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Highlights in this issue:

- Has the crisis left a lasting mark on global trade?
- The euro area's trade performance
- A closer look at some drivers of the trade performance at Member State level

*Economic and*
*Financial Affairs*

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# EDITORIAL

In the past weeks and months the stability of the Economic and Monetary Union has been increasingly called into question, at least in certain segments of financial market commentary. At this critical point in time it cannot be stressed enough that what truly underlies doubts concerning the EMU set-up is a crisis of confidence - confidence in the health of the banking system, in the sustainability of public finances, in Member States' ability to rebalance and grow, but also confidence in the political process that governs the crisis response in the euro area and beyond.

The European Council of 28/29 June has acknowledged this confidence problem faced by Member States and EU institutions, and has rightly declared that Europe must move forward if we do not want to risk the fulfilment of the dire prophecy of markets. It affirmed the strong commitment to do what is necessary to ensure the financial stability of the euro area, in particular by using the existing EFSF/ESM instruments in a flexible and efficient manner in order to stabilise markets for Member States respecting their country-specific recommendations and their other commitments, under the European Semester, the Stability and Growth Pact and Macroeconomic Imbalances Procedure.

The June report on the future of Economic and Monetary Union by Council President van Rompuy in cooperation with the presidents of the Commission, Eurogroup and ECB stresses that developing the four building blocks of stronger fiscal, economic, financial and political integration is necessary to safeguard the long-term future of the euro. In the immediate term, a critical aspect of the current crisis are concerns about adverse feedback loops between national banking systems and their respective sovereigns, as the latter have increasingly been called upon as a guarantor and saviour of last resort for the financial system. In order to support either of these two entities, both must therefore be brought back to health and strengthened permanently.

Fundamental concerns about the viability of the banking system and its main actors must be tackled as a matter of urgency and with the greatest resolve. National systems of supervision and banking resolution have proven too fragmented to withstand the pressures of a large and highly integrated EU financial system, in which large cross-border banking groups carry enormous balance sheets and cross-border crisis management arrangements are largely voluntary. The June Euro Area Summit has for this reason decided to create a single supervisory mechanism, as a precondition for the possibility of direct recapitalisation of euro area banks by the ESM. The Commission will shortly present proposals for a single supervisory mechanism covering, inter alia, its design, mandate, scope and governance and accountability structure.

The gains from deepening Economic and Monetary Union and from creating a financial union could be bolstered by moving to more integrated arrangements in fiscal matters. An immediate step in this respect would be the swift adoption of the "two pack" proposals. These aim at strengthening national fiscal frameworks and allow for closer fiscal surveillance, and also establish a suitable framework for enhanced surveillance of programme countries and those facing financial stress. Together with the ongoing implementation of the reform of the Stability and Growth Pact and the other provisions in the 'six pack', the adoption of the 'two pack' would strengthen macroeconomic and fiscal surveillance as much as possible within the limits of the long-standing 'Maastricht assignment', which leaves economic policy other than monetary policy in the hands of the Member States. Furthermore, the 'two pack' would enshrine SGP-consistent fiscal rules in national legal systems as foreseen by the Fiscal Compact.

As a means to drive forward Europe's focus on growth and prosperity, the June Council also adopted a new Compact for Growth and Jobs for Europe. The compact presents a coherent set of priorities for action at national, EU and euro area levels. The onus of delivering meaningful reform will to a considerable extent lie on Member States, who can identify, design and implement appropriate reforms. At the EU level, the compact spans measures amounting to €120bn, equivalent to 1% of EU GDP. These include a reallocation of EU structural funds, focusing them on growth and competitiveness, increasing the lending capacity of the EIB so as to boost investment at the European level and launching a pilot phase for project bonds. Finally, we need to realise the full potential of the Single Market, especially for the services sector.

While much work lies ahead of us, one must not ignore the comprehensive overhaul of economic governance and surveillance since the crisis. The June Council's adoption of budgetary measures and economic reforms first proposed by the Commission on 30 May pays testimony to the closer cooperation and coordination at the EU and euro area level. The package is the end-result of the European Semester and represents a step change in European policy coordination. It comprises country-specific recommendations in the fiscal and structural domain for each Member State plus the euro area as a whole, as well as, for the first time, in-depth reviews of macroeconomic imbalances in selected Member States.

These in-depth country reviews examine causes of, and suggest responses to, harmful macroeconomic imbalances in a number of countries selected in the context of the Macroeconomic Imbalances Procedure. As the crisis in the euro area has its roots partly in the unchecked emergence of imbalances prior to the crisis, these reviews – which follow the Alert Mechanism Report published in February – directly address these challenges. They conclude that the adjustment of macroeconomic imbalances is generally making progress, as reflected notably in smaller current account disequilibria and some convergence in unit labour costs. But considerable imbalances remain and require the implementation of the policy reforms laid out in the EU Semester's country-specific recommendations for both deficit and surplus countries.

For the EU Semester as a whole, the focus on implementation of structural and fiscal measures has been sharpened through concrete country-specific recommendations for each and every Member State, building in part on the follow-up to last year's Semester, and is underpinned by more detailed country analysis. Generally the picture is rather positive: although more needs to be done, great efforts have been made at the Member State level to implement last year's recommendations.

Firm commitment and decisive implementation is equally indispensable in relation to the most recent June Council agreements. With the remaining steps on the path towards a stronger euro area having been set out by the Council, the implementation of its proposals and agreements now becomes vital. With sufficient determination and cooperation from all stakeholders, the areas of financial supervision and assistance, budgetary coordination and growth support in both the euro area and EU should gather the forward momentum needed to move on from the crisis.

MARCO BUTI

DIRECTOR-GENERAL

# FOREWORD

The global economy has entered a weaker phase, affecting the euro area and other major advanced economies as well as some emerging markets. This backdrop of weaker activity in the major global regions may affect global trade volumes and somewhat clouds the overall outlook for the euro area economy, which is estimated to be currently in a period of stagnation. The extent to which weaker global demand may act as a restraint on euro area exports is the central motivation behind the choice of theme for this edition of the Quarterly Report, which explores external trade developments at the global, euro area and Member State level in detail.

At the global level, the financial and economic crisis that hit in 2008 affected goods trade significantly more than global output. The ensuing recovery of world trade was first quite rapid, but seems to have again entered a softer patch since spring 2011. Although a potential disruption of trade finance does not appear to be a limiting factor at the current juncture, the repercussions of financial crises in advanced economies are likely to continue to weigh on global trade, with consequences both for its geographical and its product composition. Overall, global trade seems to be approaching its long-term growth trend, partly thanks to strong export demand from emerging market economies, but will probably expand at lower rates than in the boom years of the previous decade.

Turning to the euro area, the crisis does not seem to have accelerated the downward trend in euro area market shares observed in pre-crisis years but seems to have left a mark at the geographical and product level. As the euro area still trades predominantly with its immediate neighbours in Europe, some of which are advanced economies engaged in protracted deleveraging processes, emerging markets are becoming the main a source of export demand growth. In particular, a strong rebound in import demand from new EU Member States should contribute to boost euro area exports in the coming years. Overall, there is no sign that the geographical specialisation of exports will be less supportive in the euro area than in other large advanced economies such as the US or Japan. The euro area is, however, facing specific challenges in some export sectors, particularly in machinery and transport equipment. The trend decline of this sector in euro area exports has accelerated since the crisis under the combined effect of weak demand for investment equipment and durables in countries undergoing deleveraging processes and increased competitive pressures from emerging market suppliers.

A final chapter investigates drivers of the trade performance of individual euro-area Member States. It shows that the import content of exports is high and rising, particularly in smaller Member States. This has important implications for the impact of exports on growth and the trade balance. A decomposition of export growth shows that country differences in export performance are mainly driven by market share gains or losses within geographical destinations and product markets, whereas the initial geographical and sectoral specialisation appears to be less important in determining export market performance. Export performance generally shows a certain degree of inertia, which may contribute to the persistence of external imbalances. Finally, export performance appears to be only partly related to price competitiveness, leaving an important explanatory role for non-price competitiveness. From a policy perspective, strategies to rebalance current account deficits should complement measures to improve price competitiveness with measures aimed at enhancing non-price competitiveness, including through higher competition in the service sector, export promotion programmes and the promotion of R&D and skilled labour.

ELENA FLORES

DIRECTOR

# 1. Has the crisis left a lasting mark on global trade?

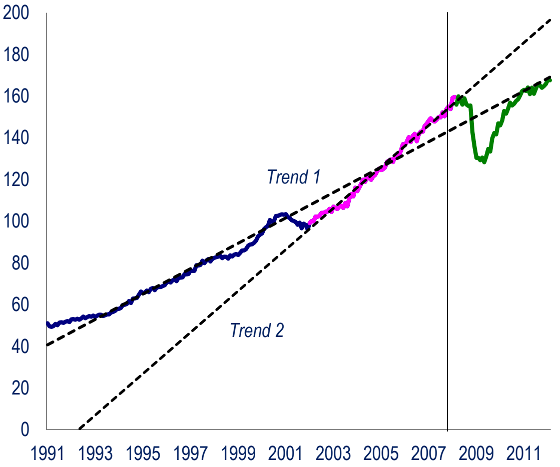
*International trade expanded substantially during much of the past decade, boosted by underlying globalisation trends and supported by a benign global environment ('the Great Moderation'). But when the global financial and economic crisis hit in 2008, global trade collapsed, with merchandise trade contracting significantly more than global output. Supported by swift policy reactions and helped by the fact that protectionism was contained, the ensuing recovery of world trade was fairly rapid, but trade levels are still below their pre-crisis path, raising the question of a possibly longer-lasting impact of the Great Recession of 2008-09 on trade dynamics. The analysis presented in this chapter shows that there is no clear evidence of a structural break in the relationship between trade and GDP although the recession may have left its mark on the geographical and sectoral composition of trade. In a number of advanced economies, substantial adjustment due to fiscal consolidation and deleveraging in the private sector is constraining import growth in the short and medium term. By contrast, emerging market economies have been left relatively unscathed by the Great Recession. They account for a steadily growing share of global demand and are expected to cushion, at least partially, the demand shortfall in advanced countries, while the supply of trade finance does not appear to be a limiting factor at the current juncture. There are some indications that international supply chains in some sectors have embarked on a consolidation process, with fewer production stages involved and consequently less cross-border trade, but there is no broadly-based evidence for such a development. Overall, global trade seems to be approaching its long-term growth trend and will likely expand at lower rates than in the boom years of the previous decade.*

## 1.1. The boom, collapse and recovery of world trade

Following the 2001/2002 recession world trade registered an unprecedented boom driven by a dynamic world economy. The boom began to falter at the onset of the financial crisis and turned into a sharp downturn in the fourth quarter of 2008 after the Lehman meltdown. Global trade plummeted by 17% in real terms between October 2008 and March 2009. Historical evidence suggests that trade is strongly correlated with output fluctuations and quite sensitive to financial crises, but the most recent trade slump appears exceptionally steep. It was about two times steeper than in 1930, the first year of the Great Depression, and was highly synchronised across countries around the world.

Underpinned by swift policy reactions and with protectionism contained, the ensuing initial recovery of world trade was fairly rapid. World trade bottomed out in the second quarter of 2009, and grew steadily thereafter, regaining its pre-crisis peak already in mid-2010. But the strong trade recovery was interrupted in the spring of 2011, when the global economy was hit by a series of adverse shocks, most notably the production disruption in Japan following the Tōhoku earthquake, the escalation of the sovereign-debt crisis in the euro area and the increasing uncertainty concerning US fiscal policies. Given the recent slowdown of trade growth, world trade is still far below levels that would have been achieved if global trade had continued to follow its growth path experienced during the period 2002-08. However, trade benefited during that period from a significant, and possibly exceptional, expansion of the world economy. To the extent that global growth was partly fuelled by a global liquidity glut and excessive consumption in several advanced countries, it is far from certain that global trade will return to a similar steep growth trend. The most recent trade expansion is actually more in line with the trend growth observed between 1991 and 2008 than with the trend of the period 2002-08 (Graph 1.1).

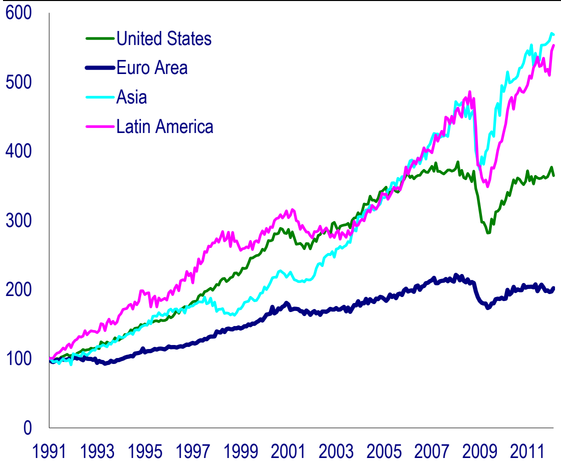
Graph 1.1: **Global merchandise trade (volumes: 2000 = 100) (1)**



(1) Trend 1 is based on the period January 1991 - February 2008, while trend 2 is based on the period January 2002 - February 2008.
***Source:*** CPB

Compared with the highly synchronised downturn, the recovery of world trade since mid-2009 has been diverse across regions. Advanced economies such as the US and in particular the euro area have experienced sluggish import growth and were still below their pre-crisis peaks in early 2012. In contrast, countries less burdened by the repercussions of the global financial crisis in terms of deleveraging needs have registered robust investment and consumption growth. In particular, imports of Asia and Latin America are almost back on the rapid growth path of the 2002-2008 boom period (Graph 1.2).

Graph 1.2: **Real imports developments across regions (1991 = 100)**



***Source:*** CPB

The recent deceleration of trade activity has raised concerns that world trade could still be bearing the marks of the 2008-09 recession. This chapter therefore aims to assess whether the global crisis has reshaped underlying globalisation trends, with possible long-run repercussions on global trade prospects.

## *1.2. The evolution of world trade and the aftermath of the Great Recession*

There are several channels through which the Great Recession of 2008-09 may have durably impacted world trade. The Great Recession may have entailed shifts in the geographical and product patterns of world trade since countries facing a banking crisis are likely to cut back on imports over a rather long period as domestic demand is hampered by credit constraints and necessary deleveraging in the public and/or private sector. Looking at the supply side, the global crisis may also have long-term effects on trade elasticities and global production structures. Finally, distress in some segments of financial markets may have affected the supply of bank-intermediated trade finance.

### Regional shifts in world income growth and import demand

Since the 1990s, emerging market economies have gradually increased their share of global output, accounting for about half of world GDP in 2011 (based on purchasing-power parity valuation). As a result, the growth of the world economy is substantially more broad-based than three decades ago when global output expansion was largely driven by advanced economies. The decreasing regional concentration of world GDP growth is reflected in the declining trend of the Gini coefficient of countries' contributions to world GDP growth. This downward trend was briefly halted by the global crisis when a large part of the world economy — mostly advanced economies — was actually shrinking and thus contributed negatively to global growth. (1) However, results based on recent IMF projections for global GDP suggest a return of the coefficient to the pre-crisis level by 2012 (Graph 1.3). (2)

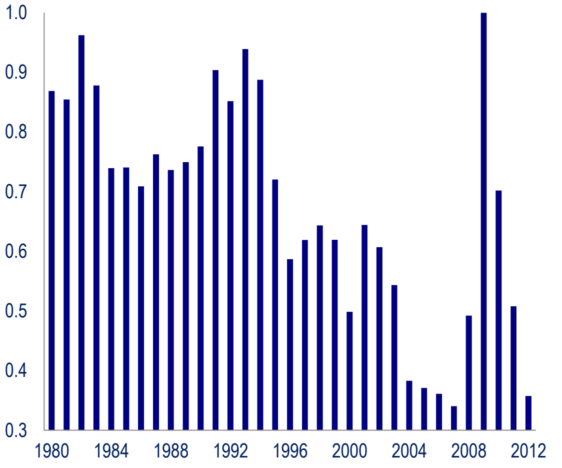
Income growth in emerging markets has also translated into a rising share of emerging markets in global import demand. As shown in the previous section, emerging markets have been pulling the trade recovery from early 2009 on, but even more so since the economic recovery has slowed in advanced economies. Since mid-2010 imports of advanced economies have been almost flat and are still below the pre-crisis level, whereas imports of emerging economies have continued to grow. The comparatively strong dynamics of emerging markets' import demand in the trade recovery have been visible for all broad product categories. Annual world trade data at the product level available up to 2011 indicate that demand for all types of goods has recovered faster in emerging markets than in advanced economies (Graph 1.4). Not only intermediate goods used in production, but also imports of final goods have rebounded more strongly in emerging market. The difference with advanced economies is quite large for fuel and lubricants and capital goods.

---

(1) By construction, the coefficient exhibits large values in recessionary periods, as a relatively large number of countries are contracting and thus offset positive growth contributions from other economies.

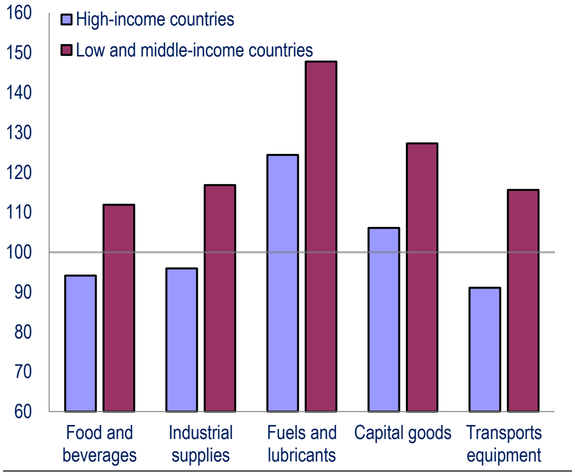
(2) Gini coefficients, which are calculated on the basis of Lorenz curves, can range between 0 and 1, with a value of 1 indicating the highest concentration and 0 reflecting an equal distribution. For the calculation of Gini coefficients with negative values, for example negative growth contributions, see Chen, C.-N. and T.-W. Tsaur (1982), 'The Gini coefficient and negative income', *Oxford Economic Papers*, Vol. 34, No 3, pp. 473-478.

Graph 1.3: **Concentration of world GDP growth (Gini coefficients) (1)**



(1) Calculations for 2012 are based on IMF estimates (WEO).
***Source:*** IMF; Commission services' calculations

Graph 1.4: **Change in imports across product categories and markets, values (2008 = 100: pre-crisis level) (1)**

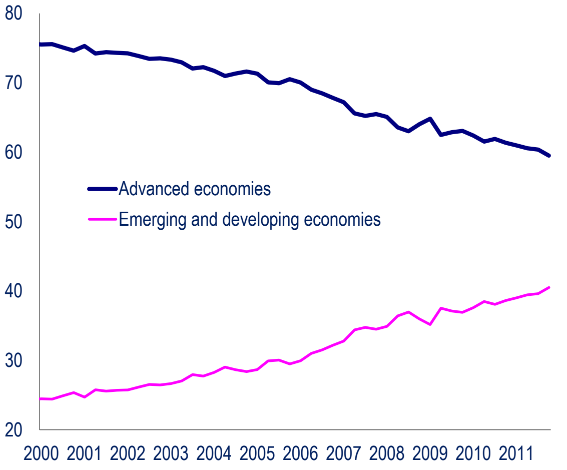


(1) Bars indicate the levels of imports in 2011 compared to 2008.
***Source:*** UN COMTRADE, Commission services' calculations.

## Evolution of export shares and product composition

The rising importance of emerging markets in world trade has been associated with a growing trend in south-south trade that has been only briefly interrupted by the global financial crisis. The trend has made emerging markets less dependent on demand in advanced economies. However, with advanced economies still accounting for two thirds of emerging markets' exports, global trade dynamics are unlikely to fully decouple from output growth in high-income countries in the near future (Graph 1.5).

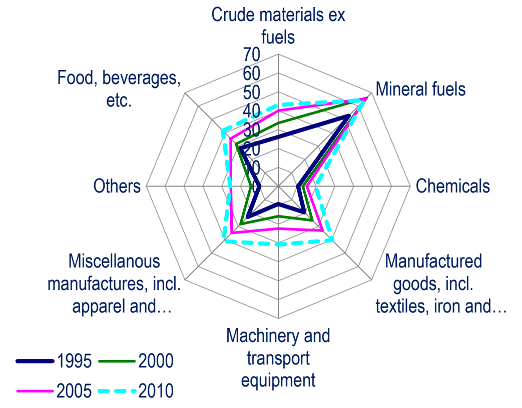
Graph 1.5: **Destinations for emerging markets' merchandise exports (in % of total exports) (Q1 2000-Q4 2011)**



***Source:*** IMF.

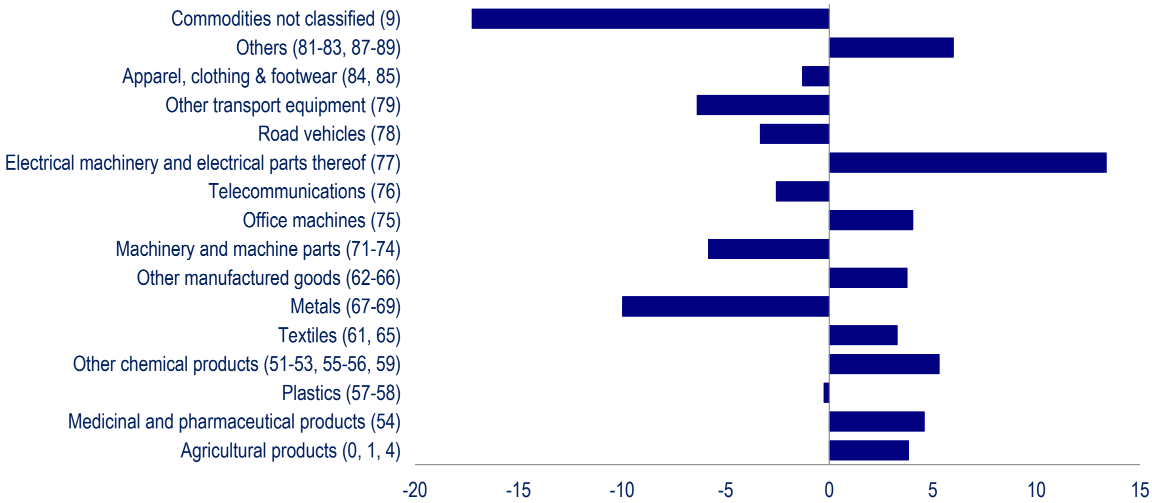
Another remarkable feature of the development of global trade is many emerging markets' successful effort to move up the value chain and improve the quality of their export portfolio. Mostly countries in emerging Asia, notably China, and in Central and Eastern Europe are increasingly able to enter export markets that were previously the exclusive preserve of advanced countries (Graph 1.7).

Graph 1.6: **Low- and middle-income countries' relative export share (1) (2)**



(1) Product categories according to STIC, Rev. 3 classification. (2) Exports of low- and middle-income countries as a share of world exports.
***Source:*** UN COMTRADE, Commission services' calculations.

Graph 1.7: **Global export recovery and product categories (exports in 2011, % of 2008 level) (1)**



(1) Figures in brackets denote SITC, Rev. 4 product categories.
***Source:*** UN COMTRADE, Commission services' calculations

Since the mid-1990s, low- and middle-income countries have expanded their market share in intermediate product categories such as chemicals or medium- to high-tech manufacturing such as machinery and transport equipment, where they increased their relative export share from below 10% in 1995 to 31% in 2010. This evidence suggests that emerging market economies have entered a new phase of export-led growth, with a shift from being pure volume exporters of low- to medium-technology goods to becoming sophisticated global providers of more high-tech products.

## Sectoral composition of the export recovery

Besides regional disparities, the trade recovery has also been rather uneven when looking at different product categories (Graph 1.6). In nominal terms, exports of crude materials, which are subject to large price fluctuations, had exceeded their pre-crisis peak by 30% in 2011, while fuels exports were 23% below levels seen in 2007. However, the latter development is largely due to base effects related to the high oil price prevailing until the summer of 2008. But also several other product categories, primarily in the medium- to high-technology segment of the product range, have not yet fully reached their respective pre-crisis level of 2008. Most notably, exports of machinery and machine parts, telecommunication equipment, road vehicles and other transport equipment are still between 2.5% and 8% below previous peak levels. Given that production of these high value-added manufacturing products still tends to be concentrated in advanced countries, the relatively subdued export dynamics in a number of high-income countries can be partly attributed to the sluggish export recovery in these product categories.

## The evolving role of global supply chains and trade elasticities

Over the last decades, global supply chains have played an increasing role in industrial production as trade and capital flows were liberalised and transportation and communication costs declined. According to available empirical evidence, vertical specialisation in high-technology products has increased substantially over the last two decades, especially in East Asia. ([3]) Moreover, vertical supply integration is estimated to account for nearly a third of total trade growth. ([4])

It is often argued that the prevalence of production chains increases the sensitivity of trade to changes in global demand (Graph 1.8). It is therefore not surprising if attention quickly focused on global supply chains as a possible explanation of the great trade collapse. Production chains allow quick adjustment to changes in market demand, but consequently also act as channels for rapid transmission of real and financial shocks. However, the prevalence of

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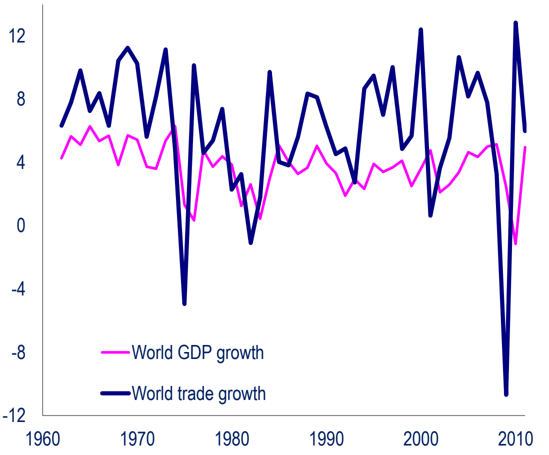
([3]) Amado, J. and S. Cabral (2009), 'Vertical specialization across the world: A relative measure', *The North American Journal of Economics and Finance*, Vol. 20, No 3 (December), pp. 267-280.

([4]) Daudin, G., C. Rifflart and D. Schweisguth (2011), 'Who produces for whom in the world economy?' *Canadian Journal of Economics*, Vol. 44, No 4, pp. 1403-1437.

global supply chains in world production should only affect the level of trade to GDP and not its elasticity. (5) Only in cases where new supply chains are developed during upswings or disrupted during downturns can the elasticity of trade to GDP be influenced by the fragmentation of the production structure.

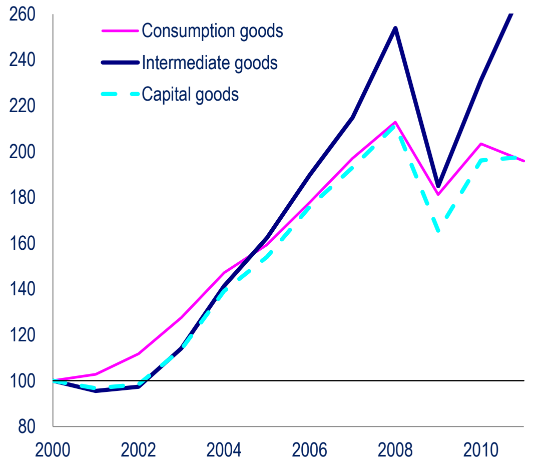
Graph 1.8: **World trade growth and world output growth (y-o-y change, 1962 - 2011)**



***Source:*** OECD

Yet supply chains did play a role in the recent collapse of trade. Firstly, the financial crisis induced a sharp drop in demand concentrated in consumer durables and investment goods, which are produced in globally integrated sectors. Secondly, the abrupt drop in demand and shortage of credit supplies are likely to have caused a sudden breakdown of some supply chains, which amplified the trade collapse. But in contrast to the sudden demand slump, supply-side disruptions seem to have played only a minor role. (6) The key explanation behind the trade collapse is the composition of the drop in domestic demand (concentrated in highly traded goods), as shown by the sharp trade rebound observed when demand recovered in 2009. In particular, the strong rebound in intermediate goods trade suggests a fairly quick re-establishment of production chains (Graph 1.9). Furthermore, as discussed further in Box 1.1, there is no clear evidence of a structural break in the relationship between trade and GDP since the crisis.

Graph 1.9: **World imports across product types (2000 = 100) (1)**



(1) Partial data for coverage for 2011 with available data accounting for 80% of total global trade.

***Source:*** UN COMTRADE, Commission services' calculations.

This evidence contradicts suggestions, at least for the time being, that the crisis has caused a 'deglobalisation' of production in terms of a consolidation of global supply chains. Empirical studies of production structures in subsectors suggest that supply chains were gradually consolidated in some sectors already before the financial crisis. Initial observations indicate that this tendency towards fewer production stages across borders has been in some cases accelerated by the global crisis. (7) For some products, the downturn in demand may have triggered a shift towards domestic production or the possibility among surviving suppliers to expand capacity and create entry barriers for the successors of firms that did not survive the trade downturn. Geographically, East and South Asia — and especially China — have gained significant market shares in the global production network at the expense of less-developed countries. However, on the aggregate level, the experience of the recent collapse and recovery of trade suggests that any amplification effects due to global supply chains are broadly symmetric across the cycle.

## Banking crises and import growth

Economic history shows that financial crises depress imports durably in affected countries as

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(5) A change in the production of final goods requires a proportional increase in the demand for all inputs, domestic and imported. Hence, the presence of supply chains only affects the absolute level of trade, and not the sensitivity of trade to changes in total demand.

(6) Escaith, H. (2009), 'Trade collapse, trade relapse and global production networks: Supply chains in the Great Recession', OECD roundtable on impacts of the economic crisis on globalization and global value chains, conference paper (revised June 2011).

(7) Cattaneo, O., G. Gereffi and C. Staritz (eds.) (2010), '*Global value chains in a postcrisis world: A development perspective*', The World Bank, Washington, D.C.

### *Box 1.1:* Global income elasticities and structural stability

Following Irvin (2002) (1) and Milberg and Winkler (2010) (2), we estimate a simple autoregressive distributed lag (ARDL) model with quarterly data on world trade (goods and services) ($x_t$) and global GDP ($y_t$) from 1991Q1 to 2008Q3 (3). In practice, we employ an ARDL bounds testing approach pioneered by Pesaran et al. (2001), (4) which is particularly helpful when a level relationship among variables is assumed, while it is not known with certainty whether regressors are trend- or difference-stationary. In contrast to other co-integration techniques, pre-testing for unit roots and co-integration is not required and it is not necessary that all of the regressors are integrated of the same order. The ARDL model of global trade is represented by the following equation:

$$\upsilon(L,p)\ln x_t = \alpha_0 + \beta(L,q)\ln y_t + u_t$$

where $\upsilon(L,p)=1-\upsilon_1 L-\upsilon_2 L^2-\ldots\upsilon_p L^p$ and $ß(L,q)=1-ß_1 L-ß_2 L^2-\ldots ß_q L^q$ are distributed lag functions. For the testing of co-integration relationships it is convenient to transform the equation into the error-correction form:

$$\Delta\ln x_t = \alpha_0 + \sum \beta_j \Delta\ln y_{t-j} + \sum \gamma_j \Delta\ln x_{t-j} + \delta_1 \ln y_{t-1} + \delta_2 \ln x_{t-1} + \varepsilon_t$$

In a first step, the lag lengths of the distributed lag functions are set to one according to the Schwartz criterion and the equation is tested for the existence of a level relationship between $y_t$ and $x_t$ based on standard *F*- and *t*-tests. The calculated F-test statistic exceeds the critical value (upper bound) provided by Pesaran et al. (2001) and the null hypothesis of no relationship can be rejected. Next, the equation can be estimated by ordinary least squares (OLS), which yields consistent long-run coefficients, and parameter inference is valid using asymptotic normal theory. (5)

**ARDL regression results (long-run coefficients)**

| | 1991:Q2-2011:Q3 | 1991:Q2-2000:Q4 | 2001:Q1-2008:Q3 | 2008:Q4-2009:Q1* | 2009:Q2-2011:Q3 |
|---|---|---|---|---|---|
| Constant | -0.03 | -1.25 | -1.35 | : | -1.48 |
| | (-0.109317) | (0.58646) | (0.306702) | | (1.987264) |
| *lny(t)* | 3.42 | 1.47 | 3.19 | | 4.92 |
| | (-0.217942) | (0.374336) | (0.499612) | : | (1.035489) |
| *lny(t-1)* | -3.39 | -1.05 | -2.62 | | -4.48 |
| | (-0.219899) | (0.490129) | (0.462513) | : | (1.52705) |
| *lnx(t-1)* | 0.98 | 0.86 | 0.73 | | 0.86 |
| | (-0.018731) | (0.071955) | (0.058434) | : | (0.299242) |
| Long-run elasticity | 1.17 | 2.93 | 2.06 | 5.27 | 3.16 |

*Standard errors in paranthesis.*
*Note: Elasticities for 2008Q4-2009Q1 calculated as (* ΔTRADE/ΔGDP) x (GDP/TRADE).

Given that the endogenous and exogenous variable has only one lag, the long-run elasticity of world trade with respect to global income can be estimated by $(ß_1+ß_2)/(1-\upsilon_1)$. Splitting the sample into a pre-crisis and a post-crisis period, estimates yield 1.58 for the period 1991Q2-2008Q3 and 3.16 for the period following the trade collapse, 2009Q2-2011Q3. These results suggest that the Great Recession might have shifted the historical global trade-income relationship. When divided into different sub-periods, elasticity estimates exhibit a remarkable pattern, with rather high trade responsiveness to global income in the 1990s and a lower level in the 2000s up to the trade collapse (see table above). These results are in line with findings by Escaith et al. (2010), who attribute the temporarily higher

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(1) Irwin, D. A. (2002), 'Long-run trends in world trade and income', *World Trade Review*, Vol. 1, No 1, pp. 89-100.

(2) Milberg, W. and D. Winkler (2010), 'Trade crisis and recovery. Restructuring of global value chains', *Policy Research Working Paper* No 5294, World Bank, May 2010.

(3) Data on trade flows are from the OECD. Global GDP is calculated as a weighted average of 34 countries accounting for about 90 % of global output over the estimation period.

(4) Pesaran, M. H., Y. Shin and R. J. Smith (2001), 'Bounds testing approaches to the analysis of level relationships', *Journal of Applied Econometrics*, Vol. 16, pp. 289-326.

(5) Pesaran, M. H. and Y. Shin (1999), 'An autoregressive distributed lag modelling approach to cointegration analysis', in S. Strom (ed.), *Econometrics and Economic Theory in the 20th Century*: *The Ragnar Frisch Centennial Symposium*, Cambridge University Press, Cambridge 1999, pp. 371-413.

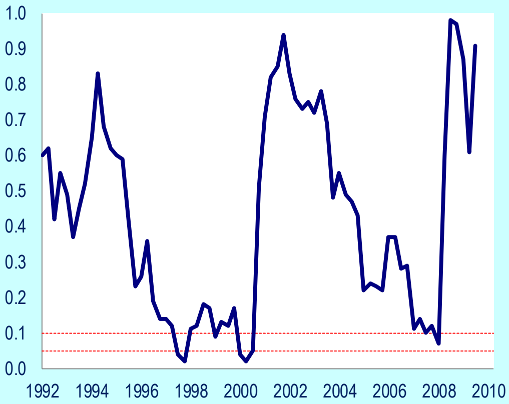
*(Continued on the next page)*

*Box (continued)*

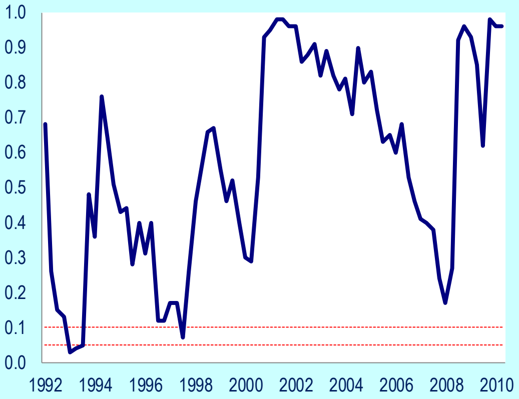
income elasticities in the 1990s to the transition between two underlying economic models which resulted in an expansion of international supply chains. (1) By contrast, other studies find that the income elasticity of global trade gradually increased from the 1960s to the 2000s. (2)

In order to identify possible structural breaks in the relationship between global output and world trade, coefficients are estimated over the whole estimation range and are subsequently subjected to the stability tests. Using a Chow breakpoint test, the null hypothesis of constant parameters (no structural break) can be rejected at the 5 % confidence level for the possible breakpoint in 2008Q4, but also for a structural break in 2001Q1. In general, searching for the most likely breakpoint tends to artificially increase the F-statistic of no break and rejection probabilities might exceed the type-one error even if only one structural break is tested. (3) Therefore, we follow Candelon and Lütkepohl (2001) (4) and employ bootstrap versions of the Chow sample-split and Chow forecast tests. In both tests, there is no indication of a structural break in 2008Q4-2009Q1 at the 5 % significance level (albeit at the 10 % level in the case of the sample-split test) (see graphs below). However, based on the sample-split test statistically significant structural changes can be identified for example in 1998 and 2000.

**Sample-split Chow test - bootstrapped p-values**



**Chow forecast test - bootstrapped p-values**



An alternative way to test for structural breaks is based on the cumulated sum of recursive forecast errors (CUSUM). If the CUSUM moves too far away from the zero line, this is an indication of a structural change. In fact, there is a tendency of the CUSUM test to wander off since the late-1990s, which might suggest structural changes in the underlying ARDL model. But these developments do not seem to be particularly pronounced since the null hypothesis of no structural break cannot be rejected at the 5 % level (left panel of graph below). A major shortcoming of the CUSUM test is its possibly low power if various parameter shifts compensate each other in their impact on the means of the recursive residuals. Thus, under the assumption that global trade has possibly been subject to more than one structural break, the CUSUM-of-squares (CUSUM-SQ) test may be more appropriate. In contrast to the Chow tests, they do not give any clear indication of model instability since the CUSUM and the CUSUM-SQ stay within the critical bounds of the 5 % significance level (right panel of graph below).

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(1) Escaith, H., N. Lindenberg and S. Miroudot. (2010), 'International supply chains and trade elasticities in times of crisis', *Staff Working Paper* ERSD-2010-08, World Trade Organisation, February 2010.

(2) See for example Freund, C. (2009), 'The trade response to global downturns. Historical evidence', *Policy Research Working Paper* No 5015, World Bank, August 2009.

(3) Lütkepohl, H. (2004), 'Univariate time series analysis', in Lütkepohl, H. and M. Krätzig (eds.), *Applied time series econometrics*, Cambridge University Press, Cambridge 2004, pp. 8-85.

(4) Candelon, B. and H. Lütkepohl (2001), 'On the reliability of Chow-type tests for parameter constancy in multivariate dynamic models', *Economics Letters*, Vol. 73, pp. 155-60.

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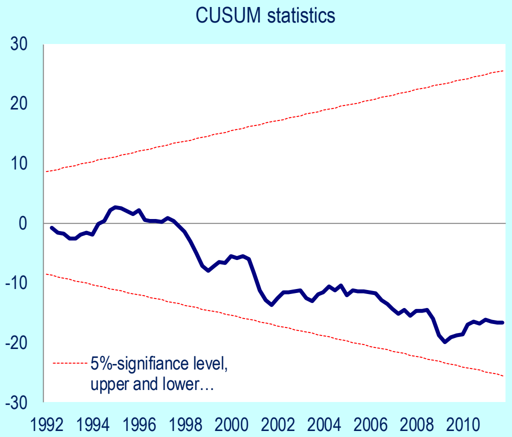
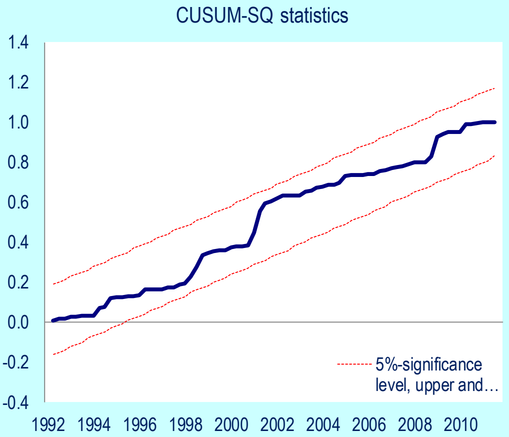
*Box (continued)*


CUSUM statistics


CUSUM-SQ statistics

Overall, estimation results and deduced long-run income elasticities to trade suggest that the relationship between world growth and global trade dynamics has changed substantially over the last two decades. The responsiveness of trade to output fluctuations has increased markedly after the profound trade collapse in late 2008 and early 2009 and has exceeded levels witnessed in the 1990s. By contrast, evidence based on standard stability tests for a unique and massive shock at the turn of the year in 2008/2009 with long-lasting repercussions for world trade is rather mixed. Instead, the global economy might have been subject to several structural changes over the last two decades and the inconclusive results of stability tests for the trade collapse in 2008-09 might reflect the presumption that global trade dynamics are more in line with the overall long-run trend.

aggregate investment is constrained by credit supply restrictions and the worsening economic situation, while negative income effects weigh on private consumption. As historical evidence and recent experience suggest, banking crises often coincide with busts in real estate booms, which additionally force non-financial companies and private households to repair their balance sheets and compound the demand slump. Furthermore, crisis-induced capital outflows and lower foreign investment due to increased risk aversion have a longer-lasting impact on imports. On the positive side, capital outflows can also entail large exchange-rate depreciations that can pave the way for a post-crisis export recovery. (8) Thus, the rather slow import recovery observed in many crisis-affected countries in the last couple of years seems to follow a typical pattern. An exception is the US, where imports were already approaching pre-crisis levels in autumn 2011. (9) By contrast, a country's export performance appears to be significantly less affected by financial distress.

To illustrate the adjustment path of imports after a financial crisis, Graph 1.10 compares recent import growth in a number of crisis-hit countries with the import recoveries in Sweden and Finland in the 1990s. Sweden and Finland had to cope with severe banking crises in the early 1990s triggered by the burst of credit-fuelled real-estate and stock-market bubbles. Investment and consumption in both the private and the public sector collapsed during the subsequent recession. As a result, imports decreased by 8 % in Sweden and plummeted by more than 21 % in Finland in the first year after the crisis and were back to pre-crisis peak levels only after about 4 years. (10) During the same time, exports soared on the back of structural reforms to improve competitiveness, but were also supported by a depreciating currency.

If a similar recovery pattern could apply to the current situation, imports of current crisis countries can be expected to fully recover from the previous downturn by spring 2012. This seems, however, to be a very strong assumption. The economic environment in the 1990s was much more benign, with a buoyant world economy and robust US import demand. Exchange-rate depreciation also helped to ease the adjustment burden. Bearing these caveats in mind and recognising the recent worsening of the global economic situation, the trade-related recovery in crisis countries is very likely to be even more protracted. Hence, with the large dispersion of financial distress across advanced countries the impact on global trade might be quite prolonged.

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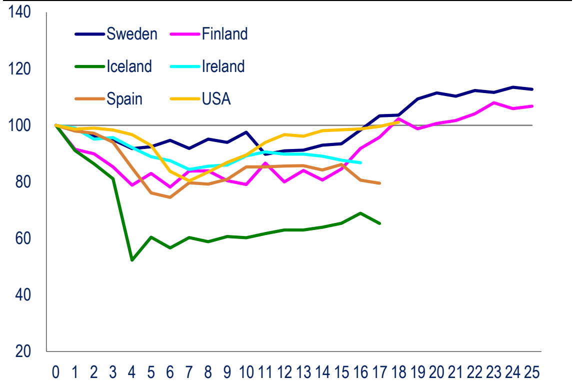
(8) Ma, Z. and L. K. Cheung (2005), 'The effects of financial crises on international trade', Ito, T. and A. R. Rose (eds.), *International trade in East Asia*, NBER-East Asia Seminar on Economics, Vol. 14, August 2005, pp. 253-85.

(9) Abiad, A., P. Mishra and P. Topalova (2011), 'How does trade evolve in the aftermath of the financial crisis?', *IMF Working Paper* 11/3, January 2011.

(10) However, this benchmark of pre-crisis peaks could also be misleading as pre-crisis import levels might have been inflated due to an overheating economy and unsustainable, credit-fuelled consumption and investment growth.

Graph 1.10: **Real import recovery in countries hit by banking crises, goods and services (pre-crisis peak = 100) (1)**



(1) Peak dates are: 1990Q1 (FI), 1990Q2 (SW); 2007Q3 (US), 2007Q4 (ES, IR, IS).
***Source:*** OECD, Statistics Sweden.

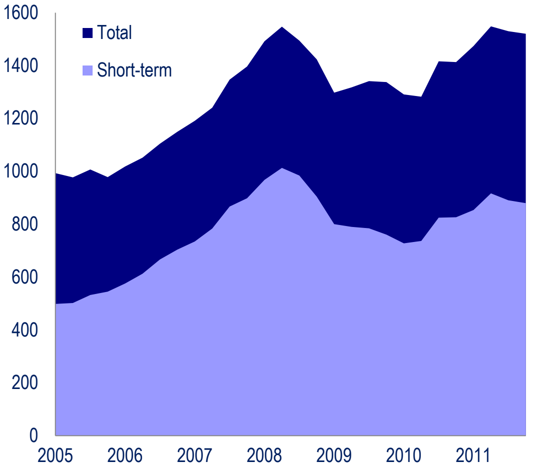
Given that financial conditions have not yet returned to pre-crisis levels, stressed credit markets are still likely to dampen world trade in the near future. Even more importantly, several advanced economies are facing substantial deleveraging needs. With both firms and households winding down debt levels and necessary fiscal consolidation under way, the global impact on trade growth is likely to be tangible and persistent.

## Impact of financial distress on trade finance

The financial crisis and the ongoing bank funding stress have raised concerns that deteriorating trade finance conditions might put the trade recovery in jeopardy. Surveys conducted by the Bankers' Association for Finance and Trade (BAFT) jointly with the IMF and the International Chamber of Commerce confirm that especially large banks that were hit by the financial crisis have been tightening lending conditions and charging higher prices following the global credit crunch in late 2008. Nevertheless, the overall decline of trade finance observed during the crisis is generally assumed to be mostly the result of lower demand, with supply constraints only playing a relatively minor role. Statistics on insured export credits (11) show that short-term export credits declined by 13 % between 2008 and 2009, but have recovered since the first quarter of 2010 (Graph 1.11). The fact that the volume of short-term export credits is still 12 % below its pre-crisis level suggests that private credit insurers may have reduced credit limits due to the deteriorated risk environment. Nevertheless, the largest share of global merchandise trade is financed on an open account basis or by cash-in-advance arrangements, which are not officially recorded.

The available evidence on the impact of trade finance conditions on trade is rather mixed. Recent empirical studies suggest that liquidity contractions and the tightening of financial conditions are likely to have restricted trade finance and thus reduced demand in trade-intensive sectors that are most credit-dependent. (12) Thus, tight credit conditions have probably amplified the trade collapse, even though most of the trade downturn seems to be explained by the slump in world demand. (13)

Graph 1.11: **Insured export credit exposure, 2005Q1-2011Q4 (billion US dollars) (1)**



(1) Short-term export credit insurance usually covers insurance for trade transactions with repayment terms of one year or less.
***Source:*** BIS-IMF-OECD-World Bank, Joint External Debt Hub.

Nevertheless, this relatively benign general picture conceals significant local risks. Emerging market economies appear to be more vulnerable to trade finance disruptions than advanced economies. Particularly worrisome is the regional concentration of banking activities, with e.g. French and Spanish banks accounting for about 40 % of bank-intermediated trade finance to Latin America and Asia. Overall, large euro-area banks account for 36 % of the market for bank-intermediated trade finance, whereas US and Japanese financial institutions hold market shares of only 5 % and 4 % respectively. ([14])

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(11) Insured export credits account for about 10 % of the global volume of trade finance, albeit the more risky segment of the market.

(12) See Ahn, J., M. Amiti and D. E. Weinstein (2011), 'Trade finance and the great trade collapse', *American Economic Review*, Vol. 101, No 3, May 2011, pp. 298-302 and Cheung, C. and S. Guichard, 'Understanding the world trade collapse', *OECD Working Papers* , No 729, 2009.

(13) Anderton, R. and T. Tewolde (2011), 'The global financial crisis: Trying to understand the global trade downturn and recovery', *ECB Working Paper* No 1070, August 2011.

It is too early to draw strong conclusions as to the extent to which the latest (and moderate) decline in trade finance since 2011 is supply- or demand-driven. However, there is a risk that the ongoing tensions in some segments of the financial market could eventually spill over to trade finance, with detrimental consequences for global trade if the funding problems of major European banks exacerbate. Additionally, the particular structure of the trade finance market exposes emerging markets more than others to the risk of a retrenchment of trade finance.

## *1.3. Concluding remarks*

International trade recovered remarkably from the recession-induced trade collapse in 2008-09. But as the world economy began to slow down in the middle of last year, concerns were raised that world trade could still be bearing the marks of the Great Recession of 2008-09. In fact, trade volumes have exceeded their pre-crisis peaks, but are still substantially below their potential trend path. However, the evidence presented in this chapter does not lend conclusive support to the thesis that the Great Recession has systematically and profoundly changed the underlying patterns of international trade in terms of a structural break in the relationship between trade and GDP. This notwithstanding, there are indications that the ensuing crisis might have accelerated the shift in the regional and sectoral composition of merchandise trade. The substantial adjustment due to fiscal consolidation and deleveraging in the private sector has constrained import growth in a number of advanced countries and these repercussions of the financial crisis in advanced economies will continue to weigh on global trade prospects in the short and medium term. By contrast, the disruption of trade finance does not appear to be a limiting factor at the current juncture. But given the structure of the trade finance market, with the large market share of European banks centred on specific regions, there is a non-negligible risk that increased tensions in financial markets and further needs for bank deleveraging will impair the availability and conditions of trade finance.

On the positive side, emerging market economies were left relatively unscathed by the Great Recession and account for a growing share of world income, global demand and international trade. Thus, low- and middle-income economies can be expected to cushion, at least partially, the demand shortfall in advanced countries by gradually increasing their imports, especially of consumption goods. But emerging market economies will also continue to play an important role in international supply chains. Even though there are some indications that international supply chains in some sectors have embarked on a consolidation process, with fewer production stages involved and consequently less cross-border trade, there is no broadly-based evidence for this process so far. Moreover, the strong global recovery in intermediate goods trade after the Great Recession suggests that the international division of labour in terms of the cross-border distribution of different production stages still tends to shape the pattern of world trade.

With global demand growth predicted to accelerate again in the course of the current year, world trade in 2013 is projected to pick up and approach its long-term average. However, the expected growth is largely insufficient for trade to recover its pre-crisis trend volume, i.e. the level that would have been achieved if global trade had followed its pre-crisis growth path also after 2008. Overall, global trade seems to be approaching the long-term growth tend prevailing before the boom years of 2002-08 and is likely to expand on average at lower rates than registered in the previous decade.

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([14]) World Bank (2012), Global Economic Prospects, Washington, D.C., January 2012.

# 2. The euro area's trade performance

*As in the case of the US and Japan, the share of euro-area exports in total world trade has been declining since the late 1990s. The trend reflects the rapid integration of emerging economies into world trade but also euro exchange rate developments. Since 2010, the euro-area's market share has shown signs of stabilisation, mostly due to a significant depreciation of the euro.*

*The euro area still trades predominantly with its immediate neighbours in Europe, some of which are advanced economies engaged in protracted deleveraging processes. The crisis seems to have accelerated the pre-crisis shift towards emerging markets, where demand has proved much more resilient than in advanced economies. A strong rebound in import demand from new EU Member States should contribute to boosting euro-area exports in coming years and there is no sign that the geographical specialisation of exports will be less supportive in the euro area than in other large advanced economies such as the US or Japan.*

*The crisis may also have a lasting legacy at the sectoral/product level. The euro area has a comparative advantage in machinery and transport, in research-intensive sectors such as pharmaceuticals and in labour-intensive sectors. It also has a weaker specialisation than the US and Japan in the Information and Communication Technology (ICT) sector. The crisis seems to have triggered a move away from labour-intensive sectors and to have accelerated the trend decline of the machinery and transport sector in total euro-area exports. There are concerns that it might have a persistent negative effect on that sector due to a mix of sluggish demand for investment goods and durables in a number of advanced economies engaged in lengthy deleveraging processes and increasing competitive pressures from emerging market suppliers. Deteriorations in export shares have been particularly visible in the ICT sector and, to a lesser extent, in the electrical machinery and car sectors. In contrast, exports of non-electrical machinery have been comparatively resilient to the crisis, confirming the euro-area's traditional strength in that sub-sector.*

This chapter analyses trade patterns for the euro area as whole. (15) It updates work presented in previous issues of the Quarterly Report on the Euro Area. (16) Elaborating on the trends in world trade identified in Chapter 1, the analysis aims to give a better understanding of the potential medium-term effects of the global economic crisis on the euro-area's export performance and to set them against pre-crisis trends. Given the importance of the structure of exports for export performance, particular attention is given to the geographical and product specialisations of the euro area.

Section 2.1 looks at developments in aggregate euro-area trade, distinguishing between goods and services as well as intra- and extra-area trade. The remainder of the chapter then focuses on extra-area trade in goods for which detailed data series are available. Sections 2.2 and 2.3 discuss the evolving patterns of the geographical and product composition of exports in the euro area, providing systematic comparisons with the US and Japan. Section 2.4 concludes.

## *2.1. Recent developments in euro-area trade*

### Foreign trade in the euro area is recovering from a steep drop during the crisis

Estimates derived from national accounts and trade data show that the shares in GDP of exports of both goods and services to outside the euro area are on a clear upward trend. Both shares dropped temporarily during the global economic crisis but have since recovered and are currently expanding at rates similar to those prevailing before the crisis (Graph 2.1). (17) The share in GDP of extra-euro-area exports reached 18.1 % in Q4 2011, up from a pre-crisis peak of 16.6 % in Q3 2008. In Q4 2011 the share of exports of services was 5.2 %, up from a pre-crisis peak of 4.7 % in Q4 2008.

The 2008-09 global recession had a distinctly stronger impact on exports of goods than on exports of services. Trade in services tends to be less cyclical than trade in goods, in particular because services are not subject to inventory accumulation and decumulation. This traditional difference in cyclicality is magnified in recessions induced by financial crises, during which the contraction in demand (and therefore trade) tends to be concentrated in specific categories of goods such as investment equipment. Euro-area balance of payments shows that trade in transportation, travel and financial services were strongly hit by the 2008-09 recession, while trade in business and professional services proved relatively resilient. Similar developments were observed in the US as well. ([18])

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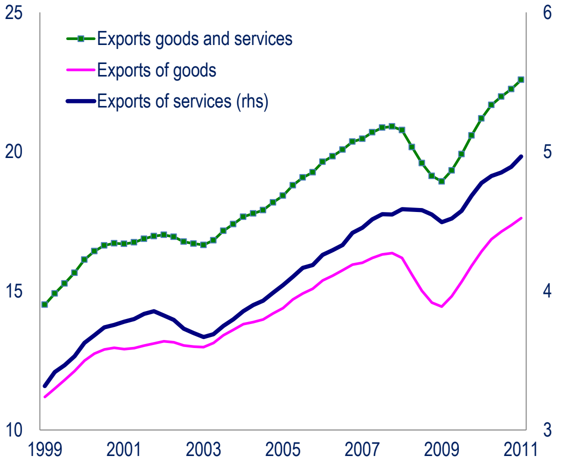
(15) A more disaggregated picture at Member State level is presented in Chapter 3.

(16) See for instance focus on the 'Export performance of the euro area', Quarterly Report on the Euro Area, Vol. 9, No 2.

(17) National accounts for the euro area do not distinguish between intra-euro area and extra-euro area trade in goods and services. The relative distribution of extra- and intra-euro area trade in goods from external trade statistics was applied to trade in goods and services from the national accounts.

Graph 2.1: **Extra-euro area exports of goods and services (1999-2011, % of GDP) (1)**

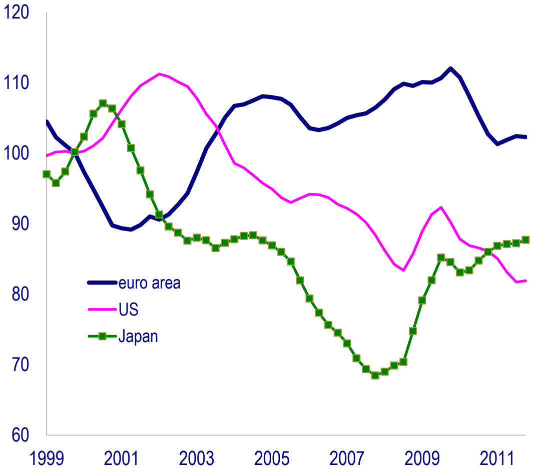


(1) Based on national accounts; the share of extra-euro area exports is from external trade statistics. Based on 2005 prices.
***Source:*** Commission services.

After a steep decline during the initial crisis period and a rapid recovery in 2010, extra-euro-area imports of goods and services are currently increasing more slowly than exports. In the fourth quarter of 2011, while real exports of both goods and services were growing at over 6% on an annual basis, imports of goods from outside the euro area were only growing by 2.2% and imports of services by 0.9%. These growth differences between exports and imports are largely due to lower domestic demand in the euro area than in the rest of the world and, to a lesser degree, improvements in external competitiveness. At the end of 2011, the euro-area's real effective exchange rate (CPI-based, quarterly averages) was about 10% below its pre-crisis peak (Graph 2.2).

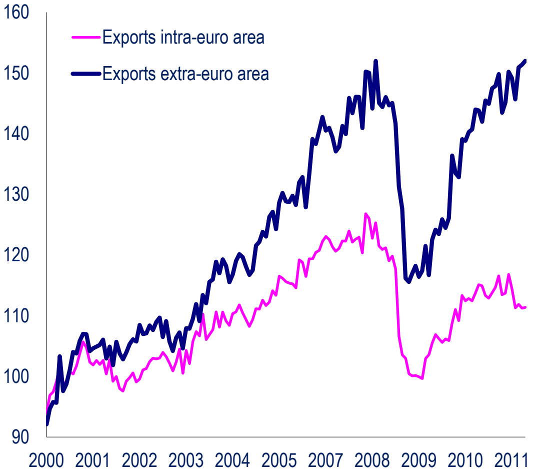
External trade statistics show that extra-euro area exports of goods were more severely hit in the early stages of the global financial crisis than intra-euro area exports. In volume terms, the former dropped by 24.0% from their peak in 2008 to their trough in 2009, while the latter fell by only 21.4% (Graph 2.3). Recovery from this initial drop was, however, much faster for extra-euro area exports, which now stand close to their pre-crisis peak although a downward inflection in the growth rate has been visible since spring 2011. In contrast, intra-euro area exports, after a short-lived recovery in 2010, have remained mostly flat before edging down slightly since mid-2011 due to a relapse in domestic demand in the euro area.

Graph 2.2: **Real effective exchange rate (1999-2011, 1999 = 100) (1)**



(1) Moving average, CPI-based.
***Source:*** Commission services.

Graph 2.3: **Extra- and intra-euro exports of goods (volume index, 2000 = 100) (1)**



(1) Based on external trade statistics.
***Source:*** Commission services.

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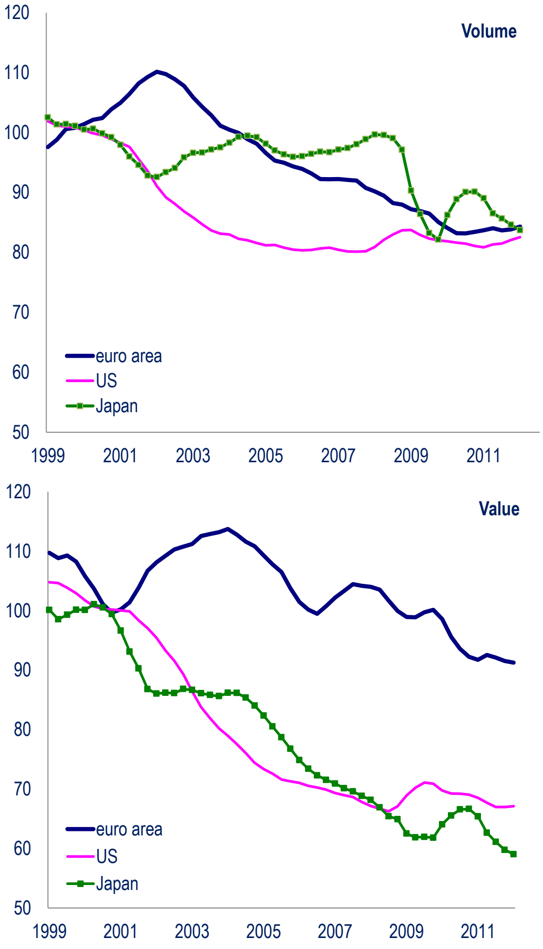
[18] See for instance Borchert, I. and A. Mattoo (2009), 'The crisis resilience of services trade', *The Service Industries Journal*, Vol. 30, No 14, December, pp. 1-20.

### The export market share of the euro area has stabilised

Looking at the euro-area’s performance in terms of export market shares (19), the shares of world exports in volumes accounted for by the euro area, the US and Japan have been declining since the late 1990s (top panel of Graph 2.4).

Graph 2.4: **Exports of goods as a share of world trade (index 2000 = 100) (1)**



(1) Moving average. Euro-area exports cover extra-euro area trade only, based on external trade statistics.
***Source:*** Commission services and CPB Netherlands.

These market share losses have been to the benefit of emerging economies, especially those in Asia, which have steadily increased their share of world exports by exporting more not only to advanced economies, but also to each other. The share of world export volumes coming from emerging economies surged from 40.8 % in the first quarter of 1999 to 55.4 % in the first quarter of 2012, while the share of the euro area fell from 15.4 % to 13.3 % over the same period. In addition to the rapid integration of emerging markets in world trade, the trend losses in market share in the euro area were also driven by the euro’s appreciation.

The decline in the euro-area’s export market share was faster in the first quarters of the crisis. This strong initial response was due to the relatively large share of crisis-affected European countries in euro-area export destinations and the large drop in world import demand for durable and investment goods, which are major components of euro-area exports. Since the middle of 2010 the export market share losses of the euro area have come to an end (though more clearly in real than in nominal terms). The stabilisation of market shares is mostly attributable to gains in external competitiveness. Estimates published in past issues of this report suggest that a decrease in the real exchange rate of 10 % (as seen between 2009 and 2011) should boost euro-area exports by about 3-5 %, with much of the effect being felt relatively rapidly (say in about 1-1.5 years). (20)

Significant differences in market share developments can be observed depending on whether volume or value data are used. Since 1999 the share of extra-euro area exports in world trade has performed significantly better in terms of values (bottom panel of Graph 2.4) than in terms of volumes. Both shares have been on a declining trend over the past decade but the fall has been less steep in values than in volumes. Furthermore, the fall in value has been much less pronounced in the euro area than in the US and Japan. This is suggestive of euro-area exporters being relatively well positioned in terms of product quality and therefore commanding more pricing power than their US or Japanese counterparts.

## *2.2. The geographical pattern of euro-area exports*

### The geographical composition of trade is determined by distance and size …

Euro-area trade is split roughly in half between intra- and extra-euro area flows, with the latter slightly exceeding the former since 2008. The bulk of extra-area trade is with partners in the region’s geographical proximity (Table 2.1). The UK alone accounted for 9.5 % of euro-area imports and 12.3 % of euro-area exports in 2011. Accounting for 14 % of euro-area exports, those

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(19) Intra-euro area trade is excluded from the world total in the analysis of export market shares.

(20) For an analysis of the real exchange rate elasticity of euro-area exports see for instance Quarterly Report on the Euro Area, No 2/2010, Box 1.1.

Table 2.1: **Geographical breakdown of exports (in %)**

| | Share of total exports | | | | | | | | | Import growth(1) | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | EA 17(2) | | | US | | | Japan | | | | |
| | 1999 | 2007 | 2011 | 1999 | 2007 | 2011 | 1999 | 2007 | 2011 | 99-07 | 07-10 |
| EA 17 | n.a | n.a | n.a | 15.5 | 15.4 | 13.0 | 14.0 | 11.1 | 8.6 | 8.3 | 1.2 |
| US | 16.4 | 13.1 | 11.4 | n.a. | n.a | n.a. | 31.1 | 20.4 | 15.5 | 5.0 | 0.3 |
| Japan | 3.3 | 2.3 | 2.3 | 8.2 | 5.3 | 4.3 | n.a. | n.a. | n.a. | 5.7 | 4.8 |
| Brazil | 1.5 | 1.2 | 1.7 | 1.9 | 2.2 | 2.9 | 0.5 | 0.6 | 0.8 | 7.7 | 15.6 |
| Russia | 1.6 | 4.6 | 4.6 | 0.3 | 0.6 | 0.5 | 0.1 | 1.5 | 1.4 | 22.7 | 8.8 |
| India | 0.9 | 1.5 | 1.8 | 0.5 | 1.5 | 1.5 | 0.6 | 0.9 | 1.3 | 16.6 | 18.3 |
| China | 1.9 | 4.1 | 6.7 | 1.8 | 5.4 | 6.7 | 5.6 | 15.3 | 19.7 | 20.6 | 14.7 |
| UK,DK,SE | 25.8 | 21.3 | 17.7 | 6.3 | 4.9 | 4.2 | 4.0 | 2.7 | 2.3 | 6.9 | -3.6 |
| EFTA | 8.1 | 7.1 | 7.5 | 1.5 | 1.8 | 1.9 | 0.9 | 0.6 | 1.3 | 10.6 | n.a |
| Non-euro NMS(3) | 8.9 | 13.9 | 13.9 | 0.3 | 0.7 | 0.6 | 0.3 | 1.0 | 0.8 | 20.1 | -4.5 |
| East Asia(4) | 5.9 | 5.5 | 6.1 | 9.8 | 9.2 | 9.7 | 28.1 | 29.4 | 31.8 | 8.0 | 2.9(5) |
| Latin America(5) | 3.7 | 3.3 | 3.4 | 18.3 | 18.9 | 22.2 | 3.8 | 4.1 | 4.4 | 7.5 | 3.9 |
| Africa | 5.7 | 5.8 | 6.4 | 1.4 | 1.9 | 2.0 | 1.3 | 1.6 | 1.6 | 11.9 | 3.0 |
| Rest of the world | 16.3 | 16.2 | 16.6 | 34.2 | 32.3 | 30.3 | 9.8 | 10.9 | 10.6 | 8.3 | -0.1 |

(1) Average annual growth in EUR. (2) Excl. trade between members. (3) BG, CZ, HU, LT, LV, PL, RO. (4) Hong Kong, Indonesia, South Korea, Malaysia, Singapore, Thailand, Taiwan. (5) Excl. Brazil.

***Source:*** Commission services and UN Comtrade.

new EU Member States which have not joined the euro also represent a major trading partner. A significant share of euro-area trade also takes place with non-EU European countries. These are countries that are close geographically, such as Switzerland and Norway, or are somewhat more peripheral in the European continent but are large, such as Russia and Turkey.

The group of geographically distant euro-area trade partners is dominated by the largest global importers and exporters. Some of them are advanced economies, such as the US, while others are emerging, such as China, India and Brazil. In 2011, the share of the US in euro-area exports was 11.4 % while the share of Brazil, Russia, India and China (the BRICs) was 14.8 %.

These figures show that geographical proximity and relative country size are important determinants of geographical euro-area trade patterns. Unsurprisingly, this is also true for other leading advanced economies. Due to its specific geographic configuration (with a comparatively limited number of direct neighbouring countries), the US has a more concentrated geographical distribution of trade partners than the euro area. Trade with Canada and Mexico represented more than a third of US exports in 2011. Beyond these immediate neighbours, the other two large advanced economies, Japan and the euro area, as well as emerging economies in Latin America and East Asia, account for a substantial share of US trade.

Japan trades predominantly with the US and countries in Asia. By 2011, China had become Japan's largest trade partner in terms of both imports and exports. The US is a more important trade partner for Japan than for the euro area.

### … with faster-growing emerging economies becoming increasingly important

Trade between the euro area and emerging markets increased substantially in the last decade. The growth was essentially spurred by the rapid integration of emerging markets into the world economy discussed in Chapter 1 and is therefore evident in the US and Japan too. Within the emerging market category, Brazil, Russia, India and China (the BRICs) stand out. The very rapid growth in trade with the BRICs between 1999 and 2007 transformed the group into a major euro-area trade partner (Table 2.2). Trade with the BRICs was initially based on traditional comparative advantage, with BRICs' exports essentially driven by large endowments in natural resources and labour and BRICs' imports of manufactured goods fuelled by strong domestic demand. In recent years, however, a shift of BRICs' exports towards goods of higher quality and higher technological content has been clearly visible, most notably for China.

The dynamics of trade intensification between advanced economies and emerging markets reflects not only a general trend of integration into world markets but also geographical specificities. The euro area being geographically close to the (non-euro) new EU Member States or to Russia, the share of these destinations in euro-area total exports has increased more rapidly than for the US or Japan. Conversely, Japan has benefited more than the other two advanced economies from trade integration with East Asia.

Table 2.2: **Trade growth (1999-2007 in %) (1)**

| | EA 17 | | US | | Japan | |
|---|---|---|---|---|---|---|
| | Imports | Exports | Imports | Exports | Imports | Exports |
| EA 17 | n.a | n.a | 4.5 | 3.6 | 2.6 | 0.7 |
| US | 2.6 | 5.1 | n.a | n.a | -2.2 | -1.7 |
| Japan | 1.3 | 3.4 | -1.8 | -1.8 | n.a | n.a |
| BRICs | 16.5 | 15.6 | 11.1 | 14.5 | 8.3 | 18.7 |
| Other emerging economies(2) | 10.4 | 9.1 | 8.2 | 6.8 | 9.6 | 9.2 |

(1) Average annual growth in EUR. (2) Average of Africa, Latin America, East Asia and non-euro area new EU 27 Member States.

***Source:*** Commission services and UN Comtrade.

## The crisis had a mixed impact on the euro-area's geographical export structure

The global crisis seems to have altered some of the pre-crisis trends in the geographical composition of euro-area exports. Overall gains in the share of emerging markets have continued since 2007 although some shifts within this bloc are noticeable. Emerging countries that were relatively less affected by the crisis, such as China and Brazil, have moved up the ranking of top euro-area export destinations faster since 2007. A pick-up of the relative importance of East Asia, Africa and, to a lesser degree, Latin America is also visible. Conversely, after a surge in pre-crisis years, the share in total euro-area exports of new EU Member States remained broadly stable between 2007 and 2011, reflecting the intensity of the crisis in most of these countries.

The global crisis also seems to have speeded up the decline in the share of some advanced economies such as the UK in total euro-area exports. This can be explained by the weakness of domestic demand in these countries, which face protracted balance sheet adjustment processes in the private and/or the public sector. But recent shifts in the export structure do not only reflect factors such as deleveraging and the changing structure of global trade. They have also been driven by potentially more short-term developments such as exchange rate fluctuations. For instance, exports from the euro area to Switzerland have been boosted by the depreciation of the euro against the Swiss franc. The franc gained 8.6% in nominal terms against the euro in 2010 and another 10.7% in 2011. As a result, in 2011 the share of Switzerland in euro-area exports climbed back to 6.3%, close to its value in 1999. Conversely, exports to the UK have been hampered (in addition to weak demand) by the depreciation of the British Pound.

The short- to medium-term implications of these changes in the geographical structure of euro-area exports are difficult to assess. In pre-crisis years, the euro area tended to offset a comparative disadvantage in trade with emerging Asia and Latin America with a comparative advantage in trade with new EU Member States and Russia. Its specialisation has proved to be relatively unfavourable during the global crisis, in particular due to sharp slumps in some new EU Member States. To check whether this remains true for the near future, Table 2.3 presents import growth for major destinations as projected in the European Commission's spring forecast for 2012 and 2013. Although import demand in countries mired in balance sheet adjustment processes such as the UK will remain comparatively sluggish, the overall import demand addressed to the euro area is projected to grow only slightly slower over the two years considered than for the US and Japan (first row of Table 2.3). This mainly reflects a strong rebound in import demand in new EU countries. Hence, although the global crisis seems to have affected geographical trade patterns, this should not translate into a major handicap for euro-area exports over the short to medium term.

Table 2.3: **Potential nominal export growth, 2011-2013 (%)**

| | Euro area | US | Japan | Import growth 2011-13(1) |
|---|---|---|---|---|
| Weighted demand for exports from...(1)(2) | 6.2 | 6.8 | 6.6 | |
| **Share in total exports** | | | | |
| Euro area | n.a | 13.0 | 8.6 | 5.0 |
| US | 11.4 | n.a. | 15.5 | 7.0 |
| Japan | 2.3 | 4.3 | n.a. | 6.7 |
| BRICs | 14.8 | 11.7 | 23.2 | 5.9 |
| *of which Russia* | *4.6* | *0.5* | *1.4* | *5.3* |
| UK,DK,SE | 17.7 | 4.2 | 2.3 | 4.0 |
| EFTA | 7.5 | 1.9 | 1.3 | 6.4 |
| Non-euro NMS(3) | 13.9 | 0.6 | 0.8 | 7.5 |
| Other(4) | 13.8 | 45.0 | 21.9 | 6.9 |

(1) Forecast average annual growth in EUR (PPS). (2) Export-weighted import demand in export destinations. (3) BG, CZ, HU, LT, LV, PL, RO. (4) HR, MK, TR, RS, ME, CA, KO, HK, AU, NZ, MX, ID, AR, SA, ZA.

***Source:*** Commission services and UN Comtrade.

## 2.3. The sectoral pattern of euro-area exports

### The general picture

Table 2.4 shows the sectoral structure of exports for the euro area, the US and Japan over the period 1999-2011 and compares it to the sectoral composition of world imports. In all three regions, the broad sector 'machinery and transport equipment' accounts for the largest share of total exports (close to 50 % in the case of the euro area), with Japan clearly ahead of the two other regions in that respect. The euro-area export structure appears more diversified than that of the other two regions, with a larger share of food and beverages, chemicals and 'other manufacturing'.

A comparison of the product structure of euro-area exports with the structure of world trade (last column of Table 2.4) provides some indication of the region's comparative advantage. In general, the euro-area export structure is closer to the world trade structure than that of the US or Japan, suggesting a less clear-cut comparative advantage. Like the US and Japan, the euro area has a clear relative specialisation (i.e. a higher share in total exports than the world at large) in machinery and transport equipment. Within this very large sector, the picture is contrasted, with a relative specialisation in sub-sectors such as non-electrical machinery and transport equipment but a weaker presence in sectors such as ICT equipment and non-electrical machinery. Unlike the US and Japan, the euro area also posts a relative specialisation in chemicals. Reflecting its endowments in natural resources, its exports are comparatively smaller in raw materials and fuels.

Table 2.4: **Product shares in total exports and in world imports (average in %)**

| | Euro area | US | Japan | World imports |
|---|---|---|---|---|
| | 1999-2011 | 1999-2011 | 1999-2011 | 1999-2010 |
| Food, beverages and oils | 6.5 | 6.4 | 0.5 | 6.8 |
| Crude materials | 1.8 | 4.5 | 1.1 | 3.7 |
| Fuels | 4.0 | 3.3 | 1.0 | 12.3 |
| Chemicals | 15.3 | 12.0 | 8.8 | 10.7 |
| Machinery and transport equipment | 43.8 | 47.3 | 64.1 | 37.4 |
| Other manufacturing | 25.7 | 21.3 | 19.6 | 25.3 |
| Other commodities and transactions | 2.8 | 5.3 | 4.9 | 3.7 |

***Source:*** UN Comtrade, Commission services.

Useful insights can also be gained by classifying exports according to their factor intensity. The euro area mainly specialises in the export of capital- and 'difficult to imitate' research-intensive goods, but also exhibits a small comparative advantage in labour-intensive goods relative to the US and Japan. (21)

The specialisation of the euro area in research-intensive goods is not as strong as that of the US and Japan, which, unlike the euro area, have a strong comparative advantage in ICT sectors. The euro-area's share of ICT exports, such as office and data-processing machinery and telecommunication equipment, in total exports is remarkably lower than in the US and Japan. Nevertheless, the euro area has a strong position in non-ICT high-tech sectors such as pharmaceuticals (4.7 % of its total exports) and, to a lesser extent, aircraft (2.8 % of total exports).

Table 2.5: **Export shares by factor intensity (averages in %)**

| | Euro area | US | Japan | World imports |
|---|---|---|---|---|
| | 1999-2011 | 1999-2011 | 1999-2011 | 1999-2010 |
| Raw material-intensive | 10.9 | 14.0 | 2.5 | 22.7 |
| Labour-intensive | 18.2 | 14.6 | 7.4 | 17.8 |
| Capital-intensive | 20.5 | 13.6 | 29.6 | 16.7 |
| Research-intensive | 50.4 | 57.8 | 60.5 | 42.8 |

***Source:*** UN Comtrade, Commission services.

At first sight, the export specialisation of the euro area appears somewhat less conducive to growth than that of the US or Japan, due to a weaker presence in fast-growing ICT sectors. However, as indicated by the overall market share developments (particularly in nominal prices) presented in the introductory section, there is no evidence that the export specialisation is systematically less supportive in the euro area than in the US or Japan. This may be explained by several factors discussed further hereafter. First, competitive pressures in ICT (particularly from emerging markets) are generally high and competitive advantages in that sector can be difficult to maintain. Second, the euro area is specialised in research-intensive sectors such as pharmaceuticals where growth may be lower but where emerging market competition and price pressures are weaker. Finally, the euro area also enjoys a strong position in the export of medium-high tech machinery, where growth is relatively fast and competitive pressures can be weathered by raising product quality.

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(21) For an analysis of the sectoral specialisation of the euro area, the US and Japan according to the products' factor intensity, see Quarterly Report on the Euro Area, No 2/2010.

### Pre-crisis performance

The product structure of advanced economies' exports changed significantly during the decade preceding the crisis (Table 2.6). The relative importance of the machinery and transport sector declined in the euro area, the US and Japan, reflecting keener competition from emerging markets, notably China. There are, however, indications that the euro area weathered the rise in competition better than the other two regions. The decline in the sector's export share was more contained in the euro area than in Japan and especially the US, where the share of the sector in total exports fell from 54.2 % in 1999 to 36.5 % in 2011. (22) Over 1999-2007, euro-area exports of machinery and transport equipment increased in value terms and the trade balance displayed a moderate improvement. On the other hand, Japan displayed a smaller improvement of the trade balance, while the US ran a trade deficit.

Table 2.6: **Change in product shares of total exports (in pp, 1999-2007 and 2007-2011) (1)**

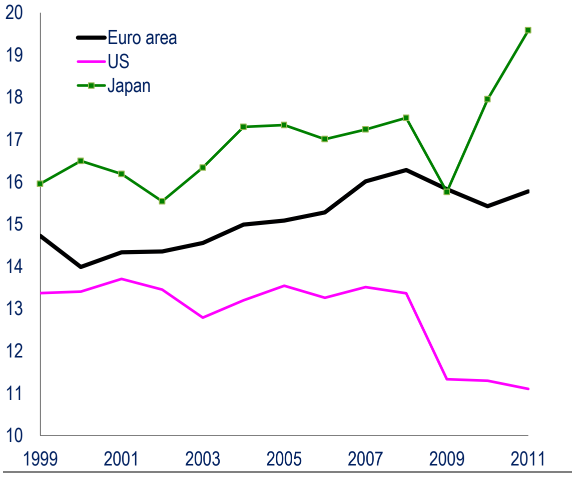
| | Euro area | | US | | Japan | |
|---|---|---|---|---|---|---|
| | 1999 - 2007 | 2007 - 2011 | 1999 - 2007 | 2007 - 2011 | 1999 - 2007 | 2007 - 2011 |
| Food, beverages and oils | -0.54 | 0.87 | -0.31 | 0.83 | -0.01 | 0.06 |
| Crude materials | 0.26 | 0.31 | 1.66 | 0.69 | 0.55 | 0.23 |
| Fuels | 2.72 | 2.30 | 1.97 | 4.54 | 1.01 | 0.68 |
| Chemicals | 1.54 | 1.10 | 2.45 | 0.73 | 1.77 | 1.14 |
| Machinery and transport equipment | -2.54 | -3.20 | -6.42 | -11.28 | -5.40 | -4.92 |
| Other manufacturing | -1.17 | -1.68 | 0.41 | -1.12 | -0.09 | 2.30 |
| Other commodities and transactions | -0.26 | 0.30 | 0.25 | 5.61 | 2.18 | 0.52 |

(1) The change in the sectoral share of total exports is expressed in percentage points and is the total change over the period of reference.

***Source:*** UN Comtrade, Commission services.

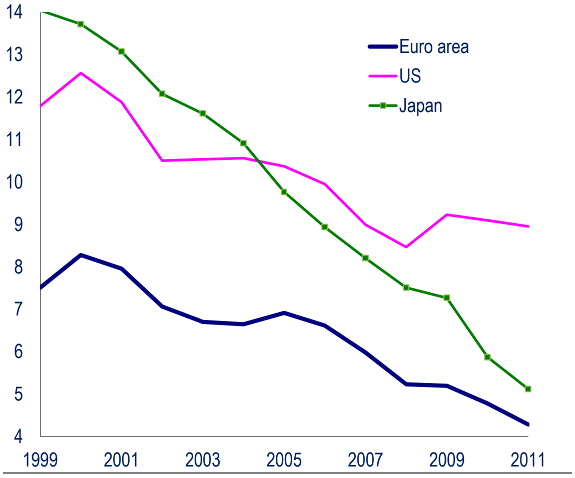
A closer look at the components of the machinery and transport equipment sector reveals that the comparatively good performance of the euro area for the sector as a whole can primarily be traced back to non-electrical machinery. Graph 2.5 shows that while the US appears to have reduced its specialisation in this sub-sector, the euro-area export share increased moderately in the years preceding the global economic crisis. Developments were somewhat less favourable with other machinery components. The euro area registered a significant decline in the share of ICT, less steep than in Japan but comparable with what was observed in the US (Graph 2.6). (23) The euro-area share of cars in total exports was broadly stable over the period, while it increased moderately in the US and especially in Japan.

Graph 2.5: **Share of non-electrical machinery in total exports (in %, 1999-2011)**



***Source:*** UN Comtrade, Commission services.

Graph 2.6: **Share of ICT in total exports (in %, 1999-2011)**



***Source:*** UN Comtrade, Commission services.

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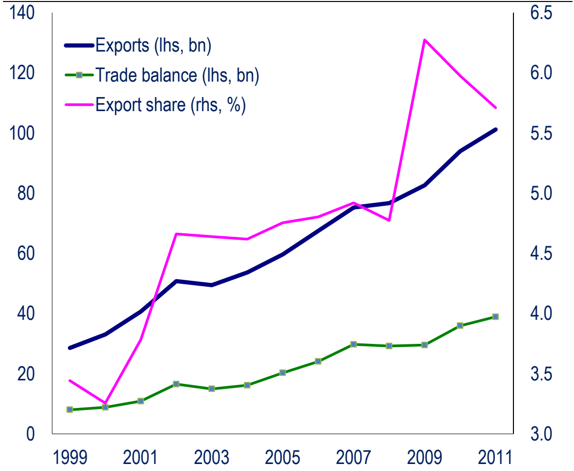
(22) The changes in the shares of 'machinery and transport equipment' and of 'other commodities and transactions' in total US exports over the period 2007-2011 are partly overestimated due to the reclassification of certain items.

(23) ICT goods are here defined as office machines and automatic data-processing machines and telecommunications and sound-recording and reproducing apparatus and equipment, based on the 2-digit SITC codes 75 and 76.

The euro-area's already strong position in exports of chemicals improved further in pre-crisis years. Within this sector, the fastest export growth was experienced by medicinal and pharmaceutical products, in terms of both value and market shares (Graph 2.7). Exports of pharmaceuticals also increased in the US. Nevertheless, the pharmaceuticals trade balances in the US and Japan showed a sizeable deterioration over the period, while the euro-area trade balance improved steadily, suggesting a stronger competitive position of the euro area in this key high-tech sector.

Graph 2.7: **Euro-area exports of medicinal and pharmaceutical products (1999-2011)**



***Source:*** Commission services.

During the pre-crisis period, the share of mineral fuels in total exports increased in all three major advanced economies. However, all three regions displayed a large and widening negative net trade balance (the largest being in the euro area). Fluctuations in the balance reflect the developments in world oil prices and the economic cycle.

Finally, looking at comparative advantage by factor intensity over the period 1999-2007, there is some evidence of a decline in the euro-area's specialisation in labour-intensive exports, such as leather, textiles and clothes, and a shift towards raw material-intensive goods and some capital-intensive goods such as rubber and metals. However, the euro area still maintains a higher export specialisation in labour-intensive goods than the US and Japan. The share of research-intensive exports in total exports also declined in all three regions but to a lesser extent in the euro area.

Table 2.7: **Change in sectoral shares of total exports classified by factor intensity (in pp, 1999-2007 and 2007-2011) (1)**

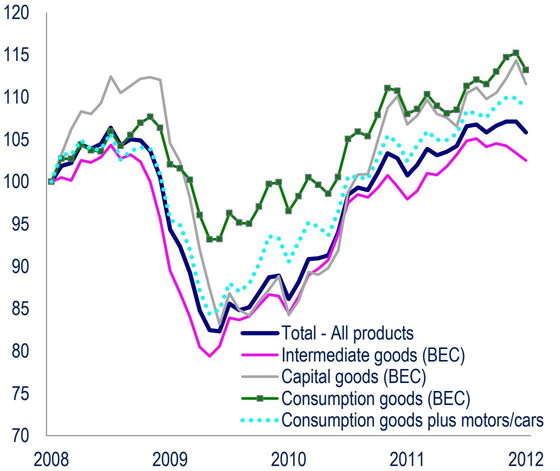
| | Euro area | | US | | Japan | |
|---|---|---|---|---|---|---|
| | 1999 - 2007 | 2007 - 2011 | 1999 - 2007 | 2007 - 2011 | 1999 - 2007 | 2007 - 2011 |
| Raw material-intensive | 2.69 | 3.60 | 3.26 | 8.00 | 1.75 | 1.00 |
| Labour-intensive | -3.15 | -1.50 | -0.36 | 0.28 | -1.50 | 0.19 |
| Capital-intensive | 2.16 | -0.90 | 1.39 | -0.54 | 5.52 | -2.97 |
| Research-intensive | -1.70 | -1.21 | -4.30 | -7.75 | -5.76 | 1.77 |

(1) The change in the sectoral shares of total exports is expressed in percentage points and is the total change over the period of reference.
***Source:*** UN Comtrade, Commission services.

## Post-crisis developments

Reflecting different sensitivities to the cycle, sectoral exports have been affected unevenly by the global crisis. The sharp drop in exports in 2008-09 has been followed by a strong rebound, but activity in a number of sectors is still below its pre-crisis peak. Exports of intermediate goods and capital goods declined sharply in the early stages of the crisis, while exports of consumption goods, typically more resilient to crises, were less severely affected. Nevertheless, when passenger cars are added to consumption goods, the slump in exports of consumption goods was much more pronounced (Graph 2.8).

Graph 2.8: **Extra-euro area exports by sector (volume indices, January 2008 = 100) (1)**



(1) Six-month moving average.
***Source:*** Commission services.

Besides short-term cyclical considerations, there are concerns that the global crisis may have lasting effects on some sectors. In the context of a balance sheet crisis characterised by protracted deleveraging processes in a number of advanced countries, persistent downside pressures on demand for investment goods and durable goods can be expected. This is visible to some extent in the most recent trade data. It is obviously difficult at this stage to disentangle cyclical from structural changes in exports, but there is evidence pointing to persistent effects of the crisis in some sectors.

In particular, the broad machinery and transport sector appears to have been durably affected by the crisis. Sectoral exports in value terms in the euro area are above their pre-crisis levels, but their shares in total exports have dropped by 3.2 pp since 2007. Even larger declines in the relative importance of machinery and transport equipment were registered in the US and Japan. The demand constraints deriving from the deleveraging process have been accompanied by supply constraints, with a further intensification of competition from China, whose share of machinery and transport equipment in total exports has been steadily increasing.

Looking into the components of the broad machinery sector, euro-area and Japanese exports of non-electrical machinery performed well during the crisis, recovering after a large drop in 2009 both in value terms and as a share of total exports. On the other hand, the share of ICT products in total euro-area exports is still currently 1.7 pp below its 2007 level. The ICT sector accounts for more than half of the decline in the overall machinery and transport sector over the period 2007-11, and its sectoral trade balance deteriorated further with respect to pre-crisis levels. Exports of electrical machinery were also affected more strongly by the global economic crisis, with a deterioration of the trade balance and a 0.7 pp decline of the sectoral share in total exports compared with the 2007 level. Finally, the global economic crisis has also hit the car industry, where the export share in 2011 was still below its 2007 level.

Some sectors have, however, been more resilient to the crisis than machinery and transport equipment. The share of crude materials and mineral fuels in total exports has increased further throughout the euro area and in the US and Japan since 2007, although trade balances have worsened considerably. Exports of foods and beverages have increased since the onset of the crisis in the euro area as well as in the US and Japan. Moreover, since 2007, the increase in euro-area exports of medicinal and pharmaceutical products has accelerated.

Overall, the global economic crisis appears to have left a lasting mark on a range of investment and durable goods sectors, amplifying pre-crisis weaknesses. An exception is the non-electrical machinery sector, where the euro area maintains its traditional comparative advantage.

## *2.4. Conclusion*

The share of euro-area exports in total world trade has been declining since the late 1990s. The trend has been visible in the US and Japan too and has been, to some extent, less rapid than in those two economies. It reflects the rapid integration of emerging economies into world trade but also euro exchange rate developments. There is no evidence that the crisis has accelerated the losses in euro-area market share observed in the decade preceding the crisis: since 2010, the market share has shown signs of stabilisation, mostly as a result of a significant depreciation of the euro.

There is, however, some evidence that the crisis has affected the structure of euro-area exports. It seems to have accelerated the pre-crisis shift towards emerging markets, where demand has proved much more resilient than in advanced economies. It also seems to have accelerated the declining importance of some traditional advanced partners where deleveraging (sometimes compounded by exchange rate developments) is hampering demand for euro-area exports. Overall, however, projected changes in world import demand patterns over the next few years, with in particular a deceleration in China (where the euro area is less present than Japan) and a strong rebound of new EU Member States (where the euro area is comparatively strong) are such that geographical specialisation should not be much less supportive in the euro area than in the US or Japan.

The potential lasting impact of the crisis is probably more visible and challenging at the sectoral level. The euro area has a strong comparative advantage in exports of medium-high tech machinery and of chemicals, particularly pharmaceuticals. Partly due to its strong position in pharmaceutical products, the euro-area’s overall export performance in chemicals seems to have been little affected by the global economic crisis. By contrast, the situation of the machinery and transport equipment sector appears more difficult. Largely due to keener competition from emerging markets, notably China, the share of the sector in total euro-area exports declined significantly during the decade preceding the crisis. As a result of the ongoing deleveraging trend in some parts of the world (and related constraints on demand for investment equipment and durables), the crisis seems to have exerted additional pressure on the sector. The recent decline in machinery and transport export shares was more contained than in other advanced countries, such as the US and Japan, suggesting that the euro area is tackling this challenge comparatively well. However, while the competitive position of non-electrical machinery seems to remain comparatively strong, the crisis has further weakened the position of the ICT, electrical machinery and car sectors.

# 3. A closer look at some drivers of trade performance at Member State level

*This chapter takes a closer look at some drivers of the trade performance of individual euro-area Member States. It shows that the import content of exports is high and rising, particularly in smaller Member States. This has important implications for the impact of exports on growth and the trade balance. Decomposition of export growth based on a constant-market share technique shows that country differences in export performance are mainly driven by market share gains or losses within geographical destinations and product markets, with the overall geographical and sectoral specialisation playing only a modest role. There is some persistence in export performance over time, with market share gains within geographical destinations and product markets in pre-crisis years correlated with gains since the crisis. This inertia in export performance is a factor that could contribute to the persistence of external imbalances. And there does not seem to be any trade-off between strategies which enhance product competitiveness horizontally (across all geographical markets) and those which may customise products to local needs or tastes in destination countries. Finally, export performance appears to be only partly related to price competitiveness, leaving an important explanatory role for non-price competitiveness. In a policy perspective, strategies to rebalance current account deficits should aim to enhance both price and non-price competitiveness, with a key role to be played by increased competition in the service sector, export promotion programmes and the promotion of R&D and skilled labour.*

Chapter II of this report provides an assessment of the overall trade performance of the euro area. This aggregate picture conceals substantial country differences, however. The present chapter therefore takes a closer look at the trade performance of euro-area Member States, emphasising in particular those countries currently engaged in a process of rebalancing large current account deficits. It aims to gain a better understanding of the role of some key structural factors underpinning trade performance and their possible contribution to external rebalancing.

Section 3.1 evaluates the import content of exports across Member States. While empirical analyses of trade performance frequently focus exclusively on exports, understanding the contribution of exports to the trade balance requires an evaluation of their import content. Section 3.2 presents a shift-share decomposition that disentangles the roles of Member States' geographical and sectoral specialisations. It also discusses the links between export market share gains and price or non-price competitiveness and reviews the recent empirical literature on non-price competitiveness factors. Section 3.3 then draws conclusions and offers some policy insights.

## *3.1. Import content of exports*

Deducting embedded intermediate inputs from gross exports — determining the import content of exports — is important for a proper assessment of competitiveness and of current account rebalancing challenges.

The methodology used to calculate the import content of exports is described in Box 3.1. A summary picture of the results is presented in Graph 3.1, which shows (24) the import content as a percentage of the total value of exports for the economy at large. It therefore includes all industries, from agriculture to services. Three main findings emerge:

- In all Member States, the import content of exports is far from negligible. A rise in exports therefore entails an increase in imports of intermediate goods, which mitigates significantly the expected effect of exports on the trade balance.
- For most countries in the sample, the import content is rising over time, which reveals the increasing role of international value chains in modern economies.
- There is a wide variation across countries, which could be partly driven by size or sectoral structure.

The import content of exports in 2005 in the euro area ranged from 26 % in Greece to 52 % in Estonia. More than a quarter of the value of exports thus consists of intermediate inputs imported, with this share being substantially

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(24) The estimates are based on data from Eurostat Input-Output tables. Since the latest data available vary across countries, the years 1995 and 2005 have generally been taken to harmonise the presentation of results. Exceptions include: Estonia (1997), Hungary and Ireland (1998), and Bulgaria, Lithuania, Poland, Romania, Slovenia and Slovakia (2000).

### *Box 3.1:* Calculating the import content of exports

The import content of exports refers to the intermediate inputs of foreign origin which are, both directly and indirectly, embedded in the goods and services exported by the country. The calculation is carried out using the input-output tables for EU countries published by Eurostat. The method used is standard and is based on the following expression:

$$MC = \left\{ \frac{\left[ M \left( I - A_d \right)^{-1} X \right]}{X_t} \right\} \times 100$$

M is a vector of technical coefficients representing the use of imported intermediate inputs: for each industry it is calculated as the ratio of intermediate inputs imported to the gross value of production. $A_d$ is the matrix of technical coefficients calculated from the matrix of intermediate transactions for domestic products. X is a vector of exports of domestic products and $X_t$ is the total value of exports. The number of industries is 59.

This expression provides the import content of exports for the economy at large. The results by industry, which underlie the overall figure, provide interesting insights into the interpretation of the results. As the calculation uses basically the intermediate flows matrix, the import content of exports does not include the imports of capital goods used, as part of the capital stock of the economy, in the production of exports. In other words, it does not measure the contribution of capital of foreign origin used to produce goods and services exported.

higher in a number of countries. Small countries tend to be more open to trade and to post a higher import content, while France, Germany and Italy are all at the bottom of the euro-area ranking. (25)

In addition to size, the diversity of these shares may also be related to the sectoral structure of the economy. An example is Greece, where the comparatively low import content of exports could be explained, at least partly, by the fact that the economy is more oriented towards services. Outside the euro area, a similar explanation holds for the low import intensity of UK exports.

The import content of exports increases significantly between the two years considered in Graph 3.1, and the trend is further confirmed by results for more recent years available for a few countries. Annual data for Germany and Finland also show that the upward trend is steady, although the lack of data for 2010 means that the impact of the crisis cannot be analysed. The trend is strongly driven by the process of globalisation and the organisation of production around global value chains (GVCs), a development which is more apparent when analysed at firm and industry level. (26)

For the EU as a whole the import content of exports is substantially lower (13.5 %) than for individual countries. This shows the significant role of the internal market in terms of the supply of intermediate inputs for the production of exports by EU countries. On average for the period 1999–2011, 70 % of the intermediate inputs used by industries in EU countries were imported from other EU countries. Imports of intermediate inputs are not just a leakage of activity towards partner countries, but also a factor of competitiveness to the extent that the economy has access to better quality inputs.

The import content of exports shows a high variation across industries within a country as the internationalisation of the production process is more developed in some industries than in others. For instance, in Germany the import content of exports ranges from 3.7 % (other services) to 81.6 % (coke, refined petroleum products and nuclear fuels), for an overall average of 28.5 %. While these are extreme cases, there is still substantial variation across industries: manufacturing and transport activities are above the average, while, as expected, all the other services industries are below the average.

Although there is a positive correlation between the import content of exports at industry level in different countries, there is still substantial variation in the proportion of imported inputs used by the same industry across countries. This reflects the above-mentioned country size effect and the different position of countries in the GVCs. For example, in computers and office equipment the import content of exports ranges from 19.8 % (EL) to 88 % (IE) and in electrical machinery from 25.5 % (DE) to 68.4 % (EE). For the same industries — and as expected — France,

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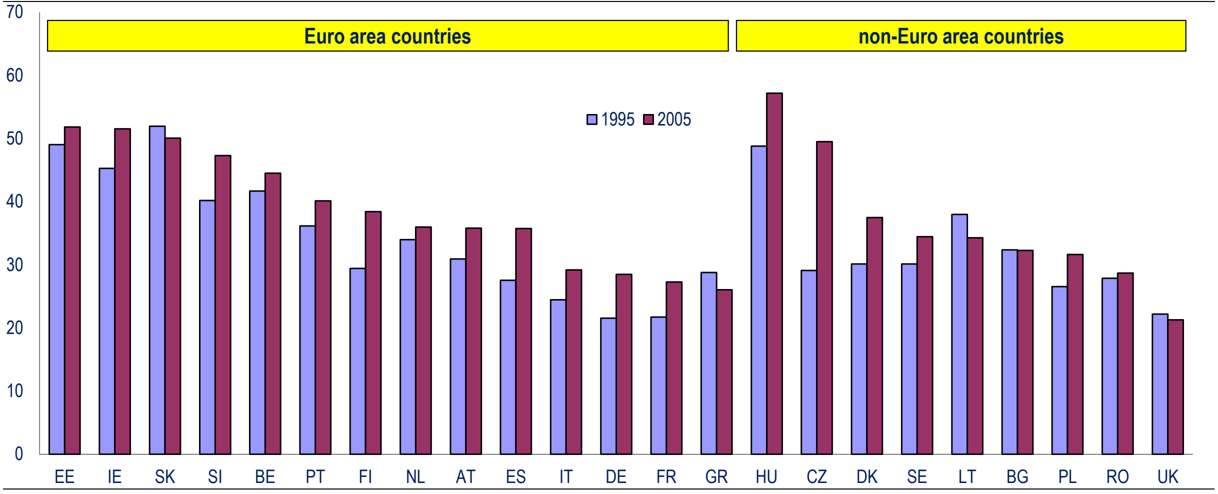
(25) The rank correlation coefficient (Spearman) between the import content of exports for the whole economy and GDP is negative (−0.57) and statistically significant.

(26) Gereffi, G., J. Humphrey and T. Sturgeon (2005), 'The governance of global value chains', *Review of International Political Economy*, Vol. 12, No 1, 2005.

Graph 3.1: **Import content of exports, EU Member States (in %)**



***Source:*** Commission services' calculations. Bulgaria: OECD STAN database.

Germany and Italy exhibit lower uses of imported intermediate inputs than the other countries.

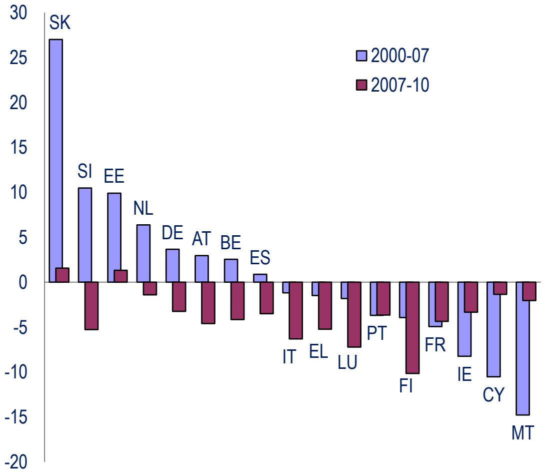
The analysis presented here also has implications in terms of assessing the needs of Member States with current account imbalances. For the euro-area countries, an increase in exports will trigger imports of intermediate inputs amounting, on average, to 38.7 % of the value of exports. For those countries with a high current account deficit, it is clear that, with the exception of Greece (26 %), a quite significant share of export activity leaks to other countries via imports: 35.7 % (ES), 40.1 % (PT) and 51.8 % (EE). While this has been identified as being part of the internationalisation strategy of businesses, the implications for correcting macroeconomic external imbalances cannot be neglected. Likewise, the contribution of exports to growth should be reassessed in the light of these results.

## 3.2. Export performance in product and geographical markets

Graph 3.2 shows the nominal export growth of euro-area countries net of global nominal import growth. It covers both pre-crisis years (2000-07) and developments since the crisis (2007-10) and gives an idea of Member States' market share gains (when net export growth is positive) or losses (when net export growth is negative) over the two periods.

There are clearly large differences in Member States' export performance over the two periods. To shed some light on the drivers of these differences, a shift-share analysis is applied. There are simple techniques to decompose the growth rates of exports into easy-to-interpret components. The decomposition used in this chapter allows us to estimate the contributions of four basic components. The first two consist in two *structural factors*: the geographical and commodity composition of exports — i.e. whether a country is specialised in sectors with dynamic global demand and whether destination countries are dynamic markets (see Box 3.2). These two components are labelled respectively *the initial geographical and product specialisations (ISG and ISP)*. The two specialisation components can be seen as the outcome of past successful export strategies and competitive advantage. For the period under analysis they are, however, considered as exogenous.

Graph 3.2: **Export growth net of global import growth, euro-area Member States (in pp) (1)**



***Source:*** Commission services' calculations based on UN COMTRADE data.

The two remaining components are performance *within product markets* and *within geographical markets*. They show how successful a country has

### *Box 3.2:* Methodology of shift-share decomposition

The decomposition is carried out using UN COMTRADE import and export data for goods for the years 2000, 2007 and 2010, for all the available 2-digit HS product categories (about 100). The year 2007 is selected as a borderline between the period before the global crisis and the post-crisis period. The export and import growth rates are nominal. The importers considered are all the countries available in COMTRADE. The decomposition is subject to the following accounting identity:

$$g^e - g^* = \tfrac{1}{2}\Big[\underbrace{\sum_i w_i^e (g_i^* - g^*)}_{ISG} + \underbrace{\sum_s w_s^e (g_s^* - g^*)}_{ISP} + \underbrace{\sum_i w_i^e (g_i^e - g_i^*)}_{MSGG} + \underbrace{\sum_s w_s^e (g_s^e - g_s^*)}_{MSGP}\Big]$$

$g^e$ — growth rate of total exports of country $e$
$g^*$ — growth rate of global imports
$w_i^e$ — share of exports from country $e$ to country $i$ in total exports of country $e$
$w_s^e$ — share of exports from country $e$ in sector $s$ in total exports of country $e$
$g_i^e$ — growth rate of exports from country $e$ to country $i$ (of all products)
$g_s^e$ — growth rate of exports from country $e$ in sector $s$ (to all destinations)
$g_i^*$ — growth rate of total imports of country $i$
$g_s^*$ — growth rate of global imports in sector $s$

Obviously, a positive difference between the export growth of country $e$ and the global import growth (assumed to be equal to global export growth) points to an increase in the global market share of country $e$. However, that can be entirely because of the favourable initial specialisation (geographical component, ISG, or product component, ISP). The two other components in the decomposition show whether market shares increased within geographical markets and product markets: the market share gains in countries (MSGG) and in products (MSGP) components. Consequently, the latter two components represent the competitiveness of exports in the period analysed. The growth rate components are calculated for two periods (2000–2007 and 2007–2010) and annualised.

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been in increasing its exports above market growth in destination countries and in products. These two factors can be labelled *market share gains in geographical destinations (MSGG) and in products (MSGP)* and reflect a country's export strategy within geographical and product markets, e.g. sufficient or insufficient customisation to local tastes, too high or competitive prices of standardised goods, or high or low quality of higher-end goods. Hence, the market share gain components reflect both price competitiveness developments (a typically successful strategy when competing in markets for standardised goods or in lower-income markets) and non-price competitiveness (important when competing in higher-income destination countries or in differentiated products).

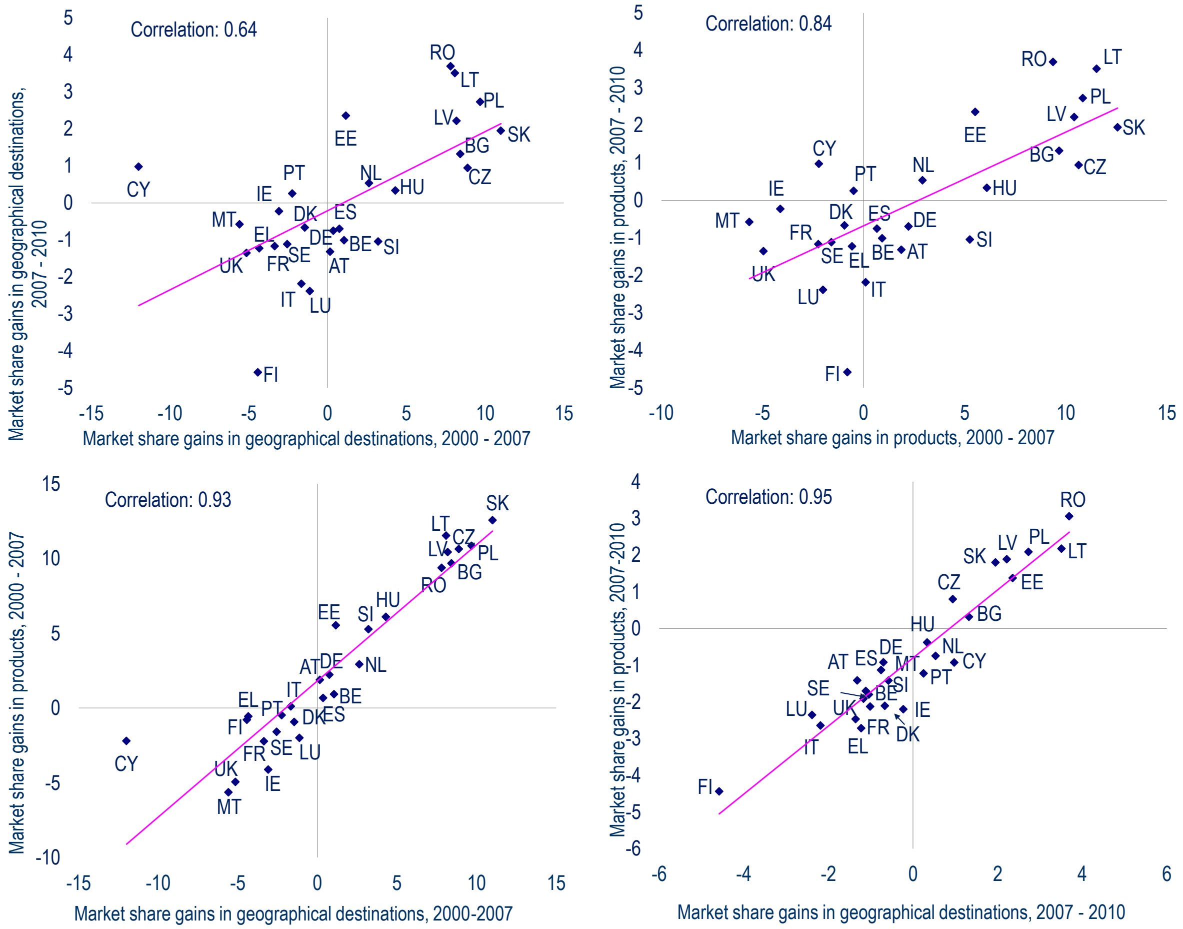
## Patterns in export decomposition across the Member States

The results of this decomposition for each Member State and for the periods 2000-07 and 2007-11 are presented in Table 3.1. A number of statistical patterns can be observed based on the correlations between the export growth components across countries (Graph 3.3).

First, performance shows inertia across the four components. This is particularly true for market share gains within product and geographical markets (*MSGP* and *MSGP*), with correlations in performance over the two periods (2000-07 and 2007-11) of 0.8 and 0.6 respectively (upper panels of Graph 3.3). So there seems to be some degree of persistence in export performance, especially in competitive performance in products. Though not a surprising finding — after all a country's competitiveness does not change overnight — it also contributes to the persistence of external imbalances.

Second, there is a very strong positive link between competitive performance within product markets (*MSGP*) and within geographical markets (*MSGG*), with a correlation above 0.9 (lower panels of Graph 3.3): Member States which gain market shares within their product markets also gain market shares within their destinations. So, there does not seem to be any trade-off between the strategies which enhance product competitiveness globally (across all geographical markets) and those which may customise products to local needs (in terms of price or quality) or tastes in destination countries. It is possible that exporters in successful Member States are able to

Graph 3.3: **Correlations of export growth components, EU Member States (all market share gains in pp)**



***Source:*** Commission services' calculations based on UN COMTRADE data.

produce a wide spectrum of product varieties: both those which compete on prices (usually preferred in lower-income countries) and those which compete on quality (generally with higher demand in richer countries). This strong positive relationship between *MSGP* and *MSGG* is also in line with microeconomic empirical evidence, which shows that high-productivity firms are better at competing both on prices and on quality and at serving more geographical markets, both richer and more difficult markets (e.g. in terms of physical or cultural distance). ([27])

Finally, there is only a weak correlation between the contributions to export growth of initial product composition (*ISP*) and geographical destination composition (*ISG*). In other words, being specialised in fast growing geographical destinations says little about being active in fast-growing product markets, and vice versa.

Similarly, the relationships between the initial specialisation components and the respective market share gain components are relatively weak and mixed. Benefiting from a good specialisation does not necessarily mean a strong capacity to gain market shares on individual markets.

## Results of a cluster analysis

To make a more systematic analysis of the main country differences in the shift-share decomposition, a hierarchical clustering method can be used. In order to shed some light on possible differences between euro-area and other EU Member States, the analysis is applied to all EU Member States. ([28])

As shown in Graph 3.5, the method allows us to distinguish between three country groups. The three groups can be characterised by their median performance and dispersion in each of the four

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([27]) Bastos, P. and J. Silva (2010), ‘The quality of a firm’s exports: Where you export to matters,’ *Journal of International Economics*, Vol. 82, No 2, pp. 99-111.

([28]) Clusters are formed using Ward’s method. Distance is Euclidean distance.

Table 3.1: **The shift-share components of net export growth, euro area Member States (in pp) (1)**

| | 2000–2007 | | | | 2007–2010 | | | |
|---|---|---|---|---|---|---|---|---|
| | *ISG (2)* | *ISP (2)* | *MSGG (2)* | *MSGP (2)* | *ISG (2)* | *ISP (2)* | *MSGG (2)* | *MSGP (2)* |
| | Intial geographical specialisation | Initial product specialisation | Market share gains in geographical destinations | Market share gains in product markets | Intial geographical specialisation | Initial product specialisation | Market share gains in geographical destinations | Market share gains in product markets |
| AT | 1.3 | -0.4 | 0.2 | 1.9 | -1.0 | -0.9 | -1.3 | -1.4 |
| BE | 0.2 | 0.4 | 1.0 | 0.9 | -1.0 | 0.0 | -1.0 | -2.1 |
| CY | 4.7 | -1.0 | -12.0 | -2.2 | -1.7 | 0.3 | 1.0 | -0.9 |
| DE | 1.1 | -0.4 | 0.8 | 2.2 | -0.9 | -0.7 | -0.7 | -0.9 |
| EE | 4.0 | -0.8 | 1.2 | 5.5 | -1.7 | -0.7 | 2.4 | 1.4 |
| EL | 3.2 | 0.2 | -4.3 | -0.6 | -1.4 | 0.1 | -1.2 | -2.7 |
| ES | 0.1 | -0.2 | 0.4 | 0.7 | -1.0 | -0.6 | -0.8 | -1.1 |
| FI | 2.1 | -0.8 | -4.4 | -0.8 | -0.5 | -0.6 | -4.6 | -4.4 |
| FR | 0.8 | -0.1 | -3.4 | -2.2 | -1.0 | -0.3 | -1.2 | -1.9 |
| IE | -0.9 | -0.1 | -3.1 | -4.1 | -1.4 | 0.5 | -0.2 | -2.2 |
| IT | 1.0 | -0.6 | -1.7 | 0.1 | -1.0 | -0.5 | -2.2 | -2.6 |
| LU | 0.3 | 1.0 | -1.1 | -2.0 | -1.2 | -1.3 | -2.4 | -2.4 |
| MT | -1.8 | -1.7 | -5.6 | -5.7 | -0.4 | 0.4 | -0.6 | -1.4 |
| NL | 0.6 | 0.2 | 2.6 | 2.9 | -1.2 | 0.1 | 0.5 | -0.8 |
| PT | 0.4 | -1.3 | -2.2 | -0.5 | -2.1 | -0.6 | 0.3 | -1.2 |
| SI | 2.2 | -0.2 | 3.2 | 5.3 | -1.6 | -0.8 | -1.0 | -1.8 |
| SK | 3.1 | 0.3 | 11.0 | 12.6 | -1.2 | -1.0 | 2.0 | 1.8 |

(1) Net export growth is nominal export growth net of nominal world import growth.
(2) Component acronym, see Box 3.2.

***Source:*** Commission services' calculations based on UN COMTRADE data.

components of the shift-share analysis in the two periods investigated (Graph 3.4). The first group (starting from the right in Graph 3.5) consists only of Member States that joined the EU in 2004 or later (but not all of them). These Member States started from very low export levels and experienced rapid catching-up during the decade. The second (and largest) group is made up of Member States which have generally shown comparatively poor export performance over the two periods considered (CY, DK, FI, FR, EF, IE, IT, LU, MT, PT, SE, UK). A third group consists of mostly advanced countries with relatively strong export performance (e.g. AT, DE, BE, ES, EE, HU, SI, NL). The clustering does not allow a clear distinction to be drawn between euro-area and other EU Member States.

Graph 3.4 points to large differences between the groups in terms of market share components of the shift-share decomposition. Although there are some group differences in terms of the contribution of the geographical and product specialisation components (*ISP* and *ISG*), it turns out that the product market share gain components (*MSGP* and *MSGG*) are much more important for explaining export growth differences. This relative pattern seems to be stable over time. This means that the deep global crisis, which is partly captured by the figures for the second period, did not change the general qualitative picture, although it obviously had an impact at the overall average level of export growth. Finally, it is interesting to note that the second group (low performers) did worse than the other two groups in terms of market share gains within both product and destination markets.

## Developments since the global economic crisis

Turning to developments since the crisis, (29) although most Member States have suffered from the crisis and seen their overall market share performance deteriorate significantly relative to the pre-crisis trends, large country differences are again noticeable. Larger countries have generally kept their ranks in terms of export performance relatively stable whereas the relative positions of smaller countries have been more volatile. This higher volatility for small countries may reflect their dependence on relatively fewer products (due to scale effects in manufacturing) and less diversified trading partners, both leading to a lower degree of export diversification. There are, however, exceptions to this general volatility difference between large and small countries: Italy is one of the countries with the largest relative deterioration.

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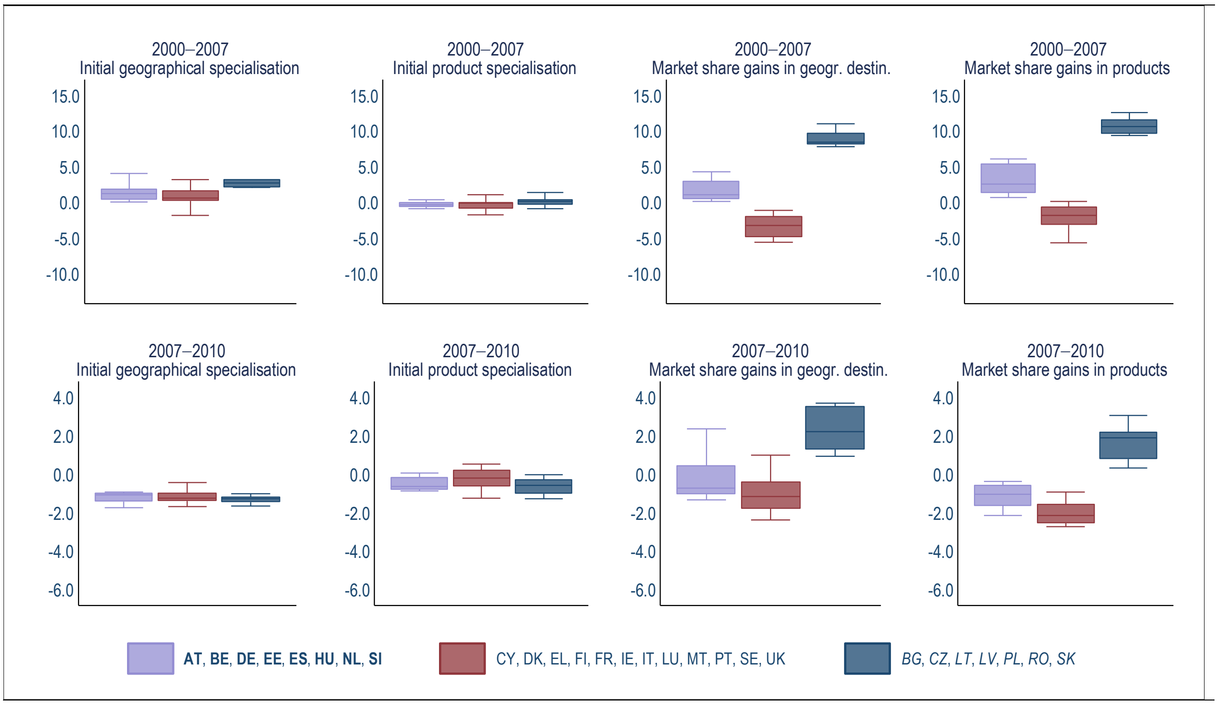
(29) As in the previous section the most recent year covered by the analysis is 2010.

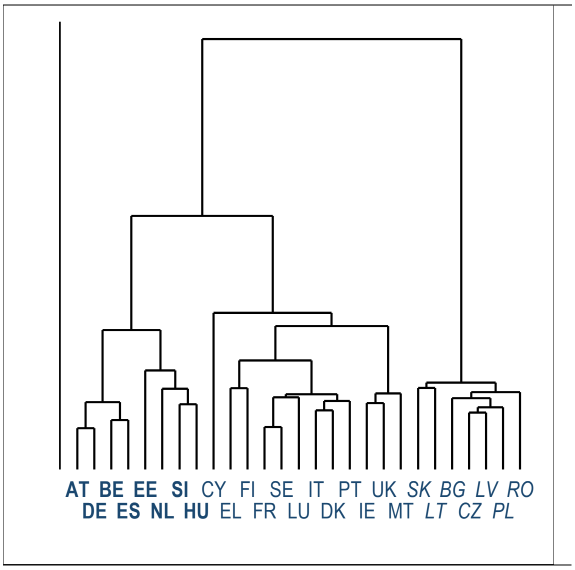
### Graph 3.4: The performance of country clusters in each of the export growth components of the shift-share analysis in the two periods (in pp) (1)



(1) Horizontal lines inside the boxes represent medians, the bottoms and the tops of the boxes represent the 25th and the 75th percentiles, and the 'whisker' lines represent the Tukey adjacent values.
***Source:*** Commission services' calculations based on UN COMTRADE data.

with high or medium external deficits, (30) the dynamism of destination countries (*ISG*) has generally made a negative contribution since the start of the crisis — not surprisingly given the large share of exports going to other sluggish EU economies in that group. The role of product composition (*ISP*) is mixed, with some deficit countries benefiting from the dynamism (though moderate) of their export basket (notably CY, MT, IE and, to a lesser extent, EL) — while the rest suffered from specialisation in products facing below-average global demand. The contribution from the components reflecting countries' market share gains in product (*MSGP*) and geographical markets (*MSGG*) is negative for all deficit countries, with the notable exception of Slovakia, which shows significant market share gains over the post-crisis period (also before the crisis), and Cyprus, whose negative performance in terms of product market shares is offset by market share gains in destination countries.

### Graph 3.5: Country clusters based on the export growth components of the shift-share analysis


**AT** **BE** **EE** **SI** CY FI SE IT PT UK *SK* *BG* *LV* *RO*
**DE** **ES** **NL** **HU** EL FR LU DK IE MT *LT* *CZ* *PL*

Countries marked in bold font belong to the first cluster, those in normal font to the second cluster, and those in italics to the third cluster in the three-cluster classification used in the following analysis. The dissimilarity scale is square-root transformed.
***Source:*** Commission services calculations based on UN COMTRADE data.

Overall, although the effect of a given geographical and sectoral specialisation may change over time, reflecting shifts in the geographical and product drivers of global trade, the results of the analysis of recent years suggest that the specialisation of deficit countries will not be a major help in the correction of external imbalances and that persistent losses in individual market shares are a reflection of deep-seated competitiveness problems (both price and non-price) in these countries.

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(30) These countries have already started their adjustment process, in some cases quite significantly.

### Price vs non-price competitiveness

A final important issue is the extent to which market share gain contributions to export growth can be explained by cost developments. The correlations between the two market share gain components (*MSGG* and *MSGP*) and the changes in the real effective exchange rate (REER) in the same period are negative but small in absolute terms (around −0.2 overall) for the euro-area countries. The role of cost factors in shaping exports in 2007–2010 seems even slightly weaker than in the period 2000–2007. Note, however, that accumulated REER appreciations were so large in some countries before the onset of the crisis that even a low elasticity of exports to price factors could translate into large export losses. In addition, the correlations above are based on a cross-country relation and assume the same sensitivity of exports to the REER for each country. (31) However, exports may react differently in different Member States, for example due to different product composition. (32)

Still, it appears that non-price factors have been important determinants of Member State differences in export performance over the past decade. These results signal that strategies for successfully correcting external deficits in the euro area should combine ongoing price-competitiveness gains with policies aimed at developing non-price competitiveness. However, policies to develop non-price competitiveness may require a longer timescale to fully deliver their effects.

As regards new Member States, both export and cost developments strongly reflect the catching-up process, resulting in positive, though generally weak, correlations between market share gain contributions to export growth and changes in the REER.

Given the importance of non-price competitiveness factors, Box 3.3 presents a review of recent empirical work on the drivers of export performance. It points to the importance of the extensive margin (new firms engaging in export activities as well as entering new destinations and supplying new products) for long-term trade performance and the positive impact of R&D, innovation and high-skilled labour on export growth. FDI, the quality of infrastructure and services and the quality of institutions also emerge as important factors of competitiveness.

## *3.3. Some policy implications*

The results presented in this chapter underscore the need to take into consideration, from a policy perspective, structural and microeconomic (industry and ultimately firm-level) mechanisms that underlie a country's trade performance. In the current macroeconomic context, where many Member States in the euro area still have to go through a significant adjustment of their external imbalances, a better understanding of factors behind performance in external trade would help gauge the effort required and its sustainability.

The development of global value chains goes along with increasing trade in intermediate inputs. In this context, traditional sectoral specialisation at country level, as measured using only export figures, provides only a partial picture as the specialisation strategies of firms and industries are increasingly dependent on their insertion in GVCs, in which imports play a significant role. In assessing the contribution of exports to the rebalancing of current account deficits, the rising importance of imported intermediate inputs needs to be taken into account. Greater insertion in GVCs entails a lower direct contribution of exports to growth and jobs, but as increased sourcing abroad should have a positive effect on a country's competitiveness it should also foster exporting activities and, ultimately, have a positive impact on growth and on trade imbalances.

Decomposing export growth using the constant-market share technique has shown that there seems to be some persistence in export performance, especially in market share gains in products. There is therefore a risk that the weak export performance observed in some Member States may be corrected only slowly, a factor which may contribute to the persistence of external imbalances. Moreover, there does not seem to be any trade-off between the strategies which enhance product competitiveness horizontally (across all geographical markets) and those which may customise products to local needs (in terms of prices or product characteristics) in destination countries. Finally,

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(31) The correlation between exports and the real exchange rate is typically significantly higher when estimated for individual countries than in country cross-sections as here.

(32) As some products are more sensitive to price fluctuations than others.

### *Box 3.3:* Recent literature on the determinants of export performance

Most recent research on export performance extends the theoretical models rooted in Krugman's new trade theory and Melitz's model of heterogeneous firms and tests them empirically. These modern trade models highlight the differences across markets, firms and products even within the same sector. This box reviews a number of recent contributions in this area, distinguishing between five groups of determinants of exports.

#### Geographical and product diversification

Besedeš and Prusa (2011) argue that there is scope for expansion of the extensive margin in exports of both standardised goods and differentiated products. Analyses for Spain indicate that short-run changes in exports are driven by the intensive margin (i.e. increases in exports by incumbent firms within established trade linkages). In the long run, both the intensive and the extensive margins (the latter consisting of net entry of firms and product-country switching) are equally important (De Lucio et al., 2011). According to evidence from the UK, exports tend to stabilise firms' sales through market diversification. While more volatile firms — including probably those with innovative products — are more likely to face financial constraints and to go bankrupt, they have more incentives to start exporting (García-Vega et al., 2012). However, when faced with multiple destinations to which they can export, many firms will choose to sequentially export in order to slowly learn more about their chances of success in untested markets (Nguyen, 2012). Therefore, there may be some persistence in the extensive margin.

#### Product differentiation, innovation, and human capital

Di Pietro and Anoruo (2006) find that the level of innovation and technology in a country, the amount of technological transfer from other countries, and the magnitude of business startups are positively correlated with exports. Faruq (2010) provides evidence that the export of high-quality differentiated goods to the US is associated with research and development activities. Munch and Skaksen (2008) show that firms may escape intense competition from low-wage countries in international markets by using high-skilled workers to undertake or improve innovation, design or branding and thereby to differentiate their products. The importance of human capital for exports is also supported by Contractor and Mudambi (2008). In particular, not only product upgrades but also innovations in production and distribution processes can have a positive impact on exports (Leon-Ledesma, 2002).

#### Imports and foreign direct investment

Across industries, imports can be a source of inputs used in exports but they can also be an important part of competition in intra-industry trade. The knowledge spillovers (Bitzer and Geishecker, 2006) or the positive disciplining effects (Kee and Hoekman, 2007) appear to be stronger than the negative impact due to 'market stealing'. Concerning foreign direct investment (FDI), Alfaro and Charlton (2009) show empirically that multinationals invest abroad to lower the cost of multistage production. Hence, FDI stimulates exporting rather than substituting it. In countries that are members of large free-trade areas, such as the EU, the link between trade and FDI may be particularly strong, because foreign firms can establish plants in one country to serve the whole area freely and exploit scale economies (Neary, 2009). The Member States that joined the EU in 2004 have attracted plenty of FDI, to a large extent thanks to their accession. The strong export performance of these countries can be better explained when FDI inflows are accounted for (Allard, 2009). Positive spillovers from FDI to exports are reported in the empirical literature even for a mature economy such as the UK (Greenaway et al., 2004; Girma et al., 2007), likely because of the positive impact on productivity (Haskel et al., 2007). Also cross-country regressions confirm the positive role of FDI for exports (De Clercq et al., 2008; Tebaldi, 2011).

#### The quality of services

Empirical investigations have shown that plentiful, high-quality transport infrastructure and high-quality information and communications services facilitate exports (Shepherd and Wilson, 2009). Better financial systems can increase the chances of successful innovation and can act as a facilitator for starting exports (Berman and Hericourt, 2009). Wolfmayr (2008) confirms a significant positive correlation between international service linkages mainly related to high-skilled, technology-driven industries and export market shares. Francois and Woerz (2008) show that imported services are important inputs stimulating exports in skill- and technology-intensive industries.

#### The quality of institutions

Moenius and Berkowitz (2004) find that improvements in the quality of institutions increase the share and volume of exports of differentiated, high-value added products through stronger enforcement of contracts and better

*(Continued on the next page)*

*Box (continued)*

protection of property rights. The significant role of institutions for long-term export performance is also pointed out by Alvarez (2011). The quality of institutions, such as the regulatory framework and public administration, may be particularly important for the export of manufacturing goods (Méon and Sekkat, 2008). Nicolini (2011) presents evidence that institutional quality, in the form of contract enforcement by the judicial system, may be a source of comparative advantage, especially in those industries which are more contract-intensive. The impact in relationship-specific and complex-task-intensive sectors is larger in developed countries. She also notes that although institutional comparative advantage is not a 'new' development, institutional comparative advantages seem to gain relevance over time.

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export underperformance seems to result mainly from market share losses within geographical destinations and product markets rather than from wrong initial specialisation. These geographical and product market share gains reflect the competitive advantage of the countries concerned during the period under consideration and are only partly determined by price or cost advantages.

This chapter does not provide a systematic analysis of non-price competitiveness factors. However, a careful reading of the economic literature points to a number of areas where policy action can support long-term export growth.

One such area is services. Services can be important inputs in exported differentiated product 'bundles' (e.g. after-sales support services or training) as well as trade facilitators (e.g.

transport, communication, or financial services). Therefore, increasing competition in the services sectors would improve the cost-competitiveness and quality of services and ultimately support export performance.

Promoting business research and development and the supply of skilled labour may boost the creation of new products and foster exports of higher-end varieties of goods where price competition is less pronounced and competitive advantages more durable.

Export promotion programmes also have a role to play. They may influence the extensive margin (i.e. induce non-exporting firms to engage in exports, and encourage exporting firms to extend the range of destinations and enter new product markets), especially if a comprehensive set of services is offered. ([33]) Such policies can, for instance, aim to provide exporters with more information on emerging markets so as to reduce the information asymmetries and the cost of expanding the extensive margin. The diversification of exports appears to be hindered by market imperfections, such as uncertainty about the production costs of new goods, uncertainty about the characteristics of foreign demand (including e.g. redesigns needed to meet foreign standards and tastes), and spillovers from the first-mover investments (needed to find out how big those costs are and learn the characteristics of foreign demand). Hence public support for ‘export discoveries’ might be justified. Those who can benefit most are companies in the initial exporting stages. ([34])

Finally, structural reforms do not usually have immediate effects because they operate on the supply side of the economy where the reaction is gradual — enterprises need to adapt their technologies and managerial techniques. ([35]) This calls for policy-makers to act promptly.

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# III. Recent DG ECFIN publications

## *1. Occasional Papers*

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 95.
The Second Economic Adjustment Programme for Portugal. Third review – Winter 2011/2012
http://ec.europa.eu/economy_finance/publications/occasional_paper/2012/pdf/ocp95_en.pdf

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 94. March 2012.
The Second Economic Adjustment Programme for Greece – March 2012
http://ec.europa.eu/economy_finance/publications/occasional_paper/2012/pdf/ocp94_en.pdf

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 93. March 2012.
Economic Adjustment Programme for Ireland – Winter 2011 Review
http://ec.europa.eu/economy_finance/publications/occasional_paper/2012/pdf/ocp93_en.pdf

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 92. February 2012.
Scoreboard for the surveillance of macroeconomic imbalances
http://ec.europa.eu/economy_finance/publications/occasional_paper/2012/pdf/ocp92_en.pdf

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 91. February 2012.
Fiscal frameworks across Member States: Commission services country fiches from the 2011 EPC peer review
http://ec.europa.eu/economy_finance/publications/occasional_paper/2012/pdf/ocp91_en.pdf

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 90. December 2011.
The Balance of Payments Programme for Romania. First Review – Autumn 2011
http://ec.europa.eu/economy_finance/publications/occasional_paper/2011/pdf/ocp90_en.pdf

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 89. December 2011.
The Economic Adjustment Programme for Portugal. Second review - Autumn 2011
http://ec.europa.eu/economy_finance/publications/occasional_paper/2011/pdf/ocp89_en.pdf

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 87. October 2011.
The Economic Adjustment Programme for Greece, Fifth review - October 2011
http://ec.europa.eu/economy_finance/publications/occasional_paper/2011/pdf/ocp87_en.pdf

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 86. September 2011.
The EU's neighbouring economies: coping with new challenges
http://ec.europa.eu/economy_finance/publications/occasional_paper/2011/pdf/ocp86_en.pdf

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 85. December 2011.
Progress towards meeting the economic criteria for accession: the assessments of the 2011 Progress Reports and Opinion (Serbia)
http://ec.europa.eu/economy_finance/publications/occasional_paper/2011/pdf/ocp85_en.pdf

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 84. September 2011.
Economic Adjustment Programme for Ireland - Summer 2011 Review
http://ec.europa.eu/economy_finance/publications/occasional_paper/2011/pdf/ocp84_en.pdf

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 83. September 2011.
The Economic Adjustment Programme for Portugal - First review - Summer 2011
http://ec.europa.eu/economy_finance/publications/occasional_paper/2011/pdf/ocp83_en.pdf

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 82. July 2011.
The Economic Adjustment Programme for Greece - Fourth Review - Spring 2011
http://ec.europa.eu/economy_finance/publications/occasional_paper/2011/pdf/ocp82_en.pdf

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 81. July 2011.
2011 Economic and Fiscal Programmes of potential candidate countries: EU Commission's assessment
http://ec.europa.eu/economy_finance/publications/occasional_paper/2011/pdf/ocp81_en.pdf

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 80. July 2011.
2011 Pre-accession Economic Programmes of candidate countries: EU Commission assessment
http://ec.europa.eu/economy_finance/publications/occasional_paper/2011/pdf/ocp80_en.pdf

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The Economic Adjustment Programme for Portugal
http://ec.europa.eu/economy_finance/publications/occasional_paper/2011/pdf/ocp79_en.pdf

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 78. May 2011.
The Economic Adjustment Programme for Ireland - Spring 2011 Review
http://ec.europa.eu/economy_finance/publications/occasional_paper/2011/pdf/ocp78_en.pdf

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 77. February 2011.
The Economic Adjustment Programme for Greece - Third Review
http://ec.europa.eu/economy_finance/publications/occasional_paper/2011/pdf/ocp77_en.pdf

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 76. February 2011.
The Economic Adjustment Programme for Ireland
http://ec.europa.eu/economy_finance/publications/occasional_paper/2011/pdf/ocp76_en.pdf

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 75. February 2011.
Capital flows to converging European economies – from boom to drought and beyond
http://ec.europa.eu/economy_finance/publications/occasional_paper/2011/pdf/ocp75_en.pdf

### *2. Economic Papers*

EUROPEAN ECONOMY. ECONOMIC PAPERS. 457. June 2012
Windy Vandevyvere and Andreas Zenthöfer
The housing market in the Netherlands
http://ec.europa.eu/economy_finance/publications/economic_paper/2012/ecp457_en.htm

EUROPEAN ECONOMY. ECONOMIC PAPERS. 456. June 2012
Josefa Monteagudo, Aleksander Rutkowski and Dimitri Lorenzani
The economic impact of the Services Directive: A first assessment following implementation
http://ec.europa.eu/economy_finance/publications/economic_paper/2012/ecp456_en.htm

EUROPEAN ECONOMY. ECONOMIC PAPERS. 455. May 2012
Fabrice Orlandi
Structural unemployment and its determinants in the EU countries
http://ec.europa.eu/economy_finance/publications/economic_paper/2012/ecp455_en.htm

EUROPEAN ECONOMY. ECONOMIC PAPERS. 454. May 2012
Klara Stovicek and Alessandro Turrini
Benchmarking Unemployment Benefit Systems
http://ec.europa.eu/economy_finance/publications/economic_paper/2012/ecp454_en.htm

EUROPEAN ECONOMY. ECONOMIC PAPERS. 453. April 2012
Jan in 't Veld and Werner Röger
Evaluating the Macroeconomic Effects of Government Support Measures to Financial Institutions in the EU
http://ec.europa.eu/economy_finance/publications/economic_paper/2012/ecp453_en.htm

EUROPEAN ECONOMY. ECONOMIC PAPERS. 452. March 2012
Jan in 't Veld, Martin Larch and Marieke Vandeweyer
Automatic Fiscal Stabilisers: What they are and what they do
http://ec.europa.eu/economy_finance/publications/economic_paper/2012/ecp452_en.htm

EUROPEAN ECONOMY. ECONOMIC PAPERS. 451. March 2012
Christian Buelens
Inflation forecasting and the crisis: assessing the impact on the performance of different forecasting models and methods
http://ec.europa.eu/economy_finance/publications/economic_paper/2012/ecp451_en.htm

EUROPEAN ECONOMY. ECONOMIC PAPERS. 450. March 2012
Rafal Raciborski, Julia Lendvai and Lukas Vogel
Securities Transaction Taxes: Macroeconomic Implications in a General-Equilibrium Model
http://ec.europa.eu/economy_finance/publications/economic_paper/2012/ecp450_en.htm

EUROPEAN ECONOMY. ECONOMIC PAPERS. 449. February 2012
Eric Ruscher and Guntram Wolff
Corporate balance sheet adjustment: stylized facts, causes and consequences
http://ec.europa.eu/economy_finance/publications/economic_paper/2012/ecp449_en.htm

EUROPEAN ECONOMY. ECONOMIC PAPERS. 448. January 2012
Lukas Vogel
Tax avoidance and fiscal limits: Laffer curves in an economy with informal sector
http://ec.europa.eu/economy_finance/publications/economic_paper/2012/ecp448_en.htm

EUROPEAN ECONOMY. ECONOMIC PAPERS. 447. January 2012
London Economics, Patrice Muller, Shaan Devnani and Rasmus Flytkjaer
The impact of state guarantees on banks' debt issuing costs, lending and funding policy
http://ec.europa.eu/economy_finance/publications/economic_paper/2012/ecp447_en.htm

EUROPEAN ECONOMY. ECONOMIC PAPERS. 446. October 2011
Lourdes Acedo Montoya and Björn Döhring
The improbable renaissance of the Phillips curve: The crisis and the euro area inflation dynamics
http://ec.europa.eu/economy_finance/publications/economic_paper/2011/ecp446_en.htm

EUROPEAN ECONOMY. ECONOMIC PAPERS. 445. September 2011
Narcissa Balta and Eric Ruscher
Household savings and mortgage decisions: the role of the "down-payment channel" in the euro area
http://ec.europa.eu/economy_finance/publications/economic_paper/2011/ecp445_en.htm

EUROPEAN ECONOMY. ECONOMIC PAPERS. 444. July 2011
Ignazio Angeloni, Agnès Bénassy-Quéré, Benjamin Carton, Zsolt Darvas, Christophe Destais, Jean Pisani-Ferry, André Sapir, and Shahin Vallée.
Global currencies for tomorrow: A European perspective
http://ec.europa.eu/economy_finance/publications/economic_paper/2011/pdf/ecp444_en.pdf

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Lukas Vogel.
Structural reforms and external rebalancing in the euro area: A model-based analysis
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Julia Lendvai, Laurent Moulin and Alessandro Turrini.
From CAB to CAAB? Correcting Indicators of Structural Fiscal Positions for Current Account Imbalances
http://ec.europa.eu/economy_finance/publications/economic_paper/2011/pdf/ecp442_en.pdf

EUROPEAN ECONOMY. ECONOMIC PAPERS. 441. March 2011
Matteo Barigozzi, Antonio M. Conti and Matteo Luciani.
Measuring Euro Area Monetary Policy Transmission in a Structural Dynamic Factor Model
http://ec.europa.eu/economy_finance/publications/economic_paper/2011/pdf/ecp441_en.pdf

EUROPEAN ECONOMY. ECONOMIC PAPERS. 440. March 2011
Paolo A. Pesenti and Jan J.J. Groen.
Commodity prices, commodity currencies, and global economic developments
http://ec.europa.eu/economy_finance/publications/economic_paper/2011/pdf/ecp440_en.pdf

EUROPEAN ECONOMY. ECONOMIC PAPERS. 439. February 2011
Pedro Gomes
Fiscal policy and the labour market: the effects of public sector employment and wages
http://ec.europa.eu/economy_finance/publications/economic_paper/2011/pdf/ecp439_en.pdf

EUROPEAN ECONOMY. ECONOMIC PAPERS. 438. February 2011
Jordi Suriñach, Fabio Manca and Rosina Moreno.
Extension of the Study on the Diffusion of Innovation in the Internal Market
http://ec.europa.eu/economy_finance/publications/economic_paper/2011/pdf/ecp438_en.pdf

EUROPEAN ECONOMY. ECONOMIC PAPERS. 437. February 2011
Ronald Albers and Marga Peeters.
Food and Energy Prices, Government Subsidies and Fiscal Balances in South Mediterranean Countries
http://ec.europa.eu/economy_finance/publications/economic_paper/2011/pdf/ecp437_en.pdf

### *3. Other publications*

Convergence report 2012 – May 2012
http://ec.europa.eu/economy_finance/publications/european_economy/2012/pdf/ee-2012-3_en.pdf

The 2012 Ageing Report: Economic and budgetary projections for the 27 EU Member States (2010-2060)
http://ec.europa.eu/economy_finance/publications/european_economy/2012/pdf/ee-2012-2_en.pdf

European economic forecast – spring 2012
http://ec.europa.eu/economy_finance/publications/european_economy/2012/pdf/ee-2012-1_en.pdf

Statistical annex to European Economy – spring 2012
http://ec.europa.eu/economy_finance/publications/european_economy/2012/pdf/2012-05-11-stat-annex_en.pdf

Tax reforms in EU Member States 2011– October 2011
http://ec.europa.eu/economy_finance/publications/european_economy/2011/pdf/ee-2011-5_en.pdf

The 2012 Ageing Report: Underlying Assumptions and Projection Methodologies – September 2011
http://ec.europa.eu/economy_finance/publications/european_economy/2011/pdf/ee-2011-4_en.pdf

Labour market developments in Europe, 2011 – spring 2011
http://ec.europa.eu/economy_finance/publications/european_economy/2011/pdf/ee-2011-2_en.pdf

Public finances in EMU – 2011
http://ec.europa.eu/economy_finance/publications/european_economy/2011/pdf/ee-2011-3_en.pdf

### *4. Regular publications*

Business and Consumer Surveys (harmonised surveys for different sectors of the economies in the European Union (EU) and the applicant countries) http://ec.europa.eu/economy_finance/db_indicators/surveys/index_en.htm

Business Climate Indicator for the euro area (monthly indicator designed to deliver a clear and early assessment of the cyclical situation)
http://ec.europa.eu/economy_finance/publications/cycle_indicators/2011/pdf/4_en.pdf

Key indicators for the euro area (presents the most relevant economic statistics concerning the euro area)
http://ec.europa.eu/economy_finance/db_indicators/key_indicators/documents/key_indicators_en.pdf

Monthly and quarterly notes on the euro-denominated bond markets (looks at the volumes of debt issued, the maturity structures, and the conditions in the market)
http://ec.europa.eu/economy_finance/publications/bond_market/index_en.htm

Price and Cost Competitiveness
http://ec.europa.eu/economy_finance/db_indicators/competitiveness/index_en.htm

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**Contributors to this issue are:**

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|---|---|
| Has the crisis left a lasting mark on global trade? | *Michael Sket and Ann-Louise Winther* |
| The euro area's trade performance | *Plamen Nikolov and Francesca D'Auria* |
| A closer look at some drivers of the trade performance at Member State level | *Jesus Maria Irigoyen, Josefa Monteagudo and Aleksander Rutkowski* |
| Overall coordination and editing | *Eric Ruscher* |

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