



**UNIVERSITY OF PIRAEUS**  
**DEPARTMENT OF BANKING AND**  
**FINANCIAL MANAGEMENT**

**M.Sc. in Financial Analysis**

**Dissertation:**

**Europe six years after the introduction of the Euro**

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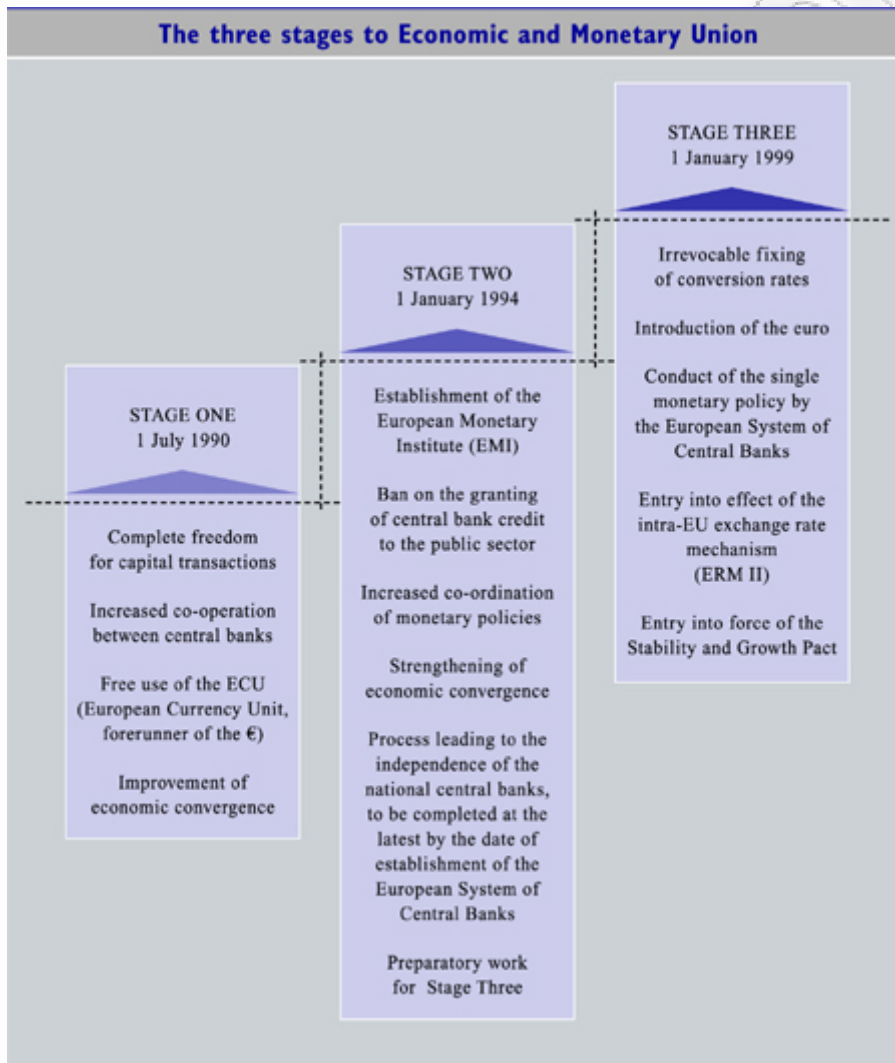
**Piraeus, September 2006**

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## 1. INTRODUCTION

In June 1988 the European Council confirmed the objective of the realization of the Economic and Monetary Union (EMU). The European Commission after a detailed study did propose three concrete stages that would lead, in the end, to EMU.



In December 1995 the European Council decided to name the European currency unit as "the euro" that was about to put into circulation on 1 January 2002. On 2 May 1998 the European Council decided that 11 Member States had fulfilled the conditions necessary for the participation in the Stage Three of EMU and the adoption of the single currency on 1 January 1999. The first participating Member States were Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain; the number of participating Member States increased to 12 two years later, on 1 January

2001, when Greece had fulfilled the necessary conditions and entered the Stage Three of EMU.

On 1 January 1999 the third and final stage of EMU started with the irrevocable fixing of the exchange rates of the currencies of the 11 Member States initially participating in EMU and with the conduct of a single monetary policy under the responsibility of the European Central Bank.

The Economic Monetary Union and the creation of the euro is the most important institutional change in worldwide financial markets during the past quarter of the 20<sup>th</sup> century. The creation of an economic area with a single market and a single currency has been a unique endeavor in economic history. A single monetary policy over the euro-zone countries, due to the introduction of the euro has not been a failure, in contrast to the warnings of some critics. On the other side, the introduction of the common currency in the euro area countries has not launched a golden age of economic growth and flexibility, in contrast to some enthusiastic promises.

The economic and monetary policy in Europe faced quite unique challenges since the start of the Economic Monetary Union. Before the introduction of the single currency a number of observers argued that the existence of autonomous national fiscal policies was unable to coexist with a supranational monetary policy, thus a single monetary policy was doomed to failure. Among others, [\*Martin Feldstein \(1997\)\*](#) predicted that the shift to the Economic Monetary Union 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, instead of increasing intra-European harmony and global peace. Furthermore, [\*Martin Feldstein \(2000\)\*](#) made the prediction that the euro is likely to have adverse medium-term and long-term effects on employment and inflation, and is likely to be the cause of political conflicts within Europe and between Europe and the United States. However, the euro is firmly established as a stable currency that shares along with the US dollar the role of the key international currency, worldwide.

The introduction of the euro results in the reduction or even elimination of some costs, because by moving from several national currencies to a common currency, as euro, some costs decline or even disappear. Among others, the advent of the single currency in the euro area contributes to the reduction of

trading costs both directly and indirectly, by removing the exchange rate risk and the cost of currency hedging; it contributes, also, to the reduction of information costs.

Furthermore, the introduction of the euro is enhancing price transparency and discouraging price discrimination; hence, it reduces market segmentation and is fostering competition. The common currency is encouraging foreign direct investments and precluding the possibility of future devaluation of national currencies. Consequently, the euro is playing a catalyzing role.

The euro is expected to accommodate Europe proceeding on reforms in the labor and product markets. In order to improve the success of European Monetary Union, the need for these structural reforms is vital.

EMU is expected to remove some national procedures and rules along with other obstacles to both economic and financial integration; the so-called "borders". Additionally, a common currency is more efficient in performing its role as an accounting unit and medium of exchange compared to multiple national currencies. Therefore, a single market along with a single currency supports convergence.

From another point of view, euro-zone countries, due the introduction of the common currency, may become more specialized and less synchronized, over the years. At the same time, some diversities and heterogeneities may surface or even deepen more over time, a development that may hinder the euro area integration.

I will organize my remarks as follows. Section 2 reviews the European Central Bank's monetary policy and operational framework. Section 3 provides some arguments about the hard currency fixing. Section 4 reviews some arguments about the international role of the euro. Section 5 touches on the question to what extent the euro area is an Optimum Currency Area. Section 6 reviews the main topic of the fiscal policies in the euro area. Section 7 focuses on some empirical evidence regarding the effects of the euro on: price setting and inflation persistence; financial markets; trade; business cycle synchronization, specialization, risk sharing and output growth; and structural reforms in labor and product markets. Section 8 presents the external environment of the euro area. Section 9 focuses on the recent developments in economic and financial environment of the euro area. Section 10 presents the

longer-term prospects for the euro area. Section 11 concludes by presenting some final remarks.

## **2. THE EUROPEAN CENTRAL BANK'S MONETARY POLICY FRAMEWORK**

*Otmar Issing (2005)* argues that from its creation the European Central Bank faced a lot of uncertainties. First, the way in which the transmission mechanism would function. Second, the ECB had at its disposal a very limited set of reliable harmonized macroeconomic data. What was really needed was a framework to assess the economic situation and future risks to price stability, which is mandatory, according to the European Central Bank's constitution.

Price stability is defined as a year-on-year increase in the Harmonized Index of Consumer Prices (HICP) for the euro area of below 2,00% to be maintained in the medium-term, due to the fact that price developments cannot be controlled in the short-term period. The Governing Council attempted to maintain a safety margin against deflationary risks and any biases in the HICP and its effects within the euro area. It was necessary to keep the costs of inflation for tolerating low positive rates of inflation in balance. The definition of stability based on a positive, but low, inflation rate is mainly explained by the fact that the nearer the target rate is to zero, the greater the risk that central banks might be unable to react adequately to deflationary shocks by reducing interest rates.

In addition, inflation differentials brought about by the "*Ballasa and Samuelson effect*", which suggests that real exchange rate depends on relative price of non-tradable goods between the foreign and domestic economy, are a normal element within a monetary union. The "*Ballasa and Samuelson effect*" is an equilibrium phenomenon that does not necessary requires economic correction. Moreover, it appears less possible that a particular region would experience falling prices over an extended period of time unless there are substantial and ongoing productivity gains underlying it.

Furthermore, the European Central Bank's strategy had to provide a systematic framework in order to conduct internal analysis and decision-making. Both strategy and operational framework play a special and important role in the conduct of the monetary policy. Regarding the operational framework, the ECB



relies on self-regulating market mechanisms, which are not only simple but also efficient, at least so far. The Governing Council has emphasized the medium-term character of the monetary perspective and furthermore stressed the major importance of defining the horizon over which price stability is supposed to be maintained in a flexible manner; hence, this flexibility of the horizon allows the policymaker to evaluate how the economic shocks have an effect on the expectations.

Furthermore, the European Central Bank in order to pursue its constitutional mandate has full political independence, which is very important in the implementation of its policy. In addition, ECB is accountable to the European public; consequently, transparency is required in all its actions.

### **3. THE HARD FIXING OF THE EXCHANGE RATE IN EUROPE**

According to *Otmar Issing (2006)* the selection of the exchange rate regime is one of the most fundamental policy issues in macroeconomics. The spectrum of possible choices ranges from the hard peg to a floating nominal exchange rate.

In particular, there are three main reasons for a country to select the peg of its exchange rate. First, a floating exchange rate can be highly volatile and be difficult to predict not only in the short but also in the long run. Second, pegging to a low-inflation currency may play the role of a commitment device, in order to provide some help in holding domestic inflation pressures. Last but not least, fixed rates may help countries to manage price developments for traded goods.

After the final collapse of the Bretton Woods system in 1973, many countries tried to create fixed exchange rate arrangements. International Monetary Fund (IMF) has evaluated the exchange rate regimes as follows:

- 38,00% of the countries had either a hard peg or a floating exchange rate in 1991, whereas the rest of them had various types of soft peg arrangements.
- 66,00% of the countries had either a hard peg or a floating exchange rate in 1991, while 34,00% had soft peg arrangements.

According to *Herbert Grubel (2005)* a country can achieve a hard currency fix by using the following policies and institutional arrangements:

- It replaces its own currency with a major currency for use in domestic transactions.
- It joins other countries in a monetary union. The central bank of the union issues a currency that circulates across the union. Furthermore, it sets interest rates and monetary policy under rules set out in its constitution.
- It retains its own currency and commits itself to a currency board arrangement under which the exchange rate is fixed against a major currency and the domestic money supply is linked to the balance of payments. Its central bank is no longer involved in making monetary policy.

The credibility of hard currency fixes is determined by the costs and benefits that are associated with them.

Hard currency fixing eliminates the transactions costs incurred in foreign exchange markets. Furthermore, the hard fix saves resources that are required to run institutions that evaluate exchange rate risk; hence, the participating countries are saving national income. The economic impact of this savings increase goes further, because they are equivalent to the reduction of tariffs on trade, capital flows and travel. Besides, they support financial arbitrage and the integration of the financial markets, as well.

The main argument against hard fix is that it deprives countries of their ability to conduct their own monetary policies. Some analysts, in the case of the euro, predict that some problems, such as unemployment, inflation and economic instability will eventually lead to serious economic crises and to the dissolution of the euro agreement. However, the experience since the introduction of the single currency, gives rise to optimism. According to *Grubel (2005)*, most of the problems in the pre-euro area were due to wrong monetary policies, in national level that could not occur under the hard currency fix. Furthermore, as *Frankel and Rose (1997)* pointed out, the hard fix forces special interest groups, such as labor unions, in the member-country to become more disciplined.

A benefit that pointed out by *Grubel (2005)* is that the hard fix prevents national politicians from influencing monetary policy by financing deficits. This



fact leads to “political business cycles” that impose severe significant costs on the economy. On the contrary, the Central Bank in a monetary union, such as EMU, is mostly free from political influences, in the short run; hence, the members of the union will not be subjected to these “cycles”. On the other hand, as regards the longer-term, no one is certain about what is going to happen, but such efforts would be rather difficult compared to the situation within each member country of the Union.

Another benefit of the hard currency fixing according to *Grubel (2005)* is that smaller countries enjoy better monetary policy by giving up their own. In particular, the making of monetary policy is quite complicated process, because, among others, requires the use of scarce and high cost human and financial capital resources; hence, the smaller countries have usually less access to the previous mentioned resources compared to the larger ones. In the hard currency fixing, highly trained economists are working with powered computers and models in order to make forecasts and the central bank uses better and more current data to make projections. All in all, the resources that the central bank disposes increases the quality and hence the possibility that the selected policy is the best one for the future. Nevertheless, we have stress the fact that the selected policy may involve some personal judgments.

A small country, by adopting a hard currency fix, will have the benefit of lower costs in the foreign exchange market, lower risk premiums on interest rates due to the fact that a large institution, such as the European Central Bank, is more likely to have freedom from some political influences and in addition, has more statistical, financial and human resources to chose and implement the best monetary policy.

#### **4. THE INTERNATIONAL ROLE OF THE EURO**

The euro was created at the value of \$ 1,17 on 1 January 1999, depreciated to a low of \$ 0,82 in October 2000 and it remained below parity with respect to the US dollar until July 2002. Afterwards, it rapidly appreciated until the high of \$ 1,36 in December 2004 and remains in high levels, so far, \$ 1,27 / 1 € in September 2006 (see Chart 1).

Though, the European Central Bank has not fostered or hampered its international use, by adopting a neutral stance.

According to *Dominick Salvatore (2005)* one explanation for the euro's depreciation during the first half of 1999 was that the chosen value for its introduction was set too high. However, the depreciation stimulated growth and encouraged the exports, which was anemic in most of the member countries of the euro area. As regards the second half of the first year since its debut and 2000, the euro continued to depreciate with respect to the US dollar, due to the positive interest differential in favor of the US that attracted large amounts of financial capital to the United States from Europe. This interest differential put an upward pressure on the dollar and a downward pressure on the euro, as *G.S.Tavlas (1997)* pointed out.

Furthermore, the euro-zone countries were not restructuring as fast as necessary and profitability and growth were expected to remain at higher levels across the Atlantic; thus, net direct investments were attracted from Europe to the United States and put additional downward pressure on the common currency. The investors received the lack of political unity in Europe as a sign of weakness. In turn, the euro depreciated more than justified by the economic fundamentals.

Regarding the international role of a currency, it is defined by the extent with which non-residents use a currency as compared to other currencies and by the influence that have interest rate and exchange rate developments of this currency on interest rate and exchange rate developments for other currencies. A currency can be used as unit of account, as a medium of exchange and as store of value.

Despite somewhat similar sizes of the real economy within the euro area and the United States and despite comparable domestic monetary stability in both areas, several important factors determining the international role of a currency still give a comparatively large advantage to the US dollar.

With regard to the role of the exchange rate as an indicator for external pressures on domestic prices seems to be relevant in relation to its international use. Euro internationalization may be associated with changes in the level and the volatility of the exchange rate, which depends on whether euro internationalization proceeds faster on the investment side than on the financing

side. It is important that ECB does not attempt to achieve an exchange rate target. Any attempt would limit its ability to maintain price stability.

A greater role of the euro in international investment is associated with a greater risk and abrupt flows in and out of the common currency, which might lead to higher long-term exchange rate volatility. So far, the euro is the second most widely used international currency, behind US dollar and in advance of the Yen. The euro has experienced a large expansion as a financing currency and a gradual increase for foreign currency bank investments. The further integration and development of the financial markets in the euro area will play the key role. However, price stability is a necessary condition and also a decisive characteristic of any good currency for its international use. In conclusion, the historical experience of international currencies tells us that the case of catching up with the US dollar is rather a long-term issue.

Furthermore, the euro from its very beginning has been an important international currency because EMU:

- Has a large and well developed financial market.
- Is expected to have a good inflation performance that will provide stability to the common currency.
- Is almost as large an economic and trading unit as the United States.

*Salvatore (2005)* claims that it is likely that 50,00% of international transactions will be conducted in dollars in the future, down from about 60,00%, 40,00% in euro and 10,00% in yen. In addition, he argues that the increased financial integration in the euro-zone will increase the supply of euro-denominated assets, resulting the dampening of the euro's tendency to appreciate against the US dollar.

*Kenneth Rogoff (2005)* suggests that a growing substitution of euro for US dollars in Central Bank portfolios is ongoing, due to the gaping United States current account deficit and is about to continue and possibly accelerate in the forthcoming years.

*Barry Eichengreen (2005)* claims that despite the large swing in the value of the US dollar, financial problems in euro-zone countries have not been emerged, which is a strong sign of normalcy within the EMU.

With regard to the large longer-term exchange rate movements, the euro since its debut, measured as logarithmic changes, has experienced a rather

impressive fluctuation; first, it depreciated to 34,00% and then appreciated by 49,00%. However, this fluctuation in the euro - US dollar exchange rate is not large compared to some movements in the longer-term of the predecessor currencies of the euro and the US dollar. The longer-term fluctuations can be explained from a macroeconomic perspective.

On the subject of the future of the euro - US dollar exchange rate it is not possible to make predictions as *Salvatore (2005)* mentioned, mainly, due to the inability of the modeling exercise to consider all the fundamentals forces. Furthermore, some unpredicted events have been almost impossible to model in a precise way. In addition, *Michael Mussa (2005)* claims that we cannot conclude that the common currency has appreciated sufficiently and overshoot the longer-term equilibrium value with respect to the US dollar. The resistance to appreciation of Asian currencies has put an upward pressure on the euro; therefore, Asian intervention has contributed, in a part, to the real effective appreciation of the euro. The euro/dollar exchange rate could either rise or fall due to some currencies adjustments; these adjustments should not be disruptive, in order to avoid a sudden collapse of the US dollar value, which is the basic element of the international monetary system, up to now.

## **5. THE EURO AREA: AN OPTIMUM CURRENCY AREA?**

The theory of optimum currency area (OCA) is a useful framework for addressing the question about the appropriate domain of currency area and it has being inspired by *Friedman (1953)*, *Meade (1957)*, *Mundell (1961)*, *(1973)* along with important contributions by *McKinnon (1963)*, *Kenen (1969)*, *Corden (1972)* and *Tavlas (1993)*. An OCA is the optimal geographic area of a single currency or of several currencies whose exchange rates are irrevocably fixed.

Optimality is regarded in terms of a set of OCA criteria that are primarily related to the economic integration of regions or countries. These criteria include price and wage flexibility, the labor and capital mobility, economic openness, diversification in consumption and production, similarity in inflation rates and fiscal integration, as well. An additional criterion is the similarity of shocks and the responses to these, that is the synchronization of shocks and



cycles, which was suggested by *Bayoumi and Eichengreen (1993)*, and *Giannone and Reichlin (2005)*.

With regard to these criteria we can conclude, in brief, the following:

- Labor mobility is roughly 2-3 times lower in Europe than in the United States. However, some improvements have been achieved, but a lot has still to be done.
- Price and wage flexibility is rather low. Improvements in flexibility have been achieved but more structural reforms are needed.
- The euro-zone countries are highly diversified and much more homogenous compared to the United States.
- Trade and financial integration is already high and rising.
- The inflation rates have converged to levels that are consistent with price stability.

In total, the euro area is not yet an optimum currency area but it scores well in several OCA criteria and it seems to have the potentials to go even better by carrying out some further improvements.

*Frankel and Rose (1997)* argue that countries which join EMU, no matter what their motivation may be, may satisfy OCA properties ex-post even if they do not ex-ante.

According to *Bayoumi and Eichengreen (1993)* the euro area was ex ante not an optimum currency area.

*Jean-Claude Trichet (2006)* claims that in recent years, an important development in the optimum currency area theory has been the idea that the optimality of a currency area is not necessarily something that needs to be achieved in full length before a monetary union; it may also be the result of a monetary union, which might be the case of the European Union.

*Otmar Issing (2005)* claims that the fact that some of the structural characteristics of the euro-zone do not bear a resemblance to those of an optimum currency area does not necessarily mean that the single monetary policy is not the right one for all the member states of the Union. It appears questionable whether the factors that before EMU were responsible for giving rise to asynchronous economic cycles within Europe will remain important after the introduction of the euro. Inflation differentials and differences between economic cycles have many sources: the divergent national monetary policies –



that no longer exist – and the further alignment of economic cycles, due to the increased competition in the goods and factors markets. Furthermore, as living standards in the member states converge, the effects of those differentials decline. Therefore, the combination of these factors may lead to the fulfillment of the Optimum Currency Area criteria in the process of the European Monetary Union, because as *Issing (2001)* mentioned they are rather endogenous than exogenous determinants.

*Francesco Paolo Mongelli and Juan Luis Vega (2006)* focus at the changes in the OCA-rating, by using the OCA-line that inspired by *Frankel (1999)*, along three main dimensions: (i) economic integration, (ii) income correlation and (iii) flexibility within the currency area.

The degree of economic integration and income correlation is very crucial in assessing the benefits from currency unions. The OCA-line is the collection of combinations of integration and symmetry among countries for which the costs and benefits of a currency union are in balance. This line is downward sloping because an increase in asymmetry raises the cost within a monetary union due to the fact that the loss of monetary policy in national level is more costly as the degree of symmetry decreases. The additional costs produced by increasing asymmetry could be compensated by additional benefits produced by more integration. To the right of the OCA-line the benefits of a monetary union exceed its costs. To the left of it the benefits from monetary independence dominate the gains from the union.

The degree of income correlation and economic integration evolve over time. However, there are different views with regard to this evolution. The majority agree that openness is expected to increase within a currency union. On the other hand, as regards the extent to which income correlation might stay the same, rise or fall there are different views.

In addition, the degree of overall flexibility is another dimension, in assessing the benefits from monetary integration. The OCA-line is the collection of combinations of flexibility and symmetry among countries for which the costs and benefits of a currency union are in balance. This line is downward sloping due to the fact that an increasing degree of asymmetry necessitates an increasing degree of flexibility, in order to remain on the OCA-line. To the right of the OCA-line the degree of flexibility is sufficient given the degree of

symmetry, so that the benefits of a monetary union exceed its costs. To the left of it the degree of flexibility is small given the degree of symmetry.

Increasing integration shifts the OCA-line downwards, because when integration increases the benefits of the monetary union increase in such level that we need less symmetry and/or less flexibility, in order to make the union beneficial.

In conclusion, although the euro area was ex ante not an optimum currency area, there is a high anticipation that EMU could possibly bring member countries closer together, by fulfilling the Optimum Currency Area criteria, over time.

## **6. THE EURO AND FISCAL POLICIES**

*Martin Feldstein (2006)* claims that the combination of centralized monetary policy along with a decentralized fiscal policy generates very strong biases towards large fiscal deficits and rising ratios of debt to Gross Domestic Product (GDP).

In order to reduce or even eliminate these biases an effective fiscal agreement, with widely agreed rules about deficits and surpluses, among the member countries of the euro-zone is urgently needed. These biases have emerged due to the lack of feedback to discipline large budget deficits in any individual member country of the Monetary Union. As a consequence, these deficits might put pressure on the ECB to permit higher inflation rate in the member-states.

The European Central Bank, in order to have these large fiscal deficits and rising ratios of debt to GDP controlled, has to implement a countercyclical fiscal policy. Problems arise when these deficits are not reserved in a short time. We have to mention that these deficits are a very tempting way to finance additional spending in the economies of the euro-zone members.

*Beetsma and Uhlig (1999)* and *Chari and Kehoe (2003)* argue that without the monetary policy commitment, fiscal policy has a “free-rider” problem and restrictions on national fiscal policies may be desirable.

In the Stability and Growth Pact (SGP), that was adopted in June 1997 as a way of addressing fears that the excessive deficits of member countries might

put pressure on the Central Bank to run inflationary monetary policies, it was agreed that members of the euro-zone should achieve fiscal balance over the cycle; the budget should be in surplus during normal years and the deficits during recessions should not exceed 3,00% of GDP. The countries that violated the deficit condition were supposed to pay huge fines, up to 1,50% of GDP; however, no fines have been imposed, to date. Unfortunately, instead of these fines, the European Union's Council of Ministers voted to suspend enforcement. The Pact has failed to encourage fiscal stabilization and restraint within the euro area, so far. Furthermore, the Stability and Growth Pact has failed to distinguish the situation of euro-zone countries that are in different positions.

These failures led to negotiations for its reform. The euro-zone governments, in the European Council's meeting of March 2005, did issue an agreement that it was entitled "Improving the operation of the Stability and Growth Pact", that retained the basic rules of the Pact. The European Union's member states in strong fiscal positions were opposed to any weakening of the Stability and Growth Pact. On the other side were states that already have violated the Pact, which were demanding greater flexibility in its implementation. The European Union moved towards the second direction because the states that violated the SGP were the larger ones. The exceptions to the interpretation of the basic rules were specified by the Council that made them meaningless; hence, there are no longer any restraints on member countries deficits. Although, five of the twelve EMU countries have deficits that exceed the 3,00% ceiling, the bond market has not done anything to punish them or to reward those of having low debt and deficits.

The changes in the rules of the Pact reduced the probability that the large ones would ever pay the fines imposed by the SGP. The deficit ceilings were relaxed and new provisions were added exempting some categories of public spending for the deficit limits of the Pact. To sum up, these reforms provide greater flexibility in its implementation. In spite of its flexibility, the ambiguities of the reformed Stability and Growth Pact may eliminate the possibility that it will ever be effectively enforced.

The problem is that power must be married with accountability, which is a significant issue in the fiscal policy. A possible response to these problems is to marry this greater flexibility along with greater enforcement power for the

European Commission. In this direction, we could go further by giving the Commission the power not only to issue an “early warning” of an excessive deficit but also to decide on the deposits, fines and sanctions. If governments believed that sanctions would be imposed when the Commission judged their debts unsustainable, they would be more prudent.

*Otmar Issing (2005)* argues that the Pact has served, as a rule of discipline, in order to keep growth in public debt at moderate levels.

*Barry Eichengreen (2005)* argues that the binding constraint is the limited political integration in Europe, so far, which limits the mechanisms available for keeping the Commission accountable for its actions. If and only when Europe will be further politically integrated, there may be a chance to attempt strengthening the enforcement of the Stability and Growth Pact.

*Otmar Issing (2006)* claims that although there is an ongoing debate with regard to the exact shape of the fiscal restrictions, there is a consensus in favor of the necessity of a fiscal framework within the European Monetary Union.

## **7. THE EFFECTS OF THE SINGLE CURRENCY ON THE ECONOMIC AND FINANCIAL ENVIRONMENT OF THE EURO AREA**

The effects of the euro since its advent are, in general, beneficial and the economies of the euro area member countries have become more interdependent, compared to the situation before its introduction. Let's take a closer look to the euro's effects on the European Monetary Union economies.

### **PRICE SETTING AND INFLATION PERSISTENCE**

According to *Angeloni, Aucremanne and Cicarelli (2006)* the price-setting and the dynamics of inflation is a rather important issue because EMU, beside the introduction of the euro and the creation of a new central bank, has the primary goal of reinforcing the single market of the European Union by eliminating any differences in the units of account. Besides, a main motivation for the majority of the EMU member countries for joining was the monetary stability, especially after the experience of high and variable inflation rates over the last 25 years.

However, nobody had the expectation that price-setting in the euro area would change drastically in just one night, due to the introduction of the single currency. As a matter of fact, most economists agree that in the longer-term inflation is a monetary phenomenon, while in the short-term is subject to a variety of factors, such as input costs and structures of product markets. EMU could influence these factors, however not through a direct chain of effects. Furthermore, some structural changes in price formation could have happened well before the introduction of the common currency and caused by the policies linked to the preparation of the Economic Monetary Union.

*Angeloni, Aucremanne and Cicarelli (2006)* argue that the European Monetary Union has led to a more competitive environment. This increased competition, as regards the price-setting, could have led to (i) more price level convergence in the euro area, (ii) more price flexibility and (iii) a fall in the sign asymmetries that characterize price-setting in some sectors. Regarding the inflation persistence, this more competitive environment could have led to a stronger incentive to set prices in an optimal way and to rely less on explicit or implicit indexation and hence reducing the intrinsic inflation persistence.

Furthermore, the European Central Bank's constitutional mandate of maintaining price stability have led to a stronger anchorage of inflation expectations and a lower dependence on past inflation history. This could have an impact on the extrinsic inflation persistence. In the run-up to the new regime, inflation declined substantially; stabilized at low levels compatible with the monetary policy of the Eurosystem. Consequently, as to price-setting, the downward rigidities have become a more visible aspect and as to inflation persistence, the decrease in the long-run inflation should be taken into account in order to avoid spuriously high persistence estimates.

The last few years an international research project (Eurosystem Inflation Persistence Network or IPN) that involves the European Central Bank and the National Central banks of the EMU member countries has started to analyze a data base, which includes data for aggregate, sectoral, consumer and producer price indices for all euro area countries. These data are being used to give some answers to the questions regarding the inflation persistence, the rigidity of prices, as well as their possible causes in the euro area.



*Angeloni, Aucremanne and Cicarelli (2006)*, by using the data covering the period 1985 to 2004 examine the inflation persistence and price-setting for 6 member countries of the EMU (Germany, Austria, France, Belgium, Italy and Spain).

As to price-setting they did not find evidence of pronounced breaks in the frequencies and magnitudes of price adjustment in 1996 and 1998. At the end of 2001 and in the beginning of 2002 retail price adjustment frequencies, both up and down, increased substantially, while the magnitude of the price adjustment was smaller; however, it was temporary and they returned to the earlier patterns. The significant decrease of inflation during the run-up to EMU was accompanied by a moderate reduction of the frequency of price increases and a mild upward trend in the frequency of price decreases. This fact suggests that the low inflation environment of EMU is not hindering the smooth adjustment of relative prices.

As to inflation persistence they did not find evidence of a change around 1999. However, they did find evidence of a decline in inflation persistence in the mid-1990s. Moreover, the reduction in persistence is relatively homogenous, both across sectors and countries. Hence, the change is attributed to macroeconomic factors such as expectations or monetary policy, as well. Furthermore, this reduction is preceded by a decrease in inflation expectations; something that puts even more weight on expectations based persistence as the most important driver. It seems that the expectations tend to lead persistence and persistence tends to lead inflation. In addition, this decline could be due to a structural change in private inflationary expectations associated, at least in part, to preparatory policies that paved the way to the euro. However, the link to the convergence of the euro area countries is weakened by the fact that the degree of inflation persistence is similar at a more global scale, even in areas of the globe that have not experienced currency reforms.

In commenting *Angeloni, Aucremanne and Cicarelli (2006)*, *Dickens (2006)* argues that we should not focus at the frequency of price changes, but rather at the process by which price changes take place. Therefore, by estimating a model of price changes, it could be possible to see prices change even if there were no changes in the frequency and magnitude of price adjustments.

If we hold everything else equal, *Dickens (2006)* argues that he would expect the frequency of price changes to decline as the inflation rate experienced a decline. The fact that it did not suggests the possibility that EMU may have reduced the cost of price changes or made product markets more competitive making failure to adjust more costly. Furthermore, he doubts that all the member countries of the EMU would have experienced as large and rapid reduction in inflation persistence in a monetary policy framework different than European Central Bank's, in which the maintenance of low and stable inflation rate is a ECB's constitutional mandate.

In commenting *Angeloni, Aucremanne and Cicarelli (2006)*, *Tony Yates (2006)* noted that it is hard to interpret not only the statistics on price changes but also the inflation dynamics equations, since there is no general equilibrium model of the benefits of having a single currency. We do not have a complete theory of what EMU would have done regarding the price-setting. In order to test the effects of EMU, we should have a widely acceptable null model of nominal rigidities that could explain macroeconomic fluctuations. Furthermore, he doubts that a general equilibrium model would be feasible to build.

In addition, he argues that shifts in reduced form inflation dynamics could come from shifts in structural features of the equation that define price-setting behavior, or shifts in the monetary policy behavior that drives the output gap.

*Francesco Paolo Mongelli and Juan Luis Vega (2006)* argue that the dispersion of national inflation rates steadily declined in the run-up to the European Monetary Union; stabilized at the beginning of Stage Three of EMU and remained nearly at the same level with very little changes, since then. An exception was a modest increase over the period 2000 to 2002. The magnitude of the inflation differentials within the euro area is similar to those, that seen in the United States. However, an important difference between euro area countries and United States is that the observed inflation differentials have been quite persistent for the EMU member-countries.

It is quite important to note that in a monetary union some inflation differentials constitute a way of relative prices adjustments in the face of asymmetric demand or supply developments. Since its introduction, the euro has been more flexible than anticipated, so far, from the view that the changes in relative prices have been larger and more frequent than expected. Hence, the

advent of the common currency has not hindered adjustment of relative prices, in contrast to some observers' claims.

At this point, we have to mention that in some cases the inflation differentials are emerging from an economy that has been outperforming the average and that is making efforts towards a level that is closer to the average.

The persistence of differentials in inflation rates among euro area countries are a major concern to the extent that they mainly reflect misaligned national economic policies or rigidities in their structures. From this viewpoint, a country that has a low level of competitiveness is about to face further deterioration due to higher level of inflation rates.

*Kenneth Rogoff (2005)* argues that the European Central Bank has done a solid job in maintaining inflation in low and stable levels. By allowing slightly higher inflation in the face of consistently weak growth within the euro area, from its upper bound of 2,00%, the ECB has demonstrated a degree of flexibility. *Kenneth Rogoff (2004)* argues that faster productivity growth and increased price flexibility, due to globalization, have made central bank inflation targets more credible.

*Akerlof, Dickens and Perry (2000)* claim that wage and price setters tend to ignore the low rates of inflation in EMU in price setting. When inflation is low, price setting should become less responsive to recent shocks. Since European Union has low and stable inflation for the last decade, one should expect inflation persistence to weaken. But this does not mean that the EMU should not get some of the credit for the decline in the persistence in the European Union.

*Jean-Claude Trichet (2006)* argues that inflation dispersion within the euro area declined significantly in the 1980s and 1990s and has generally stabilized at a low level since the introduction of the euro. In particular, the unweighted standard deviation of annual HICP inflation rates was around 6,00% in the late 1990s and it has dropped to 1,00% since the advent of the common currency. Furthermore, inflation dispersion in the euro area has not been high by international standards.

Inflation differentials within the euro area appear to be persistent. Many member countries of the euro area have remained in the same position, as regards the inflation rates, for at least a decade, on average. Although some

countries have achieved to move down their inflation rates, this adjustment process is very slow-moving.

The main sources of inflation persistence are differentials in the growth of unit labor costs, something that suggests a link with differing levels of wage rigidities within the euro area. Unit labor costs are increasing at a quite fast pace in those economies of the euro area that started at considerably lower price and cost levels, mostly, due to the Balassa-Samuelson effect. Nevertheless, changing profit margins have as well contributed to inflation differentials. Additionally, another factor is imperfect competition and associated price rigidities across euro area member countries.

In addition, inflation dispersion has been quite higher in the services sector, something that is most likely associated with the dispersion in wage developments in the area of services. In contrast, price dispersion has been relatively lower for tradable non-energy industrial goods.

In conclusion, *Jean-Claude Trichet (2006)* argues that there is certain degree of structural diversity in inflation and cost developments among national economies of the euro area. This is undesirable, if it reflects structural rigidities and misaligned policies. This should be corrected; otherwise, it may produce negative effects and externalities for the whole euro area.

ECB notes that several features of inflation persistence and characteristics of price setting, such as infrastructure of product and labor markets should be examined further.

## **FINANCIAL MARKETS**

*Philipp Hartmann, Angela Maddaloni and Simone Manganelli (2003)* argue that a financial system is defined by the set of institutions through which households, governments and corporations invest their savings and obtain funding for their activities. The mixture of financial markets operating in the economy defines its financial structure. Financial institutions, within the euro area financial system, are playing a key role, with market-based instruments that are very much developed.



*Jean-Claude Trichet (2006)* claims that financial systems contribute not only to channel funds from those who have surplus to those who have a shortage of savings, but also to trade and risk diversification.

As a consequence, financial integration has two major economic benefits: the increase of potential growth; and better sharing and diversification of risk. Some studies conducted by the European Commission claim that the gains from the financial integration of euro area bond and equity markets in terms of additional real GDP growth amount to about 1,00% over a ten year period.

First, financial integration leads to a better diversification and sharing of risk. With the introduction of the common currency investors can diversify their risk, by being able to invest more easily in other regions of the euro area. Therefore, they spread the risk of potential local shocks having an impact on income and consumption, as well. This fact helps the fulfillment of some conditions of the Optimum Currency Area theory.

Second, financial integration increases the potential for greater and more sustainable non-inflationary economic growth. Financial integration, by making markets deeper and more liquid, creates economies of scale and increases the supply of funds for investment opportunities. This fact leads to further financial development, which in turn leads to lower intermediate costs and more efficient capital allocation. By allocating resources to the most productive investment opportunities will eventually lead to greater and more sustainable substantial non-inflationary economic growth.

Since the introduction of the euro two main features have appeared. First, fiscal consolidation and the constraints imposed by the Stability and Growth Pact have led euro area governments to reduce their budget deficits and debt exposures; hence, this reduction of government financing created space for the increase in financing of non-financial corporations, mostly due to the decline of interest rates. Second, non-financial corporations have increased their share of total assets at the expense of the household and government shares.

An economic area, such as the euro area, is financially integrated if there are no barriers that discriminate investors in their access to fund investments within that area. Therefore, when an economic area is fully integrated: i) there should not be systematic differences in the portfolio allocation and sources of



funding of investors within the area and ii) financial instruments with cash flows that are identical should have the same price.

*Gerard (2006)*, in commenting *Cappiello, Hordahl, Kadareja and Manganelli (2006)*, argues that in economic and finance literature we can find that markets are integrated when only common risk factors are priced in assets returns and that markets are segmented when local risk factors determine equilibrium returns. Furthermore, we can find that market and economic integration is related to a strengthening of the financial and real linkages between economies.

One would expect that the introduction of the euro should be accompanied by an increase in co-movements in assets cash flows, which are consistent with increased economic integration and independence. On the other hand, economic integration and independence is not necessary equivalent to integration in financial markets, because trade barriers may well be removed while financial flows restrictions may remain.

The extent to which the introduction of the single currency lead to an increase in financial market integration can be evaluated by assessing whether financial assets offer similar risk return trade-offs across the euro zone. Evidence of decreased home biases and increased investments in assets from countries with lower costs would suggest the disappearance of barriers to cross-border investments and increased integration in financial markets.

*Jean-Claude Trichet (2006)* argues that financial integration is quite broad since it embraces a variety of financial market segments. In September 2005, the European Central bank published a set of indicators as regards the state of financial integration; price-based; and quantity-based indicators. These indicators clearly show that the common currency has played a catalyzing role, for the most part in market segments closer to the single monetary policy.

*Kalemli-Ozcan, Sorensen and Yosha (2003)* argue that the financial market integration might develop heterogeneities within the euro area, over time. This could happen due to the better risk-sharing opportunities, because of the financial integration. This in turn could make specialization in production more attractive; hence, heterogeneities could arise. However, there has not been visible impact of EMU on specialization and heterogeneities, so far.

In commenting *Cappiello, Hordahl, Kadareja and Manganelli (2006)*, *Vives (2006)* argues that integration is driven by the euro, the Financial Sector

Assessment Program and by improvements in globalization and information technology. Therefore, it is somewhat difficult to draw firm conclusions as to the effect of the euro to the financial markets.

Furthermore, he argues that retail markets remain regional, because the key competitive drivers are accessibility to information, long-term relationships and proximity to clients.

Evidence in financial markets points out that the degree of integration varies. Integration is more obvious in the public corporate bond issuance, however significant in the public equity market. Integration in the banking sector has been high in wholesale banking and in some areas of corporate finance. On the other hand, it has been rather low in retail banking. Investment banking has occurred for the most part on the back of penetration of European markets by US banks, which resulted in a greater degree of competition for new issues to the benefit of European corporations.

To sum up, *Vives (2006)* claims that integration occurs where comparative benefits are greatest. Therefore, regarding the areas where the achievement of integration appears to be a failure, it reflects mostly, inherent impediments.

*Baele, Ferrando, Hordahl, Krylova and Monnet (2004)* argue that the common currency has a visible impact in the re-organization of several segments that constitute the European financial market.

*Cappiello, Hordahl, Kadareja and Manganelli (2006)* in order to assess the effects of the single currency on both bond and equity markets have proposed two methodologies. The first one is a time-varying GARCH correlation, as suggested by *Engle (2002)* and *Cappiello, Engle and Sheppard (2003)*. The second one is a regression quantile-based codependence estimate, as suggested by *Cappiello, Gerard and Manganelli (2005)*. These two methodologies are complementary, in the sense that GARCH-based measures provide a short-run picture of the correlation evolution, while the measures based on regression quantiles are used in order to analyze changes in correlations over the long-run. Their analysis of continuously compounded returns on equity market indices and 10-year government bonds covers the period from January 1987 to October 2005, by using weekly Global Financial Data.

Let's take a more detailed look to the impact of the euro on money markets, bonds markets, equity markets and banking sector.

### **Bond markets**

Regarding the bond markets, with the GARCH correlation analysis, *Cappiello, Hordahl, Kadareja and Manganelli (2006)* have observed a striking increase in integration with the advent of the euro. Correlations, which were about 0,40 in the first half of the 1990s, have experienced an increase thereafter and reached almost 1,00 after 1999. However, government bond markets are not perfectly correlated, due to the existence of remaining credit risk premia and domestic liquidity. Furthermore, in contrast with the equity markets, the increase in correlation has occurred for both small and large countries.

With the co-movement box, their results are consistent with those found with the GARCH methodology.

*Cappiello, Hordahl, Kadareja and Manganelli (2006)* in order to investigate whether the dynamic behavior of macroeconomic risk factors that are relevant for the term structure have changed with the introduction of the euro, they have employed the macro-finance model of *Hordahl, Tristani and Vestin (2005)*, that it was built on the work of *Piazzesi (2003)* and *Ang and Piazzesi (2003)*. With respect to the determinants of the time-varying portion of premia, they found that despite large differences in the magnitude of estimated premia, the macro factors that were found to be important in explaining the dynamics of premia before the advent of the single currency continue to play a key role after its introduction.

To be more specific, at the 1-year horizon, the largest fraction of the time-varying yield premium both before and after the euro is due to interest rate risk. On the other hand, while 1-year pre-euro yield premia were decreasing in the level of the short-term interest rate, the opposite seems to be the case after the introduction of the common currency. The other most important component of the time-varying yield premium at 1-year maturities is inflation target risk, which appears to increase.

At the 7-year horizon, the most significant determinant of the time-varying component of the yield premium is risk associated with the inflation target. At this horizon, the inflation target premium is negatively correlated with the level of the inflation target both before and after the euro, even though the influence of the target is smaller after 1998. When the target is high, the yield premium is lower than average and therefore investors are more willing to hold 7-year bonds. Another relevant factor is output gap risk. To be more specific, recessions tend to make investors require a larger bond premium, while during booms make them more willing to hold long term bond, thus reducing premia. This finding holds both before and after the advent of the common currency.

Furthermore, they argue that the advent of the euro resulted in a more stable environment and reduction in variability of the risk premium in the yield curve.

With regard to the government bond markets, *Jean-Claude Trichet (2006)* argues that they have achieved a remarkably high degree of integration, due to the convergence of inflation expectations within the euro area and the disappearance of intra-euro area exchange rate risk. In order to quantify the degree of integration we take a look at developments in the standard deviation of yield spreads: the lower the dispersion, the higher the degree of integration; since the introduction of the euro the standard deviation has remained close to zero.

We have to mention at this point that the news related to a specific country of the euro area will continue to have an impact on government bond yields; a government bond of a country with a higher fiscal deficit is riskier than a government bond of a country with a lower fiscal deficit.

The government bond market was very much affected by the introduction of the common currency. An explanatory reason was the significant reduction in the importance of government bond related to the budget constraints imposed by the Stability and Growth Pact. The introduction of the euro, by eliminating exchange rate risk, has increased the homogeneity of different issues; therefore, it has promoted competition in the Treasury bond market. That fact led to a restructuring process of government debt; most Treasuries decided to specialize on certain points of the yield curve, in order to increase the liquidity of the outstanding issues and to minimize the borrowing costs. Consequently,



these developments led to the absence of a single homogeneous yield curve in our region, which constitutes an obstacle to full financial integration.

However, price-based indicators show that government bond market integration has advanced less compared to that of the money market. On the other side, quantity-based indicators show that government bond market is significantly integrated, but some “home biases” still remaining. Furthermore, market transparency has been increased, by the pre-announcement of auction calendars. We have to mention here that some electronic trading platforms have emerged in order to cover trading in most euro government bonds.

*Gaspar, Detken and Winkler (2004)* claim that the impressive narrowing of the interest rate spreads on government debt is a consequence of the elimination of the exchange rate risk from national debt, while some of the decrease is attributed to the conditions in the global economy.

*Baele, Ferrando, Hordahl, Krylova and Monnet (2004)* argue that spreads among government bonds have become very low, due to the greater integration.

*Herbert Grubel (2005)* argues that the gaps between the yields on the bonds issued by several governments often were over 5,00% through the middle 1990s. Thereafter, these gaps narrowed rapidly and reached near zero by 1999, where they have been since then. The market of the euro-denominated corporate bonds has grown in such level, that investors treat the Euro zone as a single entity; hence, the market becomes safer and corporations experience a decrease in their cost of capital.

*Kenneth Rogoff (2005)* argues that a major success of the euro has been the growth of euro-zone bond market, although, its growth has been driven by gaping fiscal deficits in Germany, Italy and France.

The integration degree of the euro corporate bond market is reasonably high, due to the fact that the issuance country is only of marginal importance in explaining yield differentials.

In commenting *Cappiello, Hordahl, Kadareja and Manganelli (2006)*, *Gerard (2006)* argues that the most striking evidence of increased integration in the euro zone is observed in bond markets where the average cross-country return correlation increases from 0,62 prior to 1999 to 0,97 after the advent of the single currency. However, same magnitude increases in correlation are



observed between US and non-EMU EU bond markets; except Japan. Furthermore, we observe a uniform decrease in correlations between equity and bond markets, after the introduction of the euro.

*Philipp Hartmann, Angela Maddaloni and Simone Manganelli (2003)* argue that the government and corporate bond market integration has also been affected in a great part by the advent of the common currency. The euro has created a more homogeneous market, by the expansion of the investors' base; hence, corporate and government bond market has become more competitive.

Since the introduction of the euro, euro area has experienced an unprecedented boom of corporate bond issuance. A major importance development in the corporate bond market, according to *Santos, Joao and Tsatsaronis (2002)*, was that the introduction of the common currency had a negative impact on the underwriting fees of international corporate bonds issued in the new currency. The greater contestability of the international euro market acted as a powerful substitute for foreign entry into national underwriting.

*Arturo Bris, Yrjo Koskinen and Mattias Nilsson (2002)* argue that the advent of the euro has changed the European financial markets, especially by fostering the creation of a corporate bond market. However, it is not clear whether EMU has affected the corporations in Europe, in a positive or even negative way. The authors did show that in the period 1998-2000 the increase is higher for large firms in countries of the euro area with a history of recent currency crises compared to the euro countries that managed to stay within in the European Monetary System during the turmoil of the early 1990s. This suggests that the underlying reason has been a reduction in currency risks that has consequently reduced firms' cost of capital. In addition, they only documented an important increase in valuation for small firms coming from countries that have experienced recent currency crises. However, there is no support for this view, from empirical data. In addition, euro countries have witnessed this positive development in the corporate sector because of the tax reductions.

On the whole, the creation of the euro has increased the value of the large firms, firms in countries with weak currencies and firms exposed to currency risks. The decrease in cost of capital is not a necessary consequence of the elimination of currency risks, because by adopting the euro, EMU countries

have given up independence of their monetary policy. The advent of the euro could have increased market risk in Europe, because authorities in each country lack instruments to respond to asymmetric shocks. Furthermore, the cost of capital may have decreased through better risk sharing opportunities in Europe, due to the elimination of intra-European currency risks; hence, the creation of the euro reduced firms' cost of capital by eliminating currency risks among the euro-zone countries, and by further increasing capital market integration in Europe. They argued that the effect of the euro on firm investments is larger for larger firms and for firms in weak EMU countries. The increase in investments has been financed mainly via debt issues. The investments have been financed by debt, suggesting that firms' capacity to bear debt has increased. Even though obstacles in investing have been reduced, there is still the issue of home equity bias. If the introduction of the euro diminishes home equity bias, then the cost of capital may decrease, due to better risk sharing opportunities in EMU countries.

*Barry Eichengreen (2005)* argues that financial market integration has stimulated merger and acquisitions activity and improved the competitiveness of European firms by enhancing their access to external finance.

### **Equity markets**

Regarding the equities market, with the GARCH correlation analysis, *Cappiello, Hordahl, Kadareja and Manganelli (2006)* have observed an overall increase in the level of conditional correlation in the second half of the 1990s, with a major boost in 1998, mostly due to the reduction in the exchange rate risk because of the announcement of irrevocable exchange rates, which occurred in May 1998. Furthermore, they found that most of the increase in correlation is driven by the largest countries, while at the same time the correlation in the smallest countries remained, more or less, unchanged. However, a similar increase was observed for the same period in the non-EMU EU countries and the United States. This fact suggests that this increase is not a euro area specific feature.

With the co-movement box, their findings are somewhat similar. The fact that the integration is much bigger in the larger countries with larger stock

markets compared to that of smaller countries can be explained, mostly, by the concentration in investments in larger and therefore more liquid markets.

In addition, they have found that some countries, which are historically linked, did not show significant increase in co-movement after 1999, something that may be due to the fact that these countries had very low exchange rate volatility, before the introduction of the euro. Furthermore, their findings suggest that co-movements in equity markets are driven by common “cross Atlantic” factors.

*Jean-Claude Trichet (2006)* claims that the euro area equity markets are still quite fragmented. However, a gradual integration process is ongoing. In particular, the disappearance of intra-euro currency risk has encouraged integration in the sense that the “home bias” has been remarkably reduced. Despite of this reduction, the country effect is still too important.

According to *Monica Melle (2002)* it is not possible to speak of a single euro area stock market. Continuing fragmentation in stock markets reflects national differences in market practices, tax treatment, laws and regulation. These differences, in turn, with the lack of a single infrastructure platform for the stock market, impose costs and inefficiencies that prevent the full benefits of a unified equity market. Given the absence of a single European stock market, did focus on whether the advent of the euro has affected the European stock markets integration. The main findings from the empirical analysis based on the Vector Auto Regression (VAR) methodology and the Impulse Response Function (IRF) are the following:

- The stock markets presented a high degree of integration and efficiency before the introduction of the euro; hence, stock prices and volatilities reflect idiosyncratic characteristics of each stock market and the euro does not increase the correlation among them. It was noticed an increase of correlation only between the main stock exchanges: the German, Spanish, Italian, French and Dutch stock markets. That fact could be explained by the increase of the possibilities of worldwide diversification of portfolios.
- The explanatory power of the equity indices on each equity index after the euro as the single currency has i) declined in Germany, Austria and Switzerland; ii) increased in France, the UK, the Netherlands, Sweden,

Ireland, Denmark, Finland and Luxembourg; and iii) has been maintained in Greece and Italy. The German stock exchange has become a leader market and the euro substituted the Deutsche Mark. The stock markets in central and northern Europe, which were already integrated, are more affected by the rest of the markets after the euro, due to the major influence of the German one on them. On the other hand, the stock markets in southern Europe are less influenced by the rest of the markets after the introduction of the common currency, because of the minor degree of previous integration with the markets in central and northern Europe.

- Before the euro, the main European stock exchanges affected the German market and the US market influenced all of them. After the euro, most of these causality relationships have disappeared. The euro area is acquiring a major importance compared to the other main financial areas, the US\$ and ¥. The national stock markets in Europe have reduced their dependence to US dollar and increased their influence on the ¥.

The integration in EU equity markets has been evident during the 90s, but the introduction of the euro has accelerated the intensity of the process. Although, there has been some progress in equity market integration, the transformation into a single European stock market is not yet complete. Evidence shows that investors in the European Union equity markets still have a strong “home bias”. In order to achieve full stock market integration, it will be necessary to ensure equal access to market infrastructure and remove major obstacles, such as tax and regulatory that discriminate against cross-border transactions.

*Philipp Hartmann, Angela Maddaloni and Simone Manganelli (2003)* argue that in an equity market that is fully integrated, there are no effective barriers preventing investments in assets, no matter of their location; hence, expected returns are decreasing in their covariance with global returns. One should expect the domestic stocks portfolio's share to decline compared to that of foreign stocks share. Empirical studies provide weak evidence that equity market has been integrated, since the introduction of the euro. Furthermore, there has been a shift in the asset allocation, which is now based on sector, rather than country, diversification. Quantity-based indicators show increasing



stockownership among households and greater international portfolio diversification among investment funds, pension funds and insurance companies. However, euro area's equity market capitalization has significantly increased, since 1999; the euro has already had an increasing role and a visible impact on international portfolio choices.

*Eiling, Gerard and de Roon (2005)* by investigating 11 euro zone countries equity index portfolios and 10 euro zone regional industry portfolios over the period 1990-2003 found that both industry and country returns have become more volatile, however the increase in euro area industry volatility has been significantly larger, in absolute and relative terms. In terms of co-movements, while cross-country correlations have increased, cross-industry correlations have decreased substantially. This fact suggests increasing homogeneity of industry structures across countries. At the same time, industries in the euro area have become gradually more heterogeneous. Besides, while the level of country return idiosyncratic volatility has remained stable, in relative terms, euro area industry idiosyncratic risk has more than doubled, over the sample period. Whereas in the early 1990s country returns were more volatile but less correlated compared to industry returns, we have an opposite situation in the post-euro period.

This increase in euro area industry idiosyncratic risk has improved the benefits from holding portfolios that are optimally diversified across industries within the euro zone; from 5,20% per annum in the early 1990s to 9,70% per annum after the advent of the euro. Furthermore, they found that euro area countries have become less specialized in terms of industry structure. Though, after the introduction of the single currency, the benefits in terms of risk-adjusted returns from optimal diversification across EMU countries have decreased; from 8,0% in the beginning of the 1990s to 6,00%.

*De Santis and Gerard (2006)* by investigating the determinants of international portfolio reallocation for the 30 largest world economies over the period 1997-2001 and evaluating the effects of the introduction of the single currency on international allocation of equity and fixed income portfolios have documented an important decrease in home bias over the sample period. This decrease was documented both for equity and bond portfolios, however it was, on average, more evident within the euro area and more so for fixed income



than for equity portfolios. Additionally, they have documented a significant increase in the share of EMU assets in international portfolios. The reallocation of international fixed income portfolios of EMU countries towards other EMU countries is generally large, at about 15,00% of total portfolio. However, the effect of the euro's introduction has been stronger for bond portfolios, compared to equity portfolios, due to the fact that bond portfolios returns, are more affected by transaction costs and currency risk that have been reduced or even eliminated.

In commenting *Cappiello, Hordahl, Kadareja and Manganelli (2006)*, *Gerard (2006)* argues that equity returns correlations increase more between non-EMU EU countries than between euro zone equity markets.

*Baele, Ferrando, Hordahl, Krylova and Monnet (2004)*, as regards the bond and equity markets, argue that a process of structural changes and integration, that increases is ongoing. The single currency in the euro area has added to the pressures from globalization for the formation of new alliances among European exchanges.

Regarding the further integration of securities market, including bonds, the Giovannini Group claims that the lack of the securities clearing and settlement infrastructure is a barrier to integration that should be removed. In October 2005, EU published standards for securities clearing and settlement systems, in order to adapt international recommendations to the European context.

### **Money markets**

*Jean-Claude Trichet (2006)*, as regards the euro area money market, argues that the cross-country standard deviation of the average overnight lending rates was higher than 130 basis points in January 1998; it decreased to 3 basis points in early 1999 and since then decreased to just 1 basis point. The establishment of the TARGET system has mostly supported this rapid integration. The launch of the TARGET2 system in November 2007 will improve financial integration even further.

Furthermore, the cross-country standard deviation of EURIBOR lending rates among euro area countries stands since the beginning of the EMU at levels around and below 1 basis point. The euro area cross-country standard

deviation of the one-month EUREPO rates has been around and below 1 basis point; the cross-country standard deviation of the 12-month EUREPO rates has been around and below 2 basis points.

Robust evidence confirms that the euro area interbank deposit market have become extremely integrated from the very beginning of the EMU. Furthermore, the introduction of the euro has played a key role in the interest rate derivatives markets.

The least integrated money market segment is the short-term securities market. However, the current fragmentation is expected to be reduced in the future as a result of the Short-Term European Paper (STEP), which is about to increase the depth and liquidity of the market.

By contrast, the euro repo market appears to be less integrated. More than half of euro area repo trading is still in instruments secured by home country collateral. That lagging in the integration of the euro repo market is mainly explained by the following reasons: i) contractual heterogeneity and some legal uncertainty, ii) fragmented settlement infrastructure of securities and iii) imperfect substitutability of government debt used as collateral and related price differentials.

In conclusion, the euro area money market is mainly characterized by an extremely large, liquid and highly integrated unsecured deposit market and by a much smaller and less integrated repo market.

## **Banking**

*Vives (1991)* argues that the most important effect of the integration would be a change of the focal point of banks' strategies from collusion and regulatory capture to competition. However, this competition would be imperfect due to the presence of significant barriers to entry, and consequently this would pose an upper bound for the integration benefits lower than the competitive benchmark. Therefore, the banking sector would remain segmented with different degrees of competition, and the benefits of integration would not be evenly distributed. Mergers, cross-participation agreements and acquisitions would have the tendency to soften competition.

*Vives (2001)* argues that the most important effect of the euro would be the deepening and expansion of financial markets. The single currency would reduce segmentation in retail banking, though it would not eliminate it, and imply a degree, but small, of cross-border penetration. There was an urgent need to establish an active domestic and EU-wide competition policy that would limit local market power.

In commenting *Cappiello, Hordahl, Kadareja and Manganelli (2006)*, *Vives (2006)* argues that concentration in the banking sector, especially in the European national markets, has experienced an increase mostly due to domestic mergers, which have helped them to cut costs, maintain market power, or even prevent a hostile takeover. However, this is not the common case in cross-border banking, due to the existence of some important obstacles, such as the rigidities in the labor market, differences in corporate culture, language and regulation, and more limited economies of international diversification, as well as political interference.

*Vives (2006)* argues that integration in the banking sector has been high in wholesale banking and in some areas of corporate finance, while only modest in relationship aspects of banking. On the other hand, integration has been rather low in retail banking.

*Jean-Claude Trichet (2006)* claims that cross-border interbank loans have experienced substantial growth. The securities issued by non-monetary financial institutions of another euro area country accounted for only 16,00% of the securities held by euro area monetary financial institutions (MFI) at the end of 1997; this share has now reached almost 40,00%, pointing to a clearly higher degree of capital market integration in the euro area. Furthermore, although loans granted between domestic monetary financial institutions still account for more than 50,00% of the total EU MFI loans, the respective euro area cross-border activity has increased from just 15,00% at the end of 1997 to around 23,00% today.

By contrast, retail banking has not progressed to any great extent, since the introduction of the euro. The share of euro area cross-border MFI loans granted to non-MFIs stood at 2,00% at the end of 1997; this share has now reached to no more than 3,50% at present time. The retail markets need an integrated infrastructure in order to reap the benefits of financial integration, in full.

The integration in the banking sector is much slower compared to that in the securities market. Regarding the retail markets, they remain regional due to the fact that proximity to clients and long term relationships are the key factors.

Banking is a multi-product business; therefore, it is somewhat difficult to give a description of the integration process in banking. In principle, the absence of barriers to entry would ensure a perfectly integrated banking market. However, this is rarely met and is, in practice, unrealistic.

*Berger A., Q. Dai, S. Ongena and D. Smith (2003)* claim that the banking industry may never become fully integrated. Some banking services will be always provided by small institutions operating in the national level. In addition, a host nation bank may better know the local market, culture and regulations and furthermore may have access to some information.

Although full integration may never be achieved in the banking market, one alternative way to illustrate the integration progress in banking is showing how the barriers to entry that exist have been reduced, since the introduction of the euro.

*Buch C. and G. DeLong (2002)* argue that empirical results support the view that “efficiency barriers”, such as language, culture and regulatory conditions hinder cross-border bank mergers. The incentive for these mergers relies more on economies of scale instead of economies of scope.

In general, there has been a noteworthy erosion of barriers to foreign entry in the banking market; however, some barriers, such as regulatory factors and different taxation, still stay put. Interest rates in retail banking within the euro area appear to have increased homogeneity, mostly due to macroeconomic convergence than actual integration of the retail banking. Furthermore, short-term deposit rates for wholesale banking have converged.

Quantity-based indicators of banking integration show a significant increase of interbank loans within the euro area. Additionally, although one can notice an upward trend in cross-border loans, however the total amount of loans to non-banks remains quite small compared to interbank loans. Consequently, strong “home biases” both in lending and borrowing seem to persist, something that is consistent with *Buch C., J. Driscoll and C. Ostergaard (2003)*.



## TRADE

*Andrew Rose (2000)* has shown that monetary integration can lead to significant deepening of trade by several multiples. This is often called the “*Rose effect*”.

The link between trade deepening and exchange rate volatility has been discussed at length by the literature. The majority of studies, by using time series techniques, find no significant relationship between trade deepening and exchange rate volatility or, at most, small negative effect of volatility on trade. To be more specific, cross-sectional studies find relatively small effects, while more recent studies find significant and negative effects of nominal exchange rate uncertainty on trade. That effect could be quite large, in the long run, even 10,00%.

*Baldwin and Taglioni (2004)* argue that a drop in exchange rate volatility could increase trade in two ways, though not mutually exclusive:

- By encouraging more exports per firm.
- By increasing the number of firms that are exporters.

However, the second of these effects must be dominating as given the magnitude of the impact of monetary union on trade found by most of the empirical studies and the small size of transaction cost, which are eliminated by a currency union. Therefore, a crucial element is the decision of firms to enter foreign markets as postulated by the “*beachhead model*” of *Baldwin (1988)*.

*Baldwin and Taglioni (2004)* begin by the observation that Europe has a high share of small firms that do not export or, at most, export very little, mostly due to the uncertainty involved in trade. Therefore, a reduction in uncertainty can encourage more firms to export. Whereas this accounts for a negative relationship between exchange rate volatility and trade, it still does not address the “*Rose effect*”, namely the impact of currency union controlling for a linear (or log-linear) exchange rate volatility and trade link. In order, to reach at this point, we have to explain the convexity of that link.

Suppose the true relationship between volatility and trade is convex. If an empirical model that assumes a linear link between volatility and trade, but also allows a dummy for a monetary union (zero exchange rate volatility), would estimate the dummy to be positive and significant.



According to *Baldwin (2004)* we have two additional sources of convexity:

- Exchange rate volatility affects relatively more small firms than larger ones. Furthermore, when the initial set of exporting firms includes more small firms, the marginal impact of lower volatility could be large.
- The distribution of firms in Europe is heavily skewed towards smaller firms; therefore, each reduction in the minimum size-class necessary for exporting brings into view an even larger number of new exporters; hence, a “Rose effect” jump is generated.

*Baldwin (2006)* argues that the advent of the common currency did boost intra-euro area trade by 5,00% to 10,00%, on average, using the data that are available, so far. However these data are not enough. Increased competition could go along with gains from welfare, without observing increased trade flows.

*Flam and Nordstrom (2003)*, by using the three non-euro zone and eight extra rich countries as the control group, found that the “Rose effect” implies about 15,00% higher trade. However, euro-zone trade with other countries is boosted by about half that. By using the cleanest definition of the control group, the “Rose effect” is only 8,00%. Moreover, they found that it is only present in sectors marked by differentiated products. Their results show a longer-term time horizon. Additionally, they report that the sectors without a “Rose effect” are the homogeneous products sectors.

*Baldwin (2006)* argues that the results from *Flam and Nordstrom (2003)* and *Micco, Stein and Ordonez (2003)* papers show that the “Rose effect” jumps up and becomes statistically significant in 1998, the year before the formation of the monetary union and it jumps again in 2001, the year before the currency union.

*Barr, Breedon and Miles (2003)* found that the “Rose effect” is positive and significant, even after their attempt for correction of reverse causality. *Bun and Klaassen (2002)* found that the euro has significantly increased trade, with an effect of 4,00% in the first year and a long-term effect estimated to be about 40,00%. *Berger and Nitsch (2005)* and *De Nardis and Vicarelli (2003)* found similarly positive results.

*Micco, Stein and Ordonez (2003)* found that for pairs of the countries that joined the Economic and Monetary Union, the introduction of the common currency boosted trade. The estimated effect is about 15,00% beyond what

could be explained by growth and some other factors; in fact a range of 6,00% to 26,00%. In addition, empirical results support the view that extra-euro area trade has grown by more than intra-euro area trade; something that may be related to exogenous and temporary factors, such as the euro's depreciation that took place from 1999 to 2002.

The *Micco, Stein and Ordonez (2002)* estimates of difference - in - differences reveal that in the period 1992-2001 the increase to intra-EMU trade was about 18,00% to 35,00%, depending on whether one uses dummies, or conditions on the standard gravity variables. However, these magnitudes are less than in the Andrew Rose studies. However, we have to take into account that it may take some time, even decades, in order to reach the peak of the effects on bilateral trade. The effects of the introduction of the single currency on bilateral trade have already reached levels that no one would have predicted, some time ago.

*Taglioni (2002)* and *Baldwin, Skudelny and Taglioni (2005)*, run the standard gravity model, by using not aggregate trade data but sectoral data, instead. The results did show a rough correlation between the increasing return and imperfect competition sectors with the size of the "Rose effect".

*Melitz (2006)* rationalizes trade effects of such magnitude with the use of intra-temporal elasticity of substitution of 6 to 8, on average. In order, to obtain higher effects a complementarity effect would be required.

On the other hand, *Anderton, Baltagi, Skudelny and N. Sousa (2002)*, by using sophisticated econometrics, found no evidence of the "Rose effect".

*De Sousa (2002)* estimated the basic gravity model for the EU15 countries, with the addition of a time trend. However, he found no evidence for a significant "Rose effect", unless he removed the time trend.

In commenting *Baldwin (2006)*, *Frankel (2006)* makes a crucial observation: the association between monetary unification and trade deepening might arise because both are caused by an additional factor, such as remaining political links and colonial history; consequently, the empirical investigation may be shrouded by missing variables. Additionally, he argues that there is a strong "home-country bias" in trade, in both quantity and price data. These biases could be explained, among others, by the different national currencies; hence, the removing of those currencies by a monetary union contributes to the

reduction of the biases and to the “Rose effect”. *Frankel (2006)* suggests that the display of the “Rose effect” takes time.

*Anderton, di Mauro and Moneta (2004)* report that trade between the countries of the euro area is increasingly characterized by vertical specialization, mainly due to the internationalization of product chains and should foster output correlation across countries.

*Kenneth Rogoff (2005)* argues that, although some would claim that the euro has already helped expand cross-border trade and investment in the euro-zone, it may take time, more than a decade, before we assess clearly the effect of the euro on integration.

### **BUSINESS CYCLE SYNCHRONIZATION, SPECIALIZATION, RISK SHARING AND OUTPUT GROWTH**

*Francesco Paolo Mongelli and Juan Luis Vega (2006)* argue that the issues of business cycle synchronization, economic specialization and risk sharing are quite important because in a monetary union if shocks become more persistent, large and idiosyncratic, this could pose a challenge to policy-making.

#### **Specialization**

Specialization is often related to the analysis of synchronization. In particular, a higher degree of specialization could imply a greater vulnerability to asymmetric shocks and therefore a greater need for relative price adjustments. There is not clear evidence, so far, about the effect of the Economic Monetary Union in the specialization within the euro area. However, the life of EMU is too short, so far, to come to a safe conclusion about the effects of the Economic Monetary Union as regards specialization in the euro area.

As regards specialization, there are two different views. The first view that is supported by *Krugman (1993)* suggests that as trade barriers are reduced over time, we have an increase of the inter-industry trade and opportunities for exploiting economies of scale and specialization in production should arise whenever countries have a comparative advantage. Therefore, we would have less diversified countries' production structures and hence increasingly

vulnerable to asymmetric shocks, while business cycles would become less synchronized. The second view suggests that EMU would lead to greater intra-industry trade integration. Therefore, business cycles would become more synchronized through the convergence of factors and technology, as well as reduced exchange rate variability.

*Otmar Issing (2006)* argues that the specialization and the endogeneity are the main sources of behavioral change. As countries become more integrated they will specialize in the production of those goods and services where they have a comparative advantage; hence, the production becomes more specialized and income less correlated. As regards endogeneity, there is a positive relation between trade integration and income correlation.

European Commission argues that while production specialization has increased since the 1970s, we have a decrease in the export specialization. Additionally, the changes in industrial concentration and geographical specialization, within the euro area, have been modest, as yet.

According to a study regarding the specialization among sectors, which was carried out by the European System of Central Banks, the production structure of the euro area countries seems to be more homogeneous, compared to the United States, and relatively stable. However, some studies suggest that the agglomeration of production factors could increase specialization and hence reduce cross-border trade among industries.

### **Risk sharing**

*Giannone and Reichlin (2006)* argue that EMU has helped in the smoothening of the cross-sectional correlation of consumption conditional on output. Their findings support the view that, since the early 1990s, risk sharing has increased within the euro area.

*Giannone and Reichlin (2006)* suggest that the possibilities of hedging consumption against country-specific costs have increased since the early 1990s within the euro area, reducing the welfare cost of heterogeneous economic activity. However, whereas the percentage of variance of GDP that euro area countries smoothed out through capital and credit markets has increased, the level of risk sharing remains low, compared to the level observed



in the United States. The level of risk sharing could increase by removing the barriers that remain to financial market integration.

In commenting *Giannone Domenico and Lucrezia Reichlin (2006)*, *Sørensen (2006)* argues that an interesting issue is that output convergence seems to have come to a halt in the euro area countries, as well as among United States. The neoclassical model predicts that output levels should converge when capital markets integrate, by the restriction that labor is homogeneous and endowments and productivity levels are similar. However, labor and endowments differ between United States. Furthermore, *Kalemli-Ozcan, Reshef, Sørensen and Yosha (2005)* did find that the behavior of United States-level output and income is consistent with capital freely moving across state borders to states where it is most productive. On the other hand, it is less obvious if capital markets in the euro area are integrated to the extent of integration in the United States; however, the similar patterns of convergence suggest that this is the case. Moreover, *Sørensen (2006)* argues that the decline in output volatility is striking; in the case of, it is permanent, it would reduce the role of international risk sharing.

*Sørensen and Yosha (1998)* found that the level of risk that is shared in Europe is less compared to the United States, while *Kalemli-Ozcan, Sorensen, and Yosha (2004)* found that risk sharing through financial markets has increased in the last decade, due to the financial integration.

According to *Kenneth Rogoff (2005)* the cost of having divergent business cycles could be mitigated if not only the equity markets were further advanced but also the labor mobility was increased furthermore; consequently, investors could better share risk across countries.

*Kalemli-Ozcan (2003)* argues that risk sharing increases in a currency union. The noteworthy in this view is that any asymmetries in GDP fluctuations would not translate in income volatility because ownership is diversified; therefore, consumption would smoothen across countries and, hence, limit the welfare cost of GDP fluctuations.



## **Business cycle synchronization**

*Giannone and Reichlin (2006)* looked at the empirical evidence and analyzed output dynamics in member countries in the last thirty years and tried to establish robust stylized facts on output differentials within the euro area, the synchronization of recessions and the relation with respect to the United States.

The time is too short, in order to identify new trends of output development since gaps GDP per capita have been persistent and it is difficult to distinguish trends from persistent fluctuations around different means. However, these gaps are small and cycles are synchronized.

Heterogeneity is generated by small and persistent idiosyncratic shocks, while most output variation is explained by a common shock. Therefore, the roots of recent heterogeneity have to be found in national shocks that have a long lasting, although small, effect, when we compare it with common forces of variation.

Country-specific shocks have small but persistent effects. The latter is the main factor - rather than heterogeneous responses to common shocks - for the existence of asymmetries across the euro area; hence, area wide shocks propagate. Comparing euro area with the United States they have observed that the case is to some extent similar, while the size of idiosyncratic shocks is more homogeneous across regions than it is within the euro area.

National stabilization policies should be planned to address low frequency components rather than the business cycle, for the small part of variance that is generated by idiosyncratic shocks, due to the fact that they do not play a large role in smoothing output.

When the euro area is analyzed as an aggregate and compared to the United States, they found that, even though a common world shock drives the two cycles, the propagation differs across the two areas. In particular, euro area lags the United States and its cycle appears to be more persistent, although less volatile. Low growth, persistence of shocks and low volatility are common characteristics of the euro area and the gap with the United States has been stable over the last thirty years.

They found that output differentials, both in term of levels and growth rate, have been stable, over the examined period. However, the business cycle has

shown a degree of synchronization: recessions have occurred at similar dates and cross-country correlations have been somewhat stable and in line with the findings among US regions.

Regarding the output fluctuations, they found that are generated by a world shock originating in the United States that is absorbed by Europe with a lag and with a response, more persistent, though less volatile. Output fluctuations seem not to be explained by the nature of the shocks, but rather by the propagation mechanism.

Level gaps, with the exception of Ireland, have been stable and persistent in the last thirty years and there is no clear sign of convergence to a common level of output per capita. That persistence is generated by low frequency cycles around different means and by a convergence trend, in the case of Ireland. *Barry (2006)* argues that, in the case of Ireland, specialization was possible for some tradable industries, in relation to other industries, because of the lower entry costs and barriers.

Cyclical co-movements, measured by correlations, have been high within the euro area and between the euro area and the rest of the world; something that is in line with *Stock and Watson (2005)*, *Kose, Otrok and Whiteman (2003)*, *Artis, Osborn and Perez (2004)*, *Canova, Ciccarelli and Ortega (2004)* and *Monfort, Renne, Rffer and Vitale (2004)*, who have found that the international component of output fluctuations explain a large part of total volatility. However, co-movements within the euro area are higher compared to the euro area and the rest of the world. This fact suggests that euro area countries are close enough for area-wide aggregates to capture the bulk of national features.

In commenting *Giannone Domenico and Lucrezia Reichlin (2006)*, *McCarthy (2006)* argues that economic theory is not clear on whether economic integration will lead to more or less synchronization of business cycles. Some suggest that by removing trade barriers would lead to greater regional specialization of economic activities; hence, greater vulnerability to idiosyncratic shocks. Others argue that by increasing intra-trade the countries would be exposed to greater likelihood of a common shock and increased synchronization. However, some focus on the financial channel rather than the trade channel and argue that greater capital market integration would lead to an

increase of specialization in production structures; therefore, less synchronization of business cycles.

*McCarthy (2006)* argues that there is no evidence whether EMU has increased business cycle synchronization across the euro area. In addition, he suggests that, in order to assess the issue of cyclical symmetries between euro area countries, we should pay more attention to the role of structural reforms, the sources of growth, and other growth factors.

Furthermore, *McCarthy (2006)* argues that in order to implement a common monetary policy successfully we have not only to achieve the synchronization of the cycles but also the amplitude of the cycles within the euro area. This poses questions for the need for real exchange rates adjustments in EMU. *Bergman (2005)* argues that the dispersion in amplitude has experienced an increase since the creation of the Union.

*Camacho, Perez-Quiros and Saiz (2004)*, showed that bilateral distances corresponding to euro area countries have a tendency to cluster together, which implies that the business cycles of euro area countries have much more in common with one another than with other countries. Moreover, they did show that these bilateral distances could be explained by structural features, such as the relative weight of the different sectors, developments in labor productivity, fiscal policy and bilateral trade.

*Artis Michael (2005)* suggests that in the case of increased synchronization of business cycles, it is not clear whether this is due to business cycle across the euro area specifically or due to globalization. Furthermore, he argues that the euro area grouping is not a characteristic one.

Furthermore, an overview of empirical papers presented at the ECFIN Research Conference “Business Cycles and Growth in Europe”, in October 2004 reveals that there is no evidence of an increased synchronization of business cycles in the euro area.

In conclusion, the main findings of *Giannone and Reichlin (2006)* are the following:

- Output levels are not converging in the euro area, except Ireland, but they are not diverging either. Cyclical asymmetries across the euro area are relatively small. There is evidence of persistence of output-per-capita gaps, using per-capita GDP data for the period 1970-2003, of member

states against the euro area average, with no change in the last decade. In the United States, using data on personal income-per-capita for the period 1970-2003, the case is to some extent similar. Medium/long run output volatility is somewhat similar both in the US and the euro area.

- Total output volatility is higher in the US compared to the euro area.
- The variance of output growth rates has experienced a steep decline, as well as the variance of idiosyncratic growth rates.
- The business cycles in the euro area are more persistent compared to the US, since recessions are less pronounced, but last longer. On the other hand, they are shallower.
- The business cycle in the United States leads the euro area business cycle; the world-wide/US shock explains most of the fluctuations of the gap.
- The gap between the euro area as an aggregate and the United States is significant but stationary and less persistent compared to the country-specific or regional gaps.
- The cycles that exist across the euro area are similar.
- The gap tends to close since Europe reacts slowly to the world-wide shock, during recessions. However, the gap tends to open during expansions and in the middle of the cycle it reaches its maximum, but then Europe starts catching up.
- The euro area shock reduced the gap during the recession in the United States of the 1990s, mostly due to the German Unification; however, that shock only postponed the recession within the euro area.
- There is a specific euro area cycle that is different from the US cycle, due to the different propagation mechanism.
- The variance of consumption growth has decreased sharply.
- The level of risk sharing has increased sharply starting in the early 1990s. This finding is robust at long horizons, suggesting that the increased ability of countries to smooth is very significant, in response to persistent shocks to output.

## Output growth

According to *Jean-Claude Trichet (2006)*, from 1960 up until the late 1970s, the average real output per capita growth was higher in the countries than now make up the euro area; in the 1980s it was almost the same; however by the mid-1990s it was lower. GDP per capita growth within the euro area was about 5,00% during the 1960s and 1970s, around 2,00% from 1980 to the mid-1990s and has been 1,70% on average since the mid-1990s. On the contrary, in the United States GDP per capita growth was around 3,00% from 1960 to 1980, 2,00% during the 1980s until the mid-1990s, and 2,20% in the recent period 1995-2004. In turn, real output per capita in the euro area started to decline and from 90,00% in the early 1980s, it has stood at around 70,00% in recent years.

Moreover, *Jean-Claude Trichet (2006)* argues that another way to look at GDP per capita growth is to break it down into the respective contributions from changes in age structure, labor productivity and labor utilization. Age structure did not play a major role in explaining disparities between the United States and the euro area during the 1990s, but in the years ahead the contributions to GDP per capita growth from changes in the age structure are anticipated to be negative. Labor utilization has a limit to how much it can grow, and hence this factor cannot explain growth differentials over long periods of time.

Labor productivity growth was growing faster within the euro area than in the United States from the early 1950s until the mid 1990s. It was 2,40% in the euro area compared to just 1,50% in the US. However, during the period 1996 to 2004 came down to 1,30%, whereas it came up to 2,50% in the US. This growth differential since the mid-1990s reflects a more intensive use of labor and higher labor productivity. In the long run, growth differentials are due to differences in labor productivity and not in labor utilization.

There is robust evidence that slower productivity growth in the euro area since the mid-1990s reflects both lower growth in total factor productivity (TFP) and less capital deepening. In fact, TFP captures progress not only in technology but also in improvements in organization and in the quality of capital.

One of the most important factors that driving lower capital deepening within the euro area appears to have been strong employment growth. Sustained wage moderation and continued progress with labor market reforms are likely to



have contributed to these developments, leading firms to shift to more labor-intensive production following earlier substitution policies in favor of capital during the 1980s and early 1990s.

Moreover, he claims that the main reasons for the diverging trends in labor productivity growth between the United States and the euro area in recent years seem to be the following:

- Weaker productivity growth within the euro area non-information and communication technology (ICT) sector was explained by stronger low-skilled employment growth not being matched by equivalent capital deepening.
- Lower productivity growth in ICT-using sector in the euro area compared to the United States.

*Jean-Claude Trichet (2006)* argues that growth dispersion in the euro area has been generally stable since the early 1970s. There were no signs of increased divergence over the period 1999 to 2005. The average dispersion of annual real GDP growth (measured as the unweighted standard deviation) was about 2,00%, which is very close to the average dispersion since the 1980s. Furthermore, output growth differentials, within the euro area, have a high degree of persistence.

According to *Jean-Claude Trichet (2006)* dispersion in real GDP growth rates within the euro area reflects two main factors: dispersion of cycles and dispersion of trends.

The dispersion of cycles has steadily declined since the beginning of the 1990s from about 2,00% to 1,00%; hence, the degree of synchronization of business cycles within the euro area seems to have increased since the early 1990s. Besides, the degree of correlation appears to be at its historical high. This may well indicate that EMU has led to a decline of differences in output gaps and an increase in synchronization of business cycles within the euro area.

On the other hand, the dispersion of trends has increased since the early 1990s from about 1,20% to 1,70% in the late 1990s before starting to decline. Differences in trend growth within the euro area can be explained by several structural factors, such as the degree of economic flexibility.

Growth dispersion in the euro area can only to some extent be addressed by macroeconomic policies, while structural reforms can address it to a larger extent.

*Jean-Claude Trichet (2006)* argues that nearly all growth theories suggest that TFP growth depends on innovation, technology diffusion and research and development spending. Empirical studies have advanced the following economic factors that are likely to play a key role in fostering innovative investments:

- Good education and research subsidy systems. The majority of the empirical studies seem to confirm the positive relationship between education and productivity.
- Well-functioning product and labor markets. It is clear that establishing efficient, competitive and well-functioning markets is another prerequisite for medium to long-term growth. There is empirical evidence that shows how labor market policies affect innovation activity. Many observers have indicated that the slow diffusion of new technologies in the euro area may well be related to barriers to competition and innovation, in addition to strict labor and product market regulation.
- Well-developed financial systems. Most of the empirical studies support the view that economic growth is linked with the degree of development and structure of the financial system.
- Macroeconomic stability. Empirical evidence confirms the detrimental effect of inflation on long-term growth. Furthermore, empirical studies have shown that lack of fiscal discipline can also put in great danger the monetary policy and lead to higher risk premia in interest rates, which in turn may have a negative impact on investments by crowding out the private sector's investments.

*Paternoster (2005)*, by analyzing recent data, with regard to the GDP growth during different recoveries, within the euro area, did find that:

- The current recovery seems to be weaker compared to the average of the four recoveries in the past, at the same stage of the cycle.
- The dispersion of quarterly growth rates in this recovery, for the five largest member states, is increased compared to previous recoveries.

- The dispersion of the output gap, in the four largest member states, is increased.
- The dispersion, in 2004, is increased.

These findings have given rise to concerns regarding the increase in growth dispersion. This could be a rather important issue for the euro area, something that depends on which countries is the source of the dispersion of growth rates; the small, or the large ones? Even though, cyclical dispersion has remained low in the past few years across the euro area, disparities in cyclical positions between the largest member states have remarkably increased.

*Alberto Musso and Thomas Westermann (2005)* by decomposing real GDP growth in the euro area, focusing on the period from 1980 to 2003, into the contributions from total factor productivity (TFP), capital and labor supply have come to the following main findings:

First of all, growth in measured total factor productivity has been the single most important contributor to medium to longer-term growth, explaining almost half of the average rate of growth in real GDP of 2,10%. In addition, contribution from total hours worked was near to zero, while at the same time developments in the gross capital stock made a noteworthy contribution to real GDP growth. We have to stress at this point that the contributions from total factor productivity to real GDP growth should not be interpreted as a number that depends only on random innovations, due to the fact that is derived as an unexplained residual. On the other hand, this as well underlines the key role that structural policies can play in raising economic efficiency and hence fostering medium to longer-term growth.

Second, there have been considerable changes as regards the contributions to growth between the 1980s and the 1990s. In the 1980s, more than half of real GDP growth was explained by total factor productivity, while the rest was explained by capital. However, labor had generally neutral effect on growth because the positive contributions from growth in labor were offset by a rise in the unemployment rate and a fall in the average hours worked. In the 1990s, there has been a decline in the contribution from total factor productivity to growth that explained less than half of real GDP growth. Additionally, the contribution from capital to growth was more or less unchanged than that in the 1980s. Furthermore, the contribution from labor to growth increased and

explained about one-fifth of real GDP growth. This higher contribution is explained by an increase in employment growth and a slower decline in the average hours worked. The increase in employment growth during the 1990s is due to a large extent to the sustained growth and increased relative importance of part-time employment. Furthermore, another important determinant of overall employment growth was considerable temporary job creation. The backside of this development was a decline in average labor productivity growth. All in all, the opposite movements in the contributions to growth implied that average real GDP growth declined only slightly between the 1980s and the 1990s.

Third, contributions from supply-side factors can exhibit important fluctuations over short horizons. The rates of growth in total factor productivity and total hours worked have standard deviations of 1,00% or even more, and while they reflect to a large extent the impact of business cycle fluctuations, the data suggest that even correcting for these fluctuations would leave significant variation in the rates of growth of supply-side factors. This fact suggests that the estimates of potential output growth that are collected from the contributions of supply-side factors do not automatically reflect a sustainable rate of non-inflationary growth. Therefore, before concluding whether a structural change implying a permanent change in output growth has taken place, it is a necessity to examine this change's source.

At last, demographic developments have not been favorable for growth over the past business cycle and are anticipated to be a major reason for concern, as regards growth in the upcoming years. These demographic developments would reduce average real GDP growth up to 2010 to levels below 2,00% and in the period up to 2020 even more to roughly 1,50%, if no compensation is achieved through higher contributions from other supply-side factors.

By conducting the appropriate reforms, there is some scope for sustaining or even raising medium to longer-term output growth, although demographic developments seem to be unfavorable in the coming years. The two main areas where improvements are warranted appear to be the following:

- There is a considerable potential for increasing the contributions to growth from the labor supply, if we consider that the unemployment rate within the euro area is still relatively high by international standards and that the participation rate and average hours worked are relatively low.

- Structural reforms in product and labor markets could improve the business environment, by creating space for more technological progress and innovation.

It is rather important to consider that any strategy that aims at sustaining or even raising medium to longer-term output growth should proceed rapidly on labor and product market reforms.

All members of the EMU agree on the diagnosis regarding our structural impediments in Europe. The opportunity cost of not being flexible enough has increased in recent years. This is a major issue, because the opportunity of being less flexible is the lack of resilience in periods of shocks and crises, that they might be counterparts of the chances the world experiencing in the time of globalization. Although the euro area product and labor markets have become more flexible over time, further reforms are needed in order to improve labor productivity growth in our region. Groups of experts have proposed some policy initiatives and recommendations in order to promote productivity growth within the euro area; the crucial issue is how to implement these recommendations.

### **STRUCTURAL REFORMS IN LABOR AND PRODUCT MARKETS**

*Duval and Elmeskov (2006)* argue that the symptoms of the countries being in need of structural reforms include low employment along with low labor-force participation. *Prescott (2004)* argues that part of the gap in the number of hours worked per employee may also reflect, to a large extent, policy distortions.

In many countries across the euro area high unemployment is accompanied by weak productivity. The main causes for weak productivity, among others, are barriers to competition, reallocation and innovation created by structural policies in labor, product and financial markets. Besides, the differences in resilience in the face of a series of common shocks that the euro area has exhibited are likely to reflect structural policy settings.

According to *Duval and Elmeskov (2006)* there are arguments for EMU both strengthening and weakening incentives for structural reforms. As regards strengthening incentives, the argument is that in a monetary union, monetary policy is no longer available to the member countries, in order to respond to asymmetric shocks. Therefore, incentives should become stronger to undertake



such reforms. Furthermore, increased mobility of capital - due to the fact that the common currency lowers the costs of capital mobility - could strengthen tendencies for countries to engage in a game of competitive reforms, in order to attract inflows of capital. Additionally, reduced costs in trade and greater transparency could strengthen product market competition and consequently, reduce the size of product market rents in EMU. Hence, the resistance to reforms may become smaller.

On the side of weakening incentives, the argument is that with a common currency the up-front costs of these reforms may be larger. The structural reforms expands potential output, however, is not accompanied by an expansion in aggregate demand. In a monetary union, the main mechanism for the added supply is a lower real exchange rate brought about by an extended period of slack and associated weak inflation. The up-front costs of these reforms may raise even more in large, than in smaller and more open economies. Moreover, structural rigidities have the tendency to create inflation biases, as policymakers try to beat unemployment. In a monetary union, structural reforms is unlikely to affect inflation biases and therefore the country's incentive for reforms is smaller than with an autonomous monetary policy, as argued by *Calmfors (2001)*. At last, in a monetary union, structural reforms could not reduce the currency premium of the individual countries. However, default risk premia could be reduced, but these do not seem to exist, in practice. Therefore, under a monetary union, the gains from reforms in terms of lowering risk premia seem to be lower.

*Duval and Elmeskov (2006)* by using OECD (Organization for Economic Co-operation and Development) annual databases on labor market reforms and product market regulations have tried to review progress in labor and product market reforms over the 1994-2004 period.

With regard to the labor market reforms over the entire period 1994-2004, the aggregate results suggest that, on average, the propensity of carrying out labor market reforms has been greater in the euro area compared to that of other OECD countries. The advent of EMU did not seem to coincide with an acceleration of reforms, as shown by the lower average reform intensity in EMU countries over 1999-2004 compared to 1994-1998 period. This may reflect the limited political capital some national governments were left with after a period

of fiscal adjustment, in order to fulfill the EMU criteria. Nevertheless, this slowdown was not observed in non-EMU EU countries and it was less pronounced in other OECD countries. However, one can not exclude that the high reform intensity that was observed in the EMU countries over the 1994-1998 period was fostered by expectation effects of the Union.

Labor market reforms that implemented during the 1994-2004 period have been quite deeper in some policy areas than in others; however, signs of systematic divergences in reform “profile” between EMU countries are not very robust. In particular:

- Reforms have been more modest both in the areas of employment benefits and employment protection legislation, where political resistance is greater. In these areas, reform intensity in EMU countries appears to be in line with the OECD average.
- The area of retirement systems usually exhibits strong resistance to reform. However, EMU countries have made more progress compared to OECD countries, on average, reflecting the more urgent need for reform, due to the ageing population within the euro area.
- A number of EMU countries, relative to the OECD average, have pursued both extensive and comprehensive reform strategies, whereas only few have confined themselves to reforms covering a small number of areas.
- Reform patterns within the euro area exhibit lack of relationship with initial conditions. The euro area countries, where reforms are most needed have not necessarily acted more strongly and vice versa. On the contrary, structural policies in other OECD countries appear to have been more responsive to needs for reform.
- The absence of monetary policy autonomy seems to be associated with lower structural reform activity – at least in large and more closed economies. Large countries that are participating in exchange rate arrangements, which constrain their monetary policy autonomy, have the tendency to undertake fewer reforms compared to other countries. This is consistent with larger countries having a greater need for monetary accommodation of structural reforms while this accommodation, for small and open economies, to a larger extent occurs through changes in net trade; therefore, incentives to undertake reforms are stronger. This finding

is consistent with the evidence that reforms in the small and open economies not only have been more intensive but also more radical.

As regards product market reforms over the period 1994-2004 the aggregate results point out that the reduction of regulatory impediments to competition in the product market was larger within the euro area compared to other OECD countries; something, that is offsetting, considerably, EMU's stricter initial policy stance. There has been some convergence within the euro area, with greater deregulation occurring in the most regulated countries. On the other hand, regulatory reform has proceeded in line between EMU and non-EMU EU countries, even though the non-EMU EU countries started from a more liberal position. However, this may reflect to a greater extent the EU integration process, than EMU.

In the end, there is uncertain evidence that the reduction of regulatory impediments to competition in the product market could pave the way for reforms in the labor market, subsequently. If this was to hold, EMU could facilitate the implementation of reforms in the labor market to the extent it boosts economic integration and competition in the product market. In fact, several countries that have proceeded in labor market reforms since 1999 had earlier liberalized their product markets. This is suggested by the cross-country correlation between the value of the aggregate labor market reform intensity indicator over the sub-period 1998-2004 and the change in the OECD index of product market regulation for non-manufacturing industries over the previous sub-period 1993-1998. Reforms in product market could also generate better conditions to ease employment protection legislation through two other channels: (i) *Koeniger and Vindigni (2003)* argue that product market regulation and employment protection are highly correlated across OECD countries. By using an augmented model of monopolistic competition they did show why in countries with more regulated product markets, incumbent workers prefer to protect jobs relatively more. Product market regulation increases the scope for employment protection because firms can bear the cost of employment protection; therefore, they have a direct impact on overall employment, thereby reducing the incentives for incumbent workers to protect their jobs through strict employment protection legislation. Furthermore, (ii) *Kugler and Pica (2004)*

suggest that product market reforms increase the marginal employment gains that can be expected from less strict employment protection legislation.

In commenting *Duval and Elmeskov (2006)*, *Nickell (2006)* argues that is more likely reforms in labor and product markets to be undertaken in small and open economies than in large ones. Therefore, the advent of EMU had a detrimental impact on the structural reforms process in the larger economies compared to that of smaller and more open economies in Europe. However, this fact should not be over-stressed.

When potential output rises, a negative output gap develops, inflation prospects fall below target, monetary policy is loosened and aggregate demand and output rise to close that gap; hence, both employment and output rise. However, within a currency union, member countries have no control over their monetary policy. The adjustment to the reform depends on the degree of the economy's openness. In a small economy, the fall in inflation leads to a gain in competitiveness. Output and employment are highly responsive to price competitiveness. On the contrary, in a large economy, the response of output to the lowering of inflation and therefore to the improved competitiveness will be very slow. With some additional help from monetary policy instruments, the rise in the potential output would lead, only gradually, into an increase in actual output and employment. Consequently, this clearly reduces the incentive of undertaking structural reforms in the larger member countries of EMU.

The reforms should start in the product market, due to the bigger possibility of suffering less from the EMU problem, compared to reforms in the labor market. Those in the product markets are easier to be pushed ahead, compared to that in the labor markets because they can be introduced initially by supra-national agencies, set up in the EU; therefore, it is easier for these agencies to take the blame. The reforms in the product markets should aim at the increase of the intensity of competition because real benefits start to accrue if only competition can be introduced into the market. The reform would result in lower overall prices and profits, but in higher real wages; in turn, real expenditure could increase in the short-run, because the short-run propensity to spend is higher out of wages than out of profits. Therefore, without any relaxation of monetary policy, employment and output would rise.

According to *Nickell (2006)* we should focus on the big service sectors, such as professional and financial services and retail distribution, in one part due to the fact that they are big, in another part because in these sectors there is less naturally occurring international competition and in a final part because the recent experience in the United States implies that there are substantial productivity gains waiting to be picked up. In addition, another sector where deregulation could yield large benefits is that of job placement. By allowing private placement agencies to operate freely, we could have important benefits to the efficient operation of the labor market, while at the same time enabling the public placement agencies to switch their activities to helping people hard-to-place unemployed individuals into work.

At last, he argues that reforms in the labor market seem to be too difficult to achieve, due to the fact that they are in the hands of national governments; hence there is no agency to be blamed. Unfortunately, there are plenty of examples that governments by undertaking some reforms have worsened the overall employment situation.

In commenting *Duval and Elmeskov (2006)*, *Jimeno (2006)* argues that the most important factors behind structural reforms are characteristics of the political process. On the other hand, at the current stage, external forces, such as globalization and technological changes, or internal forces, such as immigration and demographics, are the main alibis for reforms. Many of the so-called social policies were designed to deal with the social problems of the third quarter of the 20<sup>th</sup> century. However, nowadays the situation is a whole different one.

*Jimeno (2006)*, regarding the deceleration in the process of reforms in EMU countries, argues that he is not completely convinced. Throughout the run-up to EMU the speed of reforms in the labor market seems too low, in the light of the challenges that social policies would have to confront in the near future and the changes in the composition of labor demand and supply that need to be accommodated. On the whole, from the evidence we have on product and labor market reforms within the euro area, the euro area is moving much too slow towards a higher degree of flexibility. However, if reforms follow a gradual process and there are complementarities that make one reform to be the origins of future reforms, it could be too early to have a clear view of the situation in the



labor and product markets. Furthermore, small countries are likely to be undertaking more reforms, because building is easier in these countries and in addition, the notion of competitiveness is more firmly built-in in social attitudes that raise public awareness of the need of structural reforms. Furthermore, *Jimeno (2006)* argues that he is not convinced by the main result of *Duval and Elmeskov (2006)* that not having an independent monetary policy is an obstacle for implementing structural reforms. In order to be certain about the negative effect of the lack of independent monetary policy on the implementation of the structural reforms, he argues that further analysis should be needed. Whatever the case may be, structural reforms both in labor and product markets in EMU countries should accelerate.

*Van Poeck and Borghijs (2001)*, by covering the areas of wage formation, tax wedges, job protection, unemployment benefits, active labor market policies and working time arrangements, found that the average follow-through rate is the same in EMU and non-EMU countries. However, EMU countries have lower employment compared to that of non-EMU countries and hence being in greater need for reforms. Furthermore, they found a positive correlation between the follow-through rate and initial unemployment, in the non-EMU countries, while in EMU countries this relationship does not exist.

*Bertola and Boeri (2001)*, by considering only reforms to cash transfers to people of working age and to job protection, found that reforms accelerated more within the euro area than outside the euro area since the early 1990s, especially in the field of unemployment benefits.

*Blanchard and Giavazzi (2003)* argue that product market deregulation and enhanced competition would result in weakening of the bargaining position of the labor unions; hence, a reduction of its inside power would eventually lead to labor market deregulation.

*Saint-Paul and Bentolila (2000)* argue that the impact of EMU on reform incentives varies across different situations. The loss of monetary policy discretion at the country level lowers the incentive for large-scale reforms. On the other hand, they claim that EMU increases the incentives for taking over small-scale reforms, within the euro area.

*IMF (2004)* did find that EU membership is associated with faster moves towards liberalization of product markets. However, it is not clear, whether this

is an effect of EMU or preparatory policies for EMU. As regards reforms in labor market, EU membership is associated with greater reform in some specifications. On the other hand, it is associated with less reform in other specifications; though, more significantly. At last, positive spillovers have been observed between structural reforms in different areas.

*Herbert Grubel (2005)* suggests that the lower interest rates and costs of capital experienced in the euro zone will eventually result in capital deepening and higher labor productivity.

*Bayoumi and Eichengreen (2003)* argues that because of the labor mobility that is much greater between regions of the same country than they are between the euro zone countries, economic shocks will lead to problems in Europe, sooner or later.

*Otmar Issing (2006)* claims that one important factor behind the relatively low price flexibility is low wage flexibility, which ensures that the adjustment process induced by a negative shock is less likely to lead to sustained adverse changes in economic fundamentals. The degree of flexibility in the labor markets remains limited, still. Real wages adjust much more slowly to economic shocks in EMU compared to the adjustment in the United States.

Furthermore, labor mobility could alleviate some of the problems that are associated to this low flexibility. This mobility, in addition, could reduce the need to alter real factor prices between countries. The empirical data given by OECD (1999) suggest that labor mobility is 2-3 times lower in Europe compared to the US. Labor mobility in EMU is relatively low. This fact applies even to inter-regional and occupational mobility within the European Monetary Union countries. However, a large-scale migration is a less likely response to economic shocks due to cultural diversity and various barriers that still exist in the EMU.

At last, from the empirical evidence we can assert that the product and labor markets reforms are moving very slowly towards a higher degree of flexibility.

However, since EMU exists for only a short period of time, it is rather difficult to draw firm conclusions as to its impact.

## **8. THE EXTERNAL ENVIRONMENT OF THE EURO AREA**

The global economy continues to expand at a quite robust pace. However, growth appears to have moderated somewhat in the second quarter of 2006. In particular, there is some evidence of a slowdown in the United States economy, mostly as a result of lower private consumption and fixed investment spending. At the same time, the expansion in Asia appears to remain robust, with the growth of the Chinese economy increasing in the second quarter. Annual growth in industrial production in the OECD countries (excluding the euro area) has moderated to some extent in April, to 4,30%, with survey evidence suggesting some further moderation thereafter.

With reference to price developments, annual consumer price inflation has remained highly influenced by energy price changes. For the OECD countries, the annual rate of change in the Consumer Price Index (CPI) increased to 3,10% in May, from 2,70% in April. Survey evidence suggests that input price pressures in both the global manufacturing and services sectors have increased over recent months.

On the whole, the outlook for the external environment, and therefore for foreign demand for goods and services from the euro area, remains favorable. However, the six-month rate of change in the OECD's Composite Leading Indicator in May signals some moderation in the global growth momentum going forward, notably in the United States and Canada, while the rate of change in Japan has remained rather constant. The risks to the outlook remain tilted to the downside. In particular, the risks stem from oil prices have been brought into sharper focus once again, due to the heightened geopolitical tensions in the Middle East. The recent increases in consumer prices in many OECD countries and the rise in input prices underline inflationary risks related to oil price increases in the context of high capacity utilization levels. The persistence of global economic imbalances continues to pose downside risks.

## **9. THE RECENT DEVELOPMENTS IN ECONOMIC AND FINANCIAL ENVIRONMENT OF THE EURO AREA**

The creation of an economic area with a single market and the introduction of a common currency have set in motion several new developments. However, we have to be very careful when we assess the whole situation, regarding the effects of the single currency in the euro area economy, because we are dealing with an environment that is rapidly changing. Furthermore, we have to keep in mind that the introduction of the single currency took place only in 1999; hence the full effects of its introduction may take some time to unravel.

*Jean-Claude Trichet (2006)* argues that the euro area, the last few years, has witnessed a gradual recovery in its economic activity. That recovery has led to ongoing growth rates that seem to be close to European Central Bank's estimates of the euro area economy's potential growth rate.

There is some evidence that there may have been a decline in trend potential output growth compared to most of the 1980s and 1990s, if we take a longer-term perspective. The trend potential output growth seems to be closer to the lower bound of the ECB's estimated range of 2,00-2,50%. The most important factor behind that decline is the labor productivity growth's sustained decline within the euro area. To be more specific, the labor productivity growth (per hour worked) was 2,40% from 1981 to 1990 and fell to 1,30% over the 1996-2004 period.

The most important factor that lies behind the moderate growth is the structural rigidities in the factor and product markets. Even though labor and product markets have become more flexible, more improvements are needed.

Another factor that is likely to explain this decline in potential output growth is the increases in energy prices that have emerged over the last few years. However, the euro area economy has shown some resilience in these strong increases, due to i) the reallocation of resources in the euro area economy, as an impact of the improvements in the labor and product markets and ii) the decline of euro area economy's oil dependency.

Other recent important developments within the euro area are the following. Intra and extra-euro area trade in goods have experienced a considerable increase since the introduction of the single currency. Exports and imports of

goods in the euro area have increased from about 26,50% of GDP in 1998 to 31,00% in 2005. This may be to a degree related to the euro and the increased price and cost transparency, which have promoted cross-border trade. Furthermore, extra-euro area trade in goods have experienced an increase from 24,00% of GDP in 1998 to 30,00% in 2005, mainly due to more sustained growth in world GDP, increase in the global trade integration and a very large increase in trade with the ten new member states of the European Union. These developments in trade provide evidence that the integration in Europe and the global integration are complementary. Additionally, exports and imports of services within the euro area have increased from about 5,00% of GDP in 1998 to 6,50% in 2005; extra-euro area trade in services have experienced an increase from 7,50% of GDP in 1998 to 9,50% in 2005. The trade in services may rise even more by the time the single market for services is completed. In addition, intra-euro area trade in the sector of financial services has experienced a growth as rapid as extra-euro area trade. The sectors of computer and information services were also extremely dynamic.

On the subject of investment growth, some significant improvements have occurred during 2005; from only 0,10% in the first quarter, it reached 0,90% in the second quarter and finally it climbed up to 1,30% in the third quarter of 2005. In addition, the medium and longer-term interest rates have been low, at historically levels. The firms within the euro area, by taking advantage of the favorable environment have made some balance sheet restructuring, in order to improve their earnings.

Foreign Direct Investments (FDIs) in the euro area have also experienced a significant increase. Over the 1998-2004 period, total Foreign Direct Investments have increased by 180,00% in nominal terms, while cumulated total FDIs now account for about 24,00% euro area GDP. At the same time intra-euro area Foreign Direct Investments have increased by 240,00% and now account for almost 50,00% of the total FDIs.

As regards financial markets, the single currency has played a catalyzing role. In particular, the cross-country standard deviation of EONIA (euro overnight index average) and EURIBOR (euro interbank offered rate) – 1 month and 12 month – lending rates among euro area countries since the introduction of the euro has remained low at 1-2 basis points; the EONIA lending rates were



higher than 130 basis points and the EURIBOR lending rates were higher than 100 basis points (1 month) and 50 basis points (12 month maturity) in January 1998.

The corporate bond market within the euro area has grown considerably, as well; however, its volume for bonds issued by non-financial corporations is three times smaller, compared to that in the United States. Additionally, equity markets in the euro area are integrating rapidly. The “*home biases*” in the equity holdings of institutional investors have been reduced, mainly due to the reduction or even elimination of some costs. The share of intra-euro area allocation have increased by 10,00% for equity portfolios and by about 25,00% for fixed income portfolios, for the period of 1997-2003. However, there is potential for further integration in the euro area’s equity market.

Additionally, the securities issued by non-monetary financial institutions of another euro area country accounted for about 16,00% of the securities held by euro area MFIs; nowadays, this share has reached to the level of 40,00%.

On the other hand, the situation in the banking sector is somewhat different; banking sector is integrating very slowly. The cross-border activity within the euro area is limited. Consolidation in the banking sector is mainly due to the domestic mergers and not to the cross-border banking mergers.

The European Central Bank, in order to help the financial integration within the euro area, is undertaking some initiatives, along with the Eurosystem. These initiatives are:

- Short-Term European Paper (STEP), in order to promote the convergence of market standards and practices in short-term securities market of the euro area.
- Single Euro Payments Area (SEPA), in order to help the retail payment services market to get integrated.
- TARGET2 (Trans-European Automated Real - Time Gross Settlement Express Transfer) System, which is the new payment platform.

The success of the Eurosystem’s monetary framework has resulted to expected inflation levels that are in line with ECB’s definition of price stability. This fact has allowed nominal and real medium and long-term market interest rates to contribute to favorable conditions for sustainable growth.

The first years since the beginning of the European Monetary Union, with regard to the monetary policy, have been dominated by the existence of substantial and extended upward price shocks. The strongest impact, among others, came from a sharp increase in energy prices, which was a significant shock, because the developments in oil prices posed upside risks to inflation and downside risks to growth.

Obviously, these factors were beyond European Central Bank's control. The Governing Council decided to make some interest rate adjustments that have been made gradually. These revisions of its key interest rates have been made to address upside risks to price stability over the medium to longer-term, in order to avoid frequent shifts and quick reversals in the European Central Bank's monetary policy stance (see Table 1). In particular, ECB took the decision, in December 2005, to increase the key interest rates, by 25 basis points, from 1,00% to the level of 1,25%, since its last revision that took place in June 2003. Additionally, ECB decided to proceed to an increase of its rates, by 25 basis points, from 1,25% to the level of 1,50%, in March 2006, followed by an additional revision by another 25 basis points, from 1,50% to the level of 1,75%, in June 2006. Furthermore, at its meeting on 3 August 2006, the Governing Council decided to increase the minimum bid rate of the main refinancing operations of the Eurosystem by 25 basis points to 3,00%, with effect from 9 August 2006. The interest rates on the marginal lending facility and the deposit facility were also increased by 25 basis points to 4,00% and 2,00% respectively. This European Central Bank's decision of revising its rates will contribute to ensuring that medium to longer-term inflation expectations in the euro area remain solidly anchored at levels consistent with price stability. Such anchoring of inflation expectations is a prerequisite for monetary policy to make an ongoing contribution towards supporting economic growth and job creation within the euro area. However, even after this increase, the key ECB interest rates remain low in both real and nominal terms, money and credit growth remain strong, and liquidity in the euro area is ample by all plausible measures; therefore ECB's monetary policy continues to be accommodative.

The following table reports the results of the ECB Survey of Professional Forecasters for the third quarter of 2006, conducted between 17 and 22 July 2006. The SPF gathers information on expectations for euro area inflation, real GDP growth and the unemployment rate from experts affiliated to financial or non-financial institutions based in the European Union. It is important to stress the fact that, given the diversity of the panel of participants, aggregate SPF results may reflect a relatively heterogeneous set of subjective views and assumptions.

Results from the SPF, Consensus Economics and the Euro Zone Barometer						
(annual percentage changes, unless otherwise indicated)						
	Survey horizon					
	2006	June 2007	2007	June 2008	2008	Longer term <sup>2)</sup>
<b>HICP inflation</b>						
2006 Q3 SPF	2.3	2.1	2.1	1.9	1.9	1.9
<i>Previous SPF (2006 Q2)</i>	2.1	-	2.1	-	-	1.9
Consensus Economics (July 2006)	2.2	-	2.1	-	-	1.9
Euro Zone Barometer (July 2006)	2.2	-	2.1	-	1.9	1.9
<b>Real GDP growth</b>						
2006 Q3 SPF	2.2	2.0	1.8	1.9	2.0	2.1
<i>Previous SPF (2006 Q2)</i>	2.1	-	1.9	-	-	2.1
Consensus Economics (July 2006)	2.2	-	1.8	-	-	1.9
Euro Zone Barometer (July 2006)	2.2	-	1.8	-	1.9	1.9
<b>Unemployment rate<sup>1)</sup></b>						
2006 Q3 SPF	7.9	7.7	7.7	7.5	7.5	7.0
<i>Previous SPF (2006 Q2)</i>	8.1	-	7.9	-	-	7.2
Consensus Economics (July 2006)	8.0	-	7.7	-	-	-
Euro Zone Barometer (July 2006)	8.0	-	7.8	-	7.7	7.3

1) As a percentage of the labour force.  
2) In the current SPF round longer-term expectations refer to 2011. In the previous SPF round and the Euro Zone Barometer, longer-term forecasts refer to the year 2010. The Consensus Economics projections refer to the period 2012-16 (data published in the April 2006 Consensus Economics Survey).

With regard to the inflation expectations for 2006, 2007 and 2008, the average annual HICP inflation is expected to stand at 2,30% in 2006, which is an upward revision by 0,20% compared with the previous SPF round. Inflation is forecasted to slow down to 2,10% in 2007 (unchanged from the previous round) and further to 1,90% in 2008, as SPF participants assume that the moderate wage developments will continue. This outlook is expected to be largely shaped by oil price developments that appear to be the most important source of upward risk, particularly in 2006 and 2007, also reflecting a potentially stronger pass-through to domestic prices. However, their impact might be partly offset by a firmer euro exchange rate and some slowdown in growth. Moreover, some respondents clearly argued that they do not see a risk of second-round effects, and consider contained wage growth as having an offsetting impact on inflation. SPF inflation expectations are generally in line with the most recent

estimates from Consensus Economics and the Euro Zone Barometer. Additionally, SPF participants were also asked to assign a probability distribution to their forecasts. This distribution provides information on the probability, expressed as a percentage, of the future outcome being within a specific interval. The probability distribution resulting from the aggregation of responses also helps to assess how, on average, survey participants measure the risk of the actual outcome being above or below the most likely range. The results show that the balance of risks clearly shifted towards higher outcomes in the latest SPF survey. On average, survey participants now believe that there is a probability of almost 90,00% that inflation will be at or above 2,00% in 2006 on average, compared with 60,00% in the SPF round conducted in the first quarter of 2006. For 2007, the aggregate probability associated with inflation being at or above 2,00% also increased to around 70,00%, compared with somewhat above 50,00% in the first survey round of this year.

With reference to the indicators of longer-term inflation expectations, the inflation expectations five years ahead (for 2011) have remained unchanged at 1,90% for the 19<sup>th</sup> consecutive SPF round. These expectations are in order with the most recent estimates from Consensus Economics for six to ten years ahead, and with those for 2010 published in the July 2006 Euro Zone Barometer. Compared with the previous SPF round, the probability distribution assigned to longer-term inflation has shifted slightly back towards lower outcomes. In line with this, the probability that inflation may stand at 2,00% or above in the longer term fell back to 43,50%, after having risen to 47,30% in the previous round, suggesting some easing in the assessment of the perceived risks to longer-term inflation. SPF survey results can also be compared with the break-even inflation rate, which is an indicator of longer-term inflation expectations among market participants calculated as the yield spread between nominal and inflation-linked bonds. The increasing offering of index-linked bonds across the euro area allows the calculation of constant-maturity break-even inflation rates, which facilitates the comparison of break-even inflation rates and survey measures of longer-term inflation expectations. The five-year forward break-even inflation rate five years ahead has remained broadly stable since April 2006. Likewise, the ten-year break-even inflation rates derived from the French government inflation-linked maturing in 2015 remained broadly

unchanged over the same horizon. However, developments in break-even inflation rates may partly reflect varying uncertainty among investors about future inflation and a resulting willingness to pay a varying premium for a hedge, due to the fact that break-even inflation rates may also include various risk premia.

Regarding the real GDP growth expectations, they have been revised upwards by 0,10% for 2006 compared with the previous SPF round to 2,20%. This upward revision mainly reflects perceptions of a more positive external environment, which should support exports and domestic demand, especially private consumption and investment. Regarding the external environment, forecasters mentioned that the global economy is expected to remain robust in 2006 and to support euro area investment and exports. In 2007 and 2008 real GDP growth is then expected to decline slightly to 1,80% and 2,00% respectively, mainly reflecting high oil prices and a slowdown in the global economy. While in 2006 the balance of risks is assessed to be broadly neutral, in 2007 and 2008 survey participants perceive them to be more on the downside. These expectations for 2006, 2007 and 2008 are broadly in line with those from Consensus Economics and the Euro Zone Barometer. Longer-term growth expectations (for 2011) remain unchanged at an average of 2,10%. According to most forecasters, longer-term growth prospects largely depend on further structural reforms in the labor markets and social security systems. They generally expect that more flexible and efficient markets will lead to higher labor productivity and higher growth. Longer-term growth expectations have not only declined gradually from levels at around 2,50% in 2001 but have also become more heterogeneous. Though, the downward movement of both the 25<sup>th</sup> (lower quartile) and 75<sup>th</sup> percentiles (upper quartile) of the responses indicates that this more pessimistic assessment is relatively widespread. In addition, the median has been stable and somewhat lower than the mean in the last five SPF rounds, thus suggesting that at the current moment a large number of respondents have more pessimistic expectations about longer-term growth performance.

With reference to expectations for the unemployment rate within the euro area for 2006 and 2007, they have been revised down from the previous round by 0,20% to 7,90% and 7,70% respectively. The downward revisions are mainly



explained by improved economic conditions in 2006 and the positive impact of recent labor market reforms in both 2006 and 2007. On the other hand, some downward revisions could have also played a role. The unemployment rate is expected to continue to decline, to 7,50% in 2008 and 7,00% in 2011. Respondents continue to stress that the decline in the unemployment rate over the longer-term horizon is dependent on further labor market reforms; hence, in the absence of such reforms the unemployment rate will be higher than forecasted.

According to data that have published in the *European Central Bank's monthly Bulletin of August 2006*, we can focus on the following:

On the subject of money growth, there is some moderation in the annual growth rate of M3; however, these latest developments remain consistent with a persistent upward trend in the underlying rate of monetary expansion since mid-2004. In June 2006 annual M3 growth decreased to 8,50%, from 8,80% in the previous month, but however remained strong. Moreover, liquidity within the euro area remains ample. The low level of interest rates continued to be the most important driving force behind the strength of MFI loans to the private sector in June, which accounts for the still strong annual growth rate of M3. On an annual basis, loans to the private sector as a whole have continued to increase at double digit rates over recent months, with borrowing both by households and by non-financial corporations rising rapidly. Ongoing strong lending to households continues to be explained by borrowing for house purchases. At the same time, developments in longer-term financial liabilities had a stimulative effect on annual M3 dynamics in June, although this was partly offset by the moderating impact of the declining annual flows in the net external asset position of the MFI sector. In addition, developments in sectoral money growth can be related to the standard money demand framework, but also suggests that the relative importance of the different forces driving M3 growth varies across sectors.

Summing up, the low level of interest rates continued to be a key factor driving underlying monetary and credit dynamics. Strong money and credit growth in a context of already ample liquidity point to upside risks to price stability over the medium to longer term, particularly in an environment of improved economic outlook and robust housing market dynamics.

On the topic of securities issuance, the annual growth rate of debt securities issued by euro area residents continued to be robust, in May 2006. Underlying this development was the relatively strong annual growth of debt securities issued by non-monetary financial corporations and, to a smaller extent, MFIs. Simultaneously, the annual growth rate of debt securities issued by non-financial corporations increased somewhat from the very low levels observed in previous months. The annual growth rate of quoted shares issued by euro area residents rose slightly but remained at a subdued level.

Regarding the money market interest rates, they have increased across the whole maturity spectrum. As a result, the slope of the money market yield curve flattened to some extent over the month. Over the period from the end of June to early August, money market interest rates rose, with the largest rises observed at the short end of the maturity spectrum.

With reference to the bond markets, long-term government bond yields declined slightly in the euro area and the United States between the end of June and early August. Somewhat, these declines might be attributed to portfolio shifts from stock to bond markets, mostly due to the heightened tensions in the region of Middle East.

As regards interest rates on loans and deposits, in May 2006, most Monetary Financial Institutions rates continued their upward trend while remaining at a relatively low level.

On the topic of equity markets, quite large fluctuations were observed in global stock prices in July. The first few weeks of the examined period were dominated by heightened risk aversion among investors due to the wake of heightened tensions in the Middle East, which put forth downward pressure on stock prices. However, stock prices rebounded subsequently, reflecting, among other things, the ongoing strength of actual and expected corporate profitability.

On the topic of prices, according to Eurostat's flash estimate, annual HICP inflation was 2,50% in July 2006, unchanged for the third consecutive month. However, this development masked divergent movements among HICP components, with a fall in the annual rate of change in energy prices and increases in the rate of change for most of its components. In the second half of 2006, and on average in 2007, inflation rates are expected to remain above 2,00%; the exact inflation rate levels are depending hugely on future energy

price developments. Evidence on the emergence of indirect effects of higher commodity prices at the producer and the consumer level has become increasingly obvious over recent months, and further gradual pass-through effects can be expected. As regards domestic cost pressures, recent labor cost indicators suggest that wage pressures remained moderate in the period up to the first quarter of 2006. Furthermore, the whole picture emerging from the latest developments in labor cost indicators for the euro area is still in line with the assessment of moderate wage developments up to the beginning of the current year, at a level of around 2,00%.

While the moderate evolution of labor costs in the euro area is expected to continue in indirect effects of past oil price increases and already announced changes in indirect taxes are expected to exert a significant upward effect on inflation in the course of next year. Against this background, it is crucial that the social partners continue to meet their responsibilities.

Risks to the outlook for price developments have augmented and include further increases in oil prices, a stronger pass-through of past oil price rises into consumer prices than currently anticipated, additional increases in administered prices and indirect taxes, and – more fundamentally – stronger than expected wage and price developments owing to second-round effects of past oil price increases at a time of gradually improving labor markets. Regarding prospects for inflation over medium to longer horizons, the Governing Council's estimation that upside risks to price stability prevail is confirmed by the monetary analysis. However, the upward impact seems to be rather limited, compared to previous increases. Although the impact of oil prices rise on inflation was dampened by the euro's appreciation, annual HICP inflation remains slightly above the upper limit of the Central Bank's definition of price stability (see Chart 2).

As regards industrial producer prices, in June 2006, the annual rate of change in industrial producer prices (excluding construction) fell back slightly to 5,80%, from 6,10% in May, but remained at a quite high level. Moreover, as indicated by a rise in the annual rate of change in producer prices excluding construction and energy to 3,00% in June, up from 2,70% in May, there was a further increase in underlying price pressure in the manufacturing sector. The latter development reflects commodity and associated import price increases as well as the increasing pricing power of firms.

With regard to euro area real GDP growth in the first quarter of 2006, it was mostly based across sectors. Available survey indicators point to ongoing robust growth in both the industrial and services sectors in the second quarter of 2006 and at the start of the third quarter.

In addition, the common currency continued to trade within a narrow range in effective terms in July and early August, remaining generally unchanged from its level at the end of June.

On the subject of balance of payments, the most recent data show a slowdown in growth for both imports and exports on a three-month moving average basis. In May 2006, the 12-month cumulated current account registered a deficit, compared with a surplus a year earlier. This shift resulted mostly from a decline in the goods surplus, largely reflecting the rising cost of oil imports. In the financial account, the net inflows in 12-month cumulated combined direct and portfolio investment have been increasing since the beginning of the year, mostly reflecting increasing net inflows in portfolio investment.

As regards labor market, indicators continue to point to a further improvement of the euro area labor market conditions. In particular, the euro area unemployment rate continued on its declining path observed since mid-2004 in June 2006, decreasing to 7,80%. The number of unemployed persons within the euro area fell in June by about 55.000 but the decline was not as large as in the previous months. In general, these data clearly suggest that additional improvements in euro area labor market conditions should be made.

With reference to employment, it has increased by 0,30% in the first quarter of 2006, unchanged from the fourth quarter of 2005. In particular, employment grew in all sectors except agriculture, with the strongest increases recorded in the services sectors. Employment growth in industry (excluding construction) is remaining unchanged after its continuous decline since 2001. Meanwhile, growth in construction employment was lower than in the fourth quarter of 2005.

Labor productivity growth stood at 1,00% on a year - on - year basis, in the first quarter of 2006, unchanged from the fourth quarter of 2005. Whereas labor productivity in agriculture and the industrial sectors increased in the first quarter, contributing equally to overall productivity growth, labor productivity growth

declined to some extent in the services sector, with non-market related services showing the strongest decrease.

The main indicators of economic activity that have become available since early July have tended to confirm the Governing Council's baseline scenario for economic growth within the euro area. Eurostat's second release verified that, in the first quarter of 2006, real GDP grew by 0,60% on a quarter - on - quarter basis. Economic activity is as well becoming more largely based on domestic demand. Additionally, the available survey information, so far, on economic activity for the third quarter, which is also in line with the Governing Council's baseline scenario, supports the view that economic growth has continued at a sustained pace. Furthermore, the conditions are in place for real GDP in the euro area to grow at around its potential rate, as projected by the Eurosystem in June. Growth in the economies of the euro area's main trading partners is providing ongoing support for euro area exports. Investment growth is expected to continue benefiting from favorable financing conditions, corporate balance sheet restructuring, and improvements in earnings and business efficiency. Consumption growth should continue to strengthen gradually over time, in line with developments in employment growth and hence real disposable income. Risks to the outlook for economic growth are broadly balanced over the shorter term, although recent heightened geopolitical tensions are increasing the uncertainties that the Governing Council is facing. Medium to longer-term risks lie on the downside and relate in particular to the potential for further oil price rises, a disorderly unwinding of global imbalances and protectionist pressures, especially after the suspension of the Doha Round of trade talks. The dynamic growth of money and credit, in an environment of already ample liquidity, points to increased upside risks to price stability at medium-term to longer-term horizons.

Therefore, monetary developments require careful monitoring, particularly in the light of strong dynamics in housing markets. Given strong monetary and credit growth in a context of ample liquidity, a crosscheck of the outcome of the economic analysis with that of the monetary analysis confirms that upside risks to price stability prevail over the medium term. A further adjustment of interest rates was therefore warranted. The Governing Council has helped to anchor medium and long-term inflation expectations at levels consistent with price



stability, hence making an ongoing contribution to sustainable economic growth and job creation. Given that the ECB's monetary policy continues to be accommodative, the Governing Council will continue to monitor very closely all developments to ensure that risks to price stability do not materialize.

With reference to fiscal policies, given the outlook for economic growth, it is of crucial importance that euro area governments avoid pro-cyclical policies and step up the pace of fiscal consolidation. As budgetary targets for the current year are not particularly ambitious, a rigorous implementation of plans on the expenditure side is especially warranted and any additional revenues are best used for deficit reduction. Beyond the implementation of such prudent policies in the remainder of this year, the medium-term focus of fiscal policies should be on correcting the underlying sources of imbalances in public finances. Moreover, euro area governments should take full advantage of the economic environment to bring forward the structural adjustment necessary for the durable correction of excessive deficits, so as to reach their medium-term budgetary objectives at an early stage and thereby prepare public finances for the demographic challenges they must deal with.

With regard to the structural reforms, it is essential to ensure that it has a fully operational Internal Market, allowing a free flow of labor and capital and free trade in goods and services. Removing the remaining barriers within the European Union will be a powerful way to advance the efficient allocation of factors of production as well as deeper economic and financial integration. This in turn, would allow the European Union to realize its substantial potential for stronger output and employment growth and to increase its resilience to shocks. Exploiting the opportunities of the Single Market will help to maintain the prosperity of the citizens of Europe. For those member states, which have fulfilled the convergence criteria laid down by the Treaty and participate in the euro area, the considerable benefits of the Internal Market are further enhanced by the single currency, which offers them a credible framework for monetary policy and price stability in an environment characterized by the absence of exchange rate uncertainty within the euro area, low long-term interest rates, price and cost transparency, reduced transaction and information costs and stronger insurance against economic and financial instability.

In summary, the assessment of recent developments in euro area activity provides further evidence that economic growth has become more broadly based and sustained in the first half of 2006. Improvements in labor market conditions as well as favorable employment expectations support the assessment of ongoing positive developments in private consumption. Short-term risks are generally balanced, while medium to longer-term risks lie on the downside and relate largely to potential further oil price increases.

## **10. LONGER-TERM PROSPECTS FOR THE EURO AREA**

According to *Jean-Claude Trichet (2006)*, the optimal economic management of the euro area needs to reflect the increasing interdependence of economies across the euro area. This can be achieved through three principles, which are the following:

*The first principle* is a rigorous implementation of the Stability and Growth Pact that embody sound fiscal rules. The euro area economy, the last few quarters, has witnessed an improvement of its outlook and has shown, so far, signs of increased resilience. The monetary policy has helped to maintain long-term inflation rates at historically low levels; however, in order to pave the way for sustainable growth, we have to implement reforms that could improve the competitiveness within the euro area along with sound fiscal policies. We have to implement sound fiscal policies, in order, to reduce the risk of fiscal policy externalities and gain flexibility and adaptability. Furthermore, the support of sound fiscal policies creates room for domestic economic management; consequently, this fact leads to stability and sustainable growth. In addition, we have to stress the fact that an inappropriate fiscal policy in one member country of the Union affects other member countries in a direct way, such as the impact on the interest rates throughout the euro-zone if one member-country does not implement a sound fiscal policy. As regards public finances, there is an urgent need for substantial fiscal consolidation in the euro area economy. Compliance with the European Union fiscal framework is critical because of its contribution to the sustainability of EMU's public finances. Any delay of the fiscal consolidation would pose substantial short and longer-term risks throughout the euro-zone.

*The second principle* is a close monitoring of the implementation of structural reforms. However, the modest implementation so far has shown how difficult this task is. These reforms are essential not only to raise factor productivity and potential output, but also to decrease unemployment and to achieve lower prices and higher incomes. Moreover, the implementation of these reforms is urgently needed, in order, to increase economy's resilience and flexibility. In a world of a global financial system and of rapid developments in the emerging economies, it is critical to make euro area economy more flexible, in order to adapt rapidly to the major economic changes that globalization is fostering. A flexible economy is capable of taking all advantages of scientific and technological developments. Euro area economy should increase its flexibility, by speeding up the process of structural reforms, in order to raise the potential output growth rate within the euro-zone. The economic changes that globalization is fostering impose risks. Therefore, it is crucial to prevent these risks from materializing. But if and when they materialize we have to do what is needed to overcome the crisis; hence, euro area economy should have increased vigilance and resilience. A very clear sign of this need is the fact that the potential output growth has moved to the lower bound of the estimated range of 2-2,50%. Structural reforms in the product and labor markets would help to reduce price and quantity distortions and therefore encourage a better allocation of resources; hence, it would make investment decisions more efficient and additionally it would increase productivity and real Gross Domestic Product growth.

*The third principle* is the need for monitoring unit labor costs and national competitiveness indicators to prevent or correct, if they exist, abnormal deviations. In relation to competitiveness, domestic cost developments, as captured by unit labor costs, play a major role in its determination. Unit labor costs reflect wage developments compared to productivity dynamics. Sustained and stronger than average unit labor cost developments in some euro-zone countries could make worse the competitiveness in the euro area, as a whole. Controlling domestic costs, in order to preserve competitiveness, is essential for promoting economic activity and employment within the euro area. However, some dispersion and differentials are expected among the member-countries of

the euro-zone, due to the existence of several parameters that characterize their economies.

## **11. FINAL REMARKS**

In sum, the impacts of the European Monetary Union and the introduction of the euro, as a single currency, can be summarized to the following:

- The common currency has clearly fostered a stable macroeconomic environment in all the member countries of the European Monetary Union.
- The euro is the second most broadly used international currency, behind US dollar and in advance of the Yen. However, a greater role of the euro in international investment is associated with a greater risk and abrupt flows in and out of the common currency, which might lead to higher long-term exchange rate volatility. The historical experience of international currencies, to date, supports the view that the case of catching up with the US dollar is a long-term issue. The euro/dollar exchange rate could either rise or fall due to some currencies adjustments; these adjustments should not be disruptive, in order to avoid a sudden collapse of the US dollar value, which is the basic element of the international monetary system, up to now.
- The transfer of national sovereignty in a supranational institution, such as the European Central Bank, is a major importance contribution to political integration.
- The euro area is not yet an Optimum Currency Area but it scores well in several OCA criteria and it appears to have the potentials to go even better by carrying out some further improvements.
- The Stability and Growth Pact has served as a way of addressing fears that the excessive deficits of euro-zone member countries might put pressure on the European Central Bank to run inflationary monetary policies. The Pact has failed to encourage fiscal stabilization and restraint in euro area, so far. These failures led to negotiations for its reform. The reforms provide greater flexibility in the implementation of the Pact. In spite of its increased flexibility, the ambiguities of the reformed SGP may eliminate the possibility that it will be effectively enforced, eventually. A

possible response to these problems could be the greater enforcement power for the European Commission along with this greater flexibility. However, if and only when Europe will be further politically integrated, there may be a chance to attempt strengthening the enforcement of the Stability and Growth Pact. Although there is an ongoing debate regarding the exact shape of the fiscal restrictions, there is a consensus in favor of the necessity of a fiscal framework in the European Monetary Union. Any undermining of the Stability and Growth Pact, which is a key element of the European Monetary Union's framework, would hamper the current success of the monetary policy.

- Since the beginning of the European Monetary Union the annual increase in the Harmonized Index of Consumer Prices (HICP) was 2,00%, on average, in spite of the existence of substantial and extended upward price shocks for an extended period of time. The strongest impact came from a sharp increase in energy prices, because the developments in oil prices posed upside risks to inflation and downside risks to growth.
- The developments in the long-term interest rates, which reflect the expectations of the market regarding the long-term inflation risks, are another measure of the European Central Bank's monetary policy success. The inflation rates have converged to levels that are consistent with price stability. Inflation dispersion within the euro area declined significantly in the run-up to EMU and has generally stabilized at a low level since the introduction of the euro. Inflation differentials in the euro area are limited, however appear to be persistent. The main sources of persistence are differentials in the growth of unit labor costs, changing profit margins and imperfect competition and associated price rigidities across euro area. There is certain degree of structural diversity in inflation and cost developments within the euro area. This should be corrected; otherwise, it may produce negative effects and externalities for the euro area, as a whole.
- The introduction of the euro has resulted to some significant improvements in investment growth. The euro area firms, by taking advantage of the favorable environment, have made some balance sheet



restructuring, in order to improve their earnings. Furthermore, Foreign Direct Investments in the euro area have also increased significantly.

- Euro area trade integration has augmented without trade diversion. Intra and extra-euro area trade in goods and services have experienced a significant increase since the introduction of the euro. However, there is a strong “*home-country bias*” in trade, in both quantity and price data. These biases could be explained, among others, by the different national currencies; hence, the removing of those currencies by a monetary union contributes to the reduction of the biases. The introduction of the euro has already helped expand cross-border trade and investment in the euro-zone; still, it may take time, more than a decade, to draw firm conclusions as to the effect of the euro to trade.
- The introduction of the euro has played a catalyzing role, as regards financial markets. In particular:
  - The banking sector is integrating very slowly. In particular, integration has been high in wholesale banking and in some areas of corporate finance, whereas only modest in relationship aspects of banking. In contrast, integration has been rather low in retail banking. The cross-border activity within the euro area is limited.
  - The euro area money market is mainly characterized by an extremely large, liquid and highly integrated unsecured deposit market and by a much smaller and less integrated repo market.
  - The euro area government bond market has achieved a high degree of integration, due to the convergence of inflation expectations within the euro area and the disappearance of intra-euro area exchange rate risk. Furthermore, the euro area corporate bond market’s integration degree is considerably high, due to the fact that the issuance country is only of marginal importance in explaining yield differentials. The single currency has resulted in a more stable environment and reduction in variability of the risk premium in the yield curve.
  - The euro area equity market is integrating rapidly; however, still quite fragmented. We can not speak of a single euro area stock market. The “home biases” in the equity holdings of institutional investors have been reduced, mainly due to the reduction or even elimination of some costs.

Nevertheless, the country effect is still too important. However, there is potential for further integration in the euro area's equity market.

- The increased divergence in the growth rates is limited so far and has remained close to its historical average. There were no signs of increased divergence since the introduction of the euro. Moreover, output growth differentials in the euro area appear to have been highly persistent. Dispersion in real GDP growth rates within the euro area reflects two main factors: (i) dispersion of cycles that has steadily declined since the beginning of the 1990s; hence, the degree of synchronization of business cycles within the euro area seems to have increased and (ii) dispersion of trends that has increased since the early 1990s. Differences in trend growth within the euro area can be explained by several structural factors, such as the degree of economic flexibility.
- The changes in industrial concentration and geographical specialization, within the euro area, have been modest, as yet. With regard to the specialization among sectors, the production structure of the euro area countries seems to be more homogeneous, compared to the United States, and relatively stable. However, the life of EMU is too short; consequently, it is rather difficult to draw firm conclusions as to the effect of the euro to specialization.
- Regarding the business cycle synchronization, there is no evidence whether EMU has increased business cycle synchronization across the euro area. Economic theory is not clear on whether economic integration will lead to more or less synchronization of business cycles. In order to assess the issue of cyclical symmetries between euro area countries, we should pay more attention to the role of structural reforms, the sources of growth, and other growth factors. Furthermore, in order to implement a common monetary policy successfully we have not only to achieve the synchronization of the cycles but also the amplitude of the cycles within the euro area. However, the dispersion in amplitude has experienced an increase since the creation of the Union. In the case of increased synchronization of business cycles, it is not clear whether this is due to business cycle across the euro area specifically or due to globalization.

The main factor for the existence of asymmetries across the euro area is the country-specific shocks that have small but persistent effects.

- The level of risk sharing within the euro area has increased since the introduction of the single currency. The possibilities of hedging consumption against country-specific costs have increased since the early 1990s within the euro area, reducing the welfare cost of heterogeneous economic activity. However, the level of risk that is shared in Europe is less compared to the level observed in the United States. The level of risk sharing has increased in the last decade, due to the financial integration. It could furthermore increase by removing the barriers that remain to financial market integration.
- As regards public finances of the euro-zone countries, they are clearly in a better position compared to these of other industrialized countries. The member countries of the euro-zone should implement sound fiscal policies, in order, to reduce the risk of fiscal policy externalities and gain flexibility and adaptability, stability and sustainable growth. Compliance with the European Union fiscal framework is critical because of its contribution to the sustainability of EMU's public finances. Any delay of the fiscal consolidation would pose considerable risks throughout the euro-zone.
- In order to avoid the influence from some macroeconomic shocks the euro-zone countries have to implement structural reforms. These reforms will lead to significant improvement of the growth potential of their economies. Structural reforms are very crucial, due to the risks posed by structural growth weaknesses. In addition, these risks would hinder the success of the monetary policy, in one significant part. Euro-zone countries have undertaken more structural reforms compared to these of the pre-EMU period, but a lot has still to be done. The European Central Bank's monetary policy faces the difficulty of the existing structural rigidities in some markets within the European Union, such as the product and labor markets, which have a long way to walk, in order to fulfill the criteria of the Optimum Currency Area theory. In particular, the structural reforms in product and labor markets are moving very slowly towards a higher degree of flexibility. Larger euro area countries have benefited

more from financial integration but have been slower in conducting the needed structural reforms. They have also been slower in securing these reforms, hence their ability to cope with economic developments is reduced and the net benefits from EMU for the whole euro area are also reduced. However, it is rather difficult to draw firm conclusions as to its impact, since EMU exists for only a short period of time.

- The optimality in economic management of the euro area needs to reflect the increasing interdependence of the euro area economies. This can be achieved through three principles; rigorous implementation of the Stability and Growth Pact; close monitoring of the implementation of structural reforms; and close monitoring of unit labor costs and national competitiveness indicators to prevent or correct abnormal deviations.

In summary, the effects of the EMU on the euro area are beneficial, so far. We have to mention that the benefits of a stable common currency in the European Monetary Union have not been reaped yet, in full. More time is needed for the full effects of the Economic Monetary Union and the advent of the common currency to unfold, in order to draw firm conclusions as to its impact.

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## ANNEXES

### GLOSSARY

This glossary contains selected items that are frequently used in the previous text.

Budget deficit: a shortfall of tax revenue from government spending.

Business cycle: fluctuations in economic activity.

Comparative advantage: the comparison among producers of a good according to their opportunity cost.

Consumer price index (CPI): a measure of the overall cost of the goods and services bought by a consumer.

Debt (financial accounts): loans, deposit liabilities, debt securities issued and pension fund reserves of non-financial corporations, valued at market value at the end of the period.

Debt (general government): the gross debt (deposits, loans and debt securities excluding financial derivatives) at nominal value outstanding at the end of the year and consolidated between and within the sectors of general government.

Debt security: a promise on the part of the issuer (i.e. the borrower) to make one or more payment(s) to the holder (the lender) at a specified future date or dates.

Debt-to-GDP ratio: the ratio of general government debt to GDP at current market prices.

Deficit: the general government's net borrowing, i.e. the difference between total government revenue and total government expenditure.

Deficit ratio: the ratio of the general government deficit to GDP at current market prices. It is also referred to as the budget deficit ratio or the fiscal deficit ratio.

Deflation: a decline in the general price level, e.g. in the consumer price index.

Deposit facility: a standing facility of the Eurosystem, which counterparties may use to make overnight deposits, remunerated at a pre-specified interest rate, at a national central bank.

Direct investment: cross-border investment for the purpose of obtaining a lasting interest in an enterprise resident in another economy.

Economies of scale: the property whereby long-run average total cost falls as the quantity of the output increases.

EONIA (euro overnight index average): a measure of the effective interest rate prevailing in the euro interbank overnight market. It is calculated as a weighted average of the interest rates on unsecured overnight lending transactions denominated in euro, as reported by a panel of contributing banks.

Equities: securities representing ownership of a stake in a corporation. They comprise shares traded on stock exchanges (quoted shares), unquoted shares and other forms of equity.

EURIBOR (euro interbank offered rate): the rate at which a prime bank is willing to lend funds in euro to another prime bank, computed daily for interbank deposits with different maturities of up to 12 months.

Euro area: the area formed by those EU Member States in which the euro has been adopted as the single currency in accordance with the Treaty.

Eurosystem: the central banking system made up of the European Central Bank and the national central banks of those EU Member States that have already adopted the euro.

External trade in goods: exports and imports of goods with countries outside the euro area, measured in terms of value and as indices of volume and unit value.

Fixed rate tender: a tender procedure in which the interest rate is specified in advance by the central bank and in which participating counterparties bid the amount of money they wish to transact at the fixed interest rate.

Free rider: a person who receives the benefit of a good but avoids paying for it.

Gross domestic product (GDP): the value of an economy's total output of goods and services less intermediate consumption, plus net taxes on products and imports. GDP can be broken down by output, expenditure or income components. The main expenditure aggregates that make up GDP are household final consumption, government final consumption, gross fixed capital formation, changes in inventories, and imports and exports of goods and services.

Harmonized Index of Consumer Prices (HICP): a measure of consumer prices that is compiled by Eurostat and harmonized for all EU Member States.

Industrial producer prices: factory-gate prices (transportation costs are not included) of all products sold by industry excluding construction on the domestic markets of the euro area countries, excluding imports.

Industrial production: the gross value added created by industry at constant prices.

Inflation: an increase in the overall level of prices in the economy.

Inflation rate: the percentage change in the price index from the preceding period.

Key ECB interest rates: the interest rates, set by the Governing Council, which reflect the monetary policy stance of the ECB. They are the minimum bid rate on the main refinancing operations, the interest rate on the marginal lending facility and the interest rate on the deposit facility.

Labor productivity: the output that can be produced with a given input of labor. It can be measured in several ways, but is commonly measured as GDP at constant prices divided by either total employment or total hours worked.

M1: a narrow monetary aggregate that comprises currency in circulation plus overnight deposits held with MFIs and central government.

M2: an intermediate monetary aggregate that comprises M1 plus deposits redeemable at a period of notice of up to and including three months (i.e. short-term savings deposits) and deposits with an agreed maturity of up to and including two years (i.e. short-term time deposits) held with MFIs and central government.

M3: a broad monetary aggregate that comprises M2 plus marketable instruments, in particular repurchase agreements, money market fund shares and units, and debt securities with a maturity of up to and including two years issued by MFIs.

Main refinancing operation: a regular open market operation executed by the Eurosystem in the form of reverse transactions. Such operations are carried out through a weekly standard tender and normally have a maturity of one week.

Marginal lending facility: a standing facility of the Eurosystem, which counterparties may use to receive overnight credit from a national central bank at a pre-specified interest rate against eligible assets.



MFIs (monetary financial institutions): financial institutions, which together form the money-issuing sector of the euro area. These include the Eurosystem, resident credit institutions and all other resident financial institutions whose business is to receive deposits and/or close substitutes for deposits from entities other than MFIs and, for their own account (at least in economic terms), to grant credit and/or invest in securities.

Price stability: the maintenance of price stability is the primary objective of the Eurosystem. The Governing Council defines price stability as a year-on-year increase in the Harmonized Index of Consumer Prices (HICP) for the euro area of below 2,00%. The Governing Council has also made it clear that, in the pursuit of price stability, it aims to maintain inflation rates below, but close to, 2,00% over the medium term.

Short-Term European Paper (STEP): an initiative to promote the convergence of market standards and practices in the euro area's short-term securities market.

Single Euro Payments Area (SEPA): a project that aims at the integration of the retail payment services market.

Survey of Professional Forecasters (SPF): a quarterly survey that has been conducted by the ECB since 1999 to collect macroeconomic forecasts on euro area inflation, real GDP growth and unemployment from a panel of experts affiliated to financial and non-financial organizations based in the EU.

TARGET2 (Trans-European Automated Real - Time Gross Settlement Express Transfer) System: the new payment platform for the financial system.

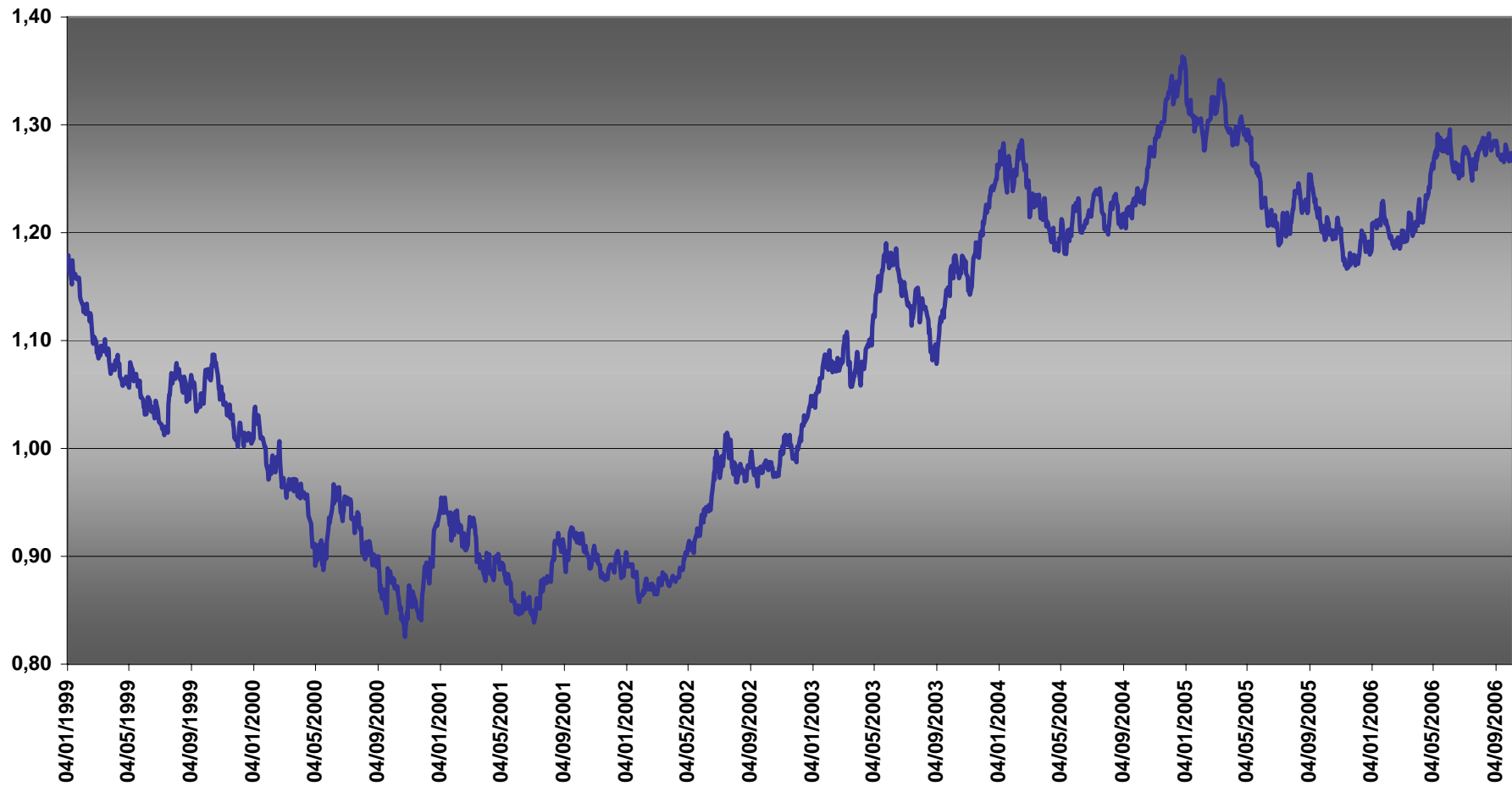
Unit labor costs: a measure of total labor costs per unit of output calculated for the euro area as the ratio of total compensation per employee to labor productivity (defined as GDP at constant prices per person employed).

Yield curve: a graphical representation of the relationship between the interest rate or yield and the maturity at a given point in time for debt securities with the same credit risk but different maturity dates. The slope of the yield curve can be measured as the difference between the interest rates at two selected maturities.

**Table 1 Key ECB INTEREST RATES**

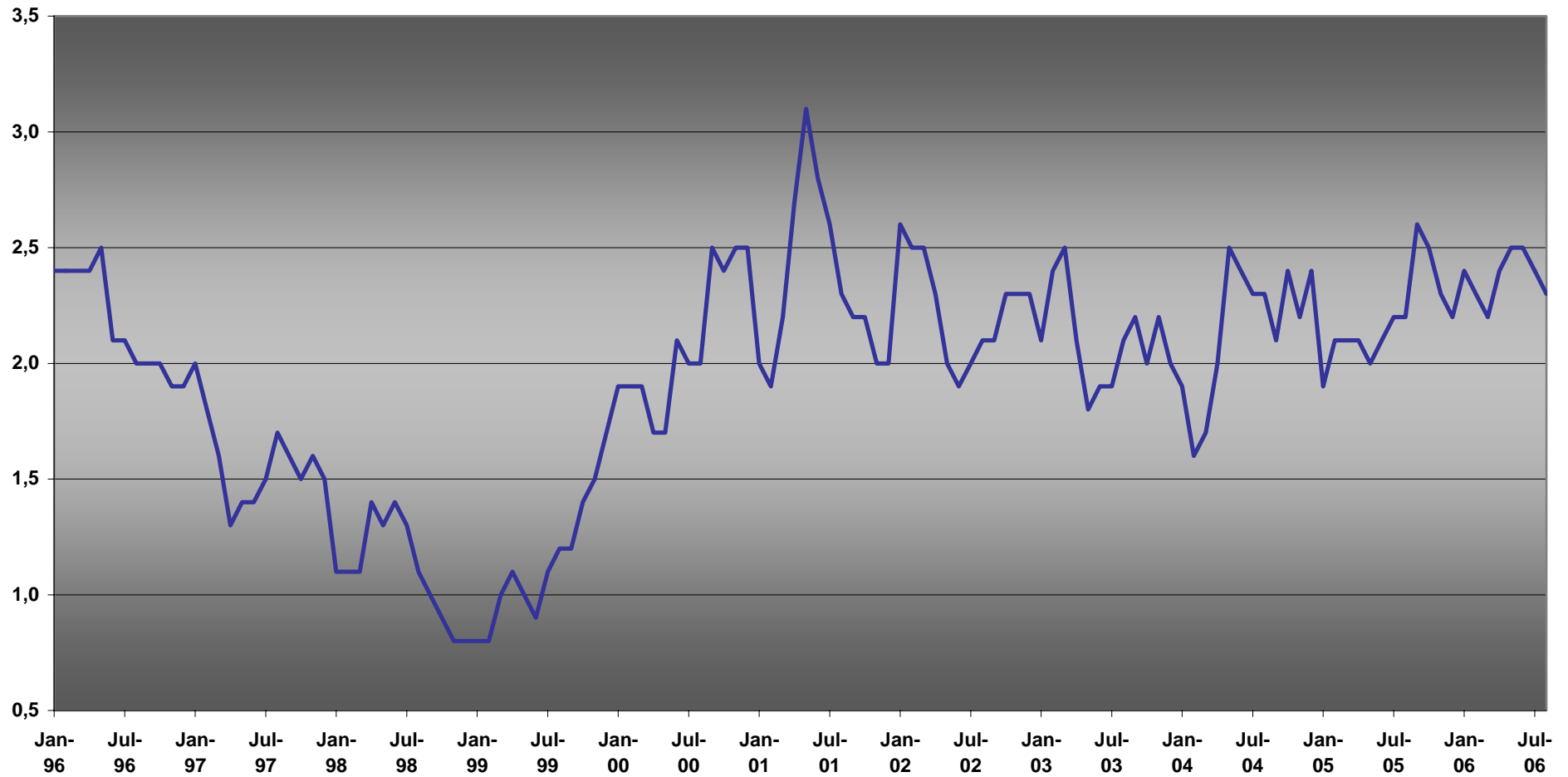
Date	Deposit facility		Main refinancing operations		Marginal lending facility
			Fixed rate tenders	Variable rate tenders	
With effect from		Level	Fixed rate Level	Minimum bid rate Level	Level
<b>2006</b>	09-Aug	2,00	-	3,00	4,00
	15-Jun	1,75	-	2,75	3,75
	08-Mar	1,50	-	2,50	3,50
<b>2005</b>	06-Dec	1,25	-	2,25	3,25
<b>2003</b>	06-Jun	1,00	-	2,00	3,00
	07-Mar	1,50	-	2,50	3,50
<b>2002</b>	06-Dec	1,75	-	2,75	3,75
<b>2001</b>	09-Nov	2,25	-	3,25	4,25
	18-Sep	2,75	-	3,75	4,75
	31-Aug	3,25	-	4,25	5,25
<b>2000</b>	11-May	3,50	-	4,50	5,50
	06-Oct	3,75	-	4,75	5,75
	01-Sep	3,50	-	4,50	5,50
	28-Jun	3,25	-	4,25	5,25
	09-Jun	3,25	4,25	-	5,25
	28-Apr	2,75	3,75	-	4,75
	17-Mar	2,50	3,50	-	4,50
<b>1999</b>	04-Feb	2,25	3,25	-	4,25
	05-Nov	2,00	3,00	-	4,00
	09-Apr	1,50	2,50	-	3,50
	22-Jan	2,00	3,00	-	4,50
	04-Jan	2,75	3,00	-	3,25
	01-Jan	2,00	3,00	-	4,50

### Exchange rate US dollar / Euro



*Chart 1. Daily European Central Bank's spot exchange rates US dollar / Euro (Source: ECB)*

## Harmonized Index of Consumer Prices



*Chart 2. HICP in the euro area (Annual percentage changes; Monthly Data) (Source: ECB)*