Working Paper

INTERNATIONAL MONETARY FUND

IMF WORKING PAPER

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WP/94/102

INTERNATIONAL MONETARY FUND

European I Department

Explaining Unemployment in Spain: Structural Change, Cyclical Fluctuations, and Labor Market Rigidities

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September 1994

Abstract

Spain has the most serious and persistent unemployment problem in Europe, with an unemployment rate that reached 24.6 percent in early 1994. This paper explores the characteristics of this unemployment problem, its causes, and provides a brief discussion of recent labor market reform measures and their likely impact. A demographic shift in recent years has produced a large rise in female labor force participation and a decrease in agricultural jobs to which the economy has been unable to adjust. The effects of generous unemployment benefits and the large underground economy may explain 6-12 percentage points of the resulting unemployment, but the remainder must be explained by failures and rigidities in the labor market. The paper presents econometric evidence that unemployment displays hysteresis, and that wages are not responsive to changes in the unemployment rate. This evidence supports the claim that insider-outsider factors and rigidities in the legal structure of the labor market are responsible for much of the high unemployment rate. Recent reforms have improved the functioning of the labor market, but they are unlikely to be sufficient to reduce unemployment to single digit rates without further action.

JEL Classification Numbers:

J21, J30, J60, E24

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Summary

This paper explores the characteristics of unemployment in Spain, its causes, and provides a brief discussion of recent labor market reform measures and their likely impact. Two characteristics distinguish the Spanish unemployment problem: i) its magnitude (over 24 percent in early 1994) and its persistence (above 15 percent even through a major economic boom in the late 1980s); and ii) the strength of the cyclical variation in unemployment (nearly 9 percentage points in the last cycle). The roots of the unemployment problem lie in a rapid demographic transformation over the past 15 years which has produced a large increase in female labor force participation and a substantial reduction in agricultural employment. Although the job creation record in Spain in the 1980s compares favorably with other European countries, it was insufficient to absorb the increasing non-agricultural labor force.

Two sets of explanations for high and persistent unemployment are explored. The first, called "market clearing" explanations, look at reasons why the reported unemployment rate would be high despite well-functioning labor markets. Little evidence is found in support of equilibrium business cycles theories, but between 6 and 12 percentage points of Spanish unemployment could be attributed to workers "voluntarily" unemployed due to generous unemployment benefits and those reportedly unemployed but really working in the underground economy.

The second set of explanations, denominated "market failure" theories, look at unemployment caused by rigidities in the labor market. Legal restrictions on hiring, firing, and employment mobility have created a labor market extremely unresponsive to fluctuations in the unemployment rate. Econometric estimates demonstrate that the unemployment rate has a unit root--an extreme manifestation of persistence which constitutes evidence in favor of unemployment hysteresis. A simple error correction model of wage determination shows evidence that the wage rate in Spain does not moderate when unemployment increases, and does not respond positively to improvements in productivity.

The paper concludes with a brief discussion of recent reforms in the labor market introduced by the Spanish government. While a number of positive steps have been taken, particularly in reducing the generosity and ease of eligibility for unemployment benefits, it is likely that additional reforms will be necessary if unemployment is ever to fall below 10 percent.

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I. Introduction

One of the most serious and persistent economic problems facing Spain is that of unemployment. Even by the high unemployment standards of Western Europe, the Spanish figures are unusually high. Despite an economic boom from 1986-91, the unemployment rate remained stubbornly above 15 percent of the work force. In the recent economic slowdown, the number of unemployed climbed with surprising speed. By the first quarter of 1994 unemployment stood at 24.6 percent; current projections suggest that it is unlikely to return below 20 percent until at least 1996.

This dismal unemployment record underlies two important concerns about labor markets and economic performance in Spain. First, it appears that the underlying "natural" rate of unemployment is extremely high. Indeed, estimates suggest that the NAIRU (Non-accelerating Inflation Rate of Unemployment) is above 15 percent. ^{1/} Second, the increase in the unemployment rate during the recent recession has also been much higher than that of other European countries. A drop in GDP of only 1.2 percent between the second quarter of 1992 and the end of 1993 produced a rise in unemployment of 6.2 percentage points. The total peak-to-trough variation in the current cycle has been 8.9 points. By contrast, the peak-to-trough variation in unemployment during the recent recession has been approximately 5 percentage points in western Germany, France, and the United Kingdom.

This paper attempts to explain both the high underlying rate of unemployment and the size of the cyclical fluctuations. It argues that a combination of socio-demographic trends, market responses to distorted economic incentives, and labor rigidities which inhibit the clearing of the labor market, have produced the unusually high and persistent rate of unemployment. The extreme stickiness of real wages has meant that adjustment to recession has had to take place via changes in the quantity employed rather than in the price of workers. Once workers lost their jobs in a temporary downturn, hysteresis effects institutionalized the higher unemployment rate, making it virtually permanent.

The roots of the current unemployment problem are found in long-term socio-demographic trends which produced a sharp increase in the size of the labor force during the last decade. Changes in economic structure as Spain moved into the ranks of highly developed countries and opened its economy to the world also led to the elimination of millions of jobs in agriculture and industry. Together, the demographic and structural changes produced the need for the generation of millions of jobs during the 1980s. Although job creation during the decade compared well with other European countries, it was sorely inadequate to absorb the growing number of job seekers.

Other countries have made the same transitions in demographics and economic structure without significant increases in unemployment, so demographics alone do not explain why the Spanish economy was unable to generate the necessary jobs to prevent an explosion in the unemployment

^{1/} de Lamo and Dolado (1991); Roy (1993).

rate. The paper argues that it was the interaction of an accelerated transition with rigidities and distortions in the labor market that generated the climb in unemployment from 1 in 20 workers in 1977 to nearly 1 in 4 workers today.

The paper explores two types of explanations for problems in the labor market which could be labelled 'market clearing explanations' and 'market failure explanations.' The thrust of the market clearing explanations is that market clearing behavior in the face of distorted incentives to employers and workers produces high official unemployment. This occurs either in the form of incentives for workers to report themselves as unemployed while working the underground economy or while out of the labor force, or due to incentives for not working (like generous unemployment benefits) that mean that much of the unemployment is not truly involuntary. Conversely, market failure explanations point to structural market failures that keep wages from adjusting to equilibrate labor supply and demand. Among the important rigidities are real wage stickiness, restrictive labor market regulations, and labor market mismatch.

The remainder of the paper is structured as follows: Section 2 presents evidence on the demographic and structural transformations of the Spanish economy during the last 20 years and discusses some of the salient features of unemployment. It also briefly discusses the legal rigidities hampering a freely functioning labor market. Section 3 evaluates market clearing and market failure explanations for unemployment. It also provides econometric evidence of hysteresis in unemployment in Spain, and presents a simple model of wage determination which provide evidence on the degree of rigidity in wage growth. Section 4 concludes with a discussion of recent reforms in the labor market and their likely effects on future unemployment.

II. Background: Spanish Employment and Unemployment in the 1980s and 1990s

1. Structural changes in the labor force

The starting place for an exploration of the causes of high unemployment is in the structural evolution of the labor force. There is an undeniable socio-demographic component of high unemployment in Spain. The high rate is being driven not just by the failure of the economy to create enough jobs, but by a secular expansion in the labor force due to the incorporation of increasing numbers of women. Coexistent with that are declines in agricultural and industrial employment which are common for economies at Spain's level of economic development, but have been accelerated by the rapid emergence from the economic autarchy of the Franco period and Spanish accession to the EC in 1986.

The Spanish labor force differs from that of G-4 Europe in several aspects. Unlike Germany, France, and United Kingdom, where the size of the labor force has grown modestly, in Spain past population growth and the entrance of women into the labor market have generated increases in the

economically active population averaging 1.4 percent per year over the decade of the 1980s. The male labor force grew by an average of 0.4 percent per year, while the female growth rate was 2.2 percent. As a result, the participation of women in the economically active population has climbed significantly in recent years. From 28 percent in 1981 (the lowest rate in the OECD), female participation has grown to 35 percent in 1992, although it still lags behind most other western European countries. (Table 1 and Chart 1).

The expansion of the labor force has meant that any reduction in unemployment required a higher level of job creation than in other European countries. In fact, as Table 1 shows, the Spanish economy has been somewhat more successful at creating jobs in recent years than G-4 Europe. Between 1980 and 1991, there was a net rise in jobs of 9.2 percent, compared to 7.3 percent in Germany and 5.4 percent in Italy. Spain also created more jobs in absolute numbers than either France or United Kingdom, despite a labor force only one half as large. Employment in Spain grew by 1 million over the decade, but female participation in the labor force climbed by 1.6 million, more than offsetting any impact job creation might have on returning unemployment to pre-1980 levels. ^{1/} Thus, it is not simply a lack of job creation capacity that explains the stickiness of the unemployment rate; rather it is the inability to keep pace with the trend toward greater economic participation of women. Expressed differently, even if it had the same degree of distortion in the labor market, Spain would have more employment problems than its European neighbors due to the increases in the female labor force.

The second important structural change in employment has been the decline in employment in agriculture. Spain lags far behind its G-4 neighbors in shifting its population out of agriculture. As recently as 1979, 20 percent of Spanish workers were employed in agriculture, compared to 5.8 percent in Germany and 2.7 percent in the United Kingdom in the same year. Over the intervening 13 years, more than 1 million jobs were eliminated in agriculture. The change in the agricultural share of employment (9.3 percentage points) was substantially greater than the drop in France (3.2 points) or Italy (6.4 points), and several times that of Germany or United Kingdom, reflecting the initially higher share of agricultural employment. (Chart 1).

Table 2 gives an idea of the importance of these structural factors in Spanish unemployment. While there is a cyclical component to the changes in the labor force, with growth in the economically active population substantially less during slack periods (1980-81 and 1991-93) than in the boom of the mid-1980s, there is also an important secular trend. This

^{1/} This trend is even more striking if we take 1985 as the point of comparison. Between 1985 and 1991, nearly two million jobs were created, but unemployment fell by only 475,000 due to the entrance of 1.2 million women into the job market.

Table 1. Spain: International Comparisons of Labor Market Structure

	1979-1981	1982-1984	1985-1987	1988-1990	1991-1993
	<u>(Annual percent change)</u>				
Labor Force Growth:					
Germany	2.0	0.4	0.8	1.1	0.3
France	0.7	0.5	0.4	0.4	0.5
United Kingdom	0.5	0.7	0.9	0.6	-0.9
Italy	1.1	0.9	1.0	0.7	0.2
Spain	0.2	0.9	1.8	1.5	0.7
	<u>(Percent)</u>				
Female Share of Labor Force:					
Germany	38.2	39.0	39.3	40.2	42.3
France	39.8	40.9	42.1	42.7	44.7
United Kingdom	39.1	39.6	41.1	42.5	43.0
Italy	33.2	34.2	35.5	36.6	37.8
Spain	28.4	29.3	31.0	34.2	36.3
Agriculture Share of Civilian Employment:					
Germany	5.4	4.9	4.4	3.7	3.2
France	8.7	8.0	7.3	6.4	5.2
United Kingdom	2.7	2.7	2.5	2.2	2.2
Italy	14.2	12.2	10.9	9.3	8.0
Spain	18.9	18.6	16.5	13.1	10.3
Unemployment Rate:					
Germany	3.6	7.4	7.7	6.9	7.7
France	6.5	8.7	10.4	9.4	10.3
United Kingdom	6.4	10.9	11.2	6.6	9.4
Italy	7.6	9.2	10.9	11.6	11.0
Spain	11.1	17.4	20.7	17.3	19.1
	<u>(Thousands)</u>				
Total Civilian Employment:					
Germany	26180	25957	26373	27330	28495
France	21281	21132	20984	21454	22019
United Kingdom	24698	23598	24408	26198	25185
Italy	20244	20355	20569	20954	21215
Spain	11556	10964	10965	12206	12274

Sources: OECD Labor Force Statistics; IMF, World Economic Outlook

CHART No 1

Spain

Indicators of Structural Transformation in Europe

Agriculture Share of Civilian Employment

Female Share of Labor Force

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Table 2. Spain: Structural Change in the Labor Force

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
<u>(Thousands)</u>														
Labor Force	13,045	13,084	13,237	13,385	13,471	13,580	13,814	14,307	14,621	14,819	15,020	15,073	15,155	7,612
Male	9,262	9,304	9,341	9,357	9,412	9,460	9,541	9,590	9,621	9,710	9,742	9,723	9,662	4,831
Female	3,783	3,780	3,896	4,028	4,059	4,119	4,272	4,717	4,999	5,109	5,278	5,350	5,493	2,780
Total Employment	11,557	11,231	11,117	11,044	10,743	10,641	10,881	11,369	11,773	12,258	12,579	12,609	12,366	5,937
Agriculture	2,227	2,107	2,060	2,067	1,987	1,949	1,757	1,722	1,694	1,598	1,485	1,345	1,253	608
Total Unemployment	1,487.8	1,853.7	2,120.4	2,340.5	2,728.2	2,938.5	2,933.0	2,937.7	2,847.9	2,560.8	2,441.2	2,463.7	2,788.5	1,674.2
Labor Force Change	10.6	39.3	152.7	148.0	86.5	108.2	234.2	492.8	313.9	198.5	200.8	53.2	81.7	-7,543.2
Male	21.3	42.7	37.0	15.8	54.9	48.0	81.1	48.2	31.8	88.7	32.1	-19.3	-60.5	-4,830.8
Female	-10.7	-3.3	115.7	132.1	31.5	60.2	153.0	444.6	282.2	109.9	168.8	72.5	142.1	-2,712.4
Employment Change	-354.5	-326.5	-114.0	-72.1	-301.2	-102.1	239.8	488.0	403.8	485.6	320.5	30.6	-243.2	-6,428.9
Agriculture	-151.9	-119.9	-46.5	6.8	-80.3	-37.8	-192.0	-35.2	-27.6	-96.3	-112.4	-140.4	-92.4	-644.8
Unemployment Change	365.1	365.9	266.8	220.1	387.7	210.3	-5.6	4.8	-89.8	-287.1	-119.6	22.5	324.8	-1,114.3
percent change:	32.5	24.6	14.4	10.4	16.6	7.7	-0.2	0.2	-3.1	-10.1	-4.7	0.9	13.2	-40.0
<u>(Percent)</u>														
Unemployment Rate:	11.4	14.2	16.0	17.5	20.2	21.6	21.2	20.5	19.5	17.3	16.3	16.3	18.4	11.0
Change in Rate:	2.8	2.8	1.9	1.5	2.8	1.4	-0.4	-0.7	-1.1	-2.2	-1.0	0.1	2.1	-7.4
Contribution to Change:														
Labor Force:	0.1	0.3	1.0	0.9	0.5	0.6	1.4	2.8	1.8	1.1	1.1	0.3	0.4	-49.8
of which Female	-0.1	-0.0	0.7	0.8	0.2	0.3	0.9	2.6	1.6	0.6	1.0	0.4	0.8	-31.5
Employment	2.7	2.5	0.9	0.5	2.2	0.8	-1.7	-3.4	-2.8	-3.3	-2.1	-0.2	1.6	73.5
of which Ag.:	1.2	0.9	0.4	-0.0	0.6	0.3	1.4	0.2	0.2	0.6	0.7	0.9	0.6	19.5

phenomenon is particularly striking in the high growth years of 1986 and 1987. The number of unemployed remained essentially constant in those years as the creation of 955,000 nonagricultural jobs was largely offset by the influx of 598,000 women into the labor force and the elimination of 225,000 agricultural jobs.

These demographic trends highlight the long-term nature of the employment problem. Even if female participation and agricultural employment were to stabilize at current levels and the cyclical unemployment of the recent recession disappeared, it would still take a decade for unemployment to fall below 10 percent of the labor force. A simple arithmetic exercise demonstrates this point. Using 1990 as a cyclically neutral base year, Table 3 illustrates the impact of the female participation and agriculture trends on unemployment through 2000. Assuming employment grows at the same average rate during the 1990s as during the 1980s, non-farm employment would rise by roughly 1.8 million. If we also assume constant female participation and agricultural employment, then unemployment would drop from the 1990 average of 16.3 percent to roughly 9 percent by 2000.

Of course, the assumptions of constant participation of women and employment in agriculture are totally unrealistic. The overall labor force participation rate in Spain is still among the lowest in the OECD, and the proportion of jobs in agriculture is still high for a country of Spain's level of development. Suppose we assume (more realistically) that by the year 2000 the female participation rate in Spain equals the current average of the European OECD countries (53.5 percent). This would imply the entry of at least 1.7 million more women over the decade of the 1990s. Likewise, if we assume that Spanish agricultural employment declines to the current OECD average, then nearly 600,000 additional jobs will be lost in that sector. Together, these two assumptions imply that instead of a decline in unemployment to 9 percent, the actual number of unemployed would climb (by over 1 million from 1990 levels) if job creation trends of the 1980s carry over through the 1990s. The unemployment rate would remain above 20 percent beyond the year 2000.

Another important structural change has occurred in the past 15 years in the industrial sector. 1/ The oil crises, the progressive opening of the Spanish economy to international competition, and accession to the European Community were factors that gave rise to a significant reorganization of production in many basic industries. 2/ Industrial employment fell steadily from 3.4 million in 1977 to 2.6 million in 1985, a cumulative loss of 800,000 jobs. After a partial recovery in 1986-1990, it dropped below 2.5 million by the end of 1993. While current employment is particularly low due to the recession, the permanent change in industrial structure is such that industrial employment is likely to remain below

1/ See Bentolila (1990); Dolado, Malo de Molina, and Zabalza (1985).

2/ Galy, Pastor, and Pujol (1993); Lopez-Claros (1988).

Table 3. Spain: Scenarios on Labor Force and Unemployment, 1990–2000 1/

			Scenario 1: Low Labor Force Growth	Scenario 2: Medium Labor Force Growth	Scenario 3: High Labor Force Growth
Year:	1990	1992	2000 2/	2000 3/	2000 4/
(Thousands)					
Population age 16–64	25210	25534	26573	26573	26573
Total Labor Force:	15020	15155	15902	17406	18838
Male	9742	9662	10272	10042	10580
Female	5278	5493	5630	7364	8259
(Percent)					
Participation Rate:					
Male	80.2	78.5	80.2	78.4	82.6
Female	40.9	42.0	40.9	53.5	60.0
(Thousands)					
Employment:	12579	12366	14467	13883	13883
Non–Agriculture	11094	11113	13214	13214	13214
Agricultural Employment	1485	1253	1253	669	669
Unemployment	2441	2788	1435	3523	4955
(Percent)					
Unemployment Rate	16.3	18.4	9.0	20.2	26.3
Female Share of Labor force	35.1	36.2	35.4	42.3	43.8
Participation Rate:					
Female:					
OECD Europe	53.5				
OECD	60				
Male:					
OECD Europe	78.4				
OECD	82.6				
Agric. Share of Employment	4.82				

Sources: Bank of Spain, INE, OECD Employment Outlook, and IMF Staff Estimates

1/ All scenarios assume that non–agricultural employment generation continues at the 1980–1990 average level.

2/ Assumes that participation rates remain constant at 1990 level, and that agricultural employment remains constant at 1990 level.

3/ Assumes that female labor force participation rate and the share of agricultural employment converge to 1990 OECD Europe average.

4/ Assumes that female labor force participation rate and the share of agricultural employment converge to current overall OECD average. Also assumes that male participation rate converges to 1990 OECD average.

3 million, implying a permanent job loss of at least 500,000. Nearly 100,000 of these jobs were eliminated through a government sponsored industrial reconversion plan. The plan facilitated redundancies in basic industries such as steel, shipbuilding, electrical appliances, and textiles, with special adjustment assistance and incentives for early retirement. 1/

Together, the changes in the participation of women and the permanent declines in employment in industry and agriculture due to changes in the economic structure imply that despite a relatively favorable record of job creation over the 1980s, Spain cannot expect to grow out of its current unemployment crisis without additional measures to generate faster employment growth. While the cyclical element in unemployment is undeniable, the underlying structural trends will not disappear in the coming decade, and any long-term employment strategy will need to deal with them.

2. Structure of unemployment

The proportion of women among the unemployed has risen substantially over recent years, as might be expected from their increasing entry to the labor force. Whereas in 1980, only 36 percent of the unemployed were female, by 1990 the proportion had climbed to 52 percent, representing a rise in female unemployment of 718,000 over the decade. Male unemployment rose by less than 200,000 over the same period. Interestingly, these unemployed women are not primarily new entrants into the labor force. The proportion of unemployed women who were first time job seekers among total unemployed fluctuated between 18-22 percent during the 1980s before descending substantially (to 14 percent) by the end of 1992. 2/

More surprising, given the structural changes discussed above, is the fact that the number of agricultural unemployed climbed only modestly over the decade. It rose from 111,000 in 1980 to 200,000 in 1990 despite the elimination of over a million agricultural jobs. Two possible explanations exist for this apparent anomaly. On the one hand, the labor force participation rate among men aged 54 and over has shown a significant decline during the 1980s. This undoubtedly reflects the exit of a substantial number of older agricultural workers leaving the labor force rather than attempting to make the transition to employment in other sectors. On the other hand, the low agricultural unemployment figures probably also reflect the fact that many former agricultural employees don't register as such because of the low expectation that they will be able to obtain future work in that sector. It should also be acknowledged that while agricultural unemployment has not risen apace with the contraction of the agricultural labor force, the rate of unemployment in the sector has

1/ Ministerio de Industria, Comercio, y Turismo (1991), pp. 227-31.

2/ This appears to reflect a pattern of women moving permanently into the labor force only upon obtaining a first job, whereas men tend to enter the labor force upon completing their education regardless of whether they actually have a first job.

climbed substantially. Those 200,000 unemployed in agriculture now represent 13.4 percent of the much reduced agricultural labor force, compared to a mere 4.9 percent in 1980.

The age profile of the unemployed also sheds some light on the nature of the unemployment problem. Youth unemployment is a large proportion of the overall unemployment rate--roughly 40 percent of all unemployed are between 16 and 24 years old. ^{1/} Young women are increasingly prominent in this group. The unemployment rate of women age 16 to 24 hit a cyclical low of 37.9 percent in 1990, but climbed above 48 percent by the end of 1993. This high unemployment rate, combined with higher labor force participation rates among younger women, have produced a situation where there are almost as many young women unemployed as men. In 1993, total youth unemployment accounted for 7.9 percentage points of the overall unemployment rate of 22.7 percent.

On the other end of the age spectrum, the unemployment rate among those above age 55 is lower than any other age group and they count for a minuscule proportion of total unemployment. That does not mean that there has not been an employment problem among older workers, since the labor force participation rate has declined substantially in this group, suggesting that older people losing their jobs are simply withdrawing from the work force.

Another important feature of Spanish unemployment is the concentration of joblessness among secondary family members. Only a quarter of all unemployed are heads of household. The unemployed contain particularly high concentrations of youth and women who are in households where another person is the primary bread-winner. This means that a family-based safety net exists independent of government unemployment compensation to cushion the costs of joblessness, allowing a higher equilibrium rate of unemployment to be sustained. This fact might well mitigate the social costs of unemployment, but it should be recognized that there is still a substantial number of household heads without work. In 1993, 24 percent of the unemployed were heads of households, a figure which represented 5.5 percent of the active population.

As has been the case throughout Europe, the rise in unemployment during the late 1970s and 1980s came in part due to increases in the duration of unemployment and the number of long-term unemployed. In 1977, only 20 percent of all unemployed had been without work for more than one year. By

^{1/} The share of youth (ages 16-24) in total unemployment declined from 47.5 percent in 1986 to only 35.1 percent by 1993. This decline reflects the improvement in the job market between 1986 and 1991, but also results from a decline in the participation rates (particularly in the 16-19 age group). Another factor in this decline has been the plateau in the population of young people after rapid growth in the early 1980s as the last of Spain's late baby boomers reached working age.

1987, that proportion had soared to 61.5 percent (1.8 million). It has since fallen below 50 percent in recent years, but the rate is likely to climb once again as many of those dismissed in the recent spate of redundancies eventually join the ranks of the long-term unemployed. Spain differs somewhat from other European countries, however, in the dynamic that has generated long-term unemployment. In other countries, unemployment rose not because of increased inflow into the pool of the unemployed, but because outflow back into the job market dried up. ^{1/} Spain, by contrast, has seen an increase in long-term unemployment and a simultaneous rise in both the number of newly unemployed and in the number of unemployed moving back into jobs. ^{2/}

3. Legal context for the labor market

One of the most pressing structural problems afflicting the Spanish economy has been the legal framework governing the labor market. During the Franco era, very restrictive labor practices, tight controls on layoffs, and indemnization payments for dismissed workers served to protect labor in a society without a developed welfare system. Since the return of democracy, all of the features of a modern welfare state have been superimposed upon the corporatist structure of Francoism without removing the preexisting rigidities. In essence, this left the country with two overlapping and theoretically inconsistent social safety nets. Their interaction has had devastating side-effects on labor market flexibility. Statutory restrictions have had important effects limiting the efficient operation of the market in three general areas: entrance into employment, the flexibility and cost of using labor, and termination of employment. In each of these areas, the restrictions increased the costs of employing workers and thus reduced the incentives to hire.

a. Entrance into employment

Legislation traditionally granted a monopoly on job placement to the state employment office (INEM). This restriction made private employment placement services illegal and prohibited the existence of temporary employment agencies. Despite this legal mandate, in reality less than 5 percent of job placements took place through INEM. Thus, private labor market mediation services existed, but were handled with less than optimal efficiency because of restrictions in the legal structure.

The contractual modalities for hiring workers have also had a distortionary effect on the labor market. Strict regulations governed the stipulations of permanent labor contracts, and part-time employment was

^{1/} Layard and Nickell (1986).

^{2/} The increase in newly unemployed grew much more rapidly than the growth in job placements, thus accounting for the rise in total unemployment. But the point is still valid--namely, that circulation increased contemporaneously with rising long-term unemployment.

discouraged. Restrictions on hiring fixed-term or temporary workers were substantially relaxed in 1984, creating a sharp distinction between permanent workers and temporary workers on contracts of up to three years. As a result, in the late 1980s fewer than 5 percent of workers obtaining employment were contracted as permanent employees. The expansion of temporary workers undoubtedly boosted employment beyond the levels otherwise obtainable during the boom years, but it also generated a tremendous degree of rotation in the labor force--rotation that often involved spells of unemployment between contracts. ^{1/} It also induced a distortionary dualism in the labor market which intensified insider-outsider unemployment problems (see below).

b. Use of labor in the workplace

The basic labor legislation, the *Estatuto de los Trabajadores* of 1980, together with the restrictive work practices inherited from the Franco period known as the *Ordenanzas Laborales*, placed restrictions on functional and geographical mobility that exacerbated employment problems. Two aspects of these restrictions added substantially to the cost of labor to the employer and the rigidity with which it could be used. First, employers were required to obtain approval from government authorities for any substantial modification in workdays, work schedules, shift work, or workplace organization. Requests by employers for geographical transfers of workers were also subject to bureaucratic approval. Second, in both cases of workplace adjustments and geographical mobility, the individual worker had the right to reject the changes and leave employment, collecting full severance payments from the firm and full unemployment benefits from the Government.

The legal structure surrounding the system of collective bargaining has been responsible for a large measure of wage rigidity. Wage bargains were negotiated at the national, sectoral, regional, or firm level, with the stipulation that agreements at lower levels could not be less generous to labor than those agreed at a higher level. This provision prevented contracts from being adjusted to take into account the productivity or profitability of individual firms, even though adjustments might preserve jobs. Contracts also include so-called "normative clauses" (*cláusulas normativas*) which have the force of law, and which can automatically extend the provisions of an agreement beyond the life of the contract. These clauses mean that provisions on salaries, working schedules, and working conditions have legal status and are binding until a new agreement is concluded. ^{2/} Consequently, the trade unions have no incentive to agree to a contract unless it is at least as generous as the previous one, since

^{1/} Segura, *et al.* (1991); Bentolila and Saint-Paul (1992).

^{2/} Thus, for example, contracts with annual cost of living increases guarantee that real wages cannot decline even beyond the life of the contract.

key features of the previous one continue in force in the absence of a new agreement.

c. Termination of employment

The regulations and economic costs of labor shedding have been extremely high in Spain. Redundancies required administrative approval by the Ministry of Labor, and could be appealed to legal authorities as well. In practice, approval was rarely granted without the agreement of the unions, which are able to extract a premium for their cooperation. Workers dismissed are granted generous lump-sum benefits. The legal minimum compensation is 20 days salary per year worked, but in practice the average indemnization is about 50 days per year worked. ^{1/} Until reforms introduced in the 1994 budget, redundant workers became eligible for full unemployment compensation from the first day of unemployment, regardless of the severance pay received.

III. Alternative Explanations of High Unemployment

Several theories have been advanced to explain the relative persistence of high unemployment. These alternatives fall into two broad groupings-- market clearing and market failure explanations. The market clearing explanations argue that in the final analysis unemployment is not really involuntary; since markets clear, ultimately the unemployed are without work by choice. Market failure arguments, on the other hand, accept that involuntary employment exists and seek to explain its persistence in terms of market failures that impede the adjustment of prices (i.e., wages) to their market clearing levels.

1. Market clearing explanations

There are three main market clearing explanations of potential relevance to the unemployment problem of Spain--real business cycles, high unemployment benefits, and the underground economy. The first two suggest that people choose to be without work either because of the leisure value of their time or because of the disincentives of work effort outweigh the benefits of work given relatively high unemployment benefits. The underground economy explanation argues that many of the reportedly unemployed are in fact working clandestinely.

a. Equilibrium business cycles

The equilibrium business cycles school of thought contends that changes in unemployment reflect changes in the natural rate of unemployment because of changes in the work-leisure decisions of intertemporally optimizing individuals. ^{2/} Temporary increases in the real wage (perhaps due to

^{1/} Garcia Perea and Gomez (1993).

^{2/} Lucas and Rapping (1969);

productivity shocks), cause individuals to raise the amount of labor they are willing to offer on the market now, deferring leisure until the future when wages are expected to fall. Likewise, if real wages fall temporarily, employment would be expected to fall now as agents replace work with leisure now and anticipate working more in the future when wages rise again. In these models unemployment is neither truly involuntary nor a serious problem. People may report themselves as unemployed, but they are really engaging in market-clearing, utility-maximizing behavior and would be better characterized as outside the labor force.

While it is undeniable that some unemployment is reported in Spain for people who should be classified as having voluntarily left the labor force, it is hard to take equilibrium business cycle explanations seriously for all or even most of the over three million jobless people in the labor force. Several implications of these models could be examined to test the theory. Consider three such implications. First, the models predict that employment and the real wage are positively correlated for temporary real wage shocks. Second, if (as is often assumed), leisure and consumption are both superior goods, employment and consumption should be negatively correlated. 1/ Third, intertemporal substitution of labor and leisure suggests that the employment rate should depend positively upon the real interest rate. 2/ Though in-depth testing of these predictions has not been conducted for Spain, casual examination of the evidence suggests that there may be some positive correlation between real wages and employment, though the other two implications are not sustained. 3/

b. Unemployment benefits

Coverage of unemployment has risen substantially in Spain over the past decade. From a low of 25 percent in 1983, the proportion of unemployed

1/ Mankiw, Rotemberg and Summers (1985).

2/ On this point, see Barro and Gordon (1984). These three points derive from the review of the equilibrium business cycle literature in Blanchard and Fischer (1989) Chapter 7.

3/ Two simple tests were made of these predictions--looking at simple correlation coefficients, and simple regressions. The correlation between real consumption and employment is positive, and a regression of real consumption on employment and a constant displays a significant positive coefficient. A similar result was obtained for the relationship between interest rates and employment, where a significantly negative relationship was found.

The case of wages and employment is more complicated. The correlation coefficient is positive (as predicted by the equilibrium business cycles model), but this result does not necessarily imply that higher real wages cause higher employment, as the model suggests. See the error-correction model developed below, where a positive correlation between wages and unemployment is found, contradicting the positive simple correlation of employment and wages.

receiving benefits has climbed to nearly 70 percent in 1993. This increase reflects both deliberate policy and factors resulting from the changing composition of the labor force. Government decrees extended coverage to temporary workers (1984), employees of cooperatives (1985), and incorporated workers in other sectors previously covered by special unemployment regimes (1986, 1987). The decline in the proportion of self-employed workers in the labor force has indirectly increased the coverage rate. In addition, the drop in the proportion of long-term unemployed in recent years has diminished the proportion of unemployed no longer receiving benefits.

Before reforms introduced with the 1994 budget, Spanish unemployment compensation was generous even by European standards. Benefits were nontaxable and were paid on a declining scale as a proportion of previous income: 80 percent for the first 6 months; 70 percent from 6 to 12 months; and 60 percent from 12 to 24 months. The 80 percent rate meant that it was theoretically possible for a worker to receive initially a higher net income from unemployment compensation than from working. OECD calculations suggest that the gross replacement rate in Spain during the first year of unemployment was second only to Sweden among industrial countries. 1/

Two factors mitigated the generosity of unemployment benefits in Spain. First, roughly half of the unemployed receiving benefits were not receiving benefits based on past salary (*asistencias contributivas*) but needs-based social assistance payments (*asistencias económicas*) which are less generous. These assistance payments cover special categories of workers (such as in agriculture) and the unemployed with dependents who have exhausted contributive benefits. Reflecting this fact, the replacement rates for the long-term unemployed drop substantially from the generous, first year levels. According to OECD calculations, only Greece had a lower replacement rate for long-term unemployed men among European OECD members. When this fact is combined with the high rate of long-term unemployment in Spain, the average overall replacement rate in Spain has been roughly average among OECD Europe. 2/

Reforms in unemployment compensation introduced in 1992 have reduced eligibility and duration of benefits. The minimum period of work to qualify for benefits has been raised from 6 months to one year, and there were also cuts in the amount of unemployment compensation paid. As a result of the reforms, the average duration of benefits has been reduced from 20 months to only 12 months. Further tightening of unemployment compensation was introduced in late 1993 as part of the 1994 budget package. Unemployment benefits are now to be subject to taxation and partial social insurance contributions. In addition, the beginning of eligibility for benefits has been delayed until the exhaustion of severance payments, and the ceilings on contributive benefits have been lowered.

1/ OECD (1991).

2/ The calculated average replacement rate is 41 percent, compared to an average of 43 percent for 14 European OECD countries. See OECD (1991).

What is the relationship between unemployment compensation and the high unemployment rate? Given that benefits have been relatively generous (at least in the initial periods of unemployment), it is legitimate to ask whether the receipt of unemployment benefits induces an artificially high level of unemployment in Spain. Alba-Ramirez and Freeman (1990) explored the relationship between benefits and the duration of unemployment in Spain using survey data. They report three interesting findings in support of the idea that generous benefits increase the unemployment rate. First, eligibility for unemployment extends the average duration of unemployment by 4-6 months compared with those who are ineligible. Second, there is a significant jump in exit from unemployment during the months immediately before and after the exhaustion of benefits eligibility. Third, (as mentioned above), many long-term unemployed are secondary workers and have a family safety net to cushion the impact of unemployment. On the other hand, Alba-Ramirez and Freeman also find that eligibility for unemployment benefits enhances the probability of finding permanent, full-time work, and results in higher wage jobs when employment is found.

c. The underground economy

A third market clearing explanation of the high unemployment rate in Spain is that the rate is overstated by people who list themselves as unemployed but are actually working. Two related possibilities exist: either the unemployment statistics are mismeasuring the level of joblessness, or people are working in the underground economy.

The possibility of distortion in the Labor Force Survey statistics that determine the unemployment rate has recently been debated in the Spanish press. ^{1/} The Labor Force Survey does report a rate of unemployment 5 percentage points higher than the monthly figures produced by the national employment institute (INEM), but this appears to reflect the fact that many unemployed fail to register, rather than any serious distortion in the survey. There is no evidence that the survey is poorly administered or that the definition of unemployment used differs substantially from that used in other industrial countries. In fact, the 'standardized' unemployment rate for Spain reported by the OECD does not differ significantly from that of the labor force survey.

If the administration and methodology of the labor force survey is adequate, then any distortion in the reported unemployment rate must come from clandestine labor; i.e., work in the underground economy. The casual perception is that the underground economy is large in Spain, but reliable statistical evidence is scarce. Use of Gutmann's method relating currency in circulation to deposits has yielded an estimate of 2.5 percent of GDP in underground economic activity for 1981. ^{2/} The more sophisticated Frey-Weck "causal" approach--which relates the size of the underground economy to

^{1/} Navarette Moreno (1993); Toharía (1993).

^{2/} Gutmann (1977); Ruesga Benito (1986).

various potential causal factors, such as tax rates, unemployment and labor participation rates--generated a much higher figure even before the huge rise in unemployment in the early 1980s. Their estimate is that the underground economy constituted 6.5 percent of GDP in 1978. 1/

Of course, estimates in terms of output do not translate directly into employment, since much underground economic activity undoubtedly occurs among people who are not officially unemployed. 2/ A study by Ruesga Benito (1986) estimated that in 1980 as much as 11.4 percent of the labor force worked in underground economic activity, of whom 3.8 percent were classified as unemployed in the official statistics. 3/ The estimate is built upon the assumption that nearly one third of all people ostensibly unemployed are working in the underground economy. If this ratio is applied to average unemployment in 1993, then about 6.8 percent of the labor force would have been listed as unemployed while working in the underground economy.

Data on fraudulent claims for unemployment compensation also give some insight into the phenomenon of underground unemployment. A 1986 government survey on working life in Spain examined the incidence of "irregular" employment. The survey found that roughly 1 percent of workers were working while claiming unemployment benefits. 4/ Detailed investigations in 1992 by INEM found fraud in 6.3 percent of unemployment claims. 5/ Given an average unemployment rate in 1992 of 18.4 percent, this translates into 1.2 percentage points of unemployment resulting from fraud.

What do these market clearing explanations imply for the true unemployment level of Spain? Although the data do not provide much support for an equilibrium business cycles explanation of joblessness, there is evidence that generous unemployment benefits and the underground economy may overstate the true unemployment problem. Any estimate of the magnitude of the overstatement is subject to a wide margin of error. 6/ As an upper limit, the evidence of Alba-Ramirez and Freeman suggests that roughly one

1/ Frey and Weck-Hanneman (1983); Frey and Weck-Hanneman (1984).

2/ This is the case of moonlighting activity by people with regular employment, economic output using tax evasion tactics (such as transacting in cash) among established firms, and people working in the underground economy who report themselves as being out of the labor force.

3/ The breakdown of the 11.4 percent is as follows: 4.0 percent classified as discouraged job seekers; 3.8 percent classified as unemployed; 2.2 percent holding multiple jobs; 0.6 percent children under age 16 working; and 0.8 other.

4/ Muro, et al. (1988); Mancha Navarro (1987). The incidence of other forms of irregularity was much higher. The survey found 12.1 percent of workers not registered with the Social Security system, and 2.6 percent improperly registered.

5/ El Pais, August 24, 1993, p. 31.

6/ In all of these areas, further empirical research is warranted.

quarter of unemployment in Spain could result from the existence of the unemployment benefits system (roughly 5.5 percent of the labor force in 1993). ^{1/} Using Ruesga's assumption that 30 percent of all unemployed are working clandestinely, we could estimate that 6.8 percent of the labor force in the underground economy in 1993. Adding these two figures together, a maximum of 12.3 percent of the labor force is either voluntarily unemployed or working in the underground economy, leaving 10.4 percent unemployment unexplained. On the other hand, if we assume the INEM figure for unemployment fraud and include the possibility of overlap between those supposedly voluntarily unemployed and those working informally, the total impact of market clearing explanations might well account for only 6 percent of the labor force, leaving over 16 percent unaccounted for.

Two aspects of the market-clearing explanations are unsatisfactory. First, under the assumptions presented above there still remains between 10-16 percentage points of unemployment to be explained. Second, while the market clearing explanations may well provide a good explanation of a substantial portion of the structural unemployment in Spain, they do not provide a compelling account the strength of the cyclical variations, and the resulting rise in unemployment since 1991. For this, we must turn to market failure theories.

2. Wage rigidity and unemployment hysteresis

a. Hysteresis and high unemployment

Unlike conventional market clearing explanations, which predict that employment will rise as the labor price adjusts downward in the presence of significant unemployment, hysteresis theories argue that unemployment shows extreme persistence--that is, the level of unemployment in any period tends to reflect the level existing in the previous period. Hysteresis theories predict that a negative economic shock (such as those faced by Europe in the 1970s and early 1980s) will lead to permanent changes in the equilibrium level of unemployment. In its most extreme form, hysteresis is suggested by the existence of a "unit root" in autoregressive econometric models (i.e., the coefficient on the lagged variable is not significantly different from one).

How persistent is unemployment in Spain? A set of simple autoregressive models were estimated to test for integration in the

^{1/} The calculation is as follows: Assume that unemployment benefits affect duration of unemployment but not entry into unemployment. Assume also 70 percent of the entrants to unemployment are currently covered by benefits. Then, the Alba-Ramirez finding that duration of unemployment is roughly 4-6 months longer for recipients of benefits than for non-recipients, implies that the duration of unemployment is one third longer for those covered. This translates into roughly one quarter more unemployment than in the absence of benefits.

coefficient of the effect of past unemployment on present unemployment, using quarterly data from 1976 through the first quarter of 1993. 1/ The results, presented in Table 4, suggest quite persuasively that unemployment is highly persistent. In regressions on the level of unemployment, the coefficient on unemployment lagged one period is 0.97 percent. 2/ When multiple lags are included, the sum of lagged coefficients is consistently between 0.93 and 0.98, suggesting extremely high persistence.

Table 5 reports the results of more sophisticated unit root tests, which confirm the persistence of unemployment. Unit root tests were conducted on deseasonalized series of the unemployment rate and the log of the unemployment rate. 3/ Both demonstrate clear evidence of a unit root. In fact, the evidence suggests that the unemployment rate may be integrated of order 2, which means that not only is the level integrated, but that changes in the unemployment rate persist over time. Together, the unit root tests reported in Tables 4 and 5 provide strong evidence that hysteresis does exist in Spanish unemployment.

b. Wage rigidity and unemployment

Ultimately, most market failure explanations of unemployment rest on the existence of wage stickiness induced via some sort of rigidities in the labor market. Since real wages cannot fall to market clearing levels, unemployment persists in spite of the existence of large numbers of people willing to work at less than the prevailing wage rates. Several approaches have been developed to explore the concept of wage rigidity. One convenient framework for gauging nominal and real wage rigidity is suggested in a 1983 study by Grubb, Jackman, and Layard. They define real wage rigidity in terms of the additional unemployment induced by an economic shock in an expectations-augmented Phillips curve type model. Nominal wage rigidity, in contrast, is defined in terms of wage growth inertia. Their empirical results for 19 OECD countries suggest a relatively high level of both nominal and real wage rigidity in Spain. On real rigidity, Spain ranks fifth of 19, while in nominal rigidity terms, it tied for second place. Since the results were based on data from 1973-1980, it may not reflect the current situation in the Spanish labor market. An update for Spain covering the 1980s might well show increased rigidity due to the increase in labor

1/ This is the approach taken by Blanchard and Summers (1987) in their seminal work on hysteresis in European unemployment.

2/ This coefficient is close enough to one that we cannot reject the hypothesis of a unit root using a Dickey-Fuller test at the 10 percent significance level. The result holds whether or not a time trend is included.

3/ These results are similar to those obtained by Mitchell (1992) in tests for unit roots in the unemployment rates in a number of OECD countries.

Table 4. Spain: Results of Unit Root Test Regressions on Unemployment
(Quarterly Data, 1976:3– 1992:4)

Regression:	constant	time	LU(–1)	LU(–2)	LU(–3)	LU(–4)	LU(–5)	LU(–6)	R2–Bar	coefficients
LU1	91.289 (3.295)	–0.2412 (0.2766)	0.9789 (46.635)						0.9908	0.9789
LUNO_T	93.361 (3.526)		0.9741 (83.599)						0.9909	0.9741
LU2	67.386 (2.353)	0.4477 (0.5243)	1.37739 (10.361)	–0.4046 (3.045)					0.9914	0.97279
LU3	70.306 (2.282)	0.5336 (0.5917)	1.353 (9.542)	–0.3258 (1.422)	–0.0571 (0.3939)				0.9906	0.9701
LU4	67.881 (2.140)	1.094 (1.201)	1.33 (9.692)	–0.3988 (1.783)	0.3401 (1.515)	–0.31203 (2.224)			0.9907	0.95927
LU5	43.441 (1.567)	2.545 (3.24)	1.185 (10.111)	–0.2004 (1.076)	0.1165 (0.6232)	0.4968 (2.669)	–0.6578 (5.517)		0.9934	0.9401
LU6	47.296 (1.587)	2.689 (2.986)	1.152 (7.875)	–0.1796 (0.8706)	0.1288 (0.6736)	0.4863 (2.551)	–0.5894 (2.922)	–0.0619 (0.4085)	0.9927	0.9362

Table 5. Spain: Unit Root Tests for the Unemployment Rate

Variable:	trend	constant	# of lags	last lag sig. level	ADF test stat.	ADF critical values:		Accept Unit Root?
						10%	5%	
Unemployment Rate (UR):								
Regression 1	yes	yes	6	0.1763	-3.331	-3.173	-3.489	no
Regression 2	yes	yes	5	0.0574	-3.019	-3.173	-3.489	yes
Regression 3	yes	yes	2	0.0042	-2.272	-3.173	-3.489	yes
Log Unemployment Rate (LOGUR):								
Regression 1	yes	yes	5	0.0501	-2.343	-3.173	-3.489	yes
Regression 2	no	yes	2	0.0598	-1.736	-2.594	-2.913	yes
Regression 3	no	no	2	0.0182	0.7278	-1.619	-1.946	yes
First Difference UR:								
Regression 1	yes	yes	6	0.3349	0.0289	-3.173	-3.489	yes
Regression 2	no	no	1	0.0094	-0.628	-1.619	-1.946	yes
First Difference LOGUR:								
Regression 1	yes	yes	6	0.8597	0.961	-3.173	-3.489	yes
Regression 2	yes	yes	4	0.0814	0.686	-3.173	-3.489	yes
Regression 3	no	no	1	0.0127	-1.19	-1.619	-1.946	yes
Second Difference UR:								
Regression 1	no	no	6	0.0572	-1.291	-1.619	-1.946	yes
Regression 2	no	no	5	0.2367	-2.227	-1.619	-1.946	no
Regression 3	no	no	0		-11.36	-1.619	-1.946	no
Second Difference LOGUR:								
Regression 1	yes	yes	6	0.204	-2.674	-3.173	-3.489	yes
Regression 2	yes	yes	3	0.1051	-5.201	-3.173	-3.489	no
Regression 3	no	no	0		-11.16	-1.619	-1.946	no

Notes:

Regressions were run beginning with 6 lags and including trend and constant.

Lags were progressively eliminated if not significant, as were the trend and constant.

as recommended by Campbell and Perron (1991) and Hall (1990). Only selected results are reported here.

union influence and greater labor market regulations (e.g., unemployment compensation, minimum wages, temporary contracts) after the restoration of democracy.

To get an idea of real wage rigidity in the Spanish labor market in the 1980s and 1990s, a simple error correction model of the determinants of real wages was estimated using seasonally adjusted quarterly data for the period 1979 through the first quarter of 1993. The model tests the link between wage rigidity and the persistence of unemployment by examining the degree of persistence of wage increases in the face of high unemployment. The results suggest that high unemployment does not lead to moderation in wage claims, a result indicating extreme wage rigidity.

The error correction form has the advantage of avoiding the well-known problems of estimating models of series containing unit roots, since the error correction mechanism is analytically identical to cointegration. ^{1/} The error-correction mechanism allows estimation of a long-run equilibrium wage-determination relationship while portraying the importance of deviations from a long-run market clearing solution.

The model is a simple one, where wages are determined by inflation, productivity growth, and unemployment. ^{2/} The implicit assumption is that wage-setting is conducted in a bargaining framework, where union power is negatively linked to the unemployment rate, and the change in firms' profit margins is determined by the growth of wages relative to productivity and inflation. In some specifications of the model, a measure of capacity utilization was introduced as an indicator of the economic conditions of firms. This gives the following empirical specification for an equilibrium relationship:

$$\text{LOGWAGE} = \beta_0 + \beta_1 \text{LOGPRODL}_{-1} + \beta_2 \text{LOGCPI}_{-1} + \beta_3 \text{LOGUR}_{-1} + \beta_4 \text{LOGCU}_{-1} \quad (1)$$

where	LOGWAGE	=	log of ordinary wage payments per worker (nominal)
	LOGCPI	=	log of consumer price index
	LOGPRODL	=	log of labor productivity per worker (national accounts definition)
	LOGUR	=	log of unemployment rate
	LOGCU	=	log of capacity utilization

The first step in estimating the error correction model is to determine the order of integration of the relevant variables. For this, regressions were run beginning with a generous lag specification and the inclusion of a time trend and a constant, with progressive elimination of insignificant variables as recommended by Campbell and Perron (1991). The results of augmented Dickey-Fuller tests are reported in Table 6. They show that

^{1/} Engle and Granger (1987).

^{2/} The model is similar to one estimated for the Netherlands by Graafland and Huizinga (1988).

Table 6. Spain: Unit Root Tests for Variables in Wage Determination Model

Variable:	trend	constant	# of lags	last lag sig. level	ADF test stat.	ADF critical values:		Accept Unit Root?
						10%	5%	
LOGWAGE	yes	yes	4	0.034	-4.639	-3.167	-3.480	no
LOGCPI	yes	yes	1	0.003	-3.087	-3.166	-3.477	yes
LOGCU	yes	yes	0		-1.372	-3.174	-3.492	yes
LOGPRODL	yes	yes	5	0.010	-1.970	-3.170	-3.484	yes
First Differences:								
LOGCPI	yes	yes	0		-6.770	-3.167	-3.478	no
LOGCU	yes	yes	3	0.084	-4.070	-3.177	-3.497	no
LOGPRODL	yes	yes	4	0.018	-1.909	-3.170	-3.484	yes
Second Differences:								
LOGPRODL	yes	yes	3	0.001	-7.456	-3.170	-3.484	no

productivity is integrated of order two, capacity utilization and consumer prices are integrated of order one, and the wage is integrated of order zero.

As a second step, tests were run for a cointegrating relationship among the variables in the model. The possibility of cointegration is complicated by the fact that two of the variables (LOGUR and LOGPRODL) are integrated of order two, while the dependent variable (LOGWAGE) is integrated of order zero. Still, as Kennedy (1992) points out, there is no theoretical problem in having a cointegrating vector of order zero from variables integrated of order two.

The estimated long run equilibrium relationship is reported in Table 7, along with the results of an Engle-Granger test for a cointegrating vector. The test shows that a unit root on the residuals can be rejected at a 5 percent level. Tests were also conducted for cointegrating vectors with other combinations of the variables in the model. These results indicate that a cointegrating relationship can still be obtained without LOGCU or without LOGUR. Nevertheless, for theoretical reasons both variables were retained in the regression.

Having estimated a long-run cointegrating relationship, an error correction specification of the model can be estimated as given in equation 2:

$$\Delta \text{LOGWAGE} = \beta_0 + \beta_1 \Delta \text{LOGCPI} + \beta_2 \Delta \text{LOGPRODL} + \beta_3 \Delta \text{LOGUR} + \beta_4 \Delta \text{LOGCU} + \beta_5 \text{RES}_{-1} \quad (2)$$

where RES = the residual of the long run cointegrating relationship. The results of this regression are presented in Table 8.

The interpretation of the results of the model is far from straightforward. Although some of the findings are consistent with traditional labor market theory, others contradict normal market-clearing expectations. Furthermore, they are not consistent with some previous empirical work on Spain, particularly with respect to the signs of the coefficients on unemployment and productivity. ^{1/}

^{1/} Dolado, Malo de Molina, and Zabalza (1986). See also the discussion of regressions by Andrés and García in Bentolila and Blanchard (1990). The difference in the results may be explained by two factors: (1) the use of the cointegration methodology employed in these regressions, or (2) the fact that these data include quarterly data from the period 1979-1993 while the other studies use annual data from the 1960s through the mid-1980s. The wage setting dynamic has undoubtedly altered significantly from that of the Franco regime compared to today. A third possibility is that the equations are mis-specified. I did run test regressions including variables on labor taxation (which figure prominently in Dolado, Malo de Molina, and Zabalza) but they did not prove to be significant in this case.

Table 7- Estimated Long-Run Equilibrium Relationship and Test for Cointegration

OLS // Dependent Variable is LOGWAGE

SMPL range: 1979.2 - 1993.1

Number of observations: 56

VARIABLE	COEFFICIENT	STD. ERROR	T-STAT.	2-TAIL SIG.
C	9.2745690	1.3415483	6.9133319	0.0000
LOGPRODL(-1)	-0.1309524	0.2112215	-0.6199764	0.5380
LOGCPI(-1)	1.1953270	0.0526144	22.718629	0.0000
LOGUR(-1)	-0.1279236	0.0095693	-13.368075	0.0000
LOGCU(-1)	-0.3727356	0.0737411	-5.0546489	0.0000
R-squared	0.999126	Mean of dependent var	11.38557	
Adjusted R-squared	0.999057	S.D. of dependent var	0.388550	
S.E. of regression	0.011930	Sum of squared resid.	0.007259	
Log likelihood	171.1655	F-statistic	14572.61	
Durbin-Watson stat	0.839103	Prob(F-statistic)	0.000000	

Engle-Granger Cointegration Test: UROOT(T,2)

--Cointegrating Vector--	
LOGWAGE	1.000000
LOGPRODL(-1)	0.873582
LOGCPI(-1)	-0.683342
LOGUR(-1)	-0.099676
LOGCU(-1)	0.104451
TREND	-0.013003

Dickey-Fuller t-statistic	-5.6702
MacKinnon critical values: 1 %	-5.7693
5 %	-5.0502
10 %	-4.6942

Table 8- Estimated Error Correction Specification of the Model

OLS // Dependent Variable is D(LOGWAGE)

SMPL range: 1979.3 - 1993.1

Number of observations: 55

VARIABLE	COEFFICIENT	STD. ERROR	T-STAT.	2-TAIL SIG.
C	0.0187938	0.0035377	5.3124545	0.0000
D(LOGPRODL)	-0.9604740	0.3620537	-2.6528498	0.0107
D(LOGCPI)	0.4153829	0.1304739	3.1836463	0.0025
D(LOGUR)	0.1702089	0.0569719	2.9875924	0.0044
D(LOGCU)	0.0676528	0.0708940	0.9542818	0.3446
RES(-1)	-0.5800193	0.1416721	-4.0940969	0.0002
R-squared	0.519235	Mean of dependent var	0.024608	
Adjusted R-squared	0.470177	S.D. of dependent var	0.010942	
S.E. of regression	0.007965	Sum of squared resid	0.003108	
Log likelihood	190.9360	F-statistic	10.58416	
Durbin-Watson stat	2.400533	Prob(F-statistic)	0.000001	

The regressions show a highly significant error correction process at work in wage setting, though it a very peculiar one, since the long-run equilibrium regression is far from that expected from market-clearing labor models. The expectation is that there would be a closely positive link between prices, productivity, and wages manifest in near unitary coefficients. These results would be tempered by downward pressure on wages exerted by higher unemployment and lower capacity utilization. The actual result differs from this expectation in several ways. First, it is striking that there is a highly significant positive trend in long-run wages independent of changes in productivity and prices. This suggests a structural problem in wage-setting that can rob the economy of competitiveness and perpetuate inflation.

Second, unemployment appears with a positive sign in both the long-run equilibrium regression and the error correction specification, which is contrary to the theoretical expectation that higher unemployment leads to wage moderation. The magnitude of this perverse effect is small, but it is statistically significant. These results strongly suggest that the normal moderating impact of unemployment on wage settlements is absent in Spain, perhaps due to insider-outsider effects (discussed below). ^{1/}

A third unusual outcome is the negative sign attached to productivity in both the long-run and error correction regressions. It is also problematic, since a positive relationship between productivity and wages would normally be expected. In the long-run equilibrium, a 1 percent increase in productivity is associated with a 0.87 percent decline in real wages, a result that can only be interpreted as another sign of the idiosyncrasy of the labor market in Spain. This perverse relationship probably also reflects the strong counter-cyclical behavior of productivity in Spain.

In summary, the results of the model show the wages in Spain are extremely rigid in the sense that they do not show a tendency to moderate in the face of high unemployment. Furthermore, there appears to be significant inertia in wage increases irrespective of economic conditions. Both pieces of evidence suggest that deep structural problems in the labor market underlie the observed persistence of unemployment.

3. Market failure theories

The results of the error-correction model provide additional evidence that market clearing explanations fail to explain fully developments in the

^{1/} Blanchard and Summers (1986, p. 39) point out that the insider-outsider model with monopolistic competition "implies no simple relation between employment and real wages." The fact that an unusual sign of the unemployment coefficient may provide evidence for strong insider-outsider type behavior, where the increase in unemployment reduces the number of insiders and thus raises the equilibrium wage the insiders can achieve.

Spanish labor market. The most prominent market-failure alternatives are: insider-outsider theories, limited mobility theories, and human capital theories of unemployment.

a. Insider-outsider theory

The foundation of insider-outsider theory is that wages are set in a bargaining process between employers and unions in circumstances where the unions' objective function places a higher welfare weight on increased wages for current workers and less weight on increasing employment than would be considered socially optimal. The result is higher than market-clearing wages for insiders and more unemployment for outsiders. Furthermore, as Blanchard and Summers (1986) point out, once workers lose their jobs and become outsiders, they lose weight in the objective function of the unions and hence are less likely to regain employment. This means that unemployment shows hysteresis as unanticipated shocks in employment levels tend to become permanent. Other research has shown that insider-outsider effects can occur in the absence of explicit union bargaining, and can depend on the behavior of the outsiders themselves as well as that of the insiders. ^{1/}

Evidence of insider-outsider unemployment in Spain is strong. In an empirical analysis using panel data for over 1,000 manufacturing firms from 1983-88, Dolado and Bentolila (1992) found significant evidence of insider-outsider type effects in wage setting. Furthermore, their evidence suggests that the insiders in Spain are a more restricted group than in other countries--namely, the permanent employees. This means that both the unemployed and temporary workers fall outside the scope of the implicit welfare function maximized by trade unions in bargaining with employers. Consequently, the drive for higher wages goes well beyond what is socially optimal.

b. Human capital theory

A second possible explanation for hysteresis in unemployment is that the unemployed may suffer from a deterioration of their human capital which makes them less attractive candidates for future employment. The long-term unemployed tend to remain jobless permanently despite the fact that the output shock that threw them out of work may have been only temporary. ^{2/}

Little systematic evidence is available on the possible human capital causes to persistent unemployment in Spain, but there are reasons to believe that, though a factor, it is not a principal cause of persistent unemployment among most jobless people. First, the strong flow of workers (particularly women) directly into jobs from outside the labor force over

^{1/} Lindbeck and Snower (1988); Layard and Nickell (1986).

^{2/} See Phelps (1972) for an early discussion of the effects of unemployment on human capital.

the 1980s seems to contradict the theory, since there is little reason to believe that women who enter the labor force after a number of years outside of it lose less human capital than the long-term unemployed. Second, there is evidence suggesting that the rate of exit from unemployment does not decline with length of time unemployed, whereas the human capital theory would predict a declining rate. ^{1/} Third, as mentioned above, long-term unemployment in Spain appears to have been the result of increased flow into unemployment rather than of decreased outflow, so the huge rise in unemployment cannot be fully accounted for by a loss of human capital impeding outflow.

A variant on the human capital explanation might be more applicable to the Spanish case. If employers are more likely to hire the recently unemployed, not because the level of human capital deteriorates over time, but rather because the length of time unemployed provides a signal about unobserved characteristics of the worker. The signal might reflect unobserved components of human capital, it might reflect work effort when the worker was employed, or some other characteristic. Employers might see time unemployed as an indicator of the individual's desirability as a potential employee to others, and thus be less likely to hire him/her as well. Under this variant, it need not be true that human capital deteriorate with continuing unemployment; rather, unemployment might merely be a signal of an inferior stock of human capital. Further research is needed in this area. ^{2/}

c. Limited mobility theory

A third important market failure explanation of unemployment is that of limited mobility or mismatch. This theory argues that limited skills, geographical, or legal restrictions impair the mobility of labor from one region or economic activity into others, producing a situation in which excess labor supply can exist in some areas with full employment (or even labor shortages) in other areas. Both skills and geographical mismatch have been proposed as factors in explaining persistent European unemployment.

There is evidence of mismatch in Spain. There are large and persistent differentials in unemployment rates among different skill levels, educational categories, and geographical regions. Given the extent of structural change in the economy over the last 20 years, there is a strong *a priori* reason to think that the shift of labor out of agriculture and the reorganization of industry could have led to unemployment among workers with sector-specific human capital. ^{3/} As regards geographical mismatch, it

^{1/} Alba-Ramirez and Freeman (1990).

^{2/} See Blanchard and Diamond (1994) for a model of the effects on unemployment of a rule whereby employers preferentially hire the most recently unemployed workers. Empirical research is needed to test both the hiring assumptions and the predictions of this class of models.

^{3/} Lilien (1982).

appears that there has been a sharp drop in the geographical mobility of labor in Spain which coincided with the rise in unemployment. ^{1/}

IV. Policy Implications and Recommendations

The evidence suggests that both market clearing and market failure factors are at work in accounting for the persistence of unemployment in Spain in recent years. These factors interact with the structural changes in the economy and the legal rigidities of the labor market to produce this persistence at a remarkably high level of joblessness. Both the market clearing and the market failure explanations yield useful policy implications for reducing both the level of unemployment and its persistence. In December 1993 the Spanish authorities announced a package of major reforms of the labor market. This section briefly considers these reforms in light of the structural, market clearing, and market failure issues raised in this paper, and makes suggestions for additional policy measures.

1. Labor market reforms

As discussed, the Spanish labor market is fraught with structural rigidities. These rigidities are both government-induced and "natural" (as in the limited geographic mobility of workers). On the government side, steps were taken in recent years to reduce legal restrictions on hiring and firing, but much more was needed. The reforms announced in December 1993 include significant measures to address many of the principal government-induced rigidities, although it is too early to determine whether these initiatives will be sufficient to reduce unemployment substantially over the medium term.

The two issues of practical relevance on the market clearing side are the generosity of unemployment compensation and the incorporation of the shadow economy into the formal sector. The Government took steps in 1992 and 1993 to reduce the generosity of unemployment benefits and tighten eligibility requirements. The length of employment required before becoming eligible for benefits has been raised. The generosity of benefits has also been reduced through a reduction in the benefits ceiling and by making benefits taxable. Furthermore, the onset of benefits will be delayed until severance payment are exhausted, which will reduce the initial compensation

^{1/} Bentolila and Blanchard (1990); Bentolila and Dolado (1990). There are two ambiguities about the evidence on mismatch which should be mentioned. First, some indicators of mismatch have declined over the period of increasing unemployment in the 1980s. Second, the existence of mismatch does not necessarily imply a market failure. It could be that mobility has declined because generous unemployment benefits allow people to remain unemployed at home rather than relocating in search of work as in the past.

from unemployment. 1/ The cyclical downturn in the economy has so far overwhelmed any positive employment effects of these measures, but they will undoubtedly bear fruit over the medium term, reducing the level of "voluntary" unemployment induced by generous benefits without unduly affecting the welfare of the needy unemployed.

On the underground economy, more study is needed to ascertain its true magnitude and determine its causal factors. Immediate steps could be taken to crack down on unemployment fraud, but over the longer term the tax system and labor market restrictions may also have to be adjusted to provide incentives for people to move economic activity above ground.

Turning to market failure explanations of unemployment, a reduction in the current segmented nature of the labor market between temporary and permanent workers would reduce the sharp insider-outsider division that seems to exist, and thus enhance the moderating impact of high unemployment on wage settlements. The removal of the structural rigidities inhibiting functional and geographical mobility would also lower labor market segmentation and so reduce the advantages of insiders, as would the lowering of hiring and firing barriers. The government's December 1993 package addresses each of these topics, though the measures implemented may well fall short of the restructuring needed to fully confront the unemployment problem.

Measures have also been included to ease the structural rigidities inhibiting functional and geographical mobility. It will be easier to transfer workers to different tasks and to different locations, though procedures requiring consultations with unions, and the rights of workers to reject transfers and receive full indemnization and unemployment benefits will remain.

Restrictions on hiring practices are particularly anachronistic given the size of the current unemployment problem. The December 1993 package specified that INEM will lose its statutory monopoly on job placement services, although it will still retain licensing authority over private placement agencies. 2/ In addition, the restrictions on part-time employment have been eased, and substantially lower social insurance contributions are now required for employees working under 12 hours per week.

High dismissal costs is another area where restrictive legal requirements substantially raise the cost of employing labor. The recently announced measures ease the restrictions in two ways. Although the requirement of advance administrative authorization for layoffs is retained,

1/ On the negative side, this measure will also lengthen the coverage of generous unemployment compensation.

2/ An OECD (1992) study discusses the inadequate performance of INEM as a job placement service.

firms laying off less than 10 percent of their payroll (up to a maximum of 30 workers) will no longer be required to seek such authorization. In addition, the criteria considered to justify mass redundancies have been expanded, which should make it easier to obtain authorization in cases where it is still required. The time required for consultations before redundancies can be approved will also be shortened. It remains to be seen how much these measures will reduce the costs of labor shedding in practice. The complete elimination of administrative authorizations would have gone farther in reducing dismissal costs, as would a reduction in the size of the (currently generous) redundancy payments.

The government package also permits wage contracts to eliminate explicitly the normative clauses that extend salary and other provisions beyond to putative life of the contract. While enhancing the role of collective bargaining process, it is not clear that this measure will substantially reduce the current inertia in wage settlements, since the unions will still be able to veto any agreement which voided the normative clauses.

The new measures effectively eliminate the restrictions on functional mobility contained in the *Ordenanzas Laborales* and should pave the way for collective agreements between workers and management on more flexible working conditions. This should help improve productivity and reduce the reticence of employers to contract permanent workers. Some steps are also included to improve geographical mobility, but workers still retain the right to veto any proposed transfers and leave employment with full redundancy benefits and full eligibility for unemployment compensation. The reduction of legal restrictions on functional and geographic mobility should begin to reduce the mismatch afflicting the labor market. Targeted training schemes could also play a role in helping to adapt the workforce to the changing skills needs of the economy. Measures to ameliorate problems in the housing market in several major cities would also enhance the possibility of increased geographical mobility. In terms of human capital, a case could be made for increased investment in training, particularly for the long-term unemployed. OECD figures indicate that Spain spends less than its European counterpart countries in this area. Job creation subsidies or steps to allow unemployment benefits money to be used instead to pay wage subsidies for previously unemployed workers should be considered, though they would have to be carefully structured to avoid high costs to the already strained central government budget. 1/

The segmentation of the labor market is tackled directly by the December labor market reform. The virtually unlimited recourse to temporary contracts available to employers in recent years will be eliminated, with temporary employment confined to jobs that are strictly temporary nature. To offset the negative effect this measure will undoubtedly have on the ability of firms to contract labor flexibly, a special apprenticeship

1/ See Snower (1994).

contract was created lasting from 6 months to 3 years and involving younger workers. Apprenticeships involve lower wages and social contributions and have lower dismissal costs than conventional permanent contracts. There will, however, be strict limits on the proportion of the workers in any firm who may work as apprentices. While the reduction in market segmentation is welcome, the cutback in temporary contracts will undoubtedly increase hiring and firing costs for those workers currently under those temporary contracts, and it remains to be seen whether the improved flexibility in other areas will lead to a net improvement in overall labor market conditions. At this juncture, it appears that additional steps (such as the complete elimination of administrative authorizations for layoffs and of normative clauses in contracts, further improvements in mobility, training initiatives, and others) may be warranted in the future in order to bring unemployment below 15 percent in the medium- and long-term.

2. Conclusion

The long-term trends in the size of the nonagricultural labor force mean that the unemployment problem in Spain can only be tackled if the pace of job creation accelerates significantly from the rate prevalent during the 1980s. Job creation requires fundamental reforms in the labor market to reduce labor market segmentation, increase mobility, decrease hiring and firing costs, and bring the underground economy into the formal labor market. Incomes policy may have some efficacy in the short run, but both the theoretical and empirical evidence suggest that the whole wage-setting structure needs to be reformed, linking wages more closely to productivity and divorcing them from an implicit insider-outsider bargaining process that places little weight on the unemployed and those in temporary jobs. Government reforms of unemployment compensation in 1992 and 1993 and the December package of labor market reforms have made significant strides in this direction. Nevertheless, the early indications from 1994 are not encouraging. Wages continue to grow in real terms, the unemployment rate has continued to climb in the first half of the year, and it is clear that the structural reforms undertaken will take time to produce significant effects. It is likely that additional policy measures will be needed if job creation is to attain the rate needed to bring unemployment below 15 percent before the end of the decade.

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