

European Economics

Speed limits

Research Analysts

Yiagos Alexopoulos
 +44 20 7888 7536
yiagos.alexopoulos@credit-suisse.com

Christel Aranda-Hassel
 +44 20 7888 1383
christel.aranda-hassel@credit-suisse.com

Steven Bryce
 44 20 7883 7360
steven.bryce@credit-suisse.com

Violante Di Canossa
 +44 20 7883 4192
violante.dicanossa@credit-suisse.com

Neville Hill
 +44 20 7888 1334
neville.hill@credit-suisse.com

Axel Lang
 +44 20 7883 3738
axel.lang@credit-suisse.com

Giovanni Zanni
 +33 1 7039 0132
giovanni.zanni@credit-suisse.com

The improvement in the trade balances of peripheral countries has been impressive, in our view. Having run large trade deficits ahead of the crisis, the peripheral trade balance is now moving tentatively towards a surplus. That adjustment has **come at a great price**, through a sharp downwards correction in domestic demand in the periphery that consequently reduced imports.

And that process is not yet over. The peripheral economies have moved out of trade deficit, but **they need to move into, and sustain, trade surpluses**. With the exception of Italy, the sustained current account deficits of the 2000s have led to very large, negative net international investment positions. Current account surpluses are necessary for these countries to speedily delever external debt, similar to the experiences of other countries and regions in the past.

That is clearly the trend these economies are on. But so far that **process has been a brutal one for domestic demand** and economic activity.

But there have also been **improvements in fundamentals**. To the extent to which large trade deficits were due to a deterioration in relative competitiveness as well as excessively strong domestic demand, there is evidence that **competitiveness is improving**. In general, the relative export performance of the periphery has improved thanks to better wage and price competitiveness.

So there is cause to expect that the **remaining external adjustment can be associated with rising economic activity rather continued recession**. But, a recovery in the periphery's GDP will bring about a recovery in its imports, so to the extent to which these economies need to have and sustain trade surpluses, their **GDP growth will be limited by the strength of exports**.

That means there are likely to be **limits to the pace of any recovery** in growth in the periphery. We estimate that, given nominal export growth rates of 5% and a desired trade surplus of 4% of GDP by 2017, **Spanish, Italian and Portuguese GDP could grow around 3-5% per annum in nominal terms** (around 1-3% in real terms). In Greece, we estimate such constraints would impose nominal growth of around 2%.

So, despite the improvement in financial fundamentals in recent months, the economic backdrop for the periphery's fiscal and debt consolidation over the coming few years will remain extremely challenging.

The ability of these economies to recover will depend on external growth. That implies **peripheral financial assets will continue to trade as risky assets sensitive to fluctuations in global growth momentum**. The ECB notwithstanding, it is possible that the strong performance of peripheral fixed income and equities in recent months is partly due to an acceleration, or "speed up scare", in global economic momentum. Past experience suggests it is not evident that the latter can be sustained for too long, especially with the fiscal cliff in the US looming.

ANALYST CERTIFICATIONS AND IMPORTANT DISCLOSURES ARE IN THE DISCLOSURE APPENDIX. FOR OTHER IMPORTANT DISCLOSURES, PLEASE REFER TO <https://firesearchdisclosure.credit-suisse.com>.

Speed limits

Steven Bryce
+44 20 7883 7360
steven.bryce@credit-suisse.com

Violante Di Canossa
+44 20 7883 4192
violante.dicanossa@credit-suisse.com

Neville Hill
+44 20 7888 1334
neville.hill@credit-suisse.com

The recent financial stability in the euro area has been accompanied by growing evidence that the external imbalances in peripheral countries have been easing. As we discussed a few weeks ago ([Turning German](#)), the collective trade balance of the five peripheral countries is moving into surplus, having narrowed sharply in the past few years.

In our view, that adjustment is an important indication that – despite these countries paying a heavy price in terms of lost output and employment – their economic fundamentals are improving. In turn, that could make prospects for a recovery to a sustainable growth path from here look plausible.

Exhibit 1: Euro area periphery trade balance

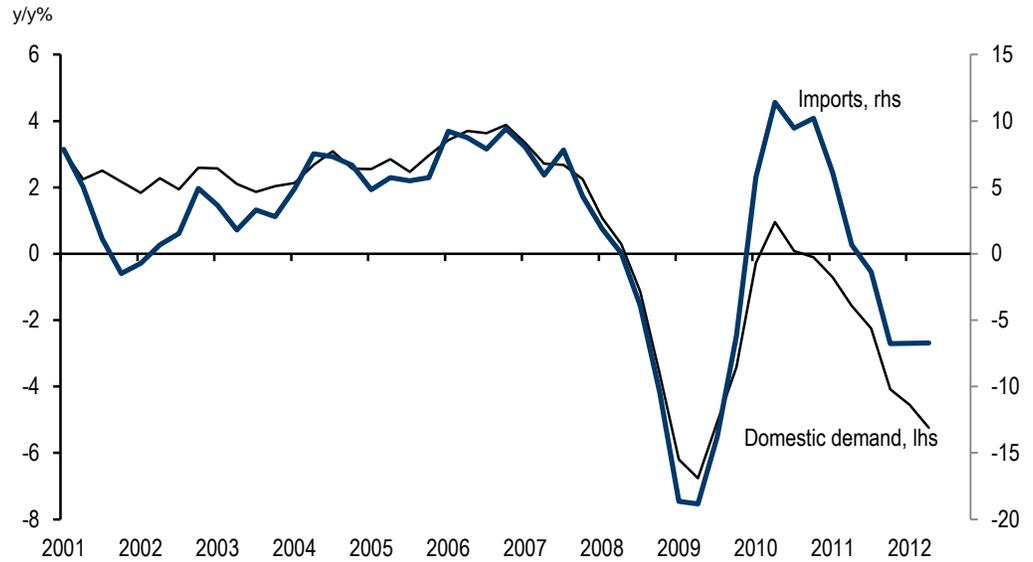


Source: Credit Suisse, Thomson Reuters DataStream

However, one of the main reasons why the periphery's trade balance has improved is that it has had a deep recession in domestic demand which, as Exhibit 2 below shows, has meant a sharp fall in imports. In the long term, that is not a sustainable basis for expansion!

The deep recession in the periphery means that some of the improvement in the periphery's trade balance is cyclical. So a key issue is whether there has also been a marked structural improvement in the trade balance, so that a further move into surplus can be consistent with recovery rather than recession.

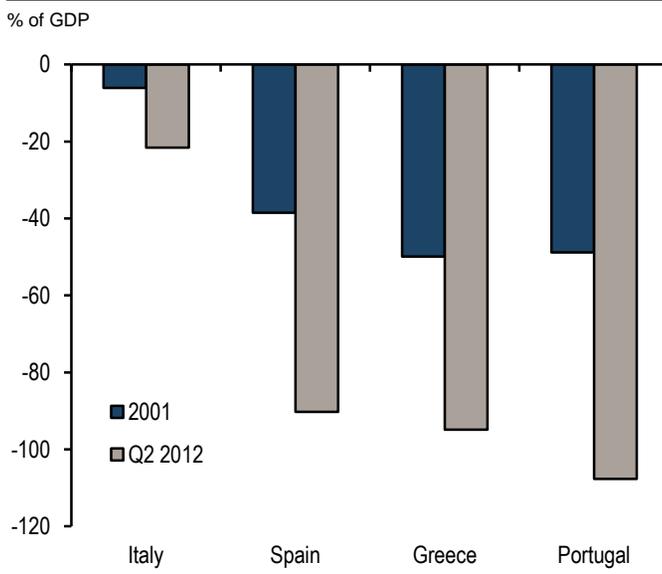
Exhibit 2: Real domestic demand and import growth in the periphery



Source: Credit Suisse, Thomson Reuters DataStream

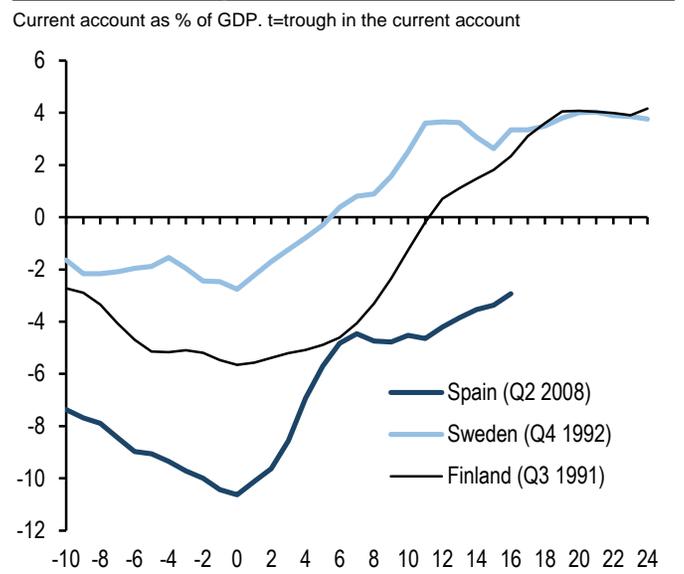
That is important because although the peripheral countries have more or less closed their trade deficits, they are likely to need to run sustained and significant trade and current account surpluses in coming years. In part, that will be necessary to bring about a reasonably swift improvement in their net international investment positions (especially in Spain, Greece and Portugal) and make them increasingly less dependent upon external financing. Indeed, the deterioration in these countries' net international investment positions in the last decade or so has been remarkable, with their negative net international investment positions at around 100% of their GDP, as Exhibit 3 shows.

Exhibit 3: Net international investment positions



Source: Credit Suisse, Thomson Reuters DataStream

Exhibit 4: Current account adjustment – the Scandinavian experience



Source: Credit Suisse, Thomson Reuters DataStream

The experience of other economies that have had similar financial crises – Asia in the late 1990s; Scandinavia in the early 1990s (Exhibit 4) – suggests that current account balances in the periphery still have some way to go before they can stabilise.

Large, unsustainable current account deficits in the periphery were a consequence of unsustainably rapid expansions in domestic demand and a loss of market competitiveness. It is clear that those expansions in domestic demand have reversed. But the more that the continued adjustment has to take place through contracting output and domestic demand, the less achievable – economically, politically and socially – these countries will find it. So the more the improvement in the trade fundamentals is structural, rather than cyclical, the more these economies should be able to sustain a modest expansion in GDP in the next few years.

One reason to think that part of the improvement in these trade balances is structural rather than cyclical is that the narrowing of the trade deficit has not entirely been due to weaker imports. There have also been some strong performances by exports, and not just in an absolute sense. In Exhibits 5 to 9 below, we plot the strength of export growth in the periphery relative to export growth for the euro area as a whole.

In the last decade or so, exports from the periphery have generally underperformed the euro area average, on the back of lax financial and monetary conditions supporting domestic demand and the relative loss in competitiveness.

Exhibit 5: Export performance in the periphery

pp, 1 year moving average. Periphery includes Italy, Spain, Greece, Portugal and Ireland

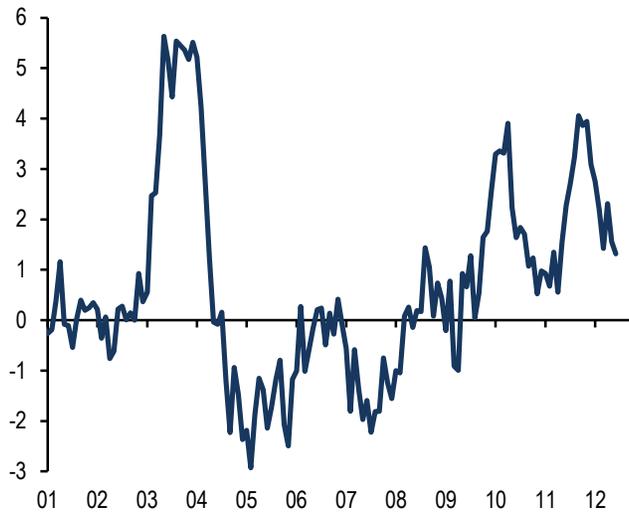


Note: The series shows the difference, in percentage points, between export growth in the 5 peripheral economies and euro area export growth minus export growth in the periphery itself
Source: Credit Suisse, Thomson Reuters DataStream

However, in the last year or so export growth in the periphery has been stronger than the euro area average, suggesting that some of the improvement in the periphery's trade dynamics is indeed structural. As we show in these exhibits, the improvements have been the clearest in Spain, Portugal and Greece. Italian exports have been just in line with euro area export growth, while Irish exports growth has broadly underperformed the euro area average since the early 2000s, with the exception of the 2008-09 episode.

Exhibit 6: Spain's export performance relative to the euro area

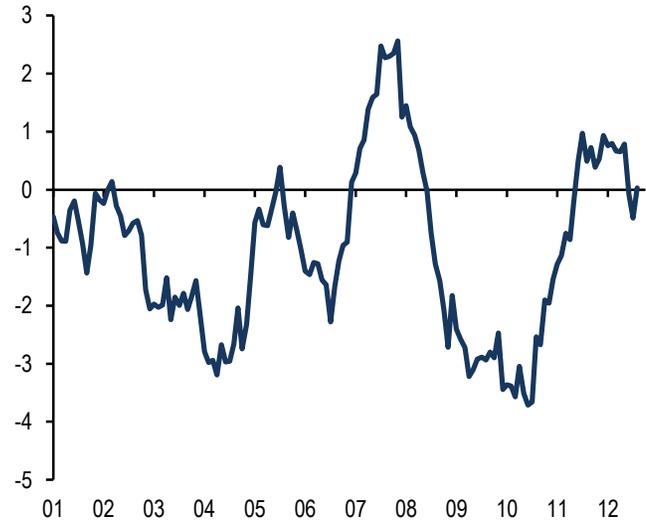
pp, 1 year moving average



Note: The series shows the difference, in percentage points, between export growth in Spain and euro area export growth minus Spanish export growth
Source: Credit Suisse, Thomson Reuters DataStream

Exhibit 7: Italy's export performance relative to the euro area

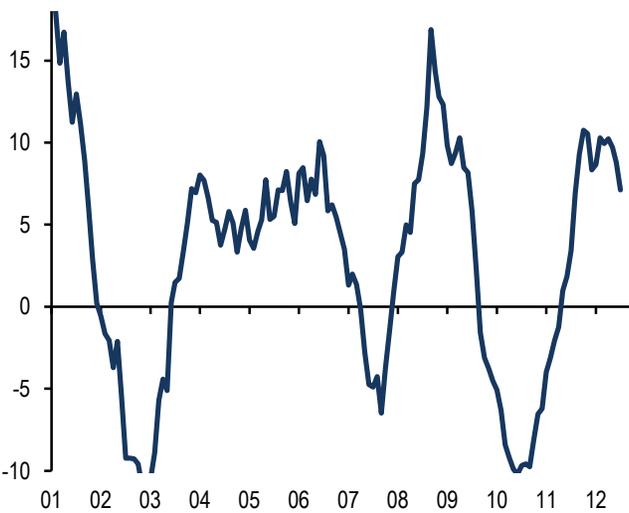
pp, 1 year moving average



Note: The series shows the difference, in percentage points, between export growth in Italy and euro area export growth minus Italian export growth
Source: Credit Suisse, Thomson Reuters DataStream

Exhibit 8: Greece's export performance relative to the euro area

pp, 1 year moving average



Note: The series shows the difference, in percentage points, between export growth in Greece and euro area export growth minus Greek export growth
Source: Credit Suisse, Thomson Reuters DataStream

Exhibit 9: Portugal's export performance relative to the euro area

pp, 1 year moving average



Note: The series shows the difference, in percentage points, between export growth in Portugal and euro area export growth minus Portuguese export growth
Source: Credit Suisse, Thomson Reuters DataStream

The relative export outperformance of most of the peripheral economies suggests that if global growth remains steady and resilient in 2013 – as we expect – then the periphery should continue to see solid export growth.

For the trade balance, of course, imports also matter. And here there is also some evidence that the decline in imports in the periphery is not just a consequence of a collapse in domestic demand.

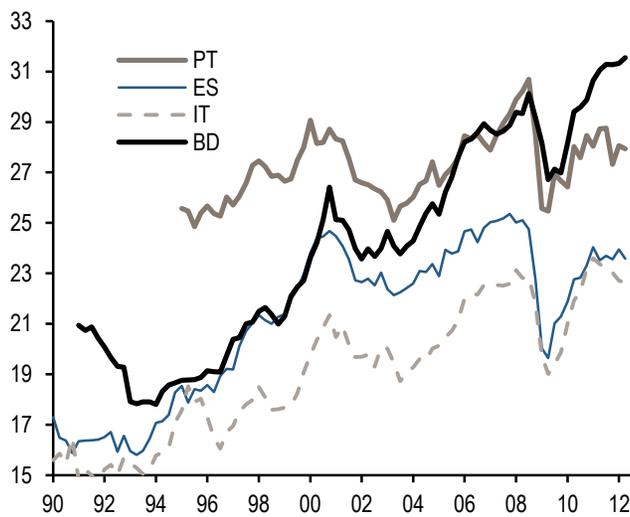
Measures of import penetration (imports as a share of domestic demand plus exports) have fallen in the periphery (see Exhibit 10). This suggests that structural changes may have changed the import demand per unit of final sales.

However, it is now unclear how much further import penetration can fall. This is particularly the case in Spain and Portugal where import penetration ratios are well below peak levels, and at around their historical euro area period average. The exception to this is Italy, where import penetration still looks historically high.

Another important metric is the relative growth of exports and domestic demand. If import penetration is assumed to be constant then the path of the trade balance is driven by export growth less domestic demand growth. **As Exhibit 11 shows, the periphery has made substantial improvements in this regard and is now running a larger gap between external and domestic demand growth than Germany was during the years prior to the crisis.**

Exhibit 10: Import penetration

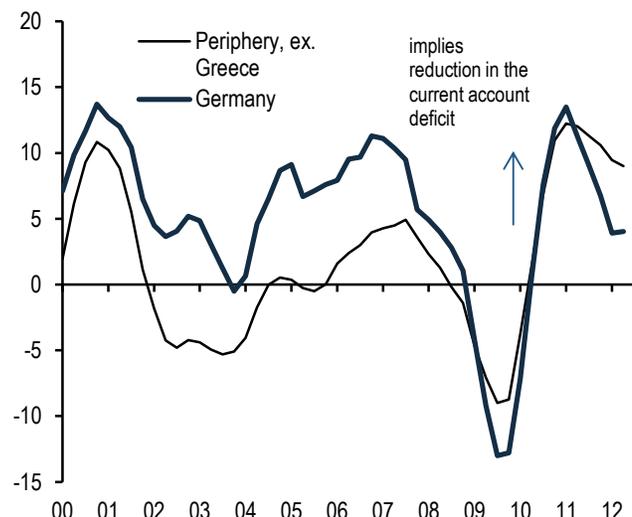
100*(imports/(domestic demand + exports)), BD is Germany



Source: Credit Suisse

Exhibit 11: Export less domestic demand growth nominal

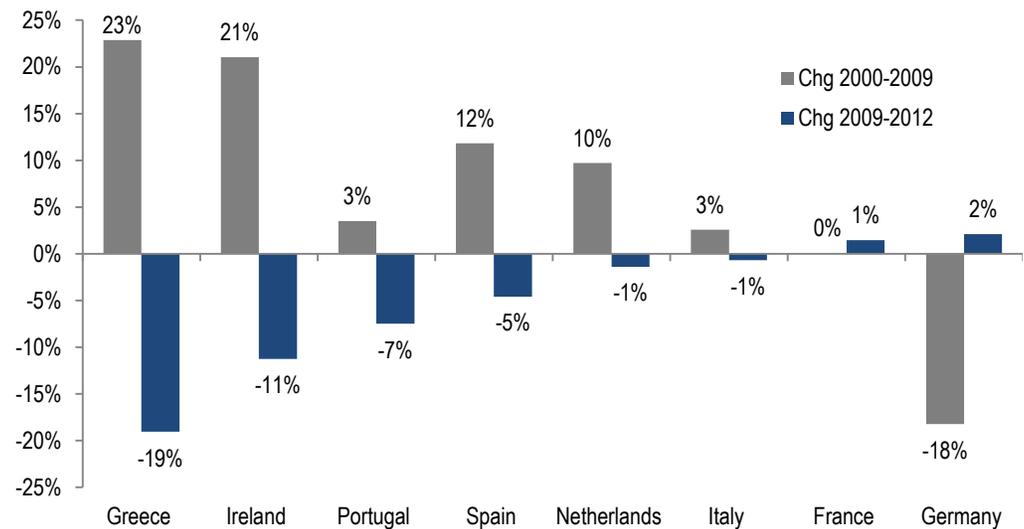
Export growth minus domestic demand growth yy% 1 year moving average



Source: Credit Suisse

There are other indicators that corroborate our view that some of the improvement in the trade balance of the periphery is due to an improvement in these countries' competitiveness. For example, wage costs in the periphery (shown here as growth in compensation per employee) have generally fallen relative to the core in the last couple of years, starting to reverse the losses in relative competitiveness seen in the first years of the single currency.

Exhibit 12: Change in nominal compensation per employee relative to European average

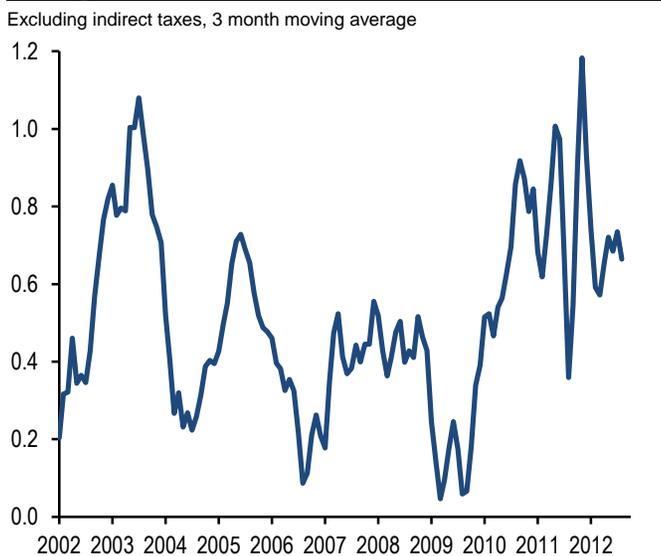


Source: Credit Suisse, Eurostat

The extent to which wages in the periphery are starting to bring about a real exchange rate depreciation is also reflected in the behaviour of domestic prices. Although headline inflation rates in the periphery have been kept high by energy prices and sharp increases in indirect taxes (a consequence of fiscal consolidation), **measures of core inflation excluding the effect of tax changes show an improvement in relative competitiveness.** Exhibits 13 to 16 below show the difference between core inflation ex taxes in the periphery and the euro area average.

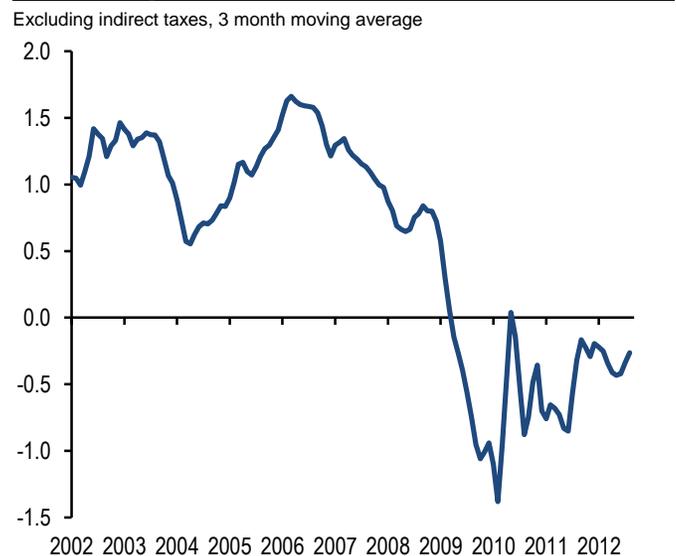
It is clear from these that there has been considerable progress made in restoring a degree of price competitiveness in Portugal and Greece and, to a lesser degree, in Spain. However, it is interesting to note that core inflation in Italy has been consistently, and remains, well above the euro area average. On that basis Italy is still losing competitiveness rather than gaining it.

Exhibit 13: Italian core inflation relative to euro area average



Source: Credit Suisse, Eurostat

Exhibit 14: Spanish core inflation relative to euro area average



Source: Credit Suisse, Eurostat

Exhibit 15: Portuguese core inflation relative to euro area average

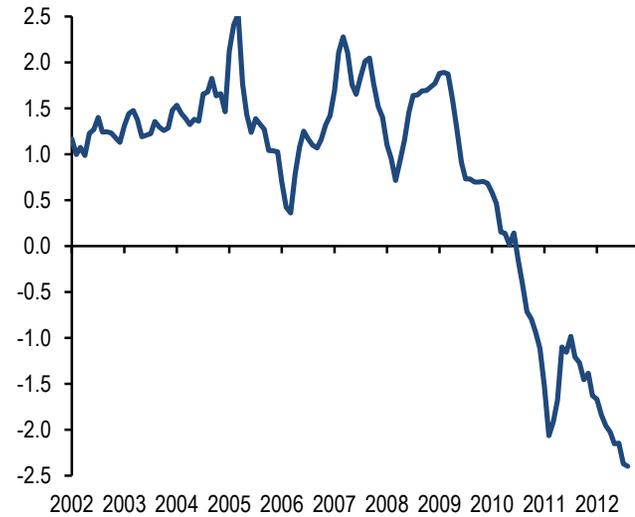
Excluding indirect taxes, 3 month moving average



Source: Credit Suisse, Eurostat

Exhibit 16: Greek core inflation relative to euro area average

Excluding indirect taxes, 3 month moving average



Source: Credit Suisse, Eurostat

In all, there is good reason to think that the recovery in trade balances in the periphery is in some part due to fundamental improvements in competitiveness as well as a consequence of weak domestic demand. The evidence suggests that the “fundamental” improvements in competitiveness have been the greatest in Greece and Portugal, and to a much lesser degree in Italy, where there is still evidence of a loss in relative competitiveness. **Surprisingly, however, Italy also has basically closed its current account gap over the past year or so.**

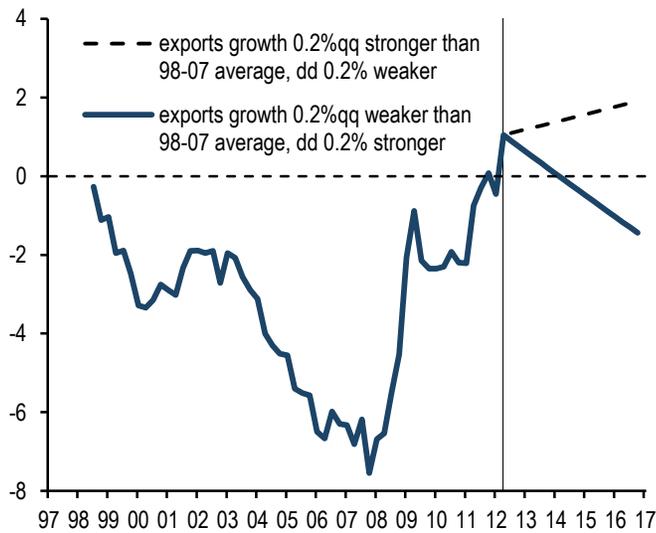
That is important because it means – after a significant downwards adjustment in domestic demand in most peripheral countries in the last few years – these economies may be able to grow – rather than contract – without reversing the necessary improvements made in their external balances. As an illustration, Exhibit 17 shows stylized projections of Spain’s trade balance on the basis of different assumptions for domestic demand and export growth.

Exhibit 17 shows the possible path of the Spanish trade balance under two different situations. In both we have assumed that the import penetration ratio remains constant (this is in keeping with the growth rate between H1 2011 and H1 2012). **By fixing the import penetration ratio we are able to calculate the trade balance under different assumptions for exports and domestic demand.** The dotted black line shows the situation in which export growth is 0.2%qq stronger than the 1998-07 average, and domestic demand is 0.2%qq weaker. The dark blue line is the opposite. **Overall, this stylised projection suggests that peripheral trade balances are still very sensitive to external demand.**

Exhibit 18 shows a stylised “trade-off” curve between export growth and GDP growth (in nominal terms) given a desired level of the trade balance. It shows the rate of GDP growth that is possible (y-axis) given an annual export growth rate (x-axis) if the country is to hit a 4% GDP trade surplus by the end of 2016 (assuming that import penetration remains unchanged). Note that all the growth rates are in nominal terms. Given the improvements in trade balances over recent months, we have estimated Q3 numbers, and the estimated export growth and GDP growth figures refer to the period 2012 Q4 to 2016 Q4. In the case of each country we have taken the rate of change of the import penetration ratio between H1 2011 and H1 2012 and assumed that this continues over the next three years. For all countries apart from Spain this is consistent with moderate continued falls in import penetration. **The purpose of this is to simulate continued improvements in these countries' competitiveness.**

Exhibit 17: Spanish trade balance simulation

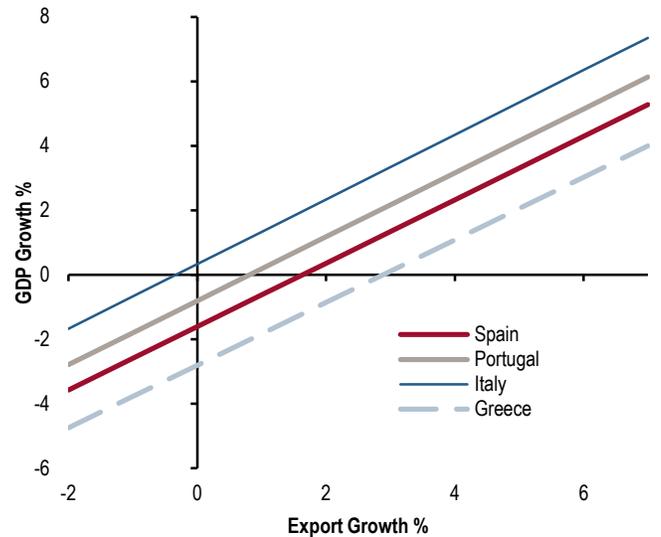
Trade balance as % of GDP, simulation after 2012Q2



Source: Credit Suisse. Note: We assume constant import penetration from Q3 2012 onwards, therefore given export growth an domestic demand assumptions we can estimate the trade balance

Exhibit 18: Trade-off between exports and GDP

All data are nominal annual growth



Source: Credit Suisse

Exhibit 18 shows that for most of the peripheral countries annual nominal export growth of around 5% (somewhat below the historical average post-2000 for Spain) would allow nominal GDP growth of around 3-5%, and consequently annual real GDP growth of around 1-3%. Broadly, this seems like a reasonable, sustainable level of trade-off. And it means these economies should now be able to grow on a 3-5 year view without their external balances deteriorating.

The one exception is Greece, where the analysis suggests that the above assumptions would allow an annual nominal growth rate of 2%.

But, even if financial conditions improve significantly over the next year or so, the ability of these economies to use stronger growth to slowly deal with their high debt ratios will be limited. **The need for “external deleveraging” to reduce these countries’ large negative net international investment positions means they will need to run a sustained trade surplus.** And the need to sustain that means they face genuine “speed limits” on growth in coming years. Even if the external backdrop for export growth remains benign and the financial and fiscal backdrop to domestic demand growth improves, their ability to post solid GDP growth would still be limited. **And, as Exhibit 18 makes clear, a slower growing global economy would be even more problematic.**

Indeed, the ability of these economies to recover will be critically dependent on external growth. That implies peripheral financial assets will continue to trade like classic risky assets, highly sensitive to fluctuations in global growth momentum. The ECB notwithstanding, it is possible that the relatively strong performance of peripheral fixed income and equities in recent months has been partly due to an acceleration, or “speed up scare” in global economic momentum. It is not evident that will be sustained for too long, especially with the fiscal cliff in the US looming.

The stronger global growth is, the easier the adjustments in the periphery. And vice versa.

GLOBAL FIXED INCOME AND ECONOMIC RESEARCH

Dr. Neal Soss, Managing Director
Chief Economist and Global Head of Economic Research
+1 212 325 3335
neal.soss@credit-suisse.com

Eric Miller, Managing Director
Global Head of Fixed Income and Economic Research
+1 212 538 6480
eric.miller.3@credit-suisse.com

US AND CANADA ECONOMICS

Dr. Neal Soss, Managing Director
Head of US Economics
+1 212 325 3335
neal.soss@credit-suisse.com

Jonathan Basile, Director
+1 212 538 1436
jonathan.basile@credit-suisse.com

Jay Feldman, Director
+1 212 325 7634
jay.feldman@credit-suisse.com

Henry Mo, Director
+1 212 538 0327
henry.mo@credit-suisse.com

Dana Saporta, Director
+1 212 538 3163
dana.saporta@credit-suisse.com

Jill Brown, Vice President
+1 212 325 1578
jill.brown@credit-suisse.com

Isaac Lebowhl, Associate
+1 212 538 1906
isaac.lebowhl@credit-suisse.com

Peggy Riordan, AVP
+1 212 325 7525
peggy.riordan@credit-suisse.com

LATIN AMERICA ECONOMICS AND STRATEGY

Alonso Cervera, Managing Director
Head of Non-Brazil Latam Economics
+52 55 5283 3845
alonso.cervera@credit-suisse.com
Mexico, Chile

Casey Reckman, Vice President
+1 212 325 5570
casey.reckman@credit-suisse.com
Argentina, Venezuela

Daniel Chodos, Vice President
+1 212 325 7708
daniel.chodos@credit-suisse.com
Colombia, Latam Strategy

Di Fu, Analyst
+1 212 538 4125
di.fu@credit-suisse.com

Nilson Teixeira, Managing Director
Head of Brazil Economics
+55 11 3701 6288
nilson.teixeira@credit-suisse.com

Daniel Lavarda, Vice President
+55 11 3701 6352
daniel.lavarda@credit-suisse.com
Brazil

Tales Rabelo, Vice President
+55 11 3701 6353
tales.rabelo@credit-suisse.com
Brazil

Iana Ferrao, Associate
+55 11 3701 6345
iana.ferrao@credit-suisse.com
Brazil

Leonardo Fonseca, Associate
+55 11 3701 6348
leonardo.fonseca@credit-suisse.com
Brazil

EURO AREA AND UK ECONOMICS

Neville Hill, Director
Head of European Economics
+44 20 7888 1334
neville.hill@credit-suisse.com

Christel Aranda-Hassel, Director
+44 20 7888 1383
christel.aranda-hassel@credit-suisse.com

Giovanni Zanni, Director
+44 20 7888 6827
giovanni.zanni@credit-suisse.com

Violante di Canossa, Vice President
+44 20 7883 4192
violante.dicanossa@credit-suisse.com

Axel Lang, Analyst
+44 20 7883 3738
axel.lang@credit-suisse.com

Steven Bryce, Analyst
+44 20 7883 7360
steven.bryce@credit-suisse.com

Yiagos Alexopoulos, Analyst
+44 20 7888 7536
yiagos.alexopoulos@credit-suisse.com

EASTERN EUROPE, MIDDLE EAST & AFRICA ECONOMICS AND STRATEGY

Berna Bayazitoglu, Managing Director
Head of EEMEA Economics
+44 20 7883 3431
berna.bayazitoglu@credit-suisse.com
Turkey

Sergei Voloboev, Director
+44 20 7888 3694
sergei.voloboev@credit-suisse.com
Russia, Ukraine, Kazakhstan

Carlos Teixeira, Director
+27 11 012 8054
carlos.teixeira@credit-suisse.com
South Africa

Gergely Hudecz, Vice President
+33 1 7039 0103
gergely.hudecz@credit-suisse.com
Czech Republic, Hungary, Poland

Alexey Pogorelov, Associate
+7 495 967 8772
alexey.pogorelov@credit-suisse.com
Russia, Ukraine, Kazakhstan

Natig Mustafayev, Associate
+44 20 7888 1065
natig.mustafayev@credit-suisse.com
EM and EEMEA cross-country analysis

Saad Siddiqui, Associate
+44 20 7888 9464
saad.siddiqui@credit-suisse.com
EEMEA Strategy

Nimrod Mevorach, Associate
+44 20 7888 1257
nimrod.mevorach@credit-suisse.com
EEMEA Strategy, Israel

JAPAN ECONOMICS

Hiromichi Shirakawa, Managing Director
+81 3 4550 7117
hiromichi.shirakawa@credit-suisse.com

Takashi Shiono, Associate
+81 3 4550 7189
takashi.shiono@credit-suisse.com

NON-JAPAN ASIA ECONOMICS

Dong Tao, Managing Director
Head of NJA Economics
+852 2101 7469
dong.tao@credit-suisse.com
China

Robert Prior-Wandesforde, Director
+65 6212 3707
robert.priorwandesforde@credit-suisse.com
Regional, India, Indonesia

Christiaan Tunttono, Vice President
+852 2101 7409
christiaan.tunttono@credit-suisse.com
Hong Kong, Korea, Taiwan

Santitarn Sathirathai, Vice President
+65 6212 5675
santitarn.sathirathai@credit-suisse.com
Malaysia, Philippines, Thailand

Michael Wan, Analyst
+65 6212 3418
michael.wan@credit-suisse.com
Singapore

Weishen Deng
+852 2101 7162
weishen.deng@credit-suisse.com

Disclosure Appendix

Analyst Certification

The analysts identified in this report each certify, with respect to the companies or securities that the individual analyzes, that (1) the views expressed in this report accurately reflect his or her personal views about all of the subject companies and securities and (2) no part of his or her compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed in this report.

Disclaimer

References in this report to Credit Suisse include all of the subsidiaries and affiliates of Credit Suisse operating under its investment banking division. For more information on our structure, please use the following link: https://www.credit-suisse.com/who_we_are/en. This report may contain material that is not directed to, or intended for distribution to or use by, any person or entity who is a citizen or resident of or located in any locality, state, country or other jurisdiction where such distribution, publication, availability or use would be contrary to law or regulation or which would subject Credit Suisse AG or its affiliates ("CS") to any registration or licensing requirement within such jurisdiction. All material presented in this report, unless specifically indicated otherwise, is under copyright to CS. None of the material, nor its content, nor any copy of it, may be altered in any way, transmitted to, copied or distributed to any other party, without the prior express written permission of CS. All trademarks, service marks and logos used in this report are trademarks or service marks or registered trademarks or service marks of CS or its affiliates. The information, tools and material presented in this report are provided to you for information purposes only and are not to be used or considered as an offer or the solicitation of an offer to sell or to buy or subscribe for securities or other financial instruments. CS may not have taken any steps to ensure that the securities referred to in this report are suitable for any particular investor. CS will not treat recipients of this report as its customers by virtue of their receiving this report. The investments and services contained or referred to in this report may not be suitable for you and it is recommended that you consult an independent investment advisor if you are in doubt about such investments or investment services. Nothing in this report constitutes investment, legal, accounting or tax advice, or a representation that any investment or strategy is suitable or appropriate to your individual circumstances, or otherwise constitutes a personal recommendation to you. CS does not advise on the tax consequences of investments and you are advised to contact an independent tax adviser. Please note in particular that the bases and levels of taxation may change. Information and opinions presented in this report have been obtained or derived from sources believed by CS to be reliable, but CS makes no representation as to their accuracy or completeness. CS accepts no liability for loss arising from the use of the material presented in this report, except that this exclusion of liability does not apply to the extent that such liability arises under specific statutes or regulations applicable to CS. This report is not to be relied upon in substitution for the exercise of independent judgment. CS may have issued, and may in the future issue, other communications that are inconsistent with, and reach different conclusions from, the information presented in this report. Those communications reflect the different assumptions, views and analytical methods of the analysts who prepared them and CS is under no obligation to ensure that such other communications are brought to the attention of any recipient of this report. CS may, to the extent permitted by law, participate or invest in financing transactions with the issuer(s) of the securities referred to in this report, perform services for or solicit business from such issuers, and/or have a position or holding, or other material interest, or effect transactions, in such securities or options thereon, or other investments related thereto. In addition, it may make markets in the securities mentioned in the material presented in this report. CS may have, within the last three years, served as manager or co-manager of a public offering of securities for, or currently may make a primary market in issues of, any or all of the entities mentioned in this report or may be providing, or have provided within the previous 12 months, significant advice or investment services in relation to the investment concerned or a related investment. Additional information is, subject to duties of confidentiality, available on request. Some investments referred to in this report will be offered solely by a single entity and in the case of some investments solely by CS, or an associate of CS or CS may be the only market maker in such investments. Past performance should not be taken as an indication or guarantee of future performance, and no representation or warranty, express or implied, is made regarding future performance. Information and estimates contained in this report reflect a judgment at its original date of publication by CS and are subject to change without notice. The price, value and income from any of the securities or financial instruments mentioned in this report can fall as well as rise. The value of securities and financial instruments is subject to exchange rate fluctuation that may have a positive or adverse effect on the price or income of such securities or financial instruments. Investors in securities such as ADR's, the values of which are influenced by currency volatility, effectively assume this risk. Structured securities are complex instruments, typically involve a high degree of risk and are intended for sale only to sophisticated investors who are capable of understanding and assuming the risks involved. The market value of any structured security may be affected by changes in economic, financial and political factors (including, but not limited to, spot and forward interest and exchange rates), time to maturity, market conditions and volatility, and the credit quality of any issuer or reference issuer. Any investor interested in purchasing a structured product should conduct their own investigation and analysis of the product and consult with their own professional advisers as to the risks involved in making such a purchase. Some investments discussed in this report may have a high level of volatility. High volatility investments may experience sudden and large falls in their value causing losses when that investment is realised. Those losses may equal your original investment. Indeed, in the case of some investments the potential losses may exceed the amount of initial investment and, in such circumstances, you may be required to pay more money to support those losses. Income yields from investments may fluctuate and, in consequence, initial capital paid to make the investment may be used as part of that income yield. Some investments may not be readily realisable and it may be difficult to sell or realise those investments, similarly it may prove difficult for you to obtain reliable information about the value, or risks, to which such an investment is exposed. This report may provide the addresses of, or contain hyperlinks to, websites. Except to the extent to which the report refers to website material of CS, CS has not reviewed any such site and takes no responsibility for the content contained therein. Such address or hyperlink (including addresses or hyperlinks to CS's own website material) is provided solely for your convenience and information and the content of any such website does not in any way form part of this document. Accessing such website or following such link through this report or CS's website shall be at your own risk. This report is issued and distributed in Europe (except Switzerland) by Credit Suisse Securities (Europe) Limited, One Cabot Square, London E14 4QJ, England, which is regulated in the United Kingdom by The Financial Services Authority ("FSA"). This report is being distributed in Germany by Credit Suisse Securities (Europe) Limited Niederlassung Frankfurt am Main regulated by the Bundesanstalt fuer Finanzdienstleistungsaufsicht ("BaFin"). This report is being distributed in the United States and Canada by Credit Suisse Securities (USA) LLC, in Switzerland by Credit Suisse AG; in Brazil by Banco de Investimentos Credit Suisse (Brasil) S.A or its affiliates; in Mexico by Banco Credit Suisse (México), S.A. (transactions related to the securities mentioned in this report will only be effected in compliance with applicable regulation); in Japan by Credit Suisse Securities (Japan) Limited, Financial Instruments Firm, Director-General of Kanto Local Finance Bureau (*Kinsho*) No. 66, a member of Japan Securities Dealers Association, The Financial Futures Association of Japan, Japan Investment Advisers Association, Type II Financial Instruments Firms Association; elsewhere in Asia/ Pacific by whichever of the following is the appropriately authorised entity in the relevant jurisdiction: Credit Suisse (Hong Kong) Limited, Credit Suisse Equities (Australia) Limited, Credit Suisse Securities (Thailand) Limited, Credit Suisse Securities (Malaysia) Sdn Bhd, Credit Suisse AG, Singapore Branch, Credit Suisse Securities (India) Private Limited regulated by the Securities and Exchange Board of India (registration Nos. INB230970637; INF230970637; INB010970631; INF010970631), having registered address at 9th Floor, Ceejay House, Dr.A.B. Road, Worli, Mumbai - 18, India, T +91-22 6777 3777, Credit Suisse Securities (Europe) Limited, Seoul Branch, Credit Suisse AG, Taipei Securities Branch, PT Credit Suisse Securities Indonesia, Credit Suisse Securities (Philippines) Inc., and elsewhere in the world by the relevant authorised affiliate of the above. Research on Taiwanese securities produced by Credit Suisse AG, Taipei Securities Branch has been prepared by a registered Senior Business Person. Research provided to residents of Malaysia is authorised by the Head of Research for Credit Suisse Securities (Malaysia) Sdn Bhd, to whom they should direct any queries on +603 2723 2020. This research may not conform to Canadian disclosure requirements. In jurisdictions where CS is not already registered or licensed to trade in securities, transactions will only be effected in accordance with applicable securities legislation, which will vary from jurisdiction to jurisdiction and may require that the trade be made in accordance with applicable exemptions from registration or licensing requirements. Non-U.S. customers wishing to effect a transaction should contact a CS entity in their local jurisdiction unless governing law permits otherwise. U.S. customers wishing to effect a transaction should do so only by contacting a representative at Credit Suisse Securities (USA) LLC in the U.S. Please note that this research was originally prepared and issued by CS for distribution to their market professional and institutional investor customers. Recipients who are not market professional or institutional investor customers of CS should seek the advice of their independent financial advisor prior to taking any investment decision based on this report or for any necessary explanation of its contents. This research may relate to investments or services of a person outside of the UK or to other matters which are not regulated by the FSA or in respect of which the protections of the FSA for private customers and/or the UK compensation scheme may not be available, and further details as to where this may be the case are available upon request in respect of this report. CS may provide various services to US municipal entities or obligated persons ("municipalities"), including suggesting individual transactions or trades and entering into such transactions. Any services CS provides to municipalities are not viewed as "advice" within the meaning of Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act. CS is providing any such services and related information solely on an arm's length basis and not as an advisor or fiduciary to the municipality. In connection with the provision of the any such services, there is no agreement, direct or indirect, between any municipality (including the officials, management, employees or agents thereof) and CS for CS to provide advice to the municipality. Municipalities should consult with their financial, accounting and legal advisors regarding any such services provided by CS. In addition, CS is not acting for direct or indirect compensation to solicit the municipality on behalf of an unaffiliated broker, dealer, municipal securities dealer, municipal advisor, or investment adviser for the purpose of obtaining or retaining an engagement by the municipality for or in connection with Municipal Financial Products, the issuance of municipal securities, or of an investment adviser to provide investment advisory services to or on behalf of the municipality. If this report is being distributed by a financial institution other than Credit Suisse AG, or its affiliates, that financial institution is solely responsible for distribution. Clients of that institution should contact that institution to effect a transaction in the securities mentioned in this report or require further information. This report does not constitute investment advice by Credit Suisse to the clients of the distributing financial institution, and neither Credit Suisse AG, its affiliates, and their respective officers, directors and employees accept any liability whatsoever for any direct or consequential loss arising from their use of this report or its content. Principal is not guaranteed. Commission is the commission rate or the amount agreed with a customer when setting up an account or at any time after that.

Copyright © 2012 CREDIT SUISSE AG and/or its affiliates. All rights reserved.

Investment principal on bonds can be eroded depending on sale price or market price. In addition, there are bonds on which investment principal can be eroded due to changes in redemption amounts. Care is required when investing in such instruments.

When you purchase non-listed Japanese fixed income securities (Japanese government bonds, Japanese municipal bonds, Japanese government guaranteed bonds, Japanese corporate bonds) from CS as a seller, you will be requested to pay the purchase price only.