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Jürgen Matthes*

Ten Years EMU – Reality Test for the OCA Endogeneity Hypothesis, Economic Divergences and Future Challenges

At the start of European Monetary Union in 1999 the pessimists argued that it was too early for such a step and that EMU would aggravate economic divergences between the members, while the optimists believed that EMU itself would generate the integrative forces necessary to move towards the achievement of an optimum currency area. Ten years on, which of them prove to be right?

Ten years after the start of the European Economic and Monetary Union (EMU) sufficient time has passed to make a preliminary assessment. This article focuses first on the question raised during the run-up to EMU, whether EMU would generate the integrative forces necessary to become an optimum currency area (OCA) or whether it would have been better to postpone EMU until the euro area had achieved the properties of an OCA. This debate was particularly vocal in Germany, where a large part of the academic community vigorously supported the latter position.¹

Closely connected to this discussion was the fear that EMU members, and particularly the southern European countries, might not be prepared to continuously discipline their domestic economic policy and particularly their wage policy. In this case – it was argued – economic divergences in inflation and competitiveness would result. In the absence of national exchange-rate and monetary policies, these imbalances could only be reversed by a deep, long and hurtful economic downswing which might even endanger EMU. This article sheds some light on whether the optimists or the pessimists were right.

Moreover, it is pointed out that EMU currently faces a major challenge, as speculation has arisen concerning the potential break-up of EMU or even the possibility of sovereign defaults by individual EMU members. In this context, it is shown that EMU substantially contributed to the economic divergences which have aggravated the impact of the financial crisis in southern Europe.

The Basic Properties of OCA Theory

The criticism that the start of EMU took place too early relied on the theory of optimal currency areas.² In a nutshell, OCA theory postulates that countries joining a currency union should be sufficiently similar, e.g. in

terms of economic structures. In addition, their economies should be sufficiently flexible and open to trade and international finance. Otherwise the costs of adopting a single currency would outweigh the benefits. The costs would arise mainly in the form of an economic slowdown with high unemployment resulting from economic divergences, which can be caused by asymmetric economic shocks.

For example, a country experiencing a positive asymmetric economic demand shock, which leads to higher wage growth and inflation, would lose international competitiveness compared to other members of the currency union. In the absence of a national monetary and currency policy (and of the option of devaluing its currency), and assuming the ineffectiveness of other possible adaptation channels (e.g. labour mobility), domestic wages and prices would have to bear the brunt of the adjustment burden. In order to restore international competitiveness, a prolonged recession would be required to induce the necessary slow growth or even decline of wages and prices.

OCA theory, which was developed mainly by Mundell, McKinnon and Kenen, was traditionally relatively critical of the costs of a currency union. Over time, however, the balance shifted towards a somewhat more optimistic view, mainly for the following reasons:

- Early OCA theory was based on Keynesian macroeconomic theory, which postulated a negatively sloped long-run Phillips curve. According to this, an unexpected increase in inflation – induced by a devaluation or an expansive monetary policy – could

¹ W. H a n k e l et al.: Die Euro-Klage: warum die Währungsunion scheitern muss, Hamburg 1998.

² For an overview of the old and newer OCA debate, cf. P. D e G r a u w e: Economics of Monetary Union, Oxford and New York 2007, chapters 1, 2, 4; and F. P. M o n g e l l i: European economic and monetary integration and the optimum currency area theory, in: European Economy Economic Papers, No. 302, Brussels 2008.

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“buy” lower unemployment and facilitate the adjustment process by lowering real wages due to rising prices. As devaluations and monetary policy were thought to be effective in these respects, the cost of a currency union in terms of rising unemployment was considered high. However, the economic debate since the mid 1970s – the monetarist critique and the shift to using rational expectations – had shown that the long-run Phillips curve is vertical. Workers tend to focus on real, not nominal, wages and thus factor inflation expectations into wage demands according to past experience. Thus, national currency and monetary policy appeared much less effective. Thus an important counter-argument against currency unions was considerably weakened.

- Traditional OCA theory was difficult to operationalise, because different OCA criteria could easily provide conflicting answers to the question whether a country would be suited to enter a currency union. In recent years, some progress has been made in this respect. So called meta OCA indicators were found and could also be measured as econometric methods advanced.³ This step plays an important role for the empirical analysis of the following aspect.
- OCA criteria such as openness, financial integration, labour and product market flexibility and the similarity of economic policies are not invariant in time and may, above all, be fostered by EMU. This is called the endogeneity hypothesis of OCA. In other words, EMU itself may induce the OCA properties that are necessary for its functioning. Some more light will be shed on this aspect below.⁴ The focus lies on the potential endogeneity of trade openness and financial integration.

The Endogeneity Hypothesis of OCA

From a theoretical point of view, a currency union can be expected to increase trade and financial integration, mainly due to a decrease in transaction costs and the elimination of exchange-rate risk. Thus, the question arises whether increased trade and financial integration lead to a greater synchronicity of business cycles and thus a greater suitability of the participating countries for a currency union.

However, the impact of *trade integration* on business cycle synchronicity is theoretically ambiguous. On

the one hand, increased trade links between countries lead to spillovers. For example, in the case of a positive demand shock, the booming country will increase its imports from other countries. Moreover, it is likely that intra-industry trade intensity rises, because higher incomes (generated from more economic integration) foster demand for income-elastic goods, which are often differentiated goods for which economies of scale are relevant. According to the so-called new trade theory, these goods are often traded between the same industries in the form of intra-industry trade. This leads to economic spillovers on the sector level and renders countries involved in intra-industry trade more similar in terms of sector structures. The impact of common sectoral economic shocks will thus be less asymmetric. On the other hand, according to both traditional and new trade theory, based on economies of scale more trade integration should lead to more sectoral specialisation among countries – which would increase economic divergences between countries in the case of a common sectoral shock.

Empirically the case is clearer.⁵ Several studies have shown that trade integration between two countries and also common membership of a currency union are both associated with more tightly correlated business cycles. In line with the theoretical conjecture, intra-industry trade is identified as the main driving force behind this result. The negative indirect specialisation effect of closer trade integration appears to matter only little for business cycle synchronisation.

With regard to the endogeneity of *financial integration*, the theoretical mechanisms are similarly ambiguous.⁶ Several arguments can be made for increasing business cycle synchronicity. First, similar to trade, financial linkages can lead to spillovers and more synchronicity,

³ These indicators are, for example, the similarities of economic shocks and policy responses as well as the synchronicity of business cycles and of monetary transmission mechanisms.

⁴ For an overview, cf. e.g. P. De Grauwe, F. P. Mongelli: Endogeneities of OCAs, ECB Working Paper Series, No. 468, Frankfurt 2005.

⁵ For the general result cf. J. Frankel, A. Rose: The Endogeneity of the Optimum Currency Area Criteria, in: *Economic Journal*, Vol. 108, No. 449, 1998, pp. 1009-1025; and A. Rose, C. Engel: Currency Unions and International Integration, in: *Journal of Money, Credit, and Banking*, Vol. 34, No. 4, 2002, pp. 1067-89. For further references cf. P. De Grauwe, op. cit. For the relevance of intra-industry trade cf., among others, J. Fidrmuc: The Endogeneity of the OCA criteria, intra-industry trade, and EMU enlargement, in: *Contemporary Economic Policy*, Vol. 22, No. 1, 2004, pp. 1-12; U. Böwer, C. Guilleminau: Determinants of Business Cycle Synchronization across Euro Area Countries, ECB Working Paper, No. 587, Frankfurt a.M. 2006; and J. Imbs: Trade, Finance, Specialization, and Synchronization, in: *The Review of Economics and Statistics*, Vol. 86, No. 3, 2004, pp. 723-734, the latter also for the specialisation effect.

⁶ For an overview of the theoretical arguments and for the empirical evidence cf. e.g. J. Imbs, op. cit.; S. Schiavo: Financial Integration, GDP Correlation and the Endogeneity of Optimum Currency Areas, in: *Economica*, Vol. 75, No. 297, 2008, pp. 168-189; for the relevance of specialisation cf. J. Imbs, op. cit. with a simultaneous econometric approach; and S. Kalemli-Oczan, B. E. Sørensen, Y. Oved: Risk Sharing and Industrial Specialization, in: *American Economic Review*, Vol. 93, No. 3, 2003, pp. 903-18.

e.g. when investors in a slow growing country benefit from high profits of their investments in a fast growing country and spend the income domestically. Second, consumers (and companies) whose incomes (profits) suffer in a slow growing country can smooth their consumption (investments) patterns by taking up loans in a booming country. This kind of risk-sharing, however, could indirectly lead to less business cycle synchronisation. It might induce more specialisation in production across countries, because a better international diversification of financial assets would mitigate the increased risks of specialisation and could thus become a substitute for a diversified production portfolio. Moreover, growth divergences could increase if – in reaction to more financial integration – capital flows from slow to fast growing countries. Empirically, however, financial integration appears to foster business cycle correlations. However, the indirect effects of specialisation are found to be relevant and reduce this direct effect.

The empirical evidence regarding other potential endogeneity factors is mixed:

- The influence of EMU on structural reforms which could enhance product and labour market flexibility can theoretically be bi-directional. Reforms might appear more necessary in a currency union but, with fewer instruments to cushion the resulting adjustment processes, political resistance might also rise. In fact, empirical evidence on this aspect is hardly detectable.⁷
- Fiscal policies, which can be a source of asymmetric shocks, could theoretically become more symmetric due to the disciplining framework of EMU, particularly the Stability and Growth Pact. However, in practice fiscal policies have sometimes been procyclical (and thus increasing divergences), as countries did not reduce deficits in times of high economic growth and thus had to consolidate in times of weak growth.⁸

It is important to note that the above-mentioned results regarding the endogeneity of trade and financial integration mostly do not relate directly to the effects of EMU. However, they form the basis for the expectation that EMU could have fostered similarity across partici-

pating countries in general and business cycle synchronicity in particular.

Reason for Growing Economic Divergences in the Euro Area

Despite these hopes, evidence of a strong EMU effect on business cycle synchronisation is lacking. Since the early 1990s – i.e. since the Single Market programme and the run-up to EMU – the similarities in business cycles and inflation appear to have increased. However, since the start of EMU there has been little evidence of an additional increase in synchronicity. Nevertheless, a positive note can be struck: the short-term divergences of business cycles and of annual inflation rates do not appear to have increased since the start of EMU and have reached roughly the same level as between regions within the USA and some other countries.

However, growth and particularly inflation differentials have been remarkably persistent in the medium run. This has led to widely diverging developments in international competitiveness and strong imbalances in the euro area. In contrast to Germany, particularly in southern European countries real appreciations and large current account deficits ensued (cf. Figure 1).⁹

How can this stark contrast to the encouraging evidence on the OCA endogeneity hypothesis be explained? First, while the impact of EMU on financial markets is found to be relatively strong, the trade effects of EMU in particular appear to be rather limited up to now. They are estimated to be merely in the low one-digit percentage area. Second, while EMU's effects on trade and financial integration still may have fostered business cycle synchronisation to a certain degree, other (stronger) forces have obviously contributed to the divergences and their persistence.¹⁰

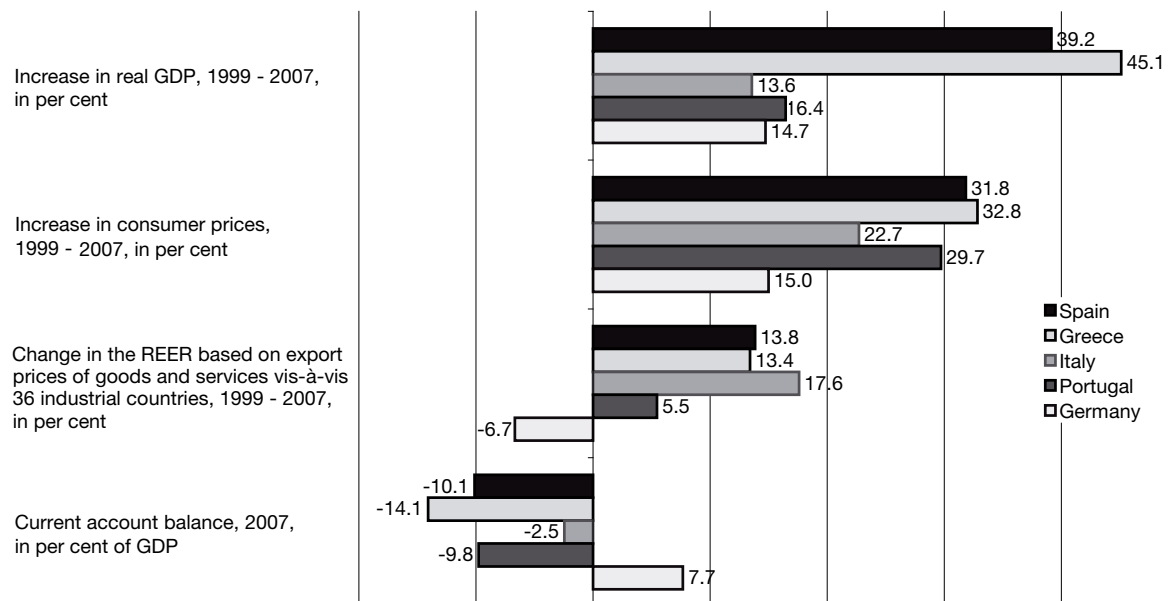
⁷ Cf. R. Duval, J. Elmeskov: The Effects of EMU on Structural Reforms in Labour and Product Markets, ECB Working Paper No. 596, Frankfurt a.M. 2006; European Commission: EMU@10 Successes and challenges after 10 years of Economic and Monetary Union, in: European Economy, No. 2, Brussels 2008, pp. 88-93.

⁸ For evidence on the disciplining forces of fiscal policies in EMU cf. Z. Darvas, A. K. Rose, G. Szapary: Fiscal Divergence and Business Cycle Synchronization: Irresponsibility is Idiosyncratic, NBER Working Paper No. 11580, Cambridge Mass. 2005; for evidence on the procyclical effects cf. F. P. Mongelli, op. cit.

⁹ For the evidence on business cycle synchronisation, cf. D. Giannone, L. Reichlin: Trends and Cycles in the Euro Area – How much Heterogeneity and should we worry about it?, in: ECB Working Paper, No. 595, Frankfurt a.M. 2006; J. de Haan, R. Inklaar, R. Jong-A-Pin: Will business cycles in the Euro area converge? – A critical survey of empirical research, in: Journal of Economic Surveys, Vol. 22, No. 2, 2007, pp. 234-273; M. Mink, J. P. Jacobs, J. de Haan: Measuring Synchronicity and Co-movement of Business Cycles with an Application to the Euro Area, CESifo Working Paper, No. 2112, Munich 2007; U. Böwer et al., op. cit. For the comparison with the USA and other regions as well as the medium-term divergences cf. e.g. D. Giannone et al., op. cit.; N. Benalal et al.: Output growth differentials across the Euro Area – Some stylized facts, ECB Occasional Paper, No. 45, Frankfurt a.M. 2006; European Commission, op. cit., p. 63.

¹⁰ For the evidence of the impact of EMU on financial integration cf. e.g. European Commission, op. cit., pp. 94-101; for evidence of the impact of EMU on trade integration cf. R. Baldwin et al.: Study on the Impact of the Euro on Trade and FDI, European Economy Economic Papers, No. 321, Brussels 2008; J. Matthes: Wirkungen der Europäischen Währungsunion auf Wachstum, Handel und Direktinvestitionen, in: Zehn Jahre Euro, IW-Analysen No. 43, Cologne 2008.

Figure 1
Economic Divergences in EMU



REER: Real effective exchange rates, weighted according to the export structure of the respective country.

Sources: OECD, European Commission, own calculations.

In a brief and cursory overview these forces can be broadly arranged into two groups: general reasons for the economic divergences and reasons to which EMU has contributed.¹¹ First, different kinds of economic shocks have to be listed. While common shocks – which could potentially lead to asymmetric effects on countries with different economic structures – do not seem to have contributed significantly to economic divergences until recently,¹² country-specific shocks were important drivers. For example, the literature identifies demographic shocks (population increases, mostly due to immigration) as having contributed to the good economic performance of Spain and Ireland. Moreover, particularly southern European countries (apart

from Greece) are shown to have suffered from negative shocks to total factor productivity.

Turning to country-specific asymmetric economic shocks resulting from economic policy, the role of fiscal policy appears to be relatively limited. Wage policy, however, contributed – particularly when southern European countries are compared to Germany. In southern Europe nominal wage increases exceeded productivity growth and led to rising nominal unit wage costs, thus contributing to persistently higher inflation.

Asymmetric shocks usually only lead to temporary divergences, but in the euro zone they are more persistent. Inflation persistence is closely related to price rigidities, which largely stem from rigid product and labour markets (see below for more on this). In fact, in the euro area prices changed in the past on average about every four to five quarters while in the USA the interval was about two quarters on average. In contrast to Germany and several other countries, inflation proved relatively persistent in southern Europe and elsewhere.¹³

EMU-related Reasons for Economic Divergence

Concerning the second group of reasons for the economic divergences in the euro area, two additional

¹¹ For the empirical evidence mentioned in the following paragraphs cf. D. Giannone et al., op. cit.; European Commission, op. cit., pp. 46, 57, 178-180; E. Stavrev: Growth and Inflation Dispersions in EMU: Reasons, the Role of Adjustment Channels and Policy Implications, IMF Working Paper 07/167, Washington DC 2007. For the role of fiscal policies cf. e.g. U. Böwer et al., op. cit. For an analysis of inflation persistence cf. F. Altissimo, M. Ehrmann, F. Smets: Inflation persistence and price-setting behaviour in the euro area, A summary of the IPN Evidence, in: European Central Bank Occasional Paper Series, No. 46, Frankfurt 2006; European Commission, op. cit., p. 63; E. Dhyne et al.: Price changes in the euro area and the United States, in: Journal of Economic Perspectives, Vol. 20, No. 2, 2006, pp. 171-192.

¹² However, since 2007 the temporary (common) rise in energy, raw material and food prices, has led to asymmetries, e.g. due to different energy intensities between countries. Cf. O. Issing: Ten Years of the ECB – Achievements and Challenges, in: Goldman Sachs: The Euro at Ten, London 2008, pp. 17-23.

¹³ Cf. B. Hofmann, H. Remsperger: Inflation Differentials among the Euro Area Countries: Potential Causes and Consequences, in: Journal of Asian Economics, Vol. 16, Issue 3, 2005, pp. 403-419.

country-specific shocks are closely related to EMU. The first one hinges on the level at which the exchange rates among EMU members were fixed at the beginning of 1999. Particularly for Italy and Spain, the cost advantage they had obtained by strongly devaluing their currencies in the early 1990s was perpetuated. Consequently, their economies benefited from a higher foreign trade contribution to growth than could have been expected if the exchange rate had been fixed at a less favourable level.

Second, and by far more important, was the positive interest-rate shock particularly in southern Europe in the run-up to EMU.¹⁴ As inflation had decreased considerably since the early 1990s and the risk of a devaluation had largely vanished, the risk premia on interest rates in southern Europe fell considerably. As a result, credit growth, domestic demand and particularly housing demand expanded rapidly.¹⁵ This buoyancy continued in Spain and Greece up until 2007, while in Italy and Portugal it broke down a few years after the start of EMU. On the other hand, Germany (and some other countries) suffered from having their exchange rate fixed at a relatively high level. Hence, they did not benefit from the positive interest-rate shock.

EMU contributed even further to these divergences due to a pro-cyclical real interest-rate effect:¹⁶ in a monetary union, monetary policy – and to a large extent also interest rates – are the same for all members. Due to different output gaps, however, inflation rates varied in recent years. In southern Europe (including Italy and Portugal) where prices increased faster than in Germany, real interest rates were considerably lower. This resulted in a self-reinforcing effect by further increasing domestic demand, the output gap and inflation. The internal self-reinforcing dynamics of the

housing booms in Spain, Greece and Italy added to the buoyancy and interacted positively with the real interest-rate channel: the housing boom reacted positively to low interest rates on the one hand and, on the other hand, it increased consumer spending and housing investment and thus domestic demand. As a result and due to rising house prices and rents, inflation (expectations) increased further and real interest rates fell even more. Short-term real interest rates were briefly negative in Italy and for a prolonged period in Spain, and long-term real interest rates were also significantly lower than in Germany (cf. Figure 2). Data for Portugal and Greece on long-term (*ex ante*) real interest rates is, unfortunately, not available.

The Balance of EMU-induced Effects

These EMU-induced diverging effects of different real interest rates obviously far outweighed the convergence creating effects which EMU endogenously caused via trade and financial integration. In this respect, an important conclusion can be drawn: EMU contributed to divergences, the elimination of which it renders more difficult.

However, there are additional convergence-inducing effects at the macroeconomic level which are not discussed in the endogeneity context, mainly in the form of the competitiveness channel.¹⁷ This concept postulates that rising divergences in international competitiveness lead to increasingly negative growth contributions of net (real) exports. The resulting lower and eventually negative output gaps would eventually bring down inflation sufficiently to restore international competitiveness. However, in reality the negative growth contributions of net exports were relatively small in relation to the growth impulses of domestic demand and thus did not achieve a sufficient inflation reduction. The details of, and the reasons for, this failure are explained below.

Outlook: EMU in Crisis?

The question arises what the consequences of this failure could be for the southern European countries. The divergences appear so large that the growth deceleration needed to restore competitiveness might be very strong and long – with negative consequences in the form of sharply rising unemployment and a prolonged period of slow or even negative wage growth. What is more, the negative effects of this adaptation

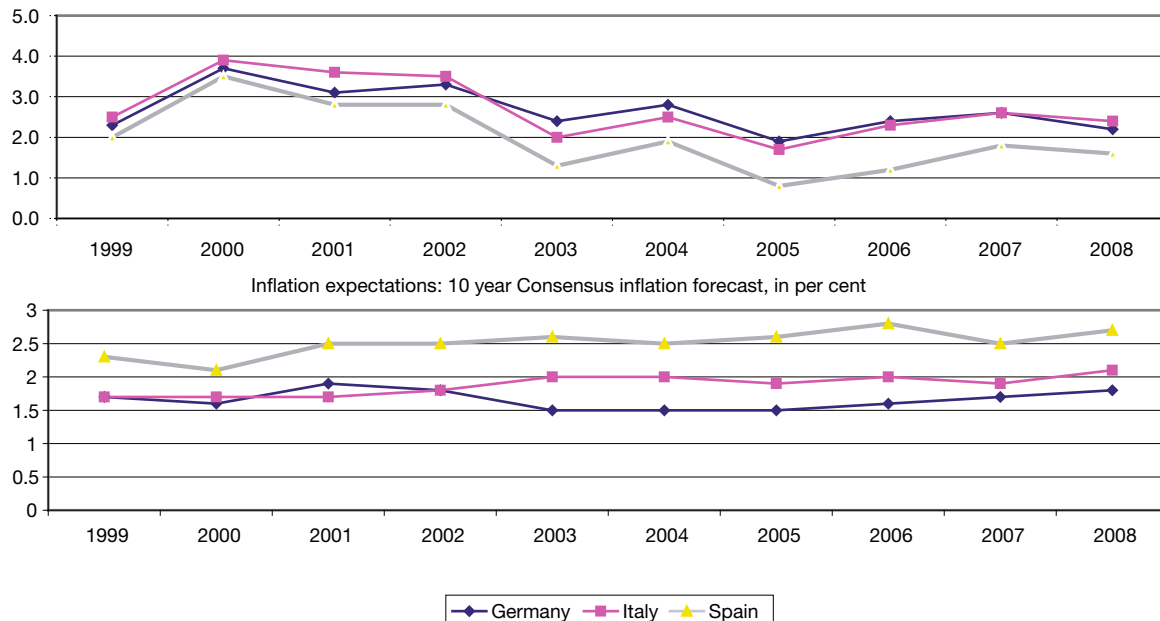
¹⁴ For an illustration of decreasing capital costs, cf. European Commission: EMU@10 Successes ... , op. cit., pp. 109–110; for the economic impact of the decline in real interest rates, cf. e.g., G. Fagan, V. Gaspar: Adjusting to the euro, in: European Central Bank Working paper series, No. 716, Frankfurt 2007; S. Langedijk, W. Roeger: Adjustment in EMU: A model-based analysis of country experiences, in: European Economy Economic Papers, No. 274, Brussels 2007. In addition the inflow of foreign capital, financial liberalisation, an expansive monetary policy particularly in the USA and capital exports from China and other emerging markets have also contributed to lower real interest rates. Model simulations show that the effects of the real interest rate shocks largely subside over time, but the level of consumption should remain higher and the current account balance smaller.

¹⁵ Particularly in Spain, immigration and population growth also contributed to the housing boom.

¹⁶ Cf. European Commission: Adjustment dynamics in the euro area – Experiences and challenges, in: European Economy, No. 6, Brussels 2006, chapter V; A. Belke, D. Gros: Instability of the Eurozone, IZA Discussion Paper, No. 2547, Bonn 2007; M. Wickens: Is the Euro Sustainable?, in: The University of York, Discussion Papers in Economics, No. 18, York 2007; European Commission: EMU@10 Successes ... , op. cit., pp. 61–62.

¹⁷ In addition the capacity increasing effect of fast growing investment and the absorption effect of imports that are induced by a rapidly growing economy can be mentioned, cf. e.g. M. Wickens, op. cit.

Figure 2
Long-term Real Interest Rates and Inflation Expectations
 10 year (ex ante) real interest rate based on inflation expectations, in per cent



Data for Greece and Portugal not available.

Source: Consensus Forecast, various editions.

process are seriously aggravated by the consequences of the global financial crisis.¹⁸

With public resistance to a painful adaptation process possibly becoming strong, pressures on the ECB to lower interest rates and loosen its price stability orientation could rise. In such a situation the euro's image could suffer substantially. In the extreme, political demands could even arise to leave EMU, as already happened in Italy in 2005. This step would – so the expectation – allow the economy to be supported by an expansive national monetary policy and competitiveness to be restored by a devaluation in a more rapid and less hurtful fashion.

In the following, arguments for and against such a scenario are presented. More weight is given to the qualifying arguments as the critical view has been well represented in the debate on EMU.¹⁹ While the standard critical points are briefly presented here, many of these aspects are then elaborated on in a more positive perspective.

¹⁸ In addition, the slowdown would be accentuated by a negative real interest rate effect, once the inflation rate in southern European countries falls below the euro zone average.

¹⁹ Cf. e.g. P. R. Lane: The real effects of EMU, CEPR Discussion Paper, No. 5536, London 2006; S. Tilford: Will the Eurozone crack?, London 2006; A. Belke, D. Gros, op. cit.; M. Wickens, op. cit.

Pessimistic Arguments

In the absence of national monetary and exchange-rate policy, the burden caused by the adaptation to a loss in competitiveness can be cushioned in various ways:

- Cross-border labour mobility can potentially lower unemployment. However, mostly due to language barriers, only 1.5% of the population in the EU25 lives and works in a foreign country, so that this mechanism is relatively ineffective.
- Cross-border capital movements can help to limit the effect of output declines on incomes as investors in a slow growing country benefit from high capital incomes in a booming country. In fact, risk sharing via capital markets has increased in the euro area, but it still remains below the extent in the USA.²⁰ It thus appears still to be insufficient.
- Fiscal policy could potentially buffer negative economic shocks but its use is limited in southern European countries (apart from Spain) due to the relatively high public deficits in recent years.

²⁰ Cf. e.g. J. Melitz: Risk-sharing and EMU, in: Journal of Common Market Studies, Vol. 42, No. 4, 2004, pp. 815-840.

Product and labour market flexibility play a central role in the adaptation process in a monetary union, because wages and prices have to adapt in order to restore lost competitiveness when a devaluation is no longer feasible. The less flexible wages and prices are, the more and the longer the output gap has to be negative and the more and the longer unemployment has to increase in order to induce the required reactions of wages and prices. Indeed, the evidence on *levels* of rigidities and on the past experience of wage reactions appears to confirm the fear that particularly the southern European countries are ill prepared for the requirements of EMU:

- Product and labour markets are relatively rigid in southern Europe in international comparison (except for product markets in Spain). And this rigidity has been statistically related to the (above-mentioned) high persistence of inflation and the limited responsiveness of inflation to economic slack.²¹
- Wage policy contributed (as mentioned above) to the loss of international competitiveness. Moreover, wage policy has aggravated price rigidities in the past, because in most of southern Europe unit labour costs rose more in booms than they declined in economic slowdowns.²² This asymmetric reaction weakened the effectiveness of the competitiveness channel and reinforced the real interest rate channel by contributing to inflation persistence.

The average annual growth of labour productivity in southern Europe between 2002 and 2007 was dismal (except in Greece at 2.8%). It stagnated in Spain (0.0%) and Italy (0.0%) and grew only moderately in Portugal (1.1%). If continued, this could spell trouble for the future. The process of regaining competitiveness would require a longer period of slow or negative wage growth. This would also limit the room for real wage increases and the growth of private consumption, thus potentially causing considerable public discontent. According to popular perceptions, in most of southern Europe the potential for future productivity increases appears to be limited by deeply embedded economic

structures that cannot be altered rapidly. Among them are weaknesses in education systems, rigidities in the product and labour markets and the importance of very small firms which have only limited capacities to raise productivity via outsourcing or research and development.

High current account deficits also bode ill for the future in Greece (-14% of GDP), Portugal (-10%) and Spain (-10%) – but less so in Italy at only -2.5%. While this is less of a problem within a currency union (see below), foreign investors could still withdraw their funding for the demand spree in these countries that far exceeds supply capacities. In fact, foreign investors hold claims mostly in the form of portfolio and bank flows and only a small share of less than 20% in the form of more stable foreign direct investment. The incentive to withdraw capital grows as the profitability of investments decreases due to the current sharply declining rate of growth or if doubts arise about the full repayment of their capital. This is all the more true as indebtedness has been rising rapidly, particularly in Spain and Portugal, where private sector credit exceeded 150% of GDP in 2007. Thus, the danger arises that – with a possibly rapid exit of foreign capital – the economies in southern Europe will have to face a severe downturn and a prolonged period of sluggish growth in order to bring domestic demand (investment) back into line with domestic supply (savings). Substantial twin deficits aggravate this concern in Greece and Portugal, where fiscal balances have improved but still remain deeply in the red (close to -3% in 2007 and reaching -4% to -5% of GDP in 2009) and also in Spain where a fiscal surplus is expected to turn into a deficit of around 6% in 2009 due to the economic slowdown.

Relativising the Pessimistic Arguments

The above-mentioned pessimistic arguments, which point to a very difficult adaptation period ahead for EMU, can be relativised in several respects. Before this is spelt out in detail, it has to be noted that economic developments in the near future will be influenced mainly by the financial crisis. However, the impact of the portrayed divergences among EMU members remains an important underlying factor.

Effectiveness of Devaluation Questionable

As mentioned above in the discussion of OCA theory, it can be questioned to a certain extent whether leaving EMU would be an effective option to regain competitiveness by means of a devaluation and to mitigate unemployment increases by using an expansionary national monetary policy. Devaluation, which is meant to

²¹ For the rigidity of regulations cf. OECD: *Going for Growth*, 2009, chapter 7, (Reform of Product Market Regulation in OECD Countries, 1998-2008); P. Conway, V. Janod, G. Nicoletti: *Product Market Regulation in OECD Countries: 1998 to 2003*, OECD Economics Department Working Papers, No. 419, Paris 2005; Fraser Institute: *Economic Freedom of the World 2008*, Vancouver 2008; for the relation to inflation persistence, cf. B. Cournède, A. Janovskaia, P. J. van den Noord: *Sources of Inflation persistence in the euro area*, OECD Economics Department Working Papers, No. 435, Paris 2005; European Commission: *EMU@10 Successes ...*, op. cit., pp. 182-184.

²² Cf. European Commission: *Adjustment dynamics ...*, op. cit., pp. 117-122 for an analysis of the period 1980-2005. The results for Portugal and Greece show the expected signs, but are not significant.

lower domestic costs (expressed in foreign currency), and an expansionary monetary policy, which is meant to create unexpected inflation and lower real wages, might not achieve these goals because they unleash new-cost increasing forces. Import prices rise and, if workers do not suffer from money illusion, wages will also rise in response to the increase in inflation. Thus competitiveness will deteriorate again and real wages will not be lowered.

This reversing effect is stronger in more open economies. It was shown to have been important in European countries in the past, as people in southern Europe have experienced the effects of devaluations time and again.²³ Still, a political economy argument could be made for leaving EMU as, in the end, real wages have to fall or at least have to grow more slowly than in the other EMU countries in order to improve competitiveness. This might be less difficult to accomplish via higher inflation than via lower growth in nominal wages.

Labour Markets in Improved Shape

Despite still rigid levels of regulation, labour and product market reforms and wage policy have been relatively favourable for employment creation in most southern European countries.

Regarding wage policy the impact on international competitiveness has to be distinguished from the impact on the domestic labour market. Nominal wage increases exceeding the slow growth of labour productivity (except in Greece) contributed to a loss in international competitiveness. However, as nominal wages hardly kept pace with inflation, real wages hardly increased in Italy, stagnated in Spain and even fell in Portugal between 2002 and 2007 (they rose in Greece by 3% on average). During this period, real unit labour costs fell considerably in Greece, Spain and Portugal and increased only slightly in Italy. And since the early 1990s, real unit labour costs have decreased significantly in Spain and particularly in Italy. Thus, from a domestic point of view, wage policy cannot be described as excessive. Instead it should have fostered employment creation. Moreover, this signals a certain adaptability of workers that is not sufficient to improve competitiveness but that still goes beyond the cliché.

With a view to the near future, there is an additional reason for hope. With lower inflation it could become easier to regain competitiveness. The easing of inflation pressures (due to the global financial crisis and

lower energy and raw material costs) allows for lower nominal wage increases, which have broadly tended to keep up with inflation. Thus, *ceteris paribus*, increases in nominal unit labour costs will be smaller with lower inflation.

Moreover, while labour and product markets in southern European countries are still relatively rigid in international comparison and considerable reform challenges remain, a remarkable degree of flexibility has been created since the end of the 1990s. This is documented by the OECD indices for product market regulation for the period 1998 to 2008, by OECD data on employment protection legislation for the period 1998 to 2003, and by the regulation index of the Fraser Economic Freedom Report, which provides data missing in the OECD statistics (cf. footnote 20). Particularly Italy and also Greece made significant progress in product and labour market flexibility. For Spain and Portugal the picture is somewhat more mixed - with progress concentrated on product market regulation. Remarkably, regarding the OECD product market regulation index Spain is placed at rank 7 in 2008, far ahead of Germany (rank 16), Italy (rank 18) and Portugal (rank 20). The results of these quantitative measures are confirmed by more qualitative studies,²⁴ which also mention certain important labour market reforms in Portugal (e.g. a labour code change, the tightening of unemployment benefit eligibility) and Spain (e.g. the deregulation of atypical employment).

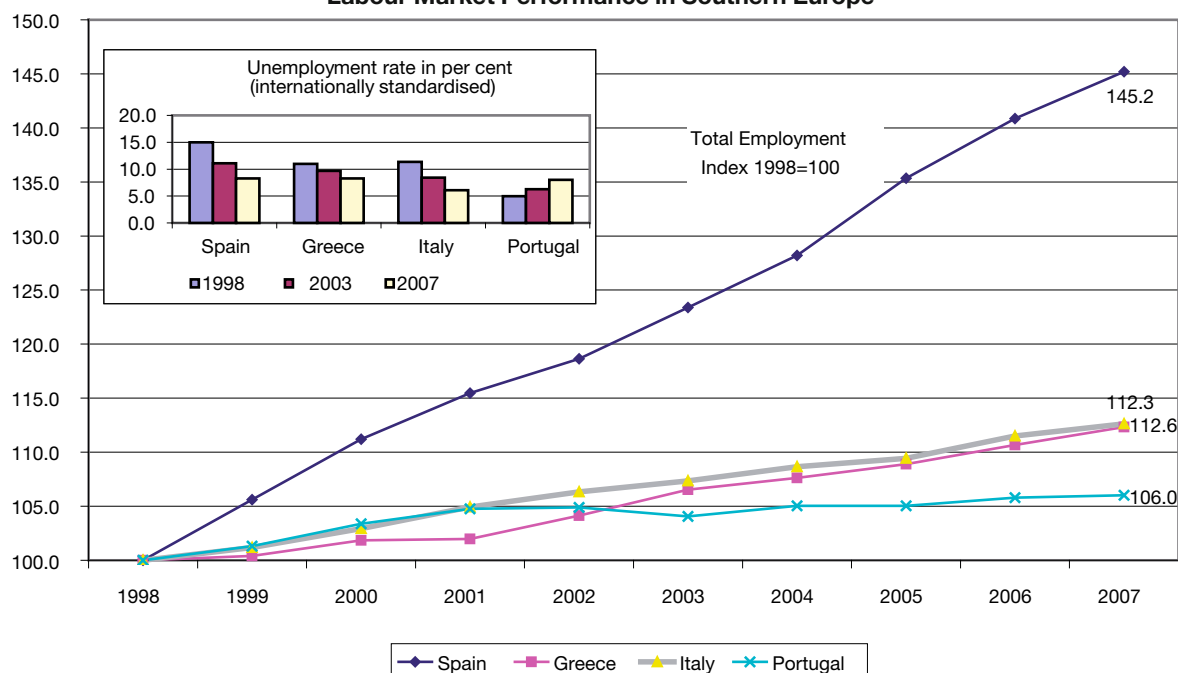
As a result of wage policy and regulatory developments, labour markets performed well in most southern European countries until 2007/2008. Since the onset of EMU, employment has risen by an impressive 45% in Spain, by 12% in Greece, and remarkably also (despite slow economic growth) in Italy by nearly 13% (cf. Figure 3). What is more, structural unemployment decreased markedly in these countries, particularly in Spain and Italy. In Portugal, however, (actual and structural) unemployment has increased since 2000, but employment has also grown by 6% since the start of EMU (and by about 2% since 2003).²⁵ These remarkable results show that structural reforms – even if they do not go very far in each case, so that substantial rigidities remain in certain areas – can offer a significant pay-off.

²³ Cf. P. De Grauwe, *op. cit.*, p. 37 with references.

²⁴ Cf. e.g. European Commission: *Adjustment dynamics ...*, *op. cit.*, chapter VII; S. Bergheim: *Spain 2020 – the success story continues*, Deutsche Bank Research, Frankfurt 2008; cf. also the most recent country report in the OECD Economic Surveys and in the reports on Article IV consultations by the IMF.

²⁵ The rise in unemployment is explained by a marked increase in the Portuguese labour force.

Figure 3
Labour Market Performance in Southern Europe



Spain: Break in employment series in 2004.

Source: OECD, own calculations.

Referring to the question whether EMU will face a crisis in the near future, the (gradual) reforms in southern Europe offer some consolation. More flexibility allows for a more rapid adaptation process with less grave consequences for unemployment. In addition, it has become obvious that – contrary to widespread perceptions some years ago – reforms are politically feasible in southern Europe and people there have a greater adaptability than expected.

Higher Productivity Growth on the Horizon?

The outlook for productivity growth might not be as dismal as suggested above for southern Europe (except Greece, where it has already been high):

- Again, one argument lies in the significant progress in structural reforms (particularly in product markets) that might bolster productivity growth. More reforms are in the offing in Portugal, in Italy with a new prime minister, and particularly in Spain with an ongoing encompassing reform programme focusing on raising competition, improving the business environment, and increased spending on education and innovation.²⁶

²⁶ For the reforms and moderate successes mentioned in this and the following paragraph, cf. the references in footnote 24.

- Furthermore, economic restructuring is underway in Portugal and Italy. Both are countries which have been hard hit by the increase in competition from emerging economies due to the traditional specialisation in low and medium tech sectors, particularly textiles. While progress is still limited, some success has been accomplished in upgrading product quality and climbing up the technological ladder.
- Productivity growth may have been slowed down by increasing employment particularly in Spain and Italy, mainly for two reasons. First, workers who have been unemployed for a longer period lose qualifications and productive abilities. Second, both countries managed to considerably raise the employment rate of low skilled workers between 1999 and 2006 – Spain by 10 and Italy by 5 percentage points. Both effects lowered the average productivity of the workforce. In the current crisis, unemployment will rise considerably again. Unfortunate as this may be for the newly unemployed, this has the potential to also raise productivity growth.²⁷

²⁷ To be sure, in the early phase of an economic downturn, productivity growth slows down, because output growth decreases and companies tend to keep up employment initially. However, this effect should lose in importance as labour markets have become more flexible, particularly with an increased importance of temporary and fixed term contract employment.

In fact, the medium-term forecasts for productivity growth in Italy and particularly in Spain are higher than in recent years, when productivity was nearly stagnant. In Portugal the level of productivity growth is assumed to remain at more than 1% (and in Greece around 2.5%). Certainly, these productivity increases in Italy, Spain and Portugal are low compared to other industrial countries. However, they still have the potential to support the adaptation process towards better international competitiveness without weighing too heavily on workers' incomes.

Limited Impact of the Competitiveness Effect

As mentioned already, the downward pressure on the economy induced by the above-mentioned competitiveness channel was less important than expected. A further look into the empirics of this central mechanism to foster economic convergence sheds more light on this development.²⁸

Most of the academic literature expects the competitiveness effect to outweigh the real interest rate effect with increasing divergences.²⁹ The main reason for this conjecture lies in the fact that losses in international competitiveness accumulate over time if wages and inflation grow persistently faster than in competing countries. On the other hand, the real interest rate effect depends merely on the current inflation divergence.

However, a look at southern European countries does not confirm this view. The fact that different real effective exchange rates (REERs) of the southern European countries vis-à-vis 36 industrial countries³⁰ have stagnated at high levels or have even further increased in recent years, should – according to the mainstream view – have led to constantly or even increasingly negative growth contributions of net exports. This should eventually have slowed down the economy to such an extent that wages and inflation should have grown more slowly than in competing countries – and the REER should have decreased again.

Looking at Figure 4, it is true that the growth contribution of net exports was negative for most years in southern European countries. However, and contrary to expectations, the growth contributions of net

exports became less negative in recent years in Spain and Greece – and in Portugal and Italy it even became positive. Thus, the extent to which the competitiveness effect slowed down the economy did not suffice to let the REER decrease again. In Spain and Greece the positive growth contribution of domestic demand was far greater than that of net exports. And in Portugal and Italy, the exports and also the general economy displayed signs of recovery in recent years, which also runs counter to expectations.

It could be argued that the slow growth in Italy and Portugal was due to the competitiveness effect, which might also work via depressing business investment. However, other reasons for sluggish growth appear more important than the competitiveness effect. For example, the share of business investment in GDP is relatively small. In addition, Portugal's economic growth was dragged down by a considerable decline in its real estate sector. In Italy particularly the growth of private consumption was very slow. This can be related mostly to stagnating real wages, which are a reflection of very low productivity growth. What is more, both countries are in a deep restructuring process due to increased competition from emerging markets which most likely lowered growth considerably.

The academic literature on the competitiveness effect also does not appear to be very supportive of the relevance of this effect. Theory-based model simulations arrive at diverging conclusions about the relative strengths of the competitiveness and the real interest rate effects. This is not very surprising as the results of such exercises often critically depend on the underlying assumptions. Also, studies which econometrically analyse *ex post* data do not come to clear-cut results about whether the competitiveness effect is sufficiently strong to eventually induce convergence of REERs in EMU again.³¹

What are the reasons for the apparent weakness of the competitiveness effect?

- The role of foreign trade still seems to be rather limited compared to the relevance of the domestic economy. The export shares in GDP are still relatively

²⁸ For a more detailed analysis cf. J. Matthes: Zunehmende Ungleichgewichte im Euroraum – Gefahr für die EWU?, in: Zehn Jahre Euro, IW-Analysen No. 43, Cologne 2008.

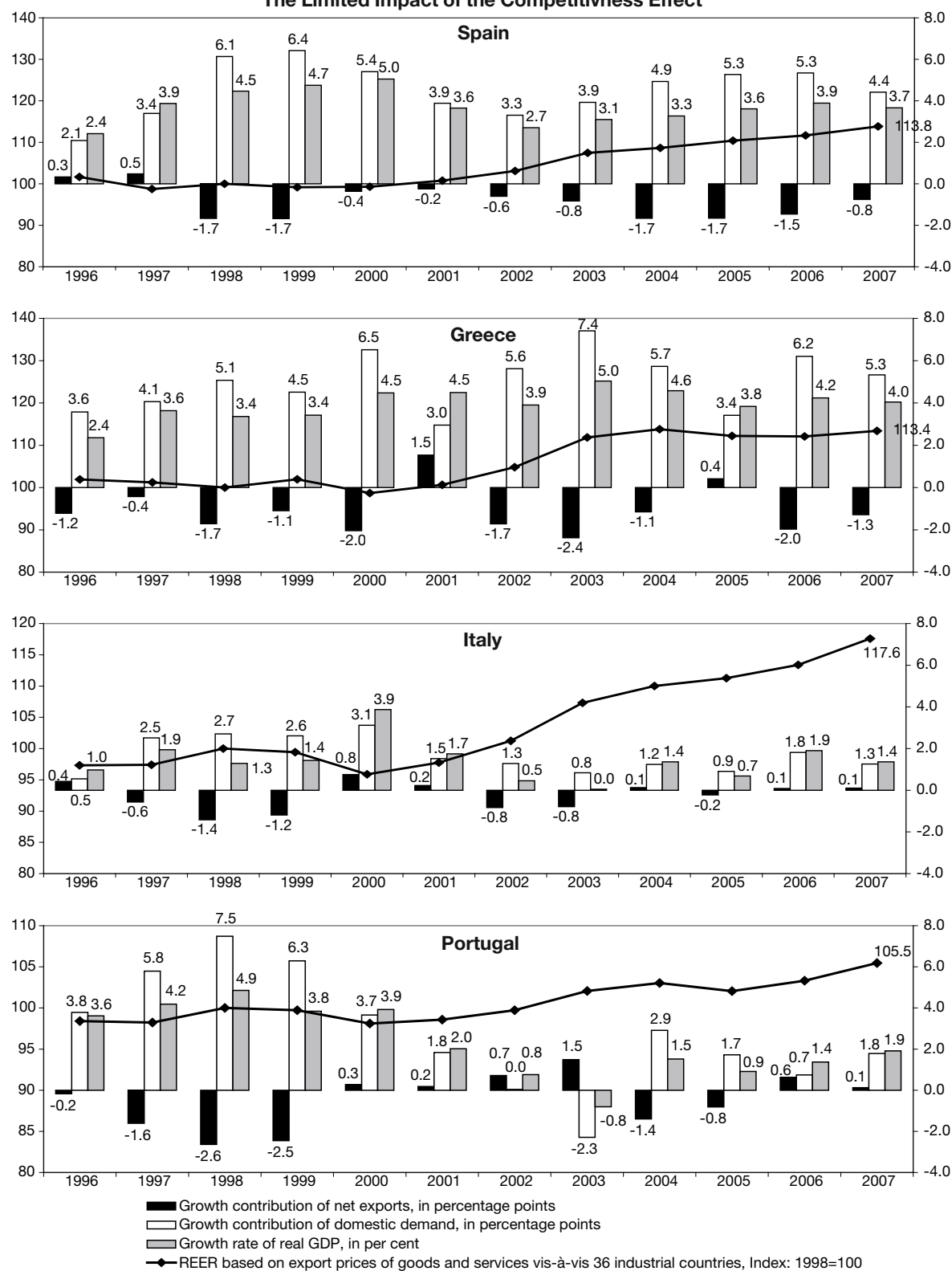
²⁹ Cf. e.g. B. Hofmann, H. Remsperger, op. cit.; European Commission: Adjustment dynamics ... , op. cit., chapter IV; European Commission: EMU@10 Successes ... , op. cit., pp. 55-61.

³⁰ The difference lies in the conversion of nominal to real effective exchange rates, for which GDP deflators, export prices, consumer prices or unit wage costs in the total economy or in manufacturing can be employed. The data is provided by the European Commission.

³¹ For a model based analysis cf. European Commission: Adjustment dynamics ... , op. cit., chapter VII; M. Wickens, op. cit.; A. Belke, D. Gros, op. cit.; S. Langedijk, W. Roeger, op. cit. For example the European Commission in its DSGE model assumes a high degree of substitutability between domestic and foreign goods which is likely to contribute to the conclusion from the model that the competitiveness effect is portrayed as relatively strong. For the *ex post* regression results cf. e.g. B. Hofmann, H. Remsperger, op. cit.; European Commission: Adjustment dynamics ... , op. cit., pp. 114-127; and for an overview of former studies p. 174; European Commission: EMU@10 Successes ... , op. cit., pp. 58-60.

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Figure 4
The Limited Impact of the Competitiveness Effect



REER: Real effective exchange rates, weighted according to the export structure of the respective country.

Sources: OECD, European Commission, own calculations.

limited in Greece (22%), Spain (26%), Italy (28%) and Portugal (31%).

- The calculation of growth contributions is intricate: increasingly negative growth contributions of net exports require that the *increase* of the real trade deficit grows from year to year. This was obviously not the case in southern Europe. In Spain and Greece the real trade deficit increased in recent years, but by less than previously, so that the growth contribution of net exports became less negative. In Italy and Portugal the real trade deficit recently declined slightly, so that the growth contribution of net exports became positive.
- The argument for the effectiveness of the competitiveness effect relies on the importance of relative prices between goods from different countries. However, trade is also – and even more – dependent on demand conditions.³² Above all, imports are decisively influenced by domestic demand. This can easily be seen in Figure 4. In most cases the growth contribution of net exports became more negative when the growth contribution of domestic demand became larger and vice versa. In fact, between 1996 and 2007 the negative correlations between the growth contribution of domestic demand and of net exports are very high in Spain (-0.8), Greece (-0.9) and Portugal (-0.9) but less so in Italy (-0.3). Moreover, rising growth rates of real exports, which run counter to the ideal effects of the competitiveness channel, can be explained by booming world demand – also for products from southern European countries.

Turning to the economic outlook for southern Europe, some hopeful implications can be drawn from this analysis and particularly from the insight that demand conditions are important for the effectiveness of the competitiveness effect. Due to the negative growth impact of the financial crisis, net exports might not worsen the economic downturn but might even exert supportive effects.

This somewhat surprising result can be explained by expected import developments. Particularly in formerly booming Spain and Greece – and somewhat less in slow growing Italy and Portugal – there is a large potential for a decrease in imports resulting from a sharp fall in domestic demand. This might lead to less negative or even positive growth contributions from net exports – if the slowdown in world demand does not exert an

even stronger effect on exports. In fact, the OECD forecasted in December 2008 that the growth contribution of net exports should become positive in Spain in 2008 (+0.6 percentage points) and even more so in 2009 (+1.5 percentage points).³³ In Greece, the same line of argument applies for 2008 with a projected growth contribution of net exports of even 1.9 percentage points in 2008. However, due to falling export demand, in 2009 only -0.7 points are expected. Roughly in line with the arguments presented above, the projected values for Portugal are -0.4 percentage points in 2008 and 0.2 percentage points in 2009 and in Italy 0.5 and 0.0 percentage points respectively

How Problematic are Current Account Deficits Really?

Several reasons can be found why the current account deficits mentioned above in Greece, Spain, and Portugal might be sustainable or might be dissolved over a sufficiently long period so that growth perspectives would not be dampened significantly.

The euro eliminates the risk of a currency crisis, which often goes hand in hand with high current account deficits and indebtedness. When a country has a national currency, foreign investors fear a devaluation because it erodes the value of their assets if these are denominated in the national currency or, if assets are denominated in the investor's currency, the debtor country could face solvency problems as the asset value measured in nominal currency rises. Within the euro zone such fears are groundless. However, as mentioned above, foreign investors can still withdraw money from a country if their profits erode or if indebtedness increases so that solvency is at risk.

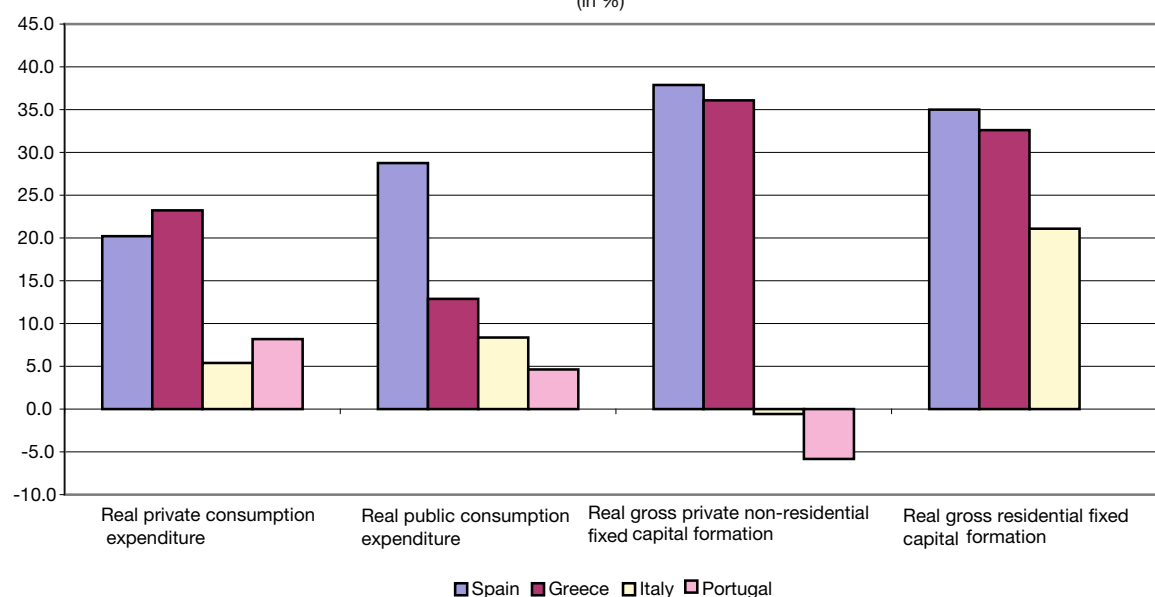
Nevertheless, high current account deficits could be sustainable to a certain extent as they might merely be a reflection of capital account surpluses. In fact, as mentioned above, EMU has contributed to more financial integration in the euro zone by eliminating exchange-rate risks and lowering transaction costs. Thus, it appears natural that – as has happened in the euro area – capital flows from capital-rich to capital-poor countries, in which profitability and productivity growth should be higher.³⁴ This could be a roughly suitable explanation in Greece, where high output growth went

³² Cf. IMF: France, Germany, Italy, and Spain: Explaining Differences in External Sector Performance Among Large Euro Area Countries, IMF Country Report, No. 05/401, Washington DC 2005.

³³ Cf. the data annex of the OECD: Economic Outlook, No. 84, November 2008, Paris.

³⁴ Current account deficits in poorer but fast growing (converging) countries could also reflect the intention to smooth consumption intertemporally, taking out credit to allow for higher consumption during the convergence process and repaying credit when the convergence process has ended.

Figure 5
Growth Rates of Selected Real Aggregate Demand Components of GDP
 (in %)



Note: Portugal: Real gross private non-residential fixed capital formation = Real total gross fixed capital formation, as data on the former is not available.

Sources: OECD, own calculations.

hand in hand with high productivity growth. However, in Spain only output has grown rapidly and in Portugal output and productivity have risen only slowly.

Mainly in the latter countries, but to some extent in Greece as well, the current account deficit appears to be caused to a significant degree by the portrayed loss in international competitiveness which resulted in high trade deficits. In fact, in 2007 the trade deficit accounted for four fifths of the current account deficit in Portugal and Greece and for about two thirds in Spain. From this perspective the question arises again whether foreign investors are still prepared to finance the overdemand. An important consideration in this respect is whether foreign financial means have been used productively or whether they have been spent mainly on consumption and unproductive government expenses. While the high fiscal deficits in southern European countries mentioned above sound an alarm, other indicators display a less bleak picture. Particularly in Spain and Greece real private non-residential capital formation rose rapidly in recent years, when the current account deficits expanded rapidly (cf. Figure 5).³⁵ In Portugal, however, real gross fixed capital

formation has even fallen since 2003, mainly due to a downswing in the real estate market.

In Portugal and Greece (as well as in Italy), however, there are signs that export perspectives could improve. Export firms have partly succeeded in upgrading product quality and technology content, in lowering costs by means of outsourcing and in diversifying their exports to fast growing markets or markets with less competition. In Portugal this has resulted in an improvement in export performance in 2007. The same is projected for Greece in 2009/2010.³⁶

Conclusion and Outlook

It has been documented that possible endogenous effects of EMU which are expected to foster convergence among the euro zone countries are theoretically relevant but practically have been of limited importance to date. On the contrary, divergence inducing

³⁵ The rapid increase in private residential capital formation in Spain and Greece, however, carries the risk of having created oversupply in the course of the real estate market boom.

³⁶ Cf. H. Bennett et al.: Competitiveness in the Southern Euro Area: France, Greece, Italy, Portugal and Spain, IMF Working Paper, No. 08/112, Washington DC 2008; B. Lissovolik: Trends in Italy's Non-price Competitiveness, IMF Working Paper, No. 124, Washington DC 2008; and the references mentioned in footnote 23; for data on export performance cf. the data annex of the OECD: Economic Outlook No. 84, November 2008, Paris: Portugal's export performance, however, is projected to decline again after 2007; the same applies to Italy since 2002, however with a tendency for changes to become less negative in 2009/2010.

effects of EMU at the macroeconomic level – mainly the fall in real interest rates in the run-up to EMU and the real interest rate channel – have contributed to imbalances within the euro zone and particularly to a sustained loss of international competitiveness by southern European countries. The convergence inducing macroeconomic effects of EMU, particularly the competitiveness channel, have up to now not proved to be sufficiently strong to reduce these imbalances. As a result, large current account deficits have accumulated in southern Europe (except in Italy). This situation and certain weaknesses of southern European countries, e.g. in terms of productivity growth and the rigidity in product and labour market regulations, appear to pose risks for a sharp and sustained economic downturn in the near future, which would be required to regain competitiveness.

However, a deeper analysis of the standard arguments shows some light at the end of the tunnel. At the margin things might not be as bad as often thought. For example, wage policy was in part relatively moderate from a domestic point of view and there has been remarkable progress in reforms of product, and partly also labour, markets. These factors contributed to an impressive labour market performance (except in Portugal), which might also have contributed to the slow growth of labour productivity. These developments would under normal circumstances (without the current economic crisis) provide some hope that the southern European countries can regain competitiveness without having to bear a sharp and enduring rise in unemployment of the core labour force – which could become a heavy burden for the image of the euro. Moreover, it was argued that in contrast to expectations, the competitiveness effect of EMU might soon support – and not further depress – economic activity.

Nevertheless, economic and political risks remain, both in southern European countries and also for the euro zone at large. Those risks mainly lie in the current deep recessions which are induced by multiple factors, including the weakness in competitiveness, the severe impact of the global financial crisis, and the downturn in real estate markets particularly in Spain. The paradox in this development lies in the fact that the latter factors are likely to achieve the economic slowdown which the competitiveness effect of EMU had not been able to deliver. As the southern European countries are hit by multiple recessionary factors, their economic slowdown should tend to be deeper and longer than in the rest of EMU. Thus, the economic imbalances within EMU might eventually be re-

duced partly due to the financial crisis. For the public image of the euro this is consoling, as the blame for the impending deep recessions will most likely fall on the financial crisis – and not the euro. However, EMU and the reputation of the euro might still be at risk, as political demands for cushioning the effects of the coming recessions by using a devaluation and a national monetary policy might be the more pronounced the deeper the economic crisis is.

Yet, leaving EMU is likely to be very costly.³⁷ First, the one-off costs of changing the currency have to be accounted for. What is more, the exit from EMU poses grave risks that an even more severe financial crisis could ensue which would most likely be aggravated by a debt and a currency crisis. As actors in financial markets will expect a devaluation, there is a strong incentive to transfer money out of the respective country.³⁸ These transactions would be largely without risk, if an EMU exit was expected. Thus, a massive outflow of capital could endanger the financial system of the respective country.

In addition, doubts could arise whether the country would be able to repay its debts:

- because as debts are denominated in euro a devaluation would increase the amount of domestic currency which is required to repay the debts;
- because of rising interest rates (and thus payments on the debt stock) due to expectations of rising inflation and of further devaluations. This would be particularly relevant in Italy and Greece where government debts amount to around 100% of GDP according to Eurostat.

In fact, the interest rate spreads of 10-year government bonds vis-à-vis German government bonds have recently increased considerably in southern Europe. While spreads had come down to below 0.1 percentage points at certain times since the entry into EMU, they started to increase in mid-2007 and have

³⁷ Cf. S. Tilford: Will the Eurozone crack?, London 2006; C. A. E. Goodhart: Currency Unions: Some Lessons from the Euro-Zone, in: Atlantic Economic Journal, Vol. 35, Issue 1, 2007, pp. 1-21; B. Eichengreen: The Breakup of the Euro Area, NBER Working Paper, No. 13393, Cambridge Mass. 2007; Eichengreen even speculates about the "mother" of all financial crises that could be caused by an exit from EMU.

³⁸ This would apply in the case of foreign debts denominated in the respective country's currency in order to avoid losses from a devaluation. Alternatively, it is possible to profit from the devaluation by taking up credit in the currency of the respective country, transferring the money abroad and repaying the loan after the devaluation. The same applies to the transfer of financial assets denominated in the currency of the respective country and then transferred back after the devaluation.

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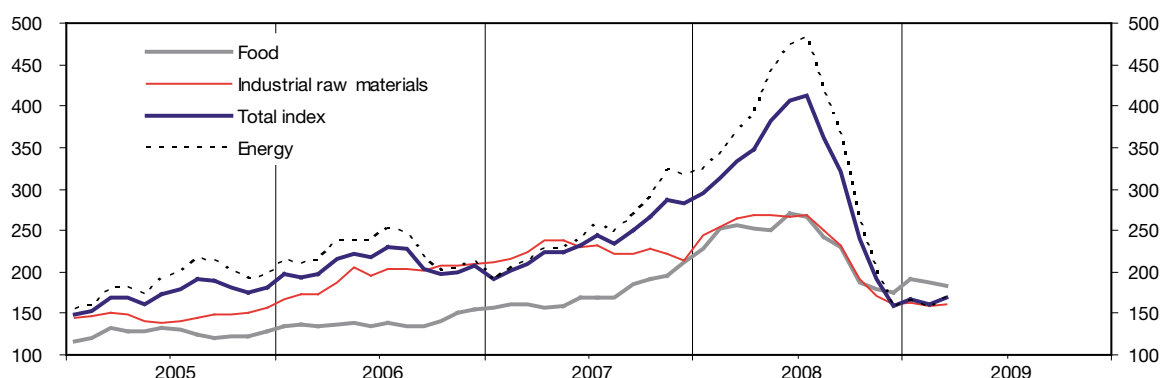
hiked up markedly since the deepening of the financial crisis in September 2008 to mid-March 2009 in Greece (to up to 3.0 percentage points), Italy (up to 1.6 points), Portugal (up to 1.6 points) and Spain (up to 1.3 points). There could be several reasons for this: investors might have become less sure whether government debts can be repaid fully due to the impact of the bank bail-outs and of the impending deep recessions on government revenues and outlays. Recently, even debates about possible sovereign defaults have come up. This view is supported by markedly higher spreads of credit default swaps. However, it might in addition be the case that the rise in government bond spreads is also the outcome of an overreaction, as hedge funds and other investors have to de-leverage due to the financial crisis and cash in their investments largely regardless of fundamentals. It might possibly also be interpreted as in part mirroring a growing per-

ception that an EMU exit by the respective countries is not impossible, so that a risk premium on a possible devaluation is re-introduced.

All in all, and contrary to overly pessimistic expectations, the risks arising from economic divergences within EMU and from large current account deficits would appear to be containable in normal times. However, the impact of the global financial crisis might deepen impending recessions significantly, induce grave criticism about the strings attached by EMU, and might even lead to considerable capital outflows from southern European countries. This could possibly lead to a current account crisis which would render economic downturns even more severe. Thus, the jury is still out on whether the image of EMU will remain as favourable as it has been at the end of the first ten years.

HWWI Index of World Market Prices of Commodities¹

(2000=100)



Commodity Groups ¹	2008	Sep. 08	Oct. 08	Nov. 08	Dez. 08	Jan. 08	Feb. 09	Mar. 09 ²
Total Index	315.8 (33.4)	321.9 (28.7)	239.4 (-9.9)	191.0 (-33.6)	159.7 (-43.6)	166.7 (-43.6)	160.9 (-48.5)	169.0 (-49.4)
Total, excl. energy	236.0 (12.9)	230.8 (9.5)	190.6 (-11.8)	173.5 (-18.7)	164.7 (-22.7)	171.7 (-28.0)	167.7 (-33.7)	168.2 (-36.0)
Food total	233.0 (34.3)	229.9 (23.7)	187.2 (-1.9)	178.2 (-9.0)	175.2 (-17.3)	192.4 (-15.3)	187.0 (-25.6)	183.6 (-28.5)
Industrial raw materials	237.4 (5.7)	231.2 (4.3)	192.0 (-15.5)	171.4 (-22.4)	160.0 (-25.1)	162.6 (-33.2)	159.3 (-37.2)	161.5 (-39.1)
Agricultural raw materials	150.7 (-3.5)	151.5 (-3.8)	131.3 (-17.5)	117.3 (-26.9)	110.3 (-31.8)	109.8 (-31.9)	104.6 (-34.5)	104.3 (-35.8)
Non-ferrous metals	242.2 (-11.1)	234.6 (-11.2)	176.9 (-35.9)	148.1 (-42.8)	122.7 (-48.7)	124.9 (-50.0)	121.6 (-56.1)	128.0 (-57.0)
Iron ore, steel scrap	482.2 (60.8)	459.0 (53.5)	413.2 (37.7)	394.4 (31.7)	407.8 (35.8)	420.2 (-10.6)	422.6 (-10.5)	420.9 (-13.2)
Energy	354.4 (41.6)	365.9 (35.9)	263.0 (-9.2)	199.4 (-38.3)	157.2 (-50.4)	164.3 (-49.1)	157.6 (-53.8)	169.4 (-54.0)

¹ On a US dollar basis, averages for the period; figures in brackets: percentage year-on-year change.

² Up to and including March 27th.

Further information: <http://www.hwwi-rohindex.org/>