Carstensen, Kai; Gern, Klaus-Jürgen; Kamps, Christophe; Scheide, Joachim

Working Paper

Gradual recovery in Euroland

Kieler Diskussionsbeiträge, No. 405

Provided in cooperation with:
Institut für Weltwirtschaft (IfW)

Suggested citation: Carstensen, Kai; Gern, Klaus-Jürgen; Kamps, Christophe; Scheide, Joachim (2003) : Gradual recovery in Euroland, Kieler Diskussionsbeiträge, No. 405, http://hdl.handle.net/10419/3065

KIELER DISKUSSIONSBEITRÄGE

405 KIEL DISCUSSION PAPERS

Gradual Recovery in Euroland

by Kai Carstensen, Klaus-Jürgen Gern, Christophe Kamps, and Joachim Scheide

CONTENTS

- The economic situation in the euro area continues to be weak. In the course of 2003, real GDP has only stagnated. Several factors prevented the expected recovery to materialize. Last year's collapse of stock prices dampened activity, so did the high oil price. In addition, the uncertainty in the wake of the conflict with Iraq had a negative impact on the business sentiment and on consumer confidence. Finally, exports were hit by the strong appreciation of the euro. Since the spring of 2003, leading indicators have improved somewhat, but they do not suggest that economic activity will pick up strongly in the second half of this year. All in all, real GDP growth will amount to just 0.5 percent in 2003 and, thus, remain below the trend rate for the third year in a row.

- In the course of next year, economic activity will accelerate gradually; beginning in the spring, overall capacity utilization will increase again for the first time in three years. One factor supporting the recovery will be exports as growth in the world economy will gain momentum and the dampening factors of the euro appreciation will phase out. Internal demand will be stimulated by low interest rates; investment of firms will pick up, and also consumers will become more optimistic as the labor market situation will slowly improve. For the year as a whole, we expect real GDP to rise by 1.9 percent. Consumer price inflation will remain moderate and be in line with the target of the ECB.

- The European Central Bank (ECB) will leave key interest rates at their low levels for the time being. If the economy starts to recover in the fourth quarter of this year, as we expect, there will be no reason to loosen the policy stance further. The ECB will most likely start to tighten policy when the upswing has gained momentum and capacity utilization has increased considerably. Therefore, it is not likely that interest rates will already be raised next year.

- The budget deficits in most countries will again be higher than anticipated in the national Stability Programs. For the year as a whole, the aggregated deficit in the euro area will rise to 2.6 percent in relation to GDP, compared to 2.2 percent last year. Next year, the stance of fiscal policy will be roughly neutral with differences among the member states.

- The budget situation in Germany is a major cause for concern. Already last year, the deficit exceeded the 3 percent limit of the Stability and Growth Pact (SGP). The same will be true for this year. The current plans for 2004 make it very likely that the deficit will exceed the 3 percent margin once again. A similar scenario can be expected for France, where the announced measures will not prevent the deficit to reach more than 3 percent for the third year in a row.

- Several governments are acting against their own announcements by allowing excessive deficits to persist. That is in clear contradiction to the Broad Economic Policy Guidelines (BEPG), which call for a continuous reduction of structural deficits. By violating these rules and also the commitments made in the context of the Stability Programs, fiscal policy is losing credibility. Should the Stability Pact fail, it would not be because of its "tight rules" but because governments fail to comply with the rules which they have established themselves.

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This report was completed on September 9, 2003, and prepared for the 68th Kieler Konjunkturgespräch (September 22/23, 2003).

Gradual Recovery in Euroland

The economic situation in the euro area continues to be weak. In the course of 2003, real GDP has roughly stagnated. A number of negative shocks has prevented that the expected recovery could materialize. The sharp fall of stock prices dampened economic activity, so did the high oil price. In addition, the uncertainty in the wake of the conflict with Iraq had a negative impact on the business sentiment and also on consumer confidence. Finally, exports were hurt by the sharp appreciation of the euro.

After the end of the war with Iraq there are some signs that the economic situation starts to improve. Stock prices have risen sharply. Since the middle of this year, the confidence of businesses has advanced somewhat; this is due to the fact that the outlook for the world economy has brightened up and that the value of the euro has declined. As important dampening factors lose their impact, the low level of interest rates will show more and more effect; the recovery which will start at the end of this year will accelerate in the course of 2004. However, a strong upswing with a marked increase of capacity utilization is not likely for the forecast horizon. As a consequence, the labor market will improve only slightly next year. Inflation will remain moderate and be in line with the target of the European Central Bank (ECB).

The prolonged weakness of the economy has been a challenge for economic policy in the euro area. The ECB has repeatedly lowered interest rates and thus contributed to a stabilization of the economy. In the monetary policy strategy of the ECB, which has been altered somewhat in the spring of this year, the money stock M3 plays a less important role than previously. This change appears to be adequate because the money demand function has obviously become unstable recently; this is supported by our empirical analysis. As far as fiscal policy is concerned, several governments have left the course of budget consolidation. By moving towards higher structural deficits they obviously hope that they can stimulate economic activity. This claim, however, is questionable. In addition, such a policy is in sharp contrast to the rules of fiscal policy and the repeated commitments at the European as well as the national level. Fiscal policy is losing more and more of its credibility, and this has a negative effect on the economic recovery in the euro area.

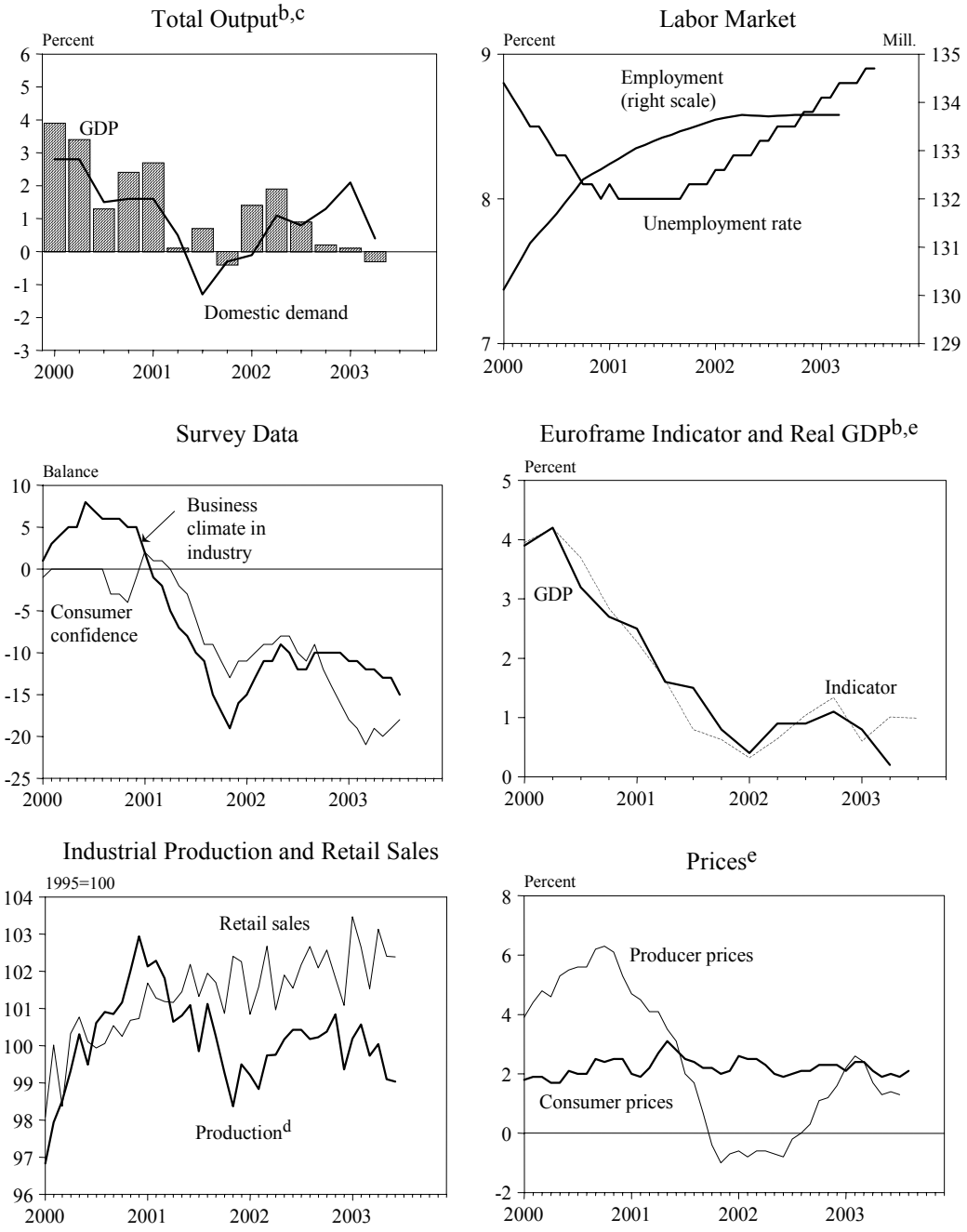
1 Renewed Economic Setback

Economic activity in the euro area has further weakened in the course of this year. The recovery that had materialized in the first half of 2002 lost momentum at the end of last year and came to a standstill in the first half of this year. In the second quarter, real GDP even slightly declined (Figure 1). For two years, economy-wide production has expanded each quarter at a slower pace than potential output. Economy-wide capacity utilization is by now considerably lower than on average. Yet, the extent of underutilization depends on the method that is used in order to estimate potential output (Box 1).

The current period of economic weakness distinguishes itself from previous downturns in two respects. On the one hand, the strength of the downturn is still moderate compared to the recessions in 1974/75, 1980/82 and 1992/93. On the other hand, economic weakness is not—as usually—mainly concentrated in the industrial sector but also extends to the service sector. The sentiment indicators compiled by the European Commission suggest that the downturn in the service sector in the last two years was stronger than in 1992/93, whereas the recession in the industrial sector was considerably milder than ten years ago. Notwithstanding, employment continued to expand in the service sector—albeit at a slower pace —, whereas in the industrial sector it has been declining for the past two years. The number of employed persons in the total economy, that had continued to increase over the past two years, declined in the course of this year. The unemployment rate, which had reached a cyclical

trough in 2001 at 8.0 percent, increased to 8.9 percent in July. Compared with previous downturns the situation on the labor market has only slightly deteriorated.

Figure 1:
Business Cycle Indicators[a] for Euroland



[a]Seasonally adjusted. — [b]At constant prices. — [c]Percentage change over previous quarter (annual rate). — [d]Industrial production without construction. — [e]Percentage change over previous year.

Source: EUROFRAME (2003); Eurostat (2003); ECB (2003d).

Box 1:
On the Level of the Output Gap in the Euro Area

According to the OECD (2003a), which estimates potential output based on a production function approach, the output gap in the euro area amounts to –1.8 percent this year on average.[a] In contrast, own estimates on the basis of an HP filter (Hodrick and Prescott 1997) and on the basis of a band pass filter (Christiano and Fitzgerald 2003) suggest an output gap of only –0.8 percent and –0.6 percent, respectively. The deviation between the OECD estimates and the estimates based on the univariate time series methods are, among other things, due to differences in the underlying concept of potential output. The OECD method is based on a concept, which views potential output as a magnitude that grows comparatively smoothly over time. As a consequence, OECD estimates of the growth rate of potential output for consecutive years hardly differ from each other. According to OECD estimates the average potential-output growth rate in the euro area over the period 1993–2003 was 2.0 percent, with a standard deviation of only 0.1 percentage points. In contrast, the two univariate methods, which are often used in quantitative applications of Real Business Cycle Theory, are based on an alternative concept according to which potential-output growth is far from being smooth over time. Whereas—regarding the average growth rate of potential output—estimates based on the HP filter and on the band pass filter lead to similar results as the OECD estimates, the estimates based on these two methods exhibit a significantly higher standard deviation. The consequences can be seen, for example, in the estimate of potential output for 2003. While the OECD (2003a) estimates the growth rate of potential output in the euro area to be 2.0 percent this year, the HP filter suggests a growth rate of 1.6 percent and the band pass filter even one of only 1.2 percent.

The quantitative differences in the estimation of potential output and, derived from that, in the estimation of the output gap have important implications. The level of the output gap is an important point of reference for stabilization policy, primarily monetary policy. It is generally accepted that monetary policy cannot influence the growth rate of potential output. The role of monetary policy—except the primary goal of maintaining price level stability—rather consists in reducing the fluctuations of real GDP around its growth path. These two roles of monetary policy, for example, find expression in the Taylor rule, in which the output gap is one of the determinants of the nominal interest rate set by the central bank.[b] Moreover, the output gap plays a central role in the assessment of the fiscal policy. The calculation of structural budget deficits, which serve to gauge the fiscal policy stance, presupposes knowledge of the output gap.

To sum up, the discussed methods may at times lead to very different assessments of the cyclical situation and with that to diverging policy recommendations. Related to the current economic weakness, the OECD estimate points at strongly underutilized capacities in the euro area, while underutilization is only moderate according to the two alternative methods. Yet, all methods agree that economy-wide capacity utilization has markedly decreased over the past three years.

[a]This figure is based on the forecast of the OECD (2003a), which expects real GDP to grow by 1.0 percent in 2003 on average. If, instead, our forecast (0.5 percent) is used in the calculation, the output gap even amounts to –2.3 percent. — [b]Empirical estimates of Taylor rules for Germany also show that the coefficient of the output gap differs for alternative measures of the output gap (Clausen and Meier 2003).

The renewed economic setback since summer 2002 is due to a marked decline in exports. The exports declined at an annual rate of around 4 percent in the course of the first half of 2003. It has to be kept in mind, though, that the trade data published by Eurostat in the national accounts include trade flows between the member countries of the euro area. Calculations of the European Central Bank (ECB 2003d: 36–37) on the basis of trade data that are only partly comparable to those in the national accounts suggest that the deliveries to the United States, the United Kingdom and to Asia declined last fall and winter.[1] This is partly due to the strong appreciation of the euro. In the course of last year, the euro had appreciated 14 percent against the US dollar and 8 percent in real effective terms. In the course of the first half of this year, the euro appreciated another 15 percent against the US dollar and another 8 percent in real effective terms. Domestic demand, which had increased comparatively strongly until this winter, lately showed signs of weakness again. In the second quarter of 2003, private consumption nearly stagnated against the background of the deteriorating situation on the labor market and corporate investment fell in view of the continued decline in capacity utilization.

The increase in consumer prices has calmed down again after an acceleration at the beginning of this year. However, the inflation rate is still surprisingly high measured by the continued economic weakness. In the course of this year, the Harmonized Index of Consumer Prices (HICP) increased at an annualized rate of 1.8 percent. In August, it exceeded its level in the previous year by 2.1 percent. The core inflation rate (HICP excluding energy, food, alcohol and tobacco) this year fell below the 2 percent threshold for the first time since summer 2001, in August it amounted to 1.6 percent. The decline in the core inflation rate is probably mainly due to firms' diminished scope for raising prices against the background of continued economic weakness. Moreover, the appreciation of the euro dampened the increase in import prices.

2 Situation of Public Finances Continues to Deteriorate

Against the background of continued economic weakness the situation of public finances in the euro area further deteriorated in the course of this year. As in the preceding years, budget deficits in the member countries of the euro area will again exceed the targets laid down in the Stability Programs. In 2003 the aggregated budget in the euro area will exhibit a deficit of 2.6 percent in relation to GDP (Table 1), following 2.2 percent last year. The increase in the budget deficit is due to the renewed deterioration of economic activity. Measured by the OECD's estimate of potential output, economy-wide capacity utilization will decrease by 1½ percentage points this year. Assuming an elasticity of the budget balance with respect to the output gap of 0.5 (OECD 1999: 147), the cyclical component of the change in the deficit amounts to around 0.7 percent in relation to GDP. The increase in the actual budget deficit is smaller since fiscal policy is on a slightly restrictive course this year in the euro area as a whole. According to OECD (2003a) estimates, the structural budget deficit goes down in all member countries of the euro area except France and Austria. Yet, the fall in the structural deficit is due to one-off measures in some countries. For example, in the first half of 2003 Italy raised additional revenue equivalent to approximately 0.8 percent of GDP in connection with a large-scale tax amnesty. In the short run, Italy was able to prevent exceeding the threshold of the Stability and Growth Pact thanks to this one-off measure. In the medium run, however, the probability of exceeding the 3 percent threshold increases. As experience shows, frequent tax amnesties—in Italy it was the third amnesty in twenty years—weaken tax honesty. In consequence, tax revenue is lower in the medium run and in the long run than what it would have been without the amnesty.

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[1] These data further suggest that trade across euro-area countries also declined.

Table 1:
Indicators of Fiscal Positions in Euroland, 2001–2004 (in percent of nominal GDP)

	Gross public sector debt				General government balance			
	2001	2002	2003[a]	2004[a]	2001	2002	2003[a]	2004[a]
Germany	59.5	60.8	63.4	65.1	–2.8	–3.5	–3.6	–3.8
France	56.8	59.1	61.5	62.0	–1.5	–3.1	–4.0	–3.7
Italy	109.5	106.7	105.5	104.0	–2.6	–2.3	–2.3	–2.8
Spain	56.9	54.0	52.0	50.5	–0.1	–0.1	–0.6	–0.5
Netherlands	52.8	52.6	53.0	53.0	0.1	–1.1	–2.0	–2.0
Belgium	108.5	105.4	103.0	100.5	0.4	0.0	–0.5	–0.8
Austria	67.3	67.9	68.5	68.5	0.3	–0.6	–1.5	–1.3
Finland	43.8	42.7	41.5	40.0	5.1	4.7	3.0	2.0
Greece	107.0	104.9	103.0	101.0	–1.4	–1.2	–1.0	–0.7
Portugal	55.6	58.0	60.0	60.5	–4.2	–2.7	–3.5	–3.0
Ireland	36.8	34.0	33.0	32.5	1.1	–0.1	–1.0	–1.5
Luxembourg	5.6	5.7	5.7	5.7	6.4	2.6	0.5	0.0
Euroland	69.2	69.1	69.9	69.9	–1.6	–2.2	–2.6	–2.7

[a]Forecast.

Source: Eurostat (2003); own calculations and forecasts.

Next year fiscal policy will be neutral in the euro area. There will be marked differences across individual member countries, though. In the majority of countries the structural deficit will go down slightly, mostly through measures that limit the increase in government spending. In Germany, Finland and Ireland, however, fiscal policy will be expansionary. Yet, it should be taken into consideration that the initial position of these countries is very different. Finland and Ireland have had considerable success with budgetary consolidation in the past ten years. Lately, in both countries the ratio of government debt and GDP was significantly lower than the 60 percent threshold of the Maastricht Treaty. Moreover, since the Finish budget exhibits a surplus and the Irish budget deficit is low, there is little reason to fear that fiscal policy in these two countries will come into conflict with the provisions of the Stability and Growth Pact. The situation is markedly different in the case of Germany. There the budget deficit increased to 3.5 percent in relation to GDP last year and with that exceeded the threshold laid down in the Stability and Growth Pact. Thereupon, the European Commission started the so-called excessive deficit procedure according to Article 104 of the EC Treaty.[2] In accordance with the wording of the Pact, Germany would have to reduce the budget deficit below 3 percent in relation to GDP this year or next year for the latest in order to escape sanctions. In view of available fiscal data for this year and according to the plans of the German government for next year, the necessary reduction in the budget deficit will in all probability not occur. Rather, in the wake of the third step of the tax reform the structural budget deficit will perceptibly increase. As a consequence, the budget deficit in Germany will in 2004 exceed the 3 percent level for the third consecutive year. The same holds in the case of France where fiscal policy restriction will not be sufficient next year to limit the budget deficit below 3 percent. Given the large budget deficits in the large member countries the aggregate budget deficit in the euro area will also be quite large next year and amount to 2.7 percent in relation to GDP.

[2] The excessive deficit procedure was also initiated in the cases of France and Portugal.

3 Fiscal Policy on the Wrong Track

At the European level, there are several important rules for economic policy which have been agreed upon by the governments of the EU countries. They are summarized in the Broad Economic Policy Guidelines, which are drafted by the European Commission every year and then accepted by the ECOFIN Council. As far as fiscal policy is concerned, these rules include the Stability and Growth Pact (SGP) and general principles which should be pursued in the process of budget consolidation. In particular, cutting taxes on the one hand and shifting expenditures towards investment in human and in physical capital on the other is seen as a means to stimulate growth of potential output. Balancing the budget is not only compatible with this target, it is actually seen as conducive in this regard.[3]

While 11 of the 15 EU countries have roughly balanced their budget or even reached a surplus, four countries have failed to do so. Also in the current year, the deficits in Germany, France, Italy and Portugal are very high or even excessive according to the definition of the SGP. And it cannot be said that these deficits are mainly due to the economic downturn in recent years because other countries have experienced a downturn as well, and, more importantly, the structural deficits in these four problem countries are relatively high amounting to 2 to 3 percent of GDP depending on the method of estimation[4] (Gern et al. 2003).

It is the task of the European Commission to supervise fiscal policy in the member countries and to take measures if the rules of the SGP are not met. In 2002, the German government could avoid a warning by promising that it would take action to keep the budget deficit below 3 percent of GDP. However, the deficit turned out to be higher than 3 percent so that the excessive deficit procedure of the SGP was started. Furthermore, when it became likely in the fall of 2002 that the deficit would exceed 3 percent also in the following year, the German government had to take measures to reduce the deficit. At present, it is likely that both Germany and France will not meet the target in 2004 but will have an excessive deficit for the third year in a row. In this case, the Commission itself, according to the rules of the Pact, should propose measures in order to keep the deficits below 3 percent. However, it can be questioned whether the Commission will do this. The statements so far, and especially the negative comment of the President of the Commission about the SPG, suggest that this may not happen. So the time for true test is yet to come. If the Commission does not act according to the rules, it would contribute to the abolition of the Pact. Then it would be difficult to explain to the public what the sense of treaties or commitments at the European level really is.

The governments with high budget deficits are acting against their own announcements not only by announcing or, at least, allowing an excessive deficit, some even plan to raise the structural deficit. For example, the German government plans to reduce taxes without financing this, as it was originally intended, by a cut of expenditures. This is clearly contradicting the rules stated in the "Broad Economic Policy Guidelines" (BEPG). In the Guidelines it is stated first, that the room to cut taxes should be created by cutting expenditures; this appears logical as it would otherwise not be realistic to balance the budgets. And second, it was agreed upon by the governments after it became clear that a balanced budget would not be achieved by 2004, to continuously reduce the structural deficits in the problem countries. Over the coming years, the "Member States should […] take all the necessary measures to ensure an annual improvement in the cyclically-adjusted budget position of at least 0.5 % of GDP" (European Commission 2003b: 5). These recommendations were repeated in the Guidelines for the individual countries. As some governments act against their own announcements at the European level and also against the national Stability Programs, fiscal policy loses more and more credibility. In fact, the rules of the SGP are simply ignored. Should the Pact fail, it would not be because of its tight or rigid rules (or even its "stupidity"), but because the governments fail to comply

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[3] One of the main targets of economic policy in the EU is to achieve a sustained and high rate of economic growth; this is described, for example, in the Lisbon Strategy. Fiscal policy is supposed to contribute to this target, too.

[4] For a discussion see Gern et al. (2003): 7–9.

with the rules which they themselves have established and—not to forget—have seen as essential for a sound macroeconomic policy in the euro area.

In the current discussion about fiscal policy, budget consolidation is obviously not the main issue but rather efforts to stimulate economic activity by expansionary measures. While the idea of the so-called countercyclical fiscal policy was rejected in the BEPG of 2002, some governments now expect a positive impact on the economy. In the literature, there are strong objections against such a policy. For example, Taylor (2000) presents many theoretical arguments as well as empirical evidence against discretionary fiscal policy.[5] If it was true that fiscal policy works as it is assumed by proponents of an active policy, an increase (decrease) of the structural balance should go along with a decrease (increase) of the output gap. The examples shown in Figure 2 demonstrate that such a negative correlation cannot be observed. Most of the time, there is no relationship or even a positive correlation. For example, the correlation was always positive in the United States; since the beginning of the 1990s, this has also been the case in the euro area as a whole and most of the time also in the four largest economies. So there is strong evidence against the hypothesis that an expansionary fiscal policy has a systematic positive effect on the economy. Therefore, it can be questioned whether the planned measures will have the desired effect. In contrast, it is likely that more credibility is lost without any gain in terms of economic stabilization.

4 Monetary Policy Remains Expansionary

In June this year, the ECB lowered key interest rates by another 50 basis points. Since then, the minimum bid rate on the main refinancing operations of the Eurosystem has been 2.0 percent. At the beginning of September, the 3-month money market rate stood at a little more than 2.1 percent (Figure 3); this rate implies that financial markets do not expect a further cut of interest rates by the central bank. For some time now, the ECB has been on an expansionary course. If the nominal interest rate is corrected for core inflation, the real short-term interest rate is approximately 0.5 percent, i.e., well below its long-term average of 2.5 percent (Gern et al. 2003: 14). The money market rate is even a lot lower than the Taylor interest rate, which is calculated with the commonly used formula of the Taylor rule (Figure 4). To be sure, the degree of expansion may be overestimated because the real equilibrium rate may currently be lower than its long-term average.[6] However, even if it is assumed that the equilibrium rate is currently only 1 percent, the actual interest rate would still be in line with the Taylor rule. In other words: monetary policy sufficiently contributes to a closing of the output gap.

Other important indicators which represent monetary conditions have moved into different directions in recent months. Long-term interest rates have increased considerably from their lows reached in June; 10-year government bond yields went up from 3.7 percent to 4.3 percent until early September. Nevertheless, the respective real rate is still well below the long-term average. The European currency has not continued to appreciate. The gains which could be observed between April and June this year have been reversed since then. At the beginning of September, the euro/dollar exchange rate was more or less at the same level as in April this year; the same is true for the real effective exchange rate. Financing conditions for firms have improved markedly as a consequence of the sharp rise of stock prices. The money stock M3 has increased by more than 8 percent (annual rate) since the spring of this year; the year-over-year increase has also been higher than 8 percent for some time. However, M3 is currently not a good indicator for the stance of monetary policy (see Chapter 5).

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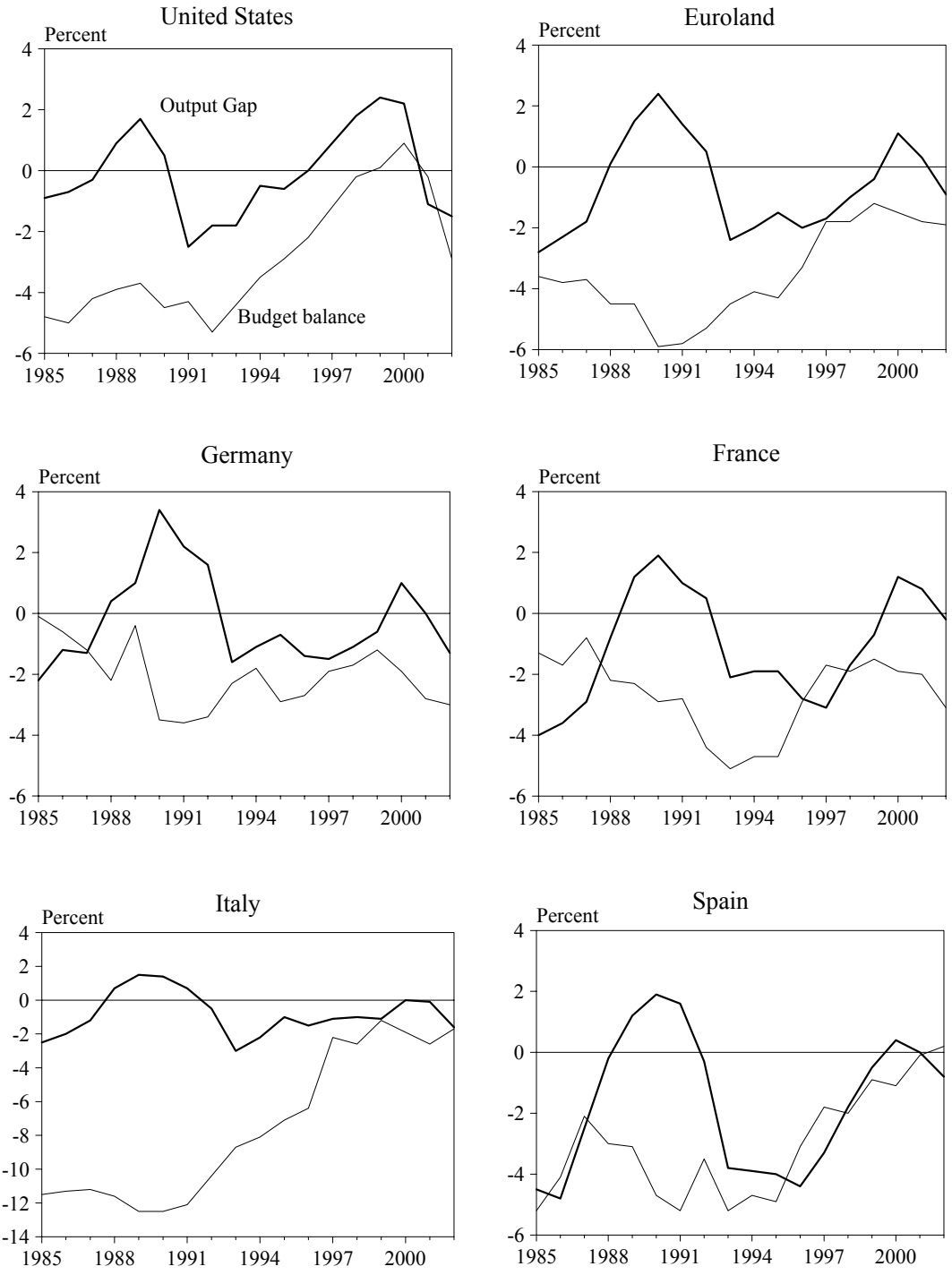
[5] For a discussion of the limits of stabilization policy and the implications for economic policy at the European level, see Scheide (2003).

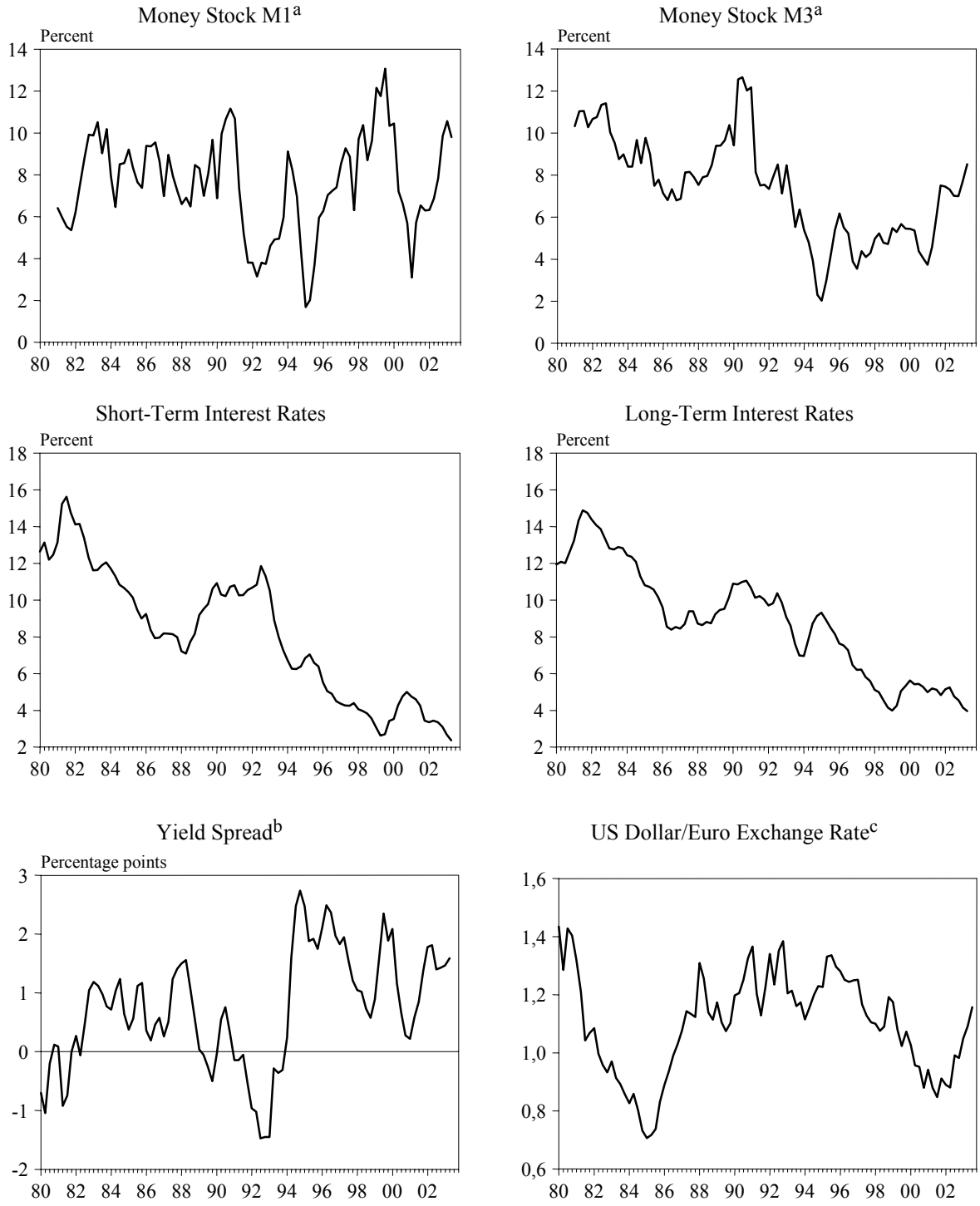
[6] Gern et al. (2003) discuss the possibility that the real equilibrium interest rate may not be constant over the cycle but show—possibly even strong—variations in the short run.

Figure 2:
Structural Budget Balance and Output Gap in Selected Countries and Regions, 1985–2002



Source: OECD (2003a).

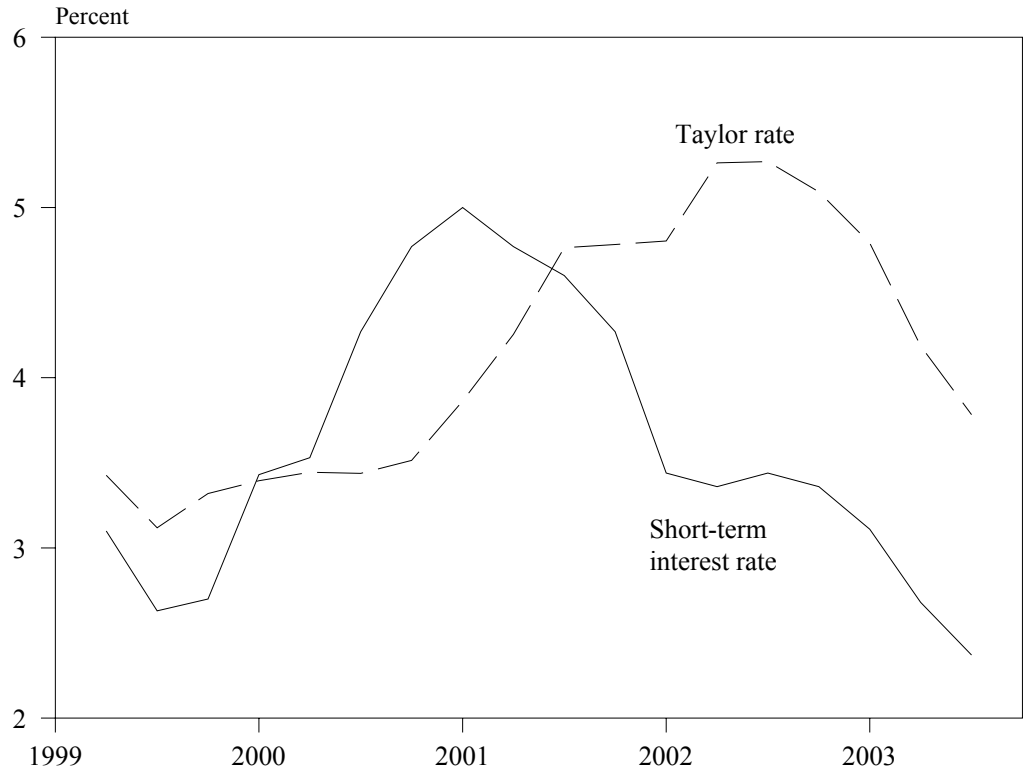
Figure 3:
Indicators of Monetary Policy in Euroland, 1980–2003



[a]Percentage change over previous year. — [b]Long-term interest rate minus short-term interest rate. — [c]Before 1999: exchange rate US dollar/ecu.

Source: ECB (2003d).

Figure 4:
Short-term Interest Rate and Taylor Rate in Euroland, 1999–2003



[a]The Taylor rate is calculated for the HICP excluding energy, food, alcohol and tobacco. The calculations are based on the assumption of an inflation target of 1.75 percent and on the assumption of an equilibrium real interest rate of 2.5 percent.

Source: Eurostat (2003); ECB (2003d); own calculations and estimates.

The ECB will leave key interest rates at their low levels for the time being and will wait and see whether the economy in the euro area will pick up. When the recovery will be visible in the fourth quarter, as we expect, there is no reason to loosen monetary policy further. However, it will take some time until the ECB will start to tighten its policy again. This will probably be the case only after the recovery has gained momentum and capacity utilization has increased considerably. We assume, therefore, that interest rates will not be raised next year.

In May this year, the ECB presented the result of the evaluation of its monetary policy strategy (ECB 2003c). It has made the definition of price level stability more precise: The target is met if the annual increase of the HICP is "below, but close to" 2 percent in the medium term. Compared to the previous announcement of the range between 0 to 2 percent this is a clarification because the distance to the zero line is stressed. In light of the current discussion about the possible risks of deflation, the ECB wants to provide a safety margin against such a risk. For example, if the rate of inflation stayed below 1 percent for a longer period of time, this would, contrary to the previous definition, not be consistent with the target.

In assessing the risks for price level stability, the ECB will in the future focus on two kinds of analyses, namely a short-term economic analysis and a more longer-term monetary analysis. In the economic analysis, a number of indicators related to demand and supply conditions relevant for the inflation rate in the near term will be evaluated. Such an analysis has also been performed in the past in line with the second pillar of the strategy, and actually all changes of key interest rates were explained with those factors considered. This means that the ECB will not change its procedure in the

future. In comparison to the previous version of the official strategy, the monetary analysis now is moved more into the background. While M3 played a "prominent role" as the first pillar in the official strategy, the ECB now focuses more on the medium-term relationship between money and prices. In addition, the ECB will also look at other monetary variables and financial market developments. Finally, there will no longer be an annual evaluation of the reference value for M3 growth. The ECB will only announce changes if there are changes in the factors determining the reference value.[7]

All in all, the ECB has redefined the relative importance of the two pillars of its monetary policy strategy. The fact that M3 now is less important has to do with the money demand function, which seems to have become unstable recently. As a consequence, M3 has lost its function as an indicator at least for the time being; for example, in spite of the fact that M3 growth has by far exceeded the reference value for quite some time, there has not been a strong acceleration of inflation as could have been expected if the money demand function had been stable. Money growth was much higher than intended, but the ECB did not—quite correctly—change interest rates accordingly; this implies that the ECB did not assign a prominent role to M3 anymore as it was stated in the official strategy. Thus, it was appropriate for the transparency and also for the communication with the public not to give a lot of weight to the monetary analysis. However, the fact that the money stock along with other variables will still be evaluated in the future is appropriate because the ECB stresses the long-term relationship between money and prices.

5 On the Stability of Money Demand in the Euro Area

The two-pillar strategy of the ECB emphasizes the importance of monetary developments for the assessment of potential future inflationary risks.[8] For this to be feasible, there must be a stable relationship between money and prices in the Euro area. A number of studies[9] in fact found that such a relationship exists in the form of a stable and plausible money demand function. However, two recent papers (Kontolemis 2002 and Bruggeman et al. 2003) do not come to results as clear-cut as before: While the hypothesis of stability still does not seem to be implausible, some testing results indicate structural changes in the recent past. This would imply that the inflationary effects of monetary developments cannot be predicted with any confidence anymore. Ultimately, this would undermine the monetary pillar of the ECB strategy.

The growth rate of M3 money balances has been exceeding the reference value of 4.5 percent since June 2001, in some months by more than 3 percentage points. At the same time, the ECB cut the prime rate from 4.5 percent down to 2 percent, justifying this with the downturn on stock markets and increased uncertainty, which was brought about by the terrorist attacks on September 11, 2001 (e.g., ECB 2001), the illegal accounting practices of US firms (ECB 2002), the unsettled geopolitical situation (e.g., ECB 2003a) and missing growth perspectives (e.g., ECB 2003b). The ECB argues that all this induced portfolio reallocations into safe and liquid assets, which are part of M3. Once stock prices rise again and uncertainty diminishes, the ECB expects the actual excess liquidity to flow back into stock markets again without causing any inflationary pressure.

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[7] If money demand is stable, money growth can even be used for short-term forecasts of inflation, for example, in a PStar model as estimated by Scheide and Trabandt (2000). Similar exercises could be made by using measures of the money gaps which are regularly calculated by the ECB.

[8] Compare the analysis in Carstensen (2003).

[9] E.g., Gottschalk (1999), Hayo (1999), Bruggeman (2000), Brand and Cassola (2000), Clausen and Kim (2000), Calza et al. (2001), Coenen and Vega (2001), Funke (2001), Müller and Hahn (2001) and Golinelli and Pastorello (2002).

The above reasoning implies, however, that real money demand in the Euro area in its conventional specification as being a function of real GDP and interest rates only, in fact has become instable. Otherwise there would be no need to explain the observed excessive money growth by additional factors like stock prices. From this perspective, the ECB's justification for the interest rate cuts stands in conflict with its official position that money demand in the Euro area is stable. Moreover, there is no guaranty that the excess liquidity really does not flow into goods markets and cause inflation.

In the following, it shall therefore be analyzed by means of econometric methods whether the conventionally specified money demand function in the Euro area has become unstable in the recent past. Since variables like money balances, GDP and interest rates are best characterized as non-stationary processes, a stable money demand function implies that a cointegration relationship between these variables exists. Consequently, those methods are inappropriate which assume stationary variables or even a static regression model (like the well-known Chow test, which is typically reported). Additionally, given the preceding discussion, interest centers on structural breaks in recent time because, according to the findings in the literature, structural stability in the time before the start of the monetary union seems to hold.

A testing procedure introduced by Andrews and Kim (2003), henceforth AK test, satisfies these conditions. It was developed to test for the breakdown of an initially stable cointegration relationship after a certain point of time. This exactly complies with the testing situation at hand. The only disadvantage of the AK test is that an earliest possible breakpoint has to be specified a priorily.

In the analysis quarterly observations for nominal M3 money balances (m_t), real GDP (y_t), the GDP deflator (p_t), the interest rate for 10-year government bonds (rl_t), the 3-month money market rate (rk_t) and the own rate of M3 (re_t) from 1980 I to 2002 IV are used. The observations from 1980 I to 1999 IV are taken from Calza et al. (2001) and are extended until 2002 IV with the help of the ECB statistics. To measure the influence of the stock market, a stock price index (a_t) and stock price volatility (v_t) are used.[10] Finally, the world oil price index oil_t (source: Thompson Financial Datastream) is included later on. All variables except for the interest rates are given in logs.

Initially, the long-run money demand function in the baseline specification of Calza et al. (2001)

$$(1) \qquad m_t - p_t = \beta_0 + \beta_1 y_t + \beta_2 (rk_t - re_t) + u_t$$

is analyzed. Note however, that the main conclusions remain unchanged if alternative specifications put forward in the literature are considered.[11] Since a number of studies find cointegration and structural stability for the baseline period from 1980 I to 1998 IV, we refrain from a detailed analysis of the baseline period and instead presume that a stable cointegration relationship exists in this period. Conditional on this, we test for stability in the period from 1999 I to 2002 IV.

As a first step, stability is analyzed by estimating the money demand function over both the baseline and the full sample using two different estimation methods: ordinary least squares (OLS) and fully modified least squares (FM-OLS), which leads to asymptotically normally distributed estimators (Phillips and Hansen 1990). The results in Table 2 show that instability of the parameters cannot be ruled out, at least if one looks at the FM-OLS estimation. In particular, the influence of the interest rate spread (β_2) changes substantially. This could signal that the weight of the opportunity costs of money demand has shifted, perhaps following the turbulences at the stock markets. However, a state-

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[10] The European stock price index is constructed with daily data of the German DAX30 from 1980 to 1986 and the Dow Jones Euro Stoxx50 from 1987 to 2002 (source: Thompson Financial Datastream). The DAX30 is rescaled such that its last value on 31 December 1986 and the first value of the Euro Stoxx50 on 1 January 1987 are identical. Quarterly observations are calculated as the average of daily observations. Stock market volatility is calculated as the quarterly median of squared daily stock market yields. The median is used instead of the mean because otherwise some extreme outliers would dominate the quarterly observations.

[11] Alternative specifications comprise one or more of the following explanatory variables: GDP, long-term interest rate, short-term interest rate, own rate of M3 and inflation rate (Carstensen 2003).

Table 2:
Estimation of Long-Run Money Demand in the Baseline Specification

	Baseline sample 1980 I–1998 IV		Full sample 1980 I–2002 IV	
	OLS[a]	FM-OLS[a]	OLS[a]	FM-OLS[a]
β_0	–10.51 *(–28.30)*	–10.58 *(–12.82)*	–10.80 *(–31.05)*	–11.47 *(–10.56)*
β_1	1.36 *(57.25)*	1.37 *(25.84)*	1.38 *(62.19)*	1.42 *(20.53)*
β_2	–0.71 *(–3.91)*	–0.79 *(–1.95)*	–0.73 *(–3.92)*	–0.37 *(–0.64)*

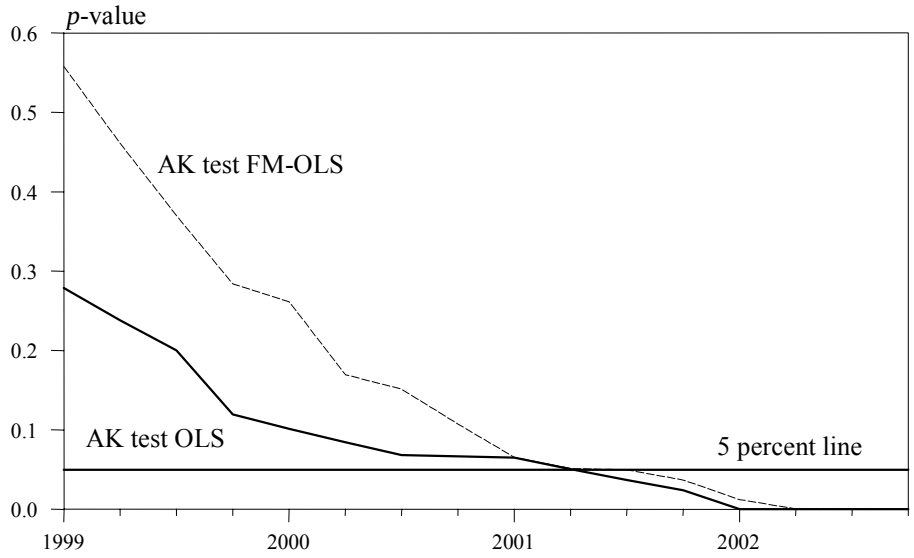
[a] *t*-values in brackets.

Source: Carstensen (2003); own calculations.

ment regarding the statistical significance of the parameter shift can only be made with the help of a statistical test. In addition, it should be noted that the apparent stability of the OLS estimates does not necessarily imply that the model is in fact stable. It could well be the case that, e.g., stock market variables which had no measurable impact before 1999 have gained importance since then without altering the weights of the other variables.

The suspicion of structural instability is now analyzed by means of the AK test.[12] Since the test results depend on the estimation method, both OLS and FM-OLS are employed. The null hypothesis is that of structural stability, the alternative hypothesis that of structural change after a pre-specified earliest breakpoint T_B. The tests are conducted for all possible breakpoints T_B between 1999 I and 2002 IV, the corresponding *p*-values are reported in Figure 5.

Figure 5:
Tests for Structural Stability of the Baseline Specification of Money Demand in the Euro Area, 1999–2002



Source: Carstensen (2003); own calculations.

12 Andrews and Kim (2003) discuss several different variants of their test. Only that one is reported which performs particularly well in a simulation study conducted by Andrews and Kim (Rc test). In the case at hand, the other variants lead to the same conclusions.

Table 3:
Estimation of Long-run Money Demand in the Augmented Specification

	Baseline sample 1980 I–1998 IV		Full sample 1980 I–2002 IV	
	OLS[a]	FM-OLS[a]	OLS[a]	FM-OLS[a]
β_0	–11.14 (–20.89)	–11.50 (–12.31)	–11.81 (–26.04)	–12.01 (–11.69)
β_1	1.41 (38.50)	1.43 (22.39)	1.45 (47.78)	1.47 (21.31)
β_2	–1.02 (–4.72)	–1.09 (–2.87)	–0.87 (–4.60)	–0.70 (–1.63)
β_3	–0.026 (–1.97)	–0.039 (–1.73)	–0.026 (–3.29)	–0.031 (–1.71)
β_4	–0.0010 (–0.32)	0.0016 (0.30)	0.0050 (2.16)	0.0120 (2.20)

[a] *t*-values in brackets.

Source: Carstensen (2003); own calculations.

No matter which estimation method is used, the null hypothesis of structural stability is rejected at the 5 percent level not later than 2001 III when the *p*-values fall below the 5 percent line. This roughly corresponds to the begin of excessive money growth and, thus, confirms the conjecture that this growth is related to the instability of money demand.

To account for the possibility that uncertainty and stock price decline have caused the excessive money growth and the instability of the conventional money demand function, the baseline specification is augmented by the real stock price index, $a_t - p_t$, and volatility, v_t, which yields the specification

$$(2) \qquad m_t - p_t = \beta_0 + \beta_1 y_t + \beta_2 (rk_t - re_t) + \beta_3 (a_t - p_t) + \beta_4 v_t + \varepsilon_t .$$

This augmented specification is now analyzed in the same way as the baseline specification. In the first step, it is estimated for both the baseline and the full sample (Table 3). The estimated parameter values again seem to indicate that the model is not stable. In particular, the parameter β_4, which measures the weight of volatility, is estimated as being insignificant in the baseline sample but highly significant in the full sample. This can possibly be explained by the fact that stock market volatility was relatively low until the beginning of 1997 and started to rise thereafter, also exhibiting an increased variance.

In the second step, the stability of the augmented money demand function is analyzed with the help of the AK test using both the OLS and FM-OLS estimation method. The tests are conducted for all possible breakpoints between 1999 I and 2002 IV, giving rise to the *p*-values reported in Figure 6. Now, stability cannot be rejected at the 5 percent level with the only exception being the OLS based AK test for the last observation 2002 IV, which lies below the 5 percent line. This is not sufficient evidence against the null hypothesis of stability.

Since the AK test indicates that the augmented money demand function (2) represents a stable cointegration relationship, in the next step an error-correction model is specified in order to capture the short-run developments of money demand. Starting from a model with two lagged differences of all variables, a parsimonious model is chosen by successively eliminating insignificant coefficients. This yields

$$(3)\quad \Delta(m_t - p_t) = \underset{(4.08)}{0.003} - \underset{(-2.38)}{0.058}\,\hat{\varepsilon}_{t-1} + \underset{(8.13)}{0.631}\,\Delta(m_{t-1} - p_{t-1}) - \underset{(-3.94)}{0.328}\,\Delta rl_t + \underset{(2.89)}{0.494}\,\Delta^2 re_{t-1}$$
$$+ \underset{(3.65)}{0.009}\,\Delta oil_t - \underset{(-5.75)}{0.586}\left(\Delta^2 p_t + \Delta^2 p_{t-1}\right) - \underset{(-3.01)}{0.013}\,\Delta(a_t - p_t) + \underset{(2.89)}{0.002}\,\Delta v_t + \hat{w}_t,$$

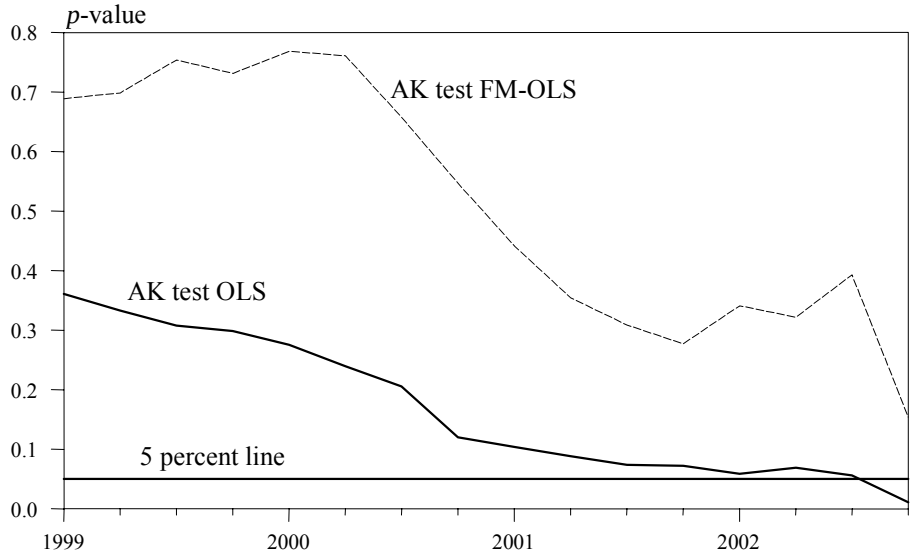
where the cointegration parameters are estimated in advance by FM-OLS (*t*-values in brackets). The stability of this error-correction model is verified with the help of a test which is proposed by Andrews (2002) for stationary models but is otherwise similar to the AK test. The *p*-values of this test for any possible breakpoint between 1999 I and 2002 IV are presented in Figure 7. Obviously, stability cannot be rejected at any conventional significance level.

The estimated empirical model consisting of long-run relationship (2) and error-correction model (3) is finally used to analyze whether the burst of the stock market bubble, which came along with falling stock prices and increasing volatility, can be blamed for the excessive M3 growth rates. To this end, two different scenarios are considered. In both of them it is assumed that real GDP, the GDP deflator, interest rates and oil prices take their actually realized values. For real stock prices and volatility, however, different paths are assumed and a dynamic model simulation is performed to assess the impact of the stock market developments on M3 growth.

In the first scenario the stock market variables are fixed at their 2000 III levels, when stock prices were on an all-time high and volatility was still relatively low. From this scenario one can learn how the stock market downturn influenced the M3 growth rates in the subsequent quarters.

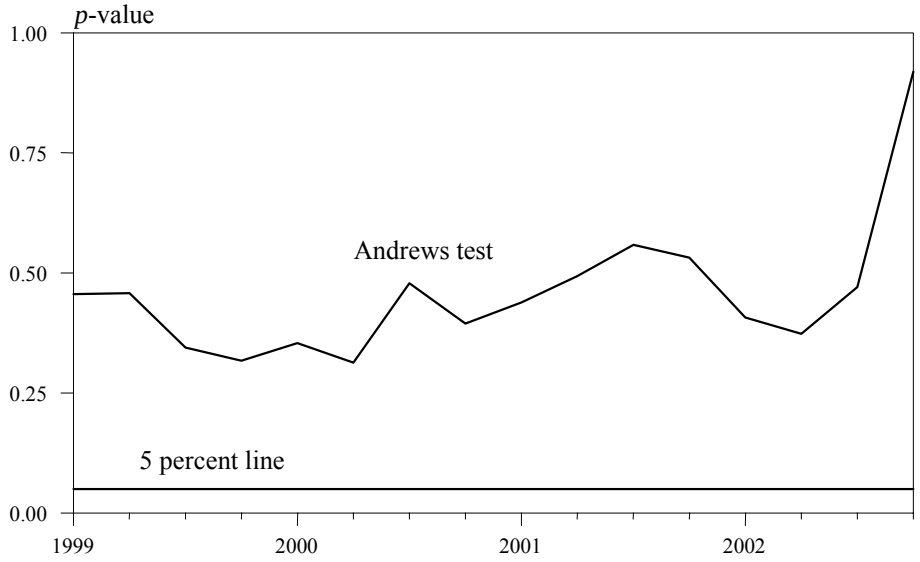
In the second scenario, the stock market variables are fixed at their 1999 I levels. This scenario is used to analyze how M3 growth rates would have developed if neither the final rise of the stock market bubble nor its burst had occurred. The resulting hypothetical M3 growth rates can be interpreted as those with which the ECB ceteris paribus would have been confronted if the stock market developments had not influenced European money demand.

Figure 6:
Tests for Structural Stability of the Augmented Specification of Money Demand in the Euro Area, 1999–2002



Source: Carstensen (2003); own calculations.

Figure 7:
Andrews Test of Structural Stability of the Error-Correction Model for Money Demand in the Euro Area, 1999–2002



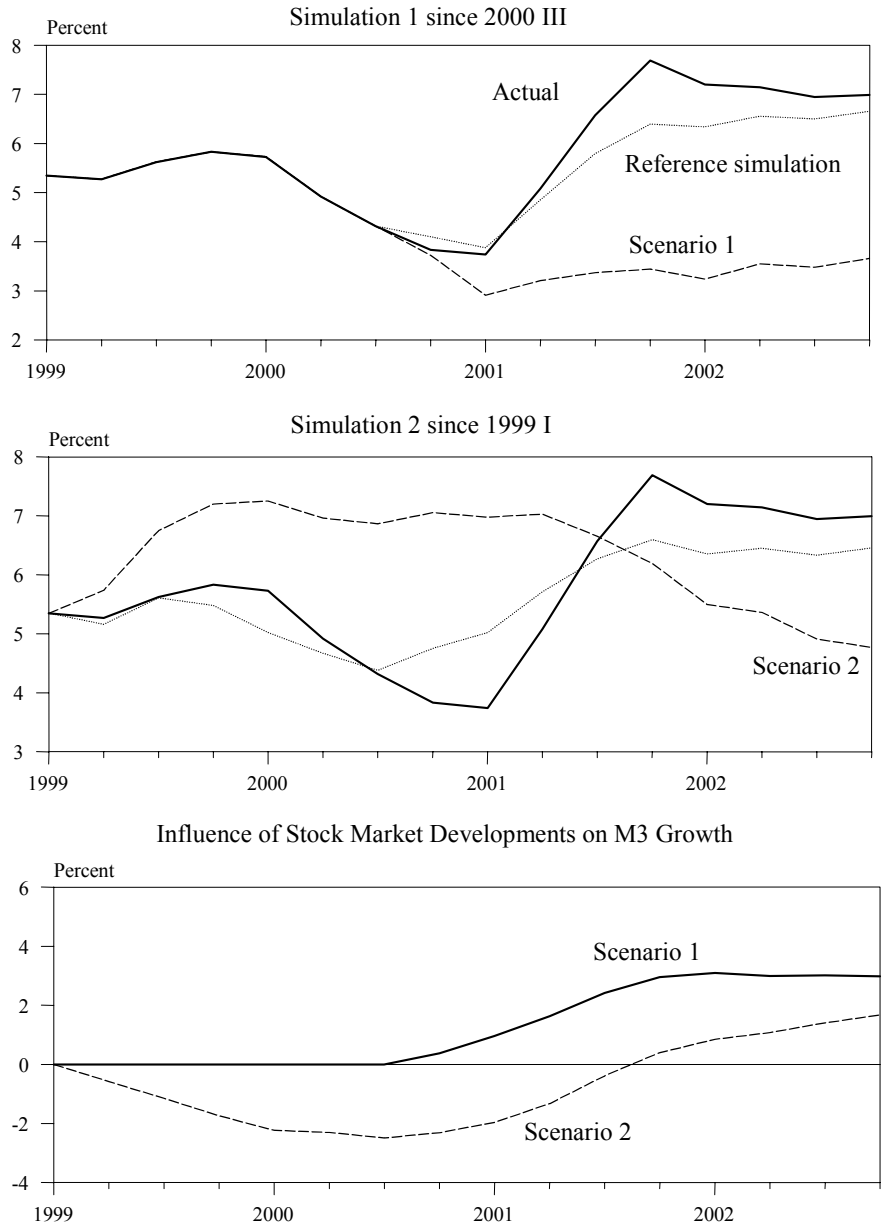
In both scenarios the hypothetical path of M3 growth is compared with the actual path and a reference simulation in which all variables including those of the stock market take their actually observed values. The differences between the scenario based simulations and the respective reference simulations can thus be interpreted as being solely caused by the different assumptions regarding the stock market developments.

The simulated annual M3 growth rates $m_t^{sim} - m_{t-4}^{sim}$ are reported in Figure 8. The simulation of scenario 1 demonstrates that the M3 growth rates after 2000 III would have been below the reference value of 4.5 percent if the stock market had remained at his historically high level. In contrast, the M3 growth rates of the reference simulation rise up to 7 percent annually. The difference between these two simulations is due to the different paths of the stock market variables and amounts to roughly 3 percentage points in the whole year 2002 (Figure 8, lower panel). From this perspective, the ECB correctly argues that the high M3 growth rates are due to the adverse developments of the stock markets.

However, the analysis of scenario 2 allows somewhat different conclusions. If stock prices and volatility had remained at their 1999 I levels, the M3 growth rates would have exceeded 7 percent annually at the end of 1999 and would not have declined noticeably before the middle of 2001. Comparing this scenario with the reference simulation shows that the relatively moderate actual M3 growth rates in 1999 and 2000 were mainly caused by the favorable stock market developments in these years. If the final stock market boom had not occurred, the ECB would have been confronted with excessive M3 growth rates much earlier than it was actually the case. Moreover, only a share of less than 2 percentage points of the very recent excess M3 growth rates can be traced back to the adverse stock market developments.

The simulation results demonstrate that the stock market developments play an important role for money demand in the euro area as emphasized by the ECB. Falling stock prices and increasing volatility were a major cause for high M3 growth rates in 2001 and 2002. The extent of this influence depends, however, on the starting point of the analysis and, thus, on the implicit assumption regarding a normal or average state of the stock market. Based on the stock market boom quarter 2000 III, almost the full portion of the M3 growth rates above the reference value of 4.5 percent can be traced

Figure 8:
Dynamic Simulation of Money Growth in the Euro Area,[a] 1999–2002



[a]Simulation 1 assumes constant stock prices and volatility since 2000 III, simulation 2 since 1999 I.

back to the stock market downturn. Based on the starting point of the European Monetary Union (EMU) in 1999 I, a different picture emerges: The relatively moderate M3 growth rates at the beginning of EMU were caused by the rise, the excessive M3 growth rates in recent time by the burst of the stock market bubble. When judging the actual excess liquidity, which has accumulated over the last few years, it is therefore, from the perspective of the augmented money demand model, necessary to take a stand whether a return to high and less volatile stock prices can be expected. Is this deemed unlikely, it follows from the reasoning of the ECB that there may be a considerable potential for future inflation in the Euro area.

6 Moderate Wage Increases

In the first months of 2003, wage increases in Euroland remained subdued. The rate of change of compensation per employee over previous year was almost unchanged at 2.5 percent in the first quarter, the most recent period for which data are available. While negotiated wages rose at a slightly higher rate and increases in social security contributions pushed up compensations fringe benefits are reduced. The rate of increase in labor cost per hour fell markedly, but this was mainly due to special factors, such as working day and base effects, rather than reflecting an underlying trend (ECB 2003d: 23). Productivity growth slowed down slightly from the 1 percent pace to which it had recovered during 2002. Consequently, the rise in unit labor costs—1.7 percent over previous year—remained moderate.

Available information about wage agreements so far suggests that wages will increase at a similar pace in 2003 as in 2002. However, there will be some variance in developments across countries (Table 4). Wage rises can be expected to be considerably more moderate in some smaller countries, particularly those which recently registered relatively high wage growth (such as the Netherlands, Portugal, or Belgium). At the same time, compensation per employee is likely to accelerate in some other countries (particularly in Germany and Italy), partly reflecting higher social security contributions. As a result, wage growth in Euroland seems to become less differentiated across countries. We expect this trend to continue next year. The increased uniformity in wage growth will contribute to a gradual reduction of inflation differentials in the euro area, which have widened continuously since the foundation of EMU. In 2004, with stronger output growth the rise in unit labor costs will decelerate further, after having fallen below 2 percent already this year (Table 5). On aggregate, the environment for inflation to meet the ECB's target of price level stability is favorable as wage developments are concerned.

Table 4:
Wage Increases[a] in Euroland, 2001–2004 (change over previous year in percent)

	2001	2002	2003[b]	2004[b]
Germany	1.8	1.6	2.0	1.8
France	2.6	2.7	2.5	2.5
Italy	3.0	2.4	2.8	2.8
Spain	4.1	4.0	3.8	3.5
Netherlands	5.0	5.5	3.8	2.8
Portugal	5.3	5.3	3.0	2.5
Austria	1.8	2.2	2.2	2.5
Belgium	3.6	4.1	2.0	2.3
Greece	6.0	6.7	5.5	5.0
Finland	5.0	2.5	3.5	3.2
Ireland	9.2	6.5	5.5	5.0
Luxembourg	4.4	3.0	2.5	2.5

[a]Compensation of employees per worker. — [b]Forecast.

Source: European Commission (2003a); own forecasts.

Table 5:
Compensation of Employees and Productivity in Euroland, 2000–2004 (change over previous year in percent)

	2000	2001	2002	2003[a]	2004[a]
Compensation of employees per worker	2.6	2.8	2.5	2.5	2.3
Productivity[b]	1.3	0.1	0.4	0.7	1.8
Unit labor costs	1.3	2.7	2.1	1.8	0.5

[a]Forecast. — [b]Real GDP per worker.

Source: ECB (2003d); own calculations and forecasts.

Table 6:
Extent of Wage Restraint in Euroland, 2000–2004

	2000	2001	2002	2003	2003[a]	2004[a]
(1) Real gross value added[b]	3.8	1.7	1.2	1.0	0.7	2.0
(2) GDP deflator[b]	1.4	2.5	2.4	2.1	2.0	1.9
(3) Compensation per employee[b]	2.6	2.8	2.5	2.7	2.5	2.3
(4) Wage restraint (1)+(2)–(3)[c]	2.6	1.4	1.1	0.4	0.2	1.6

[a]Forecast. — [b]Change over previous year in percent. — [c]In percentage points.

Source: ECB (2003d); own calculations and forecasts.

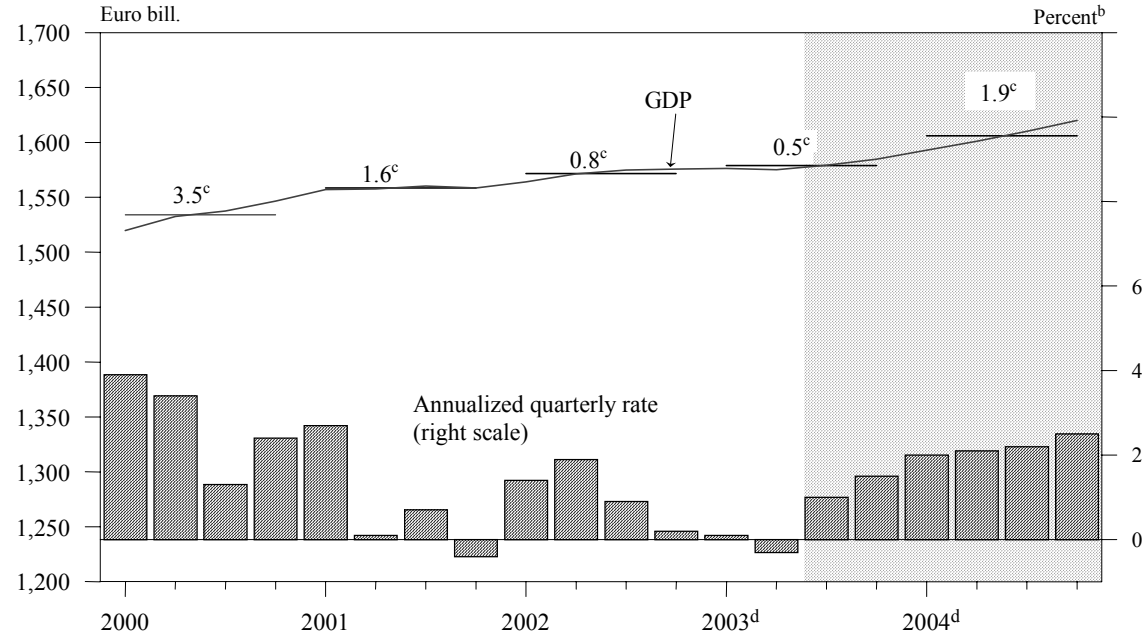
Measured against a simple yardstick of wage restraint (Lehment 1999), there is still some positive effect of wage developments on employment in Euroland. While the growth rate of compensation per employee recently has been only slightly below the sum of the growth rates of real gross value added and the GDP deflator, a return to a considerable degree of wage moderation can be expected for next year as a consequence of accelerated output growth and a slightly reduced rate of increase in labor costs (Table 6). Comparing, in a cyclical adjusted perspective, wage growth with the sum of the trend rate of productivity growth of around 1.5 percent and the rate of increase in the GDP-deflator (as a proxy for producer price inflation) yields that the rise in compensation per employee in both this year and next will be slightly less than 1 percentage point below the rate which can be regarded as being neutral for employment.

7 Outlook: Recovery Postponed until Next Year

The leading indicators suggest that economic activity will only slightly recover in the further course of this year. The confidence indicators compiled by the European Commission taken together have moved neither up nor down in the past months. With that the expectation that the indicators would markedly improve after the end of the war in Iraq has not yet been fulfilled. Consumer confidence has only slightly risen in the meantime; industrial confidence has even continued to decline. In particular, firms' assessment of export orders has become increasingly pessimistic, probably due to the strong appreciation of the euro until this summer. The only ray of hope is confidence in the service sector, which has considerably improved since March. Yet, taken together the confidence indicators do not suggest that economic activity will strongly pick up in the second half of this year. The growth indicator calculated by EUROFRAME supports this assessment. Moreover, the purchasing managers' index until lately remained below the threshold value of 50 and thus signaled a continuation of the downturn.

Real GDP in the euro area will increase by only 0.5 percent this year on average and with that again expand at a slower pace than potential output. The output gap will continue to widen in the second half of 2003, even though economy-wide production is expected to rise again (Figure 9). Domestic demand will gradually pick up in the course of the second half of this year; corporate investment will, stimulated by low interest rates, end its downward trend. However, economic activity will not receive strong impulses from foreign trade. Exports will continue to be dampened by the strong appreciation of the euro. Against the background of protracted economic weakness the situation on the labor market will further deteriorate. The unemployment rate will amount to 8.9 percent this year on average. The increase in consumer prices will calm down somewhat. In 2003, the Harmonized Index of Consumer Prices will exceed its level in the previous year by 2.0 percent.

Figure 9:
Real GDP[a] in Euroland, 2000–2004



[a]Seasonally adjusted. — [b]Annualized quarterly rate of change in percent. — [c]Percentage change over previous year. — [d]Forecast starting in 2003 III.

Source: Eurostat (2003); own forecast.

In the course of next year the cyclical situation will considerably improve in the euro area (Table 7). From next spring on, we expect economy-wide production to expand at a somewhat faster pace than potential output. On the one hand, exports will gather speed in the wake of the faster expansion of the world economy (Benner et al. 2003) and due to the gradual fading of the dampening effects from the euro appreciation (Figure 10). On the other hand, monetary policy will remain on an expansionary course next year in view of underutilized economy-wide capacities. Against the background of favorable financing conditions and improved sales and profits expectations in the wake of the recovery in the world economy, corporate investment will pick up. With that, the situation on the labor market will gradually improve and private households will expand their consumption expenditures noticeably faster than before. All in all, real GDP will increase by 1.9 percent next year on average (Table 8).

The increase in consumer prices will remain moderate next year. While economy-wide capacity utilization will increase in the wake of the recovery, it will not reach it normal level until the end of 2004. As a consequence, firms' scope for raising prices will continue to be limited. If, moreover, there are no strong fluctuations in the particularly volatile prices for energy and food, the inflation rate will be roughly equal to the target of the European Central Bank. We expect the Harmonized Index of Consumer Prices to increase by 1.7 percent next year on average.

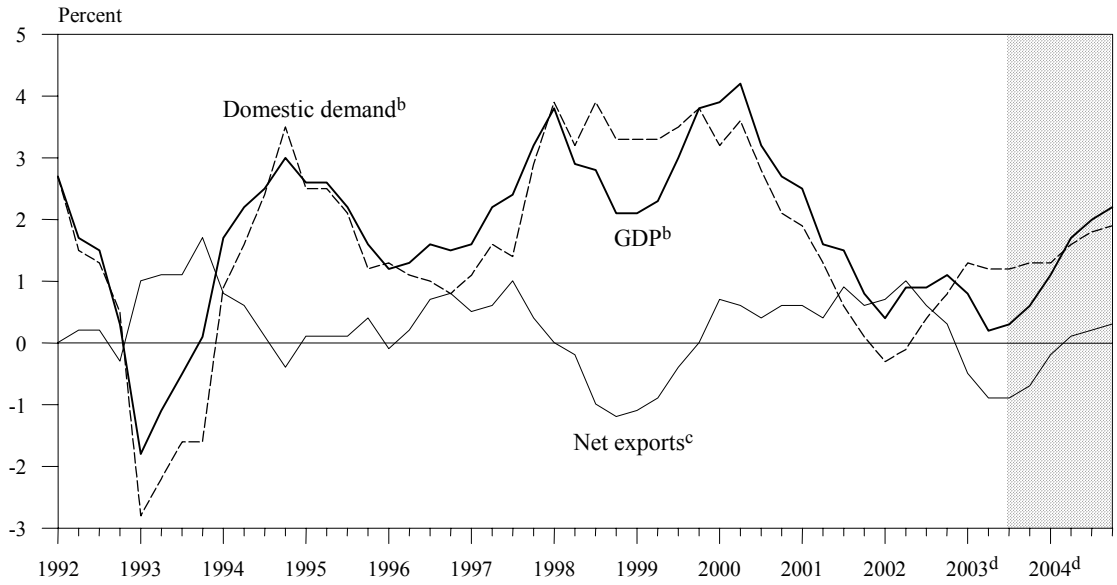
Table 7:
Quarterly Data on the Economic Development in Euroland, 2002–2004

	2002				2003				2004			
	I	II	III	IV	I	II	III[a]	IV[a]	I[a]	II[a]	III[a]	IV[a]
Gross domestic product[b]	1.4	1.9	0.9	0.2	0.1	–0.3	1.0	1.5	2.0	2.1	2.2	2.5
Domestic demand[b]	–0.1	1.1	0.8	1.3	2.1	0.4	1.2	1.7	1.8	1.8	1.9	2.1
Private consumption[b]	–1.1	1.5	1.2	1.2	1.9	0.3	1.3	1.5	1.9	1.7	1.8	1.9
Public consumption[b]	2.5	3.0	2.1	0.8	1.1	2.9	0.6	1.0	0.5	1.7	1.1	1.1
Fixed investment[b]	–3.1	–5.3	0.5	1.0	–4.7	–1.6	1.3	2.0	2.6	3.1	3.8	4.3
Change in stocks[c]	0.7	0.8	–0.5	0.2	1.7	0.0	0.0	0.1	0.1	–0.2	–0.1	–0.1
Net exports[c]	1.5	0.8	0.1	–1.0	–1.9	–0.7	–0.1	–0.1	0.3	0.4	0.4	0.4
Exports[b,d]	0.1	11.0	6.0	–1.7	–4.6	–1.8	1.4	2.8	4.4	4.9	5.4	6.2
Imports[b,d]	–4.0	9.5	6.1	0.9	0.3	0.1	1.8	3.4	3.9	4.1	4.7	5.5
Unemployment rate[e]	8.2	8.3	8.5	8.6	8.7	8.8	8.9	9.0	9.0	9.0	8.9	8.8
Consumer prices (HICP)[f]	2.5	2.1	2.1	2.3	2.3	2.0	2.0	1.8	1.5	1.7	1.8	1.8
Money stock M3[b]	4.6	6.8	7.8	8.7	7.8	9.8	6.0	5.0	5.0	5.0	5.0	5.0
3-month money market rate	3.4	3.5	3.4	3.1	2.9	2.4	2.1	2.1	2.1	2.2	2.2	2.3
Long term interest rate	5.1	5.3	4.8	4.5	4.2	4.0	4.3	4.4	4.5	4.6	4.7	4.9
US dollar/euro exchange rate[g]	0.88	0.92	0.99	1.00	1.07	1.14	1.12	1.10	1.10	1.10	1.10	1.10
Real effective exchange rate[h]	87.8	90.2	93.8	94.9	99.2	102.7	102.1	101.3	101.3	101.3	101.3	101.3

[a]Forecast. — [b]Annualized quarterly rate of change in percent. — [c]Contribution to change in GDP. — [d]Including intra-Euroland trade. — [e]In percent of the labor force, harmonized according to the ILO concept. — [f]Change over previous year in percent. — [g]US dollar/euro. — [h]Broad group. Based on the consumer price index. Index 1999 I = 100.

Source: Eurostat (2003); ECB (2003d); OECD (2003b); own calculations and forecasts.

Figure 10:
GDP, Domestic Demand and Net Exports in Euroland,[a] 1992–2004



[a]At constant prices. — [b]Percentage change over previous year. — [c]Change of net exports over previous year in percent of GDP in the same quarter of previous year. — [d]Forecast starting in 2003 III.

Source: Eurostat (2003); own forecast.

Table 8:
Real GDP, Consumer Prices and Unemployment Rate in Euroland, 2001–2004

	Weights in total[a]	Real GDP[b]				Consumer prices[b,c]				Unemployment rate[d]			
		2001	2002	2003[e]	2004[e]	2001	2002	2003[e]	2004[e]	2001	2002	2003[e]	2004[e]
Germany	29.8	0.8	0.2	0.0	1.8	1.9	1.3	1.1	1.2	7.9	8.6	9.4	9.7
France	21.5	2.1	1.2	0.5	2.0	1.8	1.9	2.1	1.5	8.5	8.8	9.4	9.2
Italy	17.8	1.7	0.4	0.4	1.8	2.3	2.6	2.8	2.2	9.5	9.0	8.9	8.8
Spain	9.5	2.7	2.0	2.2	2.6	2.8	3.5	3.1	2.5	10.6	11.3	11.5	11.1
Netherlands	6.3	1.3	0.2	–0.5	1.5	5.2	3.4[f]	2.0	1.7	2.4	2.8	4.0	4.7
Belgium	3.7	0.8	0.7	1.0	1.8	2.4	1.5	1.4	1.5	6.7	7.3	8.0	8.0
Austria	3.1	0.6	1.1	0.7	1.5	2.3	1.7	1.3	1.6	3.6	4.3	4.5	4.6
Finland	2.0	1.2	2.2	1.0	2.3	2.6	2.0	1.3	1.5	9.1	9.1	9.2	9.0
Greece	2.0	4.1	4.0	4.2	5.0	3.6	3.9	3.6	3.3	10.2	9.6	9.5	9.0
Portugal	1.8	1.6	0.4	–0.8	1.0	4.4	3.7	3.2	2.1	4.1	5.0	6.8	7.5
Ireland	1.8	6.2	6.9	1.9	3.5	4.0	4.7	4.0	3.1	3.9	4.4	4.7	4.5
Luxembourg	0.3	1.2	1.1	1.0	2.0	2.4	2.0	2.3	1.6	2.1	2.8	3.7	3.9
Euroland	100.0	1.5	0.8	0.5	1.9	2.3	2.2	2.0	1.7	8.0[g]	8.4[g]	8.9[g]	8.9[g]

[a]Based on GDP at current prices and exchange rates of 2002. — [b]Percentage change over previous year. — [c]Harmonized Index of Consumer Prices (HICP). — [d]Standardized unemployment rates according to the ILO concept. — [e]Forecast. — [f]Estimated. Official data not available. — [g]Based on the number of employees in 2002.

Source: ECB (2003d); OECD (2003b); own calculations and forecasts.

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