

# GLOBALISATION, TRADE AND THE EURO AREA MACROECONOMY

## ARTICLES

Globalisation, trade and the euro area macroeconomy

*The process of globalisation – or the entrance of new participants into the global market-place and the growing economic and financial interdependence between existing participants – has accelerated over the last decade, with important consequences for the euro area macroeconomy. Globalisation should significantly benefit the euro area macroeconomy through more efficient resource allocation, along with welfare gains from deepening specialisation, cheaper products, greater product choice and, ultimately, higher living standards for all citizens. In the euro area, the opportunities implied by globalisation, in conjunction with other important ongoing and related phenomena (such as rapid technological change), also imply challenges and call for greater flexibility so as to facilitate macroeconomic adjustment and to fully realise these benefits. Structural reforms have a decisive role to play in supporting an increase in the euro area's competitiveness, in augmenting the euro area's growth potential and in reducing frictions associated with adjustment. However, in order to continue reaping the benefits of globalisation in the future, it is important to continue to foster global openness in goods, services, labour and financial markets, and to fight protectionism.*

## I INTRODUCTION

As economies have become increasingly interdependent via trade, production and financial market linkages, globalisation has received considerable attention over the last decade.<sup>1</sup> What distinguishes the most recent phase of globalisation is not just falling transport costs or tariffs – a process which has been ongoing for decades now – but rather new production paradigms enabled by both an expansion of global productive capacity and major technological changes facilitating access to and the transfer of trade, capital, people and knowledge across borders. Accordingly, distinguishing between the impact of technological change and that of trade openness is very difficult in practice.

Figures commonly used to gauge economic openness, such as data on international trade and capital flows, have increased substantially over the last decade. Partly as a result of the increasing role of central and eastern European countries as trade partners, as well as rapidly increasing imports from Asia (especially China), the trade openness of the euro area has increased rather markedly, especially since the mid-1990s, and has remained higher than in other major advanced economies, such as the United States or Japan. Global cross-border capital flows have also been growing at an extremely robust pace over the last decade, increasing threefold as a percentage of GDP.<sup>2</sup> This has corresponded to

a similar dynamism in the euro area, where the ongoing strength of capital flows is reflected in the considerable increase in the euro area's stock of foreign assets and liabilities over the period 1999-2006, with the stock of outward and inward foreign direct investment virtually doubling as a percentage of GDP since 1999.

The rapidly changing world implied by these forces has influenced a wide array of developments in advanced and emerging economies alike. While many important developments have been taking place in the financial sphere, this article focuses exclusively on gauging the macroeconomic impact of trade globalisation on the euro area, leaving aside the issue of changes implied by financial globalisation. Notwithstanding difficulties in gauging globalisation's ultimate economic impact, given interlinkages with other phenomena, along with its changing pace and characteristics, this article reviews some stylised facts and assesses its likely effects in two steps. First, it analyses the euro area's international performance, with globalisation having placed a premium on competitiveness in an international context, given a need for increased specialisation (Section 2). Second, it assesses globalisation's prospective role in domestic adjustment with

1 In July 2007 the ECB hosted a conference on "Globalisation and the macroeconomy". The papers presented at the conference can be downloaded at [http://www.ecb.europa.eu/events/conferences/html/global\\_macro.en.html](http://www.ecb.europa.eu/events/conferences/html/global_macro.en.html).

2 Source: IMF balance of payments statistics.

a focus on the supply side of the economy, analysing globalisation and its implications for productivity, labour markets and prices (Section 3). Lastly, some conclusions are drawn while highlighting the key role that policies can play in facilitating an efficient adjustment to a changing global environment (Section 4).

## 2 GLOBALISATION AND EURO AREA TRADE AND COMPETITIVENESS

This section looks at how globalisation has affected export market shares and how this may be related to the export specialisation of the euro area vis-à-vis emerging countries. On the imports side, the way in which globalisation has changed the composition of imports in terms of trade partners is examined.

### EXPORTS, COMPETITIVENESS AND SPECIALISATION

Against the background of the emergence of low-cost countries as major participants in world trade, export volume market shares of advanced industrialised economies – such as the euro area, the United States, the United Kingdom and Japan – have fallen in recent years, while the shares of countries such as China have increased

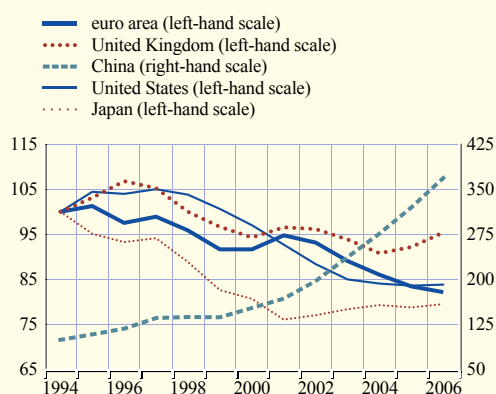
dramatically (Chart 1 and Box 1). Given these developments, it may not be surprising that the losses in export market shares occurring across a variety of advanced industrialised countries cannot be fully explained by changes in traditional measures of price competitiveness.<sup>3</sup> Nevertheless, despite the decline in export market share, extra-euro area export volumes have been growing very rapidly in recent years, due to persistently robust growth in foreign demand. Given that these favourable global demand conditions are also largely driven by globalisation forces, this positive impact on exports has more than offset the dampening effect of the loss in market share. Indeed, the global economy has been growing at levels above previous trends in recent years and the euro area has benefited significantly from this.

As the rise in China's export market share seems to be the main counterpart to the loss in the euro area's export market share, the following examines Chinese exports in terms of their composition and how they compare with the export specialisation of the euro area and other competitors.

In terms of the Balassa indices<sup>4</sup> of revealed comparative advantage by factor intensity, euro area exporters have been largely specialising in capital and research-intensive products, as well as in labour-intensive goods, over the period 1993-2004 (Table 1). However, the euro area seems somewhat overweight in labour-intensive sectors, where China has both a natural comparative advantage and a high degree of specialisation. By contrast, other advanced

Chart 1 Export market shares

(volumes; index: 1994=100; annual data)



Sources: IMF, Eurostat and ECB calculations.  
Notes: Last observation refers to 2006. Export market shares are calculated as an index of export volumes divided by an index of foreign demand (where foreign demand is defined as a country-specific export-weighted sum of foreign import volumes of goods and services).

3 For further details, see Task Force of the Monetary Policy Committee of the European System of Central Banks, "Competitiveness and the export performance of the euro area", ECB Occasional Paper No 30, June 2005, and the article entitled "Competitiveness and the export performance of the euro area" in the July 2006 issue of the ECB's Monthly Bulletin.

4 The Balassa index of revealed comparative advantage is calculated as the share of a particular type of product in a country's exports divided by the share of that product in world exports. An index greater than one indicates that a country specialises in that export product. Balassa indices of revealed comparative advantage by factor intensity for the euro area and other countries are also reported in Table 2 in U. Baumann and F. di Mauro, "Globalisation and euro area trade: interactions and challenges", ECB Occasional Paper No 55, March 2007.

competitor countries, such as the United States, do not have a revealed comparative advantage in labour-intensive products, but are relatively more specialised in exports of research-intensive goods. Overall, the sectoral export specialisation by factor intensity generally seems to broadly reflect the countries' relative factor endowments, with higher-skilled workers being relatively abundant in the euro area and the United States, and cheaper, lower-skilled workers being prevalent in China.

However, there are several caveats regarding these measures of revealed comparative advantage. First, some products are difficult to classify by factor intensity as they use several factors of production. Second, the classification by factor intensity may be misleading if a country focuses primarily on the labour-intensive production stages of a predominantly research-intensive good. This may apply particularly to China, where its increase in specialisation in research-intensive products in recent years may be due to foreign firms outsourcing the labour-intensive parts of production to China for a variety of research or capital-intensive products and then using China as an export base.

Turning to Balassa indices of export specialisation by technological content, distinguishing between

high, medium and low-technology sectors shows that, over the period 1993-2004, the euro area was relatively specialised in medium-high-tech exports and appeared to be less open to direct competition in these sectors from China, which specialises primarily in low-tech sectors, particularly textiles, clothing and footwear (Table 1).<sup>5</sup> This is not true, however, for all euro area countries. In particular, Greece, Portugal and, to a lesser extent, Italy appeared to be more specialised in low and medium-low-tech sectors (such as textiles, clothing and footwear), which were especially vulnerable to competition from Asian economies, particularly China.<sup>6</sup>

- 5 Another criticism of measures of revealed comparative advantage is that the internationalisation of production may render measures of export specialisation less meaningful nowadays as exported goods now embody substantial international outsourcing of production inputs. However, Baumann and di Mauro compute an index of trade specialisation which nets intermediate imports out of exports and find that it gives similar results to the traditional Balassa indices of export specialisation reported in this article.
- 6 See Box 3 in ECB Occasional Paper No 55, as well as P. S. Esteves and C. Reis, "Measuring export competitiveness: Revisiting the effective exchange rate weights for the euro area countries", Banco de Portugal Working Paper No 11, 2006.

**Table 1 Revealed comparative advantage of exports by factor intensity and technological content**

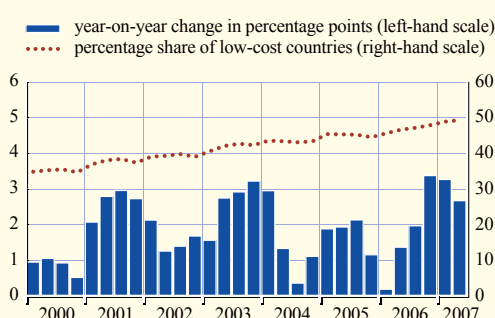
	Euro area	United States	China
<b>Factor intensity</b>			
Raw materials-intensive	0.5	0.7	0.6
Labour-intensive	1.1	0.7	2.2
Capital-intensive	1.2	0.9	0.4
Research-intensive	1.1	1.4	0.9
<b>Technological content</b>			
High-technology industries	0.9	1.4	1.0
Medium-high-technology industries	1.2	1.1	0.6
Low-technology industries	0.9	0.8	1.6
- Textiles, clothing, footwear	0.9	0.4	3.6

Sources: Chelem and ECB calculations. See also ECB Occasional Paper No 55.

Notes: Balassa index of revealed comparative advantage. Average for the period 1993-2004. An index greater than one indicates that a country specialises in that type of export.

**Chart 2 Share of extra-euro area manufacturing imports from low-cost countries**

(value shares in euro; quarterly data)



Source: Eurostat and ECB calculations.

Note: "Low-cost countries" are: Algeria, Argentina, ASEAN, Brazil, Chile, Central America and the Caribbean, the CIS, China, India, eastern European countries that have joined the EU since 1 May 2004, rest of North Africa, rest of Africa, rest of Asia, rest of South America, and Turkey.

## IMPORTS AND THE RISING SHARE OF LOW-COST COUNTRIES

Over the last decade, both intra and extra-euro area imports of manufactured goods have shown robust growth, but the ratio of intra to extra-euro area trade volumes has declined, which – again – does not seem to be fully explained by movements in relative prices. Globalisation forces have been driving the relatively stronger growth of extra-euro area imports, with outsourcing to low-cost countries and the internationalisation of production playing an important role.<sup>7</sup> Since the start of the 2000s, the share of low-cost countries in extra-euro area manufacturing imports has increased from just over one-third to almost a half (Chart 2). Among the low-cost countries, China and the new EU Member States were the main contributors to this increase, with their shares roughly doubling since the mid-1990s.

In summary, the emergence of new global trade participants such as China has stimulated world trade growth and boosted euro area exports, but has at the same time shrunk the market shares of the incumbent advanced industrialised economies such as the euro area. Nevertheless, the extent of this loss in market share may also be connected to the export specialisation of the euro area and how it compares with that of these new competitors. Meanwhile, extra-euro area imports are growing faster than intra-euro area trade, triggered by higher euro area import penetration from low-cost countries.

<sup>7</sup> One possible implication of the internationalisation of production is that the rising trend in outsourcing has led to higher correlation between imports and exports by increasing the reliance of euro area exporters on imported intermediate inputs. ECB Occasional Paper No 30, June 2005, by a Task Force of the Monetary Policy Committee of the European System of Central Banks shows that the import content of exports (which is the inverse of the value added per unit of export) – measured as the long-run elasticity of imports with respect to a one-unit increase in exports – has risen for the euro area, from 38% in 1995 to around 44% in 2000.

### Box 1

#### CHINA AND INDIA'S INTEGRATION INTO THE GLOBAL ECONOMY

One of the most fundamental changes shaping the global economy is the rapid advent of emerging economies as major trading partners. Due to their sheer size, the emergence of China and – more recently – India is often perceived to be illustrative of the systemic implications entailed by these trends. In this context, this box aims to shed light on the main features of China's and India's integration into global trade in goods and services.

Owing to sustained growth and an increasing opening-up to international trade, China's integration into the global economy has proceeded rapidly since the early 1990s. China's share of world output, measured at market exchange rates, rose from around 2% in 1990 to 5.5% in 2006.<sup>1</sup> Similarly, China accounted for 6.5% of world trade in goods and services in 2006, compared with less than 2% in 1990. India's importance in world output and trade, while rising, is more recent and limited thus far (with shares of 1.8% and 1.5% respectively). However, India's share of world trade in services has risen markedly in the last few years, to reach nearly 3% in 2006. From a euro area perspective, China accounted for 10.3% of extra-euro area imports of goods in 2006, more than twice the share of Latin America as a whole (4.7%), while India's share was still relatively low (slightly above 1%).

Focusing on global trade in goods, estimates by ECB staff using a gravity model of trade provide an insight into the overall depth of China and India's integration in global trade, as well as into

<sup>1</sup> When GDP is adjusted in purchasing power parity (PPP) terms, China's share of world output is significantly higher, slightly above 15% in 2006. India's share is also higher, over 6% in the same year. In PPP terms, the United States accounted for the largest share in 2006 (nearly 20%), followed by China, the euro area (14.6%), Japan (6.3%) and India.

possible future developments.<sup>2</sup> Gravity models relate trade between two countries to economic size, the distance between these countries, as well as dummy variables for a common language, a common border, a common history or membership of the same free trade area.<sup>3</sup> According to the results, China is already more integrated in global trade in goods than average, based on the benchmark suggested by the model, whereas India is not (see Chart A, which compares actual trade in goods with the value predicted by the model). A breakdown of these results by trading partner indicates that China is particularly well integrated with other Asian economies, which also reflects its integration into a regional production network for export activity (sometimes called the “Asian production chain”), with both domestic and foreign investors exploiting China’s comparative advantage in low-cost labour. This gives China a central role as a processing and assembly location for inputs imported from other emerging Asian economies, which are then re-exported to mature-economy markets. Looking forward, however, recent evidence suggests that China’s role may gradually be shifting from that of a processing hub to an economy increasingly able to domestically produce certain capital goods (e.g. machinery and equipment) and intermediate goods (e.g. iron and steel). In this setting, the ensuing process of import substitution seems to be one of the factors driving the increase in China’s trade surplus, especially since 2005.

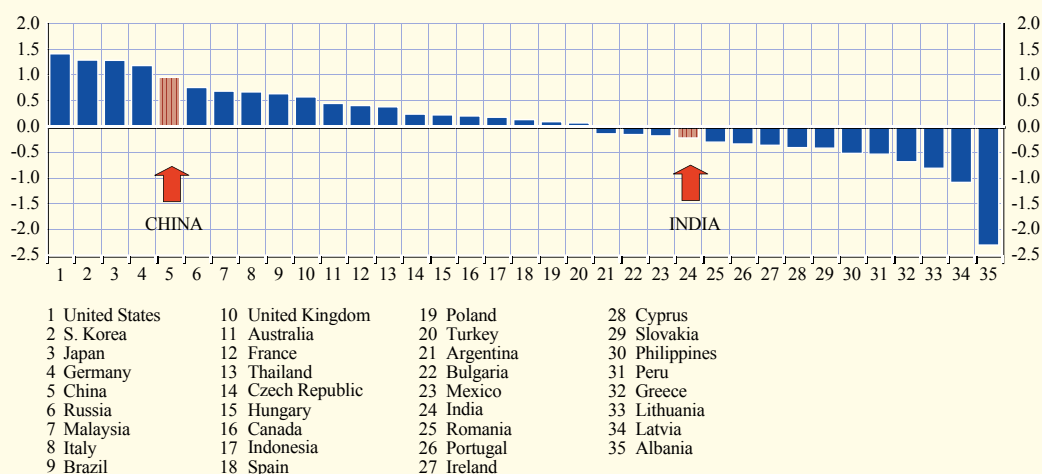
At variance with China, India is less integrated with other economies than suggested by the explanatory variables of the gravity model, which mostly hinges on weak trade links with other Asian economies.

Turning to the composition of exports of goods, China has been characterised by a noticeable shift since the early 1990s, when it was primarily exporting low-tech goods such as clothing, leather or yarns and fabrics (Chart B). Since then, the share of high-tech goods, such as electronic

2 See M. Bussière and B. Schnatz, “Evaluating China’s integration in world trade with a gravity model based benchmark”, ECB Working Paper No 693, November 2006.

3 See Bussière and Schnatz, loc. cit., for further details. The model is estimated with a sample of bilateral trade flows (i.e. exports and imports together) in goods across 61 countries, using annual data covering the period 1980-2003.

Chart A Integration into global trade in goods relative to gravity model benchmark

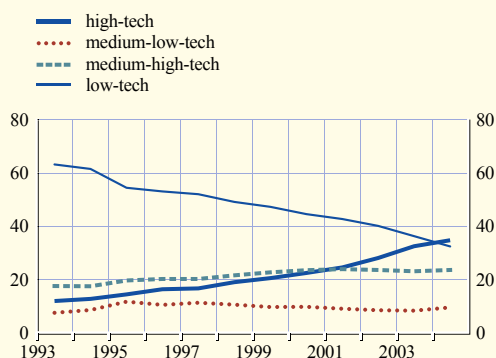


Source: ECB Working Paper No 693.

Note: The scale of the vertical axis is in natural logarithms. A value of one indicates that actual trade is 172% above the model’s predicted value ( $e^1 - 1 \approx 1.72$ ).

**Chart B Breakdown of China's exports by commodity**

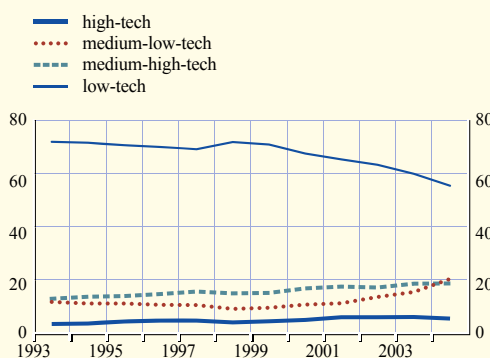
(percentage of total exports of goods)



Source: Chelem database of the Centre d'Etudes Prospectives et d'Informations Internationales (CEPII).

**Chart C Breakdown of India's exports by commodity**

(percentage of total exports of goods)



Source: Chelem database of the Centre d'Etudes Prospectives et d'Informations Internationales (CEPII).

products, has risen and has accounted for a dominant share of China's exports in most recent years. By contrast, India still mostly exports low-tech goods (Chart C), such as jewellery and works of art. One implication of this is that China is increasingly in a position to compete with exports of goods from mature economies, which is less the case for India.

On the other hand, India seems to specialise more in exports of services than China: the share of services in total exports reaches 38% in India (of which information technology and information technology-enabled services account for a large part), compared with less than 9% in China. In absolute terms, however, China still exports more services than India. Transportation, including maritime transportation, is one of China's key exports in this respect, most likely reflecting activities related to its role as a manufacturing hub in Asia.

### 3 GLOBALISATION AND EURO AREA DOMESTIC ADJUSTMENT

This section focuses on three key aspects of domestic macroeconomic adjustment in the euro area, namely globalisation's influence on productivity, labour markets and prices.

#### GLOBALISATION AND EURO AREA PRODUCTIVITY

In principle, globalisation has an important role to play in boosting euro area productivity by facilitating total factor productivity spillovers across economies and stimulating innovation in response to competitive pressures. In particular, globalisation is expected to boost productivity through three main channels. First, it may

contribute to technology transfer, both through input flows (the cross-border movements of capital goods and labour) and the transfer of multifactor productivity (e.g. the convergence of management techniques to best practice standards). Second, the international competitive pressures associated with globalisation may encourage firms to be more innovative in order to maintain their market presence. Third, globalisation may result in higher average productivity in the economy through both a more productive composition of firms and the possibility for firms to increase the scale of their operations. In this respect, globalisation also offers greater opportunities for the euro area to concentrate on areas of higher comparative advantage.



While the above arguments imply increasing productivity through globalisation, a general decline in the growth rate of aggregate euro area productivity has been observed over the last decade, despite steadily increasing international openness – although several factors other than globalisation may have played an important or even dominant role in the productivity slowdown. Hourly labour productivity growth fell from an average of 2.3% over the period 1985-1995 to an average of 1.3% over the period 1996-2006, while international openness increased strongly (see Chart 3). Similarly, the contribution of total factor productivity to GDP growth fell from an annual average growth rate of 0.9% over the period 1980-1995 to 0.2% over the period 1995-2004.

An analysis of the sectoral dimension of these aggregate productivity developments yields a more nuanced picture. Indeed, a positive relationship between growth in openness and productivity in manufacturing in several countries is highlighted in empirical work.<sup>8</sup> Firm-level studies indicate that the channels which would be expected to boost productivity in response to openness – notably technological spillovers and increased competition – form an important mechanism in propagating such gains.<sup>9</sup>

**Chart 3 Hourly labour productivity growth and trade openness in the euro area**

(percentages; annual percentage changes)



Sources: ECB calculations based on Eurostat and AMECO data. Note: Trade openness is defined here as the sum of extra-euro area export values and import values expressed as a percentage of GDP.

When comparing the weak euro area productivity outcome on aggregate with the United States over the last decade, it appears that diverging trends in labour productivity growth in recent years mainly reflect developments in a number of specific services sectors such as retail, wholesale and some financial services where weak euro area productivity growth contrasts with strong gains registered in the United States.<sup>10</sup> This suggests that competition, possibly associated with globalisation, has fostered productivity in the United States and, at the same time, hints at a productivity shortfall for the euro area as a whole, in particular in areas which can also be characterised as more sheltered from international competitive pressures. In addition, structural rigidities in some sectors may have contributed to inhibiting the beneficial effects of globalisation. In this vein, protectionist policies, as well as product and labour market rigidities, may have prevented prospective productivity gains from materialising in the euro area.

### GLOBALISATION AND EURO AREA LABOUR MARKETS

The impact of globalisation on euro area labour markets can be characterised by the interplay of two main mechanisms – one relating to an allocational channel as globalisation contributes to changing the sectoral, occupational and skill composition of employment, and another whereby higher activity resulting from globalisation lifts demand for all labour. With regard to the former channel, standard trade theory would suggest that, in advanced economies, changing specialisation given relative factor or technology endowments would

8 See, for example, H. Badinger, “Market size, trade, competition and productivity: evidence from OECD manufacturing industries”, *Applied Economics*, No. 39(17), 2007.

9 See G. Ottaviano, D. Taglioni and F. di Mauro, “Deeper, wider and more competitive? Monetary integration, eastern enlargement and competitiveness in the European Union”, paper presented at the ECB conference on “Globalisation and the macroeconomy”, July 2007, and R. Baldwin, H. Braconier and R. Forslid, “Multinationals, endogenous growth, and technological spillovers: Theory and evidence”, *Review of International Economics*, 13(5), 2005, pp. 945-63.

10 See, for example, R. Gomez-Salvador, A. Musso, M. Stocker and J. Turunen, “Labour productivity developments in the euro area”, ECB Occasional Paper No 53, October 2006.

imply, on the one hand, increased labour demand for high-skilled workers; on the other hand, increased import competition should lead to a decline in labour demand for the low-skilled. A changing skill composition of labour demand and changes in remuneration, even within skill groups, could result from globalisation, in particular as implied by changes in the global labour supply in conjunction with enhanced production fragmentation possibilities. Obviously, rigidities present in the economy can prolong the movement of labour from declining to expanding activities.<sup>11</sup>

The impact of globalisation on euro area labour markets appears to have been mainly visible in the form of a redistribution of employment across sectoral, occupational and skill categories. In particular, the rise in offshoring which characterises the recent phase of globalisation has been commonly associated with a skill bias in labour demand (see Chart 4) – likely interacting with other sources of skill-biased change including, for instance, rapid technological change.<sup>12</sup> In the euro area, adjustment in labour demand has mainly resulted in a discrepancy of growth in hours worked, according to an educational attainment-based skill classification, as real wages across this skill categorisation have

shown little differentiation.<sup>13</sup> This contrasts with the case of the United States, where wages have tended to display more differentiation across skill categories and where, accordingly, the downward impact on labour demand for lower-skilled workers could be cushioned. Empirical evidence for the euro area suggests an increase in the real wage elasticity of labour demand in the recent past, particularly for traditionally lower-skilled occupations, confirming stronger pressure on employment in low-skilled sectors.<sup>14</sup> This

11 Migration flows may play a role in facilitating such adjustments and, indeed, there are signs of steadily increasing inflows of migrants to the euro area, with a heterogeneous skill mix depending on their geographical origin (see F. Heinz and M. Ward-Warmedinger, “Cross-border labour mobility within an enlarged EU”, ECB Occasional Paper No 52, October 2006).

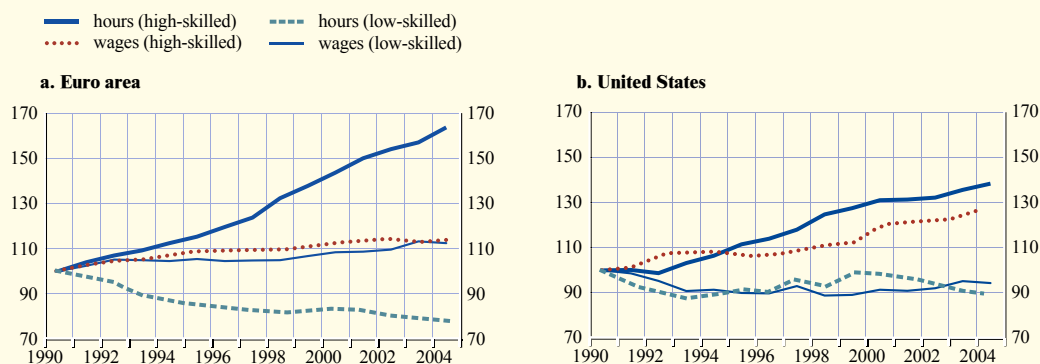
12 For more on evolving trends in offshoring within advanced economies, see for example R. Feenstra, “Globalization and its impact on labor”, Global Economy Lecture, Vienna Institute for International Economic Studies, February 2007, and R. Baldwin, “Globalisation: the great unbundling(s)”, paper for the Finnish Prime Minister’s Office, Economic Council of Finland as part of the EU Presidency, 2006.

13 Education-based skill classifications have some limitations, notably that they could be affected not only by the skill content of work, but also by changes in educational attainment patterns.

14 See G. Pula and F. Skudelny, “The impact of rising imports from low-cost countries on euro area prices and labour markets – some preliminary findings”, paper presented at the ECB conference on “Globalisation and the macroeconomy”, July 2007, and M. Molnar, N. Pain and D. Taglioni, “The internationalisation of production, international outsourcing and OECD labour markets”, OECD Economics Department Working Paper No 561, 2006.

**Chart 4 Hours and real hourly wages by educational attainment-based measure of skill**

(indices: 1990 = 100)



Source: ECB calculations based on EU Klems data.

Notes: Wages are deflated using producer prices. Skill data derived from national data on educational attainment, with the high-skilled comprising those with university level education, and the low-skilled comprising those with primary and/or secondary education (depending on the country). Data refer to the total economy, i.e. manufacturing plus services.



Table 2 Euro area employment

(millions)			
	1996	2006	change, 1996-2006
<b>Total</b>	123.6	140.6	17.0
<b>Industry</b>	34.5	35.0	0.5
Industry excluding construction	25.4	24.5	-0.9
Construction	9.1	10.5	1.4
<b>Services</b>	81.5	98.9	17.4
Trade and transport	30.3	35.1	4.8
Finance and business	15.0	21.6	6.7
Other services	36.2	42.1	6.0
<b>Agriculture</b>	6.7	5.8	-0.9

Sources: Eurostat data and ECB calculations.

underlines that the euro area would benefit from more flexible real wages, as the apparent lack of real wage flexibility of less-skilled workers may have contributed to undermining growth in hours worked for this group. At the same time, the latter development could imply a more general need to upgrade skills in the euro area.<sup>15</sup>

Notwithstanding the lack of wage differentiation across skill categories, globalisation may have been one factor contributing to the recent generalised wage moderation within the euro area (for instance, through immigration, offshoring or the threat of offshoring). This wage moderation, in turn, may have facilitated the large employment gains witnessed over recent years in the euro area, in particular in the services sectors (see Table 2).

Indeed, attributing gross job losses in some segments of the labour market to globalisation may conceal potential net gains in employment as the process encourages within and cross-sector job movements to more productive areas where the euro area has a comparative advantage. Survey data suggest that job losses associated with offshoring have been limited as a proportion of gross job losses in the euro area economy.<sup>16</sup> More importantly, job losses within industry (excluding construction) have been offset by employment gains elsewhere, in particular within the services sector (see Table 2). On the whole, however, it is difficult

to disentangle globalisation effects from what appears to be an ongoing decline in manufacturing sector employment given a structural shift to the services sector on the one hand, and technological change and structural changes in labour markets on the other hand.

### GLOBALISATION AND EURO AREA PRICES

Globalisation could embed some effects on consumer price inflation, as well as on relative prices in the short term, through two main mechanisms, though monetary policy would ultimately determine inflation over longer horizons. First, a direct relative price effect would be expected as globalisation contributes both to decreases in some prices, given lower import prices for manufacturing imports from low-cost countries (see Box 2), and to increases in other prices through stronger global demand for, among other things, energy or other commodities from emerging markets. Such relative price movements could have a short-term aggregate impact on the HICP either to the extent that these movements are sizeable or to the extent that adjustment frictions and imperfect information imply a prolonged impact. Second, increased competitive pressures associated with globalisation could constitute an indirect channel affecting prices as they contribute to compressing firms' price-cost markups or change price elasticities, and thereby exert a moderating influence on inflation. While this potential to increase the elasticity of firms' prices to marginal costs would imply a strengthening of the relationship between inflation and measures of domestic slack (commonly referred to as the Phillips curve slope), it could equally be argued that in an increasingly globalised environment, there could be a growing role for global measures of slack, in addition to domestic measures of slack, in the domestic inflation process.

An examination of recent import price developments in the euro area reveals that rising imports from low-cost countries put downward

<sup>15</sup> See also IMF, "Globalization and Inequality", *World Economic Outlook*, October 2007, pp. 36-65.

<sup>16</sup> See NTC Economics, "Special focus chapter on outsourcing", April 2007.

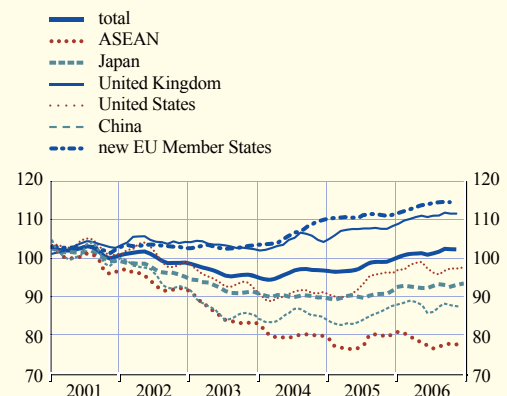
pressure on extra-euro area manufacturing import prices over the period 1995-2004. This is mostly due to the increasing share of low-cost countries in euro area imports, combined with the relatively lower prices of imports from low-cost countries. Based on detailed data disaggregated both by sectors and countries over the above period, the levels of euro area import prices (proxied by absolute unit value indices) from China and the new EU Member States are estimated, on average, to be substantially lower than the prices of imports from advanced industrialised countries such as the United States, Japan or the United Kingdom.<sup>17</sup> Overall, it is estimated that the increase in import penetration from low-cost countries may have dampened euro area import prices for manufactured goods by an average of approximately 2 percentage points each year over this period, an effect almost equally accounted for by China and the new EU Member States.<sup>18</sup> Most of this downward impact is due to a “share effect”, which captures the downward impact on import prices of the rising import share of low-cost countries combined with the relatively lower price level of low-cost import suppliers. There was also a second smaller downward impact due to the differentials in the growth of import prices across different import suppliers (the “price effect”), which captures the impact of lower import price inflation from the low-cost countries relative to the high-cost countries over the period.<sup>19</sup>

More recently, while the prices of imports from China to the euro area still appear generally subdued (also partly as a result of movements in the exchange rate), some upward import price pressures may be originating from the new EU Member States (Chart 5 and Box 2). The ultimate impact of such a development on manufacturing import prices depends on the extent to which they are offset by the continued growth of the import shares of these countries in the euro area, combined with their lower prices.

The recent euro area experience indicates that imports from low-cost countries have had an impact on relative domestic prices over the last decade, although downward pressure on prices of manufactured goods contrasted with

**Chart 5 Prices of euro area manufacturing imports from selected countries and regions**

(unit value indices in euro: Q1 2001=100)



Source: Eurostat and ECB calculations.

a strong increase in prices for commodities (see Chart 6). Empirical studies estimating the relative price effect using data on various EU countries for a number of sectors suggest a net downward impact of trade openness amounting, on average, to about zero to 1 percentage point on euro area annual manufacturing producer price inflation and a net downward impact of, on average, zero to 0.3 percentage point (depending on the inclusion of the impact of commodity prices) on annual consumer price inflation over the period of five to ten years up to 2005.<sup>20</sup> This effect is mainly due to increasing shares of low-cost countries in the euro area import basket, which was offset, at least partly, by increases in commodity prices (e.g. energy

17 This calculation is subject to caveats, notably that the accuracy of the results may be affected by the fact that unit value indices do not control for changes in quality.

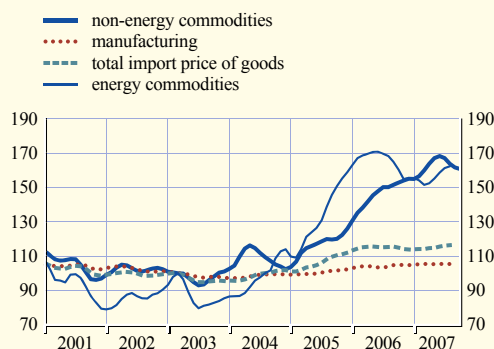
18 See the box entitled “Effects of the rising trade integration of low-cost countries on euro area import prices” in the August 2006 issue of the ECB’s Monthly Bulletin for further details.

19 This calculation is based on the methodology used by S. B. Kamin, M. Marazzi and J. W. Schindler, “Is China exporting deflation?”, Board of Governors of the Federal Reserve System International Finance Discussion Paper No 791, 2004. Further details are given in Box 6 of the August 2006 issue of the ECB’s Monthly Bulletin.

20 See, for example, N. Pain, I. Koske and M. Sollie, “Globalisation and inflation in the OECD economies”, OECD Economics Department Working Paper No 52, 2006, and Pula and Skudelny, loc. cit.

**Chart 6 Extra-euro area import prices by commodity**

(indices: Q1 2003 = 100; three-month moving averages)



Sources: ECB, HWWA and Eurostat.

Notes: Last observation relates to July 2007, except for non-energy commodities (October 2007). All prices are in euro.

and food prices) in the context of heightened global demand pressures.<sup>21</sup>

Evidence on the role of international competitive pressures in compressing firms' markups is mixed. On the one hand, theoretical models would predict that pro-competitive effects contribute to reducing markups as domestic firms compete with international firms. On the other hand, the currently high profitability of firms would suggest that profit markups have not been compressed at the aggregate level. Empirical evidence is fairly limited due to the complex nature of the markup formation process and measurement issues.

21 For a recent discussion of the rise in local food prices, see Box 4 in the December 2007 issue of the Monthly Bulletin.

**Box 2****RECENT DEVELOPMENTS IN PRICE PRESSURES ARISING FROM THE NEW EU MEMBER STATES AND LARGE EMERGING ECONOMIES**

Excluding Slovenia that joined the euro area in January 2007, the 11 Member States that joined the EU in 2004 and 2007 (EU11) and emerging economies play a growing role as trading partners of the euro area. The share of the EU11 economies in euro area imports stood at around 11% in recent years. Similarly, China accounted for around 10% of euro area imports of goods in 2006, while India's share was slightly above 1% (see Box 1). Price and cost developments in these economies affect euro area import prices and, in turn, have implications for overall inflation developments in the euro area. This box reviews recent price and cost developments in the EU11, as well as in two of the largest emerging economies – namely China and India – in order to assess the existence of potential risks to inflation originating from these two regions.

Inflation developments in EU11 economies in recent years have been very much influenced by adjustments in administered and regulated prices, changes in indirect taxes and demand trends. At the same time, looking at the four largest EU11 economies (the Czech Republic, Hungary, Poland and Slovakia) as a representative sub-sample for the EU11 as a whole, global trade integration seems in recent years to have contributed to the disinflation process in these countries via a diminishing contribution of industrial prices to the overall HICP. This diminishing contribution is likely to reflect, inter alia, the impact of stronger competition from abroad and the wider availability of cheaper foreign goods. As regards cost developments, while compensation per employee in most EU11 economies has grown significantly faster than in the euro area in recent years, wage increases have been accompanied in most cases by significant gains in labour productivity. This has contributed to moderate growth in unit labour costs, notably in the largest of the EU11 economies. However, productivity gains in the Baltic States were insufficient to prevent strong growth in unit labour costs.

**Table A Export prices**

(annual percentage changes)

	2003	2004	2005	2006
Bulgaria	-0.2	6.4	7.3	11.9
Czech Republic	0.1	2.7	-2.4	-0.7
Estonia	1.2	1.0	3.4	9.6
Cyprus	-0.2	4.1	2.8	1.5
Latvia	8.6	11.0	10.3	9.2
Lithuania	-0.7	7.3	7.9	5.2
Hungary	0.1	-1.1	-0.3	6.5
Malta	-1.1	-1.8	5.3	8.3
Poland	6.2	8.3	-2.6	2.3
Romania	17.9	13.4	-0.9	5.7
Slovakia	1.5	1.8	-1.9	2.2
EU11 <sup>1)</sup>	4.9	6.0	-0.8	3.5
Euro area	-1.3	1.2	2.6	2.7

Source: Eurostat.

1) Weighted average of countries above, using GDP weights.

**Table B Unit labour costs**

(annual percentage changes)

	2003	2004	2005	2006
Bulgaria	3.0	1.0	2.4	4.5
Czech Republic	3.6	1.5	-0.6	1.7
Estonia	5.6	3.0	2.5	8.1
Cyprus	9.5	1.6	1.3	0.1
Latvia	5.6	6.4	15.2	14.0
Lithuania	0.9	3.3	5.9	8.8
Hungary	6.4	6.6	3.1	.
Malta	6.0	0.5	0.2	0.5
Poland	-3.2	-2.1	0.3	.
Romania	16.0	7.7	.	.
Slovakia	5.6	3.2	0.5	1.2
EU11 <sup>1)</sup>	3.2	1.9	1.1	.
Euro area	1.8	1.0	1.2	1.1

Source: Eurostat.

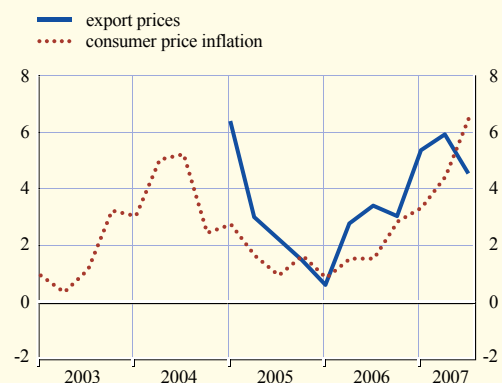
1) Weighted average of countries above, using GDP weights.

In this context, there has not recently been any clear trend in the dynamics of export prices in the EU11, with each country experiencing rather specific patterns. It therefore remains difficult to assess the future transmission of domestic price and cost developments in the EU11 countries to the euro area via export prices.

Turning to large emerging economies, a noteworthy feature of both China and India is the recent significant upturn in domestic inflationary pressures. In China, consumer price inflation (CPI) increased from 1% in July 2006 to 6.9% in November 2007, its highest rate in a decade, largely due to higher food prices. In India, wholesale price inflation (WPI) – the Reserve Bank of India's main inflation measure – reached a peak of above 7% in February 2007, but reverted to around 3% in November. Admittedly, it is possible that higher domestic inflation could feed into wages and, eventually, export prices. In this respect, export price growth has increased in China in recent months.

**Chart A Export and consumer prices in China**

(annual percentage changes)

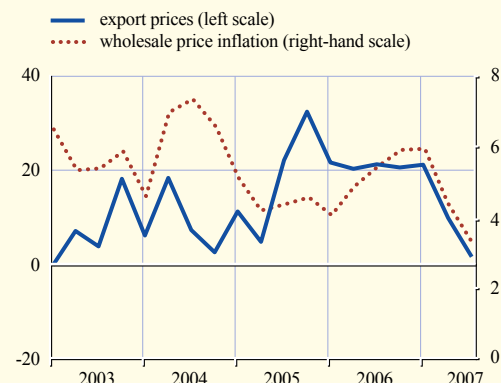


Sources: Bloomberg, CEIC.

Note: Data are not available for export prices prior to the first quarter of 2005.

**Chart B Export and wholesale prices in India**

(annual percentage changes)



Sources: CEIC, Bloomberg.

The ultimate impact of these developments on euro area manufacturing import prices depends on the extent to which they are offset by the continued growth in the import shares of these countries in the euro area, combined with their lower prices.

Widespread evidence for a growing role of global measures of economic slack in the inflation process of the euro area and other advanced economies is also limited. On balance, most studies suggest that the quantitative extent of any such impacts on advanced economies is still small or insignificant.<sup>22</sup> Indeed, other factors such as the more efficient conduct and credibility of monetary policy, fiscal discipline and structural reforms (and, largely coinciding with this, fewer macroeconomic shocks) may have played a more important role in any observed change in the relationship between inflation and demand conditions. Still, there is reason to believe that, in integrated markets, local labour market conditions become less and less important for domestic price setting, in particular if factors of production (capital and labour) become increasingly mobile.

#### 4 CONCLUSION

In gauging the impact of globalisation on the euro area's external performance, it would appear that globalisation has increased export competition in world markets, while simultaneously stimulating world demand and increasing the import content of exports. Regarding imports, globalisation has been accompanied in the euro area by a higher share of imports of manufactured goods from low-cost countries, which has also affected import prices and, in general, inflationary pressures. However, this downward impact on inflation has been offset, at least partly, by the higher demand for commodities from low-cost countries, resulting in increasing commodity import prices.

With regard to globalisation and domestic macroeconomic adjustment in the euro area, the phenomenon of globalisation is difficult to

isolate, given that it is intertwined with several other ongoing structural changes, such as policy changes, along with technological change and its diffusion. Notwithstanding these difficulties, some conclusions can be drawn for euro area productivity, labour markets and prices. While a positive impact of globalisation on euro area productivity is not discernible at the aggregate level, sectoral studies point towards such a favourable influence, as generally evident in areas more exposed to international competitive pressures. The impact of globalisation on euro area labour markets is most visible in terms of a skill bias in labour demand, which points to a downward adjustment of low-skilled hours worked and an upward adjustment of high-skilled hours worked, while real wage trends have remained rather similar across both skill groups. Meanwhile, the recent moderation of overall wage developments, possibly influenced by globalisation, in addition to other factors, may have contributed to strong euro area employment growth, in particular in the services sector. In addition to these possible effects on productivity and labour markets, globalisation may have increased economic welfare in other ways, such as cheaper products and greater product choice. Concerning the impact of globalisation on prices, increasing trade openness seems to have had a downward impact on manufacturing price developments, which has been offset, at least partly, by upward pressure from commodity import prices that derived from strong growth of commodity imports by emerging markets. At the

<sup>22</sup> In particular, the empirical findings of a significant global output gap in Phillips curve relations reported in C. Borio and A. Filardo, "Globalisation and inflation: New cross-country evidence on the global determinants of domestic inflation", Bank for International Settlements 2007, contrast with the findings of a negligible role in J. Ihrig, S. Kamin, D. Lindner and J. Marquez, "Some simple tests of the globalization and inflation hypothesis", Board of Governors of the Federal Reserve System International Finance Discussion Paper No 891, April 2007.

same time, there is mixed evidence of a notable compression in the markups of euro area firms in response to globalisation, while evidence of a clear role for global measures of slack in the domestic inflation process remains limited.

Synthesising the international and domestic impacts of globalisation for the euro area, one key message that emerges is the crucial role of structural policies in reaping its potential benefits and in facilitating adjustment to globalisation. Appropriate structural reforms remain particularly important with a view to boosting the euro area's competitiveness. These include, in particular, policies which support education, research and innovation and facilitate smooth economic adjustment in a dynamic environment. Globalisation also implies a need to search for further efficiency gains in the conduct of fiscal policy. More generally, in order to continue to benefit from globalisation in the future, it is important to continue to foster global openness in goods, services, labour and financial markets, and to fight protectionism. As for monetary policy in a phase of heightened globalisation, it is necessary to actively monitor possible ongoing changes in the inflation process. At the same time, efficient adjustment can be best facilitated by focusing on price stability and continuing to anchor inflation expectations in the face of considerable relative price shocks.