UNEMPLOYMENT AND VACANCIES IN SPAIN: LABOUR MISMATCH AND ACTIVE LABOUR MARKET POLICIES

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ABSTRACT

The growth and persistence of unemployment in recent years in Western countries has led to it becoming one of the most extensively analysed labour market-related problems. This study analyses the relationship between unemployment and vacancy rates during the period 1977-1996 in the Spanish economy: the Beveridge curve. The evidence points towards the existence of a concurrent increase in vacancies and unemployment. The author investigates whether this is due to an increase in the so-called structural unemployment or, more concretely, to a qualification mismatch between vacancies and unemployment.

The last part of the paper discusses the possible effect that active labour market policies (basically, expenditure on training) could have on unemployment. The findings of this study may enable conclusions to be drawn regarding the desirability of devoting greater financial resources to this type of policy.

Keywords: vacancies, unemployment, active labour market policies.
1. Introduction

An analysis of the course followed by unemployment rates in most of the European Union member countries in recent years reveals the existence of difficulties in achieving substantial reductions in these rates, even during periods of economic growth. The main conclusion of the theoretical and empirical studies performed on the subject is that there seems to exist a series of factors that lead to the persistence of high unemployment rates. Spain has not been immune to this process and the unemployment rate has increased from 5.2% in 1977 to 22.2% in 1996. The persistence of high unemployment rates in periods of economic growth leads to the statement that this growth in unemployment is not due solely to insufficient demand but also that other factors, such as the so-called structural unemployment, may have contributed to this growth. Thus, in the specific case of the Spanish economy, in addition to the growth in the observed unemployment rate, there has been a marked increase in the equilibrium unemployment rate, from 4.5% in the 60's to 14.9% in the 80's.

The growth in the equilibrium unemployment rates indicates that, even during times of strong economic growth, the growth of employment has not been sufficient to bring the unemployment rate down to pre-recession levels. However, the increases recorded in the equilibrium unemployment rates in countries such as the United States and Japan have been low compared with the increases that have taken place in the European countries. This has led analysts to point to the importance that institutional factors may have in this differential behaviour.

As a consequence of the growing mismatch on the labour market and the resulting increase in structural employment, it is possible for jobs (vacancies) to co-exist with people who are unemployed. This paper proposes to analyse the relationship between vacancies and unemployment (the well-known Beveridge curve). Its primary goal is to assess the effect of the possible labour market mismatch -in a broader sense- as a factor accounting for shifts in this curve.

Thus, the following section contains a theoretical discussion of the Beveridge curve concept and the various mechanisms that act on it and which account for movements along the curve and shifts of the curve itself. Section 3 describes the course followed by the relationship between unemployment and vacancies in the Spanish economy for the time period studied (1977-1994) and defines the various mismatch ratios that will be used at a later point in this paper. Finally, the last section analyses the econometric estimate of the Beveridge curve with the aim of ascertaining the importance of some of the items that, on a theoretical level, have been suggested as factors causing shifts of the curve. At this point, particular emphasis is placed on assessing the possible impact of measures of structural mismatch and the possible effect that some of the economic policies aimed at palliating this mismatch may have, referring to active labour market policies, particularly those concerned with occupational training.

2. The Beveridge curve

As has already been stated in the introduction, the existence of a relationship between the number of people unemployed and the number of vacancies can be postulated. The labour market is subject to continual population variations and job creation/destruction processes, giving rise to unemployment in- and outflows. The differences between the features and terms of the jobs offered and those of the people looking for work, together with the lack of information available on the labour market, means that unemployed workers are not allocated immediately to the vacancies available, and thus the two -unemployed workers and vacancies- coexist in time. The basic issue, therefore, is how to account for this coexistence of unemployment and
I don't have access to the image, but I can help you with the text. It seems to be a discussion about the labor market, specifically the matching function and the Beveridge curve. The text mentions that the process by which job offers are filled in the labor market (the so-called matching function) obviously depends on the number of unemployed workers and the number of vacancies. This, in turn, will depend on the time that elapses from when a job offer appears to when it is filled, since, as we have said above, we are not dealing with an instant process.

Following Bowden's analysis (1980) -subsequently reproduced in Smith (1994)- and assuming that real wages do not immediately match labor supply and demand, the market may lead to situations (see Figure 2.1) where disequilibrium wages such as w₁ or w₂ exist. Thus, with a wage such as w₁, there exists a level of unemployment that is equal to the difference between the volume of employment (given by the employment curve E) and the labor supply (curve S) - i.e., the distance AB - and, at the same time, a number of vacancies AC, that is, the difference between labor demand (curve D) and employment. Thus, vacancies and unemployment will coexist even at a point with equilibrium wages (w*), although, in this case, both will have the same value given by the distance FG. Consequently, wages vary with respect to an inverse ratio between unemployment and vacancies, as shown in Figure 2.2 (the Beveridge curve). This is consistent with the idea suggested above that the process by which a vacancy is filled is not immediate and, therefore, even though labor supply and demand may be equal, there is a turnover process in the labor market which leads to the coexistence of unemployment and vacancies. Thus, according to Figure 2.2, when there exists a level of vacancies equal to v₀ in the economy -on the curve UV- the unemployment rate is u₀. If the economy is affected by an activity shock consisting of strong economic growth, jobs are created and the number of vacancies increases (to point v₁ in the figure). As the number of vacancies is higher, the chances of finding a job increase and unemployment falls to point u₁, and the curve's slope is now negative.

Upon analysis and starting from the so-called matching function, new hirings (C) -that is, the proportion p of unemployed people who find a new job- depend both on the current number of unemployed (U) and the number of vacancies (V), as stated in the following function:

$$ C = aU + V $$

where a is a factor indicating efficiency in the matching function. On this basis, the proportion of unemployed people who finally find a job is given by:

$$ p = \frac{C}{U} $$

where u and v are the unemployment and vacancy rates, respectively. The ratio between the two variables provides an indicator of the degree of labor market tightness. As we have already
discussed, even in a situation of equilibrium, there is a certain pool of workers who lose their jobs (a proportion \( s \) of total employment \( N \)) as a result of continual job destruction processes caused by technological change or relative price changes. Thus, given a certain active population \( (L) \), a state of equilibrium will be attained when outflows from unemployment to employment \( (pU) \) are equal to inflows to unemployment from employment \( (sN) \),

In a state of equilibrium, unemployment inflows are equal to unemployment outflows, i.e.,

which gives

thus obtaining an inverse ratio between unemployment and vacancy rates, as has already been shown in graph form in Figure 2.2. For their part, \( s \) and \( a \), and the factors determining them account for shift of the curve.

As has already been pointed out, the proportion of workers who lose their jobs (i.e., \( s \)) depends on technology shocks or relative price changes. On the other hand, when the allocation or matching process between unemployed workers and vacancies loses efficiency (i.e., \( a \) changes), the curve will shift so that unemployment does not fall (in the Figure, the unemployment rate remains constant at \( u_0 \)) even if the number of vacancies increases (for example, from \( v_0 \) to \( v_2 \)). In this situation, the economy will have shifted to a new Beveridge curve (represented by \( UV' \)). Attention will therefore be focused on the factors that determine changes in the efficiency parameter \( a \) and the impact they have on the Beveridge curve. At this level of efficiency, the unemployed workers’ eligibility for vacancies becomes particularly significant and this, according to the literature, basically depends on four factors:

- the proportion of long-term unemployment. This factor has a number of effects both on labour supply and demand. On the one hand, employers seem to be more unwilling to hire people who have been unemployed for a long time, given the likely obsolescence of the human capital held by a person who has been unemployed for a considerable period of time. On the other hand, people who have been unemployed for a long period may feel discouraged about their chances of finding a job and the intensity of their search for a job will diminish.
- the unemployed workers’ geographical mobility. Decreased willingness to move geographically to find a job increases the inefficiency of the matching function.
- structural imbalances in the labour market. Among, other factors, the differences between the vacancies’ training and qualification requirements and the level of training or qualifications held by the unemployed also hamper matching between vacancies and unemployed.
- the unemployment protection system. Higher unemployment benefits or a longer period of entitlement to such benefits may lead the unemployed to raise the reserve wage and, thus, be more selective when accepting jobs.

The goal of our research will therefore be to obtain the Beveridge curve for the Spanish economy
and to study these factors’ potential impact on shifts of the curve and, in particular, the role that may be played by qualification mismatches between the vacancies’ requirements and the skills held by the unemployed.

3. Unemployment and vacancies in Spain

This section provides a descriptive analysis of the behaviour of unemployment and vacancies in Spain from 1977 to 1994. This simple analysis will show the need to carefully assess the factors that may affect the relationship between these two variables and this will be the subject of the next section. The statistical appendix describes the information used in this paper and its features. The unemployment rate took a sharp upturn after 1977, and -as has already been pointed out in the introduction- this high level has persisted even during periods of economic growth and, therefore, of growth in the number of vacancies. Consequently, during the period under study, the ratio between vacancies and unemployment (v/u) -that is, the relationship that has been called the labour market’s degree of tightness- must have changed. The analytic approach provided by the Beveridge curve led to the statement that the proportion of unemployed workers who will be hired at any given time (p) depends on the tightness prevailing at that time on the labour market, which in turn is defined as the ratio between the vacancy rate and the unemployment rate. This ratio is shown in graph form in Figure 3.1.

Figure 3.1
As can be seen, the \( v/u \) ratio fell sharply until 1981, that is, there were less vacancies per unemployed worker, thereby decreasing the likelihood of finding a vacancy. As a result, \textit{ceteris paribus}, one would expect a movement along the Beveridge curve that would lead to a higher unemployment rate and a lower vacancy rate in the economy. However, after 1981, the \( v/u \) ratio increased substantially and this increase continued throughout the period of economic growth. This increase in the \( v/u \) ratio is a necessary but not sufficient condition for stating that there has been a shift of the Beveridge curve during this period and that this shift has been caused by an increase in the labour market’s structural mismatch. This increase in the ratio may be due to three factors:

- a decrease in the economy’s aggregate imbalances, thus causing an upwards shift along the same curve.
- the existence of increased difficulties in filling vacancies, causing the curve to shift to the right,
- an increase in labour mismatch causing the curve to shift.

So, at this point, we must now analyse the behaviour followed by the Beveridge curve in Spain during the period under study (Figure 3.2.). As can be seen, the two types of movement postulated on a theoretical level are clearly distinguished. Thus, there are both movements along the curve and shifts of the curve itself. Indeed, between 1977 and the mid-80’s, the curve shifts outwards and, from the mid-80’s onwards, the curve turns anti-clockwise.

On this basis, the first shift would be caused by a structural shock while subsequent shifts - leading to an inverse ratio between unemployment and vacancies- would be caused by an activity shock. During periods of economic growth, the number of vacancies in the economy increases, the likelihood of finding a job is greater, and the unemployment rate falls. On the contrary, during periods of recession, the number of vacancies decreases and, therefore, the unemployment rate increases as a result of the difficulty in leaving unemployment (without forgetting the new entrants in the ranks of the unemployed). This shift in the curve, which can be seen in Figure 3.2, thus seems to indicate that the matching function’s efficiency parameter \( (a) \) has been altered. The goal is therefore to analyse what factors may have played a role in this loss of efficiency and whether it is due -at least in part- to an increased degree of mismatch on the labour market.
4. Empirical analysis

After having described in graph form the behaviour of the relationship between the unemployment rate and the vacancy rate in the Spanish economy during the period under study, and following the model proposed by Layard & Nickell (1986), Table 4.1 shows the results of the estimate of the possible relationship between the unemployment rate and the vacancy rate. The first two columns give the results of the OMS estimate and confirm the negative relationship between the unemployment rate and the vacancy rate. However, it would be advisable to verify the exogeneity of the vacancy rate variable included in the specification as the rate of growth of the economy and the unemployment rate itself -among other factors- may affect the number of vacancies. However, the results of this verification lead us to accept this variable's exogeneity.

Table 4.1. Estimate of the relationship between unemployment and vacancies
(dependent variable: ln(υ)_t)

<table>
<thead>
<tr>
<th></th>
<th>(1) OMS</th>
<th>(2) OMS</th>
<th>(3) AR1</th>
<th>(4) AR1</th>
<th>(5) AR1</th>
<th>(6) AR1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.2035</td>
<td>0.1991</td>
<td>0.1459</td>
<td>-0.1126</td>
<td>0.5187</td>
<td>0.7568</td>
</tr>
<tr>
<td></td>
<td>(1.337)</td>
<td>(1.149)</td>
<td>(0.480)</td>
<td>(-0.325)</td>
<td>(0.884)</td>
<td>(1.416)</td>
</tr>
<tr>
<td></td>
<td>0.8746</td>
<td>0.8772</td>
<td>0.8906</td>
<td>1.0315</td>
<td>0.5849</td>
<td>0.4559</td>
</tr>
</tbody>
</table>
Having detected this possible source of bias in the parameters, we should now determine whether the presence of the deferred unemployment rate variable may lead to a degree of autocorrelation in the residues. Upon performing Breusch-Godfrey's verification, we are led to accept the absence of autocorrelation in the model specified. However, given the fact that this is an asymptotic verification and the small sample size used in this study, doubts may be raised as to this verification's validity. Alternatively, verifying the significance of the deferred residues leads us to accept the presence of autocorrelation in the disturbance term. Thus, the third and fourth columns of Table 4.1 give the results obtained by estimating a first-order autoregression model.

It seems interesting to verify whether the introduction of a new variable that seeks to account for the curve shift detected on the graph gives the expected results (columns 5 and 6). These results seem to confirm the hypothesis of a shift of the Spanish economy's Beveridge curve between the late 70's and the mid-80's. The factors that theoretically may lead to this situation -that is, a loss of efficiency in the matching function- were listed in the previous section, stressing particularly the possibility of an increase in the labour market's structural imbalance. Bentolila & Dolado (1990) and Antolín (1994) use a mismatch ratio that gives non-significant results. Specifically, Antolín (1994) provides an estimate of the determinants of unemployment outflows and finds that, in the long term, only vacancies and the proportion of long-term unemployed seem to affect unemployment outflows, while neither the replacement ratio nor the structural mismatch ratio used seem to have any significant effects. In this paper, we propose that a number of alternative mismatch ratios be used. As will be seen, these enable improved results to be obtained in the specification of the model proposed. Thus, we have decided to follow the ratios initially defined by Jackman & Roper (1987) as measures of the importance of the structural mismatch since they offer the advantage of including both the volume of unemployment and vacancies. The ratios used are defined as follows:

\[
\frac{\text{Unemployed in category } i}{\text{Vacancies in category } i}
\]

where \( \text{Unemployed in category } i \) and \( \text{Vacancies in category } i \) indicate the percentage of unemployed and vacancies, respectively, in category \( i \).
(sector, job category or autonomous community) out of the total, \( l_i \) is the proportion of the active population in category \( i \), \( u_i \) and \( v_i \) are the unemployment and vacancy rates, respectively, in each category \( i \) and, finally, \( u \) and \( v \) are the economy’s unemployment and vacancy rates.

The information available on unemployment and vacancies from 1977 to 1994 enables this data to be obtained at sector (classified in 10 activity divisions), job category (7 groups) and regional level (17 autonomous communities). Thus, it is possible to calculate these mismatch ratios for all three classifications above. In this paper, we will focus on the ratios corresponding to categories and activity divisions. In spite of the existence of not insignificant differences in the course followed by the various ratios calculated, there seems to be a trend towards increased mismatch until the mid-80’s, followed by a descent and then increasing again in the final years of the series.

According to this, the increase in structural mismatch -indicated by the ratios that have been calculated- could be the cause, in part, of the shift in the Spanish Beveridge curve. The following pages will seek to verify the validity of this hypothesis and, thus, confirm the impact on the curve’s shifts of one of the factors proposed on a theoretical level. When estimating the new Beveridge curve, we have introduced a number of the factors which, as has already been indicated on a theoretical level, may be considered as accounting for the shift in the curve. Thus, the various specifications take into account the structural mismatch ratios, the proportion of long-term unemployed -as a proxy of the intensity with which employment is sought- and the replacement ratio variable as an indicator of the level of unemployment protection. A number of studies have proposed that the percentage of long-term unemployed -a proxy variable of the intensity with which employment is sought- be included as a factor accounting for the shift in the curve, obtaining positive results. On the contrary, as has already been mentioned above, the inclusion of a mismatch ratio did not lead to significant results. In this paper, we use alternative mismatch ratios that link vacancies and unemployment simultaneously.

Table 4.2 shows the results of the new estimate which, as we have already indicated, takes into account the different variables that may account for the shift in the curve. The replacement ratio variable -although it is significant- takes the wrong sign and must be eliminated from the estimate. This can be explained both by the way this variable is calculated and by the limited variability of this indicator at aggregate level. On the basis of the results obtained in the estimate, models are chosen that include the ratios \( I_2 \) and \( I_4 \), referring both to activity divisions and job categories, as measures of the degree of mismatch. It could be conceived that both ratios measure the proportion of active population in the wrong division or job category, given the labour market’s requirements. On a theoretical level, it seems more appropriate to measure the labour market’s structural mismatch linking vacancy and unemployment rates by job categories, as the unemployed person is confined to the activity division he or she worked in before becoming unemployed but there is no certainty that he or she will find a vacancy in the same sector. On the other hand, the unemployed person’s job category or occupation is much more stable, unless he or she has followed a training course during the period of unemployment that enables him or her to opt for a higher-skilled job.

### Table 4.2. Estimate of the Beveridge curve
(dependent variable: \( \ln u_t \))

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>( c )</td>
<td>0.1891</td>
<td>0.5169</td>
<td>0.8201</td>
<td>0.2037</td>
<td>0.5459</td>
<td>0.3566</td>
</tr>
<tr>
<td></td>
<td>(0.297)</td>
<td>(0.884)</td>
<td>(2.679)</td>
<td>(0.747)</td>
<td>(1.430)</td>
<td>(1.222)</td>
</tr>
<tr>
<td>( \ln u_{t-1} )</td>
<td>0.6743</td>
<td>0.5727</td>
<td>0.3558</td>
<td>0.6650</td>
<td>0.5553</td>
<td>0.6421</td>
</tr>
<tr>
<td></td>
<td>(1.802)</td>
<td>(1.759)</td>
<td>(2.244)</td>
<td>(4.909)</td>
<td>(3.044)</td>
<td>(4.437)</td>
</tr>
<tr>
<td>( \ln v_t )</td>
<td>-0.2424</td>
<td>-0.1858</td>
<td>-0.1757</td>
<td>-0.2423</td>
<td>-0.1843</td>
<td>-0.1793</td>
</tr>
</tbody>
</table>
It can be seen from the above results that, as a consequence of the inclusion of the mismatch ratio and the percentage of long-term unemployed (DUR), the shift variable (Des) loses significance. On this basis, it can be said that both indicators account for the shift in the Beveridge curve and, consequently, this shift seems to have been caused both by an increase in the degree of mismatch in the labour market and by a decrease in job search intensity - indicated by the percentage of long-term unemployed. However, it should not be forgotten that the long-term unemployment variable may express the effect of several factors, including -as has already been said- the degree of labour mismatch. Furthermore, this could also explain the incorrect sign of the replacement ratio (RR) variable. As the replacement ratio increases, the unemployed choose a higher reserve wage and become more selective when accepting a vacancy, thereby prolonging their period of unemployment and increasing long-term unemployment. Viewed from this angle, it seems obvious that this indicator cannot be considered solely as a proxy for job search intensity.

The elasticity of the unemployment rate with respect to the vacancy rate varies between -0.17 and -0.24, thereby confirming that an increase in the vacancy rate will lead, ceteris paribus, to a decrease in the economy's unemployment rate by increasing the likelihood of finding a job. Mean elasticity with respect to structural mismatch varies between 0.12 and 0.32, depending on the ratio and model used, and, finally, mean elasticity with respect to long-term unemployment varies between 0.25 and 0.36. While confirming the hypotheses postulated on a theoretical level with respect to the Beveridge curve, these results must be interpreted with due caution, given the short time series used in the study, which could distort the parameters obtained. If it is accepted - with the necessary reservations- that the qualification mismatch, as measured using the ratios proposed here, between the requirements of the vacancies and the skills offered by the unemployed may account, in part, for the shifts in the Beveridge curve and, consequently, the difficulty in reducing unemployment, even during periods of economic growth, it would appear that those measures aimed at palliating such mismatches could ease this situation. Among such measures, it seems particularly useful to analyse the active labour market policies.

Spain allocates most of its labour market policy resources to the so-called passive policies, basically unemployment benefits, while the proportion allocated to active policies is relatively
small compared with most other OECD countries. Insofar as they may increase the efficiency of the matching function, resources allocated to active labour market policies shift the Beveridge curve towards the origin (see Grubb (1994), among others). The fundamental problem that the studies seeking to assess the possible effects of active labour market policies come up against is the information available on resources allocated to such measures. Given this situation, this paper has confined itself to a preliminary assessment of the effects of expenditure on active labour market policies in Spain on the Beveridge curve. A priori, it would be expected that increasing expenditure on active policies, particularly on occupational training, could help decrease the mismatch between the vacancies’ training requirements and the qualifications held by the unemployed. Likewise, expenditure on job creation subsidies could be expected to have a positive effect in creating new jobs and thus increasing the number of vacancies in the economy. Table 4.3 shows the results obtained when the expenditure on active labour market policies variable is introduced -as a percentage of the GDP- in the above Beveridge curve equation. Likewise, as one of the purposes of this paper is to assess occupational training measures -both for unemployed and to increased the skill level of the employed-, a distinction has been made between total expenditure on active policies (ACT) and the variable representing expenditure on occupational training policies (FOR).

As can be seen, the variable representing expenditure on active policies -both total and the part allocated to training policies- is significant and has the expected sign: an increase in resources leads to a decrease in the economy’s unemployment rate. Columns 5 and 6 show the estimate when only the variable representing the active policies and long-term unemployment are included, leading to better fits of the estimate. In spite of the caution with which this first approach to the effects of active labour market policies must be treated, there seems to be sufficient evidence to support their positive effects in decreasing labour market mismatches. It therefore seems warranted to increase the resources allocated to these active policies -and also

| Table 4.3. Estimate of the Beveridge curve and the effects of active policies  
| (dependent variable: lnui) |
|--------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                         | (1)             | (2)             | (3)             | (4)             | (5)             | (6)             |
| c                       | -6,789          | 2,162           | -5,362          | 1,369           | -2,005          | -2,564          |
|                         | (-2.548)        | (3.572)         | (-2.221)        | (3.445)         | (-2.309)        | (-3.509)        |
| lnui_{i,t-1}            | 2,980           | 0,007           | 2,447           | 0,206           | 1,391           | 1,499           |
|                         | (3.403)         | (0.037)         | (3.007)         | (1.593)         | (5.628)         | (7.009)         |
| lnv_{i,t}               | -0,553          | 0,0375          | -0,495          | -0,057          | -0,257          | -0,339          |
|                         | (-2.948)        | (0.716)         | (-3.228)        | (-1.729)        | (-2.603)        | (-4.616)        |
| DIV2                    |                | 14,407          | 13,099          |                |                |                |
|                         |                | (7.316)         | (10.130)        |                |                |                |
| CAT2                    | -19,324         |                | -11,586         |                |                |                |
|                         | (-1.773)        |                | (-1.134)        |                |                |                |
| ACT                     | -0,135          | -0,188          |                | -0,247          |                |                |
|                         | (-1.412)        | (-5.344)        |                | (-2,846)        |                |                |
| FOR                     |                | -0,408          | -0,424          | -0,567          |                |
|                         |                | (-2,038)        | (-8,098)        | (-3,661)        |                |
| DUR                     | 2,263           | 1,025           | 2,283           | 1,276           | 1,879           | 2,093           |
|                         | (4,858)         | (4,563)         | (5,408)         | (8,672)         | (3,394)         | (4,575)         |
| R^2                     | 0,997           | 0,977           | 0,997           | 0,987           | 0,979           | 0,987           |
| s.e                     | 0,0535          | 0,0189          | 0,0502          | 0,0125          | 0,0569          | 0,0492          |

Note: t statistics in brackets. All estimates correspond to an AR1 model to correct for autocorrelation in the disturbance term.

See the Appendix for definitions of the terms used.
improve their management- as a not insignificant tool for correcting, at least in part, the high unemployment rates that prevail even during periods of economic growth.

5. Conclusions

The persistence of high unemployment rates, even during periods of expansion in the business cycle, has induced a number of authors to study the factors that may influence the evolution of the relationship between unemployment rate and vacancy rate, that is, the so-called Beveridge curve. This paper has analysed this relationship for the case of the Spanish economy during the period 1977-1994 and the influence that the labour market’s structural mismatch may have had on the course followed by this relationship.

It has been seen that from the late 70’s to the mid-80’s, the vacancy rate and the unemployment rate have increased simultaneously, shifting the Beveridge curve to the right. Among other factors, this is related with the increase in structural unemployment. Most of the studies performed led to a rejection of the significance of the structural mismatch measures used in such studies and acceptance of increases in long-term unemployment -and, hence, the decrease in job search intensity- as the primary factor accounting for the curve’s shift.

This paper shows that the use of alternative mismatch ratios, which take into account both the number of vacancies and of unemployed workers, modify the results obtained in previous estimates and lessen the importance that may have been ascribed to the decrease in job search intensity by the unemployed. Thus, the results indicate that, during the years studied, the degree of mismatch between job supply and demand has increased, explaining in part the shift of the Spanish economy’s Beveridge curve. Lastly, we have analysed the effect that expenditure on active labour market policies may have had on this situation, confirming a positive effect by these resources in decreasing the Spanish economy’s unemployment rate during the years under study. This result seems to lead to the recommendation that increasing expenditure on active policies -and particularly on occupational training measures- may be worth considering with a view to lowering the unemployment rate.

In spite of this, the results of this study must be analysed with caution and, no doubt, future developments in obtaining a more appropriate variable for measuring job search intensity by the unemployed will lead to improvements in the model’s specification. However, one significant conclusion is the obtainment of a not insignificant effect of increases in structural mismatch on the curve’s shift. This opens an interesting avenue of research for calculating the appropriate mismatch measure to obtain a better specification for the model.

References


Sanromà, E. (1994).- "El paro estructural en la economía española" in J.L. García Delgado (Coord.) Economía española, cultura y sociedad. EUDEMA.


**Statistical appendix**

*Information sources used:*

**Vacancies:** *Estadística de Empleo*. INEM. Monthly data from 1977-1 to 1994-12. Detailed list of generic job offers unfilled, classified by activity, job category and autonomous community.

**Unemployment:** *Encuesta de Población Activa*. INE. Quarterly data from 1977-1 to 1994-IV. Relationship between the number of people unemployed and the total active population, classified by activity, job category and autonomous community.

*Definition of the variables used in the model:*

**Structural mismatch ratios**

$DIV_1, DIV_2, DIV_3, DIV_4$: I1, I2, I3, I4 ratios, respectively, referred to different types of activity (see page 14 for a definition of the ratios).

$CAT_1, CAT_2, CAT_3, CAT_4$: Ratios referred to job categories.

**Other variables**


$DUR$: percentage of long-term unemployed (more than two years) out of total unemployed.

$RR$: replacement ratio. Defined as the proportion corresponding to the mean monthly amount received in the form of unemployment benefits and the mean monthly wage.

$ACT$: total expenditure on active labour market policies as a percentage of the economy’s GDP. Source: Espina (1991) and OECD (1995).