by year at the ECB's main refinancing interest rate without any further repercussions.

As Sinn and Wollmershäuser showed, the emergence itself of Target imbalances implied contractions and expansions of the local monetary bases of the euro countries that induced sterilizing changes in local refinancing credit, or that were themselves caused by an increase in the amount of refinancing credit provided, the deterioration of collateral requirements playing a major role in this context. The ECB's policy decisions and market reactions kept both the overall stock of base money and its distribution across the countries of the Eurozone unchanged. Thus, approximately, the Target balances also measure the reallocation of the ECB's stock of refinancing credit across borders.

Target balances were virtually zero up until 2007, but subsequently soared dramatically (see Figure 2). While the periphery states of the Eurozone (including Italy) had accumulated liabilities totaling over 600 billion euros by the end of 2011, the German Bundesbank's claims against the Eurosystem had increased to around 500 billion euros, and by October 2012 to 719 billion euros. Germany's claims built up because Germany accumulated current account surpluses with the rest of the Eurosystem, without a corresponding amount of private capital flowing into the deficit countries. The funding shortfall in the respective deficit countries was mainly covered by additional refinancing credit issued by the respective national central banks, i.e. by local money creation. In addition,

the flow of public credit in the form of EU bail-out packages also helped from May 2010 onwards.

Figure 2: Target balances in the Eurozone (stocks at end of month)



Notes: core countries: Austria, Germany, the Netherlands; periphery countries: Greece, Italy, Ireland, Portugal, Spain.
 Source: IMF, national central banks, Sinn and Wollmershäuser (2012a), <http://www.cesifo-group.de/de/ifoHome/policy/Spezialthemen/Policy-Issues-Archive/Target.html>.

As far as the change of private capital flows is concerned, a distinction can be drawn between a mere reduction of capital flows into the periphery countries and an outright reversal of capital flows. We refer to the latter as capital flight. It is also possible to differentiate between the countries of residence of the investors fleeing with their capital. We draw distinctions between the flight of capital held by investors from the crisis-afflicted countries, by investors from the core countries, and by investors from other countries. In our first article on this topic (Sinn and Wollmershäuser 2012a) we assumed that it was primarily investors from the core countries that were fleeing back home from the periphery since these countries had been the biggest net capital exporters before the crisis, when public capital flows did not yet play any role. Specifically, we had the collapse of the interbank market in mind, i.e. the transfer of the short-term investment portfolios of the banks in the core countries back to their domestic markets. However, we also pointed to the existence of anecdotal evidence of capital flight on the part of rich asset holders from the crisis countries. Examples of such capital flight include the purchase of German sovereign bonds, the acquisition of German real-estate,

and the transfer of deposits to German banks. In our paper, we were not able to separate the two phenomena, i.e. the flight of foreign capital to Germany and the flight of German capital back home.

Now we are able to be more concrete on this issue. We aim to identify the components of Germany's capital exports that were replaced by the outflow of Target credit and other types of public credit. Our five key conclusions can be summarized as follows: firstly, when the bail-out measures taken by the public sector (general government and Bundesbank) are subtracted from Germany's capital export figures as shown in the country's financial account, it turns out that Germany's private sector has been a net recipient of capital from the rest of the world since the beginning of 2010. This means that there has actually been a private capital flight to Germany since that time. This was already demonstrated in Sinn and Wollmershäuser (2012a, Figure 7). Secondly, the capital outflow of German commercial banks reversed and turned into an inflow. The stock of international interbank loans dropped dramatically beginning with the first half of 2010. Thirdly, there was a significant inflow of capital from Spain and Ireland into Germany. Overall, however, this type of capital flight was small compared to the repatriation of German capital invested abroad. Fourth, foreign lending to German financial institutions was reduced during the crisis until 2011. Fifth, in 2012, German financial institutions received large funds from abroad, and their credit repatriations came to a halt.

2. Definition of a balance-of-payments crisis

The current account balance of a country is ex post always identical with the difference between domestic saving and domestic investment. If more is saved than invested domestically, the surplus saving, and with it that part of goods production that the domestic economy does not absorb, flows abroad as a capital export. Abroad, the situation is reversed, as this flow becomes capital imports and makes it possible to invest more than is saved, or in other words, to absorb more goods than are produced domestically. The domestic current account balance, which is mainly determined by the balance of goods and services (exports minus imports of goods and services)², shows a surplus, while the domestic financial account (borrowing from the rest of the world minus lending to the rest of the world, or, in short, capital imports minus capital exports) exhibits a deficit. The balance of payments, which is defined as the total of the financial and current account balances, summarizes the incoming and outgoing payments that are connected with real and financial cross-border transactions.³

² A country's current account surplus equals the net export of goods and services minus current transfers made to other countries (development aid, net EU contributions, etc.) plus the income earned abroad, in particular capital income.

³ To be strictly accurate, the balance of payments is defined as the sum of the current account balance, the financial account and the capital account. However, the capital account, which according to the Balance of Payments and International Investment Position Manual of the IMF means unrequited transfers of an asset of some kind, does not play any major role in Germany, so it can be ignored. Please note that in this paper the terms 'capital import' and 'capital export' do *not* refer to the capital account, but to the financial account and follow

Seen from the viewpoint of a country with a current account surplus like Germany, a balance-of-payments crisis in the Eurozone occurs if private, domestic capital exports are no longer sufficient to finance the current account deficits of foreign countries. In that case this capital must be replaced either by public, inter-governmental loans that this country provides to other countries, or the national central bank must honour net payment orders coming in from other countries, i.e. provide them a Target credit.

In fixed exchange rate systems (like, for example, the Bretton Woods system or the European Monetary System) a balance-of-payments crisis typically manifests itself in an accelerated drop in the foreign reserves of the crisis-afflicted country, because the portion of the current account deficit that cannot be financed by net borrowing from the rest of the world has to be financed by reducing the foreign claims held by the respective national central banks. In order to sustain the fixed exchange rate despite the massive outflow of private capital, the central banks sell their foreign reserves for domestic currency and thus provide domestic debtors with the foreign currency that they need to settle their liabilities. In terms of the financial account, the central bank reduces its net foreign assets, which is supposed to counteract the drop in the country's foreign liabilities (i.e. the capital flight). Such balance-of-payment crises typically end with full loss of foreign reserves and the abandonment of the fixed exchange rate.

Unlike a fixed exchange rate system, European Monetary Union is distinguished by the fact that national currencies were abolished and that national central banks no longer have any monetary autonomy. A balance-of-payment disequilibrium can nevertheless arise even in such a special form of a fixed exchange rate system. The only difference is that foreign reserves are replaced by the Target balances.

Target balances arise if international payment orders do not balance out, in which case they lead to changes in the local stocks of base money that induce or require sterilizing actions or reactions by the Eurosystem. When Target debt is being built up in a deficit country as payments to other countries are carried out, the monetary base of the deficit country shrinks. However, given that the demand for central bank money in the form of liquidity for domestic transactions remains, the shortfall in the monetary base is normally made up for by new central bank credit (refinancing credit) given to commercial banks. Without a net outflow of payments no new central bank money would be needed, and without the new central bank money only few payment orders would be honored because rising interest rates would create an incentive for capital not to leave the country or to flow in from abroad. Therefore, as shown by Sinn and Wollmershäuser (2012a), replacement credit from the (electronic) printing press is also indirectly measured by Target balances, or, conversely, extra credit from the printing press induced the net payment orders in the first place. Whatever cause and effect, the two things go hand in hand.

In the surplus countries the reverse process takes place. The supply of central bank money grows in the wake of incoming cross-border payment orders; however, since the existing stock of money balances is sufficient to meet the liquidity needs in these countries,

the textbook definition; hence these two terms are interchangeable with 'borrowing from the rest of the world' and 'lending to the rest of the world'.

the banks return the unneeded stock to their central bank by repaying existing refinancing credit or by lending it to their central bank. In Germany, the stock of refinancing credit had already practically disappeared by summer 2011, and since then commercial banks have been lending straight away the additionally created central bank money stemming from net payment orders back to the Bundesbank. This has turned the Bundesbank into a debtor of the commercial banking system (see Sinn and Wollmershäuser 2012a).

Unlike in a fixed exchange rate system, the central banks in a currency union are not subject to any restriction in the sense of a limited stock of foreign reserves when facing a balance-of-payments crisis. The central banks of the deficit countries can create as much money as they wish to make up for the dearth of foreign capital and lend it to banks, should the latter offer sufficiently good collateral. There are no limits for Target liabilities that arise in this way. The only conceivable restricting mechanism, namely that good collateral would eventually run out, has been successively relaxed by the ECB by steadily lowering the standards for eligible collateral, which has now mostly reached junk status. However, the building-up of Target balances and the accumulation of badly secured claims against the commercial banks of the crisis countries induce countervailing policy actions leaning towards debt mutualisation (EFSM, EFSF, ESM, Eurobonds and the like) that tend to change the nature of the overall economic system and create serious moral hazard effects that may jeopardize the stability of the political union as such (Sinn 2012a).

3. Some general remarks on the financial account

The financial account covers cross-border capital movements between a country and the rest of the world and the payments related to them. Since both claims and liabilities between two countries can be traded and since both can rise and fall over a given period, the payments in the financial account are differentiated depending on whether they represent net lending to, or net borrowing from, the rest of the world, and portfolio restructuring by domestic or foreign entities. This article focuses on the latter, since we wish to find out who has taken flight from the periphery countries: investors from these countries, or investors from the core countries who have called in their loans.

In the financial account, capital movements are broken down into different asset types: direct investment (including real-estate transactions), portfolio investment (shares, bonds and financial derivatives), other investment (financial credits, trade credits, bank deposits and other assets) and changes in foreign reserves. In addition, the German Bundesbank also provides a regional breakdown of capital flows for Germany, which shows German investment abroad by country and foreign investment in Germany from individual countries.

We also focus on the sector-based breakdown of capital flows. The balance-of-payments statistic distinguishes between four domestic sectors:

1. monetary financial institutions (in other words, banks that are active in deposit and lending business),
2. enterprises and households,
3. general government
4. central bank.

These sectors can be debtors or creditors with regard to the rest of the world.

4. The public sector's financial account

During the crisis, the German Bundesbank was Germany's foremost capital exporter (see Figure 3). The export of capital consisted of two main components. Firstly, under the covered bond purchase program and the securities markets program, the Bundesbank regularly acquired foreign private sector and government bonds (blue line) between 2009 and 2011. As discussed above, this was not directly a matter of capital outflows, because the Bundesbank purchased the securities from German banks. Indirectly, however, such capital outflows were induced

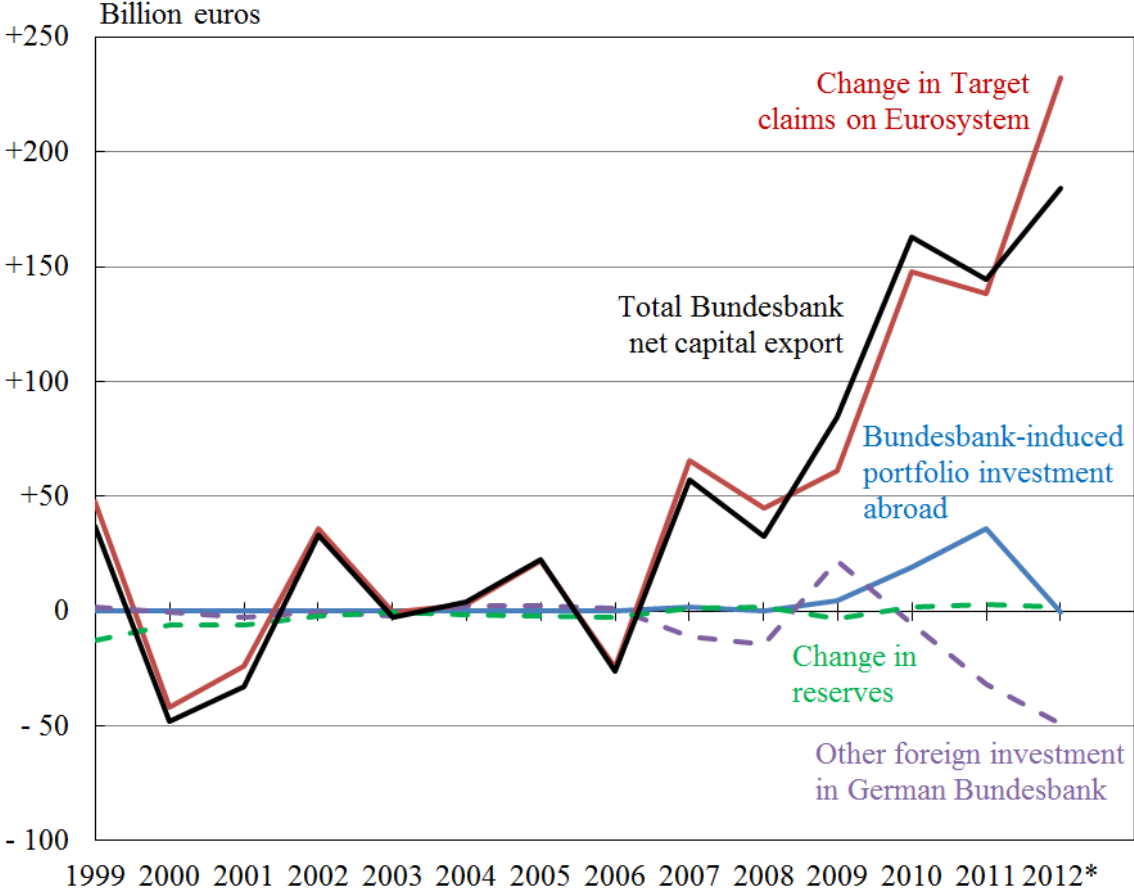
- i) because foreign bonds flowed in from foreign banks, and
- ii) because the Bundesbank purchases created scope for foreign banks and countries to issue new bonds, which were then sold, directly or indirectly, to German banks.

In the statistics these transactions are booked as part of German private capital outflows to the country of origin. In actual fact, however, they constitute a publicly induced outflow of capital.

Secondly, the Bundesbank granted large amounts of credit by fulfilling, on balance, payment orders for other central banks of the euro area within the framework of the Target system, and approximately to the same extent by absorbing money that the commercial banks returned to it to pay off their refinancing loans or as deposits (red line). Up until 2006, inward and outward payment orders were regularly balanced under this payment system, so that the Target balances on average stood at zero. The Bundesbank did not start sizeable net lending to the rest of the world until the onset of the financial crisis in Summer 2007, when the interbank market shortly broke down for the first time. By October 2012, Target claims amounting to 719 billion euros had been built up. Since Summer 2007, the Bundesbank's overall net capital outflows have increased more or less continuously. The slight decline in 2011 to 145 billion euros was mainly due to the booking of a liability amounting to 33 billion euros in December 2011 within the framework of the Target system, which is shown in the financial account as capital imports (purple line). The counter-entry took place at the ECB, which in its Annual Report for 2011 refers to swap transactions that were carried out with the national central banks in the context of liquidity-providing transactions in US dollars. Similar processes in

2012 are likely to be instrumental in the development of the other foreign investments in Germany, which point to a capital inflow to the Bundesbank amounting to 49 billion euros. Overall, however, the net capital exports of the Bundesbank increased again dramatically in 2012 by way of Target credits, reaching a temporary peak at 184 billion euros by the end of the third quarter.

Figure 3: Financial account of the German Bundesbank (net capital exports)



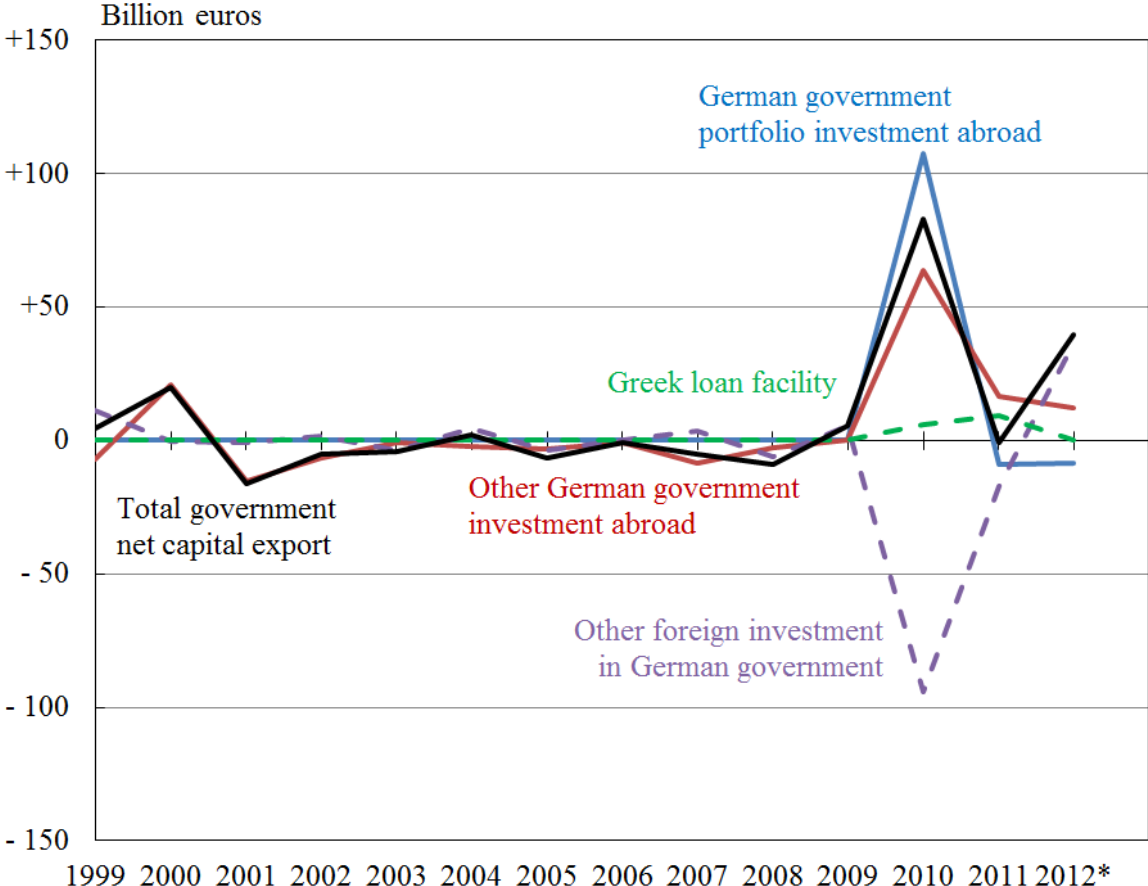
Notes: 2012*: sum of monthly financial flows from January to September 2012.
 Source: German Bundesbank.

The cross-border movement of capital held by the rest of the state (excluding the Bundesbank) played no special role in quantitative terms before 2011.⁴ Although the statistics for 2010 recorded a certain amount of public capital export, this was only because the net foreign assets of the banks WestLB and HypoRealEstate (HRE) were transferred to the two federal government’s bad banks EAA and FMS-WM. For the first time, the state thus became a statistically significant exporter of capital, with a volume of 83 billion euros (see Figure 4). On the one hand, the state was a purchaser of foreign securities (blue line). On the other hand, the two bad banks took over the credit portfolio of WestLB and HRE, which was booked in

⁴ In the balance of payments statistics, the general government usually appears only as a debtor in cross-border flows of capital, since foreign investors acquire large amounts of German government bonds. Although this item is allocated to the government sector, it has been eliminated from the calculation of the “public” financial account and added to the “private” financial account, since the decision to make these capital imports was not taken by the German government, but by foreign investors.

the financial account under the other investments category (red line). However, the liabilities of the two banks to foreign countries (purple line) also reverted to the state. Overall, the transfer of toxic WestLB and HRE assets to the two federal bad banks were neutral in terms of the balance sheet, as these payment flows were offset by a corresponding booking in the banking sector.

Figure 4: Financial account of the government (net capital exports)



Notes: 2012*: sum of monthly financial flows from January to September 2012.
 Source: German Bundesbank.

In addition to the interventions in the banking sector, the state also participated in the rescue packages for Greece, Ireland and Portugal. As part of the Greek loan facility, bilateral loans through the state-owned KfW bank (Kreditanstalt für Wiederaufbau) of 5.9 billion and 9.3 billion euros were awarded to Greece in 2010 and 2011. Since statistically the KfW is allocated to the banking sector, such capital outflows are recorded in the balance of payments as net investments abroad of German monetary financial institutions. Since, however, the facility for Greece is actually a public capital export, it is included in this article in the financial account of the government (see Figure 4, green line), and is accordingly deducted from the private sector’s financial account in the next section. In addition, there is Germany’s commitment in the context of the European Financial Stabilisation Mechanism (EFSM), the European Financial Stability Facility (EFSF), the European Stability Mechanism (ESM) and Germany’s financial contribution to the loans given by the International Monetary Fund (IMF). Of course, these loans do not necessarily lead to an immediate outflow of German

state capital. The EFSM loans to Ireland and Portugal, amounting to 21.5 billion and 21.8 billion euros respectively (as of October 2012), will be financed from the EU budget, and the German contribution to the EU budget will be booked in the current account as an ongoing transfer, whereby no claim arises. The EFSF loans to Ireland, Portugal and Greece, amounting to 12 billion, 17.4 billion and 73.9 billion euros respectively, are financed on the capital market via the issuing of bonds; the German state only guarantees the repayment of these bonds. Germany's contributions to the ESM's core capital should be booked as other receivables of the state against foreign countries. Since, however, the first two tranches of 8.7 billion euros were transferred in October 2012, they are not yet included in the red line in Figure 4. The IMF loans are not initially counted as an outflow of state capital either, since the IMF is financed by contributions from its member countries. In view of the IMF's high level of engagement in the financial and euro crises, the member countries signed voluntary loan agreements to increase the IMF's funds, to which the German Bundesbank will participate with a credit line amounting to 41.5 billion euros that is to be transferred no later than spring 2013. These loans will then appear as additional Bundesbank capital exports in Figure 3.

The majority of cross-border public capital movements in 2011 and 2012 therefore probably arose in connection with the liquidation of WestLB and HypoRealEstate. In 2012 there was a strong reduction of the external liabilities acquired in 2010 (purple line), meaning that the state exported capital amounting to a total of 39 billion euros in the first 9 months of this year.

5. The private sector's financial account

The sharp increase in crisis-induced public capital exports, which is largely driven by the Bundesbank's accumulation of Target claims against the Eurosystem, must either have been accompanied by an increase in the German current account surplus or by a decline in private capital exports. Since the capital exports of the German Bundesbank and the government stood at zero before the outbreak of the financial crisis, Germany's current account surplus before the crisis was equal to the net outflow of private capital from the country. After the outbreak of the crisis, private capital flows reversed. Public capital flows had to make up for the lack of private capital in the crisis countries, financing the current account deficits and, potentially, capital flight. The question is whether foreign or primarily German capital from abroad came to Germany.

On the flow of foreign capital to Germany

During the crisis, domestic and foreign demand for German securities has increased dramatically, as suggested by the fact that international interest spreads were clearly to Germany's advantage. German private and government issuers of securities had much cheaper access to money than had been the case before the crisis. However, this increase in demand does not necessarily have to be expressed in a corresponding net increase in German assets held by foreigners and residents, because when the demand of one group increases

more strongly or is less elastic than the other, there are countervailing displacement effects triggered by the concomitant price increases. Thus, the price-induced decline in foreign demand for German assets may overcompensate for the initial increase in such demand, if domestic demand for German assets is relatively more rigid. In other words, if domestic residents also wish to restructure from foreign to domestic assets, then it is quite possible that foreigners are driven from Germany on balance by the price increase of German assets, despite the rise in their preference for such assets. In addition, there can also be considerable shifts between the various groups of capital investors from different countries hidden in the statistically reported net amounts.

Figure 5 shows how foreign investment in Germany has changed, with a differentiation made between the acquisition of government securities and of claims on German banks, enterprises and households (assets and credit titles). Overall, the chart shows no clear tendency towards a rise in foreign investment in Germany. On the contrary, since 2008, when the crisis hit, the inflow of foreign capital to German banks, firms and households taken together has been below the level of previous years. In 2008, 2009 and 2011, when the interbank crisis reached its peak, foreign investors even recalled, in net terms, credit given to German monetary financial institutions (blue line). This supports the displacement hypothesis. Domestic and foreign capital both may have tried to move from the periphery to Germany, but the return flow of German domestic capital was stronger and thus displaced the foreign credit provided to German monetary institutions.

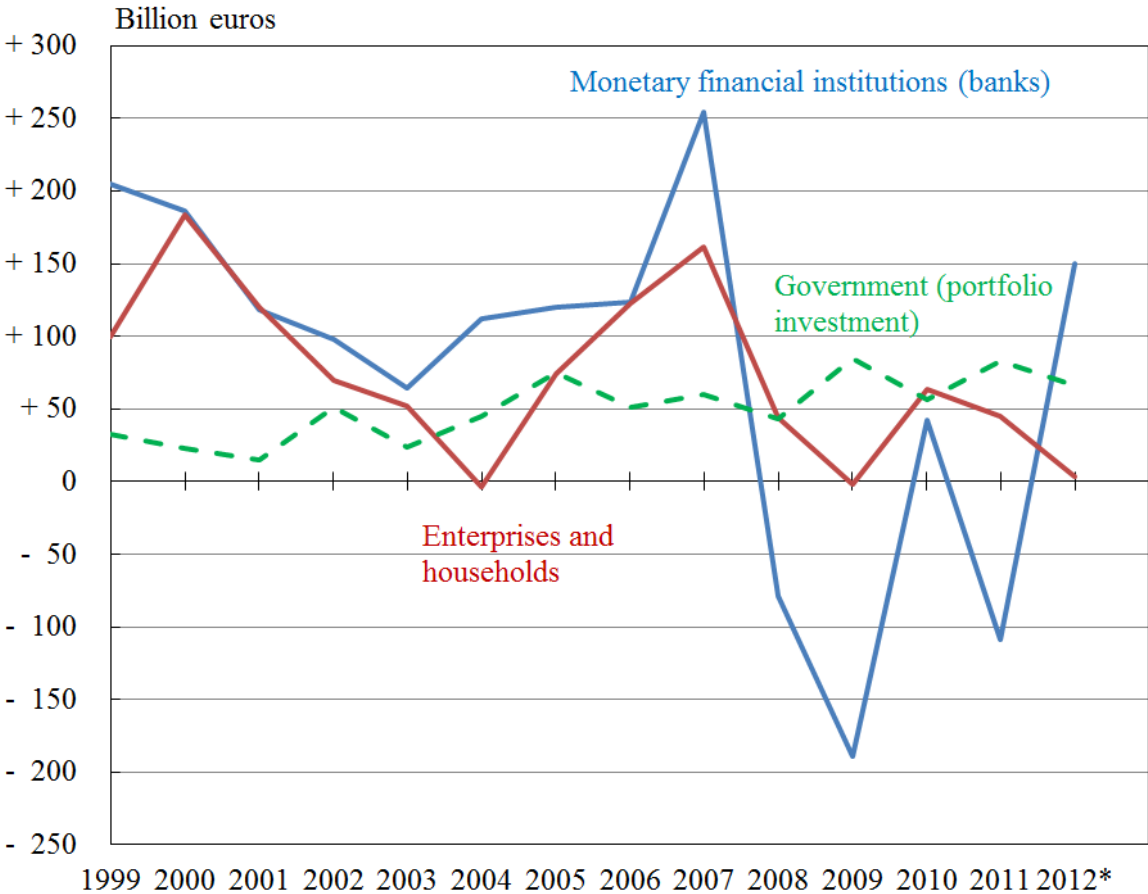
However, this observation does not generalize to all crisis years. In fact, as the chart shows, over the first three quarters of 2012, foreign investors lent, in net terms, a record 150 billion euros to German monetary financial institutions. Presumably this was largely money from the ECB's LTRO⁵ program (big bazooka) that Southern banks tried to park at German banks. In a sense, therefore, the ECB in effect has enabled the capital flight that it intended to prevent with its policy measures.

Moreover, it should be noted that during the crisis years foreign investors bought more government bonds from Germany (green line) than before. While net foreign investments in German government bonds in the ten years from 1999 to 2008 amounted, on average, to 42 billion euros a year, in the period 2009–2012 they averaged 77 billion euros per year.

The fact that, throughout the crisis years, there were also such foreign capital flows to Germany can be seen more clearly when differentiating foreign investment in German securities according to the investors' countries of origin, as is shown in Figure 6 for the Eurozone's peripheral countries. Although a further breakdown into security categories (government bonds, bank bonds, corporate bonds or stocks) is not available, it is evident that Spanish and Irish investment capital in particular migrated to Germany during the crisis. In the years 2010 to 2012, Spanish investors acquired a total of 29 billion euros in German securities, while Irish investors purchased 18 billion euros worth of German securities during the same period.

⁵ Long-term refinancing operations.

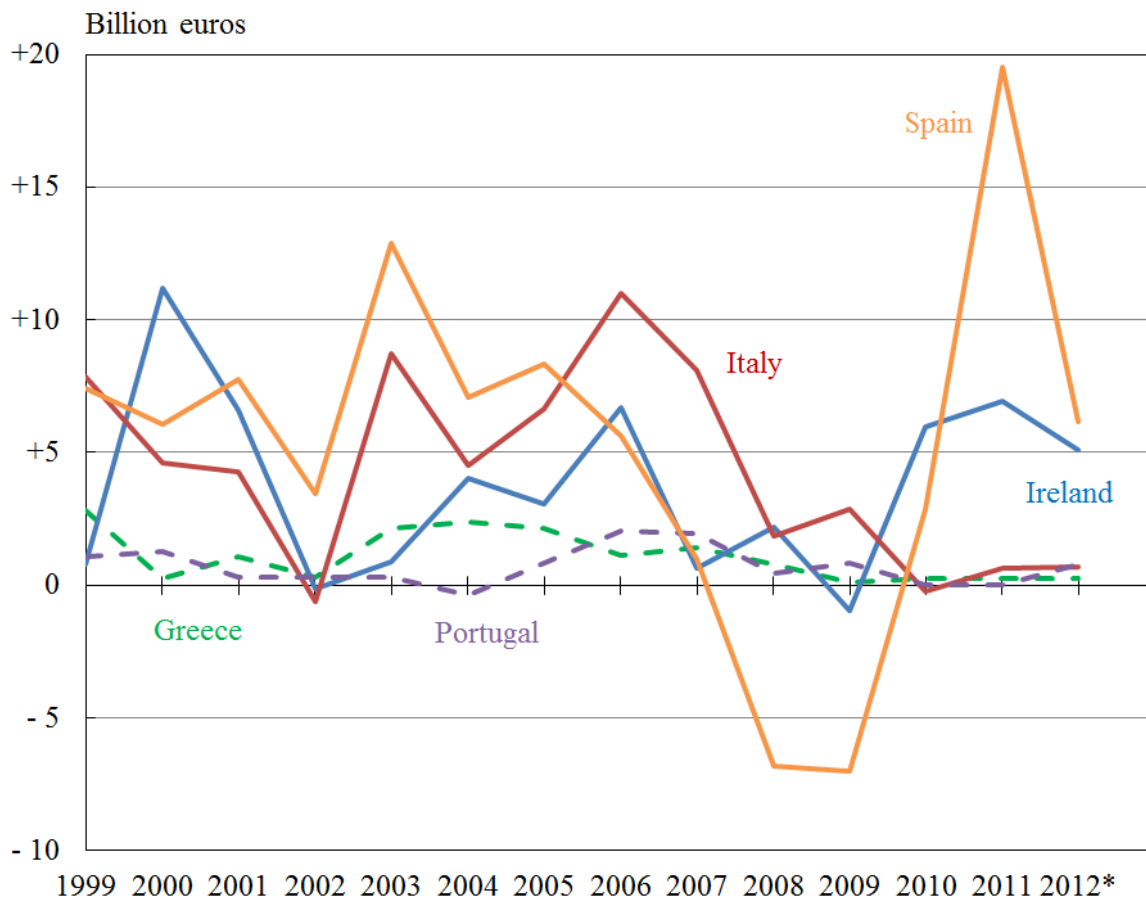
Figure 5: Foreign investment in Germany by recipient sector (capital imports)



Notes: 2012*: sum of monthly financial flows from January to September 2012.
 Source: German Bundesbank.

The transfer of deposits to German banks is often seen as an important factor in foreign capital flight. Greek banks in particular had to absorb a decline in deposits by domestic non-banks totalling 82 billion euros between the end of 2009 and the third quarter of 2012. In theory, such transfers, along with many other items, could stand behind the Target balances (De Grauwe and Ji 2012). However, there is no direct evidence of this in German financial account data. In the balance of payments, cross-border transfers of deposits are not reported separately, and according to the ECB’s banking statistics, the deposits at German banks of non-banks from the rest of the euro area, which stood at 84 billion euros in the third quarter of 2012, were roughly the same as at the end of 2007. This is actually not surprising because of the transitory nature of deposits. When foreign capital flows to Germany, it may well be initially transferred to German deposits but is then quickly liquidated and converted into real, interest-bearing securities (Sinn 2012b). Thus, Germany cannot protect itself against Target losses after a euro break-up, as has been suggested (De Grauwe and Ji 2012), by excluding foreign deposits from a currency conversion. While the data may be incomplete in this regard, since assets and deposits of foreigners living in Germany are reported together with those of other domestic residents, we doubt that this effect has had any quantitative significance.

Figure 6: Foreign portfolio investment in Germany by country of origin (capital imports)



Notes: 2012*: sum of monthly financial flows from January to September 2012.

Source: German Bundesbank.

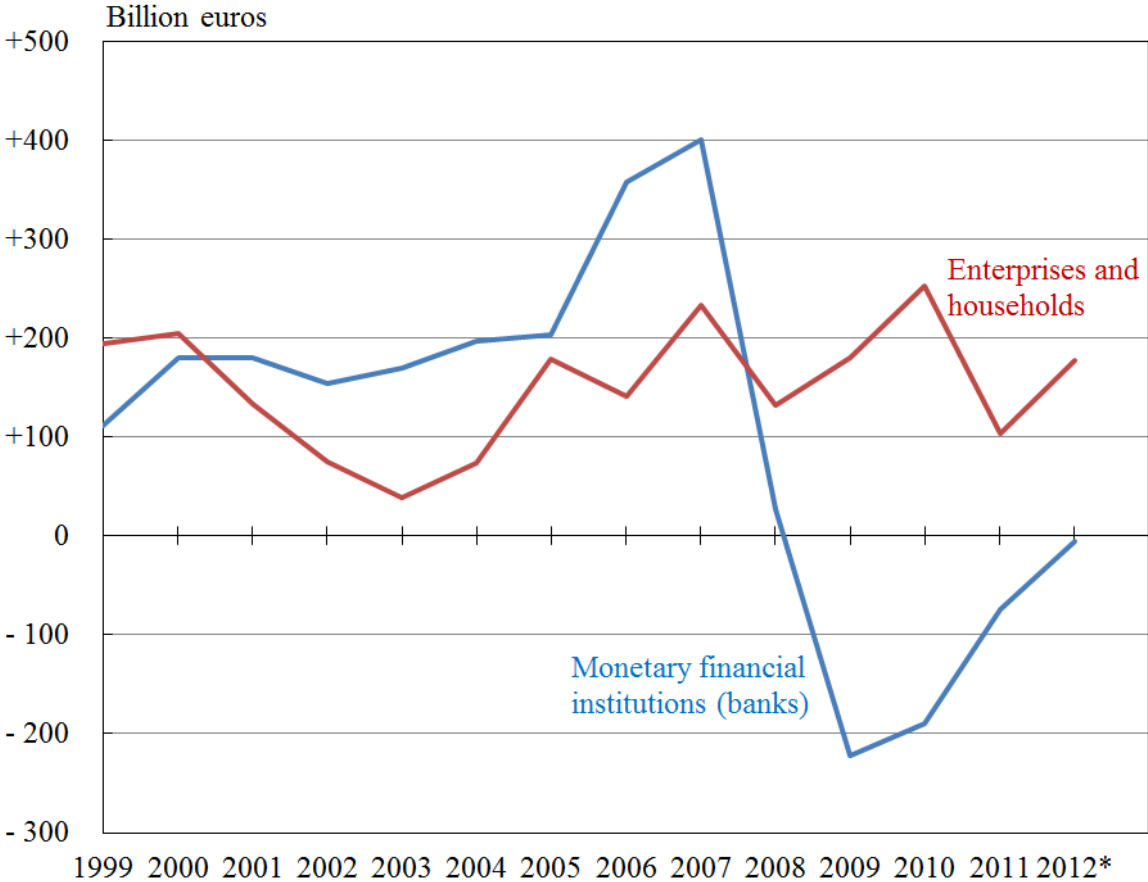
The flow of German capital to foreign countries

Much more important than any flight of foreign-owned capital to Germany was the return flight of German capital back to the home harbor. This is shown in Figure 7. While German enterprises and households (red line) were still willing to provide capital to foreign countries (both in the form of direct investment and in the form of purchases of securities and other assets), German commercial banks (blue line) vastly reduced their capital exports after 2007, and even became capital importers in net terms. They stopped providing new credit to foreigners and even called back outstanding credit upon maturity. Within only two years, from 2007 to 2009, the annual capital export of these institutions, of about 400 billion euros, turned into a capital import of more than 200 billion euros. The size of this flow reversal outstrips all other changes in the balance of payment statistics.

The capital import remained in the same order of magnitude in 2010, but declined in 2011 and 2012, and it came to a halt in the third quarter of 2012. One interpretation of this phenomenon is that the markets calmed and regained confidence in investments in Southern Europe. Another is that this is simply a reverse displacement effect of the sort we described above. In fact, it seems to us that the inflowing interbank credit from foreign banks to

Germany that we described in the context of Figure 5 has now displaced some of the domestic German interbank credit. Given that so much foreign interbank credit was ending up in Germany in 2012 because of the EZB's LTRO program, German banks, seeing few additional investment opportunities in Germany, eventually stopped recalling their credit from abroad.

Figure 7: German investment abroad by sector of origin (capital exports)



Notes: 2012*: sum of monthly financial flows from January to September 2012.
 Source: German Bundesbank.

6. Germany's role in the crisis and the current-account capital-flow-reversal controversy

To understand Germany's pivotal role in the Eurozone crisis, two aspects of the economic situation before the crisis are essential. For one thing, after China, Germany had become the world's largest capital exporter. About 60% of German savings were exported to other countries, two thirds of which channelled through German banks and insurance companies. A substantial fraction of these funds was lent to other Eurozone countries. Some went directly to Southern Europe and Ireland; and much went there indirectly through other countries, notably the Netherlands, Luxembourg and, in particular, France, whose banks had specialized in investing in Southern Europe. The export of German funds helped trigger a huge economic

boom in Southern Europe, while at the same time it led to an economic downturn in Germany (Sinn 2010, 2011d, 2012a).

For another, though quantitatively much less important, German banks had distributed a substantial part of central bank money to the euro area. The share of the liquidity-providing operations made by the Deutsche Bundesbank in the overall operations of the Eurosystem stood at an average of 50%, almost twice the economic weight of Germany. Due to the high penetration of covered bonds in Germany (the so-called Pfandbrief), German banks had more good collateral available for the purchase of refinancing loans and were more easily able to meet the rating requirement of the ECB – that bonds had to be rated at least as A- – than the banks of the Southern countries (see Chailloux et al. 2008). For this reason, they drew central bank money from the Deutsche Bundesbank and lent it out at their own risk to the commercial banks of other countries, much of it directly to Southern Europe and Ireland, but also to French banks, which then forwarded this capital to Southern Europe. In the balance of payments, this process was booked as German private capital outflows.

This all changed when the financial crisis broke out. When distrust arose between banks, capital flows reversed. The French, German, Dutch and Luxembourgian banks lending to Southern Europe demanded higher interest rates and, in many cases, refused further loans to finance the current account deficits of the Southern countries or to refinance existing loans that had matured. In either case, this resulted in a reduction of German lending to other countries and in the redemption of outstanding credit given to foreign institutions. There was a return flight of capital back to the home harbour.

A flight of foreign investors to Germany, by contrast, only explains a relatively small portion of the capital flow reversal. Although attention has focused on the purchasing interests of Greek real-estate companies in Berlin newspapers, the purchases of German securities by Spanish and Irish nationals has significantly outweighed the activity of Greek investors.

Foreign banks definitely did *not* flee to Germany, but withdrew their funds from the German interbank market in 2008, 2009 and 2011. Our interpretation of this phenomenon is that there was a displacement effect at work resulting from the predominant return flight of German capital to the home harbour.

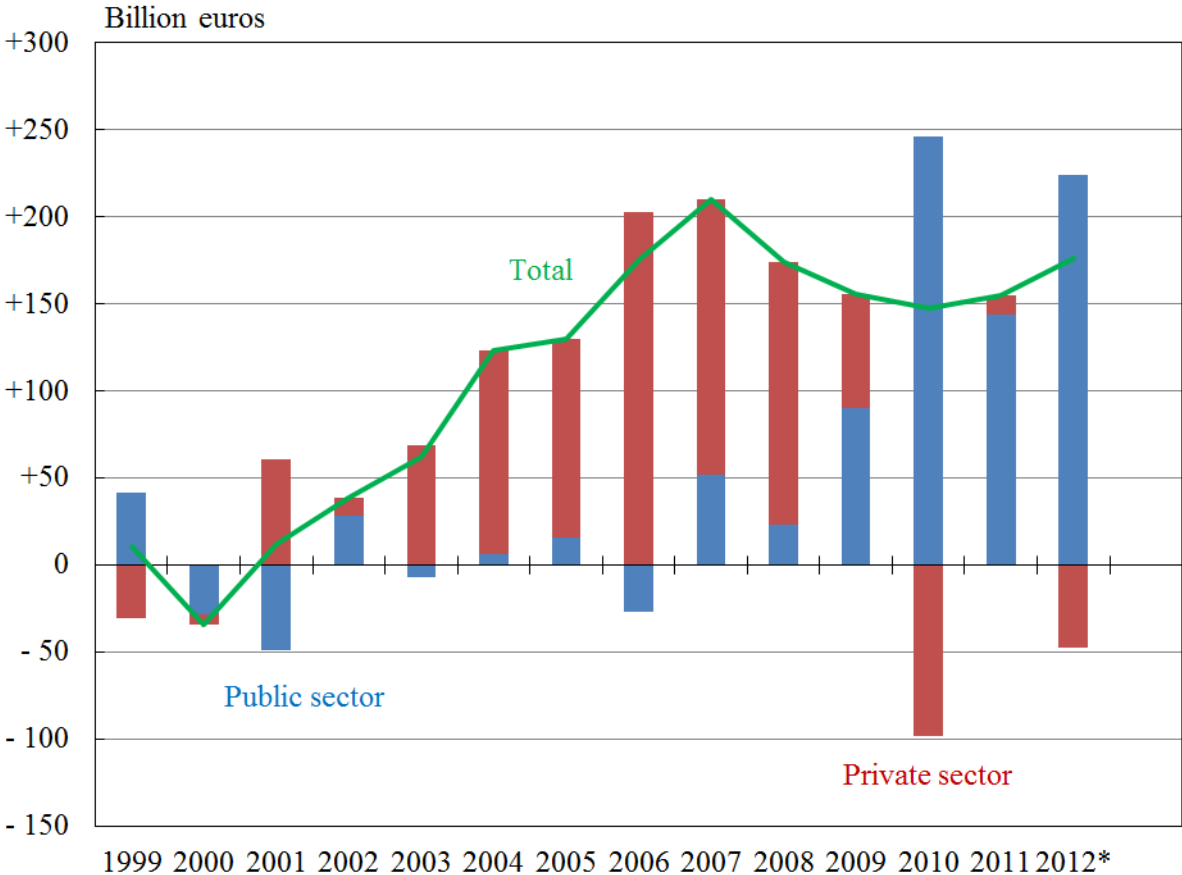
As the red and blue bars in Figure 8 show, the reversal of private capital flows was compensated with public capital. Since the onset of the financial crisis in 2008, the German current account has shown a nearly constant surplus of about 150 billion euros per year. This current account surplus is necessarily offset by a net annual outflow of capital from Germany of the same magnitude.⁶ However, since during the crisis private capital no longer participated in financing the current account deficits of the troubled countries and actually even fled back home to Germany, public capital had to step in. Apart from intergovernmental rescue credit, this public capital largely took the form of Target credit. As Sinn and Wollmershäuser (2012a) as well as Sinn (2012a, Chapter 8, Figure 8.10) showed, the Target credit issued by the German Bundesbank between the beginning of 2008 and July 2012

⁶ Any differences between the current account balance and the financial account balance are largely explained by statistically unallocated transactions.

explains almost the entire capital exports of the Federal Republic of Germany; and for this reason it roughly equals the accumulated current account surplus in this period. The ECB's asymmetric creation and lending of fresh money, made possible by a dramatic lowering of collateral requirements for the refinancing credit provided to commercial banks, compensated for the dearth of private capital and enabled the net payment orders across borders measured by the Target balances.

As Figure 8 shows, in 2010, for the first time since 2000, private capital outflows from Germany were lower than private capital inflows to Germany, so that Germany became a private net capital importer, whereas in overall terms (private and public) capital kept being exported to the amount of the German current account surplus. In 2011, the financial account of the private sector (red bar) was nearly balanced, and only the public sector, i.e. the Bundesbank and the government, was, on balance, sending capital abroad (blue bars). According to the data available to us at this writing, the German private sector again appears to be importing capital in 2012.

Figure 8: Financial account balance (net capital export = current account surplus)



Notes: 2012*: sum of monthly financial flows from January to September 2012.
 Source: German Bundesbank.

The fact that the public sector compensated for the decline and even reversal of private capital exports during the crisis is also reflected by some simple statistics. While the correlation coefficient between private and public net capital exports from 1999 to 2007 was

only minus 7% (calculated on the basis of annual data, as shown in Figure 8), it was almost minus 100% in the years 2008–2012. This confirms the view that funds needed to finance the current account deficits came from public rather than private sources and that public capital also compensated for outright capital flight.

In the public debate on the Target balances, a number of commentators (Auer 2012, Bindseil and König 2012, Cecchetti et al. 2012) associate our view with a (“false”) current account interpretation of the Target balances as opposed to a (“correct”) capital-flow-reversal interpretation. They argue that the Target balances have no influence on current account balances and the real economy, alluding to the fact that there is hardly any correlation between the current account balance of the crisis countries and the increase in their Target deficits, as they insinuate we have claimed, while demonstrating that there is a negative correlation between private capital inflows and the increase in Target deficits.

This represents an absurd distortion of our position. Given the inertia of the current account balances, none of us has ever maintained or suggested that there is a positive statistical correlation between short-run current account balances and changes in the Target balances. On the contrary, we have always pointed out that the money-printing press has been activated as a replacement for the dearth of private capital imports, which the observed negative correlation between capital imports and the increase in the Target deficits most obviously implies. There is no contradiction between saying that during the crisis current account imbalances were largely Target financed and that Target credit compensated for the capital flow reversal. These two statements are two sides of the same coin.

The statements can only be seen as contradictory if the financing of current account deficits is given the correlation interpretation cited above, which we find dumbfounding. We also wish to emphasize here that we never changed our interpretation of the Target balances in our writings on this issue. After the original articles of Sinn (2011a, 2011b, 2011c) stating the basic accounting identity between Target, current account and capital flows as well as the interpretation of Target balances as also measuring the international reallocation of the ECB's refinancing credit, our first academic working paper on the issue, which gave Sinn's prior statements a more precise and empirical interpretation, was published in June 2011. A revised version appeared in November 2011 with the NBER, and the final version was published by ITAX in May 2012 (Sinn and Wollmershäuser 2012a). In all of these versions, even the very first one, we carefully documented with graphs and textual descriptions, country by country, how the three variables (Target, current account, capital flows) evolved over time. We documented the reversal of private capital flows and illustrated outright capital flight once it had shown up in the data available (Irish capital flight in the June 2011 version, Italian capital flight in the November 2011 version, and Spanish capital flight in the May 2012 version, given that the Spanish data had come with a delay).

Despite the inertia of current accounts, which implies a close-to-zero correlation, there is, of course, a relationship between Target credit and the current account deficit in that the latter must somehow be financed. If neither private capital inflows nor public capital inflows via the bailouts or the money-printing presses of the Eurosystem are available for financing, the latter of which would activate the Target balances, then no current account deficit can

arise – for mere accounting reasons. To reach this conclusion, no econometric methods need be applied. A look at economic identities is sufficient.⁷

Some maintain that the Target balances will decline again when the economic crisis has subsided, and there is, of course, some truth to this. However, the amelioration implicit in this argument is thoroughly incorrect. If Target credit declines again, it will probably be because of other replacement credit of public origin is being provided or announced or because of public guarantees provided to private investors. Thus, the ECB's decision to buy unlimited amounts of government bonds of the crisis countries if need be, or in other words to guarantee the repayment of government loans at the expense of its distribution of profit to national governments, has led to a decline of some Target balances since mid-2012. The creation of a banking union promising creditors of Southern banks a bail-out with ESM money will have a similar effect on Target balances. However, apart from that, the persistence of Target balances will depend on the ECB's policy choices. Target balances arise because the ECB is undercutting the capital markets by offering credit from the electronic printing press on terms (interest rate, maturity, required collateral) at which the market cannot compete. Therefore, given the rescue operations, these balances will only disappear if the ECB stops undercutting the market.

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⁷ In the literature, such a financial flow-based form of adjustment of current account deficits is referred to as a "sudden stop" (Calvo, 1998). Only if net capital inflows are maintained by public loans, the current account imbalances will persist.

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