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THE GREEK TRAGEDY

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Abstract

By the end of March 2015, Greece had already received a total of 325 billion euros in rescue credit from the measures instituted by the EU, the IMF and the ECB, and yet its unemployment has soared to more than double the rate of five years ago, when the fiscal rescue operations started. The reason is that Greece is suffering from a bout of Dutch Disease. The more money that flows in, the lower the incentives to roll back the excessive price increases of the early years of the euro, and the lower the disposition to set off on the stony path to restoring the country's competitiveness.

Contrary to assertions, the Greek population has also benefited from the rescue credit. Calculated from the onset of the crisis, in net terms one-third of the public credit has contributed to financing the Greek current account deficit, one-third to paying off private foreign debt, and one-third to capital flight by Greek people. Furthermore, the country has profited greatly from the lowering of interest rates on its foreign debt, an advantage that translated into around 50 billion euros between 2008 and 2014. In 2014, overall Greek private and public consumption amounted to almost 114% of net national income.

Greek banks have received some 80 billion euros in ELA credit from the Greek central bank in the past few months. ELA credit, which can be blocked only by a two-thirds majority in the ECB Council, exceeds by far the recoverable assets of the Greek central bank in case commercial banks go bankrupt and the collateral pledged by the banks loses its value. Thanks to ELA, the private capital fleeing to other countries has been replenished with public credit from the international community. This credit has strengthened Greece's negotiating position with the international community by increasing the other euro countries' potential losses in the case of Grexit. This could explain why the Greek government has played for time in the current negotiations.

If it should come to a Grexit, it would be crucial to introduce as quickly as possible a new legal tender, in order for all price tags, as well as rent, credit and wage contracts to be redenominated and devalued simultaneously, restoring the competitiveness of the Greek economy. A creeping transition to a new currency by way of state-backed promissory notes (IOUs) that are not legal tender could buttress the solvency of the Greek government, but it would not solve the competitiveness problem. Econometric studies have shown that an economic upturn can make itself felt in as little as one or two years after a devaluation and a haircut on outstanding foreign debt have been carried out.

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The Greek Tragedy

Hans-Werner Sinn*

1. The Public Rescue Credit

A Grexit debate raged already back in 2010. At the time, German Chancellor Angela Merkel insisted that the no-bail-out clause of the Maastricht Treaty (Article 125 of TFEU) must be taken seriously and that no rescue funds should be deployed. On 5 May 2010, she said: "A good European is not necessarily the one who rushes to help. A good European is the one who respects the European treaties and the corresponding national laws, and in so doing helps to protect the Eurozone's stability."[1]

Things, as we all know, turned out differently. On 11 April and 10 May, the EU, under heavy pressure from the United States, France, the IMF and the ECB, decided to rescue Greece with public credit. On 9 May, the ECB Governing Council decided to set up the so-called Securities Markets Programme (SMP), under which all national central banks (NCBs) in the Eurozone were to buy Greek government bonds.[2] The programme was later extended to bonds of the other crisis-stricken countries.

Christine Lagarde, at the time French Finance Minister and now IMF Chief, said that policy makers had broken the law in order to save the euro: "We violated all the rules because we wanted to close ranks and really rescue the euro zone."[3] In reality, it was all about rescuing the banks and investors with exposure to Greece, who now demanded bridge loans to make it possible for Greece to repay its debts. At that time (late March 2010), French banks had a 53 billion euro exposure to private and public instances in Greece, the German ones a 33-billion euro exposure, the US 10 billion, and the UK 9 billion.[4]

Since the onset of the crisis in 2008 and well before the fiscal rescue programmes, Greece had been helping itself by having its national central bank provide credit to the local commercial banks with freshly printed money, with which these banks financed both the private economy and the government. Under normal circumstances, a national central bank provides the local economy with only so much credit as needed for transactions. Payment orders to purchase goods abroad are financed by money flowing in through borrowing or through the sale of goods or assets to other countries. During the crisis, however, the ECB relaxed its rules for the granting of credit by NCBs, with the result that a monetary overhang was created that was used to finance the current account deficit, pay off private foreign debt and acquire assets abroad.

The key instrument to relax the granting of credit was the lowering of the collateral requirements that the borrowing banks had to pledge to their NCB to receive fresh refinancing credit. The rating was lowered to below BBB-, i.e. below investment grade into junk territory. When Fitch and Standard & Poor's lowered Greek debt to BBB+ with a negative outlook, and Greek banks no longer could pledge their Greek government bonds as collateral for new refinancing credit, the ECB Council lowered the rating requirement and continued to accept this paper as collateral. In addition, the ECB Council also lowered repeatedly the required rating for private debt instruments through an array of individual measures,

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[1] A. Merkel, *Regierungserklärung: Griechenland helfen, den Euro sichern,* 5 May 2010, http://www.bundesregierung.de/ContentArchiv/DE/Archiv17/Artikel/2010/05/2010-05-05-regerkl-gr-bk.html.

[2] See European Central Bank, ECB Decides on Measures to Address Severe Tensions in Financial Markets, Press Release, 10 May 2010, http://www.ecb.europa.eu/press/pr/date/2010/html/pr100510.en.html. Barclays Capital, "ECB SMP: Marking to Market", *Interest Rates Research,* 6 January 2010.

[3] See B. Carney und A. Jolis, "Toward a United States of Europe", *The Wall Street Journal,* Report on a conversation with Christine Lagarde, 17 December 2010, http://online.wsj.com/article/SB10001424052748704034804576025681087342502.html. See also C. Lagarde, "Wir werden bedingungslos sparen", interview by M. Kläsgen and S. Ulrich, *Süddeutsche Zeitung,* 23 December 2010, http://www.sueddeutsche.de/geld/christine-lagarde-ueber-deutschand-und-europa-wir-werden-bedingungslos-sparen-1.1039481. Christine Lagarde said in that interview: "The Lisbon Treaty states that a EU country may not help another EU country in financial difficulties. But the Greek rescue plan leads directly to that. The euro rescue package was not contemplated in the Lisbon Treaty either. But we have nevertheless created a comprehensive rescue system – and we went beyond the existing rules to do that." (Own translation.)

[4] See Bank for International Settlements, *Consolidated Banking Statistics,* Table 9E, http://www.bis.org/statistics/consstats.htm. Sums converted into euro as per the exchange rate of 31 March 2010 (1 euro = 1.3479 US dollars).

in order to make it possible for the commercial banks to continue to draw refinancing credit from the Greek central bank. The banks were allowed to bundle debt into asset-backed securities (ABS), which were then accepted as collateral for refinancing credit even though these securities were not traded in the market and therefore lacked an objective valuation. In this way, an increasingly large proportion of the assets held by banks was converted to acceptable collateral that could be pledged to obtain refinancing credit with freshly created money. Furthermore, banks were allowed, by way of expanding their balance sheet, to create eligible collateral themselves by ring-trading own bonds with other banks.[5]

When the Greek crisis became more acute in autumn 2011 and culminated in the country's first sovereign default in the spring of 2012, which with a haircut amounting to 105 billion euros at the expense of private creditors turned out to be the largest in history, the instrument of choice became the Emergency Liquidity Assistance (ELA). ELA is emergency credit, but also refinancing credit like any other, the only difference being that the collateral quality is defined by the corresponding NCB, since the fiction is maintained that in case of bankruptcy of the local commercial banks and the collateral losing its value, the respective NCB itself will bear the loss, while in the other cases all NCBs bear the loss jointly. Much ELA credit was granted in Greece against promissory notes guaranteed by the Greek state. The money was then used by the banks largely to buy new Greek government bonds.

The Greek central bank was able to decide itself whether to grant ELA credit; a two-thirds majority in the ECB Council would have been necessary to stop it from doing so. Given that in the years in question the six crisis-stricken countries (Greece, Italy, Portugal, Spain, Ireland and Cyprus) had one vote more than one-third of the total, the two-third blocking majority was never achieved. It was only after the accession of Latvia and Lithuania that the voting balance changed, so that blocking ELA credit has become easier.

Greece made abundant use of the wide leeway for supplying itself with central bank money. By June 2012 it had created altogether 154 billion euros in central bank money through credit operations or open market operations,[6] although according to the size of its economy it should have created no more than 50 billion.[7] The excess money creation was a sort of overdraft facility at the expense of other countries. It made it possible for Greece to issue net payment orders for purchasing goods, repaying debts and acquiring assets abroad, which, by June 2012, had reached a total of 105 billion euros. The payment orders had the effect of reducing the monetary base in Greece, forcing in the process the NCBs of other countries to create fresh money without receiving securities from or claims on the banks in their jurisdictions. They received instead interest-bearing Target claims on the ECB system, which in turn acquired claims on the Greek central bank. Target claims and liabilities are interest-bearing credit between central banks that result from an asymmetric creation of money. They are booked (at times somewhat obscurely) in the NCBs' balance sheets, and they are also booked as Greek foreign debt and other countries' foreign assets in the European balance-of-payments statistics.[8]

The height of the lower area on Figure 1 shows the evolution of Target credit over time. It can be seen that Target credit came back down after its original peak in 2012, as a result of other credit becoming available. Still, by March 2015 Greece's Target liabilities had again reached a level of 96 billion euros, and by late April, had climbed to almost exactly 100 billion euros.

The Greek central bank did not only grant special credit just to finance, and make possible, the payment orders to other countries, but also in order to offset the cash withdrawals by the Greek population. As of March 2015, the Greek central bank has issued 14 billion euros more in banknotes than corresponds to its

[5] For this and the following section, see H.-W. Sinn, *The Euro-Trap. On Bursting Bubbles, Budgets, and Beliefs,* Oxford University Press, Oxford 2014, Chapter 5: "The White Knight".

[6] This includes statutory notes in circulation plus balances on current accounts at the central bank plus deposit facility plus over-proportionate banknote issuance plus Target liabilities. See Bank of Greece, *Financial Statement,* 30th June 2012, http://www.bankofgreece.gr/BogEkdoseis/financialstat201206_en.pdf; European Central Bank, Consolidated financial statement of the Eurosystem as at 29 June 2012, http://www.ecb.europa.eu/press/pr/wfs/2012/html/fs120704.en.html; same institution, *Annual Report 2011,* p. 215, http://www.ecb.europa.eu/pub/pdf/annrep/ar2011en.pdf?ade197949067667aef5bde055975da11.

[7] Share of Greece in the paid-in capital of the Eurozone's central banks times the monetary base of the euro countries as a whole (end of June 2010 in each case).

[8] See H.-W. Sinn and T. Wollmershäuser, "Target Loans, Current Account Balances and Capital Flows: The ECB's Rescue Facility", *International Tax and Public Finance* 19, 2012, p. 468-508, http://www.cesifo-group.de/DocDL/sinn-itax-2012-target.pdf. H.-W. Sinn, *The Euro-Trap. On Bursting Bubbles, Budgets, and Beliefs,* Oxford University Press, Oxford 2014. For the booking in the balance-of-payments statistics, see for example Bank of Greece, *Balance of Payments: January 2015,* Press Release 23/03/2015, http://www.bankofgreece.gr/Pages/en/Bank/News/PressReleases/DispItem.aspx?Item_ID=4929&List_ID=1af869f3-57fb-4de6-b9ae-bdfd83c66c95&Filter_by=DT.

Box 1
Meaning of the Target balances

Whenever a Greek citizen issues a payment order to a commercial bank in another Eurozone country, the NCB of this country creates new money that it then transfers to the respective commercial bank, which in turn credits the sum to the beneficiary of the payment order. The NCB carrying out the payment order implicitly grants credit to the Greek central bank, which leads to the booking of corresponding Target claims and liabilities vis-à-vis the Eurosystem in the NCBs' balance sheets. The "Target credit" is the mirror image and result of the excess portion of the refinancing credit issued by the Greek central bank, since the payment order could not be carried out without causing a liquidity squeeze of the Greek commercial bank were it not offset by an immediate injection of refinancing credit. Target balances are shown in the balance-of-payments statistics as part of a country's net foreign debt and assets, respectively; they bear the ECB's main refinancing interest rate.

The Target balances shown on the NCBs' balance sheets are not only, as sometimes asserted, mere symptoms of a distortion in the Eurosystem, but indeed overdraft credit between the NCBs. In the USA, the equivalent balances that arise among the twelve District Feds of the Federal Reserve System are settled regularly by transferring amongst them the titles to marketable assets in the SOMA portfolio. Until 1975, the settlement was carried out with gold. A similar settlement mechanism does not exist in the Eurozone. Target overdraft can be drawn indefinitely and without limit, the creditor NCBs being unable to call it due.

As a rule, Target credit does not lead to an expansion of the Eurosystem's monetary base, because the commercial banks in the recipient country repay refinancing credit in a volume roughly equal to the incoming payment orders, since they have no use for the extra liquidity. Between 2012 and 2013, the Bundesbank's stock of central bank money resulting from refinancing credit or open market operations was practically zero (and at times even negative). All of the money circulating in Germany at that time was created through net payment orders from other Eurozone countries,[1] which crowded out the entire stock of German refinancing credit. The German Target claims peaked at 751 billion euros in August 2012. By July 2014 they had retreated to 444 billion euros, and now (April 2015) have climbed back to 532 billion euros.

[1] See H.-W. Sinn, *The Euro Trap,* op.cit., p.207, Fig. 6.8.

key in the ECB capital, which is calculated as the mean value of Greece's share in the total population and gross domestic product of the euro countries. The special credit that underlies the over-proportionate issuance of banknotes is shown in the Greek central bank's balance sheet as a liability to the ECB system.

Just like Target credit, this credit in terms of overproportionate bank note issues can be used to acquire goods and assets abroad or to pay off foreign debt. Indeed, there is anecdotal evidence that Greeks have physically brought substantial amounts of cash abroad to acquire foreign assets, such as to Bulgaria, where they have shown up as property buyers. In can also well be, however, that the cash was hoarded in Greece itself. Given that there are no statistics for this, the credit resulting from the over-proportionate issuance of banknotes, unlike the Target liabilities, is not booked in the official EU balance-of-payment statistics as part of Greece's net foreign debt, although it is entered as a liability in the Greek central bank balance sheet.

The ochre area in Figure 1 shows the help that other countries have indirectly provided to Greece through the purchases by their NCBs, under the ECB's Securities Markets Programme (SMP), of more Greek government bonds than the bonds that the Greek central bank itself purchased of other crisis countries (Italy, Portugal, Spain, Cyprus and Ireland). This value peaked at around 39 billion euros. By now it has come down, through repayment and re-selling by the ECB, to close to 14 billion euros. These bond purchases amount to a granting of public credit to the Greek government, because they enabled it to issue bonds up to the amount of that credit without having to attract private investors (who would have likely demanded higher yields). The purchases presumably led to private capital flows to Greece because the commercial banks that sold the Greek government bonds to their respective NCBs ultimately had to acquire these bonds in the Greek market. These capital flows lowered Greece's Target liability one-to-one, since they gave rise to net payment orders to Greece. Although booked as private capital in the balance-of-payments statistics, this capital flow was in fact a publicly induced credit by the other countries that stand behind the ECB.

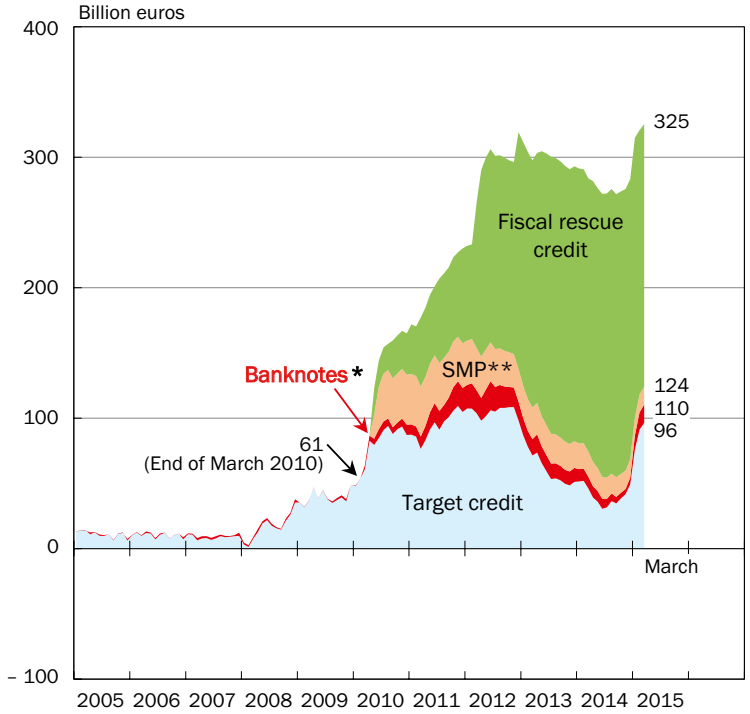
The green area in Figure 1 depicts the flow of fiscal rescue credit to Greece. It includes the two Greek rescue packages put together by the euro countries and the IMF. Under the first package, Greece received a total of 52.9 billion euros as bilateral credit from the euro countries. The second package has not been concluded yet. So far, 130.9 billion euros have been disbursed by the European Financial Stability Facility (EFSF), and 11.7 billion by the IMF. Out of the IMF portion of the first package, 11.5 billion euros had been repaid by late March 2015. Greece has also itself contributed to rescue measures, by providing 2.3 billion euros to the capital of the European Stability Mechanism (ESM); through the EU budget, it also participated with around 0.7 billion euros in rescue money for Ireland and Portugal from the European Financial Stabilisation Mechanism (EFSM). Thus, the net sum by the end of March 2015 amounted to 201.3 billion euros.[9]

The media has reported repeatedly that public credit to Greece by late March 2015 amounted to some

[9] Summary: 52.9 + 20.3 + 130.9 + 11.7 = 215.8;
215.8 - 11.5 - 2.3 - 0.7 = 201.3.

Figure 1

Public credit given to Greece by other euro countries



* Liabilities of the Greek national central bank to the Eurosystem due to over-proportionate banknote issuance.

** Greek government bonds purchased from other Eurosystem national central banks (NCBs) under the framework of the Securities Markets Programme (SMP), minus the government bonds of other euro countries bought by the Greek central bank under that programme. These are book values. The monthly values were estimated through interpolation of the yearly stocks adjusted to the overall stock of government bonds held in the books. A corresponding flow of government bonds across borders is assumed.

Note: The fiscal rescue credit is calculated as a net value; it includes the financial help disbursed by the end of each month by the rescue programmes of the euro countries and the IMF. The repayments made to date have been subtracted, as well as the Greek contributions to the rescue programmes. These include Greece's share in the European Financial Stabilisation Mechanism, financed by the EU budget, and also the capital subscription to the European Stability Mechanism. See also Table 1.

Sources: Bank of Greece, *Financial Statements;* European Central Bank, *Weekly Financial Statements;* same institution, *Capital Subscription;* European Financial Stability Facility, *Lending operations;* International Monetary Fund, *Financial Activities;* also IMF, *SDR Exchange Rate Archives by Month;* European Commission, *The Economic Adjustment Programme for Greece: Fifth Revue;* same institution, *EU Budget 2011;* European Stability Mechanism, *Governance, Shareholders.*

240 billion euros. But that is the gross amount and includes the sums pledged but not yet disbursed. Furthermore, the repayments that Greece has made and its contribution to the rescue packages for other countries have not been deducted. Table 1 shows how these deductions reduce the gross amount of fiscal help to the net one depicted in Figure 1.

The table's first column shows the sums originally authorised, and the second the sums effectively pledged. With the first rescue package, the difference between these two categories is explained, among other factors, by the fact that the 80 billion euros in intergovernmental help agreed by the euro countries could not be completed because Slovakia from the beginning did not partake of the support payments and also because Ireland and Portugal, themselves in financial difficulties, failed to pay in. The original sum shrank thus to 77.3 billion euros. Furthermore, part of the money that was supposed to be disbursed according to the intergovernmental agreement was merged with other money from the EFSF and disbursed through it. In addition, 0.95 billion euros from this fund were not drawn. If the sums disbursed under the old regime are counted together with the new funds of the EFSF as well as the IMF funds proportionally authorised – in which non-disbursed credit from the first package was also carried over to the second – one arrives at 244.8 billion euros. This is the sum that is often quoted in the press.

It must be borne in mind, however, that the funds pledged had conditions attached, the actual disbursement of credit tranches being contingent on their fulfilment. Given that Greece fell behind in the fulfilment of its commitments and that the second rescue programme was extended twice by the euro countries (the IMF programme, in contrast, runs out in 2016), by March 2015 not all the money pledged had been disbursed. This explains the difference between the second and third columns. By late March 2015, Greece had received a total of 215.8 billion euros in fiscal rescue funds.

In this tally, the IMF funds are calculated at the exchange rate valid on the day of disbursement, and are shown on the last column valuated at the exchange rate of 31 March 2015.

If one adds to the fiscal credit the credit granted by the ECB system mentioned previously, in particular the Target credit and the purchases of Greek government bonds by non-Greek NCBs, the total comes to 343.5 billion euros.

This is a gross value, though. To arrive at a net figure, the repayment of IMF credit must be deducted, as well as Greece's capital contribution to the ESM, Greece's 1.6-percent share in the EU funds disbursed

under the EFSM programme, and the purchases of government bonds of other euro countries by the Greek central bank. These items add up to 18.1 billion euros. Deducting them from the above total of 343.5 billion euros, the total public credit actually provided to Greece comes to 325.4 billion euros as of 31 March 2015 (or 327.8 billion euros at the latest exchange rate). This is the sum shown at the end of the green area in Figure 1.

Table 1
Public credit given to Greece by March 2015 – Gross vs. net (bn. euros)

	Sum authorised originally[1]	Sum effectively provided[2]	Sum disbursed/ stock[3]	As info: IMF help calculated at exchange rate of 31 March 2015
A) Funding for Greece				
First rescue package	110.0	73.2	73.2	
Euro countries' share	80.0	52.9	52.9	
IMF share[4]	30.0	20.3	20.3	22.5
Second rescue package	172.7	171.7	142.6	
EFSF share	144.7	143.7	130.9	
IMF share[4]	28.0	28.0	11.7	13.1
Fiscal rescue credit (gross)	282.7	244.8	215.8	219.4
Purchases of Greek government bonds[5]			17.2	
Target liabilities of the Greek central bank to the Eurosystem			96.4	
Liabilities of the Greek central bank to the Eurosystem due to over-proportionate banknote issuance			14.0	
A) Total international help, gross			343.5	347.1
B) Payments effected by Greece				
Repayment of IMF credit instalments from the first rescue package[6]			11.5	12.7
Capital contribution to the ESM[7]			2.3	
Contribution to EFSM help for Ireland and Portugal[8]			0.7	
Contribution of the Greek central bank to the purchases of Irish, Portuguese, Spanish and Italian government bonds[9]			3.6	
B) Total payments effected by Greece			18.1	19.3
Net balance of rescue funds (= A – B)			325.4	327.8

[1] According to the programme. [2] First rescue package: Disbursed sums at the time of the programme's early termination. Second rescue package: 0.95 billion euros was not drawn before the deadline from the sum made available for the haircut. [3] Sums effectively disbursed as of 31 March 2015. [4] The sums defined in units of IMF drawing rights were converted into euros at the exchange rate of the corresponding date. [5] Excluding Greek central bank share; own extrapolation of the stock at 31 December 2014. [6] The same exchange rate was used for repayments as for the corresponding disbursement. [7] According to the ESM treaty. [8] In accordance with Greece's contribution to the EU budget. [9] Own extrapolation of the status at 31 December 2014.

Sources: Bank of Greece, *Financial Statements;* European Central Bank, *Weekly Financial Statements;* same institution, *Capital Subscription;* same institution, *Financial statements of the ECB for 2014,* Press release, 19 February 2015; European Financial Stability Facility, *Lending Operations;* International Monetary Fund, *IMF Country Report No. 12/57;* also IMF, *Financial Activities;* same institution, *SDR Exchange Rate Archives by Month;* European Commission, *The Economic Adjustment Programme for Greece;* same institution, *The Economic Adjustment Programme for Greece: Fifth Revue;* same institution, The Second Economic Adjustment Programme for Greece; same institution, *EU Budget 2011;* European Stability Mechanism, *Governance, Shareholders.*

In relative terms, the public credit amounts to 182% of Greece's 2014 GDP, which was 179 billion euros. Interestingly, this percentage is similar to Greece's debt-to-GDP ratio, which amounted to 177% by late 2014. This similarity should not distract from the fact that the figures measure different things. The sum shown in Figure 1 corresponds to public credit given by foreign public institutions, including the other NCBs, to Greek banks and the Greek government. The debt-to-GDP ratio, in turn, encompasses credit given by private and public lenders within and outside Greece to the Greek government, without including the Greek central bank. However, it is no mere coincidence that the figures are so similar, since Greece's private foreign creditors have by now been largely replaced by public creditors (more on this in Section 3) and because Greek banks could only buy government bonds up to the volume of refinancing credit they received from the Greek central bank, which in turn led to transfer orders abroad and the accumulation of Target liabilities.

During discussions of a haircut, the Greek side has repeatedly raised the issue of war reparations demands against Germany. Going into this issue exceeds the scope of this article,[10] but this much can be said: the reparation

[10] See, among others, F. Schorkopf, "Die Forderungen sind erfüllt", *Der Spiegel* 12/2015, p. 36, and A. Ritschl, "Debatte um Zwangskredit ist Erbsenzählerei", *Zeit Online,* 20 March 2015, http://www.zeit.de/wirtschaft/2015-03/reparationen-griechenland-albrecht-ritschl.

demands from an alleged loan[11] amounting to 476 billion Reichsmarks added up at the time to 5.5% of Greek GDP, which using today's Greek GDP translates into close to 10 billion euros. Greece itself comes to a sum of 11 billion euros for that loan. Whether this has any legal basis cannot be commented here.[12] In any case, this is a small sum in comparison with the credit that has already been given to Greece.

The exceptional size of the credit given to Greece stands in stark contrast with the recurrent Greek accusation that the Troika, made up of representatives of the IMF, the EU and the ECB, imposed austerity on Greece and that, with its demands for budget cuts, it pushed the country into a humanitarian catastrophe. The truth is obviously the opposite, since it was the markets that imposed austerity, not the Troika. The international community, which exercised control over Greece through the Troika, actually softened with its loans the hardship of market-imposed austerity to a degree unprecedented in history.

2. Did the Money Help?

Given the truly gigantic rescue credit provided to Greece, which at a net 325 billion euros has turned out to be more than three times larger than originally calculated by the European Commission and the IMF for the first rescue package (110 billion euros),[1] one could be excused for thinking that Greece's economy must be on the mend. After all, the EU countries were of one mind that the package served to buy time for the Greek economy to reform and to provide Greece help to help itself.[2] Furthermore, the German Chancellor stressed time and again that the rescue programme would not be extended.[3]

The reality is sobering. As Figure 2 shows, Greece's unemployment more than doubled from 11% in the first quarter of 2010, when the first Grexit debate took place, to 26% in the first quarter of 2015.[4] Youth unemployment, in turn, rose from 30% to 50%. Every second Greek youth between 15 and 25 years of age who is not attending school or university is unemployed. If this situation does not improve fundamentally soon, an entire generation of Greeks will be lost to the labour market.

The evolution of the Greek economy as a whole can also be described only as catastrophic. As Figure 3 shows, Greece's industrial production had fallen by 26% by the first quarter of 2015 compared to its pre-crisis level (first quarter 2008), and GDP by 27%.

Although the bulk of the slump occurred before fiscal rescue credit was provided, the support given shows no

[11] That this was not a loan, but an arbitrary calculation of the German occupation authority, was shown by M. Martens. See M. Martens, "Die Karriere einer Zahl", *Frankfurter Allgemeine Zeitung,* No. 63, 16 March 2015, p. 2, http://www.faz.net/aktuell/politik/ausland/europa/griechenlands-forderungen-warum-deutschland-zahlen-soll-13484948.html?printPagedArticle=true#pageIndex_2.

[12] 476 million Reichsmarks amounted to 0.435% of German GDP for 1939 (109.3 billion Reichsmarks; see German Statistical Office, *Bevölkerung und Wirtschaft* 1872–1972, p. 260). Greek GDP amounted, according to A. Maddison, to 8.0% (in international dollars) of German GDP in 1939. According to this, the share of the German debt in Greek GDP came to 0.435%/8.0% = 5.46%. See A. Maddison, *Monitoring the World the World Economy* 1820–1992, OECD Publications Paris 1995, p. 181–184.

[1] See European Commission, *European Economy,* Occasional Papers 61, "The Economic Adjustment Programme for Greece", p. 25. The official estimate was based on the financing gap from May 2010 through June 2013 that was to be closed by the agreed help from the euro countries and the IMF (now labelled First Rescue Package). The credit was to be disbursed in single tranches contingent on the Greek financing needs. Slovakia refused to participate from the very beginning. After the second tranche, Ireland suspended payments and Portugal did likewise after the fourth tranche, because they themselves had to request financial help. This led to the fact that the first rescue package amounted to only 77.3 billion euros.

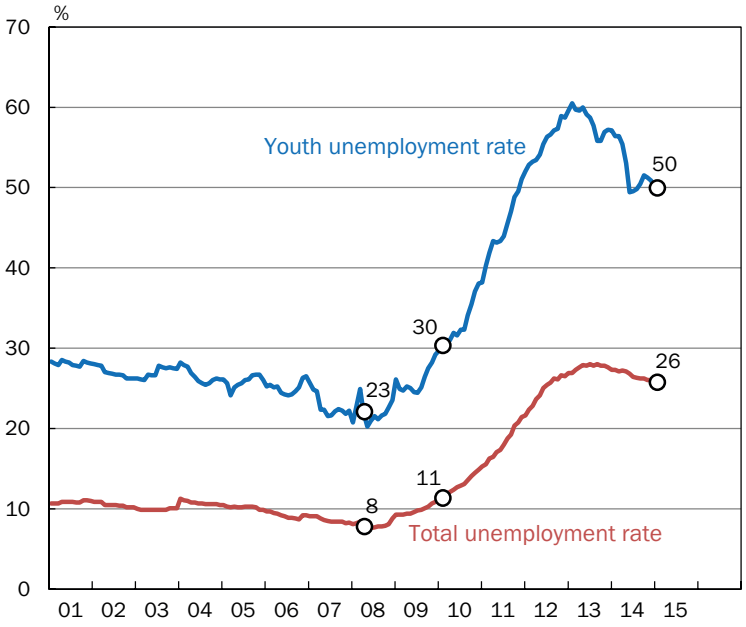
[2] See A. Merkel: "The important thing is that with the rescue packages we have given the euro time for all countries to carry out the necessary budget consolidation – and, if necessary, to also carry out structural reforms." (Own translation.) See A. Merkel, "Merkel: Anstehende Aufgaben überzeugend umsetzen", *N24 – Sommerinterview,* 7 July 2010, http://www.bundesregierung.de/ContentArchiv/DE/Archiv17/Interview/2010/07/2010-07-07-n24-sommerinterview.html.

[3] A. Merkel on 16 September 2010: "There won't be any extension of the current rescue package with Germany." (Own translation.) See H. Janssen, "Merkel und Schäuble in der Euro-Krise: Die Schönredner – Teil 2: 'Eine Verlängerung der jetzigen Rettungsschirme wird es mit Deutschland nicht geben'", *Spiegel Online,* 19 November 2012, http://www.spiegel.de/politik/deutschland/muenchhausen-check-merkel-und-schaeuble-ueber-die-euro-krise-a-867147-3.html.

[4] Calculated as the average for January and February, since the value for March was not available at the time of writing.

Figure 2

The evolution of unemployment in Greece



Source: Eurostat, Database, *Population and Social Conditions,* Labour Market, Employment and Unemployment.

discernible positive effects. Real GDP fell between the first quarter of 2010 and the first quarter of 2015 by a further 21%, while manufacturing output dropped by another 10%.

As Figure 4 shows, the evolution of the economy came nowhere close to the IMF expectations and forecasts. The IMF, which took part in the rescue, turned out to be too optimistic. The fact that this was purely calculated optimism, aimed at establishing the sustainability of Greek debt required for the continuance of rescue credit for the country, was admitted and criticised by IMF representatives in June 2013.[5]

Figure 4 gives the impression that, after the failure of the first forecasts, better forecasts were made starting in 2013. The economy did indeed pick up in 2013 and 2014, as Figure 3 shows. However, in view of the latest Greek crisis, which has led to a new recession in the past two quarters, these forecasts will likely also turn out to be too optimistic.

Whatever the case, it seems that the money has not helped. It did provide a Keynesian boost to domestic demand, as is always the case when the government carries out credit-financed spending programmes, and which could explain the light improvement of 2014. But signs of a sustainable recovery of the Greek economy are entirely lacking.

This may be due to the fact that the reforms demanded of Greece by the Troika as condition for granting rescue credit have either been barely carried out or not at all. While there have been pension cuts and modest tax increases, pensions are on average still considerably higher than in Germany,[6] and no particular suc-

[5] See IMF, "Greece: Ex Post Evaluation of Exceptional Access under the 2010 Stand-By Arrangement", *IMF Country Report* No. 13/156, June 2013, in particular p. 2, 21 and 33, http://www.imf.org/external/pubs/ft/scr/2013/cr13156.pdf.

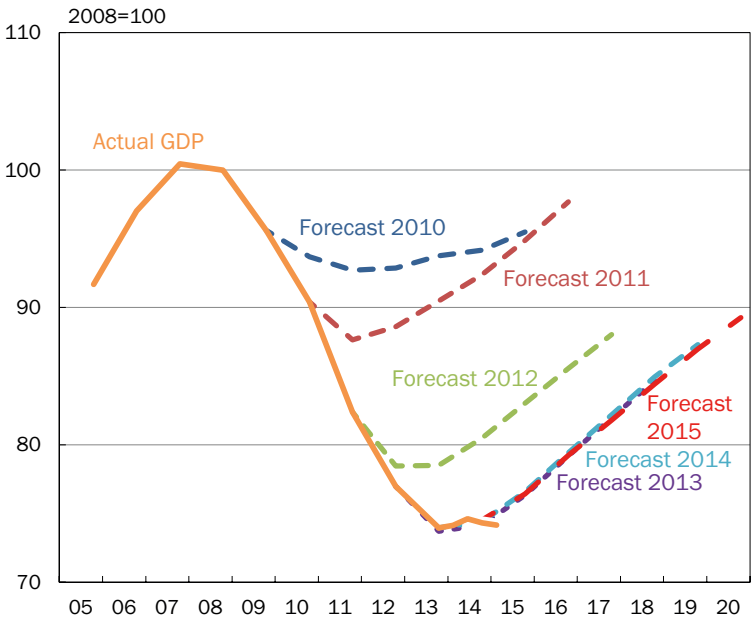
[6] See *Spiegel Online*, 23 March 2015, http://www.spiegel.de/wirtschaft/soziales/warum-griechenland-kein-rentnerparadies-mehr-ist-a-1025159.html. The sum of 958.77 euros cited by Spiegel Online and other news outlets for the average Greek pension comes from the Ministry of Labour in Athens. The average pension for German retir-

Figure 3

The Greek economic slump

Sources: Eurostat, Database, *Industry, Trade and Services, Short-term business statistics,* Industry; same institution, *Economy and Finance,* National Accounts (ESA 2010), *Quarterly Accounts, Main GDP aggregates;* same institution, Press release 84/2015, *Flash estimate for the first quarter of 2015,* 13 May 2015; Production: Moving 5-month average.

Figure 4
Greece's Real GDP: Comparison of the real evolution[a)] with the IMF[b)] forecasts



Actual evolution from 2005 until first quarter 2015 and comparison with the IMF spring forecasts from 2010 to 2015.
[a)] Actual GDP; 2005 – 2013, yearly data; quarterly data starting first quarter 2014. Status: May 2015.
[b)] Respective spring forecasts.

Sources: International Monetary Fund, *World Economic Outlook Database,* April 2010 to April 2015; Eurostat, Database, *Economy and Finance, National Accounts (ESA 2010), Quarterly Accounts, Main GDP aggregates;* same institution, Press release 84/2015, *Flash estimate for the first quarter of 2015,* 13 May 2015.

cess in tax collection can be discerned.[7] Instead, the government has allowed delinquent taxpayers to pay their more than 70 billion euros worth of taxes in arrears in one hundred monthly instalments.[8] The minimum wage, at 684 euros, lies above the average wage for most of the East European countries.[9] In manufacturing, the average wage per hour (14.7 euros) is almost exactly twice as high as in Poland (7.4 euros).[10]

Already back in 2013 doubts were voiced that Greece would tackle the promised reforms seriously.[11] An assessment of 787 conditions that the Troika conducted found that not even half had been fulfilled. The Greek government was still working on 76 of them, and no effort to introduce measures to fulfil 357 other conditions could be observed.[12] Practically no progress was made on privatisation either. On 2 July 2011, Greece had committed to sell 50 billion euros worth of state property in order to be able to meet its credit obligations.[13] But by December 2014, privatisation proceeds amounted to barely 3.1 billion euros.[14] The sale of harbour facilities in Piraeus to a group of Chinese investors was stopped by the new government led by Alexis Tsipras: the election campaign of his party Syriza was based on an open rejection of the reform commitments made with the Troika. The attempts to bring the government around have proved fruitless up to this writing (May 2015).

At first sight, it may seem puzzling that Greece's economy, despite the huge financial help it has received, has not improved and actually appears sicker than ever. What explains this is a hard economic mechanism known as the Dutch Disease.[15] When the Netherlands discovered huge gas deposits in the 1960s

Footnote 6 continued
ees amounts to 766 euros (734 euros in West Germany, 896 euros in East Germany). See Deutsche Rentenversicherung Bund, *Rentenversicherung in Zeitreihen,* October 2014, p. 201.

[7] See S. Vogt, "Unter Druck – Griechenland im wirtschaftlichen, politischen und sozialen Reformprozess", *KAS Auslandsinformationen* 6, 2013; *Zeit Online*, "Griechenland scheitert an Umsetzung der Sparauflagen", 13 July 2012, http://www.zeit.de/wirtschaft/2012-07/griechenland-sparauflagen-troika-bericht.

[8] See *Handelsblatt*, "Scharfe Kritik an Athener Steuerplänen", 23 March 2015, http://www.handelsblatt.com/politik/international/griechenland-scharfe-kritik-an-athener-steuerplaenen/11539706.html; see also Hellenic Parliament, Legislative Work, Enacted Legislation, 20/03/2015, *Regulations for the Restart of the Economy,* http://www.hellenicparliament.gr/en/Nomothetiko-Ergo/Anazitisi-Nomothetikou-Ergou?law_id=a3a50719-b333-4010-86c5-a45e015c2576.

[9] See Eurostat, Database, *Population and Social Conditions, Labour Market, Employment and Unemployment. Earnings, Minimum Wages.*

[10] See Statistisches Bundesamt (German Federal Statistical Office), "EU-Vergleich der Arbeitskosten 2014: Deutschland auf Rang acht" Press Release No. 160, 4 May 2015.

[11] See K. Hope and P. Spiegel, "Greece and Lenders Fall out over Firings", *ft.com,* 14 March 2013, http://www.ft.com/intl/cms/s/0/3df71c6c-8c8b-11e2-aed2-00144feabdc0.html#axzz3YaTtuiJu.

[12] See European Commission, "The Second Economic Adjustment Programme for Greece, Fourth Review – April 2014", *Occasional Papers* 192, April 2014, p. 79ff.

[13] See European Commission, "The Economic Adjustment Programme for Greece, Fourth Review – Spring 2011", Occasional Papers 82, July 2011, p. 16.

[14] See Hellenic Republic Asset Development Fund, *Asset Development Plan – December 2014*, http://www.hradf.com/sites/default/files/attachments/20141211-adp-december-2014-en.pdf. As to the historical process: the Troika corrected downward already back in October 2011 the cumulative proceeds of privatisation for the years 2011 through 2013. The goal of generating 50 billion euros through privatisation by the end of 2015, however, was maintained. See European Commission, "The Economic Adjustment Programme for Greece, Fifth review - October 2011", *Occasional Papers* 87, 2011, p. 32. The Troika performed a further correction in 2012, expecting now proceeds of only 19 billion euros by the end of 2015. The report left the question open as to when the rest of the 50 billion could be expected. See European Commission, "The Second Economic Adjustment Programme for Greece, March 2012", *Occasional Papers* 94, 2012, p. 31. The Troika has meanwhile reduced its expectation of proceeds from privatisation until 2020 to 22.3 billion euros. See European Commission, "The Second Economic Adjustment Programme, op. cit., p. 27.

[15] See N. M. Corden and J. P. Neary, "Booming Sector and De-Industrialization in a Small Open Economy", *Economic Journal* 92, 1982, p. 825–848.

it came very quickly to riches, which made it possible to raise wages faster than the productivity of its economy grew. This led to its industry losing part of its competitiveness, pushing the country into recession. It wasn't until the gas production slowed down that the wage-negotiating parties agreed on wage moderation, in what became known as the Wassenaar Agreement, bringing about a healing of the economy.

The situation in Greece today is similar to that in the Netherlands then, since whether a country sells gas or debt instruments to uphold an excessively high wage level makes no difference in terms of the effects on competitiveness. The more public credit is made available to a country, the longer its lack of competitiveness will last, irrespective of the reform conditions attached to the granting of credit. Only when public money ceases to be available, circumstances force through the painful wage and price adjustments needed to restore competitiveness.

A comparison between Ireland and the other crisis-stricken countries reinforces the above point. The Irish bubble burst already in late 2006, before any international rescue credit was available. The country, therefore, had to help itself. While elsewhere in the Eurozone massive wage increases were still being pushed through, Ireland reduced wage levels in the public and private sectors, triggering a reduction in prices as well.[16] Relative to the rest of the Eurozone, its goods prices (GDP deflator) sank by 13% between 2006 and 2013. Thanks to this "real devaluation", the country became competitive once again and experienced a strong economic upturn. Irish GDP lay in the fourth quarter of 2014 9% higher than during the first quarter of 2010, while manufacturing output has jumped by 43% (first quarter 2015).[17]

Such a development did not occur in the other crisis-affected countries because their crisis started only after Lehman, two years later than Ireland's, and opted for printing the money they could no longer borrow, a development discussed for Greece in Section 1. The financing of the current account and budget deficits with international public credit relieved the pressure to reform the economy and led to the necessary structural adjustments being relegated to the backburner, which is another manifestation of the Dutch Disease. While it is true that Ireland also participated in the rescue credits, most of its painful adjustment had by then already been completed.

This is well known in Greece as well. Former economics minister Michalis Chrysocoidis replied to a question in an interview with the Frankfurter Allgemeine Zeitung conducted in 2012 of whether the subsidies had destroyed Greece: "Yes. While we took the EU money with one hand, we did not invest that money with the other hand in new, competitive technologies. It all went to consumption. The result was that those who produced anything ceased to produce and decided to go into the import business, because the profits were higher. That is the real tragedy of the country."[18]

[16] See H.-W. Sinn, *The Euro-Trap. On Bursting Bubbles, Budgets, and Beliefs,* Oxford University Press, Oxford 2014, in particular Chapter 4: "The Competitiveness Problem", Section "How Did Ireland Do It?".

[17] See Eurostat, Database, *Economy and Finance, National Accounts (ESA 2010),* Quarterly Accounts; same institution, Database, *Industry, Trade and Services, Business Statistics, Industry.* Figures for Irish GDP in the first quarter 2015 were not available at the time of this writing.

[18] M. Chrysochoidis, "Die Gesellschaft ist reifer als ihr System", Interview by M. Martens, *Frankfurter Allgemeine Zeitung,* 9 February 2012, http://www.faz.net/aktuell/politik/europaeische-union/griechischer-wirtschaftsminister-diegesellschaft-ist-reifer-als-ihr-system-11642768.html.

3. Who Benefited from the Rescue Credit?

Greek Finance Minister Yanis Varoufakis recently asserted that 90% of the public credit given to Greece had been used to serve private credit granted by international lenders; in other words, to rescue, amongst others, European banks.[1] The financial support practically never reached the Greek citizenry at all. The Greek population, goes the argument, is suffering under the austerity policy imposed by the Troika, which has brought about a humanitarian catastrophe. Other economists have also criticised the austerity policy allegedly imposed by the euro countries,[2] arguing that the rescue money helped primarily Greece's foreign creditors, who would otherwise not have recouped their investment.[3]

It is easy to see how these assertions miss the point just by considering the relationship between Greek public and private consumption on the one hand, and net national income on the other, as shown in Figure 5. While the ratio in countries like Germany, France or the Netherlands, to take just three examples, hovered around 90%, in Greece it climbed from around 95% in the years following adoption of the euro to more than 110%, where it has stayed until now. In 2014, aggregate consumption reached 113.7% of net national income, by far the highest value of all euro countries. In view of the fact that an economy normally cannot consume more than its net national income without running its reserves to the ground, this remarkable development can hardly be reconciled with the "humanitarian catastrophe" thesis.

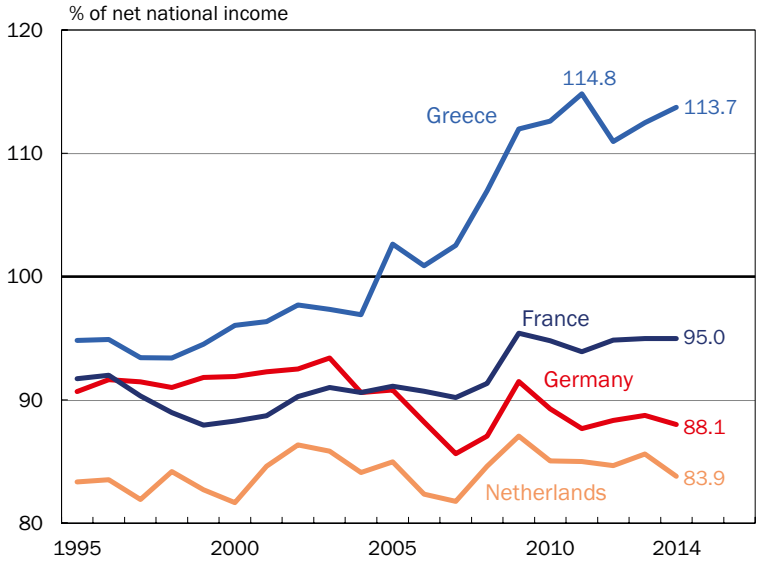
The fundamental factor behind the exploding consumption was the lower interest rates that Greece's adoption of the euro brought about. Yields on Greek government bonds, as shown in Figure 6, fell from about 25% to 5%. A similar development occurred in the private sector. As Box 2 explains, the lowering of interest rates was spurred by regulatory errors and by the implicit protection expected by investors from the Eurosystem. While the lower rates meant that private and public debtors had to pay less interest to foreign creditors, which increased the net national income and hence, taken by itself, reduced the consumption excess, this was more than offset by the increase in borrowing, which swelled the consumption excess further. The low interest rates made it tempting to improve the living standard by borrowing more abroad, since the sustainability of the additional indebtedness appeared to be assured. As a result, Greece's foreign debt jumped from the time of euro introduction (2001) to the pre-crisis year 2007 from 68 billion euros to 214 billion euros,[4] while the net-foreign-debt/GDP ratio more than doubled, from 45% to 92%.

The public sector was not the main factor behind this development, since it increased its debt-to-GDP ratio only from 105% to 107% over the same period.[5] The government can only be reproached for not using the

[1] See Y. Varoufakis, "Schluss mit Schwarzer Peter", *Handelsblatt*, 30 March 2015, p. 48.
[2] See M. Fratzscher, "Fünf Thesen, fünf Irrtümer: Targetsalden", Handelsblatt, 16/17/18 January 2015, p. 53, as well as P. De Grauwe, "The Creditor Nations Rule in the Eurozone", in: S. Tilford und P. Whyte, *The Future of Europe's Economy – Disaster or Deliverance?,* Centre for European Reform, London, p. 11–23, http://www.lse.ac.uk/europeanInstitute/pdfs/CER-report-18.9.13.pdf.
[3] See D. Dittmer, "Jahrelange Insolvenzverschleppung? Die Horror-Bilanz der Griechenland-Hilfen", *n-tv*, 13 March 2015, http://www.n-tv.de/wirtschaft/Die-Horror-Bilanz-der-Griechenland-Hilfen-article14690166.html.
[4] See Eurostat, Database, *Economy and Finance, Balance of Payments – International Transactions (bop), International Investment Positions* – Annual Data.
[5] See European Commission, General Government Data, Part I, Spring 2014, p. 33. These data were prepared in accordance with the former system of National Accounts (ESVG 95). Data under the new system (ESVG 2010) only includes Greek indebtedness from the period 2011 until 2014.

Figure 5

Public and private consumption relative to net national income



Source: Eurostat, Database, *Economy and Finance, National Accounts (including GDP), GDP and Main Components – Current Prices, Final Consumption Expenditures; and Income, Saving and Net Lending/Borrowing, Gross National Income at Market Prices;* European Commission, Economic and Financial Affairs, Economic Databases and Indicators, AMECO – the annual macro-economic database, *National Income.*

enormous advantage brought about by the lower interest rates on the outstanding government bonds – worth about 7 percentage points of GDP if compared to the year of the Madrid summit (1995), in which the timing for the euro was finally decided – for paying back debt, but to increase expenditures instead.[6] It raised the salaries of public employees and hired ever larger numbers of them. The increase in the debt-to-GDP ratio was in fact due primarily to higher private sector borrowing for consumption purposes and also for investment in construction. The credit-financed expenditures, combined with the savings from lower interest payments, made it possible for Greek wages to rise, from the euro adoption in 2001 to the onset of the crisis in 2007, by 65%,[7] while Greek GDP rose only by a nominal 53% and a real 28%.[8] Note that the true discrepancy between the rise in wages and the improvement in economic performance must have been even higher that what these figures suggest, because in the national accounts GDP consists in part of the salaries of public employees and therefore rises automatically when salaries are increased. Furthermore, wage increases may give the domestic sectors of an economy a boost by stimulating consumption demand despite the fact that they undermine external competitiveness. Seen in this light, a credit-financed upturn in domestic demand leads to an underestimation of the disadvantageous developments described above.

It is remarkable that the excess of consumption over income kept increasing even after the onset of the global financial crisis, which engulfed Greece as well. This was not only the result of a deliberate attempt to keep the consumption level unchanged even after the economy started to wobble, but also because wages were further increased with more debt, despite the ongoing crisis. The salaries of Greek public employees rose by around 19% in 2008 and 2009, although Greece's GDP rose only by 2% in nominal terms and shrank by 5% in real terms over these two years.[9] It was only later that the upward trend was broken and wages started to come down.

In view of the fact that since 2008 Greece could only borrow in the capital markets paying exorbitant premia, one may wonder where it got the money to finance its consumption overhang. The answer lies with the credit from the local money-printing press discussed in Section 1. Once the ECB Council allowed it by dramatically lowering the collateral requirements, the Greek central bank lent increasing amounts of freshly created money to the banks in its jurisdiction, which they in turn used to buy Greek government bonds and to lend to the private sector. The government used the money to increase the salaries of public employees, although the economy was sagging, the rising salaries leading then to higher consumption. Private individuals also took bank loans to finance their high consumption standards. The bloated consumption manifested itself in net payment orders to other countries aimed at purchasing goods abroad which, as discussed in Section 1, are measured by the Target balances together with the payment orders to redeem private debt and acquire assets abroad (see Fig. 1).

Greece financed itself with Target credit only in the initial phase. After the ECB spearheaded the

[6] In 1995, Greece devoted 11.3% of GDP to paying interest; in 2007 only 4.5%. See European Commission, ibid., p. 31.

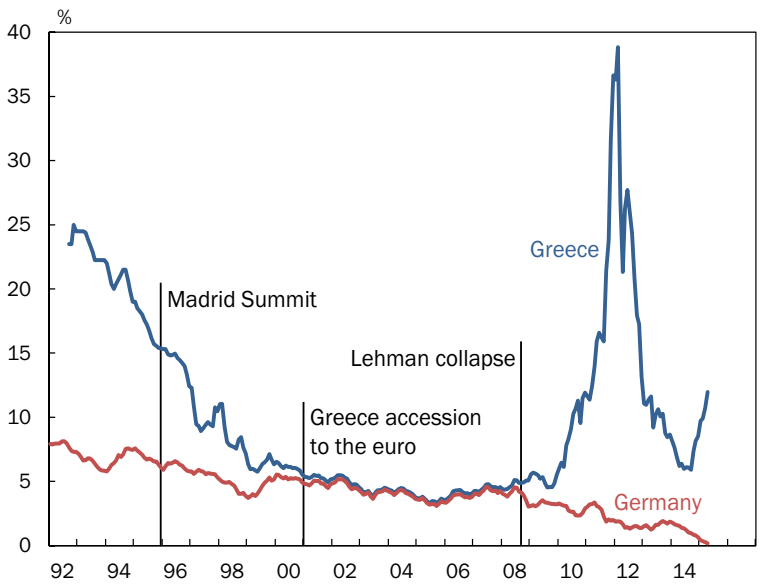
[7] Sum of workers' income; see Eurostat, Database, *Economy and Finance, National Accounts (ESVG 2010), Annual Accounts, Main GDP Aggregates.*

[8] See Eurostat, Database, *Economy and Finance, National Accounts (ESVG 2010), Annual Accounts.*

[9] See Eurostat, Database, *Economy and Finance, National Accounts (ESVG 2010), Annual Accounts,* Detailed breakdown of main GDP aggregates.

Figure 6

Effective yield of 10-year government bonds



Source: Thomson Reuters Datastream, Germany: BDBRYLD, Greece GRBRYLD (as from 04/1999) GRESEFIGR (as from 01/1996) GRESEFIGR (Data last accessed on 10 February 2014; since 09/1992).

Box 2
Causes of the interest rate drop

Before Greece joined the euro, investors demanded high yields for Greek government bonds because they had to price in the risk of being repaid in depreciated drachmas. As Greece approached the moment of euro adoption, this risk gradually diminished, the interest spreads declining accordingly until they practically disappeared when the moment of adoption came.

It is not clear when the shrinking of Greek spreads began, because the statistical information for Greece goes only back to 1993. That notwithstanding, December 1995 marks an important milestone, namely the formal decision reached at the Madrid Summit to introduce the euro as a virtual currency already in 1999, so that at the latest at that time no further exchange rate uncertainty occurred among the participating countries. While at the time it was not known when Greece would eventually join in, the intensive negotiations led investors to expect a speedy accession, so that the trend towards lower spreads was at least reinforced.

The risk of sovereign default, which would have also justified charging an interest premium for Greek government bonds, was evidently deemed insignificant by investors. This proved to be wrong with hindsight, as evidenced by the haircut applied to Greek debt in 2012. Still, it was not implausible, because investors could rightly expect fresh liquidity to be made available to the Greek financial system at all times, in order for banks to buy back debt or for the state to obtain follow-on financing. Rightly as well, they could expect euro membership to afford them exit options if the need should arise, since they were well aware of the possibility of the Greek central bank propping up the banks in its jurisdiction with emergency credit, if and whenever needed. Where they miscalculated was with regard to the size of the Greek shortfall, because it exceeded what the other countries and the ECB were ready to bear.

The willingness to lend relinquishing practically all premium was also encouraged by the Basel system of bank regulation, which allowed banks to set aside no capital reserves for government bonds if they documented their risks in accordance with the so-called standard approach, which is based on predetermined risk weight categories. On top of this, the EU also gave its banks the possibility, quite at odds with the Basel rules, to even set aside no capital reserves if they calculated their risks according to their own risk models. The banks could thus pick out the advantageous elements from two risk assessment approaches.[1] Since bankers often optimise only for the short term, and in making their decisions pay closer attention only to the risks arising during their tenure, it is no surprise that they were ready to lend to Greece at minimum premia if the supervisory bodies did not forbid such a practice and, on the contrary, actively encouraged it. Who could accuse bankers of having acted recklessly when they actually were operating in compliance with prevailing regulation and when the supervisory bodies themselves indicated that, in their opinion, Greek government bonds were risk-free?

Not only bank managers, but also managers of insurance companies aimed for short-term profits, since the Solvency Regulation that they had to comply with demanded no capital buffers for purchases of Greek sovereign bonds or of those of other euro countries. Seen in this light, the convergence of interest rates that encouraged Greeks to live above their means can be laid at the feet also of the executives of the financial institutions and the politicians who set up deficient regulatory systems. It is too simple and unfair to blame only Greece.

[1] Regulation Governing the Capital Adequacy of Institutions, Groups of Institutions and Financial Holding Groups, Para. 26 No. 2 littera b in conjunction with Para. 70 section 1 littera c; Directive 2006/48/EC of the European Parliament and of the Council of 14 June 2006 Relating to the Taking Up and Pursuit of the Business of Credit Institutions (Recast), Para. 80 No. 1 in conjunction with Para. 89 No. 1 littera d. As far as it is known, many euro countries integrated these regulations into national laws. Germany, for example, did it with the directive regarding the adequacy of capital requirements of Institutes, Groups of Institutes and Financial Holdings, Para. 26 No. 2 littera b in conjunction with Para. 70 No. 1 littera c; Directive 2006/48/EC of the European Parliament and of the Council of 14 June 2006 relating to the taking up and pursuit of the business of credit institutions (recast), Para. 80 No. 1 in conjunction with Para- 89 No. 1 littera d.

rescue, the parliaments of the Eurozone countries had no other option but to provide follow-on financing by means of fiscal rescue credit. The credit pre-financed, and thus forced, by the Greek central bank made it possible to keep consumption above 100% of income, despite the fact that Greece had been largely shut out of the international capital markets since 2008.

Public credit did not flow solely into consumption; because it allowed Greek citizens and banks to redeem their private debt, it also helped investors and asset owners who otherwise might not have seen again the money that they had lent to Greece. Yanis Varoufakis is thus right, although he grossly errs regarding the magnitude. This is shown in Figure 7. The chart repeats the information of Figure 1, but is now complemented with the blue curve that depicts Greece's cumulative current-account deficits, and by the red curve, which depicts its net foreign debt (negative international investment position).[10]

[10] It must be pointed out that since 2014 the current account statistics are prepared according to a new methodology (Balance of Payments and International Investment Position Manual, Sixth Edition: BPM6). Since the results for Greece with the new system are available only from 2009 onwards, data calculated with the old standard is used for the years up to 2008. A comparison of the overlapping data points show that this had only a negligible effect on data.

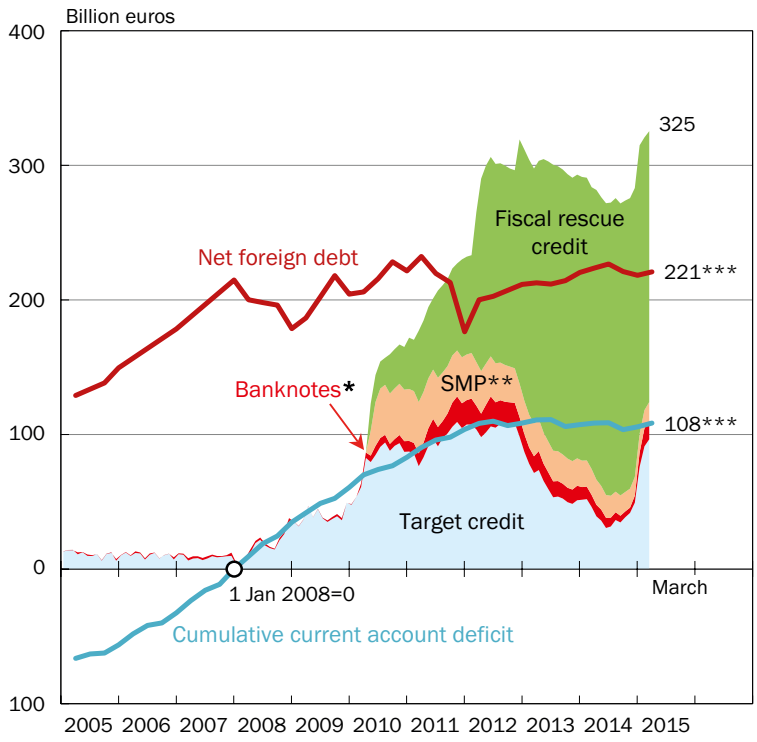
Let us first consider the curve depicting the cumulative current-account deficits. A current-account deficit is essentially an excess of imports and net interest payments to other countries, over exports and transfer receipts (such as guest-worker remittances or EU funds). The deficit is identical to the capital imports of a country, which occur through net borrowing from private and public creditors and net sales of assets to foreigners. The net borrowing from public creditors can take the form, for example, of fiscal rescue credit, or of a Target credit between Eurosystem NCBs.

The slope of the blue curve shows the current-account deficit before and after the early-2008 reference point, which by definition has a level of zero. The level of the curve depicts the sum of the deficits calculated at each observation point since the reference point. In the negative area, the distance of the cumulative current-account deficit curve from the zero axis depicts the sums of current-account deficits from the respective point in time until the start of 2008.

The chart makes abundantly clear that the current-account deficits were financed before 2008 with private capital imports, because the Target curve runs flat

Figure 7

Public credit, cumulative current account deficits, and foreign debt



* Liabilities of the Greek central bank to the Eurosystem due to over-proportionate banknote issuance.
** Greek government bonds bought by other Eurosystem NCBs within the framework of the Securities Markets Programme (SMP) minus the government bonds of other countries bought by the Greek central bank under the SMP.
*** Estimate: January to March 2015.

Sources: See Figure 1, and also: Eurostat, *Database, Economy and Finance, Balance of Payments – International Transactions.*

close to the zero axis, and that from early 2008 to early 2010 they were financed practically in their entirety by Target credit, that is, by an additional creation of money by the Greek central bank beyond the domestic liquidity needs of the Greek economy. Private capital imports dwindled practically to nought during this period. It is not quite clear why this was so. It could be that international lenders avoided Greece and the ECB stepped into the breach. It may also be that Greek debtors refrained from borrowing from foreign lenders because the ECB allowed the Greek central bank to provide credit to the banks in its jurisdiction at cheaper rates than the increasingly nervous investors did. The public-employee salary raises in 2008 and 2009 mentioned above, together with the fact that the annual current account deficits did not come down (measured by the slope of the cumulative current account deficit curve), show that the credit provided by the Greek central bank with freshly created money was generous enough to make up for the dearth of private foreign credit.

Before 2008 Target credit played no role at all, because the ECB had pursued a restrictive monetary policy that ruled out an asymmetrical expansion of the monetary base to the benefit of individual countries. Target credit was only seen as a temporary overdraft facility of the Eurosystem that was to be settled through restrictive local money creation, so that the market participants were forced to turn directly, or indirectly through their banks, to foreign lenders when they needed credit in excess of domestic savings.[11]

Since the rise in Greek Target liabilities in the years 2008 and 2009 was very nearly the same as the rise in Greece's cumulative current account deficit, on balance during these two years no public foreign credit was used to repay foreign investors. The portion of the public credit used for repaying private foreign loans, and which Yanis Varoufakis refers to in his statement, was therefore practically zero during this period. All public credit came from the ECB system, and it was used over these two years practically exclusively to finance the Greek current account deficits, and thus served to support and further raise the Greek living standard. The Greek central bank lent out the freshly created money to the commercial banks, and these in turn lent it out to private individuals and to the government. The private individuals financed thus their consumption and investment goods, which partly came from abroad, and the government financed public employee salaries and other expenditures. The salary-earners and other recipients of state resources used the money to buy imported goods. This is a simplified, but essentially accurate outline of what transpired during the first two years of the crisis.

The situation changed dramatically when the Eurosystem NCBs started to asymmetrically purchase government bonds in 2010 (SMP) and the community of euro member states deployed the rescue packages, since now the overall sum of public credit grew beyond the cumulative current account deficits. While part of the fiscal funds were manifestly used from

[11] See H. Schlesinger, "Die Zahlungsbilanz sagt es uns", *ifo Schnelldienst* 64 (16), 2011, p. 9–11.

2013 to replace the refinancing credit given by the Greek central bank to the commercial banks, and thus retroactively finance the current-account deficits of the previous years, as evidenced by the retreat of Greek Target liabilities, the other portion – the one above the blue curve depicting the cumulative current account deficits – was used to replace fleeing capital and, thus, to make capital flight possible in the first place.

A substantial portion of the capital flight was caused by foreign investors, primarily French and also German banks, who refused to roll over their loans when they reached maturity, as they had done previously.[12] But Greek investors also brought their money abroad, by selling assets to the domestic banks or taking out loans from them and bringing abroad the liquidity thus obtained.

At the end of March 2015, the sum of current account deficits accumulated since early 2008 was 108 billion euros, equivalent to one-third of the multilateral and intergovernmental loans provided to Greece, which amounted to 325 billion euros. Two-thirds of the public credit was thus apparently used to finance capital flight and one-third to finance the current account deficit – ultimately the living standard that could no longer be financed with the income of the Greek citizenry. Thus, over the entire crisis period it can hardly be argued that barely 10 percent of the public credit benefited the Greek people, as Finance Minister Varoufakis does. Apart from the above, Greek debtors benefited from the fact that the international community helped them meet their obligations towards foreign creditors, and also made it possible for them to bring their wealth out of the country.

The red curve, which depicts Greece's overall net foreign debt, which currently stands at 221 billion euros, shows as well which portion the public funds received by Greece from the international community, on balance, went to capital flight and which to repayment of foreign debt. If the sum of public credits lay below this value, on balance there would still be some private foreign investor exposure to Greece. However, at 325 billion euros, it lies around 100 billion euros above Greece's net foreign debt. This is only possible if Greek investors, on balance, own 100 billion euros more worth of assets abroad than foreigners own assets in Greece. Thus, roughly speaking, it can be said that out of the public credit received during the crisis years, one-third was used to finance the current account deficit, one-third to repay Greek foreign debt, and one-third to bring Greek citizens' wealth abroad.

There is ample anecdotal evidence of the latter. For years now, Greek investors have played a large, and much debated, role in the London and Berlin property markets.[13] And during the current flare-up of the Greek crisis, numerous newspaper articles report of Greeks raiding their bank accounts to bring their money abroad. The strong recent jump in Greek Target liabilities shown in Figure 6 is quite likely due to capital flight by Greek citizens and institutions borrowing in the local banking market to acquire assets abroad. The foreign assets owned by Greeks ought to be kept in mind in any discussion of haircuts on Greek government and central bank debt in case of an eventual Greek exit from the euro.

The current wave of capital flight was made possible by the ELA credit discussed in Section 1, that is, emergency credit that the Greek central bank gave to Greek commercial banks. By late March 2015, the Greek central bank had given its commercial banks 68.5 billion euros in ELA credit,[14] and this sum continued to grow afterwards as well. By mid-May it had reached 80 billion euros, according to press reports.[15] Without ELA credit the capital flight would not have been possible, because it requires a payment order to a foreign bank which, in turn, implies removing central bank money within Greece and creating an equivalent amount of such money in the recipient country. If the liquidity removed from Greece were not replenished through ELA credit, the commercial banks would quickly face a liquidity squeeze which could only be averted by setting up capital controls to stop the payment orders.

The ECB communications regarding ELA give the impression that the ECB has allowed Greece to issue

[12] See Bank for International Settlements, Statistics, Consolidated Banking Statistics, and H.-W. Sinn, *The Euro Trap. On Bursting Bubbles, Budgets, and Beliefs,* Oxford University Press, Oxford 2014, in particular Chapter 5: "The White Knight", Section "The Crash".

[13] See *Focus Online,* "Reiche Griechen fliehen nach London", 4 November 2011, http://www.focus.de/immobilien/kaufen/schuldenkrise-reiche-griechen-fliehen-nach-london_aid_681162.html; as well as *faz.net,* "Reiche Griechen kaufen Wohnungen in Berlin", 17 December 2012, http://www.faz.net/aktuell/wirtschaft/steigende-immobilienpreise-reiche-griechen-kaufen-wohnungen-in-berlin-11996780.html.

[14] Since ELA credit is not shown directly in the Greek central bank's balance sheet, the position "Other claims on euro area credit institutions denominated in euro" will be used here as an approximate value.

[15] See "EZB erhöht Ela-Notkredite für Griechenland um 200 Millionen Euro", *faz.net*, 20 May 2015, http://www.faz.net/agenturmeldungen/adhoc/kreise-ezb-erhoeht-ela-notkredite-fuer-griechenland-um-200-millionen-euro-13603818.html.

such credit. This is but half the truth, since, as discussed in Section 1, ELA credit must not be authorised but only announced. It is the Greek central bank itself which allows this credit in its jurisdiction, not the ECB Council. The latter can only block the granting of such credit with a two-thirds majority, and when it fails to do so, ELA credit is legal. By financing and making possible the capital flight, the Greek central bank forces the other Eurosystem NCBs to grant it Target overdraft credit, since these NCBs must honour the payment orders to the benefit of Greek citizens; in other words, they must create money without getting a claim on the commercial banks in their jurisdiction, as is normally the case. These claims have already been made against the Greek commercial banks.

Formally, ELA credit is given at the risk of the Greek central bank, as explained previously. If the recipient commercial banks should go bankrupt and the collateral lose its value, the other euro NCBs will not share the burden represented by the permanent loss of interest income from the credit being written off. In fact, the fiction remains that the Greek central bank will continue to pay the interest to the rest of the Eurosystem. This is unrealistic in the face of the sums mentioned, since the capital of the Greek central bank as of 31 March 2015, including valuation reserves, amounted to barely 4.5 billion euros, plus an ownership-equivalent share in the interest-bearing part of the Eurosystem's monetary base (stock of central bank money minus minimum reserve) amounting to 36.5 billion euros. As a result, its potential liability to the rest of the Eurosystem amounts ultimately to 41 billion euros. Thus, out of the 68.5 billion euros in ELA credit given by the end of March, 27.5 billion euros imply, contrary to the legal fiction, a liability assumed by the other Eurozone NCBs.[16]

Each euro in additional ELA credit that the Greek NCB creates today and lends through the banks to someone intent on capital flight, who then cables the money to another euro country, is a credit given by the respective foreign NCB to the Greek one, since the former has to issue central bank money to honour the payment order to a bank in its jurisdiction on behalf of the Greek central bank. While private Greek capital flees abroad, public credit flows to Greece in the form of Eurosystem credit. It is simply not possible for the Greek central bank to bear the entire liability for this credit should the commercial banks in its jurisdiction go bankrupt and the collateral pledged lose its value. The liability lies in reality with the other Eurosystem NCBs, in proportion to their respective capital keys.

The ECB itself assumes in its calculations of the liability framework that liability derived from ELA credit only applies to the portion that is not collateralised, while it applies deductions to the collateral pledged according to its own rules. In this way, it props up the fiction that even the 80 billion in ELA credit given by mid-May 2015 is secure. However, the collateral consists largely of government bonds and state-guaranteed bank bonds, which derive their safety from a state that the Greek Finance Minister himself has described as insolvent.[17]

[16] See H.-W. Sinn, *The Euro Trap, op. cit.,* in particular Chapter 5: "The White Knight", Section "ELA Credit"; See also H.-W. Sinn, "Die EZB betreibt Konkursverschleppung", Süddeutsche Zeitung, 10 February 2015, p. 18, www.ifo.de/de/EZB_Konkursverschleppung_SZ/w/3LBbmg4mN. An abridged version was published as : "Impose Capital Controls in Greece or Repeat the Costly Mistake of Cyprus", Financial Times, 16 February 2015, www.ifo.de/de/Capital_Controls_Greece_FT/w/4Ai2ZqZUP.

[17] "The disease that we're facing in Greece at the moment is that a problem of insolvency for five years has been dealt with as a problem of liquidity." Y. Varoufakis, "Greek finance minister: 'It's not about who will blink first'", *BBC Newsnight,* 31 January 2015, http://www.bbc.com/news/world-europe-31070329.

4. Interest Rebates

Greece was not only assisted with public sector loans worth 325 billion euros, equivalent to 182% of its GDP. It also enjoyed significant interest rebates on loans that had been granted by international institutions. In autumn 2012 the interest rates on the bilateral loans granted by the euro countries as part of the first bail-out programme were lowered by one percentage point, at the same time extending their maturity by 15 years to 2041. The maturity of the EFSF loan was also extended by 15 years, and interest payment was deferred for 10 years. In addition, fees on the EFSF loan were reduced. In present value terms, these measures were equivalent to a once-and-for-all haircut of 43 billion euros.[1]

Moreover, in spring 2012 Greece negotiated a debt restructuring (i.e. a haircut) of all of Greek government bonds that was worth a total of 105 billion euros,[2] marking a historically unprecedented level of debt relief. This can undoubtedly be referred to as a sovereign insolvency, since a haircut is the main characteristic of such an occurrence, even if the definition of sovereign insolvency remains nebulous: it is not defined by commercial law, nor is there any court to adjudicate it.

At interest rates of around 4.6% at the time that the bonds were written off, the 105 billion euros in debt relief corresponds to lasting budget relief equalling around 2.5% of GDP.[3] Moreover, it is worth noting that the haircut only partially represented debt relief granted to Greece by foreigners, since the government's creditors also included Greek banks and Greek investors. Greece also benefited from the fact that interest on its Target overdraft credit was only charged at the ECB's main refinancing rate, which currently is only 0.05%.

Figure 8 shows the overall debt relief effects of the interest rate reductions. The blue curve shows investment income flowing abroad that Greece was paying to foreign investors net of the income Greek investors earned abroad. Let us call this income 'interest income' for simplicity, alluding to a very broad definition of the term, as all sorts of cross-border capital income are included. As the chart shows, Greece's interest burden of around two billion euros in the year that it joined the euro (2001) soared to 11 billion euros in the crisis year of 2008, but subsequently fell to just 3 billion euros by 2014. While the increase was to be

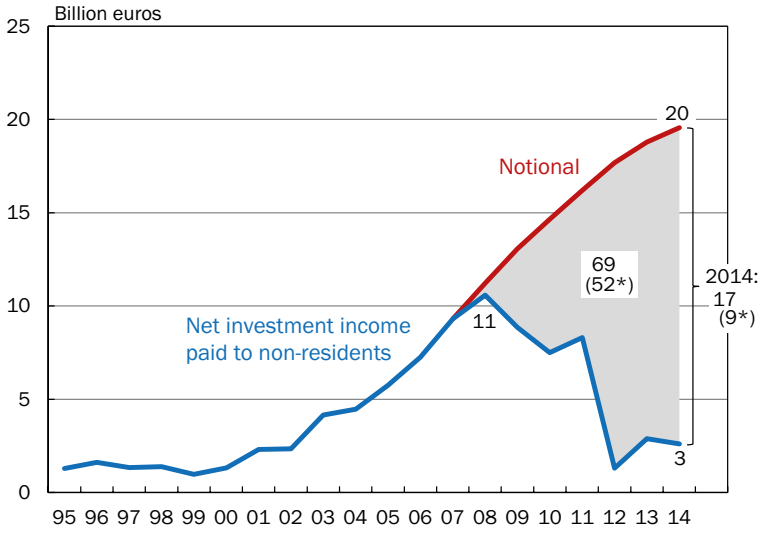
[1] The Ifo Institute initially estimated the cash value at 47 billion euros, cf. "Bailing out Greece Means Haircuts Totaling 47 Billion Euros at the Expense of Public Creditors", Ifo press release, 30 November 2012 (http://www.cesifo-group.de/ifoHome/presse/Pressemitteilungen/Pressemitteilungen-Archiv/2012/Q4/press_20121130_griechenland.html). When the exact repayment conditions for the debt became known at a later date, this value was adjusted downward by 4 billion euros. Cf. "Further Relief Planned on Bailout Loans to Greece", Ifo press release, 11 February 2014 (http://www.cesifo-group.de/ifoHome/presse/Pressemitteilungen/Pressemitteilungen-Archiv/2014/Q1/press_20140211-Greece.html).

[2] Bonds worth a total of 205.6 billion euros were offered for exchange, of which 95.7% were actually exchanged (cf. European Commission, Economic and Financial Affairs, Financial Assistance in EU Member States, Greece, available at: http://ec.europa.eu/economy_finance/assistance_eu_ms/greek_loan_facility/index_en.htm. The haircut totalled 53.5%, which equals debt relief 105.3 billion euros.

[3] Calculated on the basis of the average interest rates paid by the Greek government on all outstanding debts.

Figure 8

Greece's interest gains



* In real terms

Key: The notional yardstick values used for the comparison are calculated on the basis of the 2007 overall rate of interest for Greece, defined as the ratio between the actual net investment income Greece paid to foreigners in that year (9.32 billion euros) and the country's net foreign debt (negative net investment position) at the beginning of the year (178.2 billion euros). This interest rate was 5.2%. In a first (nominal) variant of the notional yardstick calculation, the thus-defined 2007 rate of interest was applied to the fictitious net foreign debt that in the following years would have resulted from an accumulation of current-account deficits. Account was taken of the fact that in the hypothetical case of constant interest rates the current account deficits themselves would have been larger than they actually were, given that net interest payments to foreigners are part of the current-account deficits. Alternatively, a variant of the notional yardstick calculations was carried out where the 2007 real rate of interest was kept constant, the real rate of interest being defined as the nominal rate minus the annual rate of increase in the harmonised consumer price index for the Eurozone. The numbers in brackets give the respective results. Note that balance-of-payments statistics as of 2014 are calculated internationally according to a new method (Balance of Payments and International Investment Position Manual, Sixth Edition: BPM6). Since the results for Greece according to the new system are only available as of 2009, data produced on the basis of the old standard are used up to and including 2008. Preliminary calculations showed that this had only a negligible impact on the results.

Source: Eurostat, Database, *Economy and Finance, Balance of Payments – International Transactions (BOP) (up to 2008)*; Eurostat, *Economy and Finance, Balance of Payments – International Transactions (BPM6) (as of 2009)*.

expected in view of the huge Greek current-account deficit (as shown in the previous section) and the corresponding increase in foreign debt, the post-2008 decline was remarkable given that Greece continued to have current account deficits up to 2012 and given that, as shown in Figure 6, the market interest rates for Greek government bonds during the crisis were consistently higher than in the years after it joined the euro in 2001, continuing to soar until 2012. Against this backdrop, Greece's interest burden should really have been expected to explode rather than decline after 2008.

The main explanation for this phenomenon is presumably that Greece did not pay market interest rates, as a result of the three effects cited, namely the interest rebate on fiscal credit, the low interest on the Greek central bank's refinancing credit and the interest saved thanks to the haircut. In addition, the fact that the subsidiaries of foreign companies present in Greece transferred lower profits to their parent companies may also have contributed to the decline in net investment income, for net investment income is broadly defined and covers all types of cross-border capital revenues.

The red curve featured in Figure 8 represents an attempt to assess the interest advantage enjoyed by Greece thanks to the overall combined effects cited above. It shows a notional net interest burden that would have occurred if Greece had been obliged to continue to pay the average interest rate that it actually paid in 2007, prior to the outbreak of the crisis. There is clearly a growing gap between this notional burden and the actual burden. For the period 2008 to 2014 the gap adds up to 69 billion euros, as shown by the shaded area. This sum gives a rough guide to the interest advantage gained by Greece during the first seven years of the crisis thanks to low interest rates, interest rebates and debt relief.

The lower interest rate enjoyed by Greece made a major contribution to the improvement in the Greek current-account in its own right. In the period from 2007 to 2014 the Greek current-account improved from –32.6 billion euros to +1.6 billion euros. Under the same conditions, and if the interest rate had remained as high as in 2007, the 2014 deficit would have been –15.4 billion euros.

However, Greece's current account deficit would presumably have been even larger if the country had been forced to borrow from the markets, as at least for Greek government baonds (see Figure 6) market rates were higher than in 2007 throughout the entire crisis, despite the fact that the international community's financial protection measures reduced market interest rates significantly as of 2012 by acting as free insurance for investors. In this sense, using the 2007 actual overall interest rate as a benchmark leads to an underestimation of the gains that the Greek economy obtained from the interest reductions.

While the above calculations are carried out in nominal terms, an alternative calculation (shown in brackets in the figure) takes into account that some of the interest decline may have resulted from the slight decline in the Eurozone inflation rate that took place over the period. Adjusting for this effect, Greece's interest savings over the seven years from 2008 to 2014 shrink from 69 billion euros to 52 billion euros. Savings in 2014 shrink from 17 to 9 billion euros.

5. Risks of Creditor Countries

Granting credit to Greece entails major risks for other countries in the Eurozone, since they stand to lose part of their claims if the Greek government declares insolvency. Greece has received two bail-out packages to date – as already explained in Section 1 – worth 73.2 billion euros and 142.6 billion euros respectively. The euro countries provided 52.9 billion euros and 130.9 billion euros of the above sums, respectively, the IMF providing the rest. If Greece does not repay its debts, the individual euro countries will be affected according to a specific allocation key, depending on the type of credit granted.

For bilateral credit granted via the first bail-out programme, the 2009 and 2010 ECB capital key for the euro countries excluding Greece initially served as the benchmark.[1] The ECB key was also designated for the second bail-out programme drawing on EFSF funds, this time for the period from January 2011 to June 2013. In reality, however, there were changes to the allocation shares defined initially. Slovakia was not involved at all in the first bail-out programme, which consisted of bilateral credit. Ireland and Portugal dropped out as creditors (after the first and fourth tranche respectively) when they themselves had to apply for bail-out funding from the EFSF and EFSM. This means that Germany, with a 15.7 billion euro share, provided 28.7% of the total bilateral funding of 52.9 billion euros.[2] Similarly, France, with a 11.4 billion euro share, provided 21.5% of the total bilateral funding. The key also had to be adjusted several times for the EFSF funding, due to some countries applying for bail-out funding themselves (Greece, Ireland, Portugal and Cyprus) and dropping out as guarantors. Currently Germany is liable for a 29.1% share and France for a 21.9% share.[3] As far as the IMF loans are concerned, by contrast, Germany is only liable for 6.1% and France for 4.5%, in line with their respective capital and voting shares.[4]

Germany is liable for 27.1% and France for 20.3% of funding granted via the ESM permanent bail-out fund, but this credit has not been drawn by Greece to date. ESM funding may be used for a third bail-out programme now on the cards, which would still have to be negotiated. That would mean that the protection offered by the ECB's Outright Monetary Transactions programme (OMT) – the ECB's promise to buy unlimited amounts of government bonds of crisis-stricken countries – which has had a lasting interest-lowering effect on government bonds, would also extend to Greek government bonds. Greece is currently not included in this protection.

The liability of other euro countries goes beyond the funding they have supplied. If the Greek government were to declare insolvency, Greek banks would be at serious risk of going bankrupt without further support measures, because they hold a significant volume of their government's bonds and have received substantial refinancing credit from the Greek central bank only thanks to the Greek government guaranteeing the private bonds that the banks submitted as collateral. Bank insolvencies directly affect all of the Eurosystem's NCBs, because income from refinancing credit and from the acquisition of securities with self-created money – the so-called seignorage – is pooled among the Eurosystem's central banks based on the ECB capital key. Insolvencies also indirectly affect the national treasuries that are entitled to receive the seignorage income, and thus ultimately impact national taxpayers.

This state of affairs has been refuted to date with the argument that the Eurozone sovereigns are not obliged to recapitalise their central banks should losses occur. But that is beside the point. Shareholders also lose capital if their company posts losses, although they have no obligation to recapitalise it.[5] If a national central bank charges interest for loaning self-created money to banks in its jurisdiction, or uses that money to acquire interest-bearing securities from those banks, interest is due to all central banks in the Eurosystem on a pro rata basis according to their respective capital shares. National central banks have to pass on the interest to their respective treasuries, where it can be used to finance the national budget. Potential depreciation losses from such loans and securities purchased will be pooled in exactly the same

[1] The ECB capital key is, in principle, defined as a simple average of the population and GDP share of each euro country.

[2] See European Commission, *The Second Economic Adjustment Programme for Greece,* p. 6 (http://ec.europa.eu/economy_finance/publications/occasional_paper/2012/pdf/ocp94_en.pdf).

[3] See European Financial Stability Facility, EFSF Investor Presentation, p. 31 (http://www.esm.europa.eu/pdf/EFSF%20ESM%20New%20Investor%20presentation%2024%20April%202015.pdf).

[4] See IMF, *IMF Members' Quotas and Voting Power, and IMF Board of Governors,* http://www.imf.org/external/np/sec/memdir/members.aspx#total.

[5] See H.-W. Sinn, *The Euro Trap. On Bursting Bubbles, Budgets, and Beliefs,* Oxford University Press, Oxford 2014, especially Chapter 1, in the section entitled: "The European Central Bank", as well as Chapter 8, in the section entitled: "No Risk to Taxpayers?". See also H.-W. Sinn, "The Eurosystem Is Like a Corporation", *Der Tagesspiegel,* 11 February 2015, p. 16; and H.-W. Sinn, "The ECB's Money Does Not Fall Like Manna from Heaven", *Frankfurter Allgemeine Sonntagszeitung,* 15 March 2015.

way if the commercial banks or issuers of the bonds acquired by central banks declare insolvency and cannot service their debts. These losses are basically passed on to all national treasuries too. According to the current key, Germany is liable for 25.6% of potential write-offs. France is liable for 20.1%, Italy for 17.5%, and Spain for 12.6%.

The present value (or potential market value) of the seignorage profit distribution from existing loans and assets held by the Eurosystem's central banks is exactly equal to the central bank money minus the banks' minimum reserves, because the banks do not have to pay any interest on the latter. At the end of March 2015, this figure totalled 1.259 trillion euros. If potential increases to the monetary base due to inflation and future economic growth are added to this sum, the present value could even be 3 trillion euros.[6] This is the maximum potential liability in terms of the Eurozone's potential seignorage consumption. This sum roughly corresponds to the total annual gross domestic product of the six crisis countries combined, or is slightly more than Germany's GDP (3.230 trillion euros and 2.904 trillion euros, respectively, in 2014).

These statements need to be qualified in view of the fact that the ECB switched money supply in Greece back over to ELA funding in January 2015, as on previous occasions, reaching a volume of 68.5 billion euros at the end of March 2015. ELA funding is formally excluded from joint liability. At first sight, this limits the claim on the seignorage entitlements of the other NCBs.

However, no institution can be liable for more wealth than it actually possesses. This also applies to an NCB, as discussed in Section 3, for such a bank cannot meet its payment obligations to other central banks by printing fresh money, but only by transferring interest income earned from the private sector through permissible money creation, or by transferring equity. In practice, the Greek central bank's liability is restricted to its liable equity and its share in the interest on the portion of the Eurozone's monetary base that exceeds the commercial banks' obligatory minimum reserve. Only its entitlement to this part of the interest-revenue pool can be applied to meeting the interest-payment obligations towards the rest of the Eurozone in case the claims derived from national money creation disappear. However, these interest revenues are exactly those that the Greek central bank would have earned if it had not issued an over-proportionate amount of banknotes and an over-proportionate amount of book money that made the net payment orders to other countries possible, and which is measured by the Target balances. The rest of the interest payments, payable to the Greek central bank by the recipients of refinancing credit, are actually due to other central banks, but the Greek central bank would be unable to deliver the corresponding sums to them if Greek commercial banks go bankrupt and the collateral pledged for refinancing credit, or the securities they sold to the Greek central bank, lose their value. The only income that would remain would be the minuscule returns to the Greek central bank's equity capital.

It is conceivable that the Greek government would stand in for the liability instead, but it cannot and does not have to. It cannot, because in this scenario, the government would be insolvent; and it does not have to, because the ECB rules do not foresee compulsory calls for capital.

That is why the potential losses of the Eurosystem's remaining central banks extend also to that part of the money supply created in Greece that exceeds its proportionate issuance as defined by Greece's capital share in the Eurosystem by more than the Greek central bank's equity. The potential losses therefore correspond to Greece's total Target liabilities (end of March: 96.4 billion euros) and the liabilities due to its over-proportionate issuance of banknotes (14.0 billion euros), minus the Greek central bank's equity (4.5 billion euros), all of which adds up to 105.9 billion euros. Germany is liable for 26.3% of this amount, or 27.9 billion euros, while France is liable for 20.7%, or 22.0 billion euros.

Table 2 offers an overview of the maximum potential losses of selected euro countries if the Greek government were to declare insolvency, which would also affect the commercial banks and the issuers of the securities sold or pledged by those banks to the Greek central bank (in many cases the issuers were the commercial banks themselves).

Strictly speaking, these calculations apply to the case whereby Greece remains in the Eurozone despite its bankruptcy and its banks are funded via ELA. Should

[6] See W. Buiter and E. Rahbari, "Looking into the Deep Pockets of the ECB," Citi Economics, *Global Economics View,* 27 February 2012, http://blogs.r.ftdata.co.uk/money-supply/files/2012/02/citi-Looking-into-the-Deep-Pockets-of-the-ECB.pdf. The figure cited there of 3.4 trillion euros was reduced by the Eurosystem equity (including balancing items from revaluation) of 411 billion euros at that time. See European Central Bank, *Annual Report 2010,* Frankfurt am Main, p. 269.

Table 2
Maximum potential losses of other euro countries if the Greek government and Greek commercial banks declared insolvency and the collateral pledged for refinancing dredit loses its value (end of March 2015; billions of euros)

	DE	FR	IT	ES	NL	BE	AT	FI	PT	SK	IE	SI
First Eurozone rescue package (concluded)	15.2	11.4	10.0	6.7	3.2	1.9	1.6	1.0	1.1	0.0	0.3	0.2
First IMF rescue package (concluded; includes repayments until March 2015)	0.5	0.4	0.3	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0
Second Eurozone rescue package (EFSF)	38.1	28.6	25.2	16.7	8.0	4.9	3.9	2.5	0.0	1.4	0.0	0.7
Second IMF rescue package	0.7	0.5	0.4	0.2	0.3	0.2	0.1	0.1	0.1	0.0	0.1	0.0
ECB purchases of Greek government bonds*	4.5	3.6	3.1	2.2	1.0	0.6	0.5	0.3	0.4	0.2	0.3	0.1
Target liabilities and liabilities due to over-proportionate issuance of banknotes	29.1	22.9	19.9	14.3	6.5	4.0	3.2	2.0	2.8	1.2	1.9	0.6
minus Greek Central Bank equity	–1.2	–0.9	–0.8	–0.6	–0.3	–0.2	–0.1	–0.1	–0.1	–0.1	–0.1	0.0
Total	87.0	66.5	58.0	39.6	18.9	11.7	9.2	5.9	4.3	2.8	2.5	1.6

* Greek government bonds acquired by the Eurosystem's other NCBs as part of the Securities Markets Programme (SMP); own extrapolation of the stock as of the end of 2014.

Note: The shares of individual countries in the individual items of financial assistance are as follows: first Eurozone bail-out package: funding actually granted. First and second IMF packages: share in IMF capital. Second Eurozone package: new contribution key after opting out of Greece, Ireland, Portugal and Cyprus. Capital contribution to ESM: it is assumed here that Greece's capital contribution accrues to the other contributing countries according to their capital key. Purchases of Greek government bonds by other NCBs, Target liabilities, the over-proportionate issuance of banknotes, as well as the Greek central bank's claims on the Greek banking system: allocation according to the euro countries' respective current capital key in the ECB's equity excluding Greece.

Sources: See Figure 1 as well as IMF, *IMF Members' Quotas and Voting Power, and IMF Board of Governors;* European Commission, *The Second Economic Adjustment Programme for Greece;* European Financial Stability Facility, *EFSF Investor Presentation;* European Stability Mechanism, *ESM Treaty, consolidated version following Lithuania's accession to the ESM;* European Central Bank, *Capital Subscription.*

Greece exit, the situation becomes more complex. Although potential losses from the lost fiscal bail-out funds would be identical, it is unclear how exactly the currency changeover would take place. In all events the commercial relationship between the Greek commercial banks and the ECB, already constrained by the switch to ELA, would be terminated, while the euro-denominated Eurosystem's Target claim on the Greek NCB would remain as the measure of the refinancing credit given to Greek commercial banks that was used to buy goods, pay off debt or acquire assets abroad. If the Greek central bank were not in a position to settle these claims, the other central banks would share in the losses according to the ECB capital key, as shown in Table 2.

But what happens to the euro banknotes and the commercial banks' accounts with the Greek central bank in this case? If they are redenominated into drachma, the other countries will not suffer from a loss in refinancing claims resulting from the original act of issuing the euro banknotes. From this point of view, Greece's exit would be cheaper for the community, quite apart from the fact that an exit would presumably avoid a steadily rising flow of bail-out funds – and thus even greater losses in the long run.

However, if the euro banknotes were not exchanged into drachma, but remained in the hands of the Greek population, in effect representing a parallel currency, a loss would be sustained by the rest of the Eurosystem inasmuch as these banknotes would be crowded out within Greece by the new drachma banknotes and be used for purchases in the rest of the Eurozone. This would entail losses related to goods that in effect "disappear" from the rest of the Eurozone or, equivalently, losses in terms of a reduction in the potential for money creation via refinancing credit to commercial banks in the remaining Eurozone and, with it, the corresponding interest income. Euro banknotes that permanently circulate in Greece, on the contrary, would not per se lead to losses for the Eurosystem.

6. Loss of Competitiveness and Four Options for Greece

As was the case in the other euro countries afflicted by the crisis, the crisis in Greece arose from a credit bubble caused by the euro. As shown in Figure 6, Greek interest rates fell from 25% in 1992 to 5% in 2001, the year that Greece joined the euro. And as was explained in Box 2, this was due to the fact that investors no longer saw any devaluation risk and that they were induced by flawed regulatory systems to neglect the insolvency risk. The credit that flowed into the Greek economy triggered massive wage increases, but since these wage increases exceeded the economy's productivity growth, goods prices rose. This, in turn, destroyed the competitiveness of the Greek economy, which wasn't in great shape even before joining the euro.

A country's competitiveness depends partly on its productivity, as determined by local conditions like infrastructure, geographical location, education level of its population and the quality of its institutions. It also partly depends on factor costs, i.e. the cost of capital, land and labour. Even the most unproductive country on earth can be competitive if its factor costs are sufficiently low. Since capital costs are defined by the international capital market and land prices are mainly determined endogenously by other conditions, labour costs, which are often determined politically rather than by competition, tend to be the key. If they are too high compared to other factors, the country is too expensive. It will have chronic foreign trade deficits and foreign direct investors will steer clear of it. The resulting financing gaps have to be filled by loans from foreign private investors or foreign state institutions (including other central banks).

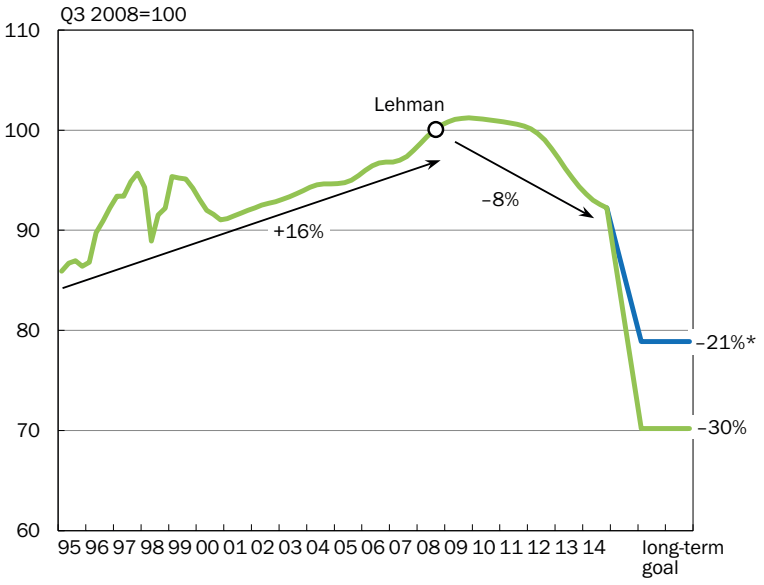
Figure 9 shows the evolution of the price level of goods produced in Greece (GDP deflator), which is the result of productivity and factor costs, relative to the rest of the Eurozone. The relative price index featured is standardised so that it reaches 100 at the time of the Lehman crisis. The figure shows that the Greek price level before the crisis rose faster than in other countries, with a real appreciation of 16% from the beginning of 1995 to the time of the Lehman-crisis. It was as if Greece still had the drachma and it had appreciated by 16%.

The relative price index shown also includes the open devaluations of the drachma that took place during the period prior to accession, and especially in the years 1995 and 1998. Without exchange rate fluctuations the real appreciation would have been 31%. However, exchange rate fluctuations are as relevant to competitiveness as price changes in the narrower sense of the term.

It is remarkable that Greece's relative price level only peaked in 2009, well after the crisis had broken out, because the government raised the wages of state employees, as described in Section 3, very sharply in 2008 and 2009. From the beginning of 1995 to the end of 2009, Greece effectively appreciated by 18%.

The relative price level did not fall noticeably until 2012, when the international community started to get serious about budget cuts after the massive haircut ap-

Figure 9
Price level of goods produced in Greece in relation to the rest of the Eurozone (index values)



* Revised calculation after the spring 2012 haircut.

Sources: European Commission, Economic and Financial Affairs, *Economic Databases and Indicators,* Price and Cost Competitiveness, Quarterly Real Effective Exchange Rates Compared to the (Rest of) Euro Area, Price Deflator GDP, Market Prices; L. H. W. Nielsen, Goldman Sachs Global Economics, "Achieving Fiscal and External Balance (Part 1): The Price Adjustment Required for External Sustainability", *European Economics Analyst,* Issue No. 12/01, 15 March 2012; and in the same publication, "External Rebalancing: Progress, but a Sizeable Challenge Remains", *European Economics Analyst,* Issue No. 13/03, 17 January 2013.

Note: The chart shows the original values of the real effective exchange rates, as published by the European Commission. These figures basically measure the relation of the price level of domestically produced goods (GDP deflator) relative to the trade-weighted average of the price level of Eurozone trade partners, whereby open exchange rate fluctuations before the introduction of the euro are included. The last data point in the chart corresponds to the 4th quarter of 2014.

plied to Greek debt. The decline in relative prices from the time of the Lehman crisis to the present (4th quarter of 2014) amounts to 8% (9% from the peak reached in the 4th quarter of 2009).

It must be borne in mind that the chart says nothing about the absolute level of Greek prices, but only about how this level changed relative to that of other countries. Absolute price index comparisons are difficult due to the different bundles of goods that are included in calculating the price indices. Furthermore, only the prices of the other euro countries are used for the purposes of comparison, for the euro prices of non-euro countries are co-determined by the exchange rate with the euro. Since the exchange rate is freely determined on the markets, the Eurozone as a whole can hardly be said to have a chronic competitiveness problem. It is implicitly assumed in the following discussion that the euro exchange rate in the aggregate is determined in a way that preserves competitiveness.

Moreover, it is important to note that the price level of the GDP deflator covers the goods produced by the country itself, and not the prices of consumer goods, for the latter include many imports, especially in the case of Greece, that should not be included in the assessment of a country's competitiveness.

Sometimes unit labour costs are used as a basis for comparisons instead of the price level. Although that may seem straightforward because it establishes a relation between hourly wage costs and productivity, in an economy affected by mass unemployment the productivity of those jobs remaining in the statistics is often high, because the less productive jobs have already been rationalised away, or because less productive companies have gone bankrupt. A comparison based on unit labour costs only makes sense if the layoff effect on productivity is subtracted out, which is a difficult undertaking.

In addition to actual developments in relative prices, Figure 9 also shows alternative estimates of the price adjustment required in Greece over a period of twenty years. These adjustments were calculated by the economics department of Goldman Sachs at different points of time and for different levels of debt, and are converted here so that they are comparable with the Eurostat data depicted in the curve. According to the Goldman Sachs calculations, Greece needs to depreciate by around 20% to 30% compared to the time of the Lehman crisis in order to restore its competitiveness and achieve long-term debt sustainability for the overall economy (and not just the government).[1] Figure 9 shows that Greece is on the right path thanks to the price restraint or disinflation exercised since 2012. However, by the end of 2014 it had only managed 8 percentage points along this path.

Basically there are only four responses, all ultimately unpleasant, to the country's lack of competitiveness. Three of these represent different ways of achieving the relative price adjustments, while the first one involves abandoning them.

(1) If the other countries accept Greece's lack of competitiveness, they must be prepared to continue to support it financially. This is the path towards a transfer union. In such a scenario, living standards in Greece would be maintained thanks to ever-rising amounts of public loans from the international community, while credit granted via the extension of maturity and lowering of interest rates to almost zero would gradually turn such loans into pure transfers. This path is not really attractive, even for Greece, because it infects the country with the Dutch Disease already discussed in Section 2.

(2) Greece could be forced to deflate. However, the magnitude of deflation needed would lead to mass bankruptcies because Greek debtors would no longer be in a position to service their debts. After all, it was a credit bubble that brought Greece into its unenviable situation. Unlike the Baltic countries, which pulled off a real devaluation, households, companies and the government in Greece are up to their ears in debt. There would also be major problems with tenants who are bound by long-term contracts. Moreover, such a policy would also encounter fierce resistance from the unions due to the necessary wage reductions.

The problems created by this option would be similar to those experienced by Germany during the global

[1] The target for the devaluation required and the resulting improvement in the balance of trade is defined such that the net external debt will fall below 25% of GDP over a period of 20 years. A first calculation showed a necessary price reduction of around 30% vis-à-vis the 3rd quarter of 2010. See L. H. W. Nielsen, Goldman Sachs Global Economics, "Achieving Fiscal and External Balance (Part 1): The Price Adjustment Required for External Sustainability", *European Economics Analyst,* Issue No. 12/01, 15 March 2012. After the interest-lowering bail-out measures and the haircut of 2012, the calculation was updated, resulting in a price reduction of around 15% to 25% vis-à-vis the 3rd quarter of 2012. See L. H. W. Nielsen, Goldman Sachs Global Economics, "External Rebalancing: Progress, but a Sizeable Challenge Remains", *European Economics Analyst,* Issue No. 13/03, 17 January 2013. The chart above uses the updated calculation of the average value of 20% for the necessary price adjustment vis-à-vis the 3rd quarter of 2012. Since Greece's relative price level had already fallen by around 1% between the 3rd quarter of 2008 and the 3rd quarter of 2012, this means that a price adjustment of 21% would be necessary compared to the 3rd quarter of 2008.

economic crisis of the 1920s and early 1930s. While England left the gold standard in 1931 and depreciated, Germany was bound to it by the Dawes and Young plans, which demanded reparation payments in non-devalued Reichsmarks, forcing Germany to realise an internal devaluation through Chancellor Brüning's austerity policy. German prices accordingly fell by 23%[2] from 1929 to 1933, while wages fell by as much as 27%.[3] There was, unfortunately, no alternative, as economic historian Knut Borchardt emphasises.[4] The austerity policy drove the country to the brink of civil war; what came in 1933 was even worse.

(3) The northern European countries could inflate. With its zero-interest policy and its policy of quantitative easing (QE) in particular, the ECB is currently trying to stoke inflation towards its goal of 2% per year for the Eurozone average. The smart thing to do for the southern European countries is to opt for a moderate austerity policy so as to avoid this inflation. If they do so and Germany inflates fairly quickly, by an annual rate of 4% for ten years, while the crisis countries including Greece (but without Ireland) remained at zero percent and France inflated at 1% and the other euro countries at an average of 2%, the necessary adjustment in relative goods prices would be largely achieved in ten years. It is impossible to predict whether the populations of the crisis-afflicted countries would be tolerant enough to accept such a ten-year period of stagnation, and whether Germany, conversely, would accept a 50% increase in its price level over that period.

(4) Greece can leave the European Monetary Union, return to the drachma and then devalue it. Although this path would be fast, there would be the danger of bank runs and massive capital flight, as seen in Cyprus in 2012 and 2013. Capital controls would have to be imposed, like in Cyprus, to limit transfers of cash abroad and the emptying of bank accounts.

None of these alternatives is really attractive, but since there are no other options available, politicians will have to make their choice.

[2] See Federal Statistics Office, *Fachserie* 17, prices, series 7, p. 2.
[3] See J. H. Müller, *Nivellierung und Differenzierung der Arbeitseinkommen in Deutschland seit 1925,* Duncker & Humblot, Berlin 1954.
[4] K. Borchardt, "Zwangslagen und Handlungsspielräume in der großen Wirtschaftskrise der frühen dreißiger Jahre: Zur Revision des überlieferten Geschichtsbildes", celebratory address given on 2 December 1978, *Jahrbuch der Bayerischen Akademie der Wissenschaften,* Beck, Munich 1979, p. 85–132.

7. Advantages and Disadvantages of a Grexit

Out of the four options outlined above, a Greek exit from the Eurozone and a return to the drachma may be the lesser evil, since the capital flight and the possible imposition of capital controls à la Cyprus would immediately cease if the currency were converted and the exchange rate left to float freely. The inevitable devaluation would attract fresh private capital. The lower the value of the drachma, the cheaper the Greek stocks and property, and the larger the number of investors, in particular wealthy Greeks who have absconded abroad, who would find it attractive to invest their funds in Greece. If private capital imports and exports balance each other out, a new equilibrium in the currency market would be achieved.

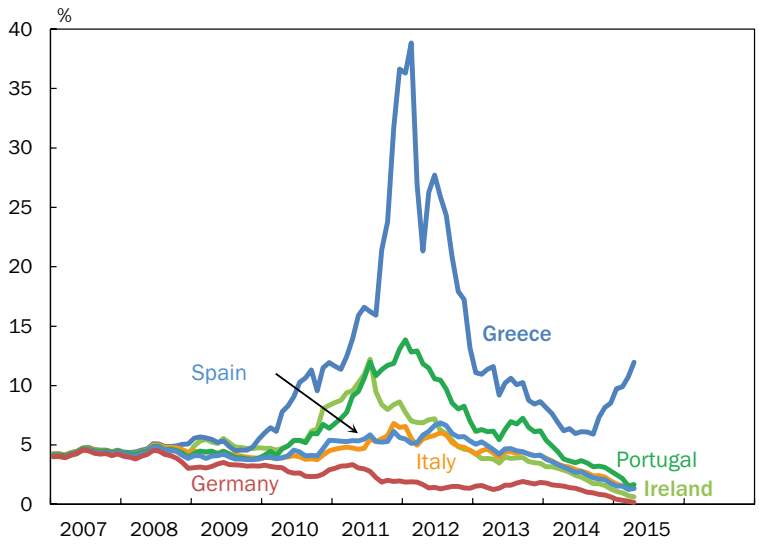
One argument put forth against a Grexit is that it would destabilise the euro, since other euro countries could become the object of speculation and would risk getting practically shot out of the common currency. While this risk cannot be simply waved away, the yields on the government bonds of the other crisis-afflicted countries tell a different story. As Figure 10 shows, they have all come down lately, while those on Greek government bonds have soared. Evidently, the markets do not see a particular risk of contagion. The Greek case has too many peculiarities for that.

The real risk is contagion at the political level if Greece does not leave the euro. As shown in Figure 1, Greece has received public credit amounting to 182% of its GDP. If such a level of help were to be given to the other crisis-afflicted countries, namely Ireland, Portugal, Spain, Italy, and Cyprus, whose combined GDP amounts to 3.05 trillion euros, the sum needed would be 5.5 trillion euros; in other words, a further 5.0 trillion euros would be needed on top of the help already provided to these countries. If we assume that 38% of this additional help, just as in the case of Greece, were given through the ECB and the rest through the ESM, Germany alone would have to shoulder around 1.6 trillion euros (almost 41% of the ECB help plus around 27% of the ESM help), which amounts to some 75% of its current public debt (2.17 trillion euros). Similarly, France would have to shoulder around 1.2 trillion euros or 61% of its current public debt (2.04 trillion euros). Such sums boggle the mind and could well push all of Europe into the abyss.

If, on the contrary, Greece were to exit, all parties involved would realise that help of comparable magni-

Figure 10

Yields* on crisis-country and German government bonds



*Effective interest rate for 10-year government bonds.
Source: Datastream.

tude as that given to Greece is not on the cards, prompting them to redouble their reforming efforts – concretely, a policy of moderation and austerity – in order not to lurch into a situation such as Greece's. That would usher in a process of disinflation, or even deflation, without which the necessary realignment of relative prices is not possible in the Eurozone. This insight will not arise out of statements and treaties, but solely through concrete action. How we react today to Greece's crisis will define the future of the European project. It is now that the decision will be made whether the Eurozone is to become a transfer and liability union in which parts of it will be on permanent support, succumbing thus to the Dutch Disease, or a currency union with well-functioning economies that are able to compete in the global arena because domestically they are competitive as well.

The political contagion effects resulting from a pooling of the investment risk à la Greece are huge, since such a pooling keeps the interest spreads low even when countries borrow excessively, because investors know that they will be rescued whenever danger looms. It also eliminates the natural debt brake that markets impose and lets the propensity to overborrow grow unhindered. This could be clearly observed in the years following the rescue operations of 2012, in particular after the announcement of the OMT programme by the ECB and the setting up of the permanent rescue fund ESM. The lowering of interest rates and the attendant relief for the government budget led to an increase in the debt-to-GDP ratio, despite the fact that the opposite had been agreed under the Fiscal Compact. The tendency to borrow can be so strong when risks are pooled that all moderation is lost, since the unitary European state and the power of a central government needed to keep this tendency in check is neither desired nor would it be tolerated by the peoples of Europe.

The ineffectiveness of mere treaties was amply demonstrated by the Stability and Growth Pact: its original rules were breached a hundred times and yet not once were the stipulated sanctions applied, because it was quickly and duly amended, and its stipulations grotesquely stretched.[1] The Fiscal Compact did not have a better destiny. The Compact was pushed through by Germany as a precondition to its participation in the permanent rescue fund ESM. Under its tenets, every EU country, starting in 2013, was to reduce its debt-to-GDP ratio over a three-year period by an average of one-twentieth of its excess over the 60% ceiling. In practice, however, the debt-to-GDP ratio of all crisis-afflicted countries (except Ireland), as well as that of many other countries, continued to rise. By the end of 2011, when the Fiscal Compact was negotiated, the crisis countries' average debt ratio amounted to 104.4% of GDP. Just three years later, by the end of 2014, it had risen to 121.8%.[2]

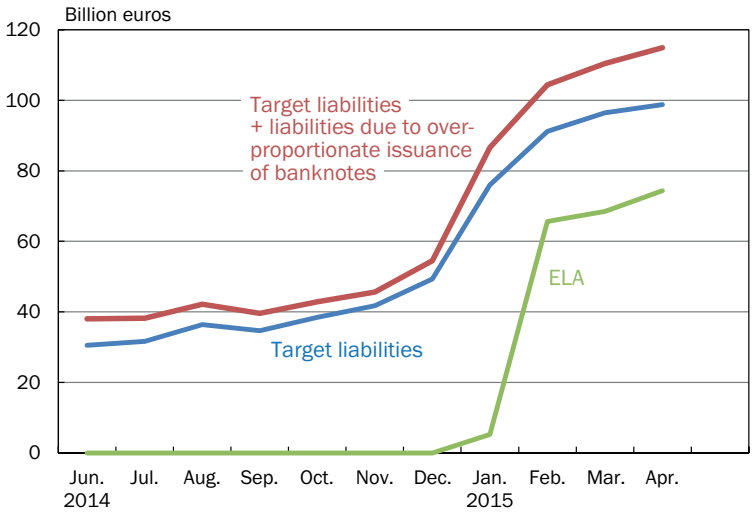
The risk of Europe sliding ever deeper into a debt morass is far greater than that of a financial crisis. The current path can lead to national crises that are difficult to handle and which can cause rifts between the peoples of Europe. The painful experiences with debt mutualisation in the USA before its Civil War should serve as a warning that these risks should not be taken lightly, and that the calls for short-term alleviation voiced by the finance industry and the creditors should be resisted.

The first US finance minister, Alexander Hamilton, converted the state debts into federal debt in 1791 – in other words, he mutualised them – in order to "cement" the nascent union, as he said. Alas, it turned

[1] See H.-W. Sinn, *The Euro Trap. On Bursting Bubbles, Budgets, and Beliefs,* Oxford University Press, Oxford 2014, Chapter 2, Section "The Lack of Fiscal Discipline".
[2] See Eurostat, *Press Release* 62/2012, 23 April 2012 or Eurostat, *Press Release* 72/2015, 21 April 2015.

out to be anything but cement. The excessive borrowing triggered both by the initial mutualisation of debt as well as by a second one, prompted in 1813 by a second war against Britain, fed a credit bubble that burst in 1837. In the following five years, 9 out of 29 federal states and territories went bankrupt. Nothing but animosity and strife resulted from the mutualisation of debt.[3] As Harold James, an economic historian at Princeton, put it, Hamilton's cement turned out to be dynamite. He also sees a direct line from the burst of the bubble to the Civil War of 1861. While the Civil War was triggered by the slavery question, it was further fuelled by the unsolved debt problem.[4] It was not until after this war that the US introduced a regime of individual liability for the states, which has underpinned the stability of US federalism to this day.

Figure 11
Greek Target liabilities, over-proportionate banknote issuance and ELA credit



Source: Bank of Greece, Financial Statements.

Greece would reap both advantages and disadvantages from a return to the drachma. The obvious disadvantage would be that it could no longer issue money that is accepted as legal tender elsewhere. This would incidentally remove its main funding source of the past months.

Most of all, it would lack an instrument to put pressure on the international community to grant further fiscal credit. The fact that Greece has not set up capital controls to stop capital flight, opting instead for refinancing its commercial banks with ELA credit, can also be explained by the Greek government and the Greek central bank (and also the representatives of other countries in a similar situation) being intent on stoking a potential threat point in case the country exits the currency union. In case of an exit, the portion of the ELA credit and refinancing credit, which was made possible by lowering the collateral requirements that exceeded the local liquidity needs and became Target liabilities through the issuance of payment orders abroad, would presumably have to be written off, as discussed in Section 5. On the other hand, the assets that Greeks have acquired abroad with those funds would remain permanently in Greek hands and the foreign debt that Greek citizens have paid off with the money created in Greece would be permanently retired. The ECB, in contrast, would presumably have to write off its euro claims on the Greek central bank, which would go bankrupt, given that all its assets would be denominated in devalued drachmas. Since everyone knows this, the willingness of the international community to prevent an exit by providing new fiscal rescue credit increases the higher the Target liabilities and ELA credit rise.

Since early 2015 until mid-May 2015, the Greek NCB has provided 80 billion in ELA credit to its commercial banks. Part of this sum has served to replace refinancing credit, the collateral for which was no longer being accepted by the ECB. Another portion served to offset the capital flight (as measured by the Target balances), as well as the cash withdrawals by Greek citizens who wanted to safeguard their wealth. Recently, the ELA credit volume has been rising by around one to two billion euros a week, and similarly is the sum of Greek Target liabilities and over-proportionate banknote issuance. And yet the two-third blocking majority to stop ELA credit has not been reached within the ECB Council.

Not only the Greek government, but also those of the countries that have given Greece credit directly or through the ECB, can reap some benefits, if only cosmetic ones, if Greece remains in the Eurozone, even if it has to be propped up with further public credit.

[3] See H.-W. Sinn, op. cit., in particular Chapter 9, Section "Learning from the United States", as well as B. U. Ratchford, *American State Debts,* Duke University Press, Durham 1941.
[4] See H. James, "Lessons for the Euro from History," *Julis-Rabinowitz Center for Public Policy and Finance,* 19 April 2012, http://www.princeton.edu/jrc/events_archive/repository/inaugural-conference/Harold_James.pdf.

New rescue credit replaces the credit generated through money creation and brings down the Target balances, thus helping to mollify public opinion. Furthermore, the new rescue credit helps the finance ministries of the creditor nations by making it unnecessary to book immediately write-offs or write-downs of fiscal credit granted to Greece, which would impact the deficits, destroy the illusion of free-of-cost Greek rescues and unsettle the voters. The fact that further fiscal credit for Greece would lead to a dangerous long-term debt spiral would not unduly bother governments keen on re-election and successful PR.

But let us get back to Greek considerations. A tangible disadvantage of an exit is that imports will become more expensive due to a devaluation of the drachma, lowering the population's living standard. Shortfalls in medicines and energy could occur, forcing the international community to further rescue action.

The rise in import prices, however, is exactly what offers the right incentive to turn to domestic products, primarily from Greek farmers who have hitherto been priced out of the market by the high wages prevailing in Greece. Paradoxically, despite the competitive advantage offered by ideal weather and soil, Greece under the euro has become a net importer of agricultural products. Greek agricultural imports lay lately (2013) one-fourth above the corresponding exports.[5] The boost in demand resulting from a Grexit would make it attractive for farmers to hire more workers, whose wage income would go to buy more domestic products. It is even likely that it would revive the cotton industry, which used to provide work to farmers and textile workers and which was decimated by the higher wages in the wake of introduction of the euro.

On the positive side, an open currency devaluation would have a decisive advantage over a real devaluation performed through a lowering of wages and prices: it would avoid bankruptcies among debtors and tenants, since not only their income would be now denominated in drachmas but their liabilities as well. In other words, the balance sheets of companies and households would remain intact.

This advantage of course does not extend to those who have foreign debts. Since these debts are denominated in euros, the Greek debtors affected – companies, banks or the government – would find themselves in difficulties. They would, however, experience exactly the same difficulties if the devaluation were to come through a lowering of wages and prices. There is no difference.

To solve this problem, Greece's foreign creditors would probably have to once again, just as in 2012, waive part of their claims. But they must presumably do so in any case. The losses to the other member states calculated in Section 5 are largely independent of whether the Greek institutions go bankrupt inside or outside the Eurozone. The difference compared to 2012 is that Greece's creditors are now almost exclusively public institutions, including the ECB, since the private investors used the past five years to bring their money to safety.

It must be stressed that the problems of a haircut are not caused by a Greek devaluation, but because the country is insolvent. If anything, the losses to foreign creditors will diminish rather than increase in the wake of a devaluation, since although such a devaluation increases the value of the debt in relation to income and therefore causes immediate liquidity and balance-sheet problems, in the medium term it leads to an improvement in the Greek trade balance, which measures the real cash flow between the Greek economy and the rest of the world. Only when this cash flow improves, which is the equivalent of the primary surplus for the public budget, the Greek economy will be in a position to service at least part of its debt. This should be kept in mind by those who raise the foreign debt problem as an argument against a devaluation.

In view of the stronger competitiveness of the Greek economy and the relief of its debt problem resulting from an open devaluation, as compared to a real devaluation through wage and price cuts, the Greek population would likely benefit despite the dearer imports. In particular, the younger generation of Greeks, who have been pushed into unemployment by the real revaluation brought about by the euro (Fig. 2), would benefit from the revival of the labour market.

It is likely that the entire Greek economy would perk up after exiting the currency union. A study published in 2012 by the Ifo Institute, which examined some 70 countries that have defaulted during the post-war period and subsequently devalued their currency, found that in almost all cases after only one or two difficult

[5] See World Trade Organization, Statistics database, Time series on international trade.

years an upturn in the economy occurred.[6] The same was independently found by a recent Oxford Economics study that was much quoted in the press.[7]

Even Argentina, which defaulted in 2001 and subsequently ditched its dollar peg, saw its economy flourish just two years after devaluing its currency, as the Ifo study shows, and grew steadily for an entire decade afterwards. The same occurred after the Asian crisis of the late 1990s, when several countries defaulted and then devalued their currencies.[8]

8. The Exit Procedure

What procedure would be followed if Greece were to exit the euro? The trigger for such an exit would presumably be an ECB decision to deny the Greek banks any further ELA funding from national money creation. Although such a veto would require a majority of two-thirds in the ECB Council, as already mentioned, it would likely be imposed if the Greek state were to receive no further funds from the ESM, because in that case a bankruptcy of Greece's commercial banks would be all but inevitable, given their close relationship with the state, turning ELA funds instantly into losses. There is in any case already strong opposition to ELA funding because Greece's banks are chronically undercapitalised and employ dubious accounting techniques. For example, banks include about 40% to 60% of their equity as deferred tax assets in their balance sheets; such assets are worthless if these banks continue to operate at a pretax loss.[1] It is also important to remember that, as shown in Section 3, the ECB's legal fiction that the Greek central bank can be held liable for its own ELA funding has no economic basis due to the total of the excessive refinancing credit granted, which is reflected in its Target liabilities. Commenting the weak situation of the Greek banks and the Greek government, Bundesbank President Weidmann recently stated[2] that "in view of the ban on the monetary financing of states, I think it is wrong to grant banks denied market access loans that they then use to buy the bonds of their own government, which itself is denied market access."

According to the rules, every large country, or a group of smaller countries, could block the ESM funds, because a blocking minority of 15% applies to these bail-out funds, instead of the blocking majority of two-thirds required for ELA funding. Blocking ELA funding via the indirect route of denying ESM credit would force the Greek government to introduce capital controls, because the banks would otherwise very quickly be plunged into a liquidity crisis.

Even with such controls, however, the banks would not be in a position to continue to provide the Greek government with credit because part of the money spent by it would not flow back to the banks, but would be hidden in suitcases, taken out of the country

[6] See B. Born, T. Buchen, K. Carstensen, C. Grimme, M. Kleemann, K. Wohlrabe, T. Wollmershäuser, "Austritt Griechenlands aus der Europäischen Währungsunion: Historische Erfahrungen, makroökonomische Konsequenzen und organisatorische Umsetzung", *ifo Schnelldienst* 65, 10, p. 9-37.

[7] Cf. "Lehren für Griechenland aus dem Scheitern von 70 Währungsunionen", *Welt Online,* 13 May 2015, http://www.welt.de/newsticker/bloomberg/article140879994/Lehren-fuer-Griechenland-aus-dem-Scheitern-von-70-Waehrungsunionen.html.

[8] See B. Born, T. Buchen et al., op. cit. and similarly, R. Fernández and J. Portes, "Argentina's Lessons for Greece", *Project Syndicate,* 9 February 2015, http://www.project-syndicate.org/print/greece-lessons-from-argentina-by-raquel-fern-ndez-and-jonathan-portes-2015-02.

[1] S. H. Hanke, "Yet another Greek Secret: The Case of Phantom Assets", *Cato Library,* 5 May 2015, http://www.cato.org/blog/yet-another-greek-secret-case-phantom-assets.

[2] J. Weidmann, "So weit hätte es nicht kommen müssen", Interview, *Handelsblatt* No. 92, 15–17 May 2015, p. 7, own translation.

or used to pay for imports. The scarcity of credit would force the Greek government to pay the wages of its employees, as well as its suppliers, with IOUs.

A similar situation was seen in 2009 and 2010 in California, when the state was on the brink of bankruptcy and received no support from the US federal government or from the Federal Reserve. Unlike the ECB, the US Fed does not buy any kind of government bonds from member states, and only allows the District Feds (in this case the Federal Bank of San Francisco) to boost their local economies by granting a very limited amount of extra credit via the printing press. If the extra credit results in net payment orders to the jurisdictions of other District Feds, the resulting Target balances (in the US called ISA balances[3]) must be settled by way of transferring ownership titles in marketable securities. That is why the state of California was forced to resort to issuing IOUs.[4] The IOUs were a substitute for money, because they could be used for certain payments, such as for electricity bills.

California overcame its problems because it only faced a liquidity issue. Even at the peak of the crisis, the Californian government's debt-to-GDP ratio was still below 10%. California also had no competitiveness problems and did not have to undergo a process of real devaluation.

In the case of Greece, the issuance of promissory notes would possibly be the first step towards reintroducing the new Greek currency, because restoring competitiveness by means of a complete currency conversion would then become plausible. In fact, this move would be advisable for Greece, because only when the new currency is legal tender can it be used to orchestrate the joint devaluation of all business contracts in a way that for legal reasons would hardly be possible within a monetary union.

Specifically, the introduction of the new currency would mean that all bank accounts, price tags, wage contracts, rental agreements and internal credit contracts would be converted into drachmas. The figures wouldn't change; only they would now be denominated in drachmas rather than euros. Such a change could happen overnight or over a weekend.

The international community should further accommodate Greece by forgiving the unsustainable part of its sovereign debt. It would be conceivable to redenominate all Greek public debt to drachmas, so that the devaluation of the new currency would automatically entail a haircut for foreign creditors. Since at present these creditors are overwhelmingly public institutions, such a step should be possible, even though the Greek debt agreement was placed under English law after the 2012 haircut. It has long been clear that Greece is unable to service its debt. It is now time that the creditor countries face this truth. At the meeting of the Euro Group in Riga on 24 April 2015, the IMF also took the position that a haircut should now be considered.[5] The foreign debt of the commercial banks and the Greek central bank will also have to be forgiven to some extent.

The Eurozone finance ministers are resisting such a solution, because they would have to post the write-down losses in a deficit-enhancing manner. But this is ultimately only a cosmetic problem that really should not matter, because if you throw new money after old in order not to have to show the losses, the burdens rise instead of fall. It is high time to bring more clarity and truth to public finances, which, in view of the huge shadow budgets that were set up in the wake of the euro bailout architecture, have lost their connection to reality.

In considering debt forgiveness, we should also include in the calculus the extensive property holdings of Greeks abroad, which, as reported in Section 3, amounted to 104 billion euros at the end of March, net of foreign ownership in Greece. The gross foreign assets of Greek citizens are certainly even much higher. The Greek government should be expected to take the taxation of these foreign assets into consideration in connection with receiving relief of its own debt, especially since some of this money is illegal and since foreign governments have already offered the Greek government their assistance in detecting these funds.[6]

Likewise, the international community can expect Greece to finally deliver on the promise it made in connection with the first rescue package – to privatise state assets to the amount of 50 billion euros in order to redeem part of its debt.[7]

[3] ISA stands for Interdistrict Settlement Account.

[4] See H.-W. Sinn, *The Euro Trap. On Bursting Bubbles, Budgets, and Beliefs.* Oxford University Press, Oxford 2014, especially Chapter 9: "Rethinking the Eurosystem".

[5] Cf. "IWF fordert von Eurozone Schuldenschnitt für Griechenland", *FAZ.net*, 5 May 2015, http://www.faz.net/agentur-meldungen/adhoc/iwf-fordert-von-eurozone-schuldenschnitt-fuer-griechenland-13575551.html.

[6] Cf. "Athen-Reise: Bern will Steuerabkommen", *Handelszeitung.ch,* 22 April 2015, http://www.handelszeitung.ch/politik/athen-reise-bern-will-steuerabkommen-772389#.

[7] See European Commission, "The Economic Adjustment Programme for Greece, Fourth Review – Spring 2011", *Occasional Papers* 82, July 2011, p. 16.

Help for Greece will also be needed with regard to essential imports that will become more expensive after the devaluation. These will need to be subsidised for a time by the international community. It would certainly be irresponsible if, for example, hospitals were no longer able to buy life-saving medications.

An important factor is that, despite a return to the drachma, Greek citizens should be allowed to keep the euro banknotes they possess. In the event of a currency conversion, there would be considerable technical difficulties involved in converting euro banknotes into drachmas: faced with a looming devaluation of the drachma, everyone would try to hide their euro notes or to get them out of the country.

Thus, foregoing the exchange of euro banknotes into drachmas would also be advisable given that it would take some time for the new banknotes to be printed. In the meantime, the euro could be used for cash payments in Greece, although it would no longer be legal tender and all invoices would be denominated in drachma. They would either be paid by credit card in drachmas or in cash in euros, at the daily market exchange rate. Accordingly, a cash withdrawal from a drachma account would initially be in euros that would be issued at the prevailing exchange rate, similar to when a tourist draws foreign currency from an ATM but the receipt is in his own currency.

Immediately after making the drachma legal tender, Greeks should be strictly forbidden from keeping euro-denominated accounts, from drawing contracts in euros with Greek compatriots, or from borrowing money in euros, in order to prevent the population from remaining de facto in the euro despite a formal exit, thus undermining the devaluation necessary for restoring competitiveness. After joining the EU, many Eastern European countries made the mistake of allowing the population to hold foreign currency loans and accounts. This is having the effect of hindering the necessary devaluations, and when devaluations are nevertheless effected, the states are forced to make high compensation payments to the banks, as was the case in Hungary. To avoid such difficulties, it would be better to follow the example of Turkey, which prohibited such foreign currency accounts and contracts. Even during the D-Mark era in Germany, foreign currency contracts were not allowed; exceptions had to be individually approved by the Bundesbank so as not to limit the scope of monetary policy.

When the new drachma banknotes are printed, the banks can convert completely to drachmas and pay them out when needed. In this way, some of the euro banknotes would gradually be replaced by drachma banknotes. Most of the displaced euro banknotes would be used for purchases from other euro countries. Another part would remain as a second circulating currency in the country, as is the case today in Eastern Europe or Turkey. All these countries have unofficial parallel currency systems, where only the domestic currency is legal tender.

The net amount of euro banknotes that flow abroad would lead to a real transfer of resources to Greece, at the expense of the international community, because the money would be used, on the one hand, for goods purchases, the acquisition of property and to pay off debt, and, on the other hand, would restrict the scope of the other central banks to lend freshly printed banknotes to the local commercial banks without creating inflation. If we assume, for example, that half of the euro banknotes issued by the Greek central bank, 41 billion euros by March 2015, leaves Greece, while the other half continues to circulate there, the international community would incur a loss of half the stock of bank notes issued in Greece, i.e. 20.5 billion euros, or 11.4% of Greek GDP (0.2% of euro area GDP without Greece). In light of the 325 billion euros, or 182% of Greek GDP, that have flowed on balance to Greece as public credit as of March 2015, and which will largely have to be waived, this is a manageable amount.

9. Concluding Remarks

Whichever way you look at it, from its euro accession based on dubious statistics through living on money-printing to the ineffective rescue packages which brought the Dutch Disease to the country, Greece's euro saga has been a true tragedy. In the half-decade from the spring of 2010, when the bail-out policy began, in blatant disregard of the Maastricht Treaty, until March 2015, public credit for Greece swelled by 264 billion euros, or 174% of its GDP, to now 325 billion euros, or 182% of GDP. And yet its economic output collapsed and unemployment more than doubled.

Five years ago, there were very different opinions about whether Greece's creditors should be rescued. Whereas politicians hesitantly accepted such a rescue, presumably under considerable pressure from America and after Sarkozy's exit threat,[1] economists gave clear warnings against such a move.[2] Former Bundesbank President Axel Weber and ECB chief economist Jürgen Stark resigned from office because of the policy decisions, which they considered misguided.[3] Some have speculated that the resignation of German Federal President Horst Köhler, who as State Secretary in the Finance Ministry had participated in the negotiations of the Maastricht Treaty and as former head of the IMF would have liked to have been involved in the decisions, also resigned because of this.[4]

At the time, the advocates of the rescue strategy had defensible reasons, because of the possible repercussions on the Eurozone and UK banks with exposure to Greece. Today, however, many of them acknowledge that their hopes and expectations regarding the strategy of buying time for Greece have not materialised.

Ireland has indeed recovered, but probably not because of the rescue operations and rather because of the early stage at which its bubble burst (Autumn 2006): the lack of international help available at that time forced it to carry out an extreme austerity policy, through which it depreciated in relation to the rest of the euro area with relative price cuts of 13% (see Section 2). Of this 13%, 12 percentage points were already realised by the end of 2010, when the bailout funds for Ireland became available. Spain carried out labour market reforms and devalued by 6%, but it still has a long way to go. Portugal and Italy, thanks to growing public debt, have continued to inflate as fast as the rest of the euro countries and have not been able to increase their competitiveness, but have at least started with some reforms.[5] In Greece, the rescue has manifestly failed, even though some reform steps have also been taken there. The bill is being footed by Eurozone taxpayers and by the Greek population, which is suffering from mass unemployment.

Trying to compensate for the lack of competitiveness by throwing more money at the problem has turned out to be an ineffective strategy that has ultimately only led to postponing a solution to the problems, causing growing frustration among the unemployed in Greece and the taxpayers of other countries. This is the climate that nurtured the radical political forces currently afflicting the international community with their extreme demands and aggressive public statements.

It is now time to implement "Plan B". This essay has tried to explain why and how this could be done. Whether Greece should leave the euro is its own decision alone. No one can or should try to expel it. Greece is an integral part of the EU and a cradle of European culture. It must be kept within the European community, politically and economically.

However, the Greek leadership certainly cannot assume that the country will continue to be kept above water with increasing funds from other countries as if there were a European financial equalisation scheme, and as if the Maastricht Treaty had established a federal state with joint and several liability. Reassurances that everything would be alright if only the debts were forgiven stand on feet of clay as long as austerity measures are not undertaken to reduce aspirations to a level commensurate with the country's productivity.

[1] See. Casqueiro, "Zapatero: 'Sarkozy amenazó con salirse del euro'", *El País,* 14 May 2010, http://elpais.com/diario/2010/05/14/espana/1273788002_850215.html.

[2] See W. Franz, C. Fuest, M. Hellwig and H.-W. Sinn, "Zehn Regeln zur Rettung des Euro", *Frankfurter Allgemeine Zeitung,* 18 June 2010, No. 138, p. 10. Cf. Sinn, H.-W., "Euro-Krise: Die Bedeutung des Gewährleistungsgesetzes für Deutschland und Europa", Sonderheft, *ifo Schnelldienst* 63, 2010, http://www.cesifo-group.de/DocDL/SD-10-10_0.pdf.

[3] This was elucidated by Jürgen Stark at a public lecture at the Hanns Seidel Foundation on 22 February 2013 in Munich. Weber made his opposition public already on 11 May 2010; see A. Weber, "Kaufprogramm birgt erhebliche Risiken", interview by J. Schaaf, *Börsen-Zeitung,* 11 May 2010, http://www.bundesbank.de/Redaktion/DE/Downloads/Presse/Publikationen/interview_mit_bundesbank-praesident_axel_weber.pdf?blob=publicationFile; see also "Brandbrief: Ex-Währungshüter Stark attackiert EZB-Kurs", *Der Spiegel,* No. 3, 14 January 2012, http://www.spiegel.de/wirtschaft/soziales/brandbrief-ex-waehrungshueter-stark-attackiert-ezb-kurs-a-809199.html.

[4] See Deutscher Bundestag, 17. Wahlperiode, Anfrage Peter Gauweiler, Drucksache 17/2223, pp. 56–57.

[5] See H.-W. Sinn, *The Euro Trap. On Bursting Bubbles, Budgets and Beliefs,* Oxford University Press, Oxford 2014, p. 124, Fig. 4.8.

Only when these aspirations are reduced to the extent that jobs become sufficiently competitive to make the full-employment trade deficit under normal rates of interest disappear can it be assumed that the country can cope on its own without incurring new foreign debt. As has been shown, this requires another, very significant real devaluation by means of relative wage and price reductions that are at least two-and–a-half times what the country has already achieved.

If a highly asymmetric inflation in the Eurozone does not come about, such a real devaluation without a Grexit is only possible via a strict austerity policy that will impose heavy burdens on Greek society for years to come. Given the complaints from Greece of a "humanitarian disaster" brought upon the nation in recent years despite the huge credit support of the international community, it can be assumed that the willingness to pursue such a policy is nonexistent.

To be sure, a country's aspiration level that exceeds competitiveness can be accommodated if there is a fiscal equalisation scheme compensating for the gap. However, such a fiscal equalisation scheme is an insurance contract based on reciprocity that needs the binding force that is only assured by the formal foundation of a unitary state.[6] There is no willingness among the European nations to take such a step.

Greece will thus have to decide for itself whether it can cope in the Eurozone without the credit support of the international community, that is, without new fiscal rescue measures and without further credit from the printing press of its central bank.

If it opts to exit the euro, the other Eurozone countries will surely not object, so that an amicable amendment to the Lisbon Treaty will be possible very quickly. An exit without a treaty change might also be possible if Greece formally remained a member of the Eurozone despite using the drachma. An exit from the euro does not and should not imply an exit from the EU, as some politicians who are weak on economic arguments maintain.

The new currency must be legal tender, however, so that rental and loan contracts may be devalued with it. The introduction of a second currency in the form of modified IOUs would indeed solve the Greek state's liquidity problem, but would be neither a solution to the competitiveness problem nor would it avert the danger of a wave of bankruptcies in the course of a real devaluation. The advantage afforded by an open vis-à-vis a real devaluation by means of reducing prices is only to be realised when the new currency becomes legal tender. This is sometimes overlooked in the debate over the role of second currencies. Nevertheless, for a transition period, the euro itself could be used as a second currency for cash transactions until a sufficient amount of drachmas have been distributed.

Greece should have the option of re-introducing the euro after a recovery and after achieving an exchange rate that is in line with its competitiveness. It is conceivable that after a waiting period of perhaps a decade the country could return to the Eurozone, assuming that it will by then have implemented the corresponding structural reforms. In any case, the door to the euro should be kept open for Greece.

The possibility of returning to the euro would help Greeks realise that they have not been pushed out, but that their economy has been given the chance to recover. The temporary withdrawal should be seen as something like a hospital stay. The patient takes a temporary leave, recovers and then returns in a healthy state.

The return option would have an advantage in that, together with the improvement of competitiveness through devaluation and the likely onset of economic recovery (Section 7), it would provide incentives to actually implement the necessary reforms. The strategy of inducing Greece to undertake reforms with an increasing amount of public money has clearly not worked. The possibility of returning to the euro could be a stronger and more credible incentive to make up for the omissions of the past.

The return option to the euro would also help make Greece immune to the lure of a stronger cooperation with Russia. Since some politicians seem to be flustered at the moment by arguments from Washington that a euro exit would carry foreign policy dangers, this is a particularly important aspect. The Russia argument is unconvincing, however, because Greece would remain an EU member after leaving the euro, and because many other EU states also have their own currencies. It would be unrealistic to turn all these

[6] See EEAG, *The EEAG Report on the European Economy: Rebalancing Europe,* CESifo, Munich 2013, https://www.cesifogroup.de/DocDL/EEAG-2013.pdf as well as H.-W. Sinn, *The Euro Trap. On Bursting Bubbles, Budgets, and Beliefs,* Oxford University Press, Oxford 2014, especially Chapter 9: "Rethinking the Eurosystem".

countries into Eurozone members just to prevent them from being attracted to Russia.

The necessary decisions should be taken quickly, since the Greek government is clearly playing for time in the negotiations. The more time passes, the more wealth Greek citizens will be able to transfer abroad and the more cash they will be able to withdraw from their bank accounts to limit depreciation losses in the event of a euro exit, making Greek state bankruptcy more expensive for the other countries. At the end of April, Greeks held 43 billion euros in banknotes, and the sum of past payment orders abroad as measured by the Target liabilities amounted to 100 billion euros. Both amounts have grown week by week by a combined one to two billion euros, which corresponds to up to 1.0 percent of Greek annual economic output. Seen in this light, Greece's negotiating position improves the longer the government manages to delay an agreement. To thwart this strategy and to prevent further accumulation of liability risks to other European countries, there is only one method: to stop the ELA loans, which would force the Greek government to impose capital controls.

One last point. Some have argued against a Greek exit by saying that it could succeed so well for Greece that other countries would want to imitate it. This is an odd argument, since it places membership in the euro above the economic prosperity of a country. The euro was introduced in order to secure peace and prosperity for the countries of Europe. It was an instrument of European economic policy, but not a goal in itself. Socialism, too, was once considered an instrument of economic policy. The professed goal was to secure freedom, equality and prosperity. When it became clear that this was not succeeding, the ruling party made socialism itself the goal. The euro brings enough advantages for Europe that it surely does not need to be discredited by a similar ideology.

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