

The euro at ten: unfulfilled threats and unexpected challenges

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The euro at ten: lessons and challenges

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Session 1: Economic and Monetary Union (EMU) after ten years: what has EMU brought to consumers and the corporate sector? Prices and quantities

Francesco Paolo Mongelli (ECB) and **Charles Wyplosz** (The Graduate Institute, Geneva)¹

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Abstract

The first ten years of the euro may well have been as good as many had hoped. Price stability has been broadly attained and interest rates are very low. These achievements are serving the citizens of the euro area well. A remarkable feature is that recent inflation dispersion in the euro area is already as low and as stable as in the United States. We might, understandably, have expected inflation dispersion to have remained higher in the euro area due to differences in national fiscal policies and supply shocks, adjustments to equilibrium exchange rates and the ongoing catching up of incomes. Three concerns raised prior to the launch of the euro have been broadly dispelled: first, the ECB has established its own credibility and has anchored inflation expectations; second, national fiscal policies are no longer pro-cyclical; and third, there is no evidence of the growing divergence predicted by the Walters critique, which states that real interest rates could act as asymmetric transmission channels. However, we may be witnessing a transmutation of the Walters critique that operates through eventually self-equilibrating external current account deficits

JEL classification: *E42, F15, F33 and F41.*

Keywords: economic and monetary integration, EMU.

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Non-technical summary

The first ten years of the euro may well have been as good as many had hoped. Price stability has been broadly achieved. Low current and expected inflation, low interest rates and low macroeconomic variability have supported other beneficial dynamics such as additional trade in goods and services as well as deeper financial integration. These dynamics are facilitating restructuring and raising efficiency, supporting credit and risk-sharing channels, and possibly enhancing the ability of euro area corporations to compete in the world markets.

A remarkable feature of these ten years is that recent inflation dispersion in the euro area is already as low and as stable as in the United States, in spite of factors that could instead have justified a higher inflation dispersion, such as still divergent fiscal policies, fragmented labour markets, the diversity of initial economic and financial conditions, and possible Balassa-Samuelson effects due to the catching up of some countries. Why is that, and is price convergence being felt in other areas or dimensions?

To address this question, we analyse a number of the concerns about the functioning of Economic and Monetary Union (EMU) that were raised prior to its launch. The first concern was about the need for the ECB to establish its credibility early on, although from the beginning, the ECB seems to have inherited the credibility of its predecessors. The second concern pertains to the risk of pro-cyclical fiscal policies. There is little doubt that a break in national fiscal policies occurred at about the time the euro was launched. However, ten years later, it is impossible to determine how much of the improvement is to be assigned to the existence of the Stability and Growth Pact and how much to the growing recognition that fiscal discipline must be achieved after years of rising public debts. Furthermore, the suspensions of the Pact indicate that it is not always considered the dominant guide for policy-making. The third concern is about the risk of asymmetric transmission through diverging real interest rates, i.e. the Walters critique. After ten years there is no evidence of the growing divergence predicted by the Walters critique: we have not observed widening inflation differentials.

We then turn to some unexpected challenges. One is the emergence of large current account imbalances -- in both directions -- in some member of the euro area, while the euro area has remained nearly balanced. Financial globalization has rendered it possible to borrow and lend internationally on a large scale: evidence of the vanishing of the Feldstein-Horioka paradox. Within the euro area, the absence of any currency risk and increased financial integration has rendered this new phenomenon more pronounced than elsewhere. We show that it is possible to interpret the observed large current account divergences as the channel through which the Walters critique has operated. Importantly, this is in part a self-equilibrating mechanism since real appreciation reduces demand for domestic goods, which exerts downward pressure on domestic inflation. Yet this phenomenon still needs to be better understood and managed.

1. Introduction

More than ten years ago, many economists were sceptical about the wisdom of monetary union in Europe. Some even characterised it as a project that was doomed to failure and that could actually tear the European Union apart.² This foreboding has not materialised. On the contrary, a whole new generation of Europeans is growing up with, at most, a distant memory of Belgian and French francs, Deutsche Mark, Italian lire and other predecessor currencies. An anniversary is a time to take stock. Accordingly, our aim is to review what has been achieved, recall the various threats to monetary union that did not materialise during this period and address a number of unexpected challenges.

Given some of the early concerns, the smooth functioning of the euro area should not be taken for granted. In Section 2, we illustrate that in spite of the recent hiccup in inflation, price stability has been broadly achieved, with average inflation having been close to or slightly above 2% since January 1999. Furthermore, the absence of exchange rate risk, low current and expected inflation, low interest rates and low macroeconomic variability more generally are supporting other beneficial dynamics such as additional trade in goods and services as well as deeper financial integration. These achievements are undoubtedly serving the citizens of the euro area well.

Many of the debates in the 1990s foresaw difficulties and threats to the successful functioning of EMU. As it turns out, most of them have not materialised, at least not to a significant extent (see Section 3). First, there was a fear that a new supranational central bank would have to earn its credibility the hard way. Would the new ECB feel compelled to be systematically over-restrictive in its early years? In fact, various measures indicate that the ECB was literally “born credible”. Even though the euro soon depreciated, it became clear that this was mainly a dollar event. Second, there was a concern that countries with higher inflation rates would also have relatively lower real interest rates, which could have a pro-cyclical impact and could foster a cyclical de-coupling from the rest of the euro area. In this case, a single monetary policy would have polarising, destabilising effects on inflation and growth (this argument is also known as the Walters critique). While the pattern of national real interest rates to some extent conforms to the Walters critique, there is no evidence of a destabilising effect. Third, there was a fear that some national authorities would display a bias towards running budget deficits that could threaten price stability. The Stability and Growth Pact was designed with that concern in mind. Although fiscal discipline remains an elusive objective and the Pact had to be amended once, the quality of fiscal policies has generally improved and there is no indication that they have been destabilising. Finally, there was also concern that once changes in the nominal exchange rate had been ruled out, real exchange rates would not be sufficiently flexible, meaning that the euro would thwart necessary changes in competitiveness within the euro area. This did not happen either.

At the same time, a number of difficulties that were not widely expected have arisen. This is the topic of Section 4. First, to a surprising extent, the ECB has found itself criticised for its lack of transparency. The ECB’s monetary policy strategy was designed with a view to establishing credibility. It was inspired by the highly successful German model, which combined a prominent role for monetary aggregates with great pragmatism in executing policy. But the growing popularity of the inflation targeting strategy, which emphasises transparency and coherence between medium-term forecasts and policy actions (the ECB’s two-pillar approach), has come to be seen by some as too complicated. Second, attention is gradually focusing on the tendency for current account imbalances, both positive and

² See, for example, Feldstein (1997), “*Instead of increasing intra-European harmony and global peace, the shift to EMU and the political integration that would follow it would be more likely to lead to increased conflicts within Europe and between Europe and the United States*”.

negative, to become relatively large in some countries. To some extent, this may reflect the increased financial integration the single currency has spurred. However, current account imbalances may also have grown because persistent inflation differentials, albeit smaller than in the past, have accumulated over time and have led to a loss of competitiveness. We examine this pattern and its potential causes, including the possibility that it is an expected effect of the Walters critique.

2. The ECB's achievements

In this section, we briefly review some evidence on price stability, growth, economic integration and the international role of the euro. We then turn to the benefits that the euro is bringing to consumers and the corporate sector.

2.1 Price stability

The first and foremost objective of the ECB, as stated in the Treaty on European Union (Maastricht Treaty), is price stability. Table 1 shows that over the first five post-war decades, with a few exceptions, inflation in all euro area countries was never as low as it was during the first ten years of the euro. One of these exceptions is Ireland, which has gone through a decade of extraordinary growth, catching up with and then passing the richer European countries.³

Table 1 Sixty years of inflation: ten-year annual averages

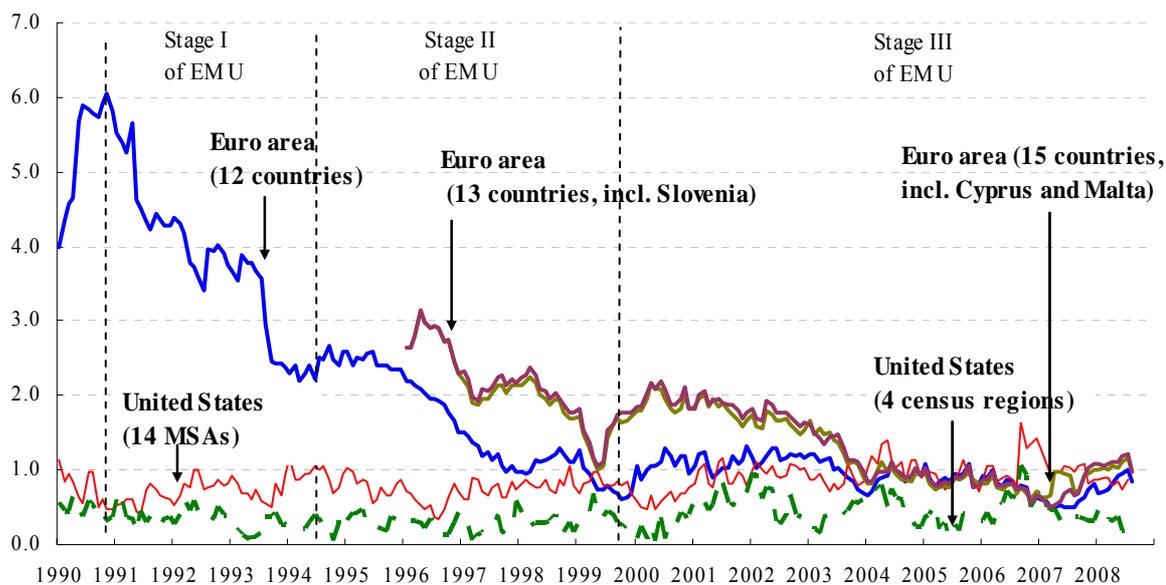
	1949-58	1959-68	1969-78	1979-88	1989-98	1999-2008
Austria	8.9	3.1	6.0	4.0	2.6	1.9
Belgium	1.4	2.4	7.1	5.0	2.3	2.0
Finland	6.1	5.0	9.9	7.4	2.7	1.7
France	6.2	3.8	8.4	8.1	2.2	1.7
Germany	1.1	2.3	4.7	3.0	2.7	1.6
Greece	7.7	1.9	10.7	20.0	12.2	3.2
Ireland	4.0	3.3	12.2	10.3	2.6	3.7
Italy	3.1	3.4	11.1	12.0	4.6	2.3
Luxemburg	2.6	2.0	6.3	4.8	2.5	2.4
Netherlands	4.1	3.5	7.4	3.2	2.3	2.2
Portugal	0.8	3.4	15.5	18.7	7.0	2.9
Spain	6.1	6.3	13.0	11.1	4.7	3.2
Denmark	4.0	5.2	8.7	7.4	2.3	2.1
Sweden	4.4	3.6	8.1	8.0	3.9	1.2
Switzerland	1.1	2.8	4.9	3.3	2.6	0.9
UK	3.8	3.1	11.8	8.0	4.3	2.7

Sources: 1949–2007: International Financial Statistics, IMF; 2008: Economic Outlook, OECD. Note: West Germany only before 1992.

³ The catching-up process implies that wages and prices, typically lower in poorer countries, rise when evaluated in foreign currencies. This Balassa-Samuelson effect implies higher than average inflation. Another exception is Germany during the post-war period, with negative inflation in 1950 (-6.2%) and in 1953 (-1.9%).

Table 1 also shows that inflation rates have been quite similar, but not identical, across the euro area member countries. Some degree of dispersion is unavoidable and possibly even desirable. We will deal with this issue at greater length below. At this stage, we only wish to establish a few facts and suggest some interpretations. Chart 1 shows a measure of dispersion, the standard deviation across euro area member countries. Dispersion has steadily declined since 1999 and is now of the same order of magnitude as within the United States, a monetary union of similar size but with a strong central government.

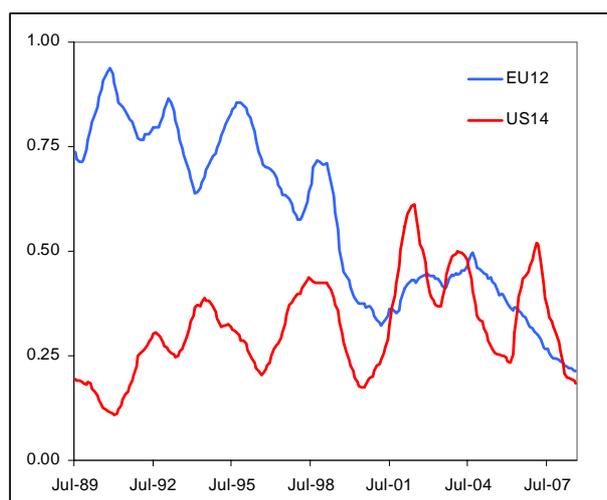
Chart 1 Inflation dispersion: standard deviations



Source: Eurostat and US Bureau of Labor Statistics. Unweighted standard deviation in percent. 14 MSA are the main Metropolitan Statistical Areas in the US.

Chart 1 can be interpreted in two ways, however. One is that inflation rates are indeed converging within the euro area. Alternatively, it could merely be a statistical artefact. Indeed, when inflation rates decline, absolute differences are bound to become smaller. A natural way to account for this possibility is to use a different measure of dispersion, the coefficient of variation, as in Chart 2. The chart shows that inflation rates have converged; in addition, they have also declined. The clear break after the adoption of the common currency confirms that, in the euro area, dispersion is as low as and even more stable than in the United States.

Chart 2 Inflation dispersion: coefficient of variation (July 1989 – August 2008)



Note: 12-month moving average. Source: Eurostat.

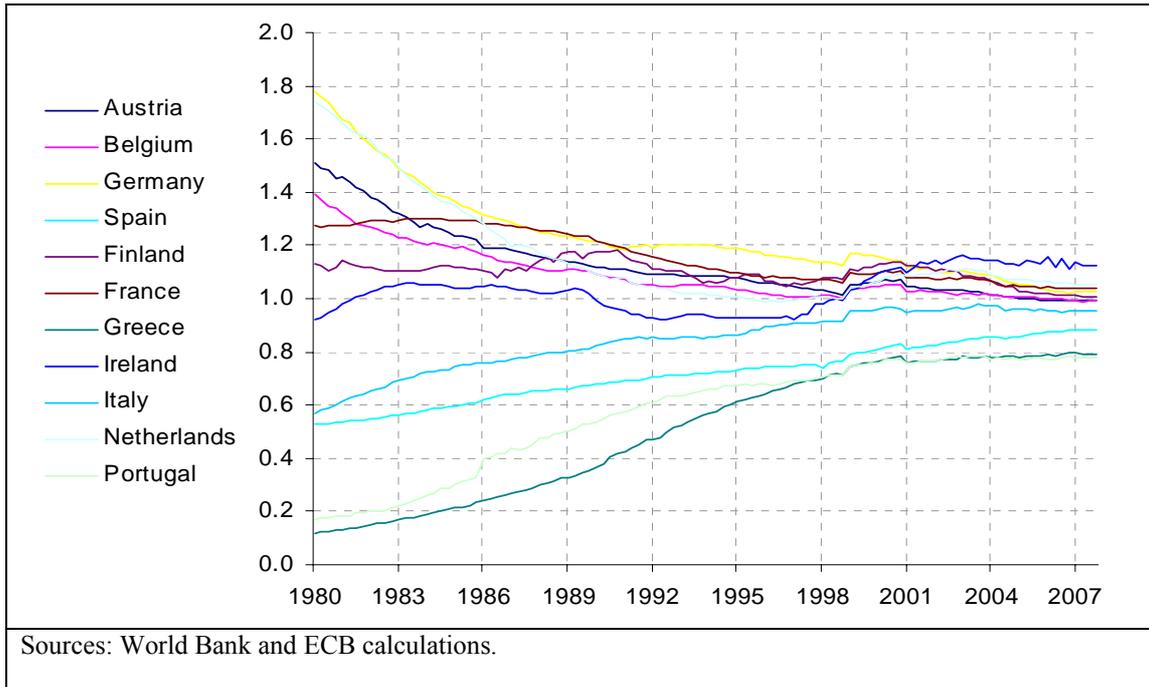
This is surprising, as a number of factors instead suggest that inflation dispersion should be higher in the euro area than in the United States.

- a. One factor is divergent fiscal policies. While theory predicts that in a monetary union, divergent fiscal policies are unlikely to lead to sustained differences in inflation rates, their short-run effects can be sizeable. In Europe fiscal policy is almost exclusively a national prerogative, whereas the United States face strict limits on their ability to run deficits, as explained in Bayoumi and Masson (1995). We discuss this further in Section 3.2.
- b. Another possible factor is the incidence of different idiosyncratic cost-push shocks, for example due to different wage pressures in decentralised national labour markets. Instead, we have seen generally lower wage pressure than in the past. The result suggests that wage claims were subdued to the same extent throughout the euro area during its first ten years.
- c. Another possible factor is that the conversion rates adopted in 1998 might not have been close to their equilibrium exchange rates for all countries.⁴ One would expect that US states have long made any correction, while possible discrepancies in the euro area would trigger relative price adjustments, hence greater inflation variability.
- d. Fourth, equilibrium exchange rates can change over time, in particular because of income catching up, a phenomenon often referred to as the Balassa-Samuelson effect. Levels of development are more diverse in the euro area than in the United States, and labour mobility is lower as well. Chart 3 takes a long-term look at a price indicator based on purchasing power parity (PPP) values of USD 1 in euro terms.⁵ The PPP rates of euro area countries show that over almost two decades, the levels of purchasing power of countries with an initially lower level of GDP per capita have caught up substantially. This increase in purchasing power has broadly corresponded to an increase in real GDP per capita. Hence, the presumption is that there should be more variability in the euro area.

Chart 3 Catching up in the euro area: PPP value of USD 1 in euro terms

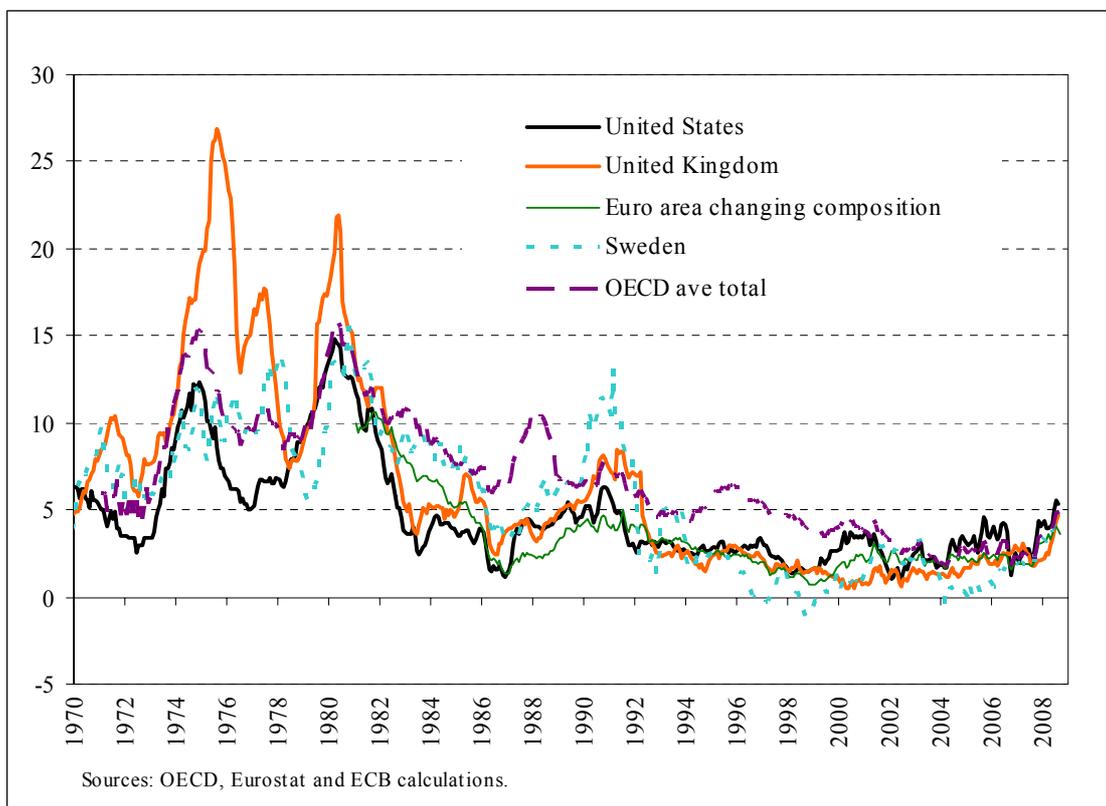
⁴ Angeloni and Ehrmann (2004) provide evidence to that effect.

⁵ The hypothesis is that, *ceteris paribus*, persistence in inflation differentials for countries starting off at rather different price levels can reflect convergence towards a new equilibrium characterised by price convergence as differences in living standards are eliminated (i.e. those in the countries below the euro area average). PPPs are currency conversion rates that convert to a common currency (the US dollar in this case) and that equalise the purchasing power of different currencies. In other words, they eliminate the differences in price levels between countries by means of conversion.



The achievement of low inflation during the first decade of EMU is reassuring, but a legitimate question is whether the credit goes entirely to the ECB. Most of the first decade of the euro coincided with the “Great Moderation”, a long period of low output volatility in many countries around the world. The achievement of low and stable inflation may therefore be due to the absence of large shocks. Chart 4 shows that euro area inflation performance is very much in line with what was observed elsewhere among developed countries. On the face of it, the ECB has performed as well as, but not better than other central banks. That, in itself, is a significant achievement, given the challenge of conducting policy for a large number of countries that had not been previously accustomed to sharing the same currency.

Chart 4 Great Moderation: inflation in the United States, the United Kingdom, the EU12, Sweden and the OECD (1970 – 2008)



A growing literature has started to explore the reasons for the Great Moderation, focusing on output variability. The issue is whether the phenomenon is due to a decrease in the size of exogenous shocks or to an enhanced ability to absorb these shocks. This ability could well include better monetary policies. The literature is surveyed in Giannone et al. (2008), whose own evaluation of the US case supports the view that the economy's response is the main source of the Great Moderation.

To sum up, the evidence on inflation dispersion presented above may be reassuring, but it is also puzzling. It could be that these various effects all materialised and yet somehow compensated each other. We return to this issue later in the paper when we bring together various strands of discussion.

Whether shocks were milder or not over the last decade, there is little doubt that this period has now come to an abrupt end. The 2007-08 combination of rising commodity prices (that subsequently declined rapidly) and the financial crisis amounts to a massive shock and a serious challenge for the ECB (as well as other central banks).

2.2 Growth

Before the launch of the euro, there were widespread fears that the ECB would want to establish its reputation as a determined inflation fighter at the expense of economic growth and employment. These fears were partly based on the Maastricht Treaty, which identifies price stability as the ECB's primary objective and "the economy" as a secondary one "without prejudice to the objective of price stability". The fears were further stoked by the ECB's own vocabulary, which was carefully chosen to emphasise the Deutsche Bundesbank's legacy.

It rapidly turned out instead, that the ECB was conducting its policy in a pragmatic manner. The first period of the euro's existence was marked by a sizeable depreciation, which could

have led a hawkish ECB to drive up interest rates. In fact, the euro depreciated less as a result of ECB policy than as a result of US dollar appreciation. In addition, inflation was low because all member countries had to pass the convergence criteria to be admitted to EMU.

Table 2 shows the growth performance of the euro area and other major economies. It varies from country to country, which is an indication that monetary policy, in and by itself, has not had any particular effect, as theory would predict. Those countries where the outcome was disappointing relative to the previous decade – Austria, Germany, Italy, Portugal, and to some extent also France – obviously need to carry out structural reforms to revive their supply side (see Duval and Elmeskov (2006)).

Table 2 GDP growth rates: ten-year annual averages

	<i>1971-78</i>	<i>1979-88</i>	<i>1989-98</i>	<i>1999-2008</i>
Austria	3.6	2.2	2.6	2.3
Belgium	3.4	2.0	2.1	2.3
Finland	3.0	3.7	1.7	3.4
France	3.5	2.4	2.0	2.1
Germany	2.9	2.0	2.5	1.6
Greece	5.4	0.7	1.9	4.2
Ireland	5.2	2.8	6.6	6.1
Italy	3.4	2.8	1.6	1.4
Luxemburg	2.9	3.8	4.9	5.2
Netherlands	3.3	1.7	3.2	2.3
Portugal	4.7	3.3	3.2	1.7
Spain	4.3	2.2	2.7	3.6
Denmark	2.4	2.2	2.2	2.0
Sweden	1.7	2.4	1.5	3.1
Switzerland	0.7	2.1	1.4	1.9
United Kingdom	2.4	2.4	2.1	2.7
United States	3.7	3.0	3.0	2.7
OECD	3.8	3.0	2.7	4.5

Source: OECD.

2.3 Economic and financial integration

Sharing the euro was expected, *ceteris paribus*, to stimulate among other things intra-euro area trade, financial flows and cross-border portfolio investment activity by eliminating exchange rate volatility, thereby removing uncertainty about returns and profits due to exchange rate fluctuations. In addition to the elimination of exchange rate volatility, the so-called “Rose effect” could possibly provide an additional boost to intra-euro area trade.⁶ It was also expected that directly comparable prices would enhance competition both for goods and services, including financial services. What can we say ten years later?

a. Trade evidence

⁶ Rose (2000) initially predicted that trade would nearly triple. Similar results emerged from the “border effect” literature (Engel and Rogers, 1996). In the meantime, the most recent empirical literature has reassessed these results (see de Grauwe and Mongelli (2005)).

Since 1998, trade among euro area countries has risen strongly. The most comprehensive study to date (Baldwin et al. (2008)) concludes that, so far, the euro has probably increased trade by some 5%.⁷ These results are substantial, considering that trade among European countries has risen uninterrupted for about five decades. The value of imports and exports of goods within the euro area increased from about 26% of GDP in 1998, the year before the euro was introduced, to 33% of GDP in 2007. In the same period, intra-euro area services trade also went up, rising from 5% to 7% of GDP. Since 1998, the year-on-year growth of euro area exports of goods to the three EU15 countries that have not adopted the euro has been 3% lower on average than the year-on-year growth of exports within the euro area. Extra-euro area trade has grown more than intra-euro area trade, an indication that the euro has not had a trade-diversion effect, as was sometimes feared. Hence, there is no “fortress Europe”.

b. Real effects of financial integration

The financial openness of the euro area has risen by about 60% of euro area GDP over the past ten years. Between 2000 and 2005, the euro area countries – either as recipients or as sources of investment – accounted for as much as 57% of world foreign direct investment (FDI) flows. EMU seems to have been a magnet for FDI activities particularly in the manufacturing sector, while an increasing share of FDI flows is taking place between euro area countries. A positive trend can also be observed when looking at FDI stocks, given that intra-euro area FDI stocks as a proportion of total euro area FDI stocks increased from almost 43% in 1999 to 45% in 2006. Overall, it seems that the positive average effect of the euro on aggregate FDI flows within the euro area is about 15%, while the impact of the euro on FDI flows from outside the euro area to the euro area countries is about 7% (see Petroulas (2007), Schiavo (2007), Ottaviano et al. (2007) and Flam and Nordström (2007)).

By eliminating exchange rate risk, the euro has also boosted cross-border portfolio investment activity between euro area countries. Empirical estimates by De Santis and Gerard (2006) suggest that the adoption of the euro played a key role in the reallocation of portfolios among euro area members as well as countries worldwide. The total impact of the euro on bilateral transactions between individual euro area countries has been estimated to amount to 3.5% of equity securities and 4.2% of bonds and notes of the respective total international holdings (see De Santis and Gerard (2006)). Moreover, non-euro area countries have on average increased their relative investment in euro area bonds.

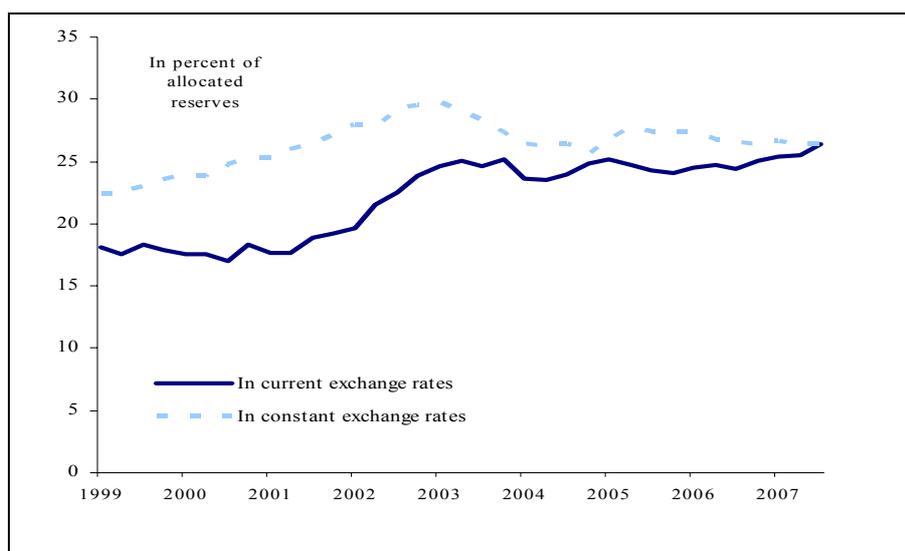
2.4 International role of the euro

When it was launched, the euro was “international” simply because it replaced 11 existing currencies. It was immediately used to replace the Deutsche Mark, the French franc as well as other legacy currencies as a reserve currency (and as an anchor for the exchange rate policy of some countries).⁸ Although the ECB has adopted a neutral stance on the international use of the euro (which is determined by market forces), the euro’s role has grown beyond this legacy, as documented in Chart 5.

Chart 5 Share of the euro in global foreign exchange reserves

⁷ These figures must be seen in perspective. Mongelli et al. (2007) show that, over the past 50 years, trade in goods among the six founding members of the European Union has risen in volume by over 1,200%. Hence, any further trade deepening would be remarkable.

⁸ See various issues of the ECB’s Review of the international role of the euro.



Source: IMF's COFER database.

Note: The shares in constant exchange rates are reported in exchange rates of the third quarter of 2007.

A distinctive feature of the international role of the euro is still its regional character. Borrowers outside the euro area are increasingly issuing bonds in euro, more than half of which are purchased by euro area investors. Countries close to the euro area naturally choose the euro as a financing currency. For example, issuers resident in Denmark, Sweden and the United Kingdom account for a significant part of euro-denominated debt issuance by non-residents (Table 3), and the City of London, as a major international financial centre, has developed its transactions in euro along with those in US dollars. Likewise, all countries running a euro-related exchange rate policy are in close geographic proximity to the euro area. Finally, the degree of currency substitution is highest in the new non-euro area EU Member States, as well as in EU candidate and potential candidate countries in south-eastern Europe.

Table 3 Outstanding volume of international bonds and notes by region (percentages, second quarter of 2007)

	Euro area	Denmark, Sweden, United Kingdom	New Member States	Non-EU Europe	North America	Asia & Pacific	Latin America	Offshore centres	International organisations	Other
EUR		44.7	3.1	3.8	23.6	5.5	2.0	10.0	6.3	1.0
USD	23.7	19.0	0.3	2.4	4.9	10.8	6.6	23.1	5.0	4.2
JPY	30.0	12.7	1.2	2.9	18.6	4.9	0.6	21.1	7.6	0.5

Sources: BIS and ECB calculations.

2.5 Welfare effects of the euro

All in all, consumers and corporations have benefited from price stability, including low interest rates at all maturities, which in turn have lowered the cost of servicing high public debts, and they have benefited from trade integration. Financial integration has also progressed, although to a limited extent only, largely because of many surviving barriers. Crucially, the risk of possible speculative attacks on national currencies has been removed. For example, prior to the launch of the euro, the impact of movements by the Deutsche Mark against the US dollar was often aggravated by similar movements between the currencies that have now merged to form the euro. This can no longer happen.

Obviously, adopting a common currency also entails costs, the key cost being the loss of direct control of monetary policy and the exchange rate. The costs depend largely on each country's ability to enhance its adjustment capacities. Countries with slow dynamic adjustment mechanisms and responsiveness – in the wake of shocks and new developments – are at a competitive disadvantage. At least, this enhances the incentives to adopt structural goods, services and labour market reforms (see European Commission (2006)).

3. Unfulfilled threats

Prior to the launch of the euro, a number of concerns were voiced. We consider three of them: the challenge of establishing the ECB's credibility (Section 3.1), the risk of pro-cyclical fiscal policies (Section 3.2), and the risk of asymmetric transmission through diverging real interest rates, i.e. the Walters critique (Section 3.3). These three threats matter, because the benefits listed above greatly depend on maintaining the ECB's credibility, securing fiscal discipline, and addressing over time sustained current account imbalances.

3.1 Central bank credibility at birth

When the ECB's strategy was designed in 1998, there was concern that the new institution would have to earn credibility the hard way and possibly very slowly. This would lead to inflation expectations that were higher than actual inflation and thus to inefficiently high real interest rates. Efforts were therefore directed at "borrowing the Deutsche Bundesbank's credibility". The main tool was monetary policy strategy, which adopted a two-pillar approach with a prominent role assigned to monetary growth. Throughout much of its first decade, the ECB also followed the Bundesbank's model of talking tough and acting pragmatically, an issue to which we return in Section 4.1. Here, we merely study the outcome. There are various measures of credibility based on expectations. Do people expect the ECB to deliver price stability? We look here at two complementary approaches.

The ECB's survey of professional forecasters

Inflation expectations can be observed directly thanks to the quarterly survey of professional forecasters (SPF). For each term since the launch of the euro, Chart 6 reports the actual inflation rate and the two-year ahead forecast. Several observations about inflation expectations may be made:

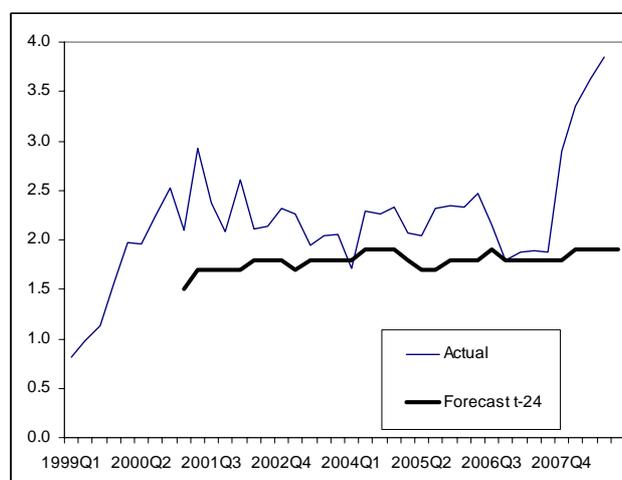
- First, professional forecasters have systematically underestimated inflation at the two-year horizon. The same is true for all other horizons surveyed. The ECB argues that, because they are affected by shocks, expectations at the two-year horizon may be an imperfect measure of credibility. The ECB prefers to measure credibility at the five-year horizon.⁹ On the other hand, a two-year horizon corresponds best to commonly accepted estimates of the lag of monetary policy effects.
- Second, until the third quarter of 2008, inflation had always been expected to be at or below 2%. This is not exactly the Eurosystem's definition of price stability of "close to, but below, 2%", but it is close enough.
- Third, inflation expectations according to this measure were very low at the outset and slowly edged upwards.
- Fourth, these measures of credibility might also be affected by the perceived likelihood of shocks.

These observations suggest that the ECB in fact started with a very high degree of credibility.

⁹ See the article entitled "The outcome of the ECB's evaluation of its monetary policy strategy" in the June 2003 issue of the ECB's Monthly Bulletin.

The ECB, it appears, inherited the Deutsche Bundesbank’s credibility from the outset. Indeed, until mid-2008, inflation expectations were anchored at or below 2%. Quite remarkably, this happened even though inflation has almost never fallen below 2% since mid-2000. In addition, the euro initially depreciated sharply against the US dollar. Even though this was a dollar issue, many commentators saw euro depreciation as proof that “the euro wasn’t working”. Throughout this period of euro weakness, as further confirmed by the evolution of long-term interest rates, markets nevertheless remained confident that inflation would stay low. Credibility exists when people believe less what they see – inflation above 2%, an initially weak euro – than what they are promised. This suggests that the ECB achieved credibility at birth. Yet the SPF survey indicated that forecasters had gradually come to recognise that the ECB was facing a real challenge in meeting its own definition of price stability. We pursue this issue further in Section 4.1.

Chart 6. Actual and forecast inflation



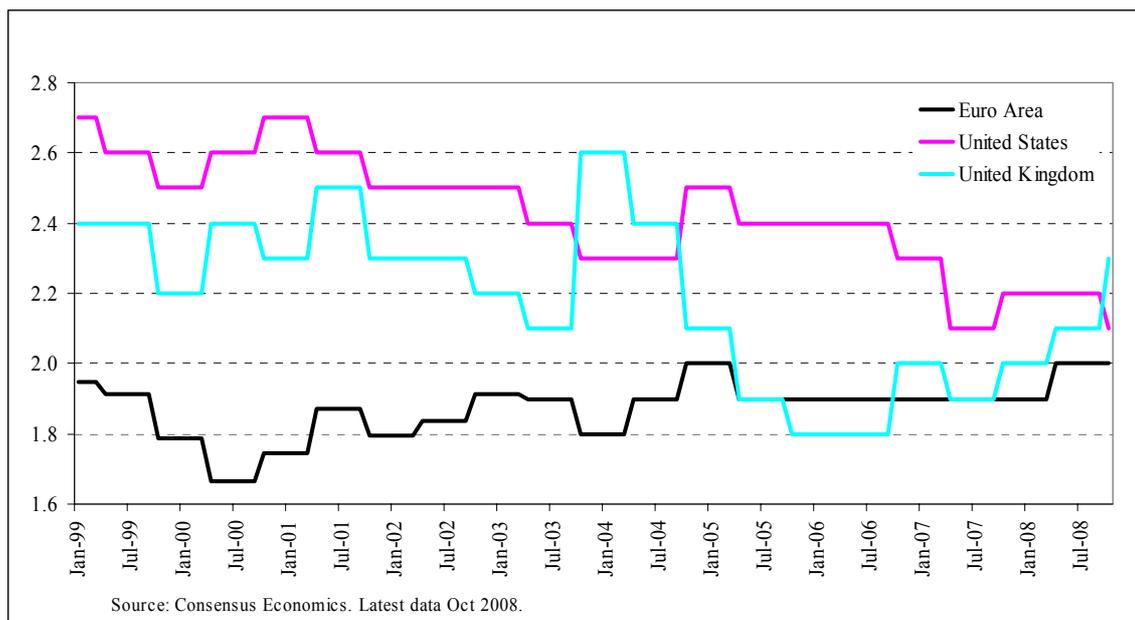
Note: The chart displays actual HICP inflation and the corresponding two-year ahead forecast collected 24 months previously. Source: ECB’s survey of professional forecasters.

Inflation expectations based on Consensus Economics

A different perspective is provided by international forecast surveys conducted by Consensus Economics.¹⁰ Chart 7 compares long (6 to 10 years ahead) forecasts for inflation for the euro area, the United Kingdom and the United States from 1999 onwards. This comparison is useful, given the fact that the period from 1999 to 2007 was dominated by the Great Moderation, as discussed above, and that the euro area’s inflation performance is not significantly different from that of other countries. The chart fully confirms this impression. From early 1999, inflation forecasts have been lower for the euro area than for the United Kingdom and the United States, thus supporting the view that the ECB achieved credibility at birth. The observation that forecasts converge over time (upward for the euro area and mostly downward for the United Kingdom and the United States) further amplifies the previous impression that credibility has been gradually eroded in the euro area.

Chart 7 An international comparison of inflation expectations (6 to 10 years ahead)

¹⁰ The SPF and Consensus Economics forecasts are generally very consistent with each other. However, the SPF offers greater detail.

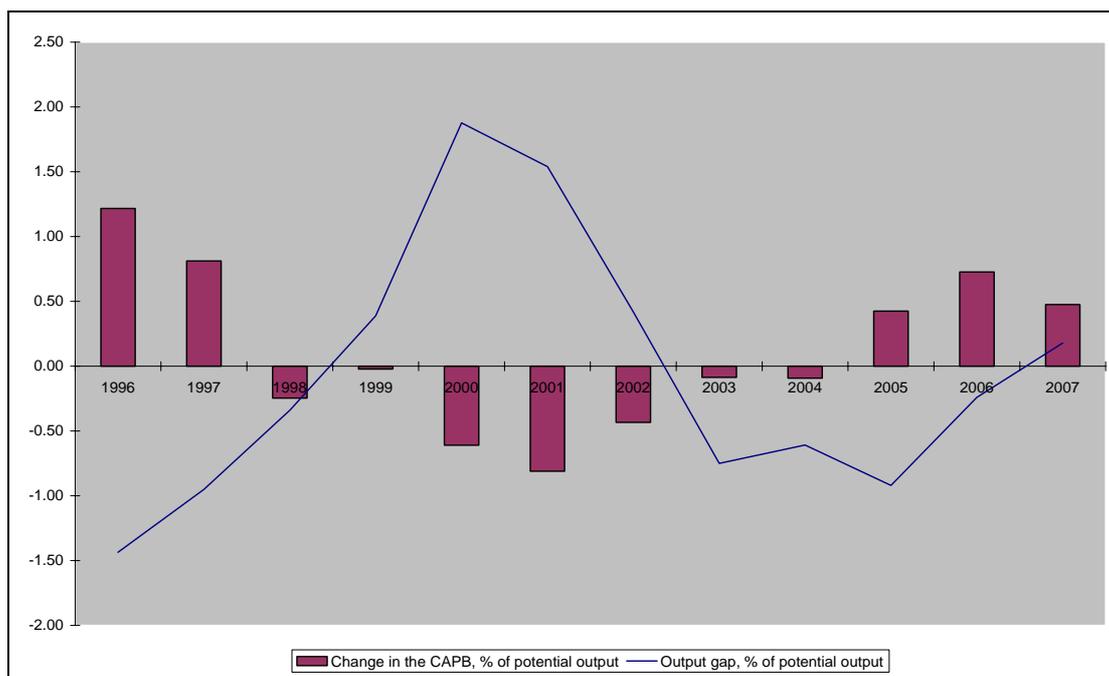


3.2 National fiscal policies

How to deal with fiscal policy has been a controversial issue from the start. Having surrendered monetary policy autonomy, euro area member states can rely only on fiscal policy for demand management. At the same time, the Maastricht Treaty has identified national fiscal policies as a matter of common concern, which has led to the adoption of the Stability and Growth Pact. Its intention is to enforce discipline, which had been lacking in several member countries in the previous decades. The precise theoretical reasons for “common concern” have long been debated (see e.g. Wyplosz (2006)). Policymakers refer only to the history of big inflations, all of which can be linked to fiscal profligacy, as the ultimate justification for the Pact, but critics note that the ECB’s independence and the EU’s no-bailout clause should also be taken into account.

Another reason for the Pact is that two of the criteria for admission to the euro area concern fiscal policy. The Pact can be seen as a way to avoid a post-entry relaxation of discipline. Indeed, as Chart 8 illustrates, the run-up to EMU coincided with a tight fiscal stance for most countries. Directly after the introduction of the euro, fiscal policy was loosened in some countries and, on average, in the euro area as a whole. This loosening was not justified by prevailing economic conditions. The following downturn brought a general worsening of budgetary balances, and during the 2003 to 2005 period, some countries even ran excessive deficits. Thus, the post-entry fiscal policy relaxation can be seen both as a justification of the Stability and Growth Pact and as an indication that its effectiveness has not been established so far.

Chart 8 Fiscal stance: euro area changes in cyclically adjusted primary balances (CAPB) and the output gap



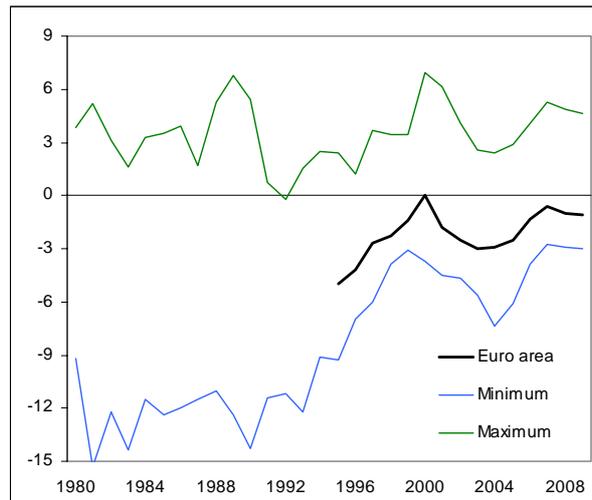
Source: AMECO.

The Pact faces serious analytical issues. Its aim is to encourage fiscal discipline. Its central requirement that deficits not exceed 3% of GDP in normal circumstances runs the risk of leading to pro-cyclical policies because the Pact is likely to be binding during periods of a slowdown in growth. To deal with this undesirable property, emphasis has shifted to the preventive arm – the requirement that adjustments be pursued during the upside of the cycle – so that the Pact never binds during the downside. A stricter version would want member countries to forgo discretionary actions, relying on the automatic stabilisers to deal with cyclical fluctuations.

This issue is important because available evidence indicates that, even before the adoption of the euro, fiscal policies were often pro-cyclical in Europe. The situation has changed somewhat since then. The report European Commission (2006) provides evidence that the fiscal stance has been pro-cyclical in good times and broadly neutral in bad times. Von Hagen and Wyplosz (2008) argue that national fiscal policies have become less pro-cyclical during these ten years than they were previously.¹¹ This is broadly confirmed by Chart 9, which displays the euro area's overall budget balance along with the maximum and minimum national balances achieved in each year. The chart shows the powerful effect of the entry criterion in the run-up to the introduction of the euro. It confirms a relapse during the cyclical downturn in 2001-03, but even then there is no return to the pre-1995 levels, and the slippage was corrected as soon as cyclical conditions had improved.

Chart 9 Budget balances in the euro area (12 countries) (as a percentage of GDP)

¹¹ Fatas and Mihov (2008) show instead that pro-cyclicality is found less frequently among non-euro area developed countries.



Source: AMECO.

On the institutional side, the Stability and Growth Pact had a rough ride. When by late 2003 the two largest countries, France and Germany, had fallen foul of the 3% limit, the excessive deficit procedure was held in abeyance for these two countries. This episode confirmed the view that the Pact was too rigid. The reform ultimately adopted in 2005 introduced some flexibility. In particular, it gave a broader definition of the exceptional circumstances under which the Pact would be suspended. The same will happen again in 2009. As a result, in practice, the Pact has never been binding. Even so, there has not been a widespread lack of discipline. If anything, Charts 8 and 9 suggest that fiscal discipline has improved.

3.3 The Walters critique

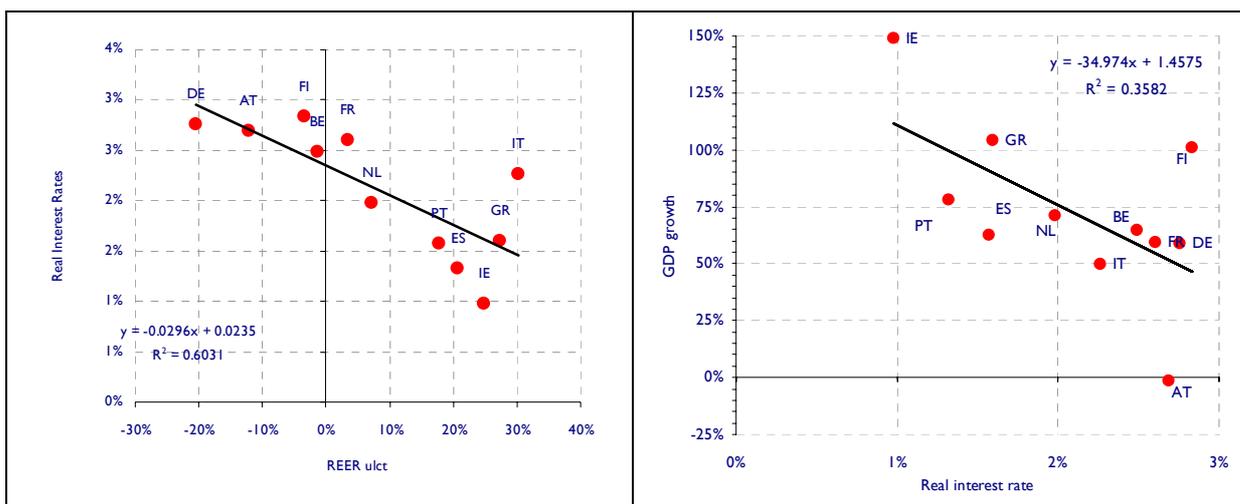
Another early concern centred on real interest rates in EMU. With a unified bond market, nominal interest rates are equalised, at least as long as all countries remain on the common currency in line with expectations. Mechanically, therefore, real interest rates are lower when inflation is higher, and are expected to remain so. This observation is encapsulated in the Walters critique that is named after Sir Richard Walter, a counsellor to Margaret Thatcher in the 1980s. The critique holds that the effects of the common monetary policy are more expansionary in countries with high inflation rates and more contractionary in countries with low ones. As a result, growing disequilibria may occur, with inflation rising where it started higher and declining where it started lower.

Euro area experience has clearly borne out several steps of the above reasoning. At fixed exchange rates, higher inflation translates into real appreciation, so we can use both measures interchangeably. Chart 10a plots the total change in the real exchange rate – a measure of the cumulated inflation differential¹² – against the average real interest rate in euro area member countries over the period 1999-2008. The link is quite close and is as expected. The next step in the Walters critique is that lower real interest rates generate faster growth. This too is confirmed, as Chart 10b shows.

Chart 10a The real exchange rate and the real interest rate in the period 1999-2008

Chart 10b The real interest rate and GDP growth in the period 1999-2008

¹² Since real effective exchange rates based on unit labour costs have been used, the correspondence is only approximate.



Sources: Eurostat, OECD and ECB calculations. Note: REER stands for real effective exchange rates.

Yet, overall, the evidence thus far shows that the key implication of the Walters critique has not materialised: as noted in Section 2.1, inflation rates have actually converged over the past decade. Some countries have long had higher or lower inflation rates than the euro area average; however, there is no evidence of the growing divergence predicted by the Walters critique. Why is this so? An interesting question is what, in the logic of the Walters critique, may be wrong. As previously noted by Angeloni and Ehrmann (2004), the most obvious answer is that international competition is overlooked.

With a fixed exchange rate, higher inflation means an appreciating exchange rate, which causes competitiveness to deteriorate and reduces demand. Thus the expansionary effect of low real interest rates stands to be compensated by the contractionary effect of an appreciating real exchange rate. Which effect dominates and, therefore, whether the process is inherently unstable, as predicted by the Walters critique, is partly an empirical issue. The evidence is that inflation rates did not diverge – quite the opposite. From a theoretical viewpoint, it also seems likely that continuing real appreciation is impossible unless justified by higher productivity gains, so that ultimately the process has to be stable. We return to this issue in Section 4.

4. Unexpected challenges

In this section, we look at some of the issues that emerged after the adoption of the euro but were not prominent in the analysis preceding the start of EMU. These new challenges concern the communication strategy of the ECB (Section 4.1) – central bank communication has emerged as an important issue over the past decade – as well as the emergence of large current account deficits in some member countries (Section 4.2).

4.1 Communication¹³

We argued in Section 3.1 that measures of inflation expectations suggest that the ECB was born with inherent credibility. A more detailed analysis can be carried out using the same survey but looking at the distribution of forecasts. Geraats et al. (2008) argue that the proportion of forecasters who predict inflation at the two-year horizon to be below 2% (and still be positive) is a better measure of credibility than the average forecast of inflation depicted in Charts 6 and 7. Indeed, one can argue that the ECB is credible if it manages to convince forecasters that, irrespective of the prevailing inflation rate, it will bring inflation

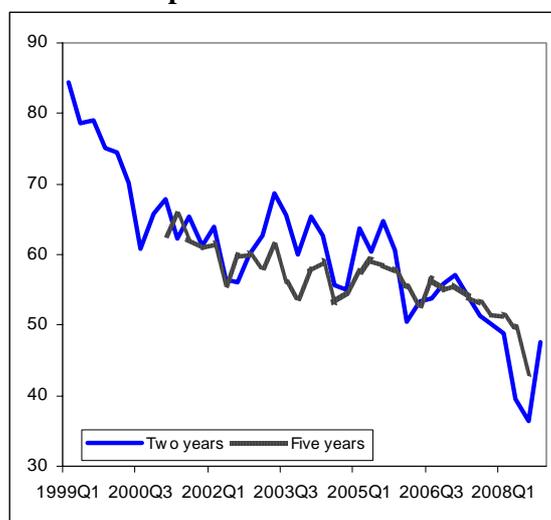
¹³ This section reflects only the views of Charles Wyplosz.

back in line with the definition of price stability over the policy horizon, which can be approximated by a two-year medium term.

To that effect, we turn to Chart 11, which displays the proportion of forecasters included in the SPF that expect HICP inflation to be below 2% – the ECB’s definition of price stability. The chart shows that, early on, forecasters were highly confident inflation would indeed fall to within the range defined as price stability. Over the years, that confidence gradually declined as realised inflation systematically exceeded forecasts (Charts 6 and 7).

It is true that, historically, large increases in energy and commodity prices starting in early 2006 were bound to have an inflationary impact. However, unless forecasters had expected these prices to increase continuously, they would have expected the ECB to return inflation to the range desirable within five years. It is therefore impossible to avoid concluding that some difficulty has arisen.

Chart 11 Proportion of ICP inflation forecasts between 0% and 2%



Notes: The chart shows the probability reported by SPF respondents of inflation being between 0% and 2% at the two-year and five-year forecast horizon. It does not refer to their point forecasts. In the latest (Q4 2008) round, 80% of respondents reported that their longer-term (five years ahead) inflation expectations were between 1.7% and 2.0%.

Source: ECB’s survey of professional forecasters.

One reason for this evolution, suggested by Geraats (2008), is that the problem lies with the ECB’s communication strategy. The euro was launched at a time when the inflation targeting strategy was slowly being adopted by a number of developed and emerging economies. As explained before, the ECB chose instead to follow the Deutsche Bundesbank’s two-pillar strategy, which has become increasingly controversial. That strategy has been criticised repeatedly from the start (see e.g. Begg et al. (1998), Svensson (1999, 2003), Alesina et al. (2001) and Gali (2003)).

While it gradually emerged that, like the Bundesbank before it, the ECB was actually quite flexible in making policy decisions, the ECB’s communication has remained firmly based on the two-pillar strategy. This is most visible in its Monthly Bulletin and in the President’s monthly press conferences. The result has been the impression of a disconnect between policy decisions and their justification. The disconnect has become very visible because many other leading central banks have gradually developed a great degree of transparency in the way they prepare and explain their decisions. The evolution of the Federal Reserve System, for instance, has been quite spectacular.

In 2003 the ECB responded to its critics by conducting an in-house review summarised in a report (ECB (2003)). The result of this review was that a change in the order of presentation of the two pillars and a clarification of how they combine and are used to inform the Governing Council. Thus, the economic analysis now aims to flag short-run risks to price stability, whereas monetary analysis permits the identification of medium and long-term risks. However, this has not reduced the controversy. Continuing criticism of the ECB's strategy is presented in Gali et al. (2004) and Woodford (2007), for example, while a defence of the ECB's strategy is provided by Beck and Wieland (2007) and Sauer (2007).

Although the debate on the strategy is unlikely to abate any time soon, the transparency aspects are of particular interest. One key advantage of the inflation-targeting strategy is that it lends itself naturally to a communication strategy: the inflation forecast is a summary statistic that is transparently comparable to the inflation target. While a flexible inflation-targeting strategy still leaves much freedom to the central bank, and therefore does not automatically deliver full transparency, the two-pillar strategy inevitably injects considerably more arbitrariness, which significantly complicates communication. Other leading central banks, such as the Federal Reserve System and the Bank of Japan, have not adopted an inflation-targeting strategy, but they have taken important steps to enhance transparency. For instance, both promptly release the minutes of their decision-making meetings, and the Federal Reserve System now releases many details of individual Open Market Committee members' inflation forecasts.

This may matter for credibility and therefore for policy effectiveness. A growing literature has been examining the characteristics and effects of transparency, and some international estimates have been produced. Table 4 presents the ECB's ranking in the three most recent studies. Not surprisingly, different methodologies lead to different results. The ECB's performance is good in one case and somewhat disappointing in the two other reported cases. Other findings of these studies are that the ECB's transparency has improved over the years, but that is a general trend. In some studies, the ECB has slipped a bit in the ranking.¹⁴

Table 4 Central bank transparency rankings

	Crowe and Meade	Dincer and Eichengreen	Eijffinger and Geraats
Year	2006	2005	2002
No. of countries	28	100	9
ECB ranking	17	6	4

Sources: Crowe and Meade (2008), Dincer and Eichengreen (2007) and Eijffinger and Geraats (2006).

An important result of this literature is that, *ceteris paribus*, inflation and output variability are inversely related to central bank transparency. This helps to explain why this issue, which is related to the description of the strategy, has become important in policy debates. Another reason why this issue matters is political. As emphasised by Feldstein (1997), sharing a currency may be a source of tension among member countries. It is therefore crucially important that the ECB be perceived as a trusted institution by the population at large.

According to Eurobarometer survey results, the percentage of citizens who consider the common currency as "advantageous overall" declined from 59% in September 2002 to 48% in September 2006 (Flash Eurobarometer, November 2006). The Eurobarometer of spring 2008 shows instead that, during the surveys spanning spring 2006 and spring 2007, between 61% and 63% of respondents looked favourably on EMU, up from 59% to 60% in the

¹⁴ Blinder et al. (2008) provide extensive discussions of the limits of transparency indices.

previous three surveys. The share of respondents expressing negative opinions on monetary union declined steadily from 35% in the spring of 2003 to 31% in the most recent survey.¹⁵

Unsurprisingly, in 2008 37% of all respondents in the EU as a whole indicated that inflation had become the “most important issue facing the country”.¹⁶ The detailed country results shown in Table 5 indicate that percentages are high in all euro area countries except Greece, Spain, Ireland, the Netherlands and Finland. The unweighted average for the euro area is 39.7%, almost the same as that for the non-euro area member countries (40.2%). It is also interesting to note that concern for inflation was low in Sweden and the United Kingdom, two countries whose central banks are usually considered highly transparent.

Table 5 Percentage of citizens who consider inflation the most important issue facing their country

Belgium	Bulgaria	Czech Rep.	Denmark	Germany	Estonia	Greece	Spain	France
48	51	38	18	44	54	33	26	51
Ireland	Italy	Cyprus	Latvia	Lithuania	Luxembourg	Hungary	Malta	Netherlands
22	44	28	71	63	43	35	40	16
Austria	Poland	Portugal	Romania	Slovenia	Slovakia	Finland	Sweden	UK
54	33	42	48	71	43	33	9	19

Source: Eurobarometer 69, June 2008.

Not too much should be made of these public opinion polls, but they do remind us of the widespread perception that inflation has increased since the adoption of the euro. They also suggest that the general public supports the ECB’s focus on maintaining price stability, which should help it in dealing with political pressures of the kind that have repeatedly arisen since 1999. The ECB’s formal independence is unassailable – it would require a new Treaty to change its status – but its room for manoeuvre could be reduced through constraints on the exchange rate or by setting up a powerful political body designed to deal with the euro area economy.

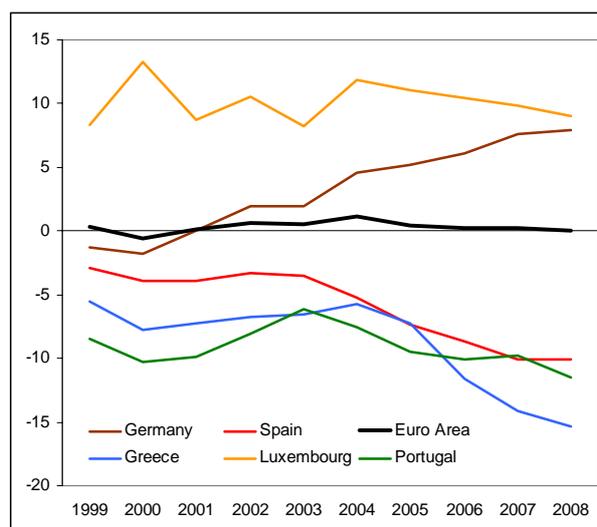
4.2 Current account imbalances

There is no reason for current accounts to balance at either the euro area level or the national level. Yet, Chart 12 documents a striking and unexpected feature of the recent experience: some national current account imbalances have become large in both directions, while the euro area current account has remained nearly balanced. Does this challenge the “one size fits all” requirement for monetary policy?

Chart 12 Current account balances (as a percentage of GDP)

¹⁵ See spring 2008 surveys in: http://ec.europa.eu/public_opinion/archives/eb/eb69/eb69_en.htm, and http://ec.europa.eu/public_opinion/archives/eb/eb68/eb_68_en.pdf.

¹⁶ This share went up by 11% with respect to the autumn 2007 survey. Concerns about unemployment, crime and the economic situation stood at 24%, 20% and 20% respectively.



Sources: OECD Economic Outlook.

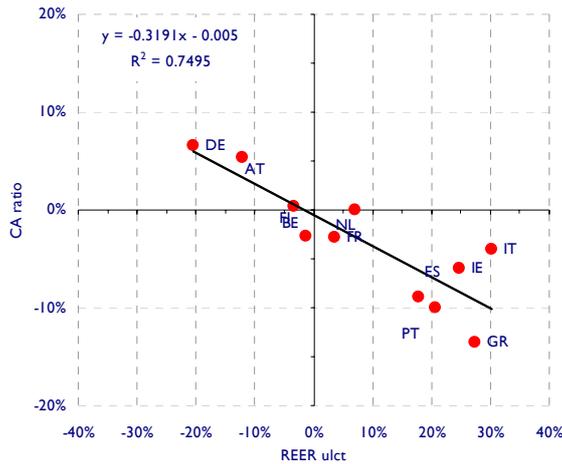
Current account deficits may be benign if they correspond to productive investments. Alternatively, they may be unsustainable if they reflect excessive spending by either the private or the public sector. Market-imposed limits on extensive borrowing formerly limited the size and duration of external imbalances to the point that this was called the Feldstein-Horioka paradox. There is mounting evidence (Blanchard and Giavazzi (2003), Lane and Milesi-Feretti (2004), Caballero et al. (2008)) that the paradox is vanishing, as financial globalization makes it possible to borrow and lend internationally on a large scale. Within the euro area, the absence of any currency risk and increased financial integration imply that the new phenomenon should be even more pronounced than elsewhere. The fact that the euro area's current account has remained approximately balanced indicates that some countries lend to others, quite possibly indirectly. The question is why and, importantly, whether this is a disequilibrating or re-equilibrating mechanism. The question is reminiscent of the Walters critique. We now argue that the current account divergences are in fact an unexpected manifestation of that phenomenon.

a. Current account imbalances and the Walters critique

We have noted that, as initially stated, the Walters critique has not been fully borne out by the facts. It remains that countries with higher inflation face a lower real interest rate, a situation that should *ceteris paribus* be expansionary. Chart 12 readily confirms this. The association between inflation and growth is quite strong, but it says nothing about causality, not even about the cause. It may well be that inflation fuelled growth via the real interest rate, but it can also be that growth fuelled inflation along the traditional Phillips curve link. Most likely, both effects reinforced each other, hence the potential source of growing divergences within the euro area.

At the same time, as noted by Angeloni and Ehrmann (2004), real exchange rate appreciation is likely to reduce demand. The strong link between the cumulated real exchange change rate and the cumulated current account deficit-to-GDP ratio displayed in Chart 13 supports this assumption. Pressure from international competition may explain why inflation rates did not diverge.

Chart 13. The real exchange rate and the current account, 1998-2008



Sources: Eurostat, OECD and ECB calculations.

b. An illustrative model

It may be that the Walters critique has materialised in the form of current account divergences in the euro area and that this is what prevented inflation from diverging. While it may be reassuring that inflation did not converge, replacing inflation divergence with current account divergence is not particularly reassuring. To explore this issue, we look at a small illustrative model.

The Walters critique can be described as follows. Let π be the inflation rate in the EMU country of interest and let λ be the log of its real exchange rate, defined such that an increase is a real depreciation. EMU membership implies that the log of the real exchange rate is equal to $p - p^*$, where p and p^* are, respectively, the log price levels in the country and in EMU as a whole. It follows that the cumulated change in the real exchange rate is:

$$(1) \quad \dot{\lambda} = \pi^* - \pi .$$

Thus a higher rate of inflation leads to a real appreciation.

The real interest rate is $r = i - \pi$, where i is the euro area-wide nominal interest rate. Without loss of generality, we assume that the EMU inflation rate is zero, i.e. $\pi^* = 0$. Alternatively, we define π as the inflation differential.

In line with New Keynesian models, the Walters critique assumes that the real interest rate affects demand (the IS curve) and that inflation is driven by its past value, its expected future value and by demand (the Phillips curve). Setting aside the role of expectations that lead to considerations irrelevant to the present case, we specify the Phillips curve with only a backward component. Therefore we express it as the change in the inflation rate:

$$\dot{\pi} = ay$$

where a is a parameter, y is the deviation of real demand for domestic goods from trend GDP and a dot represents the time derivative. The output gap is defined as:

$$y = d + x$$

where d is the deviation of total domestic demand from trend GDP and x represents net exports or the current account. This specification implicitly assumes that, in the long run, the

current account is balanced, an important assumption.¹⁷ Both components of demand are specified as:

$$(2) \quad d = -b(r - \bar{r})$$

$$(3) \quad x = x_0 t + x_1 \lambda$$

In (2), \bar{r} is the neutral real interest rate. Note that we allow for time t to appear in (3), a shorthand for the Balassa-Samuelson effect. This implies that the real equilibrium exchange rate $\bar{\lambda}$, which corresponds to external equilibrium $x = 0$, appreciates continuously:

$$(4) \quad \bar{\lambda} = -\frac{x_0}{x_1} t$$

Bringing together these terms, we have:

$$(5) \quad \dot{\pi} = -\alpha(r - \bar{r}) + \beta(\lambda - \bar{\lambda}),$$

where $\alpha = ab$ and $\beta = ax_1$.

The Walters critique is a statement about the stability of the system when the central bank sets the interest rate at a level optimal for EMU as a whole, ignoring country-specific conditions. We capture this situation by assuming that the central bank sets the nominal interest rate i at its neutral level. Assuming that the neutral real interest rate is the same in the home country and EMU, given that $\pi^* = 0$, this means that $i = \bar{r}$ and the home country real interest rate is $r = \bar{r} - \pi$. As a result, (5) becomes:

$$(6) \quad \dot{\pi} = \alpha\pi + \beta(\lambda - \bar{\lambda}).$$

Together with (1), which can be rewritten as:

$$(1') \quad \dot{\lambda} = -\pi,$$

(6) fully describes the economy. The first term in (6) captures the Walters critique: the real interest rate in the home country is lower than in EMU, the difference being equal to the inflation differential. This term is a clear source of instability. The second term seems to be a source of stability, since (1') indicates that a positive inflation differential leads to a real appreciation, which reduces demand and inflation.

The question is therefore one of model stability. If the model is unstable, we should observe growing divergences in both inflation and the current account. In fact, the model made up of (1') and (6) is always unstable as long as $\alpha > 0$.¹⁸ Merely recognising that competitiveness works against the Walters critique is not enough, in this model, to restore stability. We need to allow for other channels that reverse the sign of $\alpha = ab$. One possibility is to allow for FDI, driven by the real interest differential $r - \bar{r} = -\pi$. In that case, (2) is changed to:

$$(2') \quad d = -b(r - \bar{r}) + h(r - \bar{r}),$$

¹⁷ Removing this assumption is an interesting and challenging issue left for further work.

¹⁸ The eigenvalues of the system's determinant are $s = (\alpha \pm \sqrt{\alpha^2 - \Delta})/2$, with $\Delta = \alpha^2 - 4\beta$. When β is large, the determinant is negative and the solution is oscillatory but still unstable. In that case, the current account is alternatively negative and positive, but the amplitude grows over time (as $\exp(\alpha t/2)$).

where the second term captures FDI. The system remains described by (1') and (6), with one difference: the crucial term α is now $\alpha = a(b - h)$. If the interest rate effect on consumption is dominated by the effect on foreign investment, $\alpha < 0$ and the model is stable. If the absolute value of α is small relative to β , the model is oscillatory: the home economy, and its current account, will exhibit cycles of decreasing amplitude.¹⁹

There are many other ways of extending the model that may make it stable. The important theoretical point is that the Walters critique is not a fatality. If the model is stable, the current account may well diverge for a while but any imbalance must eventually be corrected by the evolution of inflation and the real exchange rate. In that case the process is self-equilibrating and current account divergences are no cause for concern.

c. Other sources of divergence

The model ignores other potential sources of divergence. One prominent case is the possibility of persistent and unabated excessive domestic spending. Easy external financing, allowed by financial integration and the absence of any exchange rate risk, could make it possible for a country to sustain large current account deficits for a significant amount of time, making the eventual correction all the more painful.²⁰ In the absence of a nominal exchange rate adjustment, the correction would require a significant fall in demand, which could be imposed by serious financial stress.

It may be impossible to disentangle the two alternative interpretations of the current account imbalance phenomenon. Both start with excessive demand and work through inflation and current account deficits. In the Walters critique, the proximate cause of excessive demand is inherited inflation; in the alternative case, excessive demand is driven by other factors. But these factors may well be the consequence of real interest rates that are too low and that push up asset and housing prices.

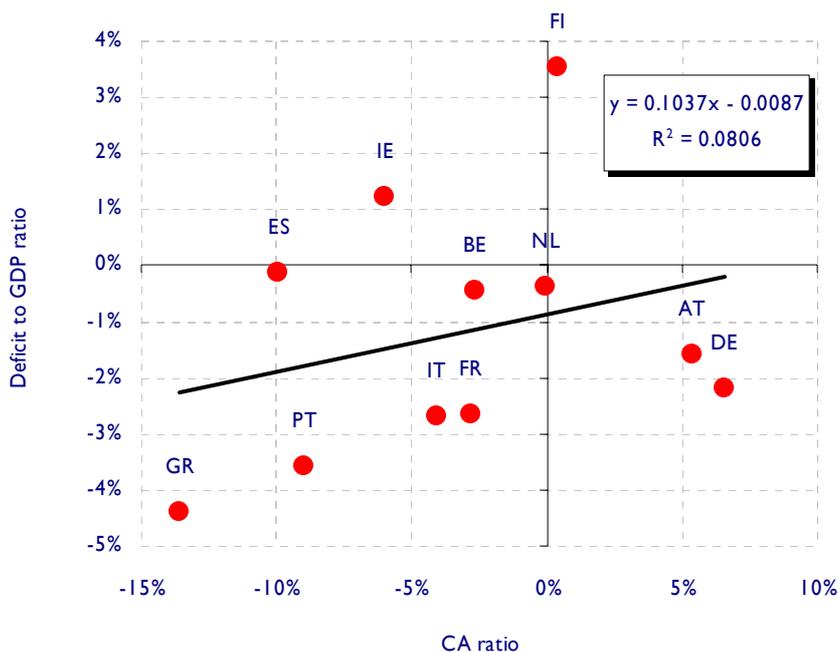
The only possibly exogenous factor that is not part of the Walters critique is excessive public spending that leads to budget deficits. This is examined in Chart 14, which plots the average budget and current account balances of the first ten years for each of the 12 original members of the euro area. There is a very low positive correlation between the two variables (the correlation coefficient is just 0.10 and the explained share of the variance is minuscule). Hence, there is at least a weak link between excessive spending and current account deficits to budget deficits, and with large current account surpluses linked to large budget surpluses.

In fact, even if they move in the same direction as budget imbalances, current account imbalances are much larger. This indicates that net private savings should be highly and positively correlated with the budget balances, as predicted by the Ricardian equivalence. Thus the evidence does not rule out the simultaneous presence of current account effects of the Walters critique.

Chart 14 Budget and current account balances in the euro area (as a percentage of GDP) Averages for the period 1999-2008

¹⁹ If $b = h$, $\alpha = 0$, and the economy keeps oscillating between current surpluses and deficits of equal magnitude.

²⁰ This is reminiscent of the global imbalances resulting from excessive spending in the United States that lie at the root of the financial crisis.



Sources: Budget balances: European Commission, AMECO database; current accounts: OECD Economic Outlook.

d. The Balassa-Samuelson effect

Taken together, Charts 10a and 10b in Section 3.3 establish a clear link between the real exchange rate and growth. Note that we measure GDP to calculate relative per capita growth vis-à-vis the euro area average. While we have interpreted these figures in terms of the Walters critique, an alternative interpretation is possible: the Balassa-Samuelson effect predicts that catching-up countries exhibit real appreciation.

This could be an alternative interpretation of Charts 10a and 10b, but not of the growing current account divergence. In fact, the Balassa-Samuelson effect rests on the combination of real exchange rate appreciation and stable current accounts, not on the increasing current account deficits that we observe. This interpretation is contradicted by Chart 13. In addition, we note that the appreciating countries did most of their catching up prior to the adoption of the euro.

5. Concluding remarks

The first ten years of the euro have been far better than many had hoped. The success is testimony to the institutional robustness of the ECB, which inherited the credibility of the Bundesbank and succeeded in generally displaying an adequate mixture of commitment to price stability and recognition that central banks are also concerned about general economic conditions and, more recently, financial stability.

EMU has also led to significant advances in economic and financial integration, which have provided euro area citizens and firms with important welfare and efficiency gains. The euro area now provides a more secure and stable economic and financial environment to safeguard the gains from trade integration and, as recently demonstrated, to prevent periodical financial crisis and disruptions from tearing apart member countries. Monetary integration also secures a level playing-field and permits cross-border investment, such as more M&As and

significant cross-border FDI.

Interestingly, a number of initial fears have not materialised, but new issues have arisen. Some apparent, albeit modest, erosion of credibility, if confirmed, could be related to the difficulty of keeping inflation close to, but below, 2%. Concerns about the use of fiscal policies at the national level could also be relevant. However, if we look at the first ten years of the euro, we have not seen fiscal policies diverging in responses to idiosyncratic shocks, and fiscal policies have been broadly neutral. At the same time, it is impossible to determine how much of the improvement is to be assigned to the existence of the Stability and Growth Pact and how much simply to the growing recognition that fiscal discipline must be achieved after years of rising public debts.

National inflation rates have converged to a degree similar to that observed in the United States. This important result conceals a significant degree of persistence in national outcomes and could be linked to the Walters critique, meaning that national real interest rates could diverge sizeably and lead to an asymmetric transmission channel. Rather, we have not observed permanently increasing inflation differentials and have advanced the hypothesis that the Walter critique may have instead led to widening current account imbalances -- in both directions -- in several euro area countries, while the euro area has remained nearly balanced. Financial globalization has rendered it possible to borrow and lend internationally on a large scale: providing evidence of the vanishing of the Feldstein-Horioka paradox. Within the euro area, the absence of any currency risk and increased financial integration has rendered this new phenomenon more pronounced than elsewhere. Hence, we might be witnessing a transmutation of the Walters critique. Importantly, this is in part a self-equilibrating mechanism since real appreciation reduces demand for domestic goods, which exerts downward pressure on domestic inflation. Yet this phenomenon still needs to be better understood and would need to be addressed over time.

References

- Adjaute, K., and J.P. Danthine (2003), "European Financial Integration and Equity Returns: A Theory Based Assessment".. In: Gaspar, V., P. Hartmann and O. Sleijpen, eds, *The Transformation of the European Financial System*, European Central Bank, pp. 185-246.
- Alesina, A., O. Blanchard, J. Gali, F. Giavazzi, and H. Uhlig (2001), "Defining a Macroeconomic Framework for the Euro Area", *Monitoring the European Central Bank* 3, CEPR.
- Allsopp, C., and D. Vines (1998), "The assessment: macroeconomic policy after EMU", *Oxford Review of Economic Policy*, vol. 14(3).
- Angeloni, I., and M. Ehrmann (2004) "Euro Area Inflation Differentials", Working Paper 388, European Central Bank.
- Asdrubali, P., B. Sorensen, and O. Yosha (1996), "Challenge of interstate risk sharing: United States 1963-1990", *Quarterly Journal of Economics*, vol. 111.
- Baele, L., A. Ferrando, P. Hördahl, E. Krylova, and C. Monnet (2004), "Measuring financial integration in the euro area", ECB Occasional Paper 14.
- Baldwin, R., V. Di Nino, L. Fontagné, R.A. De Santis, and D. Taglioni (2008), "Study on the Impact of the Euro on Trade and Investment", Economic Papers 321, *European Economy*, European Commission.
- Baldwin, R.G. (2006), "The euro's trade effects," ECB Working Paper 594.
- Baldwin, R. (2006), "In or Out: Does it Matter? An Evidence-Based Analysis of the Euro's Trade Effects" CEPR, London.
- Baldwin, R., F. Skudelny, and D. Taglioni (2005), "Trade Effects of the Euro – Evidence from Sectoral Data", ECB Working Paper 446.
- Balvers, R.J., and J.H. Bergstrand (2002), "Government Expenditure and Equilibrium Real Exchange Rates", *Journal of International Money and Finance*, vol. 21(5), October, pp. 667-692.
- Begg, D., P. De Grauwe, F. Giavazzi, H. Uhlig, and C. Wyplosz (1998), "The ECB: Safe at Any Speed?", *Monitoring the European Central Bank* 1, CEPR.
- Bergstrand, J.H. (1991), "Structural Determinants of Real Exchange Rates and National Price Levels: Some Empirical Evidence," *American Economic Review*, American Economic Association, vol. 81(1), pp. 325-334.
- Blinder, A.S., M. Ehrmann, M. Fratscher, J. De Haan, and D.J. Jansen (2008), "Central Bank Communication and Monetary Policy: a Survey of Theory and Evidence", *Journal of Economic Literature*.
- Bun, M., and F. Klaassen (2007), "The Euro Effect on Trade is not as Large as Commonly Thought," *Oxford Bulletin of Economics and Statistics*, Department of Economics, University of Oxford, vol. 69(4), pp. 473-496.
- Berg, J., M. Grande, and F.P. Mongelli (2005), "Elements of the euro area: integrating financial markets", Ashgate Publishing Ltd, Aldershot.
- Bertola, G. (2000), "Labor Markets in the European Union," *Ifo-Studien* 46(1), pp. 99-122.
- Blanchard, O., and F. Giavazzi (2003), "Macroeconomic Effects of Regulation and Deregulation in Goods and Labor Markets", *Quarterly Journal of Economics*, August, vol. 118(3), pp. 879-907.
- Blanchard, O., and J. Wolfers (2000), "The role of shocks and institutions in the rise of European Unemployment: The aggregate evidence", *The Economic Journal*, vol. 110, pp. C1-C33.
- Bayoumi, T., and P.R. Masson (1995), "Fiscal flows in the United States and Canada: lessons for monetary union in Europe", *European Economic Review* 39, pp. 253-274.
- Cappiello, L., P. Hördahl, A. Kadareja, and S. Manganelli (2006), "The impact of the euro on financial markets," ECB Working Paper 556.
- Cappiello, L., R.F. Engle, and K. Shephard (2006), "Asymmetric Dynamics in the Correlations of Global Equity and Bond Returns", *Journal of Financial Econometrics*, vol. 4, no. 4, pp. 537-572.

- Centre for European Policy Research (2008). Transparency and Governance. *Monitoring the European Central Bank*, 6. London.
- Coeurdacier, N., R. De Santis, and A. Aviat (2007), “Cross-Border Mergers and Acquisitions: Financial and Institutional Forces”, ECB Working Paper (forthcoming).
- Coeurdacier, N. and P. Martin (2007), “The Geography of Asset Trade and the Euro: Insiders and Outsiders”, CEPR Discussion Paper 6032.
- Crowe, C.W., and E.E. Meade (2008), “Central Bank Independence and Transparency: Evolution and Effectiveness”, Working Paper 08/119, IMF.
- Danthine, J. P., F. Giavazzi, L. von Thadden, and X. Vives (1999), “The Future of European Banking”, *Monitoring European Integration* 9, CEPR.
- De Grauwe, P. and F.P. Mongelli (2005), “Endogeneities of Optimum Currency Areas: What brings Countries Sharing a Single Currency Closer together?”, ECB Working Paper No. 468.
- De Santis, R.A., and B. Gérard (2006), “Financial integration, international portfolio choice and the European Monetary Union”, ECB Working Paper 626.
- De Santis, R.A. (2006), “The geography of international portfolio flows, international CAPM and the role of monetary policy frameworks”, ECB Working Paper 678.
- De Sousa, J., and J. Lochard (2006), “Does the single currency affect FDI? A gravity-like approach”, University of Paris 1, mimeo.
- Di Mauro, F., and R. Anderton (eds) (2007), *The External Dimension of the Euro Area: Assessing the Linkages*, Cambridge University Press.
- Dincer, N., and B. Eichengreen (2007), “Central Bank Transparency: Where, Why, and with What Effects?”, NBER Working Paper 13003.
- Dornbusch, R. (1980), *Open Economy Macroeconomics*, Basic Books.
- Duval, R., and J. Elmeskov (2006), “The effects of EMU on structural reforms in labour and product markets,” ECB Working Paper 596.
- Eijffinger, S.C.W., and P.M. Geraats (2006), “How Transparent Are Central Banks?”, *European Journal of Political Economy* vol. 22(1), pp. 1-21.
- Emerson, M., D. Gros, A. Italianer, J. Pisani-Ferry, and H. Reichenbach (1992), “One Market, One Money: An Evaluation of the Potential Benefits and Costs of Forming an Economic and Monetary Union”, Oxford; New York; Toronto and Melbourne Oxford University Press: 354.
- Engel, C., and J.H. Rogers (1996), “How Wide is the Border?”, *American Economic Review*, vol. 86(5), pp. 1112–1125.
- Engle, C., and J. Rogers (2004), “European Product Market Integration After the Euro”, *Economic Policy* 39, pp. 347-384.
- European Central Bank (2003), “Overview of the Background Studies for the Reflections on the ECB’s Monetary Policy Strategy”.
- European Central Bank (2005), “Monetary policy and inflation differentials in a heterogeneous currency area”, *Monthly Bulletin*, May 2005, pp. 61-78.
- European Central Bank (2005), “Review of the International Role of the Euro”, European Central Bank, see: <http://www.ecb.int/pub/pdf/other/euro-international-role2005en.pdf>.
- European Central Bank (2007), “Output growth differentials in the euro area: sources and implications”, *Monthly Bulletin*, April 2007, pp. 73-86.
- European Central Bank (2007), *Financial Integration in Europe*, March 2007.
- European Central Bank (2008), “Globalisation, trade and the euro area macroeconomy”, *Monthly Bulletin*, January 2008, pp. 75-88.
- European Central Bank (2008), *European Central Bank – The first ten years*, special edition of the *Monthly Bulletin*, June 2008.
- European Commission (1990), “One Market, One Money”, *European Economy* 44, October.
- European Commission (2004), “EMU after five years”, *European Economy Special Report*, Brussels.
- European Commission (2006), *The EU economy 2006 review: adjustment dynamics in the Euro area, experiences and challenges*.

- European Commission (2008), “EMU@10. Successes and challenges after 10 years of Economic and Monetary Union”, *European Economy* 2.
- Fatás, A., and I. Mihov (2001), “Fiscal Policy and Business Cycles: An Empirical Investigation”, *Moneda y Credito* 212.
- Feldstein, M. (1997), “The Political Economy of the European Economic and Monetary Union: Political Sources of an Economic Liability”, *Journal of Economic Perspectives*, vol. 11(4), pp. 23-42.
- Ferreira, A.L., and M.A. Leon-Ledesma (2007), “Does the real interest rate parity hold? Evidence for developed and emerging markets,” *Journal of International Money and Finance*, vol. 26, pp. 364-382.
- Fischer, B., M. Lenza, H. Pill, and L. Reichlin (2006), “Money and monetary policy: the ECB experience 1999-2006”, *The role of money – money and monetary policy in the twenty-first century*, Fourth ECB Central Banking Conference, pp. 102-175.
- Flam, H., and H. Nordström (2007), “The Euro and Single Market impact on trade and FDI”, Institute for International Economic Studies, Stockholm University, mimeo.
- Gali, J. (2003), “Monetary Policy in the Early Years of EMU”. In: M. Buti and A. Sapir, eds, *EMU and Economic Policy in Europe: Challenges of the Early Years*, Edward Elgar.
- Gali, J., and R. Perotti (2003), “Fiscal policy and monetary integration in Europe”, *Economic Policy*, vol. 18(37), pp. 533-572.
- Gali, J., S. Gerlach, J. Rotemberg, H. Uhlog, and M. Wooford (2004), “The Monetary Policy Strategy of the ECB Reconsidered”, *Monitoring the European Central Bank* 5, CEPR.
- Geraats, P. (2008), “Trends in Monetary Policy Transparency”, unpublished paper, University of Cambridge.
- Geraats, P., F. Giavazzi, and C. Wyplosz (2008), “Transparency and Governance”, *Monitoring the European Central Bank* 6, Centre for Economic Policy Research.
- Gérard, M., (2006), “Reforming the Taxation of Multijurisdictional Enterprises in Europe, a Tentative Appraisal,” CESifo Working Paper 1795, CESifo GmbH.
- Giannone, D, M. Lenza, and L. Reichlin (2008), “Explaining the great moderation: it is not the shocks”, ECB Working Paper 865.
- Giannone, D., and L. Reichlin (2006), “Trends and cycles in the euro area: how much heterogeneity and should we worry about it?”, ECB Working Paper 595.
- International Monetary Fund (2007), *Integrating Europe’s Financial Markets*, J. Decressin, H. Fauqee and W. Fonteyne, eds, Washington D.C.: International Monetary Fund.
- Ishiyama, I. (1975), “The Theory of Optimum Currency Areas: A Survey”, IMF Staff Papers 22, pp. 344-383.
- Kalemli-Ozcan, S., B. E. Sørensen, and O. Yosha (2003), “Economic Integration, Industrial Specialization, and the Asymmetry of Macroeconomic Fluctuations”, *Journal of International Economics*, October.
- Maes, I. (2007), *Half a Century of European Financial Integration: From the Rome Treaties to the 21st Century*, Brussels: Fonds Mercator / Mercatorfonds.
- Manganelli, S., and G. Wolswijk (2006), “Market discipline, financial integration and fiscal rules: What drives spreads in the euro area government bond market?”, ECB Working Paper 745.
- Melitz, J. (2004), “Risk Sharing and EMU”, *Journal of Common Market Studies*, vol. 42(4), pp. 815-840.
- Micco, A., E. Stein, and G. Ordoñez (2003), “The currency union effect on trade: early evidence from EMU”, *Economic Policy*, vol. 18(37), pp. 315–356.
- Mongelli, F.P. (2008), “What Lessons for OCAs from EMU?”, ECFIN Economic Paper 302, Brussels, February.
- Mongelli, F.P. (2005), “What is European Economic and Monetary Union (EMU) Telling us about the Optimum Currency Area Properties?”, *Journal of Common Market Studies*, vol. 43(3), pp. 607-635.
- Mongelli, F.P., E. Dorrucchi, and I. Agur (2007), “What does European institutional integration tell us about trade integration?”, *Integration and Trade* (IADB), vol. 11(26), pp. 151-200.

- Organisation for Economic Co-operation and Development (2005), *Economic Policy Reforms. Going for Growth*, Paris: OECD.
- Ottaviano, G., D. Taglioni, and F. Di Mauro (2007), “Deeper, wider and more competitive? Monetary integration, eastern enlargement and competitiveness in the European Union”, ECB Working Paper 847.
- Paredes, J., and J.J. Pérez (2008), “A quarterly fiscal database for the euro area (1970-2007), based on intra-annual fiscal information”, ECB and Bank of Spain, mimeo.
- Pedregal, D.J., and J.J. Pérez (2008), “Should quarterly government finance statistics be used for fiscal surveillance in Europe?”, ECB Working Paper 937.
- Pesaran, M.H., S. Yongcheol, and R.P. Smith (1999), “Pooled Mean Group Estimation of Dynamic Heterogeneous Panels” *Journal of the American Statistical Association*, vol 94(446), pp. 621-634.
- Petroulas, P. (2007), “The effect of the euro on foreign direct investment”, *European Economic Review*, vol 51(6), pp. 1468-1491.
- Pisani-Ferry, J., P. Aghion, A. Ahearne, M. Belka, J. von Hagen, L. Heikensten, and A. Sapir (2008), *Coming of Age: Report on the euro area*. Bruegel Blueprint Series, vol. IV.
- Rose, A. (2004), “A Meta-Analysis of the Effects of Common Currencies on International Trade,” NBER Working Paper 10373.
- Rose, A. (2000), “One money, one market: the effect of common currencies on trade”, *Economic Policy*, vol. 15(30), pp. 7-46.
- Rose, A., and E. van Wincoop (2001), “National Money as a Barrier to International Trade, The Real Case for Currency Union”, *American Economic Review*, vol. 91(2), pp. 386-390.
- Nouriel, R., E. Parisi-Capone, and C. Menegatti, (2007), “Growth Differentials in the EMU: Facts and considerations”, *RGE Monitor*.
- Sachs, J., and X. Sala-i-Martin (1991), “Fiscal Federalism and Optimum Currency Areas: Evidence for Europe from the United States”, NBER Working Paper 3855, October.
- Saint-Paul, G., and S. Bentolila (2000), “Will EMU increase Eurosclerosis?”, CEPR Discussion Paper 2423, April.
- Sauer, S. (2007), “Discretion rather than rules? When is discretionary policy-making better than the timeless perspective?”, ECB Working Paper 717.
- Schiavo, S. (2007), “Common currencies and FDI flows”, *Oxford Economic Papers*, vol. 59(3), pp. 536-560.
- Smets, F. (2008) “Monetary policy in the euro area: A comment on Geraats and Neumann”, mimeo.
- Svensson, L.E.O. (1999), “Monetary Policy Issues for the Eurosystem”, *Carnegie-Rochester Conference Series on Public Policy*, vol. 51(1), pp. 79-136.
- Svensson, L.E.O. (2003), “How Should the Eurosystem Reform Its Monetary Strategy?”, Briefing Note, European Parliament.
- Sørensen, B.E., and O. Yosha (2000), “Is Risk Sharing in the United States a Regional Phenomenon?”, *Federal Reserve Bank of Kansas City Economic Review* vol. 85, pp. 33-47.
- Van der Crujisen, C., and M. Demertzis (2007), “The Impact of Central Bank Transparency on Inflation Expectations”, *European Journal of Political Economy*, vol. 23(1), pp. 51-66.
- Von Hagen, J., and C. Wyplosz (2008), “EMU’s Decentralized System of Fiscal Policy”, *Economic Papers* 306, *European Economy*, European Commission.
- Woodford, M. (2007), “Does a ‘Two-Pillar Phillips Curve’ Justify a Two-Pillar Monetary Policy Strategy?”, CEPR Discussion Paper 6447.
- Wyplosz, C. (2006), “European Monetary Union: the dark sides of a major success”, *Economic Policy*, vol. 46(46), pp. 207-261.