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## For a stable monetary policy and tax competition in Euroland

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## For a Stable Monetary Policy and Tax Competition in Euroland

by Alfred Boss, Klaus-Jürgen Gern, Carsten-Patrick Meier,  
Joachim Scheide und Markus Schlie

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- Since the fall of last year, EMU countries have experienced a slowdown in economic activity triggered by a deceleration of exports. The expansion of internal demand has been more or less intact due to low interest rates and higher terms of trade. Consumer confidence has continued to rise and business confidence seems to have stabilized in early 1999. Economic activity in Euroland will gain momentum again in the course of 1999, mainly driven by domestic demand. The increase in real GDP will amount to 2 percent in 1999 and 2.7 percent in the year 2000.
- Monetary conditions are currently very favorable and will support the upswing. The three-month money market rate fell to 3.1 % following the concerted reduction of central banks' key interest rates in December 1998. Long-term interest rates are extremely low; corrected for inflation, the rate for Euroland is lower than the long-term average for Germany. In recent months, the growth rate of M3 has been somewhat higher than the reference value announced by the ECB (4.5 percent); narrow money has expanded twice as fast as M3. In addition, the euro has devalued considerably against the US dollar since the beginning of this year. Given the expectation that the slowdown in the economy is only of temporary nature, the ECB will not loosen its policy further but keep its key interest rate at the current low level for the rest of this year.
- The ECB decided to follow a medium-term strategy. Against this background, the current weakness in Euroland does not imply a need for action. Low inflation is also no reason to cut interest rates because consumer prices have been dampened by special factors, in particular the weakness of raw material prices, and not by a tight monetary policy. If interest rates were lowered in response to this transitory change, they would have to be raised again as soon as this effect fades away. Such a stop-and-go policy should be avoided. Likewise, the recent weakness of the euro against major currencies does not suggest that interest rates should be raised. For very good reasons, the ECB—as well as the American Federal Reserve Board—does not follow a target for exchange rates.
- According to the Stability and Growth Programs published by the governments, budget deficits in relation to GDP are projected to decline from 2.3 percent in 1998 to 0.9 percent in the year 2002 in Euroland. As the Stability and Growth Pact calls for a balanced budget or even a surplus over the medium term, fiscal policy is, in general, not yet on a course compatible with the intentions of the Maastricht Treaty. Only in smaller countries fiscal policy is making progress, while consolidation in larger member countries is not sufficient.
- It has often been argued that it is necessary to harmonize VAT rates and particularly capital income taxation in the EU in order to prevent a "race to the bottom", otherwise it would be impossible to supply an adequate level of public goods and to finance the welfare state. However, the development of capital income tax rates in the EU and in other industrialized countries does not provide evidence of a race to the bottom. But even if tax competition should become fiercer, there are still arguments in favor of competition: If tax rates are cut in a process of competition, government expenditures will have to decline with the result that inefficiencies in the public sector will be reduced. Given the high levels of government expenditures in most of the EU countries, there seems to be no risk that governments would be unable to fulfill their specific functions. In addition, tax competition might help to find better tax systems, and every country could learn from the experiences of other countries. In contrast, tax harmonization would probably lead to higher taxes in the EU.

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# For a Stable Monetary Policy and Tax Competition in Euroland

The introduction of the new European currency on January 1, 1999 did not pose any major problems. The start of the European Monetary Union (EMU) was thus successful. The challenge for the European Central Bank (ECB) is — given all the uncertainties of transition — to follow a credible medium-term strategy. Only this will allow the central bank to gain the reputation which is beneficial for the stability of the price level as well as of economic activity.

At the beginning of 1999, the EMU countries experience a cyclical weakness which was caused mainly by a deceleration of export growth. While this is the consequence of the crises in various countries of the world, internal demand growth seems to be more or less intact due to low interest rates and higher terms of trade.

The current discussion on monetary policy revolves around the question whether the ECB should stimulate demand by further cuts in interest rates. Such a short-run orientation which is often vehemently propagated by politicians runs counter to the main task of the ECB, namely to assure a stable price level in Euroland. These calls for action are even more implausible as monetary policy has not at all been tight but rather expansionary in the past.

Fiscal policy is subject to a controversy, too. A condition for EMU is the Stability and Growth Pact in which countries have promised to avoid budget deficits in excess of 3 percent of GDP. It has become apparent that in 1998 there was hardly any progress in consolidating the government budgets. If this continues and if deficits remain too high already at the beginning of EMU, the confidence in fiscal policy will weaken considerably. In another area of intense discussion, many economists and politicians favor a change in tax policies in Europe: After the single monetary policy has been established, taxes should be harmonized as well. Coordination and harmonization may have some appeal to many observers. However, experience shows

that the results of such efforts of economic policy may well be less competition and lower growth.

## I. Slowdown Triggered by Export Weakness

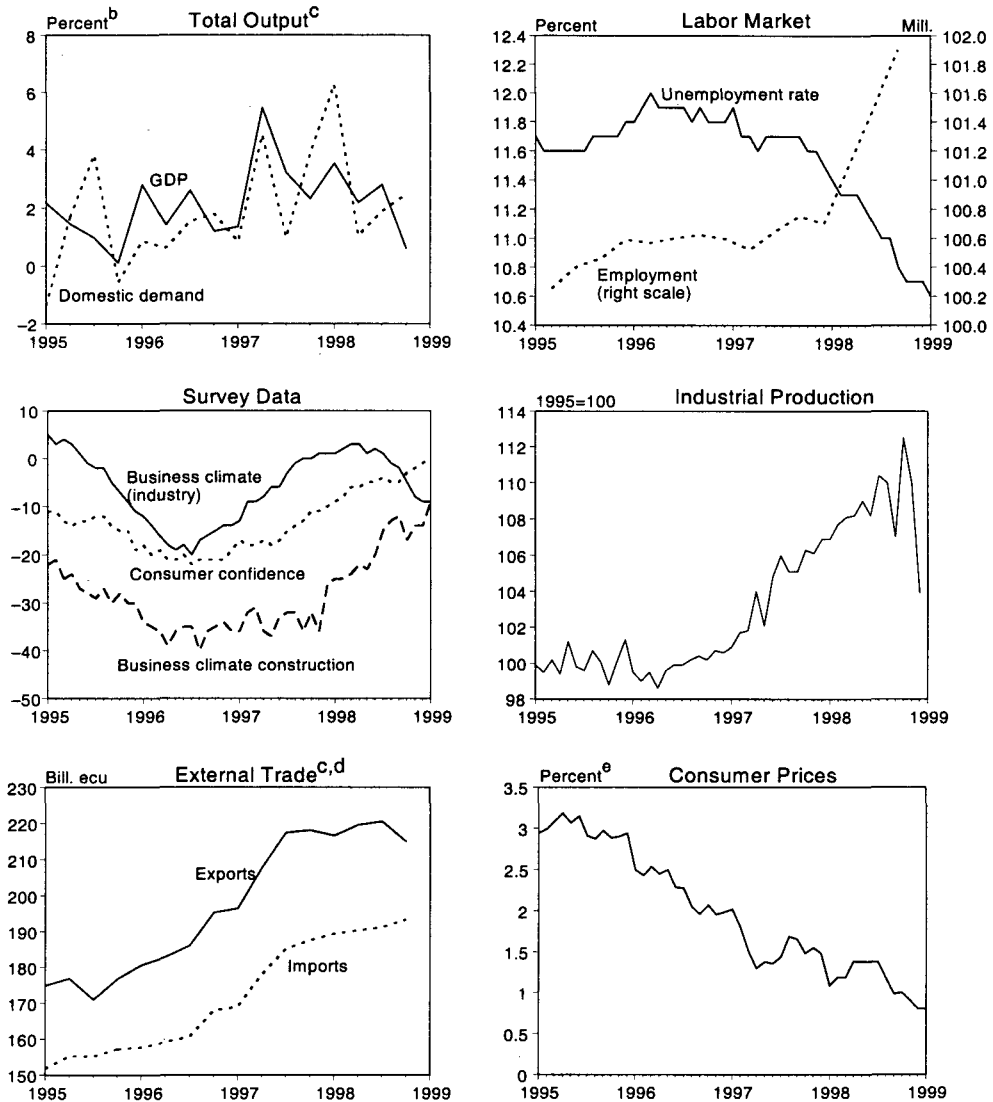
In 1998, real GDP in Euroland expanded at an accelerated rate of 3 percent (1997: 2.5 percent). The upswing, however, considerably lost momentum in the course of the year, the fourth quarter being virtually flat (Figure 1). The main factor behind the slowdown was a progressive weakening of exports<sup>1</sup> that ultimately affected also domestic demand.

In particular, the growth of fixed investment decelerated reflecting clouds in the business climate and a decline of capacity utilization. The pessimism also showed up in a decline of stock building in the second half of the year that followed a strong increase in the first half. In contrast, private consumption remained brisk because real disposable incomes rose significantly due to increasing employment and a further reduction in consumer price inflation. Contributing factors of the weakness of exports have been the pronounced fall of demand from Asia and Russia, that was not compensated by rising demand from expanding regions like North America, and the appreciation of European currencies by some 4 percent in real effective terms until the end of the year. Since the beginning of 1999, however, the euro has depreciated against major currencies.

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<sup>1</sup> The "exports" figures in the national accounts published by Eurostat (1998) include intra-Euroland trade. Own estimates (see Döpke et al. 1998b and Strauß 1998) for exports based on individual countries' extra-Euroland trade suggest that exports to outside Euroland ("correct" exports) declined in the fourth quarter while intra-Euroland trade was still expanding.

Figure 1: Business Cycle Indicators for Euroland, 1995–1999<sup>a</sup>



<sup>a</sup>Seasonally adjusted. — <sup>b</sup>Percentage change over previous quarter (annual rate). — <sup>c</sup>At constant prices. — <sup>d</sup>Excluding intra-Euroland trade. — <sup>e</sup>Percentage change over previous year.

Source: Eurostat (1998); ECB (1999b); own calculations.

Meanwhile, the labor market continued to improve. In the fourth quarter of 1998, the number of persons employed was 1.5 percent higher than one year before. The unemployment rate decreased by 0.5 percentage points over the second half of the year to a little less than 11 percent. Nevertheless, it is still higher than in other industrial countries. The improvement on the labor market spread to almost all EMU member countries; the exception is Italy where unemployment even rose slightly, reflecting slow economic growth.

Inflation has moderated further. The increase in consumer prices has reached its lowest level in decades. It amounted to less than 1 percent at the beginning of 1999 as measured by the Harmonized Index of Consumer Prices (HICP). The continued slowdown of inflation was partly due to a drop in energy prices by 4 percent over the year, while the increase in service prices remained roughly constant at 2 percent. There are still large differences in the inflation rates among EMU member countries. While in Germany and France prices were approximately stable at rates

of less than 0.5 percent, other countries in a more advanced stage of the business cycle reported inflation rates of some 1.5 percent (Spain, the Netherlands) or even more than 2 percent (Ireland, Portugal).<sup>2</sup> The fall in producer prices accelerated slightly to an annualized 3 percent in the fourth quarter of 1998, also reflecting declining unit labor costs.

## II. Monetary Policy Stimulates Economic Activity

The monetary conditions in Euroland have improved continuously. Already on the way to EMU, long-term interest rates converged at a low level. In part, this was the result of a more or less harmonized monetary policy aiming at the criteria of the Maastricht Treaty. But also the divergence of real interest rates (the difference between nominal rates and the rate of inflation) became smaller. With the increasing probability of EMU participation, the risk of devaluation declined for those currencies that had previously shown higher inflation (Lapp et al. 1996: 259 ff.), and the risk disappeared altogether after the decision on EMU membership in May 1998. The convergence of bond yields thus implied a reduction of real rates in the formerly high interest rate countries. Over a longer period (1986–1996), real rates were in several cases about two percentage points higher than in Germany (Table 1).<sup>3</sup> To summarize, the introduction of EMU itself led to an impulse in a number of countries as the cost of financing declined. Also, government budgets were relieved since borrowing was possible at lower real rates of interest.

A similar movement could be observed for money market rates which are largely under the control of central banks. In the past, there had

been considerable differences not only between nominal but also between real rates in the member countries; for example, the long-run average for the three-month money market rate in Italy was 6 % in real terms compared to less than 4 % in Germany. This reflects the lack of credibility of several central banks in Europe. Because of the risk of devaluation, they had to offer considerably higher interest rates. This risk premium disappeared completely with the introduction of the monetary union. In other words: As real rates declined substantially in countries of Southern Europe and in France — in some cases, they are even lower now than in Germany —, the impulse from monetary policy increased. It is true, therefore, that the convergence of interest rates alone — both long-term and short-term — implied an improvement of monetary conditions in those countries which had previously experienced a higher risk of inflation and of devaluation.<sup>4</sup> For Euroland as a whole, interest rates in general are currently very low even if the historically low rate of inflation is accounted for.

With the introduction of the euro on January 1, 1999 the ECB took over the responsibility for monetary policy. In December 1998, the national central banks had reduced the key interest rate to a level of 3 % in a concerted action. Since then, the three-month money market rate has come down from 3.5 % to 3.1 % (Figure 2). Long-term rates (ten-year bonds) recently stood at 3.8 %. Corrected for inflation (HICP), the real rate is approximately 3 %. This rate is lower than the long-term average for Germany. The harmonized money stock M3 increased at a rate of 4.9 percent in January which is somewhat higher than the reference value of the ECB for this aggregate; the narrow money stock M1 expanded at a rate of some 10 percent. All these figures on interest rates and money stocks show that monetary conditions in Euroland are favorable. In addition, the euro devalued against the dollar by about 8 percent between the beginning of January and early March.

<sup>2</sup> National headline inflation rates have differed to a similar degree.

<sup>3</sup> The average rates vary according to the estimation period. The sample period chosen here can be justified because the cyclical position in 1986 was similar to that in 1996. A time span over more than one cycle is not possible due to the lack of data.

<sup>4</sup> This would even be the case if the introduction of EMU had led to higher inflationary expectations; this, however, is not revealed by the development of interest rates.

Table 1: Real Interest Rates in Euroland<sup>a</sup>

	Long-term rates		Short-term rates	
	Average 1986–96	Current <sup>b</sup>	Average 1986–96	Current <sup>b</sup>
Austria	4.5	3.1	4.2	2.4
Belgium	5.8	2.9	5.1	2.2
Finland	7.0	2.9	6.5	2.2
France	6.1	3.1	5.5	2.4
Germany	4.7	3.3	3.8	2.6
Ireland	6.4	2.1	6.7	1.4
Italy	6.4	2.4	6.0	1.7
The Netherlands	5.5	2.1	4.6	1.4
Portugal	5.2	0.6	4.0	-0.1
Spain	6.0	2.3	6.4	1.8

<sup>a</sup>Long-term and short-term rates minus annual consumer price inflation. — <sup>b</sup>January 1999, partly estimated.

Source: OECD (1999); own calculations.

The difference between long-term and short-term interest rates is, however, somewhat lower than the long-term average for Germany. This is often seen as an indication of a tight policy stance. However, the term spread may not be a reliable indicator in this situation because its change is due to a fall in long-term rates and not an increase of short rates due to a tightening of monetary policy. The spread in Euroland has narrowed since mid-1998 only because long-term rates dropped faster than money market rates. In addition, the decline in bond yields is largely due to a shift of international investors towards markets in Europe (safe haven effect). This can hardly be seen as an indication of more restrictive monetary conditions.

The term structure at the short end of interest rates reveals the markets' expectations concerning the interest rate policy of the ECB in the near term. Since the rate for, say, the six-month money market rate is somewhat lower than the one-month rate, the market believes that the ECB will cut interest rates soon. Obviously, market participants assume that the ECB will react to low inflation and the current weak economic performance.

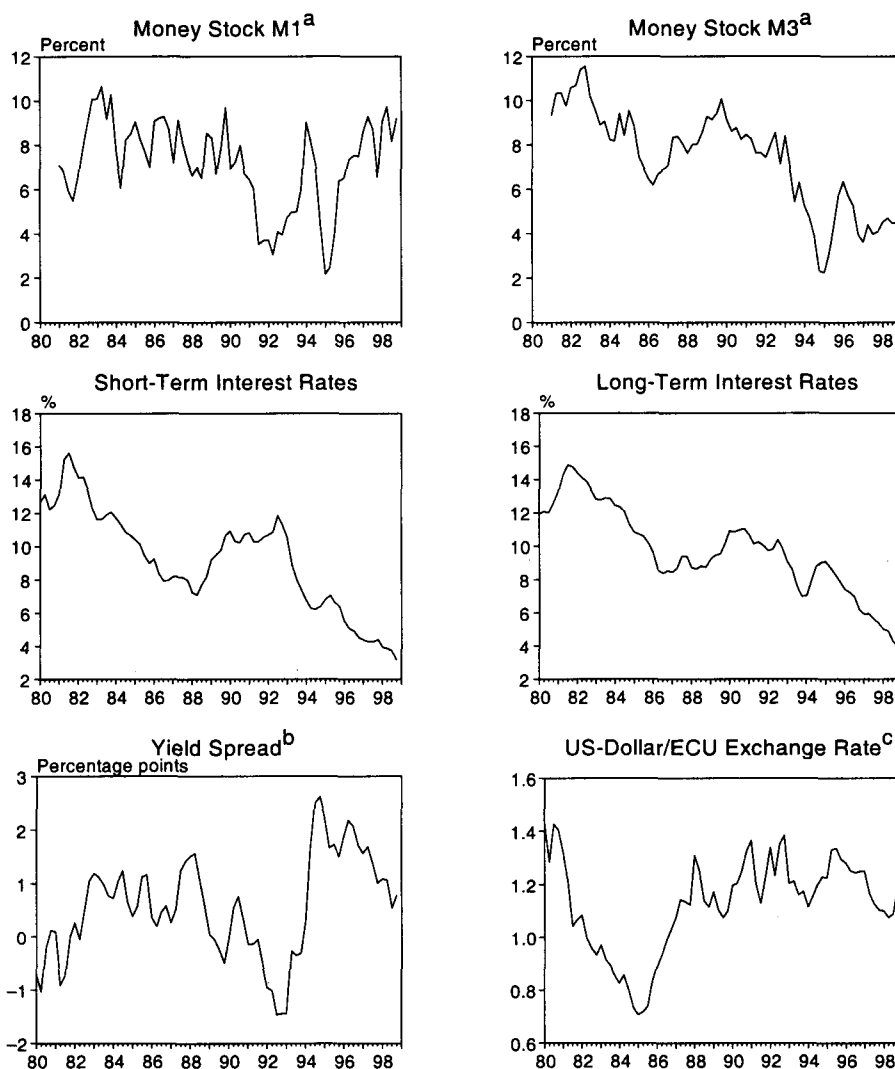
We do not share this view prevailing in financial markets but expect that the ECB will keep interest rates constant for a while. Indicators of economic activity have stabilized and suggest that the weakness is only transitory as is expected by many observers including the ECB. A further stimulation would therefore cre-

ate the risk of inflation. The expansion of M3 suggests that price increases will pick up soon, anyway; currently, they are only suppressed by special factors such as the decline of unit labor costs and low import prices. The recent devaluation of the euro is an expansionary factor as well. Finally, the ECB has to establish a reputation at the beginning of the monetary union; this means, among other things, that the central bank takes the medium-term strategy that it has chosen seriously and refrains from any attempts to fine tune the economy. And, above all, the ECB will not cut interest rates after the strong pressure from governments, especially since the national central banks cut interest rates last December and were — according to the perception of many market participants — giving in to political pressure. While key rates will remain unchanged in 1999, we expect the ECB to raise rates slightly next year because of the expected strength of the economy and the pickup of raw material prices. At the end of 2000, the three-month money market rate will be approximately 0.5 percentage points higher than currently.

Long-term rates will increase slightly in 1999 and reach some 4 % at the end of this year. They will go up further because, first, capital will return to emerging markets and, second, the economy will have gained momentum and inflation will rise somewhat. The real external value of the euro is assumed to remain constant during the forecast period.



Figure 2: Indicators of Monetary Policy in Euroland, 1980–1999



<sup>a</sup>Percentage change over previous year — <sup>b</sup>Long-term interest rate minus short-term interest rate.  
— <sup>c</sup>Since 1999 exchange rate US-Dollar/Euro.

Source: ECB (1999b); own calculations, estimations and forecasts.

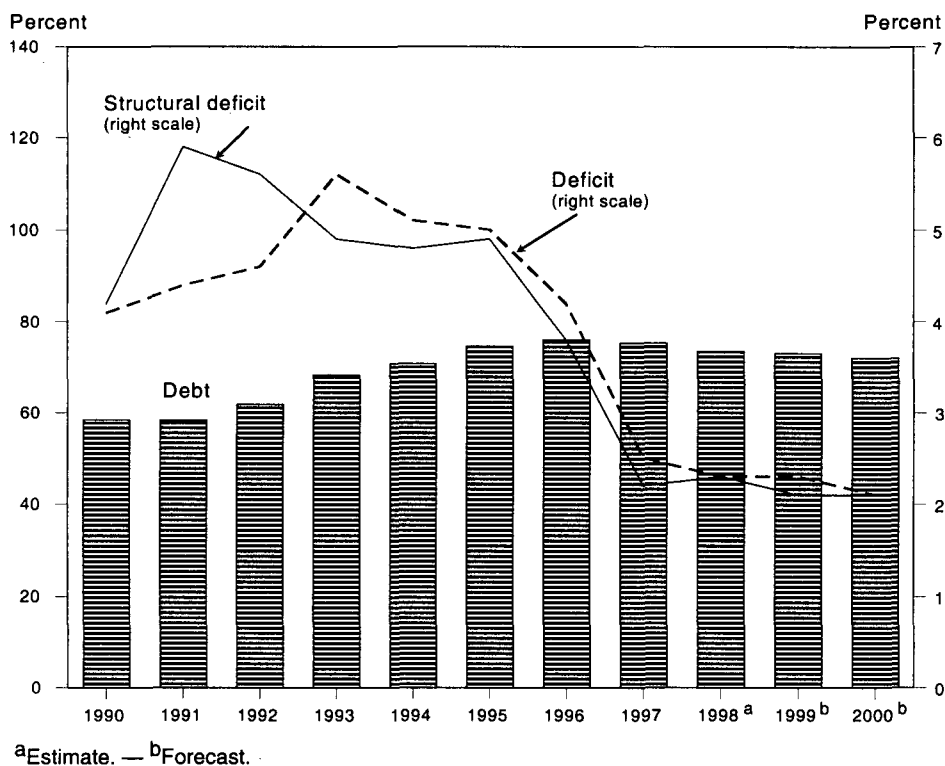
### III. Fiscal Policy on a Neutral Course

Last year, the budget deficit relative to GDP in Euroland continued to decline. However, compared to 1997, when the deficit shrank to 2.5 percent from 4.2 percent (1996), the reduction of 0.2 percentage points was minimal (Figure 3) in light of the fact that economic growth was strong in 1998; the increased revenues and reduced expenditures alone would have lowered

the deficit ratio by 0.4 percent.<sup>5</sup> In other words, the structural deficit actually increased slightly. It has to be noted, however, that the deficit in 1997 had been pushed down by one-off measures equivalent to 0.4 percent of GDP. All in all,

<sup>5</sup> A reduction of the output gap by one percentage point typically reduces the deficit ratio by a little more than half a percentage point (Döpke et al. 1998b: 20). Given the estimate of 2.3 percent for the growth of potential output, the observed increase of real GDP (3 percent) is equivalent to a decline of the output gap by 0.7 and a reduction of the deficit ratio by 0.4 percentage points.

Figure 3: Government Deficit and Debt in Percent of Nominal GDP in Euroland, 1990–2000



Source: ECB (1999b); own calculations, estimations and forecasts.

progress in fiscal consolidation was small at best in 1998. The considerable moves towards consolidation registered in 1997 in the run-up to EMU have obviously lost momentum.

Over the forecasting horizon, fiscal policy is expected to stay on its neutral course. Tax measures and various expenditure programs aimed primarily at improving the labor market will on balance neither stimulate nor dampen demand. According to the projections in the Stability and Growth Programs, the deficit should decline slightly. However, since real GDP growth is likely to be lower than projected, the achievement of the planned deficit-to-GDP ratios would necessitate additional measures to raise revenues or to reduce expenditures. We do not expect such a tightening because governments will want to avoid a procyclical stance of fiscal policy in 1999. Instead, against the background that there are no sanctions as long as the deficit remains below 3 percent of GDP, governments are likely to tolerate deficits that are higher than projected. The budget deficit relative to GDP

will be stuck at slightly above 2 percent in both 1999 and 2000, and the debt-to-GDP ratio will decline only marginally.

#### IV. Outlook: Recovery Resumes

For the immediate future, leading indicators suggest that output will grow rather slowly due mainly to the weakness of exports and corporate investment. The business climate, however, seems to have bottomed out (Figure 1). At the same time, the index of consumer sentiment reached its highest level in the 1990s, and in some countries, notably in France, it climbed to all-time highs. Therefore, private consumption can be expected to keep going strong.

Business expectations will start to improve from spring onwards, and GDP growth will gain momentum again (Table 2). The annual growth rate for 1999 will amount to 2 percent, mainly due to the temporary slowdown at the be-

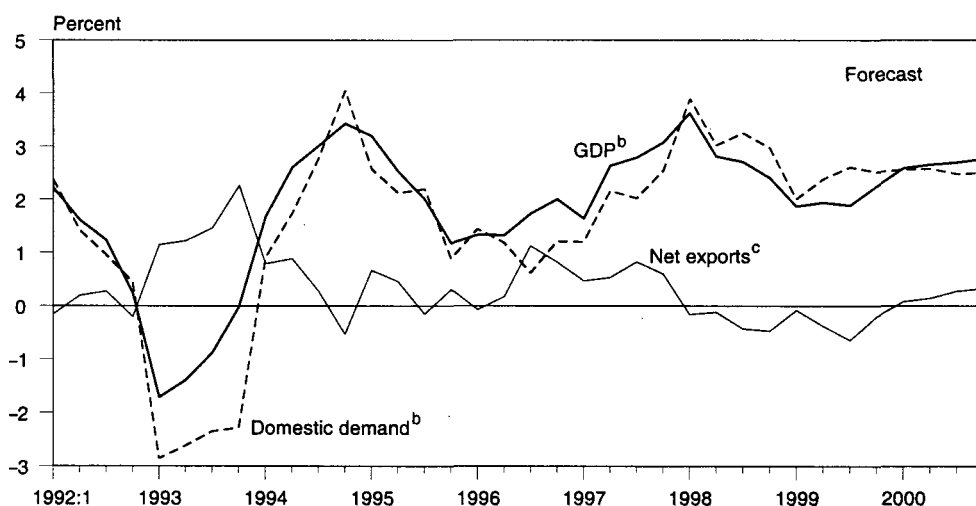
Table 2: Quarterly Data on the Economic Development in Euroland, 1998–2000

	1998				1999				2000			
	Q1	Q2	Q3	Q4 <sup>a</sup>	Q1 <sup>b</sup>	Q2 <sup>b</sup>	Q3 <sup>b</sup>	Q4 <sup>b</sup>	Q1 <sup>b</sup>	Q2 <sup>b</sup>	Q3 <sup>b</sup>	Q4 <sup>b</sup>
Gross domestic product <sup>c</sup>	3.6	2.3	2.8	0.7	1.2	3.1	2.5	2.6	2.8	2.5	2.5	2.5
Domestic demand <sup>c</sup>	6.3	1.0	1.9	2.5	2.0	3.2	2.7	2.4	2.6	2.4	2.2	2.2
Private consumption <sup>c</sup>	3.8	2.0	2.7	3.4	3.2	2.2	2.3	2.3	2.5	2.5	2.3	2.3
Public consumption <sup>c</sup>	6.4	1.1	-3.2	-1.0	4.0	1.2	1.4	1.6	1.2	1.2	1.2	1.2
Fixed investment <sup>c</sup>	6.3	-5.0	5.0	2.3	2.1	2.8	3.7	3.8	3.6	3.7	3.7	3.6
Change in stocks <sup>d</sup>	1.5	0.7	-0.3	0.1	-1.0	1.0	0.3	0.0	0.2	-0.1	-0.1	-0.2
Net exports <sup>d</sup>	-2.4	1.2	0.9	-1.8	-0.8	0.0	-0.1	0.2	0.3	0.2	0.4	0.4
Exports <sup>c,e</sup>	-2.7	5.7	1.8	-9.8	2.8	5.7	6.5	6.6	6.7	7.5	8.8	9.5
Imports <sup>c,e</sup>	3.9	2.0	2.1	4.5	2.3	3.5	4.5	5.0	5.5	6.0	6.0	6.5
Unemployment rate <sup>f</sup>	11.3	11.1	11.0	10.8	10.7	10.5	10.3	10.1	10.0	9.9	9.8	9.7
Consumer prices (HICP) <sup>g</sup>	1.1	1.4	1.1	0.9	0.8	0.7	0.9	1.1	1.4	1.5	1.7	1.8
Money stock M1 <sup>g</sup>	8.8	10.4	8.6	9.0	12.0	10.0	8.0	8.0	8.0	8.0	8.0	8.0
Money stock M3 <sup>g</sup>	4.4	4.7	4.4	4.9	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
3-month money market rate in %	4.0	3.9	3.8	3.4	3.1	3.2	3.2	3.2	3.2	3.3	3.5	3.6
Long-term interest rate in %	5.1	5.0	4.6	4.1	3.9	3.9	4.0	4.1	4.3	4.5	4.7	4.9
Exchange rate vis-à-vis US dollar <sup>h</sup>	1.09	1.10	1.12	1.18	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12

<sup>a</sup>Estimation. — <sup>b</sup>Forecast. — <sup>c</sup>Annualized quarterly rate of change in percent. — <sup>d</sup>Contribution to change in GDP. — <sup>e</sup>Excluding intra-Euroland trade. — <sup>f</sup>In percent of the labor force, harmonized according to the ILO concept. — <sup>g</sup>Change over previous year in percent. — <sup>h</sup>Ecu/US dollar; from 1999 onwards euro/US dollar.

Source: Eurostat (1998); ECB (1999b); OECD (1998a); own calculations and estimates.

Figure 4: GDP, Domestic Demand and Net Exports in Euroland, 1992–2000



<sup>a</sup>At constant prices. — <sup>b</sup>Percentage change over previous year. — <sup>c</sup>Change of net exports over previous year in percent of GDP in the same quarter of previous year.

Source: Eurostat (1998); own calculations and forecasts.

ginning of the year. In the year 2000, output growth will accelerate to 2.7 percent which is a little more than the growth rate of potential output.<sup>6</sup>

Domestic demand will lead the recovery, stimulated by favorable monetary conditions (Figure 4). At the same time, fiscal policy is on a neutral course. Investment in machinery and equipment is projected to pick up gradually owing to the low cost of financing and improving capacity utilization. Private consumption will

<sup>6</sup> We do not assume a major impact of the Y2K problem ("millennium bug"). Possible frictions are expected to be short-lived.

Table 3: Real GDP, Consumer Prices and Unemployment Rate in Euroland, 1997–2000

	Weights in total <sup>a</sup>	Real GDP <sup>b</sup>				Consumer prices <sup>b,c</sup>				Unemployment Rate <sup>d</sup>			
		1997	1998	1999 <sup>e</sup>	2000 <sup>e</sup>	1997	1998	1999 <sup>e</sup>	2000 <sup>e</sup>	1997	1998	1999 <sup>e</sup>	2000 <sup>e</sup>
Germany	33.6	2.2	2.8	1.6	2.5	1.8	1.0	0.4	1.5	10.0	9.8	9.1	8.5
France	22.1	2.3	3.2	2.1	2.5	1.2	0.7	0.5	1.3	12.4	11.9	11.5	11.0
Italy	18.2	1.5	1.4	1.7	2.8	1.8	1.7	1.4	1.8	12.1	12.3	12.0	11.5
Spain	8.5	3.5	3.8	3.1	3.4	2.0	1.8	1.7	2.1	20.8	18.8	17.5	16.5
The Netherlands	5.8	3.6	3.7	1.8	2.3	2.2	2.0	1.6	2.1	5.2	4.0	4.0	4.0
Belgium	3.8	2.9	2.9	2.0	2.5	1.6	1.0	1.0	1.5	9.2	8.8	8.5	8.0
Austria	3.3	2.5	3.0	2.0	2.5	1.3	0.9	1.0	1.5	4.4	4.4	4.0	4.0
Finland	1.9	5.9	5.0	3.0	3.0	1.2	1.4	1.0	2.0	13.1	11.8	10.5	9.5
Portugal	1.5	3.7	4.0	3.0	3.0	2.3	2.8	3.0	3.0	6.8	4.9	4.0	4.0
Ireland	1.2	9.8	9.5	6.5	6.5	1.4	2.4	2.0	3.0	10.1	9.0	8.0	7.5
Luxembourg	0.2	3.7	3.5	2.5	3.0	1.4	0.9	1.0	1.5	2.6	2.2	2.0	2.0
Euroland	100.0	2.5	3.0	2.0	2.7	1.6 <sup>f</sup>	1.1 <sup>f</sup>	0.9 <sup>f</sup>	1.6 <sup>f</sup>	11.7 <sup>g</sup>	11.1 <sup>g</sup>	10.4 <sup>g</sup>	9.9 <sup>g</sup>

<sup>a</sup>Based on GDP in current prices and exchange rates of 1997. — <sup>b</sup>Percentage change over previous year. — <sup>c</sup>National consumer price index. — <sup>d</sup>Standardized unemployment rates according to OECD. — <sup>e</sup>Forecast. — <sup>f</sup>Harmonized Index of Consumer Prices (HICP). — <sup>g</sup>Based on the number of employees in 1997.

Source: ECB (1999b); OECD (1998a); own calculations and estimates.

continue to display robust growth. However, no further acceleration can be expected because of reduced increases in employment and in real disposable incomes.

In the course of this year, exports will increasingly contribute to demand growth given the improvement of the situation in Asia and the brightening of the prospects of the United Kingdom economy (Gern et al. 1999). Meanwhile, the strong growth in the United States is likely to slow down somewhat, and in Japan the recession will bottom out. The euro is assumed to stay at around its present level in real terms.

Consumer prices will remain subdued for the time being, mainly due to the decrease in import prices reflecting low raw material prices. In the course of this year, however, raw material prices are likely to gradually recover adding to the upward pressure on prices due to an acceleration in wages and rising demand. As a consequence, the rate of inflation will pick up slightly to 1.5 percent next year, following close to 1 percent in 1999 (Table 3).

## V. Medium-term Orientation of the ECB

The ECB has decided not to follow the strategy of monetary targeting or inflation targeting in the strict sense. While the prominent role of the money stock is stressed, the ECB does not announce a target for money growth; instead, a reference path is defined. In doing this, the central bank follows the procedure the Deutsche Bundesbank has chosen in the past when deriving the target. Accordingly, the ECB defines the rate of M3 growth as compatible with target inflation of 1.5 percent<sup>7</sup> by assuming a trend growth of output of 2 to 2.5 percent and a trend decline of velocity by 0.5 to 1 percent. The role of money is therefore assumed to be the anchor for the price level (“Inflation is ultimately a monetary phenomenon,” as stated by the ECB (1999a: 47)). As there may be some problems in the period of transition — e.g. money demand may show some instability —, the ECB did not announce a target band for money

<sup>7</sup> According to the ECB, price level stability is achieved if the annual increase in the HICP is below 2 percent. This, however, is the upper limit and should not be taken as the target. Following statements by members of the Governing Council, the target can be assumed to be 1.5 percent.

growth. This could have led to speculations that the ECB would definitely change interest rates if the money stock is outside the corridor. In practice, however, there will not be major differences between announcing a corridor and a reference value because the ECB will also analyze the situation should M3 growth deviate substantially from the announced rate, and decide whether monetary policy actions are necessary. The Bundesbank behaved in a similar fashion in the past when monetary targets were not hit.<sup>8</sup>

The ECB does also not follow a strict inflation targeting. A key element of this strategy is a forecast of inflation on the basis of a macroeconomic model which then — should predicted inflation deviate from its target — leads to expansionary or restrictive measures. The ECB does not present such a model and also does not publish its forecast.<sup>9</sup> In this sense, its policy is less transparent for the public than envisaged in the inflation targeting strategy. Nevertheless, there will not be much of a difference in practice. The ECB will — as most other central banks — use a large number of indicators in order to assess the perspectives for inflation. The ECB (1999a: 49 f.) mentions an enormous number of variables which could lead to the impression that the central bank “looks at everything”, i.e. a great many indicators are used for its judgment as is the case in many macroeconomic models.

Although the ECB has not made a clear decision in favor of monetary targeting or inflation targeting, there will hardly be any difference with respect to the policy of the Deutsche Bundesbank or the Bank of England in terms of the overall targets. In the past, no central bank has ever followed a strict strategy of any type. For example, the Deutsche Bundesbank has not solely used the announced money targets as a reference for policy actions.

Although the ECB will look at many variables to assess the outlook for inflation, the statements can be interpreted in such a way that it intends to follow a medium-term strategy, oriented at potential output (ECB 1999a). This strategy is incompatible with a fine tuning of the economy or with an influence of current inflation on policy decisions; this can be the case only indirectly if money demand changes and, thus, if there is a deviation of money growth from the target. The main reason for such a policy strategy is that economic theory as well as experience have shown that a policy of fine tuning is not possible.<sup>10</sup> For that to work, any deviation from the output target or the inflation target would require a clear identification of the causes; the size and kind of the shocks (permanent or transitory?) must be known, and one has to know exactly how the change in policy instruments will affect the target variables. As the knowledge of all these necessary requirements does not exist, central banks have more and more moved away from an activist policy which had created more instability of output and led to higher inflation.<sup>11</sup>

The ECB, too, has decided to follow a medium-term strategy. This policy will by itself help to stabilize economic activity, i.e., a prolonged weakness as well as an overheating of the economy will be avoided. For example, an acceleration of inflation is unlikely which would cause a monetary tightening and a subsequent recession (Scheide 1998); also, the strategy prevents deflationary tendencies.

## VI. No Reason to Cut Interest Rates

Applied to the current debate about the interest rate policy, all this means that the sluggishness in Euroland is no reason for the ECB to act. The

<sup>8</sup> The Bundesbank also did not react in a mechanistic fashion if the target was not met. For example, in 1994 it lowered interest rates although M3 was considerably above the target.

<sup>9</sup> In contrast, the Bank of England regularly publishes an “Inflation Report” in which the outlook for inflation is described.

<sup>10</sup> This is the essence of Friedman (1968) and Lucas (1976).

<sup>11</sup> Of course, the medium-term strategy of monetary targeting also rests on certain conditions, e.g. the stability of money demand.

fact that inflation is low does not change this conclusion. Currently, consumer prices increase only slightly due to special factors, in particular the weakness of raw material prices and the consequent decline of import prices and not because monetary policy has been tight. If the central bank reacted to this transitory change by cutting interest rates, they would have to be raised again as soon as this effect fades away. In order to avoid such a stop-and-go policy, the ECB should refrain from activism especially since changes of import prices do not have a lasting impact on the overall price level. At the same time, the recent weakness of the euro against major currencies is no reason to raise interest rates.<sup>12</sup>

It does not make much sense to raise interest rates when oil prices are rising or to lower rates when oil prices are falling.<sup>13</sup> Therefore, the ECB should focus more on the “core rate,” which excludes very volatile prices (e.g. for food and energy) which are affected by special factors (speculation, weather impact etc.). The core rate of inflation is currently not far away from the ECB’s target inflation rate of 1.5 percent. This rate is compatible with the observed rate of monetary expansion, i.e., in the medium term, the inflation rate in Euroland will average 1.5 percent if money growth is consistent with the reference path of the ECB. Finally, the core rate is also closer to the present forecasts for Euroland; the current low inflation rate is not assumed to prevail in the near future.

An explicit short-run orientation is recommended by the rule proposed by John Taylor. According to this strategy, the central bank should lower (raise) interest rates if actual inflation is lower (higher) than the target and if real GDP is lower (higher) than trend GDP (Box).

This rule is, in a sense, compatible with the medium-term orientation as it suggests a neutral course when the output gap is zero and if actual inflation coincides with target inflation. On the basis of the rule, the neutral rate of interest would be 4.5 %. This rate will most likely be achieved in the medium term if inflation is 1.5 percent. However, the rule proposes a stronger activism of monetary policy in reaction to inflation and economic activity. But even if the Taylor Rule were pursued, there would be no need to cut interest rates now, because the money market rate — presently standing at 3.1 % — is not only lower than the neutral rate but also lower than the rate suggested by the Taylor Rule.

All this implies that the low interest rates are already supporting economic activity in Euroland. If a further reduction is suggested, it must be assumed that either the equilibrium real rate of interest is lower than 3 % — there is no indication for this<sup>14</sup> — or that the output gap is actually much bigger. Such an assumption would imply that Euroland is in a recession and that, for example, unemployment is to a considerable degree of a cyclical nature. For example, interest rates would, according to the rule, be one percentage point lower if the output gap was two percentage points higher than assumed in the calculation (Box). However, there is ample evidence provided by most national research institutions and international organizations that unemployment is mostly structural and that the output gap is relatively small.

<sup>12</sup> Scheide and Solveen (1998) propose that the ECB should neglect exchange rate movements. — However, some politicians and economists have recently proposed target zones once again; if they were established, the ECB would probably have to raise interest rates soon or the US Fed would have to lower rates in spite of the booming US economy.

<sup>13</sup> The same argument holds for changes in indirect taxes. Hardly anyone would propose that the central bank should tighten its policy because the value added tax or the tax on gasoline is raised.

<sup>14</sup> Estimates of the equilibrium real rate of interest naturally have a big margin of error. Lucas (1996: 666) is extremely critical with respect to the possible link between interest rates and inflation in general: “Central banks and even some monetary economists talk knowledgeably of using high interest rates to control inflation, but I know of no evidence from even one economy linking these variables in a useful way ...”. In this connection, the statement in the Monthly Bulletin of the ECB (1999a: 17) is dubious: “... the view of the Governing Council ... that a level of 3 % is appropriate in the foreseeable future as it best serves the maintenance of price stability over the medium term.” — There is no empirical basis for such a statement.

*Box: A Modified Taylor Rule*

The Taylor Rule for an interest rate policy is described as follows:

$$[1] \quad i = \pi + r + 0.5 (\pi - \pi^*) - 0.5 (y^* - y)$$

where  $i$ : money market rate  
 $\pi$ : core inflation  
 $\pi^*$ : target inflation  
 $r$ : equilibrium real money market rate  
 $y$ : real GDP  
 $y^*$ : trend real GDP

The reaction coefficient for the deviations from the targets  $\pi^*$  and  $y^*$  are usually 0.5. This version differs slightly from the commonly used versions because the core rate is included instead of the actual inflation rate. In general, the equilibrium real rate must be estimated. This is not a trivial task, and any errors may lead to substantial deviations from the inflation target (Scheide 1998: 10 f.). The estimation for Euroland is especially problematic because before the monetary union, real interest rates were biased upwards due to special risk premia. Therefore, the average rate prevailing in Germany is used as an approximation. During the past 25 years, it amounted to about 3 % — just as for the United States. Furthermore, an estimate for the output gap is needed. The numbers provided by various institutions vary. At the upper end of the spectrum, the OECD estimate is slightly above 1 percent.<sup>a</sup> Given these values for the real rate of interest and the output gap, the rule implies a money market rate of almost 4 %.

<sup>a</sup>Other methods lead to lower estimates, i.e., the money market rate according to the rule would be higher. See Döpke et al. (1998b: 10 ff.).

## VII. Stability and Growth Programs: Consolidation Remains Inadequate

In the summer of 1997, the Stability and Growth Pact was ratified in order to secure that governments pursue fiscal policies in line with the ideas of the Maastricht Treaty also after EMU had started. The Stability and Growth Pact requires that governments aim for balanced budgets or even a surplus over the business cycle. As an instrument to enforce sustainable fiscal policies, a mechanism was introduced that threatens to impose sanctions if the budget deficit exceeds 3 percent of GDP.<sup>15</sup> In addition, it was determined that the governments submit to the European Commission and the Council medium-term projections of the fiscal developments, so-called Stability and Growth Programs. On the basis of these programs, fiscal policies are to be evaluated with respect to their compliance with the Maastricht Treaty.<sup>16</sup>

Now the first reports have been submitted by all countries. They contain projections for the years until 2002 and are supposed to be updated annually.<sup>17</sup> Table 4 presents key figures of the programs. In Finland and Ireland, the budgets were in surplus already last year. Apart from these countries, only Spain plans a balanced budget. In the other countries, the budget deficit as a share of GDP is projected to decline to around 1 percent; the Austrian government explicitly views 1.5 percent as being sufficient to satisfy the requirements of the Stability and Growth Pact (Bundesministerium für Finanzen 1998: 8). The resulting deficit for Euroland as a whole is 0.9 percent in 2002, compared to 2.3 percent in 1998.

Fiscal consolidation is defined as a reduction of the structural, i.e. cyclically adjusted, deficit. Therefore, it is adequate to focus on the evolution of the structural budget balance. Most of the governments assume higher GDP growth than has been achieved in the recent past and also higher than what is generally estimated to be the growth rate of potential output. Accordingly, in these countries, structural deficits decline by less than the headline deficits. Further-

<sup>15</sup> For a critical discussion of the sanction mechanism in the Stability and Growth Pact see Scheide and Solveen (1997: 15–17).

<sup>16</sup> EU countries that are not members of the currency union also have to submit programs in order to review the convergence process.

<sup>17</sup> The Stability and Growth Programs of Italy and Ireland only cover the period until 2001.

Table 4: Key Figures of the Stability and Growth Programs

	General government budget balance <sup>a</sup>		Gross public debt <sup>a</sup>		GDP growth <sup>b</sup>		General government structural budget balance <sup>a,c</sup>	
	1998	2002	1998	2002	1994–1998	1998–2002	1998	2002
Austria	-2.2	-1.4	64.5	60.0	2.3	2.4	-2.3	-1.9
Belgium	-1.6	-0.3	117.5	106.8	2.2	2.3	-1.7	-0.6
Finland	1.1	2.3	51.9	43.2	4.9	3.0	0.5	2.7
France	-2.9	-1.2	58.2	57.6	2.3	2.5	-3.0	-1.7
Germany	-2.1	-1.0	61.1	59.5	1.9	2.4	-2.0	-1.6
Ireland <sup>d</sup>	1.7	1.6	59.0	43.0	9.4	5.6	0.9	2.2
Italy <sup>d</sup>	-2.6	-1.4	118.2	107.0	1.6	2.8	-2.1	-2.8
The Netherlands <sup>e</sup>	-1.3	-1.0	68.6	64.5	3.2	2.25	-1.6	0.1
Portugal	-2.2	-0.8	58.0	53.2	3.4	3.3	-2.3	-1.5
Spain	-1.9	0.1	67.4	59.3	3.1	3.5	-2.3	-1.8
Euroland	-2.3	-0.9	73.5	67.7	2.3	2.6	-2.3	-1.5

<sup>a</sup>In percent of GDP. — <sup>b</sup>Average annual growth rate. — <sup>c</sup>Based on potential output estimated with Hodrick-Prescott filter. For details on the methodology see Döpke et al. (1998b: 19 ff.). — <sup>d</sup>Projection until 2001 only. — <sup>e</sup>Cautious scenario. The Stability and Growth Program of the Netherlands' government includes three different scenarios based on average annual GDP growth of 2.25, 2.75 and 3.25 percent, respectively.

Source: OECD (1998b); Stability and Growth Programs of various countries; own calculations and estimates.

more, these projections seem to be optimistic in light of recent developments that led to a substantial downward revision of GDP growth for the current year. Consequently, there is a high probability that even the modest targets envisaged in the programs will be missed.

The development of the budget deficit is only one dimension in the evaluation of fiscal policies. Another important aspect is whether consolidation is achieved by restraining expenditures or by raising taxes. Consolidation via the revenue side lowers growth because higher taxes and contributions dampen capital accumulation and work effort. Experience shows that a consolidation that relies on expenditure reduction is more likely to be successful (McDermott and Wescott 1996).<sup>18</sup>

In all countries for which relevant information has been made available, the planned increase in public expenditures is projected to be smaller than GDP growth. Thus, the share of public expenditures in GDP is envisaged to fall, if slightly in some cases (Table 5). In a number

of countries, notably Ireland, Finland, the Netherlands, and Italy, this follows a significant reduction in the expenditures-to-GDP ratio between 1994 and 1998 that has resulted in considerable fiscal consolidation. General government revenues (relative to GDP) have increased in recent years in many countries in the course of bringing budget deficits down below 3 percent. In the period until 2002, the revenue-to-GDP ratio is generally projected to decline gradually. Thus, with respect to the structure of consolidation, the policies as reflected in the Stability and Growth Programs are a move into the right direction. The policies actually pursued, however, raise concern that the realization of the projections is unlikely in some cases. For this year and next, a significant reduction of the share of public expenditure in GDP cannot be expected in France and in Germany, for example.<sup>19</sup>

The Maastricht Treaty requires fiscal policies to be sustainable. Sustainability is indicated by a primary budget surplus high enough to stabilize the debt-to-GDP ratio (Buiter 1985, Blanchard et al. 1990). Comparing the projected debt ratio in 2002 (Italy and Ireland: 2001) with the debt ratio in 1998 reveals that this is the

<sup>18</sup> It has to be noted, however, that it is also important which kind of expenditures are cut. Decreasing public consumption is the preferable option as compared to reducing public investment (Alesina and Perotti 1997). In Euroland, most countries have cut public investment considerably while other expenditures (public consumption, subsidies, and transfers) continued to rise in relation to GDP (OECD 1998b: 152).

<sup>19</sup> For a discussion of the fiscal policy in Germany, see Boss et al. (1999).



Table 5: General Government Expenditures and Revenues (percent of GDP)

	Share of expenditures			Share of revenues		
	1994	1998 <sup>a</sup>	2002 <sup>a</sup>	1994	1998 <sup>a</sup>	2002 <sup>a</sup>
Austria	52.5	49.6	48.9	47.5	48.1	47.6
Belgium	54.7	51.0	49.0	49.8	49.5	48.7
Finland	59.3	50.7	n.a.	53.2	51.5	n.a.
France	54.4	54.3	51.5	48.4	50.8	49.8
Germany	50.1	48.5	45.0	47.5	45.9	44.0
Ireland	40.5	31.4	28.1	38.3	35.1	33.3
Italy	54.4	50.2	48.1	45.2	47.7	46.7
The Netherlands	52.8	46.7	43.8	49.0	45.4	42.7
Portugal	46.8	46.7	46.0	40.8	44.5	45.1
Spain	47.8	43.5	41.2	41.5	41.6	41.2
Euroland	52.1	49.5	47.4	46.9	47.1	46.3

<sup>a</sup>Based on figures from the Stability and Growth Programs, partly corrected for differences in definitions.

Source: OECD (1998b); Stability and Growth Programs of various countries; own calculations and estimates.

case for every single country. However, there are significant differences: While in some countries (Ireland, Finland, the Netherlands) the debt ratio is declining rapidly, in others only minor progress is projected. The latter is true especially for the large economies Germany and France; consequently, the fiscal policies as laid out in the Stability and Growth Programs do not lead to a marked reduction of the debt-to-GDP ratio in Euroland as a whole. Gross public debt relative to GDP will remain significantly above 60 percent.

Summing up, the current course of fiscal policy in Euroland does not comply with the principles of the Maastricht Treaty and the Stability and Growth Pact to a sufficient degree, mainly due to limited consolidation efforts in the major member states. Even slow progress is contingent on a rather benign macroeconomic environment. In contrast, in some of the smaller countries consolidation has progressed remarkably.

## VIII. Tax Competition Instead of Tax Harmonization in the EU

After the introduction of the Euro, it has often been argued that fiscal policy in the EMU or even in the EU should be more coordinated.

Facing the high degree of capital mobility, harmonization of capital income taxes is often viewed as necessary. In particular, it has been argued that the differences between value added tax (VAT) rates (Table 6) hamper the integration of the markets and distort competition.

The EU Commission — supported by the governments of many member countries — has proposed a new VAT system (Mueller 1996). The main elements are a kind of smoothing the

Table 6: Value Added Tax Rates in the European Union, 1998 (percent)

	Regular rate	Reduced rate(s)	Zero rate <sup>a</sup>
Austria	20	10; 12	—
Belgium	21	1; 6; 12	yes
Denmark	25	—	yes
Finland	22	8; 17	yes
France	20.6	2.1; 5.5	—
Germany	16	7	—
Greece	18	4; 8	—
Ireland	21	3.6; 10.0	yes
Italy	20	4; 10	yes
Luxembourg	15	3; 6; 12	—
The Netherlands	17.5	6	—
Portugal	17	5; 12	—
Spain	16	4; 7	—
Sweden	25	6; 12	yes
United Kingdom	17.5	5	yes
EU15	18.5 <sup>b</sup>	—	—
EMU	18.3 <sup>b</sup>	—	—

<sup>a</sup>Zero tax rate for specific sales (e.g. sales of newspapers in Belgium and Denmark) combined with a credit for the tax included in the purchases. — <sup>b</sup>Weighted by 1997 GDP shares.

Source: DATEV (1999); own calculations.

VAT rate differentials prevailing in the European Union, the abolition of the tax borders (shifted into the firms in 1993) and the introduction of a clearing mechanism in order to compensate those countries which lose tax revenues because of the switch to the new system.<sup>20</sup>

If the tax borders were abolished, i.e., if the invoice method of value added taxation was realized across the borders of the EU countries, trade flows would not be influenced given the present tax rates. However, the distribution of VAT revenues among the EU countries would change. Countries with net exports would gain, net importers would lose revenues. At the same time, high tax rate countries would benefit whereas low rate countries would lose tax revenues. By raising the VAT rate, every country could exploit the other countries; because of the taxation of exports an increase of the VAT rate would result in higher revenues without (due to the invoice method) affecting exports, whereas tax revenues of the import country would decline. According to the proposal of the EU Commission, these consequences on the distribution of the VAT revenues among the countries are to be avoided by a clearing mechanism and by a harmonization of taxes.<sup>21</sup>

The introduction of the system advocated by the EU Commission and by most of the governments in the EU would not enforce tax competition. This would be the case, however, if the origin principle of value added taxation<sup>22</sup> and a general (including a cross-border) subtraction method instead of the invoice method was introduced (Boss 1989). According to this system, the difference between sales and purchases of a firm is taxed by the rate decided upon by a single country, and there is no adjustment of tax

rates if goods and services are exported or imported. Whereas the existing VAT system is based on the destination principle, the new system is a VAT system characterized by the origin principle (correctly understood); the value added (excluding investment expenditures) is taxed. A country receives tax revenues if production takes place in that country. Net export (import) countries would realize higher (lower) tax revenues. Such a distribution would be equivalent to what the term "value added" actually implies.

At first glance, the introduction of the origin principle would diminish the competitiveness of high-tax countries, whereas low-tax countries would gain. But wages and prices in the individual countries can be expected to react — although possibly with a lag; the consequence is an unchanged competitive position of each of the countries.<sup>23</sup> Insofar as wages in high-tax countries are not lowered or are reduced only sluggishly, unemployment would rise permanently or temporarily.

Applying the origin principle, every country would be able to reduce the VAT rate in order to become attractive as a location of production. Due to competition, the VAT rates on average presumably would be smaller than in the case of harmonization. In addition, the tax rates might come closer to the benefits that firms have as a result of government activities in each of the countries. Finally, competition might be advantageous because every country would be free to find its optimal tax rate structure.

Competition between countries with respect to capital income taxation is often seen to be even more harmful than VAT competition. Facing an increasing degree of capital mobility, it has been argued that a "race to the bottom" is taking place;<sup>24</sup> competition even would become more intensive and possibly might only come to an end when the capital income tax rates are

<sup>20</sup> In the relation to non-EU countries nothing has to be changed.

<sup>21</sup> If the shift of tax revenues were to be compensated exactly, the clearing authority would need exactly the same data which are currently necessary in order to control the tax declarations of the firms. As to administration, especially the firms would not realize lower costs. The main effect of introducing the Commission's system might easily be the creation of a new European bureaucracy (Homburg 1997: 306).

<sup>22</sup> In the political discussion, the term "origin principle" is erroneously used to characterize the system proposed by the EU Commission.

<sup>23</sup> In technical terms: The "real exchange rates" within EMU would be unchanged after the adjustment to the new system; in relation to non-EMU countries, nominal exchange rates would also have to change in order to have constant real exchange rates.

<sup>24</sup> Assessing the attractiveness of a location of production, the effective rate of taxation is important; it depends not only on the tax rate but also on the definition of the tax base (e.g. the depreciation rules) and the importance of other taxes.

zero. This would mean that the governments would not be able to fulfill their functions sufficiently or at all. Especially, there might be an inefficient supply of public goods or the welfare state might be eroded by the market forces. For constant or declining government expenditures, the tax burden would have to be shifted to the immobile factors of production, especially to labor; this would hinder — given the high or even increasing rates of contributions to social security — the decrease of unemployment in the EU.

The question is whether the “race to the bottom” feared by many observers would actually occur. The corporate income tax rates which are at the center of the discussion about the necessity of tax rate harmonization declined in the 1985–1992 period in most of the EU countries (as well as in other industrialized countries); thereafter the tax burden on average did not change. The share of taxes on corporate income (in the OECD definition) in total tax revenues declined in only two countries (Germany and France) in the 1980–1996 period (Table 7); in the EU on the whole, the share — and the relation of taxes on corporate income to GDP — even increased somewhat. All in all, there are only weak indications of what is called a “race to the bottom” in the EU.

Nevertheless, there are strong efforts to harmonize capital income taxation and to create “fair” tax competition in the EU. The EU Commission proposed a “model of coexistence” for taxing interest income (Mueller 1998). This means that the EU countries have to either withhold a 20 percent minimum tax on interest income (including zero bonds and euro bonds) earned by foreigners or to inform the foreign tax authorities about the interest income paid.

Obviously, the proposal aims at strengthening the residence principle of interest income taxation. Using the residence principle is efficient if really enforced;<sup>25</sup> savings would be allocated — as to the EU region — without tax distortions because income from abroad would be taxed in the same way as domestic income.

In addition, capital income taxation is adequate in a system of comprehensive income taxation. However, taxing interest income means that savings are discriminated. If the tax rate on interest income in the EU on average goes up as a consequence of implementing the Commission’s proposal, the extent of discrimination increases. Anyway, the realization of the proposal would mean a step away from a system of taxing consumption which presumably has to be preferred to a system of basically taxing income. Of course, a tax on consumption also leads to distortions of economic decisions, but savers are not punished. In addition, capital might flow abroad because tax rates on interest income are smaller in non-EU countries; eventually, private households would emigrate.

It is open to doubt if the proposal will really be decided upon; the decision has to be reached unanimously. Luxembourg wants to combine the decision with a new legislation on taxes on dividends and on tax oasis; some countries think that the 20 percent rate is too high. There will be quarrels on the distribution of the additional revenues arising if tax revenues increase after the introduction of the new regime. The system of introducing a minimum withholding tax would create an additional problem. Each non-taxing or low-taxing country could increase revenues by raising the rate up to the level which is relevant in the residence country; the tax would be completely offset in the residence country. The probability that such a consequence would be accepted by every country seems to be small; by the way, the exploitation by other countries might be small or nil if the average tax rate on interest income was raised in the process of harmonization.

Unrelated to the detailed plans of the EU Commission, the question is whether tax harmonization makes sense in a world of high and/or increasing capital mobility (Kitterer 1995). If the tax rates are reduced by the countries’ efforts to attract mobile factors of production, the governments are forced to cut expenditures. Inefficiencies in the public sector would decrease, subsidies for ailing industries would possibly be cut. Tax reductions and expenditure cuts would foster economic growth and employment (Heitger 1998).

<sup>25</sup> Otherwise, taxation according to the residence principle is similar to a taxation according to the source principle which implies a reduction of tax rates in order to attract mobile capital.

Table 7: Taxes on Corporate Income<sup>a</sup> as Percentage of GDP and of Total Tax Revenues in European Countries, Japan and in the United States

Country	Year	Percent of GDP	Percent of tax revenues
Austria	1980	1.4	3.5
	1990	1.5	3.6
	1996	2.1	4.7
Belgium	1980	2.5	5.7
	1990	2.4	5.4
	1996	3.1	6.8
Denmark	1980	1.5	3.2
	1990	1.6	3.2
	1996	2.4	4.6
Finland	1980	1.4	3.9
	1990	2.1	4.6
	1996	3.2	6.7
France	1980	2.1	5.1
	1990	2.3	5.3
	1996	1.7	3.8
Germany	1980	2.1	5.5
	1990	1.8	4.8
	1996	1.4	3.8
Greece	1980	1.1	3.8
	1990	2.0	5.5
	1996	2.6	6.3
Ireland	1980	1.5	4.5
	1990	1.7	5.0
	1996	3.2	9.6
Italy	1980	2.4	7.8
	1990	3.9	10.0
	1996	4.0	9.2
The Netherlands	1980	3.0	6.6
	1990	3.4	7.5
	1996	4.1	9.5
Luxembourg	1980	6.9	16.4
	1990	6.9	15.9
	1996	7.2	16.0
Portugal	1980		
	1990	2.5	8.0
	1996	3.3	9.5
Spain	1980	1.2	5.1
	1990	3.0	8.8
	1996	2.0	5.9
Sweden	1980	1.2	2.5
	1990	1.7	3.1
	1996	2.9	5.6
United Kingdom	1980	2.9	8.2
	1990	4.0	11.1
	1996	3.8	10.5
EU15	1980	2.2	5.8
	1990	2.7	6.8
	1996	3.1	7.5
Japan	1980	5.5	21.8
	1990	6.8	21.6
	1996	4.7	16.4
United States	1980	2.9	10.8
	1990	2.1	7.7
	1996	2.7	9.6

<sup>a</sup>In the definition of the OECD.

Source: OECD (1998: 84).

Competition between governments does not exclude the supply of infrastructure by the states. Insofar as the governments provide services for firms, the marginal productivity of capital is affected and taxation of firms is possible. Thus, there is a lower bound for the fall of tax rates (Siebert 1990). It is defined by the value of the services that the governments offer (e.g. by infrastructure). The level of taxation will not fall short of the marginal costs of infrastructure even in the case of perfect capital mobility (BMW 1994: 65). Tax competition would end in a system of benefit taxation in this sense, not in zero taxation. There are different views on the question if under such circumstances tax revenues would be sufficient to finance the governments' expenditures for infrastructure (H.-W. Sinn 1997; Blankart 1996). It is argued that there would be a problem especially in the case of increasing returns to scale in using the services; there are doubts that supply would then be efficient. However, this case does not seem to be very important.<sup>26</sup>

Tax competition does not necessarily lead to an erosion of the welfare state; only the inefficiently designed systems of social security are endangered (SVR 1998). Facing the high levels of government expenditures in many countries, it seems improbable that — even in the case of enforced tax competition — an underprovision of public goods or an erosion of the welfare state are around the corner. Competition between governments helps to find better solutions of economic policy problems (S. Sinn 1990). It may lead to better economic results and to a process of learning from other countries. Competition can be understood as a process of discovery in the sense of Hayek (Hayek 1968). It could be useful in the field of fiscal policy, too; especially it might help to find a better tax system.

<sup>26</sup> Many services provided by the public sector do not share the characteristics of public goods; they are private goods in an economic sense (BMW 1994: 66; Blankart 1996).

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