

# Characteristics of the euro area business cycle in the 1990s

*As part of its monetary policy strategy, the ECB regularly monitors the development of a wide range of indicators and assesses their implications for price developments and risks to price stability in the euro area. It is helpful for such analysis to have background knowledge regarding the typical behaviour of economic indicators during different phases of economic development. This article identifies some of the main characteristics of the euro area business cycle for the 1990s as a whole, based on developments in real GDP, its main expenditure components, some key labour market variables and industrial production. Moreover, it reviews the development of these indicators during individual sub-periods in order to assess how shorter-term cyclical behaviour has conformed to the average characteristics. The article finds that some regularities are observed over all sub-periods, but also that the average characteristics derived for the 1990s as a whole conceal important specific features in individual sub-periods. This implies that, in conjunctural analysis and forecasting, it is necessary to carefully analyse specific circumstances in order to understand differences between a particular cycle and the average cyclical developments.*

## I Introduction

Market economies are typically subject to recurrent fluctuations in economic activity, referred to as business cycles, which are the outcome of a combination of shocks, mechanisms that propagate these shocks and policy responses to them. Economic cycles normally have both common and distinct features. Understanding both the regularities and specific features of business cycles is an important element in conjunctural analysis and forecasting.

This article aims to identify some of the main characteristics of the euro area business cycle in the 1990s, relying on statistical measurement instead of economic theories imposed a priori. For the purposes of this article, the main characteristics refer to the average statistical properties of the variables of interest and their relationship with overall business cycle dynamics. This information is a useful benchmark when analysing the outlook for future cyclical developments. In addition to the analysis of past average cyclical developments, it is also important for conjunctural analysis and forecasting to have a good understanding of the extent to which cyclical developments in individual sub-periods may deviate from the average behaviour observed over a longer time frame. Although the 1990s, i.e. ten years, are a relatively short period from which to draw statistical averages, this was chosen as a

reference period for specific reasons. First, harmonised national accounts data for the euro area as a whole are only available since the early 1990s. Second, the integration process towards Monetary Union is likely to have had a significant impact on the functioning of the individual euro area economies. As a result, average observations over longer periods may be less useful as regards information on the current economic relationships at play in the euro area.

In the light of the above considerations, this article is divided into two main sections. Section 2 identifies and discusses average features of the cyclical behaviour of the variables of interest in the 1990s as a whole. The variables of interest are the expenditure components of real GDP, some key labour market variables and industrial production. Data on extra-euro area exports of goods from the trade statistics are also used to distinguish the external from the domestic sector. This distinction would not be feasible only on the basis of national accounts data in which trade flows include intra-euro area transactions. Real GDP is used to measure overall economic activity. In this respect, it is interesting, for instance, to establish whether cyclical movements in the individual variables are coincident with those in real GDP as a whole or whether they lead or lag them. Section 3 of the article compares the

cyclical development of these variables in the course of the 1990s and assesses the extent to which they correspond to the average characteristics derived for the 1990s as

whole. This sheds some light on the extent to which cycles have differed from each other in the past.

## 2 Average characteristics of the euro area business cycle in the 1990s

This section identifies some of the average statistical characteristics of business cycles in the euro area over the past decade. In the first sub-section, the concepts and statistical measures used in this article are described, while their application to the euro area business cycle in the 1990s is presented in the second sub-section.

### Definition of concepts and statistical measures

As regards the identification of the business cycle itself, different concepts and methodologies are commonly used, with no conclusive consensus on which are the best or most relevant (the box below provides more details on the various definitions and measurements of business cycles). Reference is made in this article to the so-called “deviation cycle”, i.e. deviations of economic activity from its trend. Since the trend is not observable, it needs to be estimated. The

“band-pass filter”, one of the most widely used methods for separating the cyclical component of variables from their trend, has been chosen for the purposes of this article. The variables examined are real GDP and its main expenditure components, some key labour market variables (total employment, the unemployment rate and labour productivity) as well as industrial production (excluding construction). The data are quarterly data and extend from the first quarter of 1991 to the fourth quarter of 2001.<sup>1</sup> The table entitled “Average summary statistics of the euro area business cycle in the 1990s” reports a set of results based on statistical measures commonly used in the analysis of business cycle characteristics.

*1 The dataset consists of official Eurostat data and ECB estimates. On account of the way in which they are constructed, estimates of the trends using methods such as the band-pass filter are not reliable towards the beginning and the end of the sample. In order to improve the reliability of the estimated trends for these periods, the data were extended backward and forward. Then, as is usual practice, the first and last three years of the de-trended data were discarded.*

### Box

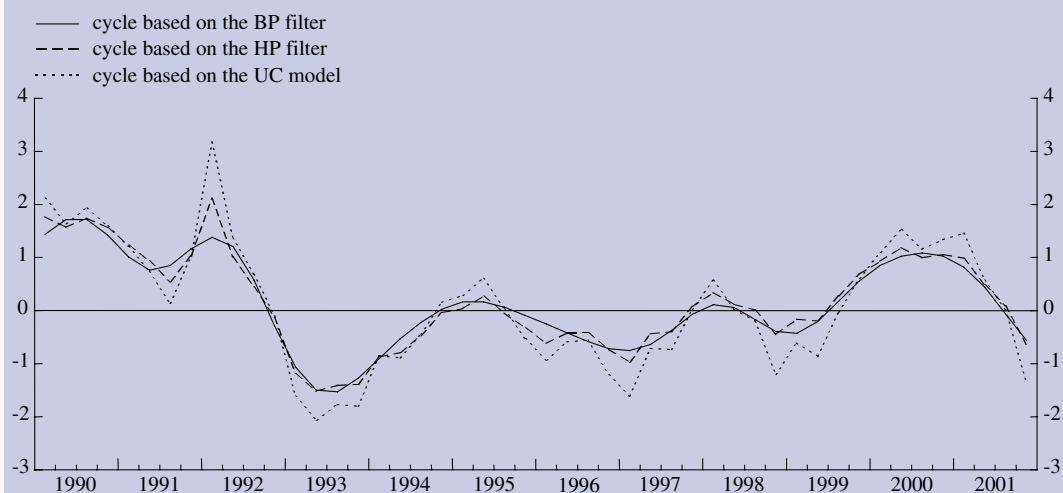
#### Definition and measurement of business cycles

There is a basic distinction between two different, but related, concepts of the business cycle. On the one hand, “classical business cycles” refer to periods of absolute declines and increases in the level of economic activity. On the other hand, “deviation cycles” – also referred to as growth cycles – denote deviations of economic activity from its underlying trend. In a classical cycle a downturn is thus always associated with negative rates of output growth, while in a deviation cycle it is associated with the level of output being below its trend, which can occur during periods of still positive growth rates. Several methods have been proposed to estimate the unobserved trend which underpins the analysis of deviation cycles. This box discusses how deviation cycles can be computed and to what extent they are different from the fluctuations observed when looking at the growth rates of output. As in the rest of this article, and in line with common practice, economic activity is assumed to be represented by real GDP.

Chart A shows the deviations from trend of euro area real GDP obtained from the most commonly applied methods of estimating the trend component, namely the Baxter-King band-pass (BP) filter, unobserved

components (UC) models and the Hodrick-Prescott (HP) filter.<sup>1</sup> The estimated cyclical components appear to be quite similar, their pair-wise correlation being between 0.9 and 1.0 in each case. The analysis of characteristics of the euro area business cycles in the 1990s would therefore lead to very similar conclusions whatever method is chosen to estimate the trend and the cyclical components of GDP. In this article the BP filter is used for de-trending the variables of interest.

**Chart A: Alternative estimates of the deviations of real GDP from its long-term trend**



*Note: The BP filter and the UC model allow three components of a series to be distinguished: the trend, irregular “noisy” fluctuations and a cyclical component. The latter is shown in Chart A. In the case of the HP filter, a distinction is made only between the trend and the cyclical component.*

**Chart B: Deviation of real GDP from its long-term trend versus year-on-year growth rates**

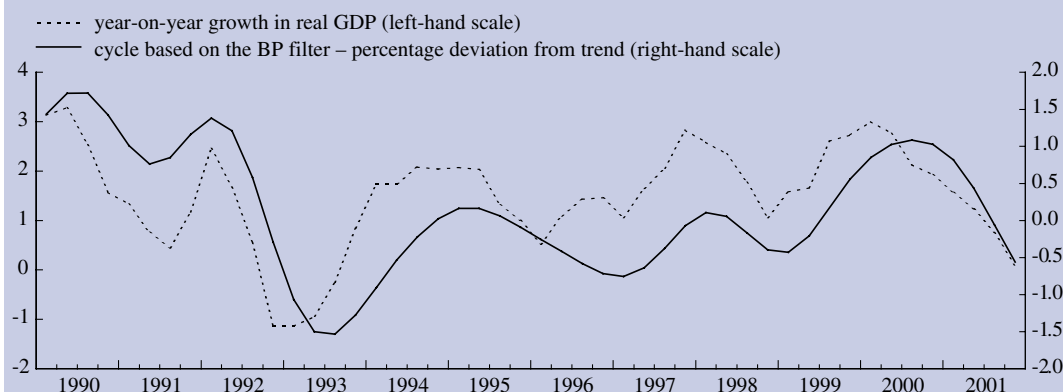


Chart B illustrates the pattern of economic developments based on deviation cycles (i.e. focusing on deviations of GDP from its underlying trend, measured here by the BP filter) and that based on year-on-year growth rates in real GDP, which are typically used in regular conjunctural analysis. It is apparent that changes in growth rates tend to anticipate those in the deviation cycle, the maximum correlation (0.7) between the two series being found when the growth rate series is lagged by two quarters. This reflects the fact that, for example, growth may be declining (the dotted line heads downwards) while remaining at above-average rates, which still implies a further widening of the positive gap between the actual level of the variable and its trend (the full line continues to head upwards). This was observed in early 2000, for instance. The sharper the downturns or upturns in activity, the more the movements in the growth rates and deviation cycles coincide. In practice,

<sup>1</sup> For an explanation of these methods, see the articles on composite indicators, potential output and key euro area indicators in the Monthly Bulletin (November 2001, October 2000 and July 1999 respectively).

conjunctural analysis usually refers to growth rates rather than deviations from trend, mainly because the former are easier to compute. The latter are more technical and practitioners need to choose between the various possible estimation methods. However, analyses based on growth rates do not take into account the fact that trend developments may be changing over time and that various economic variables have different trend patterns. Moreover, as the economy is generally growing and absolute declines in activity are relatively rare, deviation cycles encompass classical cycles. Therefore medium-term business cycle analysis, which is the subject of this article, is generally based on deviation cycles.

A series of statistical measures can be used in order to identify some main characteristics of the business cycle. Thus, the *correlation* between the cyclical component of GDP and that of its components or other variables is a measure which provides information in two respects. First, a positive value close to 1 for the correlation between two variables indicates that these variables tend to move in the same direction and that the degree of co-movement between them is strong. Conversely, a negative value close to -1 indicates that the two variables tend to move in opposite directions with similar patterns. If the correlation is close to zero, then the two variables move independently of one another. Second, by comparing the

correlation between real GDP and a variable shifted forwards or backwards by a given number of quarters, it is possible to derive whether this variable tends to precede, or follow, the business cycle. If the maximum correlation is obtained with no shift of the variable, the variable is said to be “coincident”; if it is found when the variable is shifted forward, the variable is said to be “lagging”; and if the correlation coefficient is highest when the variable is shifted backwards, the variable is said to be “leading”.

These two aspects should be analysed jointly, as is suggested by the figures reported in the table below. For example, consider the cases of government and private consumption:

**Table**  
**Average summary statistics of the euro area business cycle in the 1990s**

Variable	Contemporaneous correlation	Maximum correlation <sup>1)</sup>	Lead/lag <sup>2)</sup>	Standard deviation ratio <sup>3)</sup>	Autocorrelation		
					x(t)-x(t-1)	x(t)-x(t-2)	x(t)-x(t-3)
Real GDP					0.88	0.65	0.35
Domestic demand	0.94	0.94	coincident	1.4	0.91	0.72	0.46
Private consumption	0.83	0.86	lagging (1)	1.1	0.93	0.79	0.59
Government consumption	0.02	0.87	lagging (7)	0.7	0.92	0.74	0.52
Gross fixed capital formation	0.94	0.94	coincident	3.0	0.91	0.72	0.46
Inventory changes	0.57	0.60	leading (1)	39.5	0.87	0.59	0.26
Total exports <sup>4)</sup>	0.81	0.81	coincident	3.2	0.89	0.61	0.25
Total imports <sup>4)</sup>	0.96	0.96	coincident	4.0	0.90	0.67	0.38
Employment	0.82	0.89	lagging (1)	0.9	0.91	0.78	0.61
Unemployment rate	-0.47	-0.69	lagging (2)	1.1	0.87	0.72	0.57
Labour productivity	0.21	0.32	leading (1)	0.9	0.69	0.37	0.10
Industrial production (excluding construction) <sup>5)</sup>	0.92	0.92	coincident	2.9	0.89	0.63	0.30
Extra-euro area exports of goods	0.19	0.23	leading (1)	3.9	0.88	0.60	0.28

Sources: Eurostat and ECB calculations.

1) The maximum correlation corresponds to the highest correlation coefficient across shifts in the variable of interest between -8 and +8 quarters.

2) Figures in brackets indicate the number of quarters (leading or lagging) for which the maximum correlation is observed.

3) In relation with the standard deviation of real GDP.

4) Including intra-euro area transactions.

5) Figures for industrial production (excluding construction) are based on data from 1991 to 1998.

these two variables are characterised by similar maximum correlation coefficients, relatively close to 1, with GDP. In addition, both variables appear, on average, to be lagging the cycle. However, while private consumption is found to be lagging the cycle by, on average, only one quarter, government consumption lags GDP by almost two years. Given that the latter lag is long compared with the average duration of the cycle, it is difficult to relate the cyclical developments in government consumption over the 1990s to those in overall economic activity, despite the high maximum correlation with GDP. Thus, while government consumption will be considered to show cyclical movements independent from those of GDP, the results for private consumption will be interpreted as showing a strong relationship between the cycle of this variable and that of GDP.

A second measure is the ratio of the *standard deviation* of the cyclical component of the variable of interest to that of real GDP. This indicates whether the range of fluctuations in the variable is wider or narrower than that of real GDP. A high standard deviation may be a sign of large and abrupt changes. This is typically the case for inventory changes, as confirmed by the very high standard deviation for this variable compared with that of GDP, reported in the table above. However, smoothly evolving variables may also give rise to high relative standard deviations if cyclical changes steadily build up in the same direction over several quarters. Exports, imports and gross fixed capital formation are examples of the latter case, as is shown in the table by the ratios of the standard deviations of these variables with that of GDP, which range between 3 and 4.

A further measure complements the analysis of the cyclical behaviour of economic variables. If a variable shows erratic changes from one quarter to the next, the correlation between the variable and its past values will be relatively low. For this purpose, *autocorrelations* are computed, i.e. the correlation between a variable and its own lags. The table above reports the results for

the correlation between the variables and their lags by one, two and three quarters. The higher the value of the autocorrelations, the smoother, or more persistent, a variable. For example, taking the autocorrelation values of GDP as a reference, it can be concluded that private consumption appears to be a relatively persistent variable.

Standard deviations and autocorrelations should also be assessed jointly. Volatile variables are characterised by a relatively high standard deviation and low autocorrelations. The very high standard deviation of changes in inventories, along with relatively lower autocorrelation coefficients than for the other variables, indicate the very high volatility of this variable, for instance.

#### **Observed characteristics of the euro area business cycle**

Drawing on these various measures, the following average characteristics emerge for the euro area over the past decade.

The *expenditure components* of GDP generally exhibit a strong positive co-movement with real GDP, reflected in both high maximum correlations and a coincident pattern or very short leads or lags with GDP. Government consumption is the only expenditure component which appears to have a relatively weak relationship with the cycle, as suggested by the long lag for this variable. This lag of government spending on the business cycle is accounted for by the fact that changes in the stance of public expenditure take time on account of, in particular, legal budgetary procedures. Private consumption, which is the main expenditure component, has tended to lag the cycle by one quarter. Inventory changes, which account for the smallest share of GDP, have the lowest (but still significant) correlation with real GDP and have led the cycle by one quarter on average. For the other expenditure components, gross fixed capital formation and total trade variables – all of which display a coincident pattern over the cycle – the degree of co-movement

with real GDP is very high, ranging between 0.8 and 1. As regards total trade variables, the relatively high value of the correlation coefficients is partly accounted for by the fact that euro area national accounts data on imports and exports include intra-euro area trade. The correlation between GDP and extra-euro area trade is likely to be weaker, as suggested by the low correlation between extra-euro area goods exports and GDP reported in the last row of the table above. The correlation coefficients also suggest that cyclical developments in extra-euro area exports have tended to precede those in GDP by only around one quarter.

The expenditure components display significantly different ranges of fluctuations and degrees of persistence. Private and government consumption show limited volatility, with a standard deviation similar to and lower than that of GDP respectively, and a higher degree of persistence than GDP. As regards private consumption, the higher degree of persistence compared with real GDP is consistent with the idea of “consumption smoothing”, i.e. households tending to offset the impact of short-term changes in income by adjusting their savings. With regard to government consumption, low volatility is partly related to the fact that the number of public sector employees tends to evolve in a very stable manner over the cycle.

By contrast with consumption, the ranges of fluctuation for gross fixed capital formation and total trade flows over the 1990s are more than twice as large as that of GDP as a whole. This reflects the higher sensitivity of these variables to changes in the domestic and external environment of the euro area. The persistence of fluctuations in imports and exports is lower than that of investment. Thus, the joint consideration of the standard deviations and autocorrelations of these variables points to a somewhat higher volatility of the total trade variables. Finally, it is a generally held view that aggregate sales tend to be more volatile than aggregate production. As production is then adjusted in subsequent quarters, the level of inventories

can vary considerably from one quarter to the next. This view is supported by the very high standard deviation of changes in inventories.

The results shown in the table for the *labour market variables* support the conventional view that the cyclical components of employment and unemployment tend to lag the business cycle, while the cycle tends to be preceded by cyclical developments in labour productivity, as measured by GDP per employed person. All labour market variables display a similar standard deviation, but employment and the unemployment rate show a higher degree of persistence than real GDP, while that of labour productivity is significantly lower. The higher persistence of employment is related to the fact that firms usually prefer to wait for more information on cyclical developments in a given direction before adjusting their staff. In the case of the unemployment rate, this is reinforced by transitions into and out of the labour force.

Finally, a further interesting issue is the extent to which the variability in the cyclical component of GDP is explained by the cyclical variability in *industrial production* (excluding construction). Although the share of industrial output in total output in the euro area was only around 23% on average between 1991 and 2001, the figures presented in the table point to a significant role of industrial production in shaping the business cycle. The cyclical pattern of industrial production is coincident with that of GDP and the maximum correlation is very high. In addition, the cycle of industrial production is found to have a much wider range of fluctuations and a similar degree of persistence compared with that of real GDP. From a sectoral perspective, these data indicate that industrial production developments can account for more than half of the cyclical variability of total output in the 1990s.

The purpose of the above analysis was to highlight the main average characteristics of the euro area business cycle over the last

decade. On that basis, it is also interesting to focus on specific shorter periods and to examine whether this general pattern was reflected in each of the successive cycles or

whether economic variables have, at times, departed from their average cyclical behaviour.

### 3 Regularities and specific features of the euro area business cycles in the 1990s

This section discusses the cyclical development of the variables of interest in the course of the 1990s and compares them with the average features found in the previous section. Three full peak-to-peak deviation cycles can be identified during the 1990s:

- the first cycle occurred in the early 1990s, from the peak in the first quarter of 1992 to the peak in the first quarter of 1995;
- a second cycle took place in the mid-1990s, from the peak in the first quarter of 1995 to the peak in the first quarter of 1998;
- a third cycle was recorded in the late 1990s, from the peak in the first quarter of 1998 to the peak in the third quarter of 2000.

In Charts 1, 2 and 3, which correspond to each of the above cycles, the panels on the left show the cyclical development of GDP and domestic demand on the left-hand scale and extra-euro area exports on the right-hand scale. The panels on the right show consumption and employment on the left-hand scale and investment on the right-hand scale. The shaded areas in all charts represent periods of slowdown, i.e. from peaks to troughs. The right-hand and left-hand scales are the same in all three sets of charts to enable comparison between the successive cycles.

#### The cycle of the early 1990s

Although, in general, the features of this cycle were in line with the average characteristics of the 1990s, some specific factors are worth highlighting. The cyclical movements in the external sector (represented by extra-euro

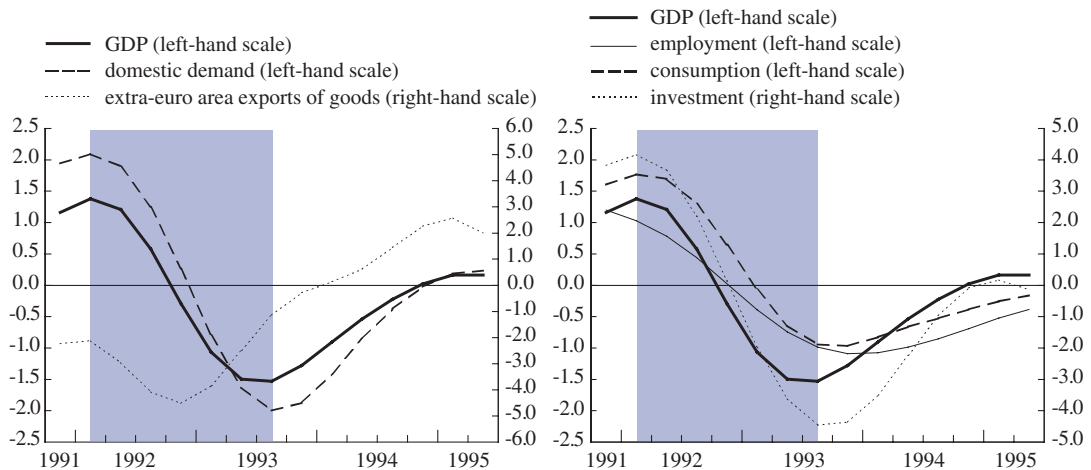
area exports) preceded those of GDP and a significantly longer lead than average was observed (see the left-hand panel of Chart 1). However, the variability of the export cycle was lower than on average in the 1990s. Meanwhile, the domestic expenditure components and labour market variables were in line with the average pattern observed as regards the relative timing of cyclical developments (see the right-hand panel of Chart 1). Investment, for example, was coincident, whereas consumption and employment lagged the cycle. In addition, domestic expenditure components and labour market variables displayed a degree of co-movement with the overall cycle and a range of variability similar to the average for the whole decade.

Cyclical developments in the early 1990s were mainly the result of developments in domestic demand. To a large extent, the unusually long lead of the decline in extra-euro area exports compared with GDP reflects the impact of German unification, a situation where national developments were significant enough to shape developments in the euro area as a whole. The expansionary impact of German unification on euro area domestic demand more than offset the downturn in exports which had already begun in 1990 and 1991 as a result of the recessions in the United States and the United Kingdom. The negative impact of the deterioration in foreign demand on extra-euro area exports was reinforced by a loss of price competitiveness in the euro area, caused by rising inflation in the early 1990s. As a result, extra-euro area exports recorded a cyclical downturn around one and a half years before GDP. Once the boost to domestic demand related to German unification ran out,

## Chart 1

### The euro area business cycle of the early 1990s: mainly a result of developments in domestic demand

(% deviation from trend; quarterly)



Sources: Eurostat and ECB calculations.

weakening private consumption and investment started to reinforce the cyclical downturn, thereby accounting for its depth. The subsequent upturn was supported by external developments, which turned favourable already in early 1993. However, overall economic activity only strengthened when domestic demand started to recover in the second half of 1993.

#### The cycle of the mid-1990s

This cycle was typical in terms of the relative variability of most variables. However, the variation of GDP during the mid-1990s cycle was lower than the average for the whole decade, and much smaller than in the cycle of the early 1990s. Moreover, the downturn of the mid-1990s was longer than the other downturns of the decade. The leads and lags between some variables over this period also differed somewhat from the average pattern. The cyclical downturn of exports was coincident with that of GDP, instead of the average leading pattern, whereas the upturn of exports led that of GDP by more quarters than on average (see the left-hand panel of Chart 2). By contrast, domestic demand tended to lag GDP, especially in the upturn, instead of being coincident as observed on

average in the 1990s. Most notably, the peak in the consumption and employment cycles only occurred at the end of 1995, implying a longer than usual lag vis-à-vis the real GDP cycle (see the right-hand panel of Chart 2).

The strong appreciation of the effective exchange rate of most currencies of the euro area countries in 1994 and 1995 was one of the main factors behind the cyclical decline in extra-euro area exports, which took place despite an ongoing strengthening in foreign demand. The weakening in extra-euro area export growth is likely to have contributed to the slowdown in fixed capital formation as of early 1995. Meanwhile, at the start of the cyclical downturn, the continued strengthening in job creation helped to sustain the cyclical expansion of consumption. However, the cyclical downturn in exports and investment spilled over into employment and consumption towards the end of 1995, which, in turn, had a negative impact on investment. Thus, the cyclical component of investment was stable for a few quarters in mid-1995 and then declined further in 1996.

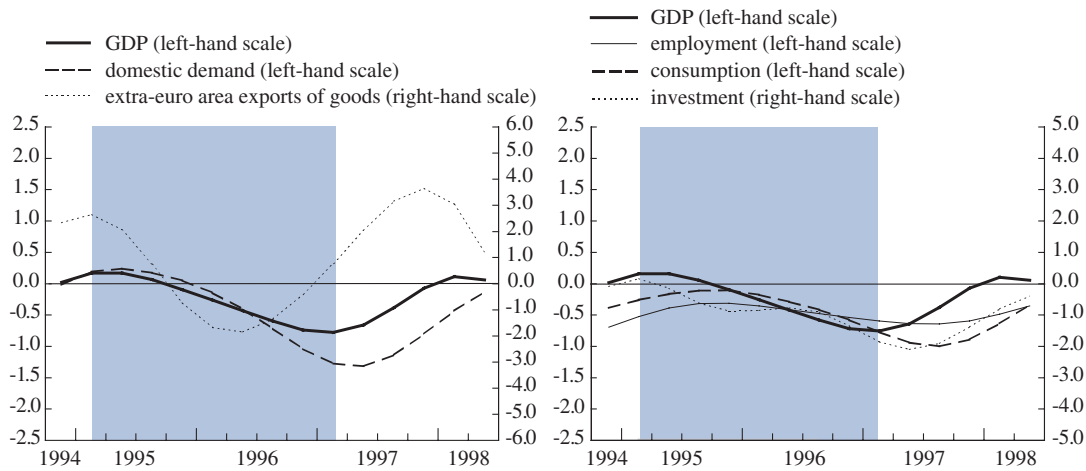
As foreign demand strengthened and the effective exchange rate started to depreciate in mid-1996, extra-euro area exports improved, i.e. between two and three



## Chart 2

### Exports and investment as the main driving forces in the mid-1990s

(% deviation from trend; quarterly)



Sources: Eurostat and ECB calculations.

quarters earlier than real GDP. The positive impulse from exports, along with declines in both short-term and long-term interest rates, restored favourable conditions for a strengthening of investment and, subsequently, employment and consumption.

### The cycle of the late 1990s

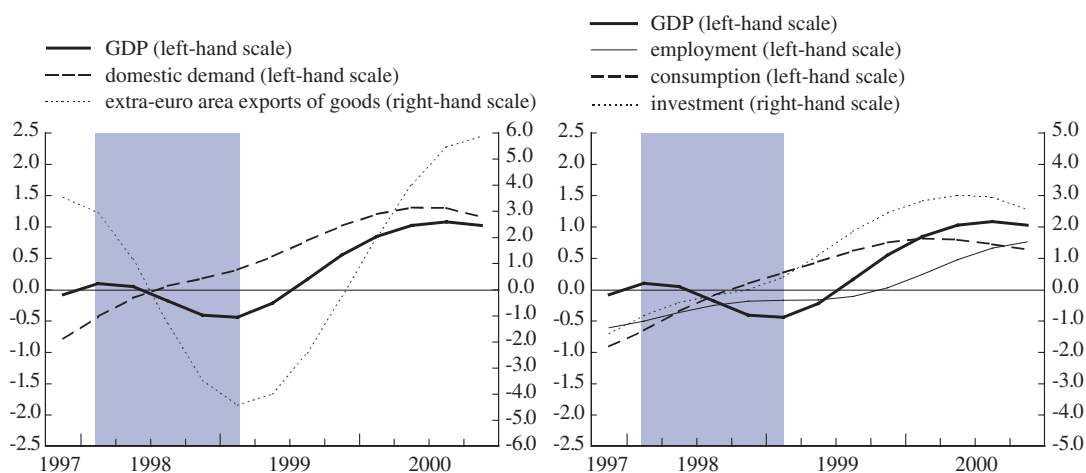
In the late 1990s, cyclical developments in GDP were almost entirely caused by developments in the external sector. The

decline in extra-euro area exports was much larger than observed in the previous cycles, with the deviation from trend falling by around 8 percentage points from peak to trough (see the left-hand panel of Chart 3), compared with a difference of around 4.5 percentage points in the mid-1990s and around 2 percentage points in the early 1990s. Domestic activity was sustained throughout the period, its expansion only slowing down somewhat towards the end of 1998. In particular, the cyclical component of private consumption continued to expand

## Chart 3

### Large fluctuations in foreign demand but continued robust domestic demand in the late 1990s

(% deviation from trend; quarterly)



Sources: Eurostat and ECB calculations.

steadily (see the right-hand panel of Chart 3), while fixed capital formation and employment did not experience any downturn. This pattern of consumption, investment and employment therefore departs from the close relationship observed on average between these variables and GDP. Moreover, the downturn in GDP was particularly short-lived and shallow.

At the end of 1997, the effects of the crisis in Asian emerging market economies and the financial turmoil in Russia were sharp enough to bring about a significant deterioration in the external environment which led to a downturn in euro area GDP, with a one to two-quarter delay. However, several factors contributed to the ongoing strength in domestic demand. Compared with previous downturns in the 1990s, the stabilising influence of fixed exchange rates between the countries of the euro area is likely to have helped to sustain domestic demand. The absence of a devaluation risk removed a potential source of instability and uncertainty which had dampened growth, for example, in

1995. In addition, domestic demand was supported by further declines in interest rates during 1998 and in early 1999 prior to and shortly after the start of Monetary Union. Moreover, in the case of fixed capital formation, ongoing robustness is likely to have been linked to the low investment in previous years and to global developments in the area of information and communication technologies (ICT). Finally, the uninterrupted cyclical expansion of private consumption was essentially a reflection of the robustness of employment and declines in inflation, which helped to maintain a high level of spending power and consumer confidence.

When foreign demand picked up again in early 1999, extra-euro area exports improved and real GDP growth increased. The exceptionally strong cyclical upturn in extra-euro area exports in 1999 and 2000 benefited from an unusually sharp expansion in the world economy and from the rise in price competitiveness associated with a protracted depreciation of the effective euro exchange rate.

#### **4 Concluding remarks**

The analysis of the euro area business cycles over the 1990s permits a number of average characteristics to be identified. First, the expenditure components of GDP mostly exhibit a strong positive co-movement with real GDP, but they differ with respect to volatility and the degree of synchronisation with the cycle. Second, the results support the conventional view that the cyclical components of employment and unemployment tend to lag the business cycle. Third, the findings point to a significant role of industrial production in shaping cyclical developments in real GDP.

The study of the individual cycles over the 1990s tends to confirm that some of the average characteristics can be regularly observed, but also, to some extent, that each individual cycle reflects specific factors. Some average characteristics, such as the lagging

nature of labour market variables, appear to have been present in all the individual cycles of the 1990s, whereas a number of variables also displayed specific features. For example, although the cyclical component of private consumption tends to exhibit a high degree of co-movement with GDP, lagging by one quarter on average, it can also move independently from the cycle. This occurred in the downturn of the late 1990s when the cyclical component of consumption continued to expand. One major difference between the cycles was the relationship between external and domestic developments. In general, developments in foreign demand and their impact on euro area exports have played an important role in setting off cyclical movements in real GDP, but the depth and duration of the cycles was ultimately determined by the behaviour of domestic demand. In this respect, the slowdowns

of the early 1990s and mid-1990s mainly reflected weak domestic demand rather than weak foreign demand. Moreover developments in the late 1990s showed that shocks to foreign demand only lead to small cyclical reactions as long as the developments in domestic demand remain robust.

Overall, the analysis has shown that average characteristics can be a useful benchmark, but specific events may force the cycle to diverge from its average characteristics. This implies that, in conjunctural analysis and forecasting, analysts need to take account of specific circumstances which may imply differences between the current cycle and average cyclical developments.