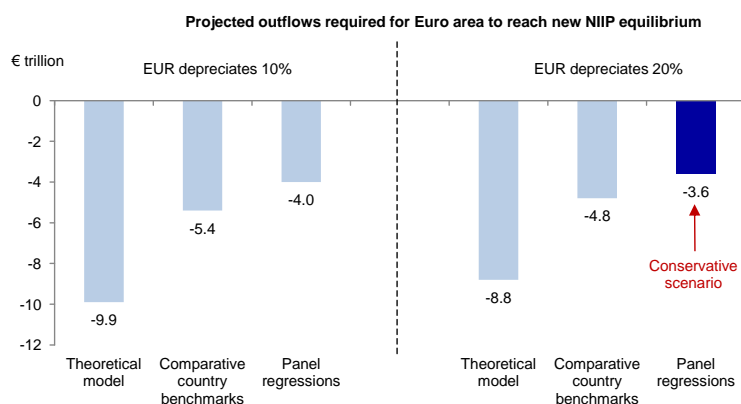




Euroglut here to stay: trillions of outflows to go

- Last year we introduced the *Euroglut* concept: the idea that the Euro-area's huge current account surplus reflects a very large pool of excess savings that will have a major impact on global asset prices for the rest of this decade. Combined with ECB quantitative easing and negative rates we argued that this surplus of savings would lead to large-scale capital flight from Europe causing a collapse in the euro and exceptionally depressed global bond yields.
- With European portfolio outflows currently running at record highs, this piece now asks: Can outflows continue? How big will they be? The answer to this question is critical: the greater the European outflows, the more the euro can weaken and the lower global bond yields can stay.
- We answer the outflows question by modeling the Euro-area's net international investment position (NIIP). Europe is currently a net debtor to the rest of the world, or in other words foreigners own more European assets than European investors do offshore. Due to a structural rise in saving preferences post-crisis, we argue that Europeans now have to become net creditors to the rest of the world.
- We find that the Eurozone's NIIP needs to rise from -10% of GDP to at least 30% for Europe's current account surplus to become sustainable. We estimate that this adjustment requires net capital outflows of at least 4 trillion euros, equivalent to a continuation of the current pace of outflows for the next eight years. The adjustment can materialize quicker if the euro weakens, or if the current account moderates, but is large irrespective.
- The current pace of capital outflows is even larger than our expectations from last year. Combined with our estimates above we revise our EUR/USD forecasts lower. We now see EUR/USD moving down to 1.00 by year-end, 90cents by 2016 and down to a trough of 85cents by 2017.
- We also foresee a continuation of low and flat global yield curves: Europe will continue being a major source of global imbalances for the rest of this decade.

Trillions of European outflows to come



Source: Deutsche Bank



Introduction

In a series of papers last year we introduced the Euroglut concept.¹ This was based on the idea that Europe's large current account surplus is the symptom of a huge pool of excess savings in the Euro-area. Seen from this angle, the current account surplus is not an obstacle to exchange rate weakness but an underlying cause: combined with ECB easing it is leading to large-scale capital flight as Europeans seek better investment opportunities abroad. Not only are these outflows causing euro weakness, but Europeans have emerged as important buyers of global assets, particularly fixed income. This in turn is keeping global bond yields exceptionally depressed.

Now that the outflows have started, this piece investigates how large they are likely to be. Our report is split into two parts. In the first part we provide an update on accelerating capital outflows over the last few months. In the second part, we estimate the total volume of outflows that we expect to materialize in coming years. We check our predictions against the actual experiences of South Korea and the Scandinavian economies, which have recently undergone similar transitions.

An Update on European Flows

Since 2011, the euro area has run larger and more sustained current account surpluses than at any time since its inception (Figure 1). These surpluses reflect unprecedented saving rates in all sectors. Aggregate deficits notwithstanding, European fiscal policy is tighter than ever. Households in most member states are still in the process of consolidating their balance sheets, and corporations use healthy profits to accumulate cash reserves and reduce leverage, rather than to invest (Figure 2).

Over the last few quarters, Europe's current account surplus has continued to grow, reaching a record €234bn at the end of last year. On the one hand, this reflects the slow recovery in domestic demand. On the other hand, the collapse in oil prices is now providing an additional boost to Europe's current account surplus and in turn, excess savings. Europe imported €340bn worth of oil in 2013. Assuming oil prices stabilize at current levels, we estimate that the Euro-area's current account surplus should approach €300bn over the course of this year.

We view current account surpluses of around 3% of GDP as reflecting Europe's post-crisis macroeconomic equilibrium, rather than a short-lived anomaly. Fiscal policy across the currency union is unlikely to revisit the excesses observed prior to 2012. High household saving rates are consistent with the aging of Europe's population, similar to Japan. Growing wealth and income inequalities between Europe's well-to-do and those chronically unemployed may further dampen consumption rates. Most important, however, is that fact that corporations are likely to remain net savers for the rest of the decade. Far from investing savings generated by the household sector, a lack of animal spirits in all but the most successful industries has turned Europe's corporate sector into a net accumulator. The saving-investment gap is self-perpetuating.

¹ See "Euroglut Revisited: The German Saver", 9 December 2014, and "Euroglut: a new phase of global imbalances", 6 October 2014.



Figure 1: Current account surpluses of 3% are here to stay

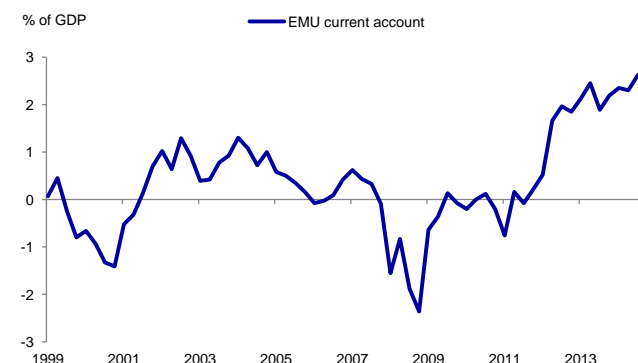
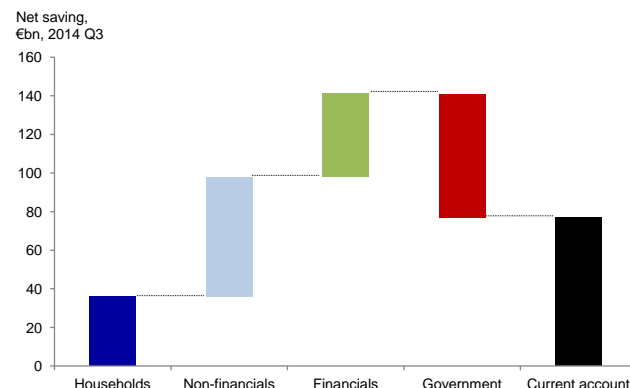


Figure 2: Both households and corporations are net savers



Surpluses recycled through record portfolio outflows

The large current account surplus combined with ECB easing and negative rates has initiated a process of large-scale capital outflows from Europe. In the second half of 2014, the euro area saw record net investment in foreign portfolio assets, reaching €135bn in Q4 (Figure 3), or around half a trillion in annualized terms. There are no indications that this trend has reversed or slowed down since. More than 90% of these flows are attributable to fixed income, though equity outflows accelerated markedly in December. At the same time, 'other investment' outflows—mostly bank lending in the European periphery—have diminished relative to the financial account. The expansion of the Eurozone's financial account has thus been driven by portfolio outflows. This stands in stark contrast to the pre-crisis decade, during which the Eurozone recycled its intermittent and meager surpluses through EUR-denominated loans to the European periphery.

Portfolio outflows from the euro area have been searching for yield overseas. Relative to the allocation of the EMU's total stock of foreign portfolio assets, recent flows have disproportionately favoured assets in the US, the UK, and Canada (Figure 4). By contrast, the rest of the European Union—Scandinavia and Eastern Europe—have seen disproportionately small outflows as a result of being drawn into the Eurozone's disinflationary spiral. If one plotted outflows against assets at the beginning of the four-quarter period, the new investor bias towards the Anglo-Saxon countries would be even starker.

Figure 3: Portfolio outflows at record highs

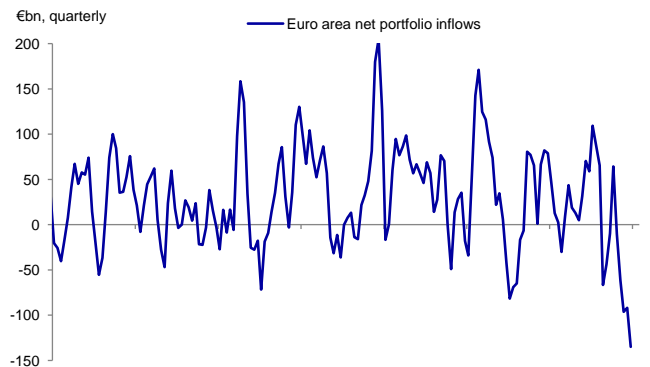
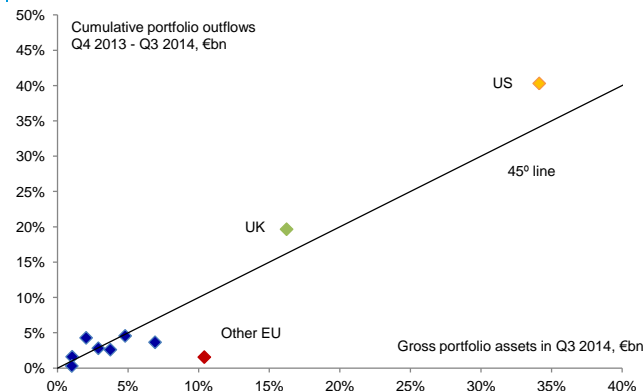


Figure 4: Disproportionate portfolio outflows to US and UK





Metamorphosis into global lender far from completed

At present, the euro area owes the world roughly 10% of its GDP. In other words, foreigners own more European assets than European investors do abroad. In theory, persistent current account surpluses will eventually offset this debt and turn the Eurozone into a net creditor. Once a mature lender, Europe's assets abroad will yield stable investment income on the current account. Interest and dividends will either be reinvested or spent on imports from the borrowing economies, thus being neutral or even bullish for the euro. While current account surpluses would tend to expand foreign wealth indefinitely, offsetting currency appreciation means that NIIPs eventually stabilize.² This is the situation in which Japan found itself during the 1990s, when a conservative BoJ, a large current account surplus and a large Japanese net foreign asset position led to persistent JPY strength.

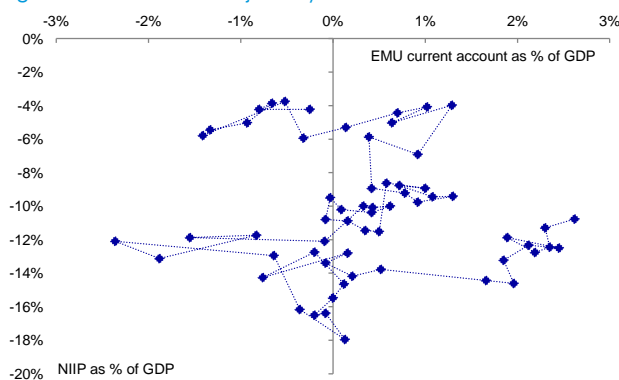
However, in contrast to Japan in the 1990s, the Eurozone is nowhere near the NIIP levels that would be consistent with its new equilibrium saving rate. It will take *trillions* of Euros worth of further investment outflows as well as significant depreciation over several years for the euro area to accumulate the net foreign wealth position associated with mature creditor economies.

Eurozone only just embarking on transition toward being a net creditor

Traditionally, the G10 universe has been divided into structural surplus and deficit economies. While Anglo-Saxon countries have tended to run current account deficits, Japan, Switzerland, Norway, and Sweden have generated consistent surpluses for decades. As a result of these highly persistent global imbalances, the two camps have accumulated large net international investment positions (NIIP), but with opposite signs.

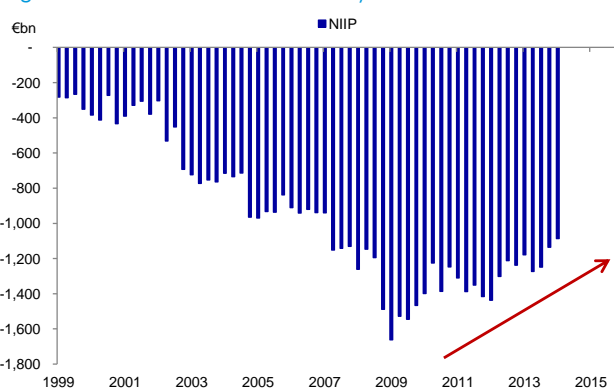
Upon its inception, the Eurozone joined the Anglo-Saxon cluster of net debtors, owing to the external debt positions of its member states. Its NIIP then quickly deteriorated as small and unstable current account surpluses were insufficient to offset negative valuation effects. The Lehman and most importantly the Eurozone crisis marked an inflection point, and the euro area has since run current account surpluses of a greater order of magnitude than during its first decade. Yet, coming from a low base level and still facing valuation headwind, the NIIP has improved only slowly and still stands at only -10% of GDP (Figure 5). Simple arithmetic suggests that this external debt ratio is not consistent with quarterly surpluses of

Figure 5: Stock-flow trajectory of Eurozone external account



Source: Deutsche Bank, ECB

Figure 6: Eurozone €1 trillion away from balanced NIIP



Source: Deutsche Bank, ECB

² In Switzerland, for instance, large and persistent current account surpluses since 1999 have failed to further expand the Swiss NIIP due to valuation losses. See Stoffels et al (2007), "Why Are Switzerland's Assets So Low? The Growing Financial Exposure of a Small Open Economy", Fed Staff Report 283. http://www.fednewyork.org/research/staff_reports/sr283.pdf



3% of GDP in the long-term, but as a cumulative stock measure, the NIIP is slow to reflect structural breaks in an economy's flow of funds.

The Eurozone's incomplete transition is palpable when plotting average G10 current accounts against the latest NIIPs for Q3 2014 (Figure 7). All countries except the euro-area are in balance, with their structural surpluses (deficits) reflected in positive (negative) NIIPs. The EMU cuts a lonely figure in the bottom-right quadrant.³ We also include South Korea, which scraped into the first quadrant only last autumn following a twenty-year adjustment process. Korea is further advanced than Europe on a similar path towards economic Japanization, and we therefore study its case in more detail below.

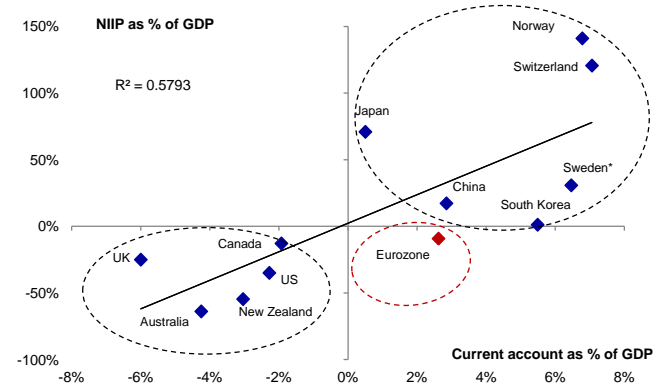
The external accounts of individual member states vary significantly.⁴ Germany and the Netherlands are long-standing creditor nations. Germany's NIIP remained positive even as it borrowed heavily during the 1990s to finance reunification. Yet while Germany and the Netherlands account for much of Europe's surpluses, others are behind the structural shift: the GIIPS. Those states whose governments were on the verge of default in 2012 had also accumulated vast external debt ratios. Post-2012 austerity extends to their external accounts, but despite painfully sustained current account surpluses, it will take a generation for Greece and Spain in particular to align their NIIPs with their newly found prudence.

Transition to mature creditor economy requires massive outflows or depreciation

While it is evident that the euro area's external account is still in transition, it is difficult to determine the precise level at which the NIIP will settle. Modeling stationary conditions for NIIPs is one of the most central and contentious exercises in modern macroeconomics. We use a few simple frameworks to estimate the Eurozone's 'equilibrium NIIP'. Although these estimates vary, they all yield the fundamental conclusion that the structural adjustment is far from over.

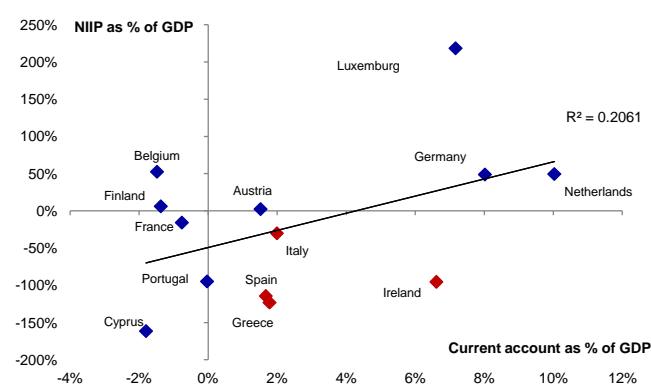
Theoretical debt sustainability models essentially ask what current account level is consistent with a country's steady-state growth rates and stationary external debt levels. We flip these models around: given current account surpluses are here to stay, as argued above, what is the implied stationary NIIP level? In a simple stock-flow model, akin to Domar's classic public debt model, the stationary condition for

Figure 7: Only Eurozone has stock-flow mismatch in G10



Source: Deutsche Bank, Haver. Note: Sweden's NIIP adjusted for hidden capital outflows, see footnote 3.

Figure 8: Transition driven by austerity in near-defaulters



Source: Deutsche Bank, Haver

³ We adjusted the official Swedish NIIP of -10% for the fact that about half of Swedish capital outflows in the past two decades have not been recorded in the balance of payments. We demonstrate this in detail in our recent report "Dark matter: the hidden capital flows that drive G10 exchange rates", 6 March 2015.

⁴ Note that the sums of the parts are different from the EMU aggregates due to intra-EMU exposures which cannot be stripped out cleanly. We also exclude recently joined member states as their NIIPs were affected by revaluation.



the NIIP is given by the ratio between the persistent current account level and the steady-state growth rate.⁵ Biasing the exercise against our argument by setting both variables to 2%, the NIIP would become stationary at around 100% of GDP.

Comparative benchmarking yields somewhat lower estimates. The vast foreign asset stocks accumulated by Switzerland or oil-rich Norway, both well over 100% of GDP, reflect greater saving rates and degrees of openness than the Eurozone will ever attain. Japan's NIIP of around 70% is in a more realistic ballpark. Ultimately, no single G10 country serves as a perfect benchmark, and the most plausible assumption is that the Eurozone as a whole will converge to a NIIP of around 50%, the level currently seen in its core group of creditor nations—Belgium, Germany and the Netherlands.

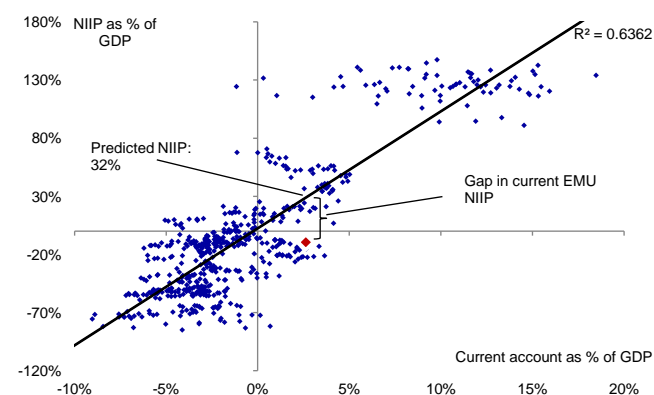
The most data-driven approach is to pool all stock-flow observations for the G10 space ex-Sweden over the past twenty years. A simple regression suggests that the current external surplus of the euro area would be consistent with a NIIP of roughly 30%. This estimate varies by a few percentage points as one includes time and/or country effects, effectively running a panel regression.⁶ Yet while this exercise necessarily remains indicative, it does yield a strong sense that the stock-flow adjustment will not be complete at any NIIP levels below 30% of GDP.

On this baseline estimate of a terminal NIIP of 30%, the Eurozone would need to invest 40% of its current GDP abroad in net terms, at least in the absence of valuation and growth effects. This amounts to a staggering €4 trillion. Assuming net financial outflows of €150bn a quarter, this process will take the rest of the decade.

With the exchange rate being endogenous to this process, the depreciation of the Euro caused by large outflows will both speed up the process and reduce the outflows required for adjustment. A weaker Euro raises the value of European assets abroad, mechanically raising the NIIP. A sensitivity analysis indicates that further Euro depreciation by 20% would shave only around 10% off the outflows implied by a 30% NIIP.

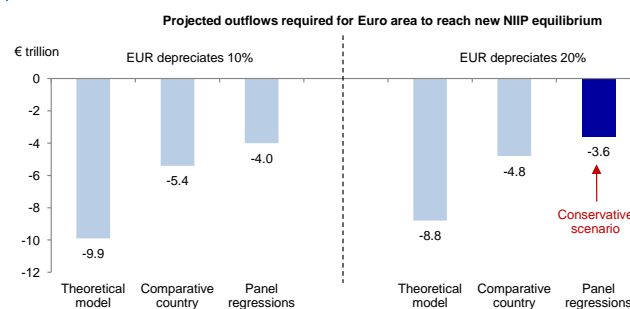
From an FX perspective, it is irrelevant whether adjustment is driven by capital outflows or exchange rate valuation: the Euro will continue to depreciate through either channel. Importantly, the fall in the Euro since Q3 cannot have fully priced

Figure 9: Illustrative regression analysis



Source: Deutsche Bank, Haver

Figure 10: €4 trillion of capital outflows required even with 20% depreciation



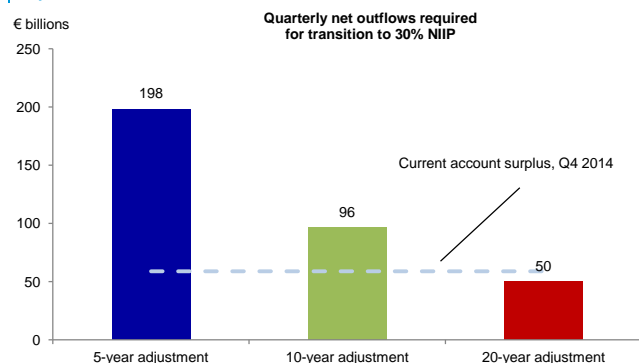
Source: Deutsche Bank

⁵ Papadimitriou et al (2011), *Contributions to Stock-Flow Modelling*, Palgrave Macmillan, chapter 10.

⁶ In practice, the NIIP is of course endogenous to the current account, but we only use the regression to explore the stock-flow relationship in the data, rather than to identify causal mechanisms. This caveat equally applies to non-stationarity.

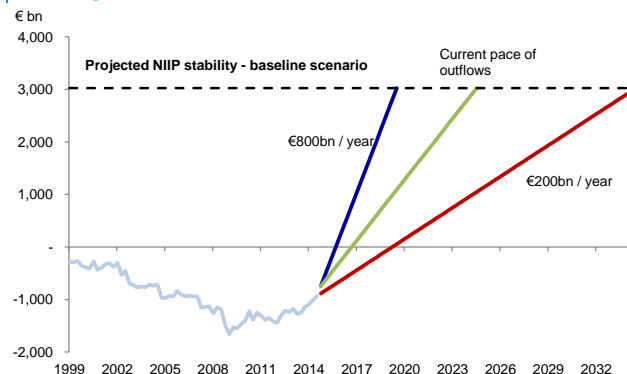


Figure 11: Pace of outflows determines how long adjustment will take



Source: Deutsche Bank

Figure 12: NIIP will not stabilize for years depending on size of Euroglut



Source: Deutsche Bank

these outflows due to its sheer magnitude. Even the speculative FX market would be too small to price this immense shift in Europe's economy *ex ante* even if participants fully understood the massive implications of Euroglut.

Ultimately, portfolio outflows are likely to exceed the euro area's current account surplus even under extremely conservative assumptions as to the pace of NIIP adjustment. The current pace of portfolio outflows is double the current account surplus, explaining the recent weakness of the Euro. Even if one assumes that the pace of adjustment slows and that it would take a decade for the new NIIP equilibrium to be reached, portfolio outflows would still exceed the current account surplus, maintaining downward pressure on EUR.

Case Studies of Other Mature Creditor Transitions

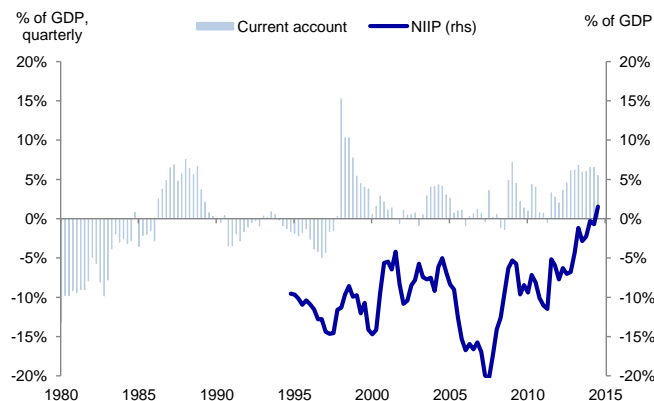
The recent Japanization of South Korea

South Korea provides a particularly relevant and timely precedent for assessing the speed with which Europe will transition towards a 21st-century Japan from a NIIP perspective. The Korean NIIP turned positive only last autumn, for the first time since the data began to be collected in 1994. This coincided with a surge in capital outflows and depreciation resulting from the Bank of Korea's decision to react to Japanese quantitative easing. This was certainly the final push the NIIP required to slide into positive territory (Figure 12). The episode illustrates how responsive capital flows, exchange rates, and ultimately NIIPs are to the Japanization of monetary policy. South Korean outflows over the past six months certainly mirror and anticipate Euroglut.

That said, structural breaks in monetary policy rarely turn perennial debtors into creditor economies overnight. On closer inspection, Korea's transition to a positive NIIP was a structural adjustment spanning almost twenty years (Figure 13). During the Asian financial crisis of 1997, the Korean economy experienced a sudden current account reversal. At the time, Korea's NIIP stood at roughly 10% of GDP, similar to the euro area today. Since then, quarterly current account surpluses have averaged at 3% of GDP. However, despite running persistent surpluses and starting from a moderate level of external debt, it took Korea two decades to become a creditor nation. Moreover, it is far from being a mature creditor economy yet: surpluses are predominantly earned through net exports rather than investment income from foreign assets.

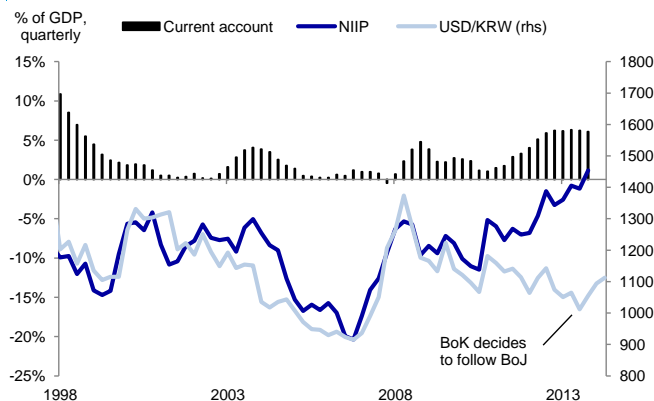


Figure 13: Korea's NIIP accelerated by Japanization of BoK but was a long time in waiting



Source: Deutsche Bank, Haver, [Lane and Milesi-Ferretti \(2007\)](#)

Figure 14: Debt reduction driven by transactions, but Japanization of BoK means depreciation helps transition



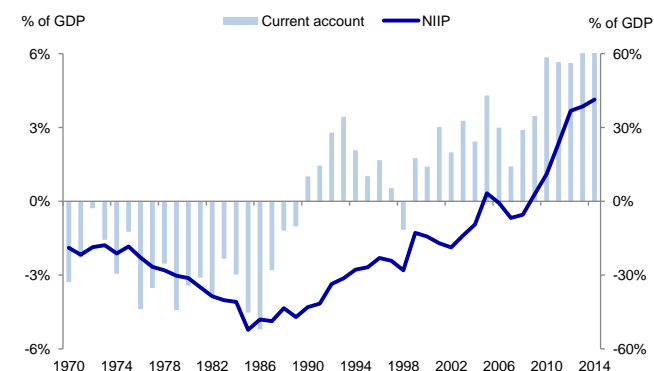
Source: Deutsche Bank, Haver

The Korean case therefore illustrates two of our fundamental predictions regarding Euroglut: QE will accelerate it powerfully, but it will still take the rest of the decade to play out fully.

The Scandinavian economies similarly transformed themselves into net creditor nations in the 1990s. Denmark experienced a current account reversal in 1987 and has run large surpluses since. Denmark was considerably more indebted than the Eurozone by the time it consolidated its external account, with the NIIP standing at -50% of GDP, so the transition inevitably took longer than it will in the Eurozone. What is remarkable about Denmark's case, nevertheless, is that its NIIP has not stabilized since turning positive in 2009, despite exceeding 30% of GDP. As a small open economy, Denmark's surpluses are bound to be larger than the Eurozone's, but its adjustment supports our view that the euro area will continue to accumulate foreign assets until its NIIP reaches levels above 30% of GDP or so.

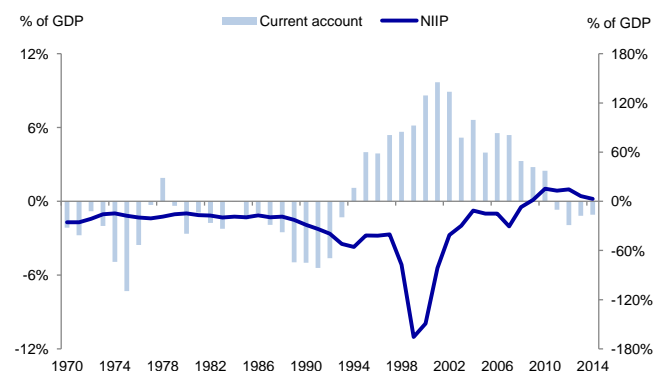
Finland is an interesting case study in that it illustrates that a small positive NIIP does not necessarily turn an economy into a mature creditor nation à la Japan. The country started its current account consolidation in 1993, following a severe banking crisis. The trajectory of its NIIP over the next two decades illustrates the importance of valuation effects. On joining the Euro at an overvalued rate, its net debt position deteriorated rapidly before stabilizing as the Euro depreciated. Since these initial hiccups, large current account surpluses gradually pulled Finland towards being a net creditor nation. Most interestingly, the recent reversal of the

Figure 15: Denmark's NIIP yet to stabilize after 25 years of surpluses



Source: Deutsche Bank, Haver, [Lane and Milesi-Ferretti \(2007\)](#)

Figure 16: Finland only recently turned into a net lender, but far from being a mature one



Source: Deutsche Bank, Haver, [Lane and Milesi-Ferretti \(2007\)](#)



current account shows that despite two decades of large surpluses, Finland never turned into a mature credit economy. The peak NIIP of 15% in 2010 failed to generate considerable investment income to stabilize the current account against trade deficits. If Europe is to live off its foreign assets one day, it will probably need to accumulate a much larger NIIP, similar to Japan, Norway, or Switzerland.

Conclusion

Since we first introduced our Euroglut thesis last September the European current account surplus has reached a new record high, while EUR/USD has had its biggest yearly drop since 1985. We view the two developments as entirely consistent: the Eurozone's current account surplus is a symptom of a large pool of excess savings looking for investable assets abroad. Negative rates and quantitative easing from the ECB have engineered an acute problem of asset shortage in Europe, in turn initiating a process of large-scale capital flight. Over the last few months, more than €300bn worth of capital has left Europe.

In this paper we take our analysis a step further, and attempt to estimate the scale of likely future outflows. We argue that, like Japan, Europeans will need to turn into net creditors to the rest of the world to mirror structurally higher saving preferences. In turn this means that Europe's negative net international investment position needs to turn positive. Europeans will need to own more foreign assets than foreigners do in Europe. We estimate that this new equilibrium will require at least 4 trillion EUR of additional outflows from Europe over the next few years.

The investment implications of our Euroglut thesis therefore remain intact.

First, we continue to expect broad-based euro weakness. European outflows have been even bigger than our initial (high) expectations over the last six months, so we are revising our EUR/USD forecasts lower. We now foresee a move down to 1.00 by the end of the year and a new cycle low of 85cents by 2017.

Second, we expect continued European inflows into foreign assets, particularly fixed income. Our earlier work demonstrated that the primary destination of European outflows will be core fixed income markets in the rest of the world, and evidence over the last few months supports these trends: most European outflows have gone to the US, UK and Canada.

Finally, we see *Euroglut* as continuing to constrain monetary policy across the European continent for the foreseeable future. Since our paper in September central banks in Switzerland, Norway, Sweden, Denmark, the Czech Republic and Poland have all cut rates (most to negative), intervened in FX markets or started QE. All these countries run large current account surpluses. Through a unique mix of large excess savings and structurally low yields, the entire European continent will continue to be a major source of global imbalances for the rest of this decade.

Robin Winkler, London

+44 20 7547 1841

George Saravelos, London

+44 20 7547 9118



Appendix 1

Important Disclosures

Additional information available upon request

For disclosures pertaining to recommendations or estimates made on securities other than the primary subject of this research, please see the most recently published company report or visit our global disclosure look-up page on our website at <http://gm.db.com/ger/disclosure/DisclosureDirectory.eqsr>

Analyst Certification

The views expressed in this report accurately reflect the personal views of the undersigned lead analyst(s). In addition, the undersigned lead analyst(s) has not and will not receive any compensation for providing a specific recommendation or view in this report. George Saravelos/Robin Winkler



Regulatory Disclosures

1. Important Additional Conflict Disclosures

Aside from within this report, important conflict disclosures can also be found at <https://gm.db.com/equities> under the "Disclosures Lookup" and "Legal" tabs. Investors are strongly encouraged to review this information before investing.

2. Short-Term Trade Ideas

Deutsche Bank equity research analysts sometimes have shorter-term trade ideas (known as SOLAR ideas) that are consistent or inconsistent with Deutsche Bank's existing longer term ratings. These trade ideas can be found at the SOLAR link at <http://gm.db.com>.

3. Country-Specific Disclosures

Australia and New Zealand: This research, and any access to it, is intended only for "wholesale clients" within the meaning of the Australian Corporations Act and New Zealand Financial Advisors Act respectively.

Brazil: The views expressed above accurately reflect personal views of the authors about the subject company(ies) and its(their) securities, including in relation to Deutsche Bank. The compensation of the equity research analyst(s) is indirectly affected by revenues deriving from the business and financial transactions of Deutsche Bank. In cases where at least one Brazil based analyst (identified by a phone number starting with +55 country code) has taken part in the preparation of this research report, the Brazil based analyst whose name appears first assumes primary responsibility for its content from a Brazilian regulatory perspective and for its compliance with CVM Instruction # 483.

EU countries: Disclosures relating to our obligations under MiFiD can be found at <http://www.globalmarkets.db.com/riskdisclosures>.

Japan: Disclosures under the Financial Instruments and Exchange Law: Company name - Deutsche Securities Inc. Registration number - Registered as a financial instruments dealer by the Head of the Kanto Local Finance Bureau (Kinsho) No. 117. Member of associations: JSDA, Type II Financial Instruments Firms Association, The Financial Futures Association of Japan, Japan Investment Advisers Association. This report is not meant to solicit the purchase of specific financial instruments or related services. We may charge commissions and fees for certain categories of investment advice, products and services. Recommended investment strategies, products and services carry the risk of losses to principal and other losses as a result of changes in market and/or economic trends, and/or fluctuations in market value. Before deciding on the purchase of financial products and/or services, customers should carefully read the relevant disclosures, prospectuses and other documentation. "Moody's", "Standard & Poor's", and "Fitch" mentioned in this report are not registered credit rating agencies in Japan unless "Japan" or "Nippon" is specifically designated in the name of the entity.

Malaysia: Deutsche Bank AG and/or its affiliate(s) may maintain positions in the securities referred to herein and may from time to time offer those securities for purchase or may have an interest to purchase such securities. Deutsche Bank may engage in transactions in a manner inconsistent with the views discussed herein.

Qatar: Deutsche Bank AG in the Qatar Financial Centre (registered no. 00032) is regulated by the Qatar Financial Centre Regulatory Authority. Deutsche Bank AG - QFC Branch may only undertake the financial services activities that fall within the scope of its existing QFCRA license. Principal place of business in the QFC: Qatar Financial Centre, Tower, West Bay, Level 5, PO Box 14928, Doha, Qatar. This information has been distributed by Deutsche Bank AG. Related financial products or services are only available to Business Customers, as defined by the Qatar Financial Centre Regulatory Authority.

Russia: This information, interpretation and opinions submitted herein are not in the context of, and do not constitute, any appraisal or evaluation activity requiring a license in the Russian Federation.

Kingdom of Saudi Arabia: Deutsche Securities Saudi Arabia LLC Company, (registered no. 07073-37) is regulated by the Capital Market Authority. Deutsche Securities Saudi Arabia may only undertake the financial services activities that fall within the scope of its existing CMA license. Principal place of business in Saudi Arabia: King Fahad Road, Al Olaya District, P.O. Box 301809, Faisaliah Tower - 17th Floor, 11372 Riyadh, Saudi Arabia.

United Arab Emirates: Deutsche Bank AG in the Dubai International Financial Centre (registered no. 00045) is regulated by the Dubai Financial Services Authority. Deutsche Bank AG - DIFC Branch may only undertake the financial services activities that fall within the scope of its existing DFSA license. Principal place of business in the DIFC: Dubai International Financial Centre, The Gate Village, Building 5, PO Box 504902, Dubai, U.A.E. This information has been distributed by Deutsche Bank AG. Related financial products or services are only available to Professional Clients, as defined by the Dubai Financial Services Authority.

Risks to Fixed Income Positions

Macroeconomic fluctuations often account for most of the risks associated with exposures to instruments that promise to pay fixed or variable interest rates. For an investor that is long fixed rate instruments (thus receiving these cash flows), increases in interest rates naturally lift the discount factors applied to the expected cash flows and thus cause a loss. The longer the maturity of a certain cash flow and the higher the move in the discount factor, the higher will be the loss. Upside surprises in



inflation, fiscal funding needs, and FX depreciation rates are among the most common adverse macroeconomic shocks to receivers. But counterparty exposure, issuer creditworthiness, client segmentation, regulation (including changes in assets holding limits for different types of investors), changes in tax policies, currency convertibility (which may constrain currency conversion, repatriation of profits and/or the liquidation of positions), and settlement issues related to local clearing houses are also important risk factors to be considered. The sensitivity of fixed income instruments to macroeconomic shocks may be mitigated by indexing the contracted cash flows to inflation, to FX depreciation, or to specified interest rates - these are common in emerging markets. It is important to note that the index fixings may – by construction – lag or mis-measure the actual move in the underlying variables they are intended to track. The choice of the proper fixing (or metric) is particularly important in swaps markets, where floating coupon rates (i.e., coupons indexed to a typically short-dated interest rate reference index) are exchanged for fixed coupons. It is also important to acknowledge that funding in a currency that differs from the currency in which the coupons to be received are denominated carries FX risk. Naturally, options on swaps (swaptions) also bear the risks typical to options in addition to the risks related to rates movements.



David Folkerts-Landau
Group Chief Economist
Member of the Group Executive Committee

Raj Hindocha
Global Chief Operating Officer
Research

Marcel Cassard
Global Head
FICC Research & Global Macro Economics

Richard Smith and Steve Pollard
Co-Global Heads
Equity Research

Michael Spencer
Regional Head
Asia Pacific Research

Ralf Hoffmann
Regional Head
Deutsche Bank Research, Germany

Andreas Neubauer
Regional Head
Equity Research, Germany

Steve Pollard
Regional Head
Americas Research

International Locations

Deutsche Bank AG
Deutsche Bank Place
Level 16
Corner of Hunter & Phillip Streets
Sydney, NSW 2000
Australia
Tel: (61) 2 8258 1234

Deutsche Bank AG
Große Gallusstraße 10-14
60272 Frankfurt am Main
Germany
Tel: (49) 69 910 00

Deutsche Bank AG
Filiale Hongkong
International Commerce Centre,
1 Austin Road West, Kowloon,
Hong Kong
Tel: (852) 2203 8888

Deutsche Securities Inc.
2-11-1 Nagatacho
Sanno Park Tower
Chiyoda-ku, Tokyo 100-6171
Japan
Tel: (81) 3 5156 6770

Deutsche Bank AG London
1 Great Winchester Street
London EC2N 2EQ
United Kingdom
Tel: (44) 20 7545 8000

Deutsche Bank Securities Inc.
60 Wall Street
New York, NY 10005
United States of America
Tel: (1) 212 250 2500

Global Disclaimer

The information and opinions in this report were prepared by Deutsche Bank AG or one of its affiliates (collectively "Deutsche Bank"). The information herein is believed to be reliable and has been obtained from public sources believed to be reliable. Deutsche Bank makes no representation as to the accuracy or completeness of such information.

Deutsche Bank may engage in securities transactions, on a proprietary basis or otherwise, in a manner inconsistent with the view taken in this research report. In addition, others within Deutsche Bank, including strategists and sales staff, may take a view that is inconsistent with that taken in this research report.

Opinions, estimates and projections in this report constitute the current judgement of the author as of the date of this report. They do not necessarily reflect the opinions of Deutsche Bank and are subject to change without notice. Deutsche Bank has no obligation to update, modify or amend this report or to otherwise notify a recipient thereof in the event that any opinion, forecast or estimate set forth herein, changes or subsequently becomes inaccurate. Prices and availability of financial instruments are subject to change without notice. This report is provided for informational purposes only. It is not an offer or a solicitation of an offer to buy or sell any financial instruments or to participate in any particular trading strategy. Target prices are inherently imprecise and a product of the analyst judgement. The financial instruments discussed in this report may not be suitable for all investors and investors must make their own informed investment decisions. Stock transactions can lead to losses as a result of price fluctuations and other factors. If a financial instrument is denominated in a currency other than an investor's currency, a change in exchange rates may adversely affect the investment. Past performance is not necessarily indicative of future results. Deutsche Bank may with respect to securities covered by this report, sell to or buy from customers on a principal basis, and consider this report in deciding to trade on a proprietary basis. Prices are current as of the end of the previous trading session unless otherwise indicated and are sourced from local exchanges via Reuters, Bloomberg and other vendors. Data is sourced from Deutsche Bank and subject companies.

Derivative transactions involve numerous risks including, among others, market, counterparty default and illiquidity risk. The appropriateness or otherwise of these products for use by investors is dependent on the investors' own circumstances including their tax position, their regulatory environment and the nature of their other assets and liabilities and as such investors should take expert legal and financial advice before entering into any transaction similar to or inspired by the contents of this publication. Trading in options involves risk and is not suitable for all investors. Prior to buying or selling an option investors must review the "Characteristics and Risks of Standardized Options," at <http://www.theocc.com/components/docs/riskstoc.pdf>. If you are unable to access the website please contact Deutsche Bank AG at +1 (212) 250-7994, for a copy of this important document.

The risk of loss in futures trading and options, foreign or domestic, can be substantial. As a result of the high degree of leverage obtainable in futures and options trading losses may be incurred that are greater than the amount of funds initially deposited.

Unless governing law provides otherwise, all transactions should be executed through the Deutsche Bank entity in the investor's home jurisdiction. In the U.S. this report is approved and/or distributed by Deutsche Bank Securities Inc., a member of the NYSE, the NASD, NFA and SIPC. In Germany, this report is approved and/or communicated by Deutsche Bank AG, a joint stock corporation with limited liability incorporated in the Federal Republic of Germany with its principal office in Frankfurt am Main. Deutsche Bank AG is authorised under German Banking Law (competent authority: European Central Bank) and is subject to supervision by the European Central Bank and by BaFin, Germany's Federal Financial Supervisory Authority. In the United Kingdom, this report is approved and/or communicated by Deutsche Bank AG acting through its London Branch at Winchester House, 1 Great Winchester Street, London EC2N 2DB. Deutsche Bank AG in the United Kingdom is authorised by the Prudential Regulation Authority and is subject to limited regulation by the Prudential Regulation Authority and Financial Conduct Authority. Details about the extent of our authorisation and regulation by the Prudential Regulation Authority, and regulation by the Financial Conduct Authority are available from us on request. This report is distributed in Hong Kong by Deutsche Bank AG, Hong Kong Branch, in Korea by Deutsche Securities Korea Co. This report is distributed in Singapore by Deutsche Bank AG, Singapore Branch or Deutsche Securities Asia Limited, Singapore Branch (One Raffles Quay #18-00 South Tower Singapore 048583, +65 6423 8001), and recipients in Singapore of this report are to contact Deutsche Bank AG, Singapore Branch or Deutsche Securities Asia Limited, Singapore Branch in respect of any matters arising from, or in connection with, this report. Where this report is issued or promulgated in Singapore to a person who is not an accredited investor, expert investor or institutional investor (as defined in the applicable Singapore laws and regulations), Deutsche Bank AG, Singapore Branch or Deutsche Securities Asia Limited, Singapore Branch accepts legal responsibility to such person for the contents of this report. In Japan this report is approved and/or distributed by Deutsche Securities Inc. The information contained in this report does not constitute the provision of investment advice. In Australia, retail clients should obtain a copy of a Product Disclosure Statement (PDS) relating to any financial product referred to in this report and consider the PDS before making any decision about whether to acquire the product. Deutsche Bank AG Johannesburg is incorporated in the Federal Republic of Germany (Branch Register Number in South Africa: 1998/003298/10). Additional information relative to securities, other financial products or issuers discussed in this report is available upon request. This report may not be reproduced, distributed or published by any person for any purpose without Deutsche Bank's prior written consent. Please cite source when quoting.

Copyright © 2015 Deutsche Bank AG