Spain (I): A Developing Economy Puts Spanish on the Threshold

". . . if Spain is to undertake industrial expansion in competitive conditions and increase productivity at a time of such rapid progress in science and technology, it cannot allow itself to fall behind its nearest commercial competitors, many of whom are engaged in making a vast effort in scientific research." World Bank report on Spain.

This year, per capita income in Spain is expected to reach $1000 per year—not really the economic millennium, compared with well over $4000 for the United States and the $3000 range of Spain's wealthier continental neighbors, but, along with an annual growth rate averaging more than 6 percent in recent years, it means that Spain has had its own modest economic miracle. Experts in the economics of developing countries say it also means that Spain's economy is at a stage when continued progress will depend increasingly on expansion of scientific research and development and of higher education.

Spain in the 20th century has drifted outside the mainstream of European development. The country was neutral in two world wars, but was identified with the Axis powers in World War II and, as a result, was politically and economically isolated after the war. More important, Spain is a relatively poor country that has experienced more than 30 years of authoritarian rule following a bitterly fought civil war.

Education and research in Spain, as in other countries, must be considered in their social and political context. Politics is proverbially the art of the possible, and in Spain a lot less has been possible than in other Western European countries.

One man, Francisco Franco, has ruled Spain since the civil war ended in 1939. He has exercised a form of personal government based on the unabashed use of force, but also on the exercise of a shrewd political sense, even on a species of moral confidence. He is surely the only European chief of state who could seriously assert that he is responsible "only to God and to history." Under Franco, impressive economic progress has been made, particularly in the last decade, but without comparable political and social development. Now Franco is nearing 80, his authority appears to be nontransferrable, and for his own reasons he has left the question of the succession unsettled.

It would be unrealistic, however, when discussing problems of education and research in Spain, to look only at the last 35 years. Spanish science reached its zenith during the Renaissance, and theories explaining its long nadir—attributing it to the spirit of the Inquisition, the diversion of Spanish energy to the conquest of the New World, and Spanish individualism breeding chronic anti-intellectualism, for example—are interesting but inconclusive. And despite the accomplishments of brilliant individuals and the efforts of reformers, it can be argued that the scientific revolution stopped at the Pyrenees.

Effects of Isolation

Having said that, however, it must be noted that the isolation of Spain since the time of the civil war has been devastating on science. A generation of scientists left Spain, and many, perhaps most, never returned to Spain to work. After the war, the universities were prostrate, and there was little money for travel or for books or journals. The attitude of other countries toward Spain heightened the Spanish tendency toward xenophobia, and in politically unreconstructed postwar Spain the police made it difficult for many students and professors to go abroad.

The 1950's brought a progressive relaxation of the political quarantine. Probably the most important event was the conclusion in 1953 of the agreement that gave the United States use of air and naval bases in Spain. The thaw was marked by Spain's admission first to UNESCO and later, in the mid-1950's, to full membership in the United Nations. Spain, however, still does not belong to NATO or to the European Economic Community (EEC), although it does have a trading agreement with EEC and a stated goal of eventual membership.

Economically, Spain after World War II was hobbled by the damage of the civil war, by lack of investment capital, and by a soft currency. In the late 1950's, the economy passed through a crisis, which caused the government to move away from the policy of autarchy that it had adopted after the civil war and to accept policies calculated to encourage foreign economic links and increase the rate of development.

In the 1960's, the flow of tourists into Spain from its prospering European neighbors and from the United States, as well as the exodus of hundreds of thousands of Spanish workers to jobs in factories in France, Germany, and elsewhere, gave a major impetus to Spain's economy. At the same time, there was an internal migration of literally millions of people out of the historically poverty-stricken areas of south and central Spain and into the industrial cities. These people concentrated in Madrid and Barcelona, in Valencia, and in the industrial cities of the Basque region in the northwest, and, in the south, in the area of Seville, Huelva, and Cadiz. Almost every other area in Spain lost population. The movement speeded a still-incomplete agricultural revolution and recasting of the country's social structure.

For an American returning to Spain after nearly two decades, the visible changes are striking. Madrid and Barcelona have their traffic jams and smog and new buildings, and everywhere there are signs of an incipient consumer economy. One gains the impression that Spaniards now are much better fed and better housed and that social services have improved.

Life has changed in another dimension. The police are less ubiquitous. Ordinary people criticize the government much more freely than they did in the early 1950's; there is now an "opposition," to which, as one professor said, "it is even fashionable to belong these days." It is a curious, peculiarly Spanish, opposition, whose members range from disenchanted monarchists and ex-Falangists across the spectrum

through the liberals. It is still hazardous to be publicly placed any further to the Left.

The political ground rules are hard for an outsider to grasp. Fairly heavy criticism seems to be tolerated as long as it is simply talk and is not published or voiced at any sort of meeting. Opposition is tolerated as long as it is not organized. In other words, political activity, by American or Western European definition, is what converts dissent into disloyalty.

The traditional pillars of the Spanish state have been the church and the army. The church, historically a reactionary institution, had been shaken during the brief life of the Spanish Second Republic in the 1930's by expropriation of church lands and restrictions on its activities, and it emerged from the civil war closely identified with the Franco cause. In the last decade, however, a division, particularly on social issues, has developed within the church, and the result has been to detach the church somewhat from the regime. The internal differences are in part generational, with young priests arrayed against their elders, but some prominent members of the hierarchy are also known as liberals. One academic, whose attitudes can fairly be described as anticlerical, says that "the church is the only institution in Spain that has changed." He felt it possible that "the church may come out of this period as the victim of the regime." Young Basque priests have gone as far as to participate actively in the Basque nationalist campaign, which periodically has broken into guerilla action.

Regionalism has always been strong in Spain, where the mountains have inhibited communications, but separatist movements have historically been most serious in the Basque provinces and in Catalonia, which is in the northeast corner of the country. Basques and Catalans each claim a distinct language, literature, and culture. Both regions have histories of friction with the central government in Madrid, and both sided with the Republic during the civil war. Basques and Catalans are reputedly Spain's most astute and energetic businessmen, and the two regions are the most heavily industrialized in Spain. Basque nationalism seems, if anything, more intransigent, while Catalonian separatism seems less sharp an issue than it was even in the 1950's. The Catalan sense of cultural identity has not diminished, but the region is prospering and there has been some easing of the restrictions on Catalan self-expression—for example, two or three magazines are now published in Catalan, and the language is used in the schools along with Castilian. And this appears to have acted as something of a safety valve.

Tensions are by no means absent in Catalonia, however. Industrial unrest is chronic, and clashes in the SEAT auto factory in Barcelona have been dealt with harshly by the paramilitary police and stern punitive action taken against workers accused of leadership roles in the disorders. Catalans seem to be living up to their old reputation for worker militance, but not currently to be pressing the issue of separatism.

Balance of Power Politics

Nationally, Franco's policy has always been to prevent any individual or group from gaining power rivaling his own. The Falange, the nationalist movement with fascist trappings that emerged from the civil war as Spain's single political party, seems virtually moribund as a force in the national government. The dominant group today is said to be Opus Dei, an organization of mostly middle- and upper-class Catholic laymen. Spain has no Christian Democratic Party of the sort that attained power in Germany and Italy after the war. Opus fascinates and puzzles foreigners because of the controversy that surrounds it. It is portrayed by its proponents as a society of political moderates with benign social and philanthropic aims. Its critics see it as a conspiracy to maintain the status quo in the interests of the social group it represents.

Opus nearly fell from grace as a result of the so-called Matesa scandal in 1969. This involved fraud on a grand scale in the use of export credits by a Barcelona textile machinery firm. Opus members were implicated, including some high in the government. After keeping everyone in suspense, Franco supported Opus Dei, thus maintaining them in power clearly on his sufferance. Since then, observers say, Opus has shown none of the inclinations toward political reform that it demonstrated earlier.

Opus, however, is credited with providing both the economic planning and the technocrats that created the economic miracle. While actual members of Opus seem to be outnumbered in the cabinet, Lopez Rodo, the energetic planning minister who is strongly identified with Opus, is regarded as de facto prime minister, and the Opus group has had the most experience in running the government machinery.

A theory popular among the opposition is that Opus Dei's main concern is to cling to power when Franco leaves the picture. To do this, the theory goes, it is necessary that Spain maintain sufficient economic momentum to keep inflation in bounds and to buy off the workers by putting consumer goods such as television sets and even automobiles within their reach. The second essential, and what almost everyone agrees is the key to power in post-Franco Spain, is the support of the army.

There seems to be no question that the army is loyal to Franco. Beyond that, the army seems politically impartial, which is not to say nonpolitical. It has no natural ties with the Falange, nor, apparently, with Opus Dei, whose members—mostly businessmen and professionals—it does not find particularly sympatico.

The Spanish army, as reconstituted during and after the civil war, became even more socially isolated and inbred than most armies. Career officers tend not to be drawn from the aristocracy and middle class, as in prewar days. Many officers now, in fact, are sons of noncommissioned officers. Although the army's political center of gravity is well to the Right, the army, like the church, is said to have its conservatives and liberals, and even some radicals. Not much is really known about this, since the military are tight-lipped themselves and hypersensitive about having anything written about them, whether by journalists or academics. There seems to be an awareness that, unless a broader sector of society is reached, there will be difficulties in recruiting new cadres of officers and technicians, and there have been some efforts to establish stronger links with the society. Officers aspiring to service on the general staff must earn an advanced degree from a university. Many military officers hold part-time jobs—often for financial reasons—some as university teachers.

It is said that some officers, particularly in the junior and middle grades, are resentful because their pay and perquisites have not allowed them to keep pace with the general advance in affluence in the society.

There is also said to be some pro-

fessional disgruntlement because, despite American military aid, tight control of the military budget has slowed the outfitting of Spanish forces with sophisticated equipment.

While even harder to establish, there are reports that some officers are thinking about the future and are restive about the army's image as reactionary and repressive. A trial of Basques on charges of terrorism in Burgos in 1970 received wide and critical coverage in the European press. A number of death sentences were handed out, and the point was made that the trials were held before a military rather than a civil court. Reportedly, some officers objected when instructions came down that the army was to conduct the trials, but, naturally, orders were followed. The point is that the army is not monolithic. But politically, the army seems uncommitted except to Franco, which, of course, is how Franco wants it.

In the event of serious unrest in post-Franco Spain, the response to watch would, of course, be that of the army. The army appears to retain its ingrained impatience with university intellectuals and liberal politicians. But probably because of the social origins of many of its officers, the army has a new strain of radicalism and populism of its own mixed up with an older nationalism and puritanism. It is a combination that in other developing countries has produced "colonels' revolutions," and it is probably the tendency to watch. Junta is, after all, a Spanish word.

If the army in Spain is an enigma, it seems widely agreed that the best chance any future government has of keeping the peace lies in maintaining economic momentum. Here some difficulties arise. The virtually unanimous finding by international experts is that Spain is at a point where science and technology can contribute crucially to growth. The situation was analyzed most fully in a 1971 report by the Organization for Economic Cooperation and Development.* The OECD analysis notes that Spain has inherited an essentially literary culture that is resistant to adaptation to science. The university system still conforms to the classic European model, with the professor, called *catredrático*, or holder of a chair, operating independently with a varying number of assistants. A 1965 law prescribed a departmental system, but the degree to which the law has been carried out varies greatly.

Spanish universities remain weak in research and in graduate education, and most research and development (R&D) is carried out in small government research centers. A Higher Council for Scientific Research, established after the civil war, funds most basic research, and applied research for specialized purposes such as agriculture or mining is carried out in a variety of laboratories financed by the govern-

* *Reviews of National Science Policy: Spain* (OECD Publications, 2, rue André-Pascal, Paris 16e. $2.50).

The CEQ Papers: Secrecy Is a Sometime Thing

The President's Council on Environmental Quality last week abruptly clamped a lid of secrecy on some highly critical letters from scientists concerning a major White House study of stream channelization in the United States. Then just as abruptly, the CEQ decided to put the letters back on public view, along with dozens of other comments on the study, after a reporter began inquiring into the matter. The council's unusual vacillations of policy brought accusations from environmentalists of an attempt to cover up criticism, but the council staff claimed it was all the scientists' idea.

The spat arose from $157,000 study the CEQ commissioned the Arthur D. Little company to perform last year on economic, engineering, and environmental aspects of stream and river reconstruction for purposes of flood control and farm drainage. Last March, Little produced a draft report of its findings, and, ever since, the whole project has become something of a political tar baby for the CEQ (*Science*, 26 May).

In the past few months, the CEQ has received a flood of complaints about the study from federal agencies, environmental groups, and state conservation officials, many of whom thought it was gravely biased in favor of continued stream "improvement" projects. (Even an A. D. Little executive conceded privately the report was flawed.)

All of this critical commentary has been open to public inspection at the CEQ offices near the White House. Not the kindest of the criticisms came from the five scientists the CEQ had enlisted as advisers to the study.

Suddenly last week, the scientists' comments, some of them rather pungent, disappeared from the open file. An attorney for a Washington, D.C., public-interest law firm tried to obtain them and was refused.

"A couple of the scientists indicated they didn't want their remarks made public," explained Boyd H. Gibbons, III, the CEQ's staff director, early Thursday afternoon. "We're not sure how to handle this, but it seems unfair to say, 'That's tough,' and release them anyway. We'll have to talk about this some more."

The law firm thought this was a bit peculiar, if not devious, since Gibbons had promised in writing that any and all comments would be available to the public. "Kind of a slimy thing," the lawyer said.

A few phone calls to the scientists soon dispelled elements of the sinister, however. Two of them really had objected, although mildly, to having their remarks released. One didn't know his letter had already been put on display. The other only wanted a few "personal" lines deleted. Obligingly, the CEQ had lifted them all out of the public file.

A third scientist said he didn't care who read his letter, and two others couldn't be reached. One was said to be on a reef in British Honduras.

Late Thursday afternoon, Gibbons said that "we've talked it all over" and that all the letters would be released. "I guess that makes it hard to write a story about how the Administration suppresses information," he mused.

In the end, the residue of the 3-day imbroglio was a small lesson in the genesis of misunderstandings between scientists, government agencies, and an environmental movement with inclinations toward paranoia.—R.G.

ment and, to some extent, by industry through government *patronatos*, or foundations.

Resources for university research actually declined in absolute terms between 1964 and 1967. In the same period, business expenditures on R&D rose from 26 percent of the total in 1964 to 49 percent in 1967. The OECD notes, however, that the 1967 figure is small in comparison to expenditures of business firms in other countries.

Comprehensive figures are not available for recent years, but total expenditures on R&D in the late 1960's were about $60 million. The portion of Spain's gross national product spent on R&D in 1968 was under 0.3 percent and is said to have still been under 1 percent in 1970. The figure for the United States is over 3 percent.

A key criticism in the OECD report is that the ratio between Spain's domestic expenditures on R&D and the amount spent on the purchase of foreign technology was on the order of 1 to 2, with the bill for foreign technology rising from $109 million in 1968, to $133 million in 1969. By comparison, Italy in 1965 spent $204 million for R&D and some $156 million for foreign patents and licenses.

In addition to an unfavorable technological balance of payments, Spain suffers a chronic trade deficit. The effects of this have been counterbalanced by earnings from tourism—some 26.6 million tourists visited Spain last year—and by remittances from Spanish workers abroad. As a consequence, foreign exchange reserves approached $4 billion last year. But the OECD report argues that the reserves have deterred Spain from facing up to the trade deficit. Furthermore, the trade deficit is increasing, while the growth of the net surplus transfers and services is slowing.

OECD Recommendations

The OECD report presses for a science and technology policy directly related to the problems of the balance of trade. It points out that many Spanish firms are too small to compete effectively in foreign markets or to fund productive R & D. The OECD analysts also found that foreign firms settled in Spain often conducted small-scale operations that are designed to sell to the domestic market and make little contribution to exports. Therefore, changes in the structure of industry are called for, with planners concentrating on industry with a potential for exporting.

Spain does have an instrument that is presumably sensitive to government policy. This is the Institut Nacional de Industria (INI), the big state holding company that has controlling interest in about 70 major companies, including Air Iberia and chemical, refining, and steel companies. The INI was established in 1941 to help implement the policy of autarchy. Its companies have a reputation for good management, although there are some exceptions, but INI has not been a notable pacemaker in R&D.

The OECD report acknowledges that developing countries inevitably depend on the import of foreign capital and technology in the early stages of industrialization, but urges that, in the future when investment is being made, the size of a firm and its market and its potential for export be taken into account. The basic rationale is as follows:

> In many other branches of industry, however, financial and industrial units should be regrouped so as to strengthen the structure of the principal firms involved and promote economies of scale, productivity, and capacity for innovation of the principal firms. This is an indispensable condition if applied research is to be systematically developed and less reliance placed on foreign technology.
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> If this argument is accepted, it appears that the *negative or adverse impact of imports of foreign technology* on the present terms and scale *goes well beyond* the simple contribution of the technological payments deficit to the country's general balance of payments deficit. Inversely, this evidently also means that a considerable change in the country's science and technology policy would in a few years have an extremely favourable effect on its balance of payments and that foreign exchange earnings and economies would easily make up for any outlay for developing national R and D.

The logic of the OECD case is irreproachable, but it leaves out complex issues in both internal and external politics. First, the Spanish economy's prospects depend heavily on the evolution of trade relations with the expanding EEC. Nearly 40 percent of Spanish exports now go to countries that are members of EEC, only 15 percent to the United States. Spanish industrialists have been pressing for entry into the EEC, warning that, although Spanish industry would face severe competitive shocks if it entered the Common Market now, the disadvantages of nonmembership will increase progressively and dangerously for Spain.

The EEC is at present essentially an economic union, but the governing assumption is that member countries have working democratic institutions. By Western European standards, Spain lacks a constitution and judicial system guaranteeing civil liberties, representative government, a party system, a free press, free trade unions, and academic freedom in the universities. Spain's entrance under present conditions would be openly opposed by northern member countries, certainly by Belgium and the Netherlands, and presumably by others. Spain, therefore, may face a dilemma that can be expressed in a kind of syllogism. Satisfactory economic development for Spain depends on membership in the EEC. Membership requires political liberalization. Ergo, economic progress involves the risk of political instability.

Under Franco, policy has, in effect, been modernization without extensive liberalization. Franco, as a matter of fact, views Western European liberal doctrine as a prescription for anarchy in Spain and avers that only his own brand of "organic democracy" is workable there.

New Priorities

On the other hand, the Spanish government appears to be adopting the new priorities counseled by the OECD, World Bank, and others. Most notably, this has meant a heavier investment in R&D and a highly ambitious program of education reform. This reform, which is avowedly aimed at "democratizing" education at every level, will be discussed in another article. These actions and the vastly increased contact with Europe through tourism and through the movement of great numbers of Spaniards abroad to work and to study have changed the Spanish outlook and will change it more. Spanish institutions, however, have changed very little, and the Spanish experience for more than a generation has been a poor preparation for Spaniards to "join Europe" politically.

Under Franco, old conflicts—between the regions and Madrid, between rich and poor, between the Red and the Black—have been suppressed, but hardly reconciled. Pessimists feel that, whatever regime emerges after Franco, polarization will occur again. Others insist that the Europeanization process has reached the point where it will be to the interests of all to break the tragic cycle of extreme action and reaction which has been the fate of modern Spain.—JOHN WALSH