

## Box 6

### The unemployment-vacancy relationship in the euro area

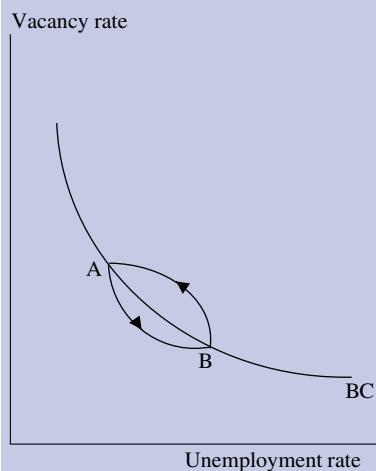
This box looks at unemployment developments in the euro area from the perspective of the relationship between the unemployment rate and the vacancy rate<sup>1</sup>, the so-called Beveridge curve. The vacancy rate refers to the number of vacant jobs as a percentage of the labour force. The unemployment-vacancy (UV) relationship appears to be an informative tool, given that it can give a broad indication of whether changes in the unemployment rate are caused only by cyclical developments in economic activity or by more permanent or structural factors.

The coexistence of vacancies and unemployed reflects the continuous process of job creation and job destruction, causing a flow of workers from unemployment and inactivity to employment and vice versa. At the same time, the process of matching newly vacant positions and workers looking for a job is subject to, among other factors, some delay on account of search and selection process costs, thereby resulting in the coexistence of vacancies and unemployed.

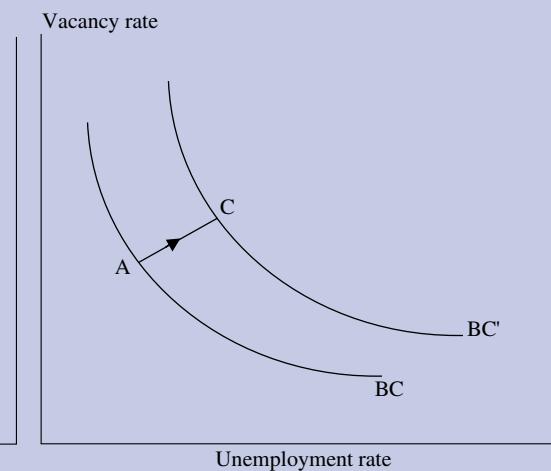
#### Shocks affecting the unemployment-vacancy relationship

Given the selection and search processes of employers and the unemployed, unemployment and vacancy rates can be expected to have a negative relationship, as the higher the level of vacant jobs in the labour market, the higher the likelihood of finding a job for an unemployed person. Moreover, as the likelihood of finding a job increases less than in proportion to the number of vacancies, the UV relationship can be expected to be convex to the origin (see Charts A and B).

**Chart A: Unemployment-vacancy relationship: activity shocks**



**Chart B: Unemployment-vacancy relationship: structural shocks**



Two main types of shock are generally considered to affect the UV relationship: aggregate activity shocks and structural shocks. Aggregate activity shocks induce movements in opposite directions in unemployment and vacancies. For instance, in the case of a slowdown in economic activity, i.e. a negative aggregate activity shock, the number of vacancies posted will decrease as firms plan to create fewer jobs. At the same time the level of unemployment will increase as a result of both less job creation and more job destruction. Reflecting

<sup>1</sup> A first discussion of the unemployment-vacancy relationship for the euro area was introduced in the ECB publication entitled "Labour market mismatches in euro area countries", March 2002.

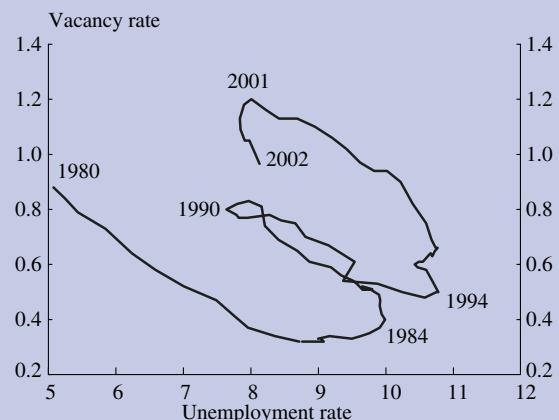
these developments, Chart A shows a movement describing an arc below the Beveridge curve from point A to point B. Once the slowdown in activity reversed, the opposite movement would be observed, i.e. an increase in vacancies and a fall in unemployment (returning to the starting point); activity shocks thus tend to produce anticlockwise loops around a unique UV relationship.

By contrast, *structural shocks* induce movements in the same direction in both unemployment and vacancies. These include reallocation shocks and changes in the effectiveness of the matching process. Reallocation shocks are related to sectoral shifts, such as shifts from industrial to service activities, while changes in the effectiveness of the job matching process are related to institutional factors, such as the effect of unemployment benefit systems on the degree of intensity with which workers search for a job. Reallocation shocks produce outward movements of the UV relationship, as both unemployment and vacancy rates tend to increase, while mismatch shocks produce an outward (inward) movement when the efficiency in the matching decreases (increases). Chart B shows a shift from point A to point C.

#### **Developments in the euro area unemployment-vacancy relationship since the 1980s point to the dominant role of structural shocks in the labour market**

Past developments in the euro area UV relationship suggest the occurrence of both cyclical and structural shocks (see Chart C). Anticlockwise loops describing activity shocks can be identified both in the 1980s and in the 1990s. Indeed, the vacancy rate followed a downward pattern in the first half of both decades, while the unemployment rate was growing. Reverse movements were observable thereafter. In addition, it is worth noting that, together with activity shocks, a marked outward shift in the UV relationship took place between the 1980s and the 1990s, as both the unemployment and the vacancy rates showed a positive trend. These developments point to the dominant role of structural shocks in the euro area labour market, i.e. shocks connected with a decline in the effectiveness of the job matching process and/or sectoral shifts.

**Chart C: Unemployment-vacancy rate relationship in the euro area  
(in percentage of the labour force)**



Sources: Eurostat and ECB calculations.

Note: Vacancy data cover around 64% of the euro area. The 2002 figures include data up to the third quarter.

Indeed, there is some evidence suggesting a link between the labour market performance in the euro area and both changes in the labour market and sectoral shifts. It appears that some institutional aspects are positively correlated with the outward shift in the UV relationship, such as the duration of unemployment benefit. This is explained by the fact that an increase in the duration of unemployment benefits may reduce the efficiency in searching for a job, leading to a delay in the matching process and, as a result, to an increase in unemployment and vacancy rates. Moreover, sectoral shifts also appear to explain the outward shift in the UV relationship, confirming that the process of restructuring in euro area economies could also partly explain the increase in unemployment and vacancy rates.

#### **Recent developments point mainly to cyclical shocks**

Recent UV developments in the euro area have been in line with the expected effects of the past downturn in economic activity. Indeed, the vacancy rate has been decreasing since the first quarter of 2001, contributing to

lower employment growth, while the unemployment rate began to increase in the second half of 2001. These developments have followed a period of a trend increase and decrease in vacancy and unemployment rates respectively which started in the mid-1990s. Thus, an anti-clockwise loop, which characterises activity shocks, appears to have been the prevailing movement in the UV relationship in recent years, while no further outward movement of the Beveridge curve seems to have taken place.

This could indicate, on the one hand, that policies and reforms implemented during the 1990s have had a positive impact on labour market developments and, on the other hand, that further reforms are needed in order to absorb the impact of sectoral shifts and increase the efficiency of the matching process, i.e. to move the UV relationship inwards.