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Spain:
Restructuring Industry

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A Research Paper

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A Research Paper

This paper was prepared by
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the Office of Global Issues.

Comments and queries are welcome and may be
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EURA.

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Spain: Restructuring Industry

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Summary

Information available as of 15 August 1986 was used in this report.

The government of Socialist Prime Minister Felipe Gonzalez is putting into effect a sweeping economic restructuring program aimed at improving the health of traditional industries and spurring development of high-technology-oriented industries. The short-term costs are high—the program has led to major layoffs in traditional industries and has significantly cut industrial employment in the regions that are most heavily dependent on steel and shipbuilding. Gonzalez and his advisers are convinced that the long-term costs of a failure to modernize would be far worse and have developed a public consensus on the need for a restructuring program. The government is making headway on pruning traditional industries and has had some success in attracting foreign investment in electronics. The program also promises benefits for the United States. US companies are providing—through joint ventures—much of the technology Spain is acquiring.

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After coming to power in 1982, the Socialist government instituted a two-pronged restructuring plan to pare down traditional industries—such as steel, shipbuilding, textiles, and footwear—and promote development of an infant electronics industry:

- Over the past several years, more than 40,000 workers in traditional industries have been laid off—equivalent to 1.4 percent of total industrial employment in 1982 and 11 percent of the workers in the affected firms—and productive capacity has been cut dramatically, particularly in the mostly state-owned steel and shipbuilding sectors. As a result, labor productivity and capacity utilization in these industries are increasing.

- At the same time, Spain's electronics sector is expanding. So far, Madrid has lined up 28 joint ventures with electronics firms in the United States, Japan, and Western Europe that will create 16 new plants and research centers, bring in 10 firms that did not previously have a manufacturing base in Spain, and expand the operations of existing Spanish subsidiaries.

Successes on these two fronts should lighten the burden of supporting ailing industries and improve Spain's competitive position internationally, although Spain will still remain far behind world leaders.

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Restructuring efforts have had a negative impact in the short run on Spain's number-one economic problem—unemployment. Investment in the electronics sector probably will not directly create enough new jobs to offset those cut back by the rationalization of traditional industries in the near term. Over the longer run, however, the electronics sector should generate jobs in supplier industries that will help offset losses elsewhere.

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Madrid's economic restructuring program should make it easier for firms to survive in the more open trade environment that prevails now that Spain has joined the European Community (EC). Under the terms of accession, Madrid is obliged gradually to eliminate trade barriers on EC imports and lower tariffs on non-EC imports. Spain's highly protected industries probably will be buffeted by rising imports, but improvements in productivity and financial positions of traditional firms should help them withstand increased competition. The infant electronics industry is among those sectors that have been shielded from competition by high tariffs, and small producers of consumer electronics probably will struggle to stay afloat. One hopeful sign is the establishment of joint ventures with large multinational electronics firms that have made a commitment to open new plants and transfer technology that the Spanish do not have.

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Despite the costs of the program in terms of higher unemployment, Gonzalez's political prospects are not likely to be seriously affected. All of Spain's political parties, with the exception of the far left, agree that Spain must pursue an industrial restructuring program. Moreover, generous benefits to laid-off workers have helped to alleviate political pressures in the regions hardest hit by restructuring. Although the Communists were able to whip up violent protests during the first two years of the program, they have not gained an audience beyond a handful of steel and shipyard centers. Now that Madrid has closed targeted shipping and steel facilities, worker opposition has died down. Although Gonzalez probably has lost some support from the left, he has retained the backing of the Socialist trade union and maintained his lead over the next largest party, the conservative Popular Alliance, during the last election.

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The restructuring program will provide a number of economic and foreign policy benefits to the United States. To the extent that Spain succeeds in increasing the country's technology base, it will provide another market for US high-tech production equipment. Gonzalez's desire to acquire US technology also will increase US leverage on Spain to implement stricter export controls. Madrid imposed an import certification and delivery verification system on high-tech products because it feared the United States would block sales of goods that Spain needs for its electronics program. Madrid also has taken steps to join the Coordinating Committee for East-West Trade Policy (COCOM), and we believe the importance of the restructuring program almost certainly will cause Spain to move ahead with its membership efforts. Madrid's interest in acquiring high technology has led to participation in European Research Coordinating Agency (EUREKA) projects, and Gonzalez has not dismissed participation in the Strategic Defense Initiative (SDI).

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Introduction

Prime Minister Felipe Gonzalez's Socialist government is facing up to the formidable challenge of adapting Spanish industry to the changing domestic and world economic environments. Global recession after the oil price shocks in the periods 1973-74 and 1979-80, exploding real labor costs at home, and competition from newly industrializing countries dealt Spain's traditional industries a major blow. The Socialists are carrying out a restructuring program designed to put troubled industries on a sounder footing and expand Spain's limited high-technology sector. This paper will explore the considerations that have impelled Madrid to take action, the goals of the industrial program, progress in implementing the program to date, the plan's prospects, and the implications for the United States.

The Industrial Crisis

The Spanish industrial boom that began in 1960 came to an abrupt end in 1975. Industrial production grew at an average annual rate of only 1 percent during the period 1975-85, a dramatic fall from the 11-percent average annual rate of expansion during 1960-74, the so-called miracle years (see figure 1). Although Spain's rate of industrial growth outpaced that of the Organization for Economic Cooperation and Development (OECD) during the economic miracle, it was only half the OECD rate in 1975-85. Largely because of the industrial slump, average annual real GDP growth slipped more than 5 percentage points, to 1.7 percent during 1975-85, the sharpest drop in the OECD (see figure 1). At the same time, real investment fell by an average annual rate of nearly 2 percent, compared with an average annual rate of expansion of 10 percent during the boom years.

More than one out of five industrial jobs were lost during the prolonged economic slump. While industrial employment also has been falling in other European countries, the contraction of employment in Spain has been the most severe (see figure 2). As a result, the rate of industrial unemployment jumped from 1.6 percent in 1974 to 15.9 percent in 1985, the worst in Western Europe.

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Exploding real labor costs played a key role in Spain's industrial decline by cutting deeply into firms' profits and discouraging hiring. Real unit labor costs shot up 50 percent from 1974 to 1979, 10 times as fast as in West Germany and nearly twice as fast as in France (see figure 3).[1] About half of this increase can be traced to trade union demands for wage hikes once the fetters of the Franco era were removed. The remainder was because of a rapid increase in pension and social security benefits as the new democratic government sought to bring Spanish benefits closer to north European levels.

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The situation began to ease in 1980, when rising unemployment prompted workers to agree to more moderate wage settlements in the National Bargaining Agreement. The Gonzalez government continued this trend by persuading the Socialist trade union (UGT) to accept real wage cuts during 1984-85 in return for government-funded training programs. While industrial production remains stagnant, large manpower cuts have helped boost worker productivity and reduce unit labor costs during the last two years.

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[1] Real labor costs are defined as total wage and nonwage payments, including contributions to social security, deflated by the wholesale price index. Dividing by an index of productivity yields real unit labor costs.

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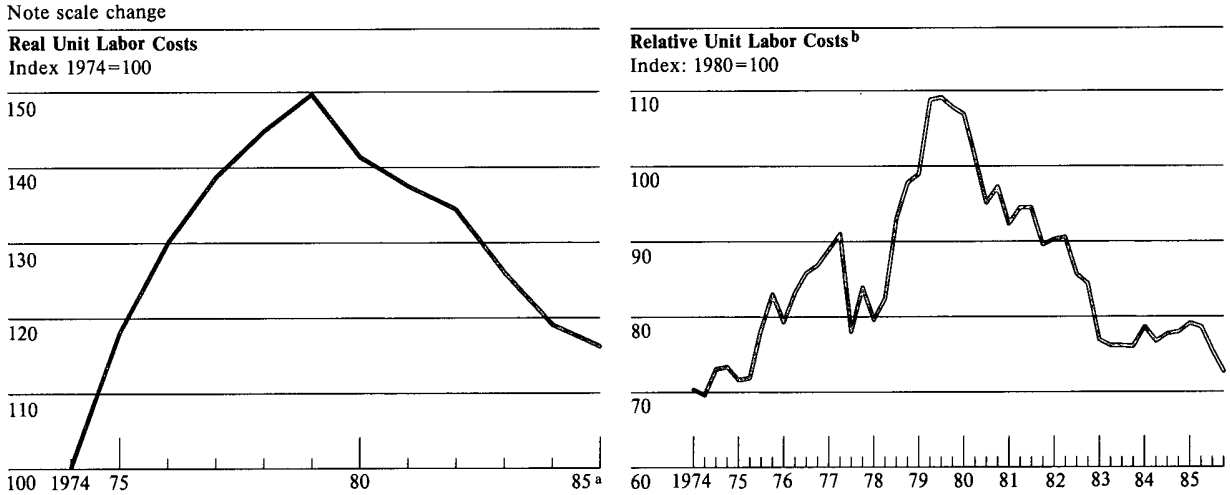
Figure 3
Spain: Labor Costs, 1974-85



[a] Estimated.

[b] Defined as the product of the effective exchange rate index and the ratio of an index of Spanish unit labor costs to an index of unit labor costs in the industrialized countries. An increase indicates a loss of competitiveness.

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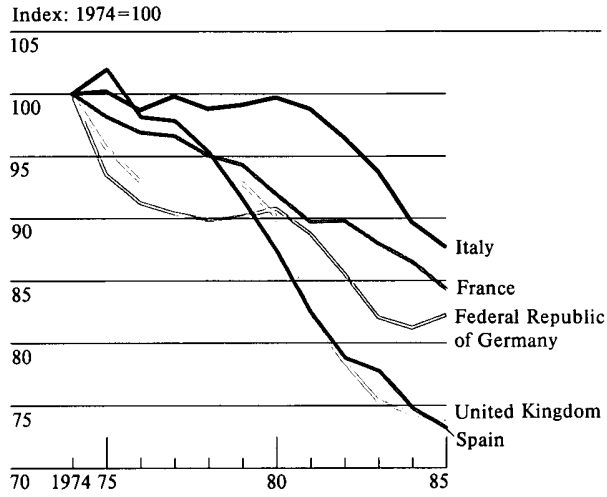
Figure 2
Comparative Industrial Employment Indexes, 1974-85



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The wage explosion of the 1970s damaged the ability of Spanish firms to compete internationally. Calculations of effective exchange rates, weighted by relative unit labor costs, indicate that export competitiveness worsened by 50 percent during 1975-79 vis-a-vis other OECD countries (see figure 3). Spanish wages in manufacturing, once well below those of most West European countries and close to some of those of the newly industrializing countries (NICs), more than doubled during 1975-79 (see table 1). Consequently, Spain lost market shares in the OECD in footwear, clothing, shipbuilding, and consumer electronics. Spanish producers also encountered greater competition from the NICs at home. Imports of manufactured goods from the NICs quadrupled during 1975 to 1983.

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The loss of competitiveness in traditional, low- and intermediate-technology sectors, such as steel, shipbuilding, textiles, leather, and footwear, and the emergence of worldwide surplus capacity in such

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Table 1
Selected Countries: Hourly Compensation in Manufacturing, Selected Years

US $

	1975	1979	1980	1981	1982	1983
Spain	2.60	5.41	5.96	5.62	5.37	4.75
Textiles	1.38	3.26	3.46	3.48	3.34	2.79
Shipbuilding	2.19	5.07	5.45	5.41	5.24	4.45
Footwear, leather, clothing	1.08	2.90	3.02	3.10	2.89	2.58
Industrial countries						
Belgium	6.54	12.02	13.18	11.10	9.33	9.20
United States	6.35	9.07	9.89	10.95	11.68	12.26
Denmark	6.28	10.05	10.54	9.12	8.68	8.53
Germany	6.19	11.29	12.33	10.54	10.44	10.41
Australia	5.02	6.50	7.37	8.87	9.01	8.45
Italy	4.65	7.14	8.13	7.39	7.36	7.59
Finland	4.59	7.40	8.21	7.94	7.83	7.36
France	4.58	7.85	9.12	8.15	7.86	7.66
Austria	4.06	7.18	7.84	6.89	6.90	6.92
United Kingdom	3.26	5.50	7.28	7.13	6.80	6.48
New Zealand	3.07	4.52	5.11	5.46	5.31	4.79
Japan	3.05	5.49	5.61	6.18	5.70	6.20
Ireland	3.01	4.79	5.81	5.44	5.54	5.48
Portugal	1.58	1.68	2.03	1.98	1.51	1.25 [a]
Greece	1.40	2.83	3.12	3.06	3.38	3.03
Newly industrializing countries						
Mexico	1.92	2.33	2.95	3.62	1.97	1.45
Brazil	1.13	1.73	1.70	2.15	2.47	1.68
Singapore	0.83	1.29	1.47	1.77	1.93	2.17
Hong Kong	0.72	1.25	1.44	1.48	1.55	1.40
Taiwan	0.48	1.01	1.27	1.52	1.57	1.61
South Korea	0.36	1.14	1.08	1.14	1.22	1.29

[a] Estimated.

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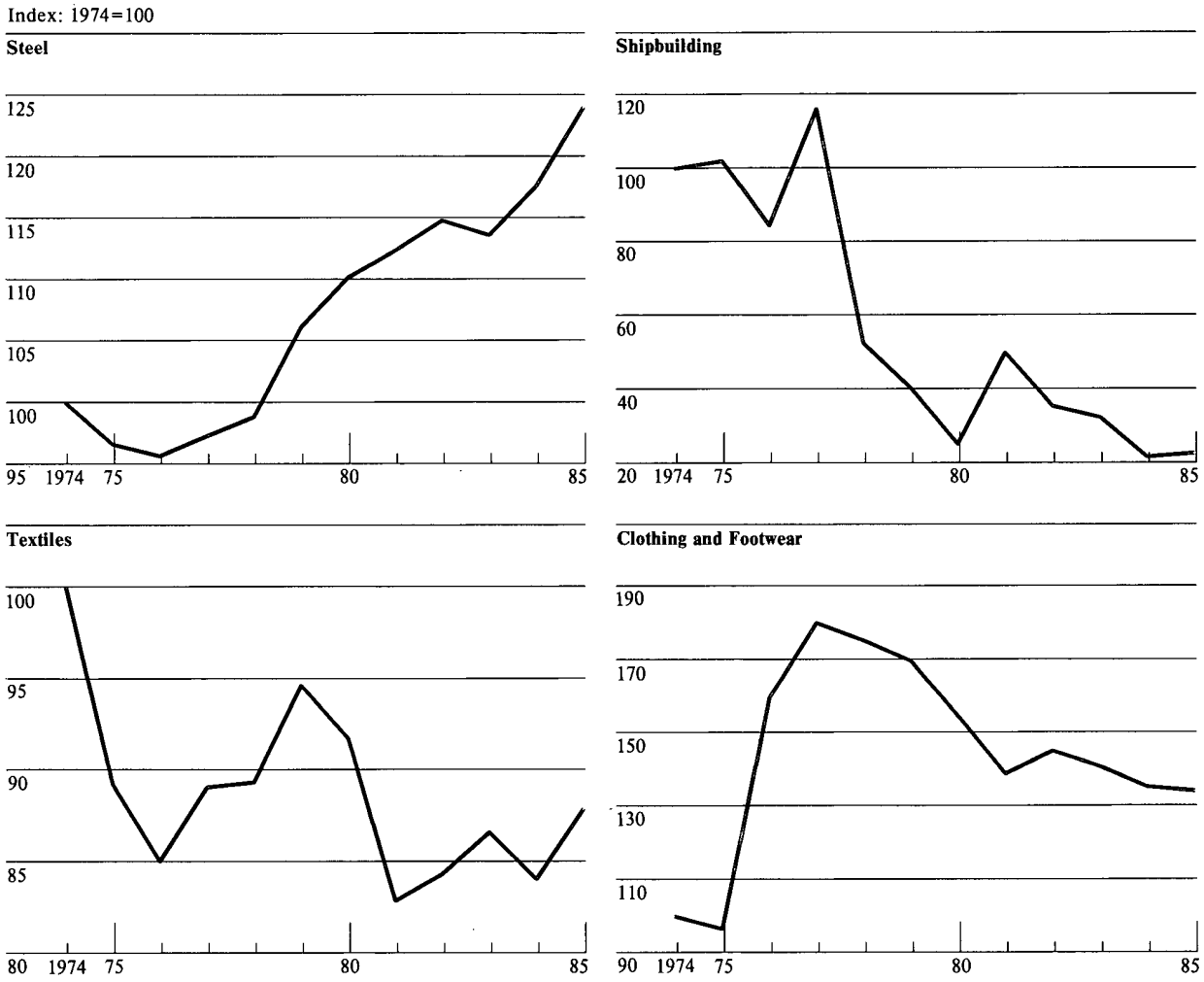
products were particularly damaging in a country overconcentrated in these sectors. Traditional sectors accounted for 28 percent of Spain's industrial production in 1972, compared with 14 to 22 percent in the four major West European countries. Moreover, in a colossal miscalculation, the Franco regime in 1974 embarked on a major investment program to further expand capacity in these sectors just as the first oil price shock drove industrialized countries into recession. Although production in the shipbuilding, textile, footwear, and clothing sectors recovered in the late 1970s, another oil price hike in 1980 sent them into a new tailspin. Unlike other West European countries,

Figure 4
Spain: Production Trends by Industry, 1974–85



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Spain has continued to increase its steel production—with the aid of government subsidies—even though domestic consumption has collapsed (see figure 4 and appendixes A and B).

Austerity programs put into place during 1977-78 and 1983-85 contributed to the industrial slump to a much lesser extent. In both cases, deepening current account deficits and inflationary pressures led to the introduction of tighter monetary and fiscal policies. Improvements in Spain's current account and in consumer price inflation were gained at the cost of slowing domestic demand and forcing firms to seek other markets for their goods.

Subsidies required to prop up sick public-sector industries diverted resources that could have gone toward productive investment and widened the budget deficit. As the financial health of state-owned enterprises deteriorated, budgetary transfers soared to $2.5 billion in 1983—2 percent of Spain's GDP—compared with $150 million in 1975. Most of these losses have occurred at the National Institute of Industry (INI), which controls firms that in 1983 accounted for 34 percent of Spanish steel production, 82 percent of ship production, 20 percent of industrial investment, 6.5 percent of the industrial work force, and 6.5 percent of GDP.

At the same time, Spain's political and economic isolation, weaknesses in its university system, and its protectionist policies hindered it from moving into the high-technology markets where world demand had grown rapidly. Spanish exports of electronics and computers in 1984 represented only 3 percent of total exports, compared with a West European average of 6 percent. Production failed to grow fast enough to meet even domestic demand and thus covered only a little more than half of domestic consumption by 1982, down from 88 percent in 1974.

The Failure of Previous Restructuring Efforts

The severity of the structural problems the Socialists inherited was due in part to the failure of previous governments to address them seriously. Moderate governments under the Union of the Democratic Center (UCD) from 1977 to 1982 delayed action because of misperceptions about world market trends, preoccupation with the transition to democracy, and a reluctance to stir up worker opposition. Even though the UCD drew up a draft restructuring plan in 1977, it did not introduce a comprehensive program until 1981. 25X1 25X1

The UCD believed that the government's role should be limited to providing financial and legal support and to monitoring the goals set by the private sector. Participation in the program was voluntary and was based on agreements between the government, management, and workers. The overall objective was to improve Spain's competitiveness in international markets by cutting surplus capacity and the bloated work force, improving firms' financial positions, and adapting products to changing markets. To support this effort, the UCD budgeted $2 billion for capital injections, investment grants, early retirement, and layoffs; it earmarked another $2 billion for credits and guarantees during the period 1981-83. 25X1

The program, however, suffered from a number of shortcomings. Most important, the government failed to cut back on shipbuilding facilities, despite slumping demand and mounting losses. An agreement with labor unions to slash jobs at shipyards the government had rescued was never put into effect. Restructuring in the footwear and textile industries also fell well behind schedule. Because of bureaucratic red tape and the large number of small firms in these industries, only 300 of the targeted 8,800 firms had received state support for restructuring when the Socialists assumed office in 1982. Progress was made toward rationalizing the steel sector—by 1982 integrated steel plants had shed approximately 5,000 laborers. Nonetheless, the UCD government made no effort to scale down steel capacity and even took over a large, unprofitable steel plant in Valencia to prevent it from closing. 25X1 25X1 25X1 25X1

Table 2
Spain: Cutbacks in Industrial Employment [a]

	Employment at Beginning of Program [b]	Planned Employment Losses Through 1986	Percent Cutback	Actual Cutback Through 1984	Percent of Program
Shipbuilding	44,896	18,873	42.0	4,220	22.4
Integrated steel [c]	43,026	17,090	39.7	10,108	59.1
Specialty steel	13,744	5,413	39.4	4,256	78.6
Regular steel	14,408	2,812	19.5	2,112	75.1
Ironworking	1,010	40	4.0	40	100.0
Textiles and clothing	91,140	7,668	8.4	5,114	66.7
Footwear	32,925	3,705	11.3	2,811	75.9
Home appliances	23,491	10,091	43.0	8,256	81.8
Automotive electrical equipment	6,720	1,320	19.6	1,125	85.2
Electrical parts	3,279	135	4.1	135	100.0
Semiprocessed copper	4,281	987	23.1	712	72.1
Telecommunications	18,681	3,181	17.0	692	21.8
Subtotal	**297,601**	**71,315**	**24.0**	**39,581**	**55.5**
Automobiles [d]	22,000	4,000	18.2	NA	NA
Paper and pulp	20,400	1,500	7.4	NA	NA
Machine tools	8,300	2,000	24.1	NA	NA
Fertilizers	10,000	1,180	11.8	NA	NA
Electrical equipment	15,000	5,900	39.3	NA	NA
Total	**373,301**	**85,895**	**23.0**	**NA**	**NA**

[a] This represents the work force at firms participating in the restructuring program, rather than total employment in each sector.
[b] For integrated steel, employment as of 30 December 1980; for home appliances, as of mid-1980; for ironworking, as of 31 December 1982 and for all other sectors—except the last four—as of 31 December 1981; for the last four sectors, which recently entered into the industrial restructuring program, employment as of 31 December 1983.
[c] The integrated steel restructuring program is scheduled to end in 1988.
[d] Automobile restructuring will get under way this year and will last until 1990. The figures for the beginning of the program represent employment as of 31 December 1985.

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The Socialists' Program

In an effort to redress these economic problems after coming to power in 1982, the Socialists broadened restructuring efforts of earlier governments by establishing in 1984 an ambitious two-pronged industrial program intended to prune traditional sectors and propel development of high technology (see inset). Under the first part, the Gonzalez administration took harsher measures to lay off surplus labor and close inefficient plants in "sunset" industries during 1984-86. Madrid's plan called for eliminating 85,900 jobs—23 percent of the labor force in the affected firms, equivalent to nearly 3 percent of the total number currently unemployed (see table 2). The government estimated that 25 percent of these workers would take early retirement, 39 percent would decide to participate in a government job-training program, and 36 percent would decide to take the standard unemployment compensation.

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To make traditional goods more competitive on the world market, in 1984 the government also began to provide subsidies and soft loans to support investments that improve efficiency and quality. Madrid estimated the total cost of employment and capacity cuts and new investments would come to $6.7 billion. The Socialists have expanded the previous program to cover any industrial sector—not only traditional industries—that is in financial difficulty and is willing to undertake restructuring. As a result, the program now covers 17 sectors: shipbuilding, integrated steel, specialty steel, common steel, ironworking, textiles and clothing, footwear, home appliances, automotive electrical equipment, electrical parts, semiprocessed copper, telecommunications, automobiles, paper and pulp, machine tools, fertilizers, and electrical equipment.

The second part of the program was aimed at reallocating resources to industries with high growth potential such as electronics, defense goods, automotive production, and food processing. Madrid has introduced a number of measures—including tax reductions and accelerated depreciation for capital equipment intended for research and development—to encourage the private sector to move into new technologies. The government anticipates these steps will cost about $1 billion. In addition, Madrid expects to increase spending by about $2 billion on public-sector research and investment in high-technology projects in the period 1984-87 by reducing subsidies to traditional industries.

Traditional Industries

The main thrust of the Gonzalez administration's plan is to improve the efficiency of depressed public-sector industries—particularly state-owned steel plants and shipyards—by eliminating idle capacity, investing in more modern equipment, and reducing overmanning. Approximately $4.7 billion is going to public enterprises in traditional sectors, primarily the National Institute of Industry (INI), the state holding company, in the period 1984-86. Another $2 billion is going to private-sector firms participating in the program. Most of the funding, in the form of direct loans and interest rate subsidies, is intended to promote rationalization through investment in more efficient production techniques. Only $400 million will go to job training programs and increased unemployment payments to cushion the transition for laid-off workers, while $1 billion is intended to cover public-sector losses.

Job Losses in the Integrated Steel Sector

The job losses will fall unevenly in the three major integrated plants—state-owned plants in Valencia and Asturias and a privately controlled mill in the Basque region:

- *The proportionately greatest blow will fall on the Valencian plant, the smallest of the three. It will lose half the workers in its labor force of 4,000, and most of those discharged will be too young to qualify for early retirement. The government, however, has pledged to hire more workers in the cold-rolling mill and is subsidizing investments in new plants in Valencia that will provide at least as many new jobs.*
- *The Asturian plant—the largest of the three—will lose 6,000 of its 21,000 jobs, but mostly through early retirement.*
- *The smallest cutback will take place at the steel mill in the politically sensitive Basque region, where job losses will be limited to one-fifth of the total work force—2,200 jobs out of a total of 10,700 will be eliminated. Here, too, most of the cutbacks will be made through early retirement.*

The Socialists propose to deal with the problems of the *integrated steel* industry by pruning employment and capacity while increasing the sector's efficiency. They plan to spend $3.6 billion during 1984-88 to support the elimination of 10,200 jobs at three integrated steel plants and new investment in rolling, finishing, and continuous casting machinery [3] (see inset). The program also calls for cutting costs by

[3] Continuous casting is a process that eliminates several steps in conventional steelmaking, increases the yield of semifinished products, lowers energy costs, and reduces the number of man-hours needed to produce hot-rolled steel.

integrating production of primary, intermediate, and finished products; shifting from lower to higher value-added finished products; scrapping obsolete open-hearth facilities; and closing the crude-steel-making plant in Valencia.

To raise profitability and productivity in the privately controlled *specialty steel* sector, most of the investment under the government's program is going toward the installation of continuous casting machinery. Some funding will also go to new quality control systems, finishing facilities, and electric arc furnaces intended to save energy and improve the quality of production. Numerous obsolete furnaces are being scrapped.

Further cutbacks in steel capacity and jobs are in the offing because of Spain's accession to the European Community (EC) and the weak world market. According to US diplomats, Madrid agreed to reduce production capacity of hot laminated steel products by 3 million metric tons during the first three transition years of its membership in the EC. Press reports indicate that this reduction in capacity, together with increased competition from EC producers, the appreciation of the peseta against the dollar, the loss of export subsidies, and expectations of slow sales, has prompted Spanish steel firms to draw up a plan to cut another 10,000 to 20,000 jobs in the integrated-, specialty-, and common-steel sectors.

The depth of the *shipbuilding* sector's troubles have prompted the Socialists to introduce an even more draconian program for it that envisions slashing the labor force by 42 percent—18,873 workers—and closing idle yards. INI has already mothballed two of its five shipyards, a supertanker yard in Galicia, and an obsolete facility in the Basque city of Bilbao. Madrid also proposes to merge some of the existing 35 small and medium-sized yards, most of which are privately owned, and to weed out the most inefficient, leaving only 16 to 20 firms.

Madrid's overall goal for the shipbuilding industry is to move it away from constructing large tankers and toward building small, specialized cargo vessels with computerized navigation and engine equipment. To accomplish this goal, Madrid has promised to provide direct subsidies for up to 25 percent of the cost of construction, research and development, and investment in high technology. In addition, firms can obtain loans at subsidized interest rates for the remaining shipbuilding costs and for specialized construction equipment. 25X1 25X1

In the labor-intensive *textile and clothing* sector—which accounts for 30 percent of jobs in the sectors to be restructured—the program's aims are to keep job losses down to 8 percent, to assist firms to enhance product quality and productivity, and to improve design, marketing, and advertising. Madrid is hoping this support will boost textile production and spur the creation of new jobs in supplier firms. 25X1

In the *footwear* sector, Madrid has set up programs to improve design and to enable small companies to purchase or renovate equipment. Despite an earlier reconversion plan, the footwear industry still suffers from poor equipment, and productivity is estimated to be 40 percent lower than the European average. In addition to subsidizing loans to promote investment, the Socialists are exempting footwear firms from social security contributions during seasonal periods of reduced production and have established an early retirement program to correct overstaffing. 25X1

Investing in New Industries

The most far-reaching part of the Socialists' program is the National Electronics Plan,[4] which is aimed at correcting Spain's technological backwardness. The Gonzalez administration hopes to more than double production of *electronics products* and more than quadruple the volume of electronics exports. Madrid hopes to satisfy more than three-fourths of domestic demand with domestic production by 1987, thereby narrowing the trade deficit in electronics products. 25X1 25X1

[4] Eight sectors fall under the program: microelectronics, consumer electronics, electronic components, telecommunications, informatics, defense electronics, medical electronics, and industrial electronics. A new plan to expand the use of robotics—the Advanced Industrial Automation Plan—forms part of the electronics plan's efforts to develop industrial electronics. Madrid also intends to spur development of a number of other new areas, including agro-food industries, genetic engineering, immunology, defense weaponry, solar energy, aeronautics, and materials science. In the agro-food industry Madrid proposes to integrate state and private firms to achieve economies of scale to facilitate research and development, marketing networks, and advertising. 25X1 25X1

Consumer electronics and computers are to become the most important sector under the Socialists' ambitious plans—to be transformed from the smallest electronics export sector to the largest. Real exports of consumer electronics expanded at an average annual rate of 93 percent during 1982-84, and this pace is expected to continue (exports doubling annually) through 1987. In 1987, Madrid projects consumer electronics will account for 20 percent of total electronics exports, compared with 2 percent in 1982. The Spanish also intend to increase computer production dramatically and to cover more than 80 percent of domestic demand by 1987.

Madrid has recently defined subsectoral plans for *millimetric waves, optoelectronics, and informatics* and has extended the program to 1989. These plans include designing systems for the use of millimetric waves, spurring the establishment of software and engineering companies, stimulating new informatics applications, and developing the technology needed for optoelectronics applications in defense, industry, and telecommunications. The new electronics plan also intends to correct two areas of weakness—technical education and venture capital—by giving scholarships, devising courses, providing tax breaks, and developing a secondary market on the stock exchange. Press reports indicate that measures to carry out the plan will be included in the budget for the 1987 fiscal year, which will be introduced this fall.

Madrid realizes that its technological base is insufficient to support this effort and that it will be forced to seek technology, investment, and marketing assistance from the United States, Japan, and the West European countries. A $200 million joint venture with AT&T to produce custom microchips, for example, will give Spain a foothold in integrated circuits—as well as the first microchip plant of this type in Western Europe—and meet most of the government's targets for microelectronics production and exports. Madrid has also sold a controlling share of a major state-owned electronics firm to Fujitsu, the second-largest data processing firm in the world, and a minority share in another state-owned computer manufacturer to a French firm in the hope of drawing on foreign expertise to improve the quality of hardware and software produced by the Spanish firms and to expand their line of products. In addition, Spanish firms are hoping to gain access to technology through joint ventures under the EUREKA umbrella (see inset).

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Madrid has earmarked $1 billion, so far, to go mainly to subsidized investment loans and export financing in order to stimulate electronics development and overseas sales. The government is also providing grants to assist firms in computerizing their operations. To lure multinationals to Spain, Madrid is offering direct subsidies, tax rebates of 90 percent of reinvested profits, low interest loans for up to 75 percent of the value of imported technology, and potential sales to Spain's growing market. As a new member of the EC, Spain is also counting on its attractiveness as a springboard for exporting to the rest of the Community.

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Easing Social Pressures

The government drew up assistance programs in 1984 for seven "zones of urgent reindustrialization" (ZURs) and a preferential industrialization zone to cushion the blow of layoffs.[5] These zones are located within regions where total labor cutbacks were equal to as much as 12 percent of industrial employment in 1984 and 3 percent of the total labor force (see map and table 3). The number of workers forced to seek new jobs is smaller once retirements are taken into account—particularly in Asturias, where anticipated retirements are equivalent to two-thirds of the job losses. Nevertheless, layoffs threaten to raise already high unemployment rates. To create new jobs, Madrid is providing companies in the zones special regional incentives, which include access to official credit, compensation for relocation costs, assistance in land purchases, tax allowances, and special accelerated depreciation laws.

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[5] The zones are the shipping centers of El Ferrol, Vigo, Cadiz, and Bilbao; the steel towns in Asturias and Valencia; Barcelona; and Madrid.

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Spanish Participation in EUREKA

Spanish firms are taking part in 13 joint ventures:

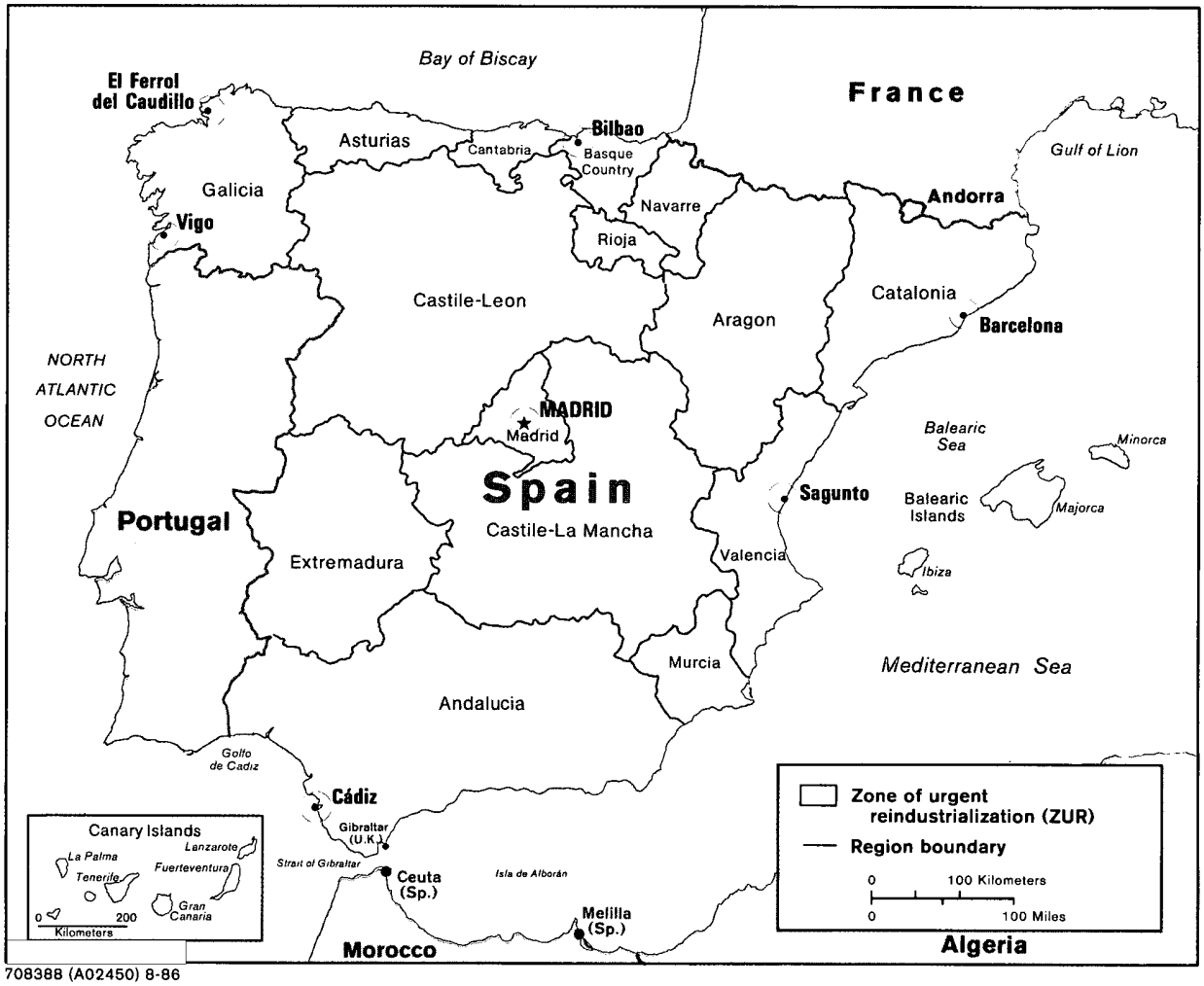
- Advanced mobile robots. *Third-generation robots for public safety applications, such as national disasters and antiterrorism.*
- BD11. *Development of a data base for distribute expert systems on low-level computers, using the Pick operating system and "C" language.*
- Chrome tanning salts substitutes. *Development of techniques to treat leather, replacing chrome with aluminum.*
- Computerized engineering. *Development of a computerized engineering system.*
- Diane. *Automatic integrated system for nondestructive use of neutron beams in the quality control of large, complicated components manufactured for new materials.*
- Electron beam welding. *Development of a cost-effective method to weld steel up to 100 millimeters thick at atmospheric pressure.*
- Eurocim. *A flexible automated factory for electronic cards, preparation of circuits, and quality control of cards.*
- European software factory. *Design and creation of a data base with programing modules available to software firms.*
- Europolis. *Intelligent control system for traffic and metropolitan control and information.*
- Fishing vessels. *Development of technology for design, construction, and use of fishing boats.*
- Galena 2000. *Development of automatic medical diagnostic equipment.*
- Oxodipina. *Pharmacological and clinical development of oxidipene, a calcium antagonist.*
- Sunflower seeds. *Production of new varieties of sunflower seeds.*

The Spanish have expressed interest in another six projects:

- Carmat 2000. *Car structures, using new materials.*
- Diesel engines. *Development of new, efficient fibre-reinforced ceramics for diesel engines for commercial vehicles.*
- Euromar. *Development and application of new technologies to ecological problems.*
- Gas turbines. *Measurement of performance improvements from introducing ceramics into gas turbines.*
- Light materials for transport systems. *Development of technology for welding aluminum alloys by electron and laser beams and development of multilayer composite materials.*
- Pan (N5). *Manufacture of equipment to produce high-pressure subsea pipes.* [redacted] 25X1

Generous benefits to laid-off workers have helped limit the political impact and alleviate social pressures. Madrid has given workers the choice of either taking severance pay and receiving standard unemployment benefits for a maximum period of 18 months or contributing their severance pay to the Employment Promotion Fund and getting further unemployment benefits equal to 80 percent of their salary for three years. The fund retrains workers, offers wage and social security subsidies to firms to encourage hiring, and provides incentives to attract new industries to hard-hit areas. The program has thus fostered the creation of alternative jobs, softening the effect of layoffs. It has also held worker opposition down. According to a poll taken in 1984, 88 percent of industrial workers and 85 percent of steelworkers were willing to go along with an industrial restructuring program if the government made a commitment to promote new jobs. In addition, it helped to keep the General Workers Union (UGT) in line on continuing layoffs by offering something in return and helped the union rebuff the Communists' criticism that it is a mere "transmission belt" of government policy. [redacted] 25X1

Figure 5
Zones of Urgent Reindustrialization



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Balance Sheet to Date

Madrid is well on the way to accomplishing most of its plans to streamline ailing industries and has made a good start on spurring development of electronics. The steps Madrid has taken to scale down idle capacity, upgrade facilities, and reduce surplus labor are already raising labor productivity and lowering losses in state-owned enterprises. At the same time, the government's electronics plan is yielding a surge in joint ventures with foreign firms that will move Spain into the production of new goods and services that are now in demand on the world market.

Trimming Surplus Labor

Excluding the steel and shipbuilding sectors, traditional industries carried out 71.4 percent of the proposed cutbacks by the end of 1984. Additional layoffs were made in 1985, and a recent government report states that 80 percent of the intended layoffs have been carried out. Layoffs in the steel and shipbuilding sectors—roughly half of the total planned cutbacks in industrial employment—were

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Table 3
Cutbacks in Industrial Employment by Region

Percent

	Planned Cutbacks as a Share of Industrial Employment, March 1984	Planned Cutbacks as a Share of Labor Force, March 1984	Unemployment Rate, March 1984
Asturias [a]	11.9	2.9	14.9
Basque Country [a]	7.3	2.3	22.3
Cantabria	4.0	0.9	17.2
Galicia [a]	4.0	0.6	11.2
Navarre	3.7	1.1	15.7
Madrid [a]	3.4	0.7	19.7
Andalucia [a]	2.4	0.3	28.5
Balearic Islands	2.2	0.4	17.0
Valencia [a]	2.0	0.5	19.0
Catalonia [a]	1.3	0.4	22.6
Aragon	0.7	0.1	14.7
Canary Islands	0.5	0	21.0
Castile-La Mancha	0.4	0	16.3
Castile-Leon	0.2	0	15.5
Rioja	0.1	0	12.8
Extremadura	0	0	26.0
Murcia	0	0	14.5

[a] The ZURs are located in these regions.

held up by violent demonstrations staged by the Communist-dominated Workers' Commissions and a radical Galician trade union, but the government refused to back down. Worker resistance has now petered out and Madrid has cut back almost all of the shipbuilding jobs it originally proposed to eliminate, according to the Embassy. Madrid has torn down the blast furnaces at a major plant in Valencia, eliminating 2,000 jobs, and pared another 1,250 jobs at a plant in Asturias.

Production in most traditional industries has increased only slightly, but trimming surplus labor has boosted productivity. For example, output per worker in the specialty steel sector rose 54 percent in 1984

Table 4
Progress in Steel Restructuring

	Integrated Steel	Specialty Steel
Output per worker *(metric tons)*		
Goal [a]	**231**	**129**
1980	153	70
1984	169	108
Capacity *(thousand metric tons)*		
Goal [a]	**7,000**	**1,200**
1980	8,600	1,600
1984	6,800	1,380
Capacity utilization *(percent)*		
Goal [a]	**86**	**90**
1980	77	60
1984	84	76

[a] The goals for integrated steel and specialty steel are 1988 and 1986, respectively.

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compared with 1980, largely because of the elimination of over 4,250 jobs (see table 4). In the integrated steel sector, where layoffs have lagged somewhat, output per worker rose only 10 percent from 1980 to 1984.

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Closing Unprofitable Plants

Madrid's progress in closing idle and unprofitable plants has increased capacity utilization in most sectors. The greatest improvement occurred in the specialty steel sector. Specialty steel producers cut capacity by 220,000 tons in the period 1980-84 and boosted production by 100,000 tons, thus improving the capacity utilization rate about 16 percentage points to 76 percent. The Socialists also have made progress in the integrated steel sector. Tearing down the blast furnaces in Valencia has reduced integrated steel capacity by 1.6 million tons and has eliminated a bottleneck in steel production (see appendix A). As a result, capacity utilization in 1984 was only slightly

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below Madrid's 1988 goal of 86 percent. Madrid has carried out all of the cuts in capacity in the shipbuilding sector that it originally planned, but slack demand is keeping orders and capacity utilization down.

Budget Financing of Restructuring

The cost of the restructuring program is easing somewhat. Industrial restructuring outlays more than doubled from 1984 to 1985 to $1.5 billion—equivalent to 2.4 percent of budgetary expenditures and 0.9 percent of GDP. We estimate that, with expenses dropping in 1986 to $900 million, the cost of the program probably will amount to about 2 percent of total government spending.

Foreign Investment and Joint Ventures

Madrid has had some success in securing foreign investment and joint ventures with foreign multinationals. So far, Madrid has lined up 28 agreements, primarily with US, Japanese, and West European multinationals (see table 5). Sixteen new plants and research centers are planned; 10 of these projects will be carried out by firms that were not previously operating in Spain. The remaining projects will be undertaken by firms that plan to expand existing lines of production in their Spanish subsidiaries. Two new plants opened last year; at least three more are under construction. We cannot assess the progress on the other 11 new projects because we do not have information on them. Two other deals were signed in 1984, but we believe they have a somewhat uncertain future.

Madrid has made advances in obtaining foreign commitments in consumer electronics, microelectronics, and informatics. Six firms intend to produce VCRs, televisions, and microcomputers; one (AT&T) will produce semiconductor chips; and six firms plan to boost their production of computers. The Gonzalez government has also settled on four joint ventures in electronic components that will go almost halfway toward meeting its production target in this subsector.

Progress has been slow in other areas. Thus far, Madrid has struck only two deals in industrial electronics, one with Hewlett-Packard and one with Sysscan, and one in electromedicine with General Electric, partly because of delays in approving a law that will govern coordinated purchases of electronic equipment by public-sector companies. Only two domestic research and development centers are in the works. In addition, investments by small, private firms have been less than expected across the board. 25X1 25X1

An assessment of how well the Spanish have done in terms of spurring investment, exports, and production is somewhat difficult because data are fragmentary and, for the most part, available only through the end of 1984—the first year the program was put in place. According to press reports, electronics production is growing but is still not keeping pace with consumption. Because Spain has started from such a small base, export growth has been quite striking as new products have come on line. For example, a 280-percent increase in real informatics exports in 1984, compared with 1983, was almost entirely because of a new line of medium-sized computers produced by IBM. Although electronics exports are rising, the sector still accounted for only 3 percent of total exports in 1984. 25X1 25X1

Madrid has made a start toward expanding the use of *robots* in the manufacturing sector, but Spain is still well behind other industrialized countries. By the end of 1984, the number of Spanish robots had increased by one-fourth compared with the previous year. In order to encourage robotics in industries outside the automobile sector—which owns more than 80 percent of the robots—the government has also signed agreements with 16 firms for preferential credits and special subsidies to finance the purchase and installation of robot units. By international standards, however, the number of Spanish robots remains rather small. In 1983, Spain had 416 robots—less than one-fourth as many robots as the United Kingdom and less than one-tenth as many as West Germany. The efforts made to date almost certainly fall short of closing the gap. 25X1 25X1

The government's success in developing other sectors in which it has expressed an interest—such as biotechnology, genetic engineering, immunology, and materials science, where Spain has a handful of firms

Table 5
Spain: Electronics Investments

Constant 1982 Million US $
(except as noted)

Firm	Project	Investment 1984-87	Planned Production in 1987	Planned Exports in 1987
Microelectronics				
AT&T/CTNE	New plant to produce 1.75 micron complementary metal oxide semiconductor chips; construction began April 1986; new jobs: 674	200	220 [a]	176 [a]
Ferranti/Piher Semiconductores [b]	Addition of 5 micron custom chips to present line of production	NA	2 million chips	NA
Consumer electronics				
Sony/Sony Espana	Addition of VCRs to present line of production and increased output of color Televisions; new plant opened February 1985; new jobs: 420	6	82	21
Sanyo/Aznarez Industrial	Addition of VCRs to present line of production and increased output of color television	4	71	35
Grundig/Intergrundig	Addition of VCRs to present line of production	NA	71	24
Panasonic/Panasonic Espana	Addition of VCRs to present line of production	6 [c]	200,000 units [d]	80,000 units [d]
Sharp/Sharp Espana	New factory to produce televisions; new jobs: 281	NA	300,000 units	200,000 units
Eurohard	32K and 64K personal microcomputers; bought out plant owned by Dragon Data	2	106	27
Components				
Thomson CSF/Componentes S.A.	New factory to produce tantalum condensors; New jobs: 150	6	24	15
Philips/Miniwat	Expansion of plant producing television tubes	6	65	24
NCR/NCR Espana	Additional factory to repair electronic modules	NA	35	31
Digital Equipment Corporation/ Digital Espana	Additional factory to produce computer components	NA	47	42
Telecommunications				
ITT/Standard Electrica [e]	Addition of system 12 telephone centrals and peripherals to present line of production; new jobs: 2,250	35	559	159
Ericsson/Intelsa/CTNE	Addition of PBXS and office automation to present line of production; new jobs: 150	NA	106	27
Siemens/Siemens Espana	New research and development center and diversification of present products to include hardware and software design and manufacture; new jobs: 420	60	94	47
Philips/Cables de Comunicacion	Addition of mobile radio equipment to present line of production; new jobs: 200	NA	NA	NA
Corning Glass/CTNE	A new plant to produce optical fibers scheduled to begin operation in 1988; new R&D center; new jobs: 80	14	85,000 km [f]	25,500 km [f]
Messerschmitt-Boelkow-Blohm/CTNE	New plant for electronic security systems; new jobs: 70	3	18	NA

Table 5 (continued)

Firm	Project	Investment 1984-87	Planned Production in 1987	Planned Exports in 1987
Informatics				
IBM/IBM Espana	Expansion of present plant producing peripherals and addition of a line of medium-sized computers; new jobs: 880	76	647	559
Nixdorf/Nixdorf Espana	Additional plant to produce minicomputers; new jobs: 130-300	9	71	47
Intertechnique/Fujitsu Espana	Expansion of Fujitsu Espana's present line of minicomputers	NA	6	3
Olivetti/Hispano Olivetti	Expansion of present line of personal computers; new jobs: 300	8	82	31
Bull/Telesincro/INI	Expansion of present line of minicomputers. Bull has acquired 40 percent of Telesincro, a state-owned company	16	35	26
Fujitsu/CTNE	New plant for the design, development, manufacture, and repair of equipment for processing eletronic data; software: Fujitsu bought 60 percent of the shares of Secoinsa, a state enterprise that produces computers and designs software. CTNE controls the remaining 40 percent of Secoinsa's shares; new jobs: 2,670	59	353	177
Industrial electronics				
Hewlett-Packard/ Hewlett-Packard Espana	New plant for computer-aided design (CAD) plotters; started operating August 1985; new jobs: 800-900	NA	300	240
Sysscan/CTNE	New facility for digital cartography	5 [c]	25,000 Ha. [d]	NA
Medical electronics				
General Electric/ General Electrica Electromedicina	Expanded production of X-ray machines	3	37	18
Defense electronics				
Informatique Internationale/ Centro de Calculo de Sabadell	New firm to produce software systems for aerospace and military projects	NA	NA	NA
Research and development				
Pacific Telesis/CTNE	New research and design center, groundbreaking ceremony May 1986; construction to be completed 1989; also have an agreement on management cooperation and marketing of CTNE packets-witching technology	39 [g]	NA	NA
Sperry/IMADE	New artificial intelligence research center in addition to Sperry's current subsidiary that imports and distributes computers; will be located in same building as AT&T and will be operational in 1987	15 [c]	NA	90 [d]

[a] In 1989.
[b] Piher Semiconductores is now going through insolvency proceedings, and the government reportedly is negotiating a joint venture with the British Ferranti company to keep the firm alive.
[c] 1986-90.
[d] In 1990.
[e] We are somewhat skeptical about the future of this project both because of the System 12's poor track record and because of ITT's sale of its overseas subsidiaries to the French CGE.
[f] In 1988.
[g] 1986-88.

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and few research and development capabilities—hinges to a large extent on its ability to obtain technical cooperation and funding from more technologically advanced countries. Spanish officials have decided to postpone investment by INI in new areas while the mammoth state firm is restructuring its holdings in ailing sectors. As a result, most of the impetus to develop other high-technology sectors was to come from joint ventures in EUREKA. Many of these projects may have to be scaled back because of French Prime Minister Chirac's lack of enthusiasm for the European Research Coordinating Agency (EUREKA).

Outlook for the Program

We believe the government had little choice but to introduce a vigorous restructuring program to cure some of Spain's economic woes. Confronted with declining industries and burdensome costs of propping up state-owned firms, the Socialists have had to choose among the following options: (1) pursuing the same course as previous governments by pouring resources into the rescue of sick firms and accepting escalating costs and shrinking export markets; (2) cutting off state support and allowing market forces to drive inefficient firms into bankruptcy with no guarantee that Spanish industry would move toward high-technology fields in the absence of domestic know-how; or (3) scaling down ailing firms and using the freed-up resources to intervene in the market to promote development of new industries. While the Gonzalez government chose the last option, restructuring is not enough to cure Spain's economic ills. In our judgment, Madrid's continuing efforts to hold down real unit labor costs by persuading trade unions to accept real wage cuts are critical to the recovery of investment and economic growth over the longer term. Additional measures also need to be introduced to bring prices into line with costs in such major money-losing state enterprises as the national railway and airline and reduce drains on the government budget.

Although Madrid is making headway in restructuring sunset industries, the adjustment effort is not yet over. According to press reports, Madrid believes that further steps will be needed to ensure the long-term viability of traditional industries, and intends to spend another $1 billion during 1987-88 to support investments in equipment, restructure debts owed by steel and shipbuilding firms to state credit institutions, and lay off additional workers. Most of this aid probably is destined for steel firms and shipyards that are reeling from the blows of worldwide surplus capacity, slack demand, stiff competition, and limits on Spanish steel exports. 25X1

Over the long run, the strides Madrid is making toward restructuring industry should improve Spain's international competitiveness and reduce the need to pour money into unviable enterprises. In traditional sectors, rising output per worker and better product quality, resulting from investments in new equipment and designs, should make Spanish goods more competitive. This will help move Spanish exports out of the market for low-quality goods, where they are overpriced, and into the market for fashionable, higher quality goods, where they would not face as much competition from the NICs. Restructuring efforts also should improve traditional industries' ability to withstand the increased competition that will result from Spain's obligation to phase out trade barriers on EC imports and lower tariffs on non-EC countries, now that it has joined the Community. The press reports that losses in state-owned steel and shipbuilding sectors are shrinking, and recent projections indicate that, by the end of 1986, they should be half the 1983 level. 25X1

The benefits of Madrid's efforts to spur high technology are likely to be felt mainly over the long run. On the basis of past experience, we believe gains in productivity are likely in the banking and manufacturing industries. Industrial and office automation probably will contribute to changing demands for job skills and educational programs. According to Embassy reporting, computer use is becoming more widespread and is giving rise to new journals and the sale of game and hobby software. As new plants come on stream, Spain stands a better chance of diversifying its exports and raising electronics' share of GDP. 25X1

Table 6
Selected Countries: Electronics Production and Consumption, 1982

	Production/GDP *(Percent)*	Consumption/GDP *(Percent)*	Per Capita Consumption *(US $)*
Ireland	6.96	5.93	291.1
Netherlands	3.22	3.47	331.4
United Kingdom	3.18	3.80	322.4
Switzerland	3.03	2.77	418.6
West Germany	3.01	2.88	309.5
Sweden	2.93	3.10	369.5
Belgium	2.61	3.04	261.8
France	2.61	3.00	296.7
Austria	2.30	2.50	219.6
Italy	2.22	2.59	158.4
Denmark	1.48	1.87	208.6
Finland	1.38	2.28	232.9
Norway	1.20	2.30	314.4
Spain	1.18	1.93	92.3

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While making inroads on the market is a challenging goal, given the increasing number of competitors, Spain can take advantage of the reputations of established foreign firms with which it is collaborating. It also can count on recent improvements in relative unit labor costs. Spain, nevertheless, almost certainly will remain a relatively small producer and competitor on the world scene—the shares of electronics production and consumption in GDP were far below other European countries in 1982, and this distance is not likely to be greatly shortened in the foreseeable future (see table 6).

Because of the leadtime before new plants start up, the effects of restructuring on unemployment probably will be negative in the short run. New projects approved so far in the ZURs will generate fewer than 10,000 jobs, a fraction of the workers laid off. Even at full production, the electronics projects—most of which will be smaller than the joint venture of the Spanish state telephone company (CTNE) with Fujitsu employing 3,000 workers—will create fewer jobs than the roughly 86,000 jobs lost in other industries.

Over the longer term, however, jobs created at supplier firms will help offset losses elsewhere. As an example of this multiplier effect, IBM's Spanish subsidiary has generated 4,000 jobs at other firms, according to the US Embassy.

Industrial restructuring is likely to have little effect on Gonzalez's political prospects. Surveys indicate most voters regard industrial restructuring as a relatively unimportant issue. Moreover, the public has perceived it as a problem that was inherited from the previous government and has had low expectations about Madrid's ability to cure the industrial crisis. Generous state programs have softened the social and economic impact of industrial restructuring, in our view, and probably have helped to minimize the political backlash. Although the Communists were able to stir up violent protests in the shipbuilding and steel sectors earlier, they never gained a wider audience than workers in Galicia and Valencia. At the same time, the Gonzalez administration has lost some

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support on the left because it did not consult thoroughly with the UGT before announcing tougher measures. The UGT, however, remained solidly behind the Socialists during a trade union congress this spring. The UGT probably will press Gonzalez to deliver on promises of job creation in return for past sacrifices, but we doubt that it will desert the Socialists. Because all of Spain's political parties—with the exception of the far left—agree that Spain must pursue an industrial restructuring program, we consider it unlikely that Gonzalez's opponents can capitalize on it.

Spain's electronics development plan probably will have little effect on the country's overall trade policy. Although Madrid has expanded its use of export subsidies to spur foreign sales, Spanish officials have refrained from implementing other measures originally contained in the National Electronics Plan—such as import barriers to protect infant industries and national content and export requirements. They cannot do so now that Spain is in the EC. Indeed, Madrid favors a new round of GATT talks that would include service industries like informatics and will begin reducing all its trade barriers under the terms of EC accession.

Implications for the United States

Spain's restructuring program is likely, on balance, to be of benefit to the economic and foreign policy interests of the United States. We believe, for example, Spain's interest in acquiring US technology will make Madrid more responsive to US pressure to introduce export controls. In the wake of hints that Washington might refuse to grant export licenses for sensitive products, Madrid already has imposed an import certification and delivery verification system on high-technology products and has taken steps to join COCOM. Spanish officials have indicated to the US Embassy that they expect to introduce a full COCOM system by the end of September. The process of revising export control mechanisms has been slow, in part, because Spanish officials are still learning how COCOM functions and because the translation of COCOM lists has not been completed. Spain's export control program still exempts public-sector enterprises and dual-use products worth less than 1 million pesetas—about $5,700—but Madrid has given assurances that it will satisfy US requirements to avoid being denied products. 25X1

Spain's industrial development plans will continue to provide a larger market for US high-technology exports and increased opportunities for direct US investment. The prospects are probably best in the areas where Spain is furthest behind in meeting targets. Madrid still needs *defense electronic systems* and 25X1
foreign investments in a number of areas in the components sector, including metallized resistors, ceramic condensors, and automated component fabrication technology. Spanish officials have indicated to the US Embassy that they are particularly impressed by US technology in the last category. With the industrial electronics industry still in its infancy, Madrid will also be seeking foreign investment and technology in computer-aided design/computer-aided manufacturing (CAD/CAM) hardware and software, electronic signaling and controls, security systems, and robotics. In the telecommunications sector, US access to the market is likely to remain limited to joint 25X1
ventures with CTNE, which enjoys a monopoly in
services. 25X1

Madrid's desire to tap foreign expertise in developing high technology probably will lead Spanish officials to leave the door open for participation in SDI research contracts, although for domestic political and economic reasons the government is not likely to sign a formal agreement. According to the US Embassy, Defense Minister Serra has indicated the Gonzalez administration may remain concerned about deployment, but is willing to approve research. While Paris's change of heart over EUREKA could make SDI more appealing to Madrid, Spanish participation in SDI will, in any event, be quite limited because of Spain's technological weakness. 25X1

Appendix A

A Sick Steel Industry

A succession of governments made critical misjudgments in the mid-1970s in building up a steelmaking capacity that vastly exceeded domestic needs. The Franco regime anticipated a doubling in specialty steel consumption between 1974 and 1982, and in 1974 launched an investment program to boost steel capacity to 20 million tons. Contrary to these expectations, steel demand was 30 percent lower in 1982 than in 1974. This development reflected the slumping fortunes of the main steel consumers—shipyards, construction, domestic appliances, and automobiles—caused by the 1973-74 and 1979-80 oil price shocks and global recessions. Unable to reverse some of the earlier projects, Spanish firms increased production even as capacity utilization fell. The Union of the Democratic Center (UCD), which came to power in 1977, made matters worse by putting most new investment into expanding productive capacity rather than into improving plant efficiency.

As a result, the Spanish steel industry has lagged other West European countries both in productivity and technology. At the start of the program, Spanish labor productivity was about 20 percent below the West European average because of sectoral inefficiencies, overmanning, and outmoded production methods. For example, crude steel slabs produced at the government-owned Valencian plant were shipped elsewhere for intermediate processing in a hot-rolling mill, then returned for finishing in a cold-rolling mill because the plant had no intermediate facilities. Spain also fell way behind other European countries that introduced continuous casting machines (see table 7). Also, rigid labor laws kept work forces fat—only 13 percent of Spanish steel jobs were eliminated during 1974-82, a period when the EC trimmed about one-third of its steelworkers.

Table 7
Western Europe:
Continuously Cast Steel, 1984

	Percent of Crude Steel Production
Denmark	99.5
Finland	94.4
Austria	89.0
Sweden	79.6
West Germany	76.9
Italy	73.3
Turkey	71.8
France	66.9
United Kingdom	52.0
Spain	**49.0**
Portugal	40.5
Belgium	49.5
Netherlands	38.7
Norway	51.4
Luxembourg	26.2

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Steel exports grew at an average annual rate of 23 percent in volume in the period 1974-85 (see figure 6). But, in order to compete with new Third World rivals, Spanish exporters shaved their prices to the point where, according to the Minister of Industry, they sometimes failed to cover production costs. By 1985, 71 percent of Spain's steel production was exported—compared with 9 percent in 1974—but slack demand, protectionist measures, an export push by the NICs, and low world prices have limited export profits. The

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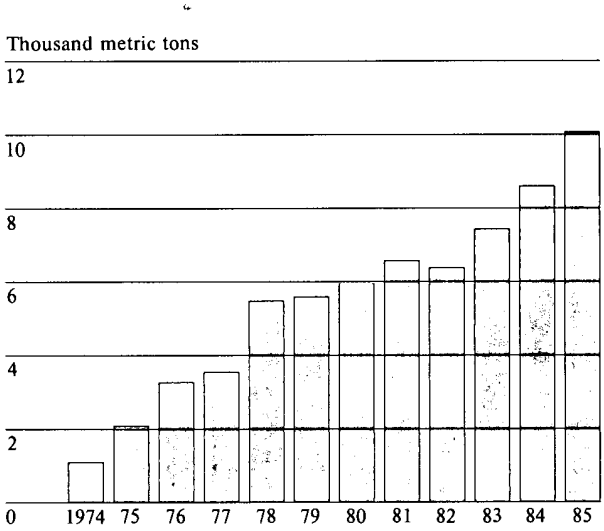
Figure 6
Spain: Steel Exports, 1974-85



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EC has also been an overproducer, which limits its potential as a market for Spanish surplus production. Under a bilateral arrangement reached in 1978, Spain agreed to restrain its exports to the EC. Moreover, soft demand, competition from the NICs, an orderly marketing arrangement, and a voluntary restraint agreement have held down Spanish exports to the United States. Spain has had more success in exporting to the Third World—exports to Middle Eastern countries rose nearly sixteenfold in value from 1974 to 1984 and sales to other less developed countries increased more than tenfold.

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Appendix B

The Declining Shipbuilding Industry

The shipbuilding industry suffered a dramatic 77-percent fall in production in the period 1974-85 (see figure 4). Spain's heavy concentration on production of large tankers and bulk carriers was the source of rapid expansion that propelled Spain from 21st largest ship producer in the world in 1960 to third largest in 1970. The demand for these types of ships, however, evaporated after the first oil price shock and a worldwide downturn in trade. Moreover, Spanish shipyards have been unable quickly to reorient production facilities toward building the smaller, technologically advanced, and specialized vessels now in demand. [redacted] 25X1

Underdevelopment of the marine equipment industry and limited shipbuilding research have also handicapped Spanish shipyards. Because of import barriers, Spanish yards purchase more than 90 percent of the goods and services they need from the domestic marine equipment industry—which lags well behind the technological level of foreign competitors and exports only 5 percent of its production. Similarly, Spanish research and development in shipbuilding is very limited in scope and has attained world standards in only a few instances. [redacted] 25X1

Madrid has squandered its resources by pumping funds into increasing capacity and propping up sick firms instead of improving existing facilities. In a mistimed decision similar to those that have plagued the steel industry, the UCD government opened a new yard for building large bulk carriers in 1979 when other industrialized countries were cutting back. It also purchased two private shipbuilding companies in financial distress to save jobs. [redacted] 25X1