SPANISH UNEMPLOYMENT:
THE END OF THE WILD RIDE?

Samuel Bentolila and Juan F. Jimeno

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Abstract

Over the last quarter century, the Spanish unemployment rate has gone from 3.5% to 24% of the labor force, and then back to 13%. In this paper we describe this extraordinary evolution more in detail, discuss the main shocks and institutions behind it, and provide a set of policy implications derived from our analysis.

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1 Introduction

Over the last quarter century, Spain has stood out for having the highest unemployment rate in the OECD. In the 1960s, however, Spain shared with the rest of Europe unemployment rates of 2-3%. As Figure 1 shows, since the second half of the 1970s Spain has experienced a *wild ride* as compared with, say, the largest four European Union economies (France, Germany, Italy, and the UK –the EU4). Only since the mid-1990s has the unemployment rate decreased significantly. In this paper we describe this extraordinary evolution in detail and present an explanation of the unemployment experience based on existing economic research.[1]

In the last few years, the joint analysis of shocks and labor market institutions has become popular for explaining European unemployment. It is therefore natural to ask whether we can account for the differential behavior of unemployment in Spain by either unusually bad shocks with average institutions, average shocks with exceptionally unemployment-prone institutions, or unusually bad shocks and institutions. To do so we use Blanchard and Wolfers' (2000) model of equilibrium unemployment in the OECD, which allows us to exploit comparable measures of shocks and institutions.

After describing the evolution of the unemployment rate (Section 2), we show that Spain experienced similar shocks as other OECD countries, except for stronger labor demand shifts (Section 3). Thus our explanation relies mostly on Spain having a set of exceptionally unemployment-prone labor institutions, in particular employment protection, unemployment benefits, and collective bargaining (Section 4). We also argue that a peculiar type of interaction between shocks and institutions was at work, namely that labor institutions were established in the transition from dictatorship to democracy and in the midst of the sharp recession of the 1970s. This environment induced attempts to compensate for the lack of social protection, leading to excessively protective labor institutions. We end by discussing how our story can account for the recent drop in unemployment and argue that it is to some extent structural –due to labor market reforms–, although further reforms will be needed (Section 5).

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[1]References to the literature are provided in running footnotes.

2   Unemployment evolutions

We start by describing the evolution of the aggregate unemployment rate in Spain since 1975 and then of a few breakdowns. Before doing so, it is worth noting that official Spanish unemployment figures have been questioned in the past. A common suspicion is that they are overstated, given the presumed large underground economy. We discuss this issue in the Appendix. Here let us note that several methodological revisions have led to increases in measured employment, but since the estimated labor force has gone up too, the unemployment rate has hardly changed. The OECD standardized unemployment rate is on average 3 percentage points below the official figure in 1976-2001, but it is still very high.

The latest revision of the Spanish labor force survey (LFS), however, *has* significantly altered the measured unemployment rate. Due to an EU directive redefining job search intensity, since 2002 the jobless who reply that their only job search method in the preceding month was to visit the public employment office and that this visit was not for jobseeking purposes are considered non-participants. Surprisingly, this has shaved 2.4 points off the official unemployment rate. Our analysis stops in 2001, to avoid the survey changes of 2002.

2.1   Aggregate unemployment rate

At the end of 1975 the Spanish unemployment rate stood at 3.4%. As Figure 1 shows, it then rose for ten years, peaking at 21.4%, fell back to a through of 16.3% in 1990-91, and shot up again to 24.1% in 1994. Since 1995 it has fallen, to 12.9% in 2001.

The trend is clearly up and the volatility is remarkable. Table 1 presents the ratio of the standard deviations of Hodrick-Prescott (HP) detrended unemployment, employment, and GDP for Spain vis-à-vis the EU4 countries. For unemployment, they range from 1.4 to 2.8. This *excess volatility* does not stem from output volatility alone, which is also higher but not as much as for unemployment. A related fact is that Spanish Okun's law shows a very high effect of the change in output on the change in unemployment.[2] One reading of these facts is that labor institutions amplify shocks more in Spain than elsewhere. And this is surprising, because labor

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[2]See Blanchard and Jimeno (1999).

market rigidity –which is high in Spain– should induce lower, not higher, volatility in (un)employment with respect to output. We return to this issue in Section 5.

Table 1 also highlights that the unemployment rate grossly underestimates the degree of labor underutilization in Spain. The employment rate fell all the way to 47% in 1985 and its current value of 62% is among the lowest in the EU.[3]

2.2   Key breakdowns

Unemployment has a very different impact across population groups in Spain. The difference between the male and female rates is now around 10% (using "%" to denote percentage points, hereafter). The rate for male workers aged 16-24 years old is about 10% higher, and for females about 20% higher, than for prime-age males, see Table 2. Males with a college degree have a 6% lower rate than those without it, while for females the difference is 14%. Across regions, unemployment rates range from around 6% in the Ballearic Islands to about 22% in Extremadura and Andalusia.[4]

Unemployment differentials are related to changes in the relative demand and supply of each population group. The usual suspects for demand are –as elsewhere– skill biased technological progress and international trade, though macroeconomic shocks probably also played a role. Some Spanish specificities can however be found for labor supply. Table 2 gives a few facts. In particular, the baby boom took place in Spain later than in the EU4, whereas recently the share of youth has decreased; the educational build-up also took place later; and female labor participation increased, closing the gap with male rates by 40%.

3   Explanations: Shocks

We now describe macroeconomic events in 1976-2001. Our theme is that, apart from worldwide shocks, Spain had a few of its own. For the sake of clarity, we break down the period into three cycles, corresponding to the periods shown in Table 1.

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[3]The *OECD Employment Outlook* gives a figure of 59% for Spain and 64% for the EU4 in 2001.

[4]The standard deviation across regions in 1985-2000, 5.3, is higher than in France (2.0), the UK (2.7) or Germany (3.3), though lower than in Italy (6.0).

3.1 The long recession (1976-85)

The turbulence of the second half of the 1970s coincided in Spain with the transition from the Franco dictatorship (1939-75) to democracy (Portugal shares this trait).[5] The dictators' economic legacy was a balanced budget and very low gross public debt (13% of GDP), but also relatively low income (80% of the EU15 average, at PPP), an underdeveloped Welfare State (with public spending at 24% of GDP), an obsolete industrial structure (with 22% of employment still in agriculture), and a relatively closed economy (with exports plus imports at 19% of GDP). The labor market was heavily regulated: unions, strikes, and lockouts were forbidden, and the government determined labor conditions. In 1976 Spain embarked on a path of democratization and decentralization, Welfare State expansion, and rising economic openness. New labor institutions were established in the Workers' Statute (1980).

Due to political instability, there was little policy response to the two oil price shocks until the early 1980s. And there was a large wage push, as unions competed to get established, ended in 1977 by the first of a series of social pacts which prevailed until 1986. The first half of the 1980s saw a strong wave of industrial restructuring.

Monetary policy was lax until 1977 and then restrictive: the real long-term interest rate went from –9% in 1978 to 3.2% in 1981.[6] On the other hand, public spending rose to 40% of GDP and the budget deficit to 6%, bringing gross public debt to 50% of GDP by 1986.

3.2 The EU (1986-94) and EMU (1995-2001) cycles

The 1986-90 boom was marked by two events. There was another specific shock (shared with Portugal as well): entry into the European Community (EC) in 1986, which entailed, *inter alia*, lower barriers to trade. Spain also joined the European Monetary System in 1989 and the European Single Market in 1993. And there was a huge increase in temporary jobs. In the 1991-94 recession Spain followed the European cycle. An aggravating factor was the overvalued exchange rate of the peseta, which triggered several realignments in 1992-93.

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[5]See Bentolila and Blanchard (1990) for a description of this period.

[6]Measured as the long-term interest rate minus the once-lagged GDP deflator growth rate.

The 1995-2001 expansion was influenced by the arrival of a center-right party to power in 1996. Its 1997 labor market reform and its determination, shared by the central bank, to meet the Maastricht Treaty conditions for Economic and Monetary Union (EMU) fostered wage and price moderation. In the run-up to EMU, real interest rates fell by sharply.

3.3 A benchmark model

We now use the observable shocks model of Blanchard and Wolfers (2000) (BW hereafter) to quantify the contribution of shocks to the increase in equilibrium unemployment. The dependent variable consists of 5-year averages of unemployment rates in 20 OECD countries, u_{it}, over the period 1960-99. The explanatory variables are country-specific shocks interacted with institutions:

$$u_{it} = c_i + (\sum_k a_k Y_{kit})(1 + \sum_j b_j X_{ij}) + e_{it} \tag{1}$$

where the indices are i for country, t for 5-year periods, k for shocks, and j for institutions. c_i are country effects and e_{it} a random noise. The shocks Y_{kit} are TFP growth, the long-term real interest rate, and labor demand shifts (the labor share purged of the impact of factor prices). Labor institutions, X_{ij}, are described in Section 4.

Since most institutions were established around 1980, the model makes less sense for Spain before that time. To retain transition to democracy, we examine changes from 1970-74 to 1995-99. Figure 2 presents the observed and fitted values and Table 3 shows the data. The last two columns show changes in shocks for Spain and the average of the other 19 countries in the sample. Changes in TFP growth and real interest rates in Spain were in line with those elsewhere, while labor demand shifts were about twice larger. The model accounts for only 11% of the 17% increase observed, attributing 6% to changes in TFP growth, 4% to labor demand shifts, and 1% to interest rates.

These results are not very robust, though. Monetary policy was loose up to 1977 and restrictive afterwards, and there was a large drop in TFP growth in the second half of the 1970s. For 1975-79 to 1995-99, the fit is much better: the model predicts

a 14.6% increase vis-à-vis the 14.2% observed, attributing a 7.6% unemployment increase to real interest rates, 4.3% to labor demand shifts, and 2.7% to TFP growth. These decompositions include as effects of shocks both their direct impact and their interaction with institutions. In the next section we separate the two.

4 Explanations: Institutions

We return to BW for a first look at labor institutions, namely: the unemployment benefit replacement rate and length, union contract coverage and union density, the union and employer coordination of bargaining, employment protection, the wage tax wedge, and active labor market policies. The measures are 1983-94 country averages from Nickell (1997), entered as deviations from the overall average.

Table 4 presents the values of institutions for Spain and the average of the other countries. It reveals that: (a) The unemployment benefit replacement rate and length, and employment protection are all high. (b) Union coverage is high and coordination low, though union density is also low. (c) The wage tax is slightly above the average. And (d) Active labor market policy is symbolic. Thus, apart from low union density, the overall impression is one of unemployment-prone labor institutions.

To isolate their role, we use BW's model with common, unobservable shocks captured by time dummies, d_t, interacted with time-invariant measures of institutions:

$$u_{it} = c_i + d_t(1 + \sum_j b_j X_{ij}) + e_{it} \tag{2}$$

Figure 2 depicts the observed and fitted values. Table 3 shows that the model underpredicts the increase from 1970-74 to 1995-99 by 3%. It implies that had Spain had labor institutions like the average country in the sample, its unemployment rate would have risen by 6.7%, from the effect of shocks, rather than the 13.9% predicted. Unemployment benefits and employment protection jointly account for more than three-quarters of the institutions-induced increase. Thus, the story that Spain had a set of strongly unemployment generating institutions, which amplified macroeconomic shocks, can account for the evolution of unemployment.

Though only a first approximation (institutions are constant, shocks are not properly identified, etc.), potentially suffering from data mining (measures of institutions

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that do well survive) and reverse causality, we think this is a very useful benchmark. But measures of institutions are likely to contain sizeable measurement error, and so we now describe the key institutions in Spain.

4.1 Employment protection

Contrary to other institutions, employment protection existed under Franco and the new legislation (1980) did not depart much from the old one.[7]

For workers on indefinite or *permanent* contracts, individual dismissal carries severance pay of 20 days of wages per year of service (p.y.o.s., hereafter) with a ceiling of 1 year, unless it is based on disciplinary grounds. However, most dismissals are actually disciplinary, for various reasons: the firm need not give advance notice, economic reasons for dismissal were not recognized until 1994, and, if the worker appeals, the firm has to prove those reasons in court. Moreover, most dismissals are appealed, since the cost of appealing is low, severance pay raises to 45 days of wages p.y.o.s. (with a ceiling of 3.5 years[8]) and the worker gets paid interim wages up to the date of the ruling if the dismissal is ruled unfair, which happens in about 72% of cases going to court. As a result, about 85% of dismissals are settled out of court.

Collective dismissals, entailing severance pay of 20 days of wages p.y.o.s., involve 18% of workers fired. They require administrative authorization, de facto given only upon agreement between the parties, which often leads to higher severance pay.

These are very high figures, but several reforms have altered the picture. In late 1984, provisions limiting the use of fixed-term contracts to temporary activities were suppressed. New fixed-term contract types were created, with low (12 days p.y.o.s.) or no severance pay, renewable for up to three years. The temporary jobs' share in hiring shot up, from 12% to 96%, and the share in the stock of employees from 11% to around 33%. The 1994 reform, which reintroduced the principle that fixed-term contracts should be used only for temporary activities, had no effect on that share.

The 1997 reform reduced severance pay for unfair dismissals to from 45 to 33 days of wages p.y.o.s. with a ceiling of 2 years, for new hires. It was implemented through

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[7]See Bover *et al.* (2000) for details.

[8]With Franco it was equal to 60 days of wages p.y.o.s.

a new permanent contract with reduced social security contributions.[9] Workers aged 30-45 with less than one year of unemployment became ineligible for the contract, so as not to subsidize all workers (forbidden by law). After the reform, the share of temporary contracts in hires fell from 96% to 91% and went from 34% to 31% of the stock of employees.

Lack of direct data on firing costs has hampered the analysis of their impact on employment. But the introduction of fixed-term contracts spurred many studies providing related evidence. The main effects found are as follows:[10] (a) Fixed-term contracts have raised employment volatility. (b) They sharply raised labor flows: for instance the ratio of annual hires to the labor force grew from 12% in 1977-83 to 76% in 2001. (c) They have probably helped reduce long-term unemployment (over 1 year), which has fallen from 61% to 40%. (d) They lowered labor costs, since temporary employees get 7% to 15% lower wages than comparable permanent employees, and have probably raised wage inequality. (e) They raised wage pressure until the early 1990s, by providing a buffer for permanent workers, but may have reduced unemployment hysteresis since then (through lower long-term unemployment). (f) Since fixed-term contracts are seldom upgraded to permanent, they have probably induced lower human capital investment and more frequent accidents at work. And (g) They have reduced youth unemployment vis-à-vis adult unemployment.[11]

4.2   Unemployment benefits

Unemployment benefits exist in Spain since 1961, but their modern form was established in 1976 and consolidated in 1984.[12] The unemployment insurance (UI) replacement ratio was, up to 1992, equal to 80% for months 1-6 of unemployment, 70% for months 7-12, and 60% thereafter. Benefit duration was equal to one-half of previous job tenure (from 6 months), with a maximum of two years. In 1992 the replacement ratio was cut to 70% in months 1-6 and to 60% thereafter, and benefit duration to one-third of tenure (from 1 year). In 1993 benefits became taxable.

Unemployment assistance (UA) pays 75% of the minimum wage to workers with

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[9]See Kugler *et al.* (2002).

[10]See Dolado *et al.* (2002) for a survey.

[11]See Jimeno and Rodriguez-Palenzuela (2002) for related evidence on firing costs.

[12]See Bover *et al.* (2002) for a description.

dependants whose average family income is below that threshold, for up to two years.[13] Since 1989 more generous conditions apply to workers aged 45 or older, and benefits are paid until retirement to workers aged at least 52. In 1993 UA also became taxable. There is a special UA for agricultural workers in the regions of Andalusia and Extremadura. They get 75% of the minimum wage for 90 to 300 days within the year if they have been employed for at least 40 days (20 days if already in the system in 1983). Since May 2002 no new workers were allowed to join the system, but there are currently political negotiations to largely undo this change.

The 1992 reform was a turning point, reinforced by the short employment durations caused by temporary employment. In particular, benefit coverage, which had risen from 23% in 1984 to 50% in 1992, fell again to around 37% in 2001.

As for the effects of benefits, the macroeconomic literature for Spain has found that replacement ratios raise wages and, through this channel, equilibrium unemployment.[14] Work on microeconomic data shows that unemployment benefits reduce the exit rate from unemployment but not that they lead to better matches, at least in terms of tenure, once a job is found.[15]

4.3   Collective bargaining

Under Franco labor conditions were bargained in so-called "vertical unions" including both workers and employers, with the government having the final say. From 1975 on, standard collective bargaining was established, with legal regulations set in 1980 and 1985. But departure from initial conditions has been slow in many respects.[16]

Workers have a constitutional right to be covered by a collective bargain, independently of union affiliation. Indeed, unions obtain their representation from firm-level elections, rather than affiliation. If they obtain 10% of the representatives at the national level or 15% at the regional level, they have the right to negotiate in *any* industry-level bargain. Absolute majority of representatives is required for agreement validity. Conditions set in above firm-level agreements are automatically extended by

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[13] The benefit duration figure in Table 4 accumulates UI and UA.

[14] See the references in footnote 18.

[15] See Bover *et al.* (2002) and García Pérez (1997), respectively.

[16] See Blanchard *et al.* (1995) for a description.

law to all firms and workers in the relevant industry or geographical area, and firm-level agreements cannot overrule broader ones.

Thus, there is little incentive for workers to unionize and union density is largely irrelevant. And large organizations are at a premium: there are two major unions and one employers' association. Above firm-level agreements cover around 80% of employees and firm-level agreements only 11% (2000). Bargaining takes place mostly at the industry level and there is geographical fragmentation. There has been no real reform of collective bargaining regulation.

The legal minimum wage has gone from representing 45% of the average wage in the early 1970s to 30% now. Minimum wages set in collective bargains are however very binding, especially for low-skill workers.[17]

Empirically, in aggregate equations, the unemployment rate, benefit replacement ratios, and taxes are all significant determinants of wages, as well as, often, the change in unemployment, the long-term unemployment share, and mismatch measures. The estimated coefficient of the effect of unemployment on wages is typically low, around –0.2, and Spain is normally ranked among the high real wage rigidity countries.[18]

Union activity is badly measured. Estimates of insider worker hysteresis from Spanish firm-level data are in between those for countries where bargaining is very centralized or decentralized. Unions have managed to reduce wage inequality, across both skills and regions, through national pacts in 1977-86 and through bargaining afterwards. The evidence indicates that industry coverage of collective bargaining raises wages in medium and large firms and reduces returns to skill, while firm-level bargaining partly offsets wage compression, presumably by allowing employers to bring wages closer to productivity. Overall, wage inequality seems to be high above the median (comparable to the US) and low below the median (comparable to Continental Europe). Lastly, both the national minimum wage and minimum bargained wages appear to have induced higher youth unemployment.[19]

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[17]See Dolado *et al.* (1997).

[18]Layard *et al.* (1991) report an estimate of –0.17, and Estrada *et al.* (2000) –0.2 for the private sector. However, De Lamo and Dolado (1991) obtained –1.17. Most real wage equations are static, but dynamic ones show a higher response in the long than in the short run. Layard *et al.* (1991) rank Spain fifth out of 19 OECD countries in the degree of real wage rigidity.

[19]See Bentolila and Dolado (1994) for insider effects, Bover *et al.* (2002) for wage inequality, Dolado *et al.* (1996) for the national minimum wage, and Dolado and Felgueroso (1997) for minimum

4.4   Other issues

Two final issues worth mentioning are geographical mobility and family ties. Interregional migration rates, around 0.5% of the population, are about half in Spain as in other European countries. This is partly endogenous to high national unemployment, but also related to unemployment benefits and housing prices.[20] Indeed, the regions with the lowest income per capita and the highest unemployment rates, Andalusia and Extremadura, receive net immigration from the rest of Spain, which is probably related to their special unemployment benefits for agricultural workers. The lack of mobility is also related to the uniformity of wages across regions, so that relative regional wages do not seem to respond much to regional unemployment rates.[21] By creating mismatch, low migration is likely to have raised equilibrium unemployment.

A related fact is that the welfare impact of becoming unemployed is mitigated by extended family networks. In Spain these provide income support to unemployed heads of households to a larger extent than in northern Europe. Also, young workers represent a larger share of the unemployed than in most of Europe and they also suffer higher job instability. They have responded by postponing parental home leaving. As a result, they may have higher reservation wages and lower geographical mobility, again leading to higher unemployment.[22]

These factors make wage adjustments harder and employment adjustments more likely, thus contributing to higher equilibrium unemployment. But they are shared with countries with lower unemployment rates, like Italy, and we are lacking an assessment of their contribution to the differential Spanish experience.

5   Interpretation and policy implications

Taking stock, an explanation for the rise in unemployment in Spain from 1975 to 1995, say, would run as follows. Spain chose a set of labor market institutions conducive to high unemployment, in particular unemployment benefits and employment protection. These institutions amplified the effects of aggregate shocks, which seem

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bargained wages.

[20] See Bover and Velilla (2002), Bentolila and Dolado (1991) and Antolin and Bover (1997).

[21] See Jimeno and Bentolila (1998).

[22] See Bentolila and Ichino (2002) for networks and Becker *et al.* (2002) for youth emancipation.

to have been similar in the rest of the OECD, except for more severe labor demand shifts (and stronger disinflation from the mid-1970s) in Spain.

Let us add two caveats. First, two other country-specific shocks were present: the transition from dictatorship to democracy and joining the EC. While the second was beneficial in integrating the economy to goods, labor, and capital flows, the first seems to us more important.

Secondly, we believe that firing costs and unemployment benefits get too much blame for the rise in unemployment, while collective bargaining gets too little. As is well known, the relationship between firing costs and aggregate unemployment is theoretically ambiguous and empirical results are not conclusive.[23] Moreover, the incidence of firing costs was reduced by deregulating fixed-term contracts. Unemployment insurance benefits are relatively high at the beginning of the spell, but unemployment assistance is much less generous, and coverage rates are low. On the other hand, unions have an undisputed grip on collective bargaining, whose regulation remains unchanged since the early 1980s.

Why did Spain choose those institutions? An important reason is that it had a low level of social protection expenditure when the oil shocks hit. To compensate, firing was kept expensive and the unemployed were provided with generous income support. This may also explain why it was possible to reform the institutions in the 1990s. By 1991 the gap in expenditures on social protection with respect to the EU12 had fallen to 4% of GDP. Simultaneously, the unemployed plus the temporary workers overtook permanent employees as a fraction of the labor force,[24] making it politically viable to reduce protection on othe margins.

For this story to be plausible, however, we need to discuss why Portugal, with apparently similar starting conditions and institutions, has much lower unemployment.

5.1 Spain vs. Portugal

As Layard (1990) once stated, any convincing story for Spanish unemployment must account for the difference with Portugal. The initial conditions were similar (e.g. in industrial structures), both underwent a transition to democracy and joined the EC

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[23]See OECD (1999) for a survey.
[24]See Dolado *et al.* (2002).

simultaneously, and it is widely thought that both shocks and institutions have been similar. However, their respective average unemployment rates were 13.6% and 6.6% in 1976-2001 (OECD standardized rates). What is missing? We now argue that, in fact, shocks and institutions have *not* been the same in the two countries.

First of all, BW measures of shocks were on average more favorable for Portugal over 1975-94 (later data being unavailable): the change in TFP growth was equal to 0.6% in Portugal vs. –2.3% in Spain, and labor demand shifts to 23.8% vs. –9.7% in Spain. On the other hand, real interest rates rose more in Portugal, 4.3% vs. 3%.

More importantly, standard measures of institutions, presented in Table 4, do not look so similar, except for high employment protection and minimal active labor market policies. In Portugal labor taxes are lower, and unemployment benefit replacement rates and length were much lower than in Spain.[25]

Table 4 presents union coverage as being the same and coordination as being higher in Portugal. Union density is higher in Portugal, but this is a bad measure of union power. There are only two coordinated unions in Spain, while in Portugal there are many uncoordinated unions. Outcomes are telling: Spanish unions achieve wages much above the national minimum wage, while Portuguese unions cannot for many categories. And wage dispersion is higher in Portugal.[26]

Why is union power lower in Portugal than in Spain? Political developments may have been important. For a few months after the "Carnation Revolution" the Communist Party run the government. But in November of 1975 a military counter-coup led to normalization of political institutions and weakened labor unions.[27] Spain had no revolution: Franco died in bed and then a party of reformists from the old regime ruled for 7 years, maintaining social peace by improving social protection.

Thus, the idea that Spanish labor institutions are less conducive to low unemployment than Portuguese ones, in particular collective bargaining, helps explain the unemployment differential. Does it also help us understand why unemployment has fallen so much in Spain in the 1990s? We now take up this question.

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[25]Blanchard and Jimeno (1995) singled out benefits as the key institutional difference. But reforms increasing coverage in Portugal (1989) and reducing it in Spain (1992) have shortened the gap.

[26]See Bover *et al.* (2000) and Cantó *et al.* (2002).

[27]We owe this point to Pedro Portugal.

5.2 Has the NAIRU fallen?

How structural is the recent fall in unemployment? A fraction is clearly cyclical: average GDP growth was 1.2% in 1991-1994 and 3.5% in 1995-2001. But while in the latter period the unemployment rate fell from 24.1% to 12.9%, inflation went from 3.9% to 3.8%. This suggests a significant reduction in structural unemployment. Let us now list the factors leading to the unemployment reduction and then present estimates of the change in structural unemployment.

One cause of the fall in unemployment was wage moderation, in particular since 1993: a simple wage equation for 1981-2002 delivers residuals of around 2% in 1986-92, close to zero in 1993-2000, and around –1.5% in 2001-02.[28] Further evidence of a structural change in wage and price setting comes from analyzing the trade-off between unemployment and inflation. In Spain, inflation is not very responsive to cyclical unemployment but it is to the change in unemployment.[29] Estimating the trade-off, see Table 5, we find evidence that after 1997 the response of changes in inflation to cyclical unemployment has increased, while the response to changes in unemployment has fallen (though neither effect is statistically significant).

What factors could account for a change in wage setting? Figure 3 presents time-varying measures of six labor institutions in Spain and the EU4 countries: unemployment benefit replacement rates and duration, employment protection, union density, coordination of wage bargaining and the wage tax wedge.[30] It reveals convergence of Spain towards the EU4 in the second part of the sample.

But there were other events. First, the employment losses of 1991-1994, leading to unemployment at 24%, affected union behavior in wage setting. Secondly, since 1994 wage moderation has been exchanged by unions for the non-application (1994) or non-approval (2001) of labor reforms. Thirdly, the nominal convergence Maastricht Treaty criteria imposed some discipline on price and wage setting. And, finally, some mild product market reforms may have lowered price markups. Since these are all

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[28] The equation is: $\Delta(w-p)_t = -0.07 - 0.24\, u_t + 0.05\, (w - (p + \widehat{y} - l))_{t-1}$ (standard errors: 0.04, 0.10, and 0.02, respectively), where $\Delta(w-p)$ is the real wage growth rate in collective bargaining, u the unemployment rate, and $w - (p + \widehat{y} - l)$ the log of the ratio of the wage to productivity predicted from a regression on a time trend and its square (see Blanchard and Katz, 1997).

[29] Dolado and Jimeno (1997) argue in favor of hysteresis in the dynamics of Spanish unemployment.

[30] From S. Nickell and L. Nunziata, Labor Market Institutions Database (cep.lse.ac.uk/pubs).

one-time events, it is hard to assess their contributions to wage moderation. In any event, it is risky to award all the merit to labor reforms.

Macroeconomic policy also helped unemployment to fall. Mostly due to EMU, the real interest rate went from 7.4% in 1995 to 1.8% in 2001, while it had averaged 5.1% in 1985-94. There were also reductions in income tax rates in 1999 and in social security contributions for permanent contracts in 1997.

Let us now try to disentangle cyclical from structural changes. We look at two indicators of structural unemployment: the third-order polynomial series used for computing cyclical unemployment in Table 5 and the equilibrium unemployment rate, or NAIRU, implied by the aggregate price and wage equations in Estrada *et al.* (2000). The two measures indicate a reduction of structural unemployment in 1995-2001 of about 7% –to around 14.5% in 2001– while actual unemployment fell by about 11%. As to the sources of the 7.4% estimated NAIRU fall, the wage and price equations attribute 3.6% to the fall in the wage taxes, 2.9% to the fall in unemployment benefits, and 0.9% to the fall in price-cost markups.

5.3   Looking ahead

We conclude with a discussion of forces challenging the achievements in the 1990s and the institutional changes needed to cope with them.

5.3.1   EMU challenges

Since its entry into EMU, Spain has maintained annual GDP growth and inflation rates of about 1 and 2 percentage points, respectively, above euro-zone averages. An argument can be made that both are equilibrium phenomena coming from the fall in equilibrium unemployment (excess growth) and the adjustment of relative prices (excess inflation) associated with growth (the Balassa-Samuelson effect). As for the fall in equilibrium unemployment, we have argued that it may be overestimated, given the concurrence of several one-time events. As for the Balassa-Samuelson effect, we may note that labor productivity in the business sector has grown at an annual rate of 0.7% from 1999 to 2001, the same rate as in the euro-zone.

Another warning comes from the current account balance, which has gone from

0.4% of GDP in 1997 to around –3% since 2000. Spain can surely afford to run deficits for a while, especially if the real interest rate remains below the GDP growth rate. But eventually the restoration of external equilibrium will require a substantial real depreciation which, given the common currency, can only be achieved through lower inflation than in the euro-zone. Further reductions in equilibrium unemployment and higher productivity growth rates will therefore be very much needed.[31]

5.3.2   Going for low unemployment

Current labor institutions will probably allow Spain to sustain unemployment rates 1 or 2 points above those of the largest Continental European economies. We very much doubt, however, that with a NAIRU of 14.5% (12% with the new official definition) Spain can join the club of low unemployment economies.

Starting with employment protection, preliminary evidence indicates that the 1997 reform raised employment rates for young workers, though we cannot disentangle the effects of lower severance pay from those of lower social security taxes.[32] We believe that further reform, aimed at reducing the role of labor courts, would be beneficial. If this was not politically viable, including workers aged 30-45 years old in the lower unfair dismissal pay regime would be a minimal step to take.

Regarding unemployment benefits, the worst feature is its lax administration: enforcement of criteria for benefit receipt, in particular work availability, is practically non-existent. Increasing strictness could prove very effective and we believe there would be a large constituency for this measure. This should be combined with more intense active labor market policies, mostly in job search assistance,[33] and specially for workers over 45 years old.

Last, but not least, the real policy challenge is to re-regulate collective bargaining. Real wage flexibility and wage dispersion are both relatively low. We wondered in Section 2 how could it be that in a country with stringent employment protection, employment and unemployment were more volatile than in the EU4. This may be attributed to acute industrial restructuring in the early 1980s and to high turnover

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[31]See Blanchard and Jimeno (1999).
[32]See Kugler *et al.* (2002).
[33]See Nickell *et al.* (2002).

caused by temporary contracts after 1984. But a third factor is the lack of wage flexibility, which has probably caused excess firing of permanent employees as well.[34]

Wage bargaining is in the hands of a small number of agents who mostly represent the interests of large firms and their permanent workers, in detriment of small firms and fixed-term employees. Despite their limited representativeness, unions have prevented any change in the regulations. We believe that a reform which fostered decentralization would help reduce unemployment. Rules like the automatic extension of both the right to negotiate and of labor conditions agreed in industry agreements to all firms belonging to an industry or area, or the inability of firm-level agreements to affect broader agreements, should be lifted.[35]

In sum, the Spanish unemployment experience shows that choosing certain labor market institutions can lead to very high unemployment rates, but also that it can be reversed if those institutions are reformed. We hope that this lesson will be applied in future, so that Spain will go back to a low unemployment equilibrium.

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[34]See Bertola and Rogerson (1997).
[35]See Bentolila and Jimeno (2002).

Appendix. Measuring unemployment in Spain

The official unemployment rate is computed from the labor force survey (LFS), which is of comparable quality to the surveys in other European countries, since it is a long-established survey, its sample is large (60,000 households) and, since 1987, its design is adequate, its questions are similar to those in other surveys, and it follows the ILO guidelines in defining unemployment.

The official figures have however been questioned several times. The main criticism is that the LFS does not capture the underground economy. While the underground economy is probably large in Spain, the relevant issue refers to the incentives that individuals may have to hide their employment status. Comparisons with other sources suggest that *irregular* unemployment did not account for more than 2-3% of the official unemployment rate around 1985. The reason is that the majority of irregular jobs were held by people who had another fully registered job, were retired or disabled (see Blanchard *et al.*, 1995).

Technical problems were present in the 1980s and early 1990s, because the 1981 census, on which the LFS sampling was conducted, became obsolete. Neither attrition nor the treatment of non-responses were corrected, and the population aged 25-45 years old was underrepresented. According to some estimates this resulted in an underestimation of employment and the labor force by about 1 million people, but had little effect on the unemployment rate (Toharia, 2000). In 1995-96 the 1991 census was adopted, which led to an overestimated employment growth then. Further improvements took place in 2000.

In 2001:1 an EU directive changed the job search requirements to be classified as unemployed. Up to then, being registered in the public employment office was enough. Since then, absent other methods, going to the employment office needs to have happened over the preceding four weeks, and the purpose must be job searching. The initial effect (see Table A1) was to reduce the unemployment rate by about 2.4%. But the rise in unemployment rate by 1% in 2002:1 and the narrowing gap between the two series suggest that the impact of the change is being undone.

Table A1. Unemployment rates: alternative definitions (%)

Period	Old definition	New definition
2001:1	13.3	10.9
2001:2	12.8	10.4
2001:3	12.6	10.3
2001:4	12.7	10.5
2002:1	–	11.5

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Table 1. Labor market variables in Spain and the EU4 (1976-2001)[1]

		1976-1985	1986-1990	1991-1994	1995-2001
Unemployment rate	Spain	12.6	18.9	20.4	18.1
	EU4	6.6	8.4	9.1	9.2
GDP growth[2]	Spain	1.6	4.5	1.2	3.5
	EU4	2.4	3.2	1.1	2.2
Employment growth[2]	Spain	-1.5	3.3	-1.5	3.9
	EU4	0.2	1.1	-1.0	1.0
Emploment rate[3]	Spain	53.8	50.3	50.6	54.8
	EU4	62.8	61.9	61.0	62.0
Relative volatility in Spain vs.:[4]		France	Germany[5]	Italy	U. Kingdom
- Unemployment rate		2.8	1.9	2.7	1.4
- Employment		3.2	0.8	2.5	1.5
- GDP		1.5	1.1	1.6	1.0

Notes:

[1] Data are averages for the periods shown. EU4 denotes the unweighted averages of the variables for France, Germany, Italy, and the UK. All variables are percentages, except for relative volatility, which is a ratio.

[2] For Germany in 1991-94 we use only the growth rate over 1992-94, to avoid the distorsions induced by the 1991 reunification.

[3] For Germany, starting in 1990 we construct a counterfactual level by imputing the growth rates of the average employment rate of the other three countries, to avoid the level change induced by the 1991 reunification.

[4] Ratio of standard deviations of the Hodrick-Prescott annual detrended series (with $\lambda=100$) for Spain and each of the other four countries.

[5] For the comparison with Germany, the period is 1976-1990 due to reunification.
Sources: OECD Economic Outlook (via dX for Windows), Encuesta de Población Activa (EPA), Instituto Nacional de Estadística (INE) (www.ine.es), and Boletín Estadístico of the Banco de España (www.bde.es).

Table 2. Unemployment differentials and demographic variables in Spain and the EU4 (%)[1]

	Spain			EU4		
	1975	1985	2001	1975	1985	2001
A. Unemployment differentials						
Youth (16-24 y.o.) vs. males (25-54 y.o.)						
- Males	6.4	23.9	9.8	6.0	13.2	9.3
- Females	4.4	35.6	20.7	6.4	18.3	11.7
Females (25-54 y.o.) vs. males (25-54 y.o.)	-1.6	0.6	7.4	0.4	2.8	2.2
Tertiary vs. non-tertiary education						
- Males			6.1			3.6
- Females			13.6			5.1
B. Demographic variables						
Youth population[2]	85.3	88.5	67.6	77.3	81.1	55.4
University graduates[3]						
- Males	25	29	53	26	26	47
- Females	14	29	62	19	25	58
Participation rates[4]						
- Males	96.5	94.2	91.6	95.3	94.3	91.6
- Females	27.9	35.0	61.2	49.1	60.0	72.2

Notes:

[1] EU4 denotes the unweighted average of the variables for France, Germany, Italy, and the UK.

[2] Youth population (16-24 years old) over the male population aged 25-54 years old.

[3] Gross enrolment rates at tertiary level of education for population aged 18-22 years old.

[4] Population aged 25-54 years old.

Sources: Unemployment differentials: Spain, EPA, INE; EU4: OECD Employment Outlook. Youth population: United Nations and Eurostat. University graduates: UNESCO. Participation: Labour Force Statistics, OECD.

Table 3. Accounting for Spanish unemployment à la Blanchard-Wolfers

1995-99 vs. 1970-74 (%)

	Change in unemployment[1]	Change in shocks	
		Spain	OECD[2]
Actual change	17.1		
Observable shocks model	11.1		
- Total factor productivity growth		6.0	-2.1	-2.3
- Real interest rate		0.9	0.9	0.8
- Labor demand		4.1	-10.3	-4.6
Unobservable shocks model	13.9		
- Shocks (at average institutions)	6.7		
- Institutions (interacted)[3]	7.2		
- Unemployment benefits		3.3		
- Employment protection		2.3		
- Unions and bargaining		0.5		
- Taxes and labor policies		1.1		

Notes:

[1] Change in the average unemployment rate from 1970-74 to 1995-99. Unemployment based on national definitions.

[2] Countries: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Sweden, Switzerland, the United Kingdom, and the United States.

[3] Unemployment benefits includes both replacement rates and benefit length. Unions and bargaining includes union coverage, union density and bargaining coordination. Taxes and labor policies includes the wage tax wedge and active labor market policy.

Source: Own estimation using the model in Blanchard and Wolfers (2000) (econ-wp.mit.edu/ RePEc/2000/blanchar/harry_data) and updated unemployment rates for 1995-99. There are changes unemployment definitions in 1995-99 in Belgium, Denmark, Germany, Greece, and Spain.

Table 4. Comparison of labor market institutions in

Spain, the OECD, and Portugal

Variable	Spain	OECD[1]			Portugal	Units
		Mean	Min.	Max.		
Replacement rate	75	56.5	11	90	63	% of previous wage
Benefit length	3.5	2.4	0.5	4	0.7	Years[2] (1)
Employment protection	19	10	1	20	18	Ordinal
Union coverage	3	2.7	1	3	3	Index[3] (2)
Union density	14.5	43.6	11.8	81.8	39.1	% of employees
Coordination	3	4	2	6	4	Index[4]
Tax wedge	52.2	47.4	29.8	69.8	35.6	% tax rate[5]
Active labor policy	7.5	12.3	2.6	59.3	9.3	% spending[6]

Notes:

[1] See the list of countries in footnote 2 to Table 3.

[2] 4 means indefinite.

[3] 1 = under 25%, 2 = 25-70%, 3 = over 70%.

[4] Sum of union and employer coordination, each ranked as low (1), medium (2) or high (3).

[5] Sum of payroll, income, and consumption tax rates.

[6] Active labor market spending per unemployed person as a percentage of GDP per member

of the labor force.

Source: Blanchard and Wolfers (2000). The variables are simple averages of the values for 1983-88 and 1989-94 given in Nickell (1997).

Table 5. The inflation-unemployment trade-off

Dependent variable: Annual change in inflation[1]		
Cyclical unemployment rate[2]	-0.040	-0.022
	(0.032)	(0.033)
Cyclical unemployment rate × Dummy 1997-2001	-0.009	-0.022
	(0.103)	(0.102)
Δ Unemployment rate		-0.124
		(0.058)
Δ Unemployment rate × Dummy 1997-2001		0.120
		(0.100)
Growth rate of price of imports (lagged)	0.019	0.027
	(0.008)	(0.008)

Notes:

[1] Quarterly data on the GDP deflator. Sample period: 1978:1-2002:2. Standard errors in parentheses.

[2] Cyclical unemployment is measured as the deviation of the unemployment rate from a third-order polynomial.

Sources: Wage increases: Boletín de Estadísticas Laborales, Spanish Ministry of Labor and Social Affairs. Unemployment: INE. Price of imports: SERIES Database, Spanish Ministry of the Economy.

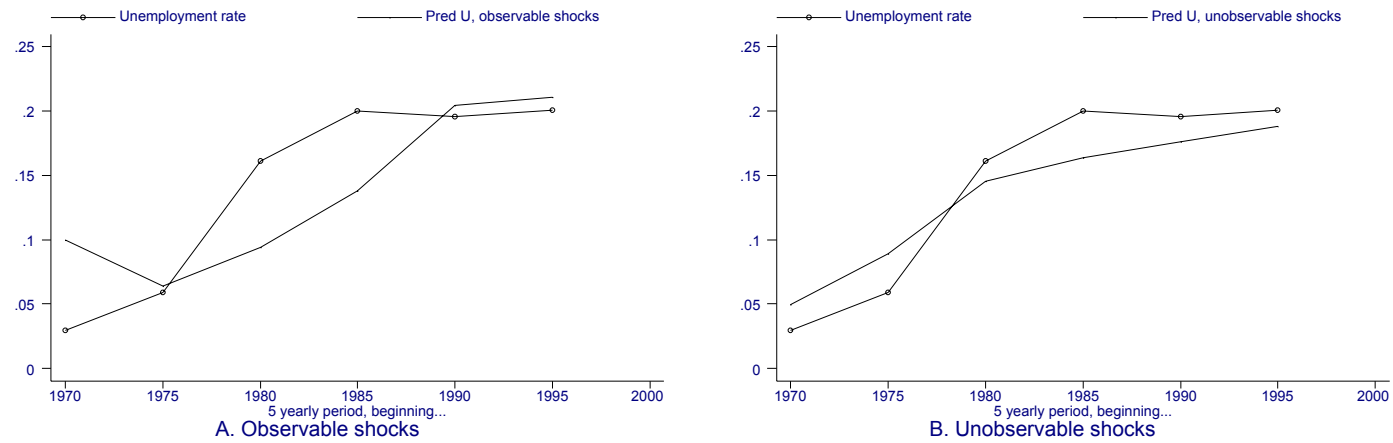**Figure 1. Unemployment rate in Spain and the EU4**
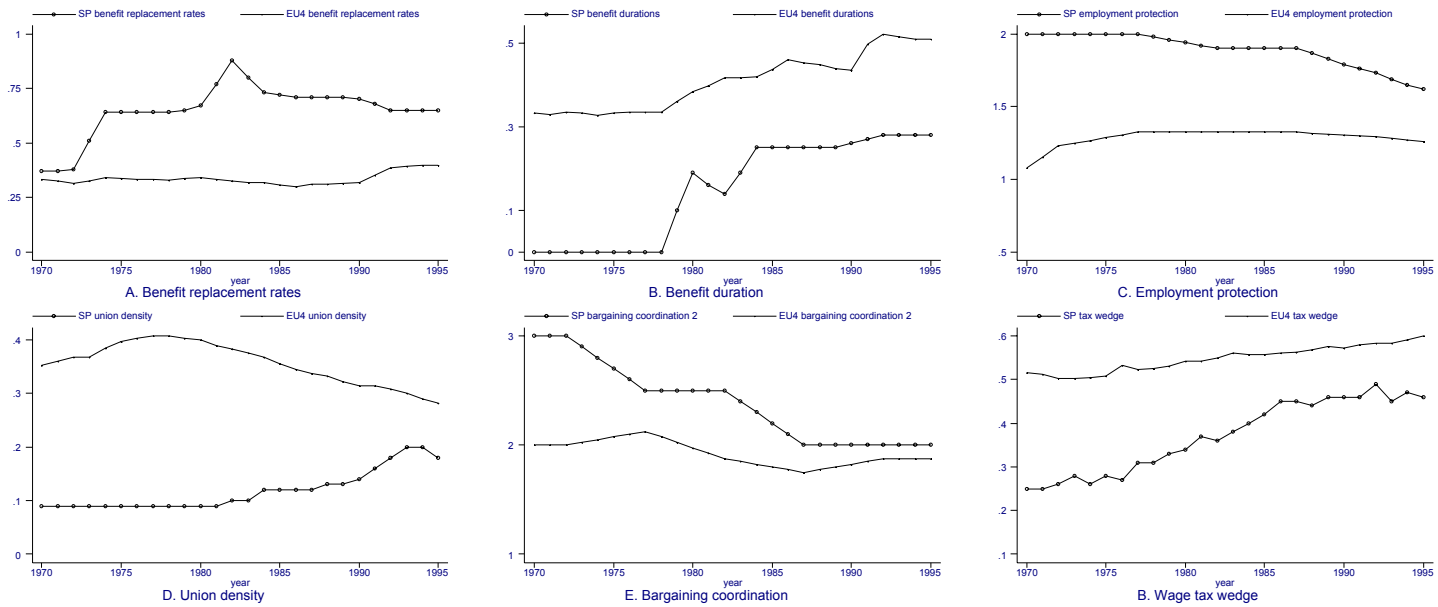
Figure 2. Unemployment rate and fit of Blanchard-Wolfers models

Figure 3. Labor market institutions in Spain and the EU4