THE SPANISH CATCHING-UP PROCESS: GENERAL DETERMINANTS AND CONTRIBUTION OF THE MANUFACTURING INDUSTRY

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ABSTRACT

This paper is devoted to the analysis of the real convergence process between Spain and the EC and the contribution to this process made by the manufacturing industry. The first part places emphasis on the peculiar higher convergence recorded by the Spanish economy in terms of wages and productivity per worker than in terms of income per capita. The very low proportion of employment to population is regarded as the main factor leading to that situation. The available data also point to a clear relationship of both higher employment and lower wages per employee to higher relative income per capita.

The concept of industrial catching-up is introduced and analyzed taking into account the productivity and employment performance in this sector. The poor results recorded in terms of industrial catching-up in Spain highlight the temporary nature of the improvement in the overall real convergence process experienced after the accession to the EC, as this was mainly supported by the expansion of the service sector and coincided with a period of worsening in Spanish competitiveness. The evolution of industrial output shows a certain relationship to the performance of the external balance, which stresses the need to preserve industrial competitiveness in order to prevent the deterioration of the external sector and to make the catching-up process endure.

CONTENTS

1. INTRODUCTION

Following Spanish accession to the EC in 1986 a positive growth differential between Spain and the Community countries was recorded up to 1991, which led to a narrowing in the relative income gap existing between Spain and the EC. The stronger impact of the last recession on the Spanish economy brought this process to a halt in the last two years. The reduction in that income gap continues being, however, the most important medium-term target for Spanish economic policy as it is expected to lead to the improvement in the overall standard of living of the Spanish population.

Moreover, this issue is particularly relevant today as the EC is engaged in a process which should culminate in an Economic and Monetary Union (EMU) and the catching-up countries want this move to EMU to contribute to the real convergence of their economies. Though EMU requirements are already changing the economic framework in which European countries are evolving, the analysis of the factors which have allowed successful catching-up in the past should remain useful to determine which conditions could facilitate continuing real convergence. Some of these conditions are common to the whole economy but others are specific to particular sectors.

Spanish economic growth after the entry into the EC has not been homogeneous across the productive structure: some enterprises have already reached an adequate combination of factors, productivity and labour cost levels, while others have suffered serious competitiveness problems and resisted facing foreign competition. The distinction between tradeable and non-tradeable sectors, traditional and modern activities and the ownership of the domestic companies by foreign or national investors are useful elements in examining how the different sectors or branches have contributed to the overall growth results.

Thus, a sectoral approach to the catching-up process could allow an identification of particular shortcomings which may be relevant for the overall economy. The 'European shock' experienced by the Spanish

economy in the last few years[1] had its strongest impact on Spanish manufacturing industry as this was the sector most open to foreign competition. The nature and size of that shock and the response of industrial firms to adapt themselves to the new conditions appeared as important factors determining whether economic growth (and, hence, the catching-up process) could be sustained in the medium term. With a view to assessing these factors, the performance of the Spanish manufacturing industry in the last decade is analyzed in this paper.

An overall description of the determinants of the real convergence process is given in chapter 2. Catching-up in terms of industrial output is introduced and analyzed in chapter 3. A detailed evaluation of the performance of Spanish manufacturing industry from a domestic point of view is made in chapter 4 while the differences between the manufacturing industry in Spain and in the biggest EC countries are described in chapter 5. Finally, chapter 6 draws the main conclusions.

[1] The main landmarks of this shock are the accession into the EC (1986), the entry of the peseta into the ERM (1989) and the European Single Market (1993). The prospect of EMU being in place before the end of the century also had important effects on markets' expectations in the last few years.

2. AN OVERALL VIEW OF THE CATCHING-UP PROCESS

The catching-up process represents the reduction in the gap between the GDP per capita in one country as compared with other more developed countries. In the European Community this comparison is traditionally made measuring the GDP per capita relative to the EC average. Thus, with stable populations, if one low-income country records a real GDP growth higher than the EC average, a certain progress in the catching-up process is experienced. Spain, together with Ireland, Portugal and Greece, are the four countries with a GDP per capita clearly below the EC average, thus being the so-called 'catching-up countries'.

To permit an adequate comparison, the GDP per capita is adjusted by the different purchasing power of the currencies, thus eliminating the differences in price levels between countries. Through this adjustment, which is made in the EC through the Purchasing Power Standard (PPS) as estimated by Eurostat, the evolution of nominal GDP per capita is made comparable between countries.

2.1. Some arithmetic of catching-up

A decomposition of the GDP per capita in relative terms is made in this section to facilitate the later analysis of the factors contributing to the catching-up process.

Let Y be the GDP at current prices in Spain measured in PPS terms, P the total population, N the level of employment and A the labour force. Then:

$$Y/P = (Y/N) * (N/P) = (Y/N) * (N/A) * (A/P) \qquad (1)$$

The GDP per capita in Spain (Y/P) is thus equal to the labour productivity (Y/N) multiplied by the proportion represented by employment in relation to total population (N/P). This latter magnitude can be further decomposed into the product of two ratios: the proportion of employment to labour force (N/A) and the proportion of labour force to

total population (A/P) which will be called hereafter the participation rate[2].

The same variables marked with an asterisk will denote the magnitudes for the EC average. The relative position of Spain in the catching-up process is thus defined as:

$$(Y/P)/(Y^*/P^*) \qquad (2)$$

which can be split into:

$$(Y/P)/(Y^*/P^*) = [(Y/N)/(Y^*/N^*)] * [(N/P)/(N^*/P^*)] =$$

$$= [(Y/N)/(Y^*/N^*)] * [(N/A)/(N^*/A^*)] * [(A/P)/(A^*/P^*)] \qquad (3)$$

If relative magnitudes are denoted with an 'r':

$$(Y/P)^r = (Y/N)^r * (N/P)^r = (Y/N)^r * (N/A)^r * (A/P)^r \qquad (4)$$

Thus, the real convergence between Spain and the EC, measured by the Spanish GDP per capita as compared to the EC average, can be obtained as the product of the relative labour productivity and the relative proportion of employment to population. $(N/P)^r$ will be called hereafter relative employment, $(N/A)^r$ relative occupation rate and $(A/P)^r$ will be the relative participation rate.

2.2. A brief historical review of the catching-up process in Spain

In the forties, after the Civil War, Spain experienced an autarchic development based on an extended system of regulation and protectionism, which allowed national enterprises to grow without being much constrained by external competition. Despite these weak foundations, the implementation of a stabilization plan in 1959, which

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[2] The participation rate is normally defined as the labour force divided by the population over sixteen years. For a matter of simplicity, we use that term here for a slightly different concept.

introduced some liberalization in foreign trade, and the introduction of development plans led Spain to record in the sixties an economic expansion stronger than in other western countries.

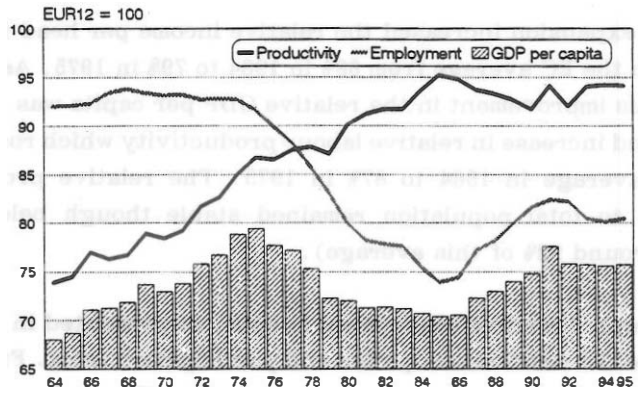
This expansion increased the relative income per head in Spain as compared to the EC average from 68% in 1964 to 79% in 1975. As shown by graph 1, this improvement in the relative GDP per capita was mainly due to a sustained increase in relative labour productivity which rose from 74% of the EC average in 1964 to 87% in 1975. The relative proportion of employment to total population remained stable though below the EC average (around 92% of this average).

In graph 2 relative employment is split, as presented in the former section, into the relative occupation and participation rates. From 1964 to 1975 the occupation rate was very close to the EC average while the participation rate was seven points below it. The similar occupation rates respond to the full-employment situation recorded by most European countries before the first oil crisis. In the Spanish case, this low unemployment was favoured by the large flow of emigration towards high-income countries which lowered the Spanish labour force. This phenomenon, together with the traditional limited involvement of women in the Spanish labour force as compared to other European countries, explained the lower relative participation rate in Spain.

The two oil shocks of the seventies and the early eighties revealed all the rigidities present in the Spanish economy. In this period the economy lacked the adequate responsiveness to the new conditions, partly due to the political change that was taking place, leading to a rapid growth of unemployment and inflation. Productivity per worker continued increasing significantly in relative terms (from 87% of the EC average in 1975 to 95% in 1985), although this trend was certainly linked to the sharp decline in employment. In this period relative employment fell 18 points to 74%, which more than offset the relative improvement in labour productivity and reduced the income per capita to 70% of the EC average in 1985. As can be seen in graph 2, though the occupation rate declined steeply after 1977, the marked fall in the participation rate, provoked by

GRAPH 1

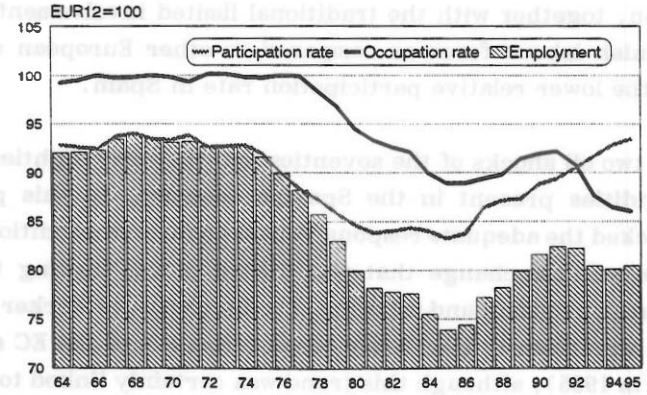
DETERMINANTS OF THE CATCHING-UP PROCESS



Source: Eurostat and Commission services

GRAPH 2

EMPLOYMENT AND ITS COMPONENTS



Source: Commission services

the disincentives to join the labour market in the recession, prevented an even more dramatic increase in unemployment.

In the eighties Spanish economic policy was designed under a new strategy, which proposed a reinforcement of the opening-up to external competition and a full-range liberalization and deregulation of the economy. The accession into the European Community, which took place in 1986, represented the most decisive step in this direction. In the second half of the eighties Spain recorded a strong economic recovery, with activity growing more rapidly than in the rest of the EC. As a result, income per capita rose to 78% of the EC average in 1991[3]. This process was due to a significant increase in relative employment, mirrored in an improvement in the relative occupation and participation rates, while relative labour productivity hovered between 90-95% of the EC average. This latter figure might suggest a fairly similar capital intensity ratio in the Spanish economy as compared to the EC average.

Economic recession was again clearly felt in Spain in 1992 and 1993. The relative improvement in labour productivity was not able to compensate the steep fall in relative employment and the GDP per capita declined from its 1991 peak[4]. Increases in relative productivity (based on the strong capital widening of the Spanish economy in the eighties) do not appear to suffice to sustain the real convergence process in the medium term if relative employment does not increase.

2.3. Differences between population and employment-based indicators

As observed above, the catching-up picture is very different depending on whether population or employment-based indicators are considered. In particular, Spanish wages and productivity levels per

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[3] In all the calculations presented here, East Germany has not been taken into account to obtain the EC average. If it were, the relative income per head in Spain as compared to the EC average would increase by some two percentage points (e.g. to 80% in 1991).

[4] The figures for 1994 and 1995 are based on the Spring Economic Forecasts of the European Commission.

worker are much closer to the EC average than the GDP per capita, as can be observed in table 1 and graph 3. On the one hand, the GDP per worker and the average compensation per wage earner were both around 95% of the EC average in PPS terms in 1993. On the other hand, in that year the GDP per capita was 76% of the EC average. This difference was even larger in 1985, when the GDP per worker and the compensation per employee were around 95% of the EC average while the GDP per capita was 25 points lower (70%)[5].

As suggested in the last section, this sharp contrast is mainly due to the low proportion of employment to total population in Spain as compared to the EC countries. In 1993 only 32% of the Spanish population worked as compared to 40% in the Community. In 1985 the difference had been larger: 29% in Spain as compared to 39% for the EC average[6].

As observed in graph 1, in the last twenty years relative labour productivity only rose when relative employment declined. This negative correlation between productivity and employment appears more clearly if domestic variables are examined. Thus, in graph 4, the changes in Spanish labour productivity and employment recorded since 1981 show that, on average, half of the reduction in employment is absorbed by a higher labour productivity. Given the hypothesis of diminishing returns, the lower short-term flexibility to adapt capital investment to output changes as compared to labour force leads to a decline (rise) in labour

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[5] Among the catching-up countries, Portugal differs most diametrically from the Spanish case: while its labour productivity is around 60% of the EC average, Portuguese relative employment is around the Community average.

[6] The striking differences between the productivity, wage and employment levels in Spain could be partially explained by the existence of a higher share of underground economy in Spain as compared to other European countries. Given that these activities are concentrated on traditional sectors with a low specialization, the actual labour productivity and wage per head of the overall economy would be probably lower than those calculated here and the relative employment somewhat higher. The inclusion of the underground activities would also imply a certain upward revision in the overall GDP per capita figures.

TABLE 1

DIFFERENT ASPECTS OF THE CATCHING-UP PROCESS IN SPAIN

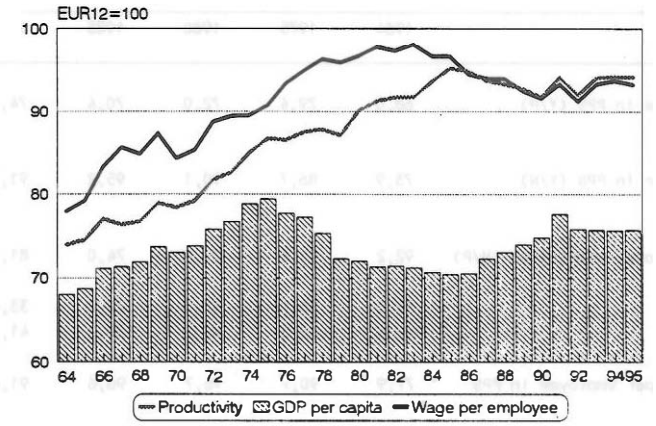
EUR12=100

	1964	1975	1980	1985	1990	1993
1. GDP per capita in PPS (Y/P)	68,0	79,4	72,0	70,4	74,8	75,7
2. GDP per worker in PPS (Y/N)	73,9	86,7	90,1	95,2	91,7	94,0
3. Occupied to total population (N/P)	92,2	91,6	79,9	74,0	81,8	80,3
Spain	39,1	36,9	32,2	29,0	33,6	31,8
EUR 12	42,4	40,3	40,3	39,2	41,1	39,6
4. Compensation per employee in PPS	77,9	90,7	96,7	96,6	91,6	93,3
MEMORANDUM ITEM						
Difference between ECU rate & PPS	53,4	30,3	23,6	29,3	9,8	16,6

Source: Eurostat and Commission services.

GRAPH 3

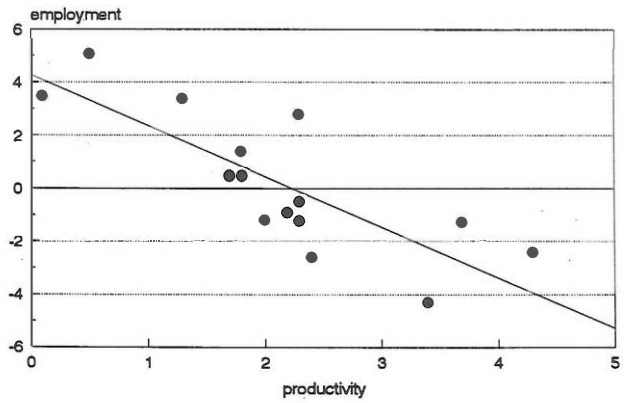
REAL CONVERGENCE: POPULATION AND EMPLOYMENT-BASED INDICATORS



Source: Commission services

GRAPH 4

LABOUR PRODUCTIVITY AND EMPLOYMENT IN SPAIN (1981-1995) (annual % changes)



Source: Eurostat and Commission services

productivity in the buoyant (recessionary) phase of the cycle. However, the more volatile changes recorded by Spanish labour productivity as compared to other European countries might point to a higher sensitivity of Spanish employment to changes in the economic cycle.

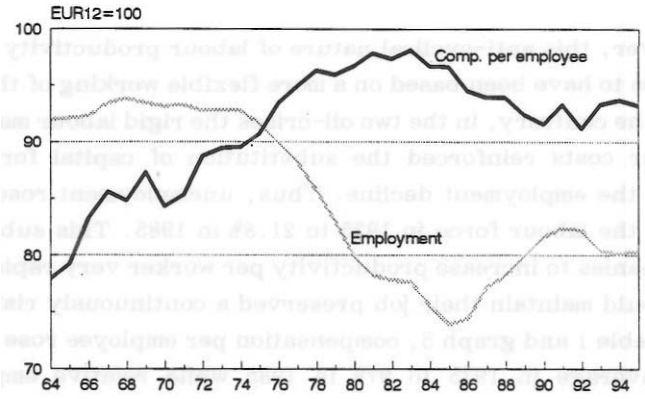
However, this anti-cyclical nature of labour productivity in Spain does not seem to have been based on a more flexible working of the labour market. On the contrary, in the two oil-crises the rigid labour market and sticky labour costs reinforced the substitution of capital for labour, accelerating the employment decline. Thus, unemployment rose steeply from 4.5% of the labour force in 1975 to 21.8% in 1985. This substitution allowed companies to increase productivity per worker very rapidly while those who could maintain their job preserved a continuously rising wage (as seen in table 1 and graph 5, compensation per employee rose from 91% of the EC average in 1975 to 97% in 1985 while relative employment plunged).

In the expansionary phase of the late eighties employment creation was enhanced by the introduction in 1985 of new subsidized contracts (mainly temporary) which further allowed some reduction in wage pressures: the proportion of employment to population thus grew from 74% of the EC average in 1985 to 82% in 1990, while compensation per employee declined to 92% of the EC average.

These employment, wage and productivity indicators offer the picture of an economy with a comparatively small labour force base which has been further hit in the recessionary phases by a rigid labour market. As wages do not show adequate flexibility, firms tend to reduce unit labour costs shedding labour. Thus, the workers who can maintain their posts record a relatively high productivity and receive a comparatively high wage, measured in terms of purchasing power. The introduction of temporary contracts in the mid-eighties was only a short-lived response to the need for higher flexibility in the labour market: it allowed an expansion of employment in the upturn but this was completely reversed in the early nineties as that reform introduced new rigidities in the working of the labour market, giving more power to the permanent

GRAPH 5

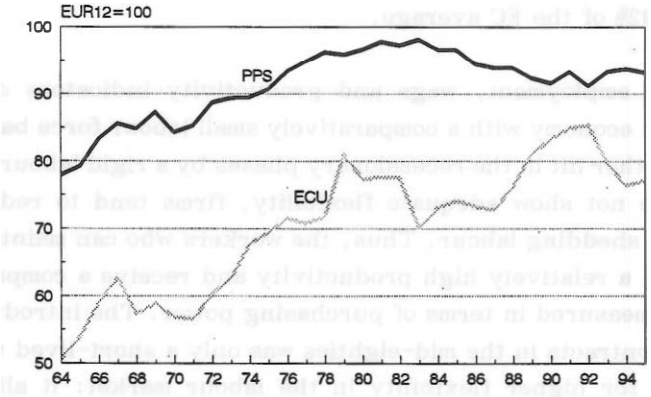
EMPLOYMENT AND COMPENSATION PER EMPLOYEE



Source: Commission services

GRAPH 6

COMPENSATION PER EMPLOYEE IN PPS AND ECU TERMS



Source: Commission services

workers, and could not preserve competitiveness (see Bentolila and Dolado, 1993).

As already noted above, the catching-up process is driven by the economic growth differential, if relative population is assumed to remain constant. However, this process appears to be more sustainable if it allows for an expansion of employment, even at the cost of a reduction in relative productivity, than vice versa[7].

On the one hand, it is obvious that the capitalization of the Spanish economy in the last decade, which allowed high productivity gains, contributed to the catching-up process through an upgrading of production, which ultimately resulted in a better remuneration of the factors employed, i.e. higher real wages and profit margins.

Conversely, the relative labour productivity in Spain (i.e. the capital intensity per worker) could be considered as excessive for a country with such a high unemployment rate. In this respect, the impediments to a more flexible use of labour resources, in terms of legal and cost barriers, could have endangered the prospects of the labour-intensive enterprises and promoted the substitution of capital for labour; excessive labour cost increases could have demanded high productivity levels, producing negative effects on employment. The resulting factor combination would thus have little bearing on the abundant Spanish labour force and would be close to that existing in most industrialized countries. In this respect, the activity of the transnational companies has surely represented a factor of homogenization of the Spanish productive structure in the last few years.

A greater emphasis on employment in the run-up to real convergence seems appropriate for a number of reasons:

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[7] This is due to the fact that the catching-up in Spain records a pro-cyclical bias: the Spanish GDP per capita grew at a higher rate than in the EC in the expansionary phases of the sixties and the second half of the eighties whereas it declined comparatively between 1975 and 1985 and in the recession in the early nineties.

first, given that relative labour productivity is close to EC levels while employment is very far from it, it seems reasonable to give priority to the increase in relative employment though it could lead in the short term to a decline in relative productivity. Wage moderation appears to be a crucial element to foster labour demand. As shown by graph 3, since 1975 higher compensation per employee (linked to progress in relative productivity) has not been positively correlated with an increase in the relative GDP per capita but just the opposite. In fact, the increases (reductions) in the compensation per employee led to a worsening (improvement) in the catching-up process.

second, a higher employment content of economic growth would allow for a better income distribution, smaller output fluctuations and reduce the burden of social expenditure on budgetary policy and social unrest.

third, the data available show that in the last twenty years progress in the catching-up process only took place when relative employment increased; by contrast, the increase in relative productivity was linked to the worsening in the real convergence process.

Thus, it seems reasonable to attribute the prominent role in the real convergence process to the creation of employment. As graph 5 suggests, labour cost moderation would foster employment and prevent the tendency to reap productivity gains and reduce unit labour costs by means of shedding labour.

Summing up, the waste of labour resources appears as the most important factor explaining Spanish backwardness. The transition from a protected economy operating at low productivity levels to a deregulated one could be viewed as inevitably requiring a far-reaching adjustment in employment, such as the one that actually took place from 1975 to 1985. After that period, labour productivity was close to the levels recorded by Spain's main trade partners though relative employment was much lower. Nowadays, the point is to identify the best conditions to allow for a

permanent expansion of production and its employment content. On the one hand, development of the capital and technological base is needed to sustain output growth and to prevent productivity gains from emerging solely from labour shedding. On the other hand, if the relative prices of productive factors mirrored to a larger extent the current labour market situation in Spain, economic growth would have a higher employment content than at present. The parallel development of labour productivity and employment would thus represent the best scenario for enduring progress in the real convergence process.

2.4. The Spanish competitive position

The competitiveness of the Spanish economy has traditionally been based on the prevailing lower level of labour costs and prices. Generally speaking, this implies that wages providing the same purchasing power are lower in Spain than in the EC at the current exchange rates; the peseta exchange rate is undervalued as compared to its purchasing power. Thus, in 1993, compensation per employee in Spain was 93% of the EC average in PPS terms, though at the current exchange rates (in ECU terms), which are those to be considered in assessing competitiveness, it was below 80% of that average (see graph 6). Obviously, lower total costs per unit of output, and thus higher competitiveness, are more likely to create an effective competitive advantage in the labour-intensive sectors while in others there could be other factors (such as human capital, infrastructure, financial costs, etc.) which could offset that labour cost advantage.

The nominal advantage due to the lower price level could be proxied by the difference between the exchange rate of the peseta and its value in terms of PPS (see Memorandum Item in table 1). Changes in that difference correspond to the variations in the real effective exchange rate: higher inflation as compared to the EC and/or the appreciation of the peseta narrow the difference between the exchange rate and the PPS magnitudes, weakening the nominal competitive advantage.

Given that Spanish productivity is close to the EC average, this nominal advantage also leads to lower relative unit labour costs in the

Spanish economy (see graph 7). This advantage, however, does not automatically lead to a higher competitiveness of Spanish output, even though only price considerations are taken into account. As concerns prices, labour is not the only productive factor; capital endowment, infrastructure and geographical situation also play a major role in determining final prices. On the other hand, competitiveness is also influenced by non-price considerations, such as quality or design, which depend on the technological content of output and manpower skills.

The real convergence process might lead to a reduction in the nominal advantage of the Spanish economy if real wages increase more than abroad. However, to make this process durable wages should catch up slowly and in parallel with the improvement in the other non-labour factors. Wage pressures, if not based on productivity gains, discourage investment and employment, bring to a halt the catching-up process and generate internal and external imbalances (inflation and a deficit on current account). Finally, these imbalances often require a painful process of economic adjustment to restore the macroeconomic equilibria.

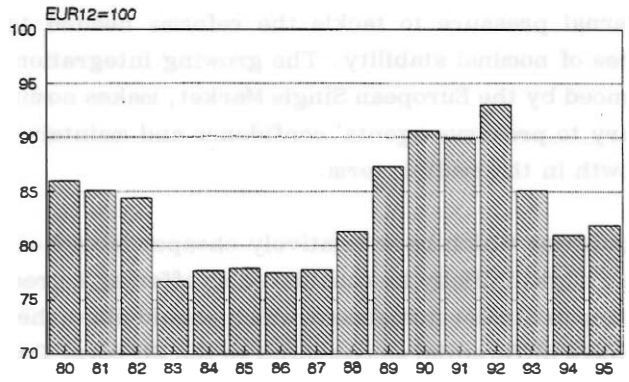
A process of this nature took place in Spain in the second half of the eighties when higher price and wage inflation, together with the strength of the peseta, led to an increase in the labour costs per worker as compared to the EC countries, measured in a common currency, which did not run in parallel with a similar improvement in real productivity. The Spanish nominal advantage in terms of unit labour costs declined from 22 points in 1987 to 7 points in 1992 (see graph 7). The continuous loss of competitiveness recorded since 1987 contributes to explain the large external deficit and the strong pressures against the peseta which finally led to its devaluation in 1992 and 1993. This depreciation stopped the worsening in relative unit labour costs and the external balance though a more permanent effect on competitiveness will only take place if prices and wages moderate significantly.

2.5. Prospects for the catching-up process

The perspective of an Economic and Monetary Union (EMU) in Europe towards the end of the nineties is regarded by the Spanish

GRAPH 7

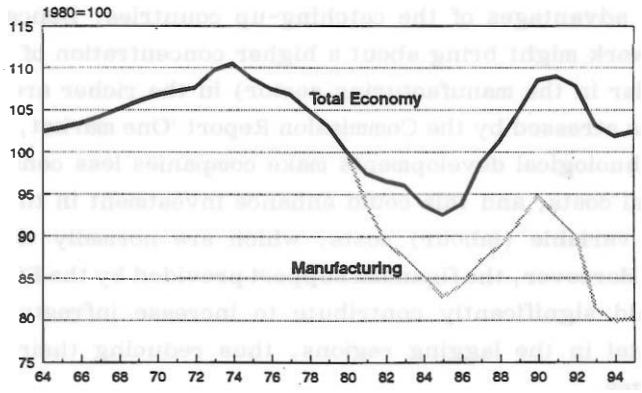
RELATIVE UNIT LABOUR COSTS IN SPAIN



Output is measured in PPS terms and labour costs in ECU terms
Source: Commission services

GRAPH 8

EMPLOYMENT IN SPAIN



Source: Eurostat and Commission services

authorities as an important contribution to stimulate the catching-up process in the medium term. A stable nominal framework, it is argued, such as that required by the Maastricht criteria, is essential to attain a sustained economic growth. In this sense, the EMU process exerts positive external pressure to tackle the reforms needed to achieve a further degree of nominal stability. The growing integration in the EC, further enhanced by the European Single Market, makes nominal stability most necessary to preserve agents' confidence and maintain a sustained economic growth in the medium term.

The countries which have relatively cheaper labour costs and are less developed might initially be considered as offering a greater variety of opportunities to attract investment which should allow them to record a positive growth differential as compared to the EC core. On theoretical grounds, however, the effect of the single market and EMU on the economic growth of the catching-up countries is controversial. Some authors, such as Krugman and Venables (1990) and De la Dehesa and Krugman (1992), have stressed the likely increase in regional divergence in the EC in the wake of EMU. The removal of trade barriers would allow the transnational firms to sell their goods in any peripheral country without the need to produce there. Moreover, the better human capital, infrastructure and location enjoyed by the core countries could offset the labour cost advantages of the catching-up countries. Henceforth, the EMU framework might bring about a higher concentration of production (in particular in the manufacturing sector) in the richer areas. On the contrary, as stressed by the Commission Report 'One market, one money' (1990), technological developments make companies less constrained by geographical costs, and this could enhance investment in those regions with lower variable (labour) costs, which are normally those in the periphery. Moreover, the financial support provided by the EC structural funds should significantly contribute to increase infrastructure and human capital in the lagging regions, thus reducing their structural disadvantages.

The decentralization of production does not only depend on the labour cost advantages offered by the catching-up countries but also on other features which allow foreign companies to shift their productive

structure at a profit. As shown by Bajo and Torres (1992), the huge flow of foreign direct investment attracted by Spain in the eighties was not only driven by the relatively cheaper Spanish labour costs but by the size of the Spanish market and the economic growth expectations. Other factors, such as the adequate training and formation of the labour force, appeared to be more important than the level of labour costs.

In short, to ensure the economic growth differential with the EC average, which is needed to progress in the real convergence process, headway in two fields seems to be essential. Firstly, the lower level of labour costs should be preserved in order to sustain the competitiveness of the domestic sectors and contribute to increase the too-low level of relative employment. As stressed by Krugman and Venables (1990), the lower the flexibility in relative wages between the peripheral regions and the centre, the stronger the tendency to concentrate production in the centre. Secondly, non-wage competitiveness features (such as more flexible markets, improvement of infrastructure and human capital), which increase productivity, should be enhanced to make Spain more attractive as a place to establish industries[8].

2.6. A sectoral outlook

From 1980 to 1990 total employment rose by 8.5% in Spain, as it declined by 7.5% from 1980 to 1985 and soared by 17% in the second half of the eighties (see graph 8). However, the 1992-93 recession made the Spanish economy lose around one third of the employment created in the previous upturn. Employment in the eighties was mainly created in the service sector, typically the most labour intensive sector and that with lowest productivity. Employment in services increased by 30% in the eighties, boosted mainly by general government employment which rose by 45%. By contrast, employment in agriculture declined by 34% while in industry it fell slightly. The composition of value added and employment by sector is shown in graphs 9 and 10.

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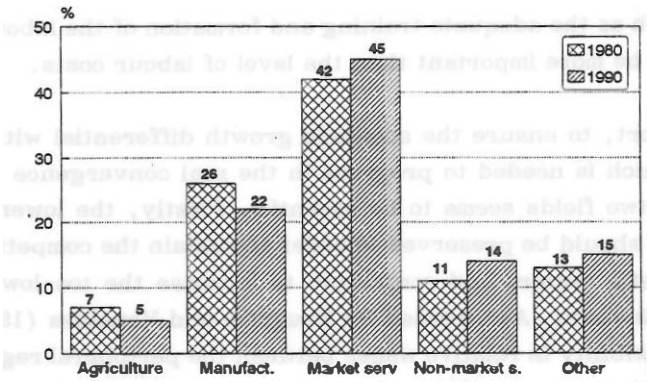
[8] As Sapir (1990) stressed: 'being peripheral is not irreversible'.

GRAPH 9

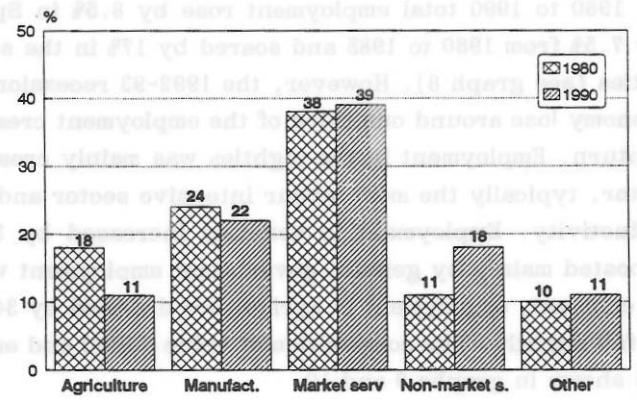
COMPOSITION OF VALUE ADDED BY SECTORS



Source: National accounts and Commission services

GRAPH 10

COMPOSITION OF EMPLOYMENT BY SECTORS



Source: National accounts and Commission services

This shift of resources from agriculture to services, while labour requirements in industry gradually declined, has been a feature common to most western countries in the last few decades. The relatively larger and less productive agricultural sector and the decentralization process which took place in the public sector led Spain to experience further important changes in the proportion of employment by sector in the eighties.

The service sector contributed only modestly to productivity expansion but reaped a good amount of the labour cost increase. Raymond (1992) showed that, from 1970 to 1990, productivity in the industrial sector increased by 50% more than in services, while the relative prices of industrial goods against services halved in the same period. The different performance of productivity and prices allowed labour costs per employee to increase at very similar rates in both sectors in the last two decades, though in the manufacturing industry in some periods it was at the cost of cutting the profit margin. On the one hand, the higher productivity recorded in the industrial sector was offset by the lesser ability to increase prices due to foreign competition; on the other hand, the service sector could compensate its lower productivity with higher freedom to fix prices as a significant share of services were sheltered from external, and even domestic, competition. Wage increases thus appeared as scarcely dependent on productivity gains by sector.

3. THE CATCHING-UP PROCESS IN THE MANUFACTURING INDUSTRY

In addition to the traditional analysis of the catching-up process (linked to the relative levels of GDP per capita) presented above, a sectoral approach to this process is also made here. Thus, in terms of the manufacturing industry the catching-up could be defined as the increase in the Spanish industrial value added per capita as compared to the EC average[9]. As previously with the overall real convergence process, this manufacturing value added per capita may be split into the productivity per worker and the proportion of manufacturing employment to total population.

As observed in graph 11, there is a big difference between the productivity level, which is around the EC average throughout the whole period[10], and relative employment, which is below 75% of the EC average. If compared with the overall catching-up process (see graph 12), four periods may be identified in the last decade: in the first half of the eighties real convergence ran at similar rates for the total economy and the manufacturing sector; from 1985 to 1987 the industrial sector contributed significantly to the overall catching-up process as relative productivity and employment increased; thirdly, from 1988 to 1992 industrial real convergence stagnated whereas catching-up for the total economy continued its upward trend; and finally, the depreciation of the peseta and the recession redressed the share of industrial production in total output.

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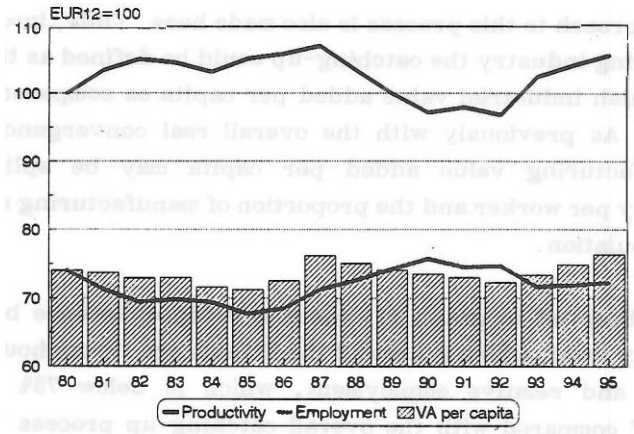
[9] Industrial data from Greece and Ireland were not available. Thus, in all the calculations presented here, the EC average has been constructed without these two countries.

[10] The comparison in industrial productivity has been made adjusting the 1980 national manufacturing value added by the PPS in that year and, for the rest of the period, applying to the 1980 level the changes in the value added per worker at constant prices. If the base year were different, the level of relative productivity in the manufacturing industry would also be different. Therefore, the following analysis should only be considered as a general approach which tries to show the main tendencies in the manufacturing industry as compared to the total economy.

GRAPH 11

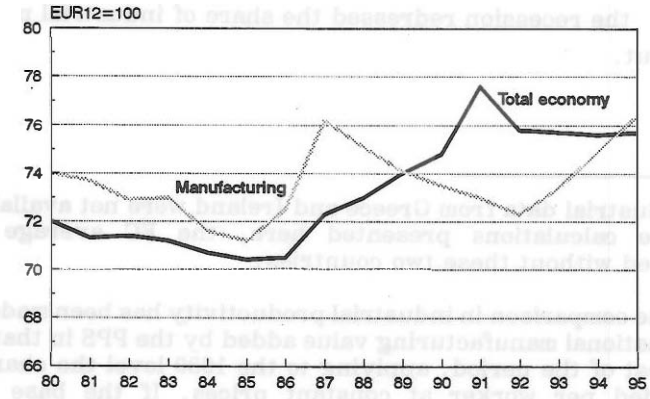
THE CATCHING-UP PROCESS IN MANUFACTURING



Source: Eurostat and Commission services

GRAPH 12

THE CATCHING-UP PROCESS IN MANUFACTURING AND TOTAL ECONOMY



Source: Eurostat and Commission services

As observed in graph 13, the ratio of manufacturing employment to population is below the ratio recorded for total employment, which is a signal of the smaller industrial base in Spain. However, though still far from Community levels, the expansion in Spanish employment in the last few years has been relatively more concentrated in manufacturing, as compared to the EC (see graph 14). In any case, the proportion of manufacturing employment to total employment in Spain has followed the same structural downward tendency observed in the other EC countries (see graph 15).

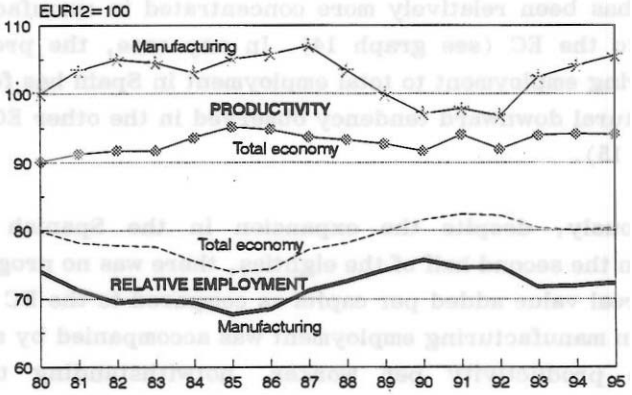
Curiously, despite the expansion in the Spanish industrial structure in the second half of the eighties, there was no progress in the industrial real value added per capita as compared to the EC countries. The boost in manufacturing employment was accompanied by a reduction in relative productivity per worker, notwithstanding the strong investment process which took place in that period. Thus, it seems that a large productive capacity was created, in expectation of a sustained growth in domestic and foreign demand. In the 1992-1993 recessionary phase, that productive capacity became excessive making it possible to reap high productivity gains by shedding labour.

The nominal competitive advantage in unit labour costs in the Spanish manufacturing sector is higher than that calculated for the economy as a whole (see section 2.4). While productivity per worker was higher in industry than in the rest of the economy, the relative compensation per employee in PPS terms remained clearly below the figures for the whole economy (see graph 16). Moreover, the difference between the relative compensation per employee in industry and the whole economy doubled from 6 percentage points in the early eighties to more than 12 points in 1993. This lower compensation per employee in Spanish industry does not reflect a domestic differentiation of labour costs in Spain but mainly a relatively higher level of industrial wages in the EC.

The Spanish manufacturing industry is thus characterized by a combination of a high relative productivity and lower labour costs per

GRAPH 13

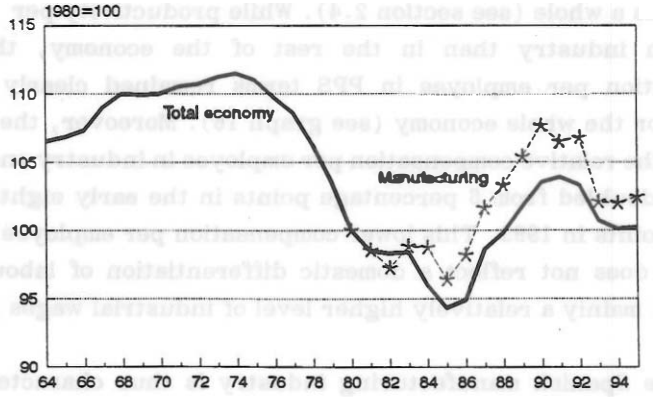
DETERMINANTS OF THE CATCHING-UP PROCESS BY SECTORS



Source: Commission services

GRAPH 14

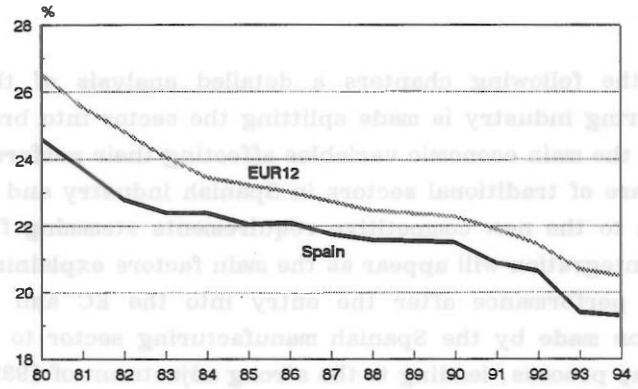
EMPLOYMENT PERFORMANCE IN SPAIN AS COMPARED TO EUR12



Source: Eurostat and Commission services

GRAPH 15

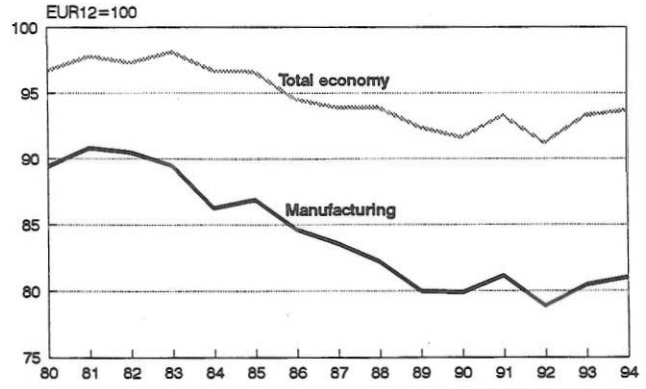
SHARE OF MANUFACTURING IN TOTAL EMPLOYMENT



Source: Eurostat and Commission services

GRAPH 16

COMPENSATION PER EMPLOYEE



Source: Eurostat and Commission services

employee which, however, coexists with a smaller employment base[11]. As commented above, the unit labour cost advantage is not a sufficient condition to expect an extension of industrial activities and employment; a strengthening of the structural conditions leading to an increase in investment also seems essential.

In the following chapters a detailed analysis of the Spanish manufacturing industry is made splitting the sector into branches and examining the main economic variables affecting their performance. The higher share of traditional sectors in Spanish industry and the lack of adaptation to the new competitive requirements stemming from a high economic integration will appear as the main factors explaining the poor industrial performance after the entry into the EC and the scarce contribution made by the Spanish manufacturing sector to the overall catching-up process, leading to the strong adjustment of 1992 and 1993.

[11] As earlier seen, productivity and employment performances are not independent. To a certain extent, high labour productivity in Spanish manufacturing industry is the result of widespread labour shedding in traditional sectors.

4. THE DOMESTIC PERFORMANCE OF THE MANUFACTURING INDUSTRY

4.1. Methodology

The data on the manufacturing industry analyzed here are from the national accounts according to the NACE-CLIO R-25 classification which considers 13 non-energy industrial activities (see annex 1). These branches are regrouped by EUROSTAT attending to the growth of demand in each sector. Thus, according to the real growth of domestic demand for these manufacturing branches in the nine biggest OECD countries in the ten years from 1972 to 1982, those 13 branches are split into three groups: strong, medium and weak demand branches. More updated sources, different from national accounts, on industrial prices or on labour costs have also been analyzed.

Apparent labour productivity has been obtained by reference to total employment and not to wage earners to prevent spurious composition changes between self-employed and employees from modifying productivity levels. Labour costs per worker include wages and social security contributions.

At the time this paper was prepared, the latest data available on these variables with the required detail by branches for Spain referred to 1990. More recent information has also been used, though the link with previous data should be made cautiously. There follows a static analysis of the situation of Spanish manufacturing industry in 1990 and an evaluation of the changes recorded from 1980 to 1993.

4.2. Static analysis

The levels of productivity, labour costs per employee and the share of labour costs in value added are presented in table 2 divided into the three demand groups (the complete data for all the industrial branches are included in annex 2). These data show a positive correlation between productivity and labour costs per worker (see also graph 17). Those branches with productivity above the average recorded at the same time

TABLE 2

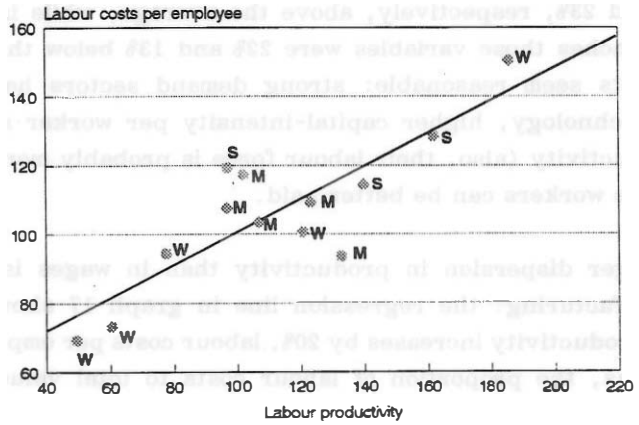
THE SPANISH MANUFACTURING SECTOR

	TOTAL	STRONG	MEDIUM	LOW
1990 average manufacturing=100				
Value added per head	100.0	126.6	116.1	78.4
Compensation per employee	100.0	122.7	104.9	87.3
Compensation per employee/value added (%)	63.8	61.8	57.6	71.0
Idem average manuf.=100	100.0	96.9	90.4	111.4
Annual average growth rates				
Real value added 1985/80	0.6	4.6	1.4	-1.8
1990/85	3.9	5.2	3.8	3.2
Employment 1985/80	-2.6	-0.7	-2.5	-3.6
1990/85	2.7	3.8	3.2	1.5
Labour productivity 1985/80	3.3	5.3	4.1	1.8
1990/85	1.2	1.3	0.5	1.6
Compensation per employee				
1985/80	12.7	12.9	13.0	12.4
1990/85	7.1	7.1	6.9	7.3
Industrial prices				
1985/80	11.7	11.5	12.1	11.7
1990/85	2.9	1.8	3.8	3.1
Real unit labour costs (ULC deflated by industrial prices)				
1985/80	-2.3	-3.6	-3.1	-1.1
1990/85.	2.9	3.9	2.6	2.4

Source: National accounts and Commission Services. For 1990, labour cost increases are proxied by the wage survey (ESA).

GRAPH 17

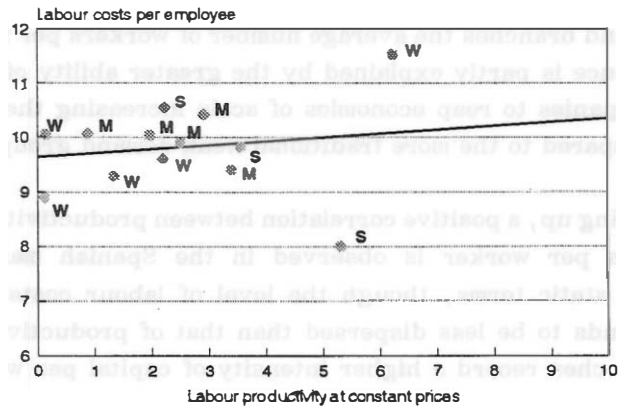
PRODUCTIVITY AND LABOUR COSTS BY BRANCHES 1990 (Industrial average=100)



S, M and W de note the strong, medium and weak demand branches.
Source: Eurostat and Commissi on services

GRAPH 18

CHANGES IN PRODUCTIVITY AND LABOUR COSTS PER EMPLOYEE (1980-1990) BY BRANCHES (a)



(a) Average of the annual growth rates,
S, M, and W idem as in graph 17.
Source: Eurostat and Commission services

higher-than-average labour costs per head, and vice-versa, with only two exceptions. It is also observed that the stronger the demand the higher the level of productivity and labour costs of the branch: productivity and labour costs per employee in strong demand branches were 27% and 23%, respectively, above the average, while in the weak demand branches those variables were 22% and 13% below the average. These results seem reasonable: strong demand sectors have a more advanced technology, higher capital-intensity per worker and higher labour productivity (also, their labour force is probably more skilled). Hence, these workers can be better paid.

A larger dispersion in productivity than in wages is observed within manufacturing: the regression line in graph 17 shows that on average if productivity increases by 20%, labour costs per employee do so by 10%. Thus, the proportion of labour costs to total value added is higher in the weak demand branches: 70% against some 60% in strong and medium demand branches.

A higher share of labour costs in total value added in weak productivity branches is a logical result as these are relatively labour-intensive activities. Further, there is a close relationship between the size of firms and the demand group to which they belong as pointed out by Martin (1992). Thus, in 1985 the companies included in the weak demand group employed on average 11 workers while, in contrast, in the strong demand branches the average number of workers per firm was 45. This difference is partly explained by the greater ability of the strong demand companies to reap economies of scale increasing the size of the plant as compared to the more traditional weak demand group.

Summing up, a positive correlation between productivity levels and labour costs per worker is observed in the Spanish manufacturing industry in static terms, though the level of labour costs across the branches tends to be less dispersed than that of productivity. Strong demand branches record a higher intensity of capital per worker while labour costs represent a lower portion of total value added. Conversely, the smaller size of the average firm in the weak demand group is reflected in a lower capital content and higher unit labour costs.

4.3. Dynamic analysis

4.3.1. Overall evolution from 1980 to 1993

From 1980 to 1990 employment in manufacturing industry (as provided by the national accounts) levelled off while both real output and productivity rose by 25% in cumulated terms. Labour costs per employee grew much faster than industrial prices (156% as compared to 101%). All these figures were, however, the result of differing trends in the manufacturing industry in the last decade. Finally, in the early nineties the recession hit Spanish industry with particular virulence. Thus, three periods can be identified in relation to some basic features: the continuation of the industrial adjustment which had begun in the seventies (from 1980 to 1985); the opening-up of the Spanish economy after the entry into the EC together with the expansionary cycle (from 1986 to 1990); and the gradual deceleration in economic growth (since 1990).

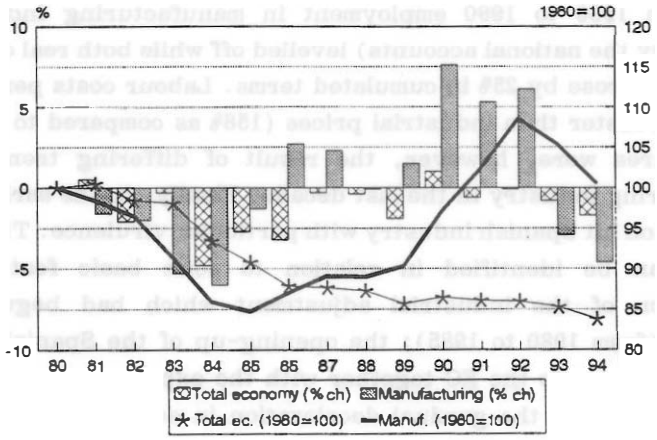
a) 1980-1985

In this period high productivity gains were achieved through labour shedding while labour costs and prices were still on an expansionary trend. Likewise, employment in manufacturing industry declined by 2.6% annually, which enabled productivity to expand by 3.3% (see table 2). Labour costs per employee and industrial prices grew at an annual rate of around 12%, thus allowing real unit labour costs to be reduced at an annual rate of 2.3% (see graph 19).

The stagnation of domestic demand and the recovery of competitiveness through the devaluation of the peseta in 1982 contributed to boost the exports of manufactures which increased in real terms at an annual rate of 7.5% in the first half of the eighties, while imports rose by only 3.6%. This evolution led to an increase in the degree of openness of the manufacturing industry, measured as the sum of exports and imports of industrial goods as a percentage of GDP, from 13.3% in 1980 to 18.5% in 1985.

GRAPH 19

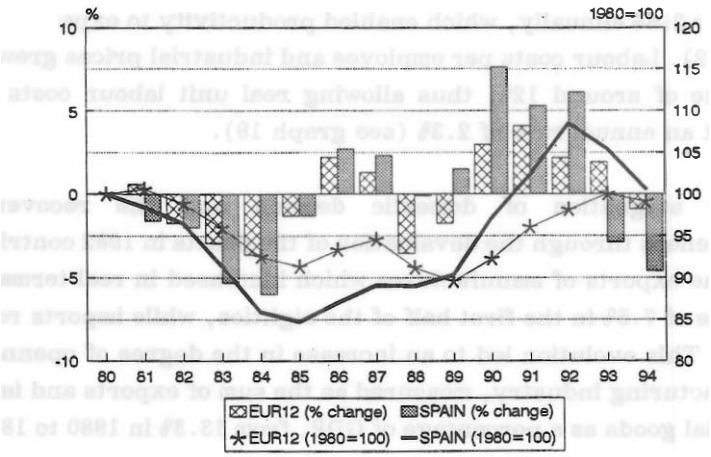
REAL UNIT LABOUR COSTS IN SPAIN
Annual change and cumulative growth



Source: Eurostat and Commission services

GRAPH 20

REAL UNIT LABOUR COSTS IN MANUFACTURING
Annual change and cumulative growth



Source: Eurostat and Commission services

b) 1986-1990

The upsurge in world demand contributed to the increase in production and employment in Spain, while economic policy tried to temper the inflationary pressures stemming from the strong domestic demand. This recovery in economic activity coincided with Spanish EC membership which led to a significant increase in its trade and financial flows with the rest of the world. The openness of the Spanish manufacturing industry increased from 18.5% in 1985 to 21.5% in 1990[12].

The effects of economic expansion on Spain were reinforced by the huge flow of foreign direct investment, which contributed to the introduction of modern management techniques and the rationalization of production, enhancing the ability of Spanish industry to compete in the international markets. This competitiveness boost is, however, being partially offset by the higher import propensity shown by foreign-owned companies as compared to national firms. This could be a consequence of the international commercial strategy followed by transnational companies and the particular relationship between subsidiaries and parent firms[13].

Real value added and employment recorded a high growth in this period (3.9% and 2.7%, respectively, in annual average terms). However, the industrial output per capita as compared to the EC average did not record any significant progress: the reason is that the higher employment

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[12] Notice that this measure of the degree of openness leads sometimes to paradoxical results: from 1980 to 1985 the openness of the Spanish manufacturing sector increased by more than five points while in the second half of the eighties, after EC entry, openness only rose by three points. The strong increase in domestic demand since 1986 which tempered the upward export trend and boosted GDP growth was the main factor which explained the deceleration of the openness in manufacturing trade in that period.

[13] The clear-cut bias to import by the foreign-owned companies is observed in other countries. For instance, the subsidiaries of Japanese firms established in the United States record a significantly higher import demand per unit of output than US firms.

could not offset the relative decline in labour productivity. Higher competition stemming from the opening up of the Spanish economy contributed to the steep deceleration in industrial prices, which reduced their rates of growth from 11.7% in 1980-85 to 2.9% in 1986-90. The rate of growth of labour costs halved in the second half of the eighties falling from 13% in the previous period to 7%. Despite further productivity gains and significant slowing in labour cost increases, the much faster deceleration in industrial prices led to an increase in real unit labour costs of almost 3% in annual average terms.

c) 1990-1993

As observed in graph 19, while real unit labour costs continued declining for the total economy, a sharp upsurge in real unit labour costs in manufacturing industry was recorded after 1989, as productivity could not offset the growing differential between the compensation per employee and industrial prices (see Gordo and L'Hotellerie, 1993).

Compounded with this lack of moderation in manufacturing labour costs, Spanish industrial competitiveness was further hit by the relative strength of the peseta. Industrial enterprises tried to preserve their profit margins shedding labour and reaping high productivity gains as a way to check unit labour costs, a phenomenon witnessed especially in 1992 and 1993 when domestic demand fell dramatically. In consequence, manufacturing employment declined by 14% in the early nineties. Though the peseta devaluation has temporarily relieved the pressure on profits, a much more synchronized evolution of industrial prices and labour costs seems to be necessary to widen the employment base in the manufacturing industry in the future.

4.3.2. Analysis by branch

In the eighties employment and productivity increased more in the strong demand branches than in the medium and weak demand groups (see table 2). Real value added in the strong demand branches rose at an average rate of 5%, while for the weak demand sectors it only grew by 0.7%. Productivity also rose more in the strong demand sectors in the

eighties (3.3% annually on average) compared to the medium and weak demand ones (2.2% and 1.7%, respectively).

While in static terms a certain positive correlation between the level of labour costs and productivity was found, only a weak positive correlation is observed in dynamic terms. As shown by graph 18, there is only a slight relationship linking higher increases in labour costs to higher productivity gains. In any case, the very small gradient of the curve (around 10%) would suggest that the role played by productivity gains in the wage-setting mechanism has not been significant.

As shown by Bajo and Torres (1992), foreign direct investment in the manufacturing industry was mainly targeted on the strong demand sectors. Representing only 18% of total value added in the manufacturing industry, firms of the strong demand group received one third of foreign direct investment in manufacturing industry. On the contrary, only 18% of direct foreign investment in the manufacturing industry was directed to weak demand branches which produced 36% of total value added. The great significance of this foreign capital inflow is better understood if it is compared with fixed capital investment: from 1986 to 1990 the net flows of foreign direct investment accounted for one half of gross capital formation in the manufacturing industry. In the high demand branches this ratio reached 97%[14].

The large flow of foreign investment contains, however, some features which tend partially to offset the possible positive effects on the external accounts. In particular, foreign direct investment contributed to the appreciation of the peseta, increased the present and future value of the factor income paid to non-residents and, as mentioned above, induced a higher level of imports as demand in foreign-owned companies was biased to imports.

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[14] It should be observed, however, that not all the foreign direct capital flows aim to increase fixed investment and thus the ratio presented here could exceed 100%.

5. A COMPARISON BETWEEN SPAIN AND THE MAIN EC COUNTRIES

5.1. Methodology

This chapter is devoted to the analysis of the performance of the manufacturing industry in Spain as compared to that of its European partners. As the necessary information was not available with the required detail for all EC countries and no EC average existed, a selection of the four biggest countries (Germany, France, Italy and United Kingdom) has been made, which will be referred to hereafter as EC4. Although the basis of comparison to analyze the process of industrial catching-up was the EC average, some conclusions could also be drawn from the evidence provided by comparing Spain and the EC4 countries.

In point 5.2 a brief comparison between the Spanish and the EC4 manufacturing industry in 1990 is presented. The evolution of this sector in the eighties is analyzed in point 5.3. Finally, in 5.4, the revealed comparative advantages will allow an assessment of the actual competitiveness of Spanish industry and its link with traditional price determinants (real exchange rates) and with other non-price factors.

5.2. Static analysis

The relative size of the Spanish manufacturing sector as compared to the overall economy is quite similar to that of the main EC countries, with the exception of Germany. The percentage accounted for by manufacturing industry in relation to employment or total value added in France, Italy, the United Kingdom and Spain ranged between 20 and 22% in 1990. In Germany this percentage reached 30%. However, given that the proportion of employment to population is significantly lower in Spain than in EC4, the similar share recorded by industrial employment is compatible with a smaller industrial base in Spain.

As in Spain, productivity and compensation per employee in EC4 were higher in the strong demand sectors as compared to the medium and weak demand branches. However, there were some differences between

the industrial structures in EC4 and Spain in 1990 which would be useful to stress.

First, the Spanish productive structure is more concentrated on lower demand sectors than EC4. Thus, in 1990 the weak demand sectors represented 47% of the manufacturing employment in Spain against 37% for the EC4 average. On the contrary, Spain had only 14% of total employment in strong demand branches compared to 19% in EC4 (see table 3). As Martin (1989) indicates, Spain is more specialized in sectors where the potential for reaping economies of scale is lower, which determines a lower level of labour productivity. Thus, a significant increase in competitiveness may not be achieved by improving the size of current structures but a shift of resources to other sectors should be accomplished[15].

Second, the range in productivity in Spain is much wider than in the EC4: value added per worker in the strong demand sectors is 61% higher than in the weak demand branches in Spain, while in EC4 this difference is 41%. This would suggest that technology and production techniques are less evenly distributed in Spain. It is also observed that the countries with a sounder industrial sector record a lower dispersion in their industrial structure: thus, labour productivity in strong demand branches in Germany is only 23% higher than in the weak demand firms.

Third, despite its larger dispersion in productivity, compensation per employee in Spanish manufacturing industry by branches are as homogenous as in EC4. Labour costs per head in Spain are 40% higher in strong demand branches than in weak demand ones, while this percentage is 32% in EC4. This may suggest lesser attention to productivity gains in Spanish wage setting in relation to other European countries and a normal tendency of labour costs to remain relatively close whatever the productivity level may be.

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[15] As shown by Segura (1992), this productive structure was the consequence of the autarchic development of Spanish industry after the Second World War, when production was determined by domestic demand.

TABLE 3

COMPARISON BETWEEN THE SPANISH MANUFACTURING SECTOR AND THE EC4 AVERAGE

	TOTAL	STRONG	MEDIUM	LOW
Employment per branch 1990				
Spain	100.0	13.8	39.6	46.7
EC4	100.0	19.4	43.3	37.2
1990 EC4 average=100				
Compensation per employee in PPS terms	79.3	84.2	80.0	79.2
Differential in the annual average growth rates (Spain-EC4)				
Real value added 1985/80	0.0	0.2	1.4	-0.7
1990/85	0.9	1.2	1.1	0.1
Employment 1985/80	0.4	1.6	-0.0	0.6
1990/85	2.6	3.3	2.8	1.9
Labour productivity 1985/80	-0.4	-1.5	1.5	-1.4
1990/85	-1.7	-2.1	-1.7	-2.0
Compensation per employee (national currencies)				
1985/80	2.2	1.8	2.8	2.1
1990/85	1.0	0.9	1.0	1.3
Industrial prices (national currencies)				
1985/80	4.6	5.6	5.4	4.8
1990/85	0.0	-0.4	0.1	-0.2
Real unit labour costs (ULC deflated by industrial prices)				
1985/80	-1.8	-1.9	-3.7	-1.2
1990/85	2.7	3.5	2.7	3.3

Source: Eurostat and Commission services.

Fourth, Spanish labour costs per worker are below the EC4 average in aggregate terms (around 80% in PPS terms). This advantage is even higher if current exchange rates are considered given that the purchasing power of the peseta is stronger than that implicit in exchange rates. However, in some branches, Spanish labour costs in PPS terms are close to the EC4 levels and are even higher than those recorded in other countries. Thus, in 1990 compensation per employee in Spain in 'metallic minerals' was close to the EC4 average and 5% higher than in Germany. Likewise, Spanish labour costs per employee were higher than in the United Kingdom in 'mechanical engineering', 'office machinery' and 'electrical engineering'.

Finally, the share of labour costs in total value added in Spain (64%) is similar to that of France or Italy though well below Germany's share (75%)[16]. This suggests that the effect of the lower level of labour costs per employee in Spain, which would tend to reduce this share, is offset in some cases by the relatively poorer productivity of Spanish industry.

Summing up, Spanish manufacturing industry experiences a higher dispersion of productivity than that of the EC4 average. There is a strong demand group of firms which might record relatively similar capital endowments and technology to those in EC4 while the weak demand branches would experience relatively lower productivity levels. The greater homogeneity of labour costs as compared to productivity leads to a lower (higher) labour cost share in total value added in the firms with high (low) productivity levels. The strong demand group, however, represents a smaller proportion of output and employment in the total of the manufacturing industry as compared to EC4, which leads to an overall lower labour productivity in the Spanish manufacturing industry.

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[16] This result is already adjusted for the greater proportion of self-employed workers in total employment (12% in Spanish industry as compared to 7% in the EC4 average).

5.3. Dynamic analysis

Industrial output increased in all countries in the eighties: while in Germany and France real value added increased between 12% and 15%, in Italy, United Kingdom and Spain it expanded by around 25%. The higher employment increases in Spain led apparent labour productivity to grow below the EC4 average (38% in EC4 compared to 25% for Spain).

The increase in real value added in EC4 was concentrated on strong demand sectors (+51%) compared to a slow growth of the more traditional branches (+10%). In Spain this feature was even more pronounced: production in the strong demand branches rose by 61% while in the weaker demand ones it only rose by 7%.

Most countries recorded a decline in manufacturing employment in the eighties. Only Germany and Spain recouped in the second half of the last decade the level of employment existing in the early eighties. Manufacturing employment in Spain levelled off between 1980 and 1990 while for the EC4 average it fell by 14%[17]. While in the first half of the eighties Spanish industrial employment declined similarly to EC4 countries, though less sharply, the particularly intense expansionary cycle in 1987-1990 made industrial employment grow at a rate 2.6% higher than in EC4 in the second half of the eighties (see table 3; the detailed data for all industrial branches is presented in annex 3). The better situation of industrial companies after the strong adjustment in the ten years to 1985 and the introduction of incentives (temporary contracts and subsidies) to expand the labour force also contributed to the increase in Spanish industrial employment.

This favourable performance in industrial employment in the second half of the eighties, however, was not enough to make significant progress in the industrial catching-up process as labour productivity

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[17] However, in 1992 and 1993 a sharp process of labour shedding in Spanish manufacturing was recorded, with employment being reduced to below the 1980 figures.

lagged behind: in 1986-1990 labour productivity in Spain grew at an annual rate 2% lower than in EC4.

The greater competition entailed by the removal of trade barriers and the relative strength of the exchange rate of the peseta were the main factors leading to the significant convergence in industrial price increases after 1986. While in the first half of the eighties industrial price increases were 4.6 points higher in Spain than in EC4, in national currency terms, in the period 1986-90, this gap disappeared completely. Price increases were even below the EC4 average in strong and weak demand branches.

Finally, real unit labour costs (whose inverse is a proxy for the profit margin) followed differing trends in the eighties. In the first half of the decade, real unit labour costs in the manufacturing sector declined more in Spain than in EC4 as the protection still in place and the depreciation of the peseta in 1982 made it possible to fix higher prices. A more rapid convergence in prices than in labour costs, not explained by higher productivity gains, caused a worsening in the relative real unit labour costs in the second half of the eighties and, hence, a deterioration of profit margins. In graph 20 it is observed that, though in the EC real unit labour costs increased after 1989, its upward trend was much more moderate than that recorded in Spain.

The different evolution of industrial prices and labour costs led to a large increase in real wages as regards industrial and import goods. Though this probably led to an increase in the standard of living (durable goods consumption was boosted), its temporary nature remained relatively concealed. The instability of this process was, however, shown at different levels (decline of profit margins in firms, rising external deficit and doubts about its eventual financing) and contributed significantly, when economic growth decelerated in 1992, to the devaluation of the currency.

The process of industrial catching-up was thus significantly affected by the opening-up of the Spanish economy after the accession to the EC. Foreign investment and optimistic expectations fostered the growth of Spanish manufacturing as Spain provided relatively lower

labour costs and a big domestic market. The investment boost did not lead, however, to significant growth in industrial output as compared to other countries as a rising share of the demand for industrial goods started to be supplied by foreign firms. As the following section describes in greater detail, the lack of adequate progress in Spanish competitiveness after the entry into the EC is probably the main reason explaining the poor role played by Spanish industry in supporting the overall catching-up process in the 1987-1992 period.

5.4. Revealed comparative advantages (RCA)[18]

From 1981 to 1992 the RCA of the Spanish manufacturing industry declined by 25 percentage points in relation to the world (see table 4). While in 1981 10 out of the 13 industrial branches recorded positive values, only two did in 1992, no branch showing an improvement in absolute terms in that period. The worsening was particularly large in the medium and weak demand sectors (-27 and -39 percentage points, respectively) while strong demand branches lost only 5 percentage points. By branches the largest falls were experienced by 'textile and footwear' (-67 p.p.), 'food & drink' (-50 p.p.), 'paper and printing' (-41 p.p.), 'metal articles' (-39 p.p.) and 'wooden industry and others' (-34 p.p.). 'Chemical industry', 'electrical engineering' and 'office machinery' were the branches which recorded a lower decline.

In absolute terms, the most competitive enterprises of Spanish manufacturing industry were traditionally those of the weak demand group as they were more labour-intensive and labour costs were significantly lower than abroad. However, in the last few years this situation changed as the RCA in the medium demand group increased while in the weak demand branches they continued to fall. Thus, in 1992 the RCA in the medium demand branches, though negative, were above those

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[18] The revealed comparative advantage (RCA) in the sector 'i' is defined as: $RCA_i = [(X_i - M_i)/(X_i + M_i)]*100$, where X_i and M_i correspond respectively to exports and imports of sector i. The index RCA varies between -100 (maximum disadvantage) and 100 (maximum advantage).

TABLE 4

SPAIN'S REVEALED COMPARATIVE ADVANTAGE

WORLD

	INDUSTRIAL BRANCHES	1981	1985	1990	1992	AVERAGE ANNUAL CHANGES 1985/81	1990/85	1992/90
1.	Metallic minerals	12.8	17.3	-18.5	-13.7	1.1	-7.2	2.4
2.	Non-metallic minerals	32.4	36.4	10.1	16.4	1.0	-5.3	3.1
3.	Chemical industry	-26.3	-12.6	-31.1	-32.0	3.4	-3.7	-0.4
4.	Metallic products	24.0	21.1	-8.3	-14.7	-0.7	-5.9	-3.2
5.	Mechanical engineering	-7.3	-7.3	-41.5	-35.7	0.0	-6.8	2.9
6.	Office machinery	-55.2	-45.1	-62.2	-54.9	2.5	-3.4	3.7
7.	Electrical engineering	-33.7	-31.3	-44.4	-35.3	0.6	-2.6	4.6
8.	Transport equipment	24.8	35.3	2.9	6.8	2.6	-6.5	2.0
9.	Food, drink & tobacco	27.8	21.3	-15.7	-21.9	-1.6	-7.4	-3.1
10.	Textile & footwear	44.0	43.2	-3.0	-22.8	-0.2	-9.2	-9.9
11.	Paper & printing	19.3	11.7	-23.5	-21.4	-1.9	-7.0	1.1
12.	Plastics & rubber	21.2	30.3	-8.2	-14.8	2.3	-7.7	-3.3
13.	Wooden industry & others	0.9	4.7	-20.4	-33.5	1.0	-5.0	-6.6
	DEMAND CLASSIFICATION							
	TOTAL	6.4	9.3	-20.3	-19.0	0.7	-5.9	0.6
	STRONG= 3+6+7	-33.5	-25.6	-43.0	-38.1	2.0	-3.5	2.5
	MEDIUM= 5+8+9+11+12	16.8	19.9	-13.7	-10.4	0.8	-6.7	1.7
	WEAK= 1+2+4+10+13	22.9	23.9	-8.9	-15.6	0.3	-6.6	-3.4

EC

	INDUSTRIAL BRANCHES	1981	1985	1990	1992	AVERAGE ANNUAL CHANGES 1985/81	1990/85	1992/90
1.	Metallic minerals	-20.6	-18.9	-21.3	-16.2	0.4	-0.5	2.5
2.	Non-metallic minerals	8.8	12.7	6.0	12.6	1.0	-1.3	3.3
3.	Chemical industry	-47.4	-30.4	-39.1	-40.6	4.3	-1.7	-0.8
4.	Metallic products	-10.4	-6.1	-24.2	-28.2	1.1	-3.6	-2.0
5.	Mechanical engineering	-36.1	-32.3	-49.4	-44.8	0.9	-3.4	2.3
6.	Office machinery	-54.2	-34.1	-46.4	-42.1	5.0	-2.5	2.2
7.	Electrical engineering	-42.4	-28.7	-36.2	-28.4	3.4	-1.5	3.9
8.	Transport equipment	18.3	32.9	8.3	9.5	3.7	-4.9	0.6
9.	Food, drink & tobacco	26.7	32.1	-7.7	-16.8	1.3	-8.0	-4.6
10.	Textile & footwear	44.4	40.5	-0.5	-16.9	-1.0	-8.2	-8.2
11.	Paper & printing	15.8	11.9	-13.0	-16.2	-1.0	-5.0	-1.6
12.	Plastics & rubber	3.2	6.1	-18.1	-19.4	0.7	-4.8	-0.6
13.	Wooden industry & others	32.2	32.6	-6.5	-16.1	0.1	-7.8	-4.8
	DEMAND CLASSIFICATION							
	TOTAL	-9.3	0.1	-18.0	-16.4	2.4	-3.6	0.8
	STRONG= 3+6+7	-47.0	-31.0	-39.6	-36.5	4.0	-1.7	1.5
	MEDIUM= 5+8+9+11+12	3.8	14.8	-10.3	-8.0	2.8	-5.0	1.2
	WEAK= 1+2+4+10+13	4.9	7.8	-11.2	-15.2	0.7	-3.8	-2.0

Source: Spanish Customs Authorities, INE, Banco de España and Commission services.

of the weak demand ones. Though still recording the worst results, the RCA in the firms of the strong demand group have also improved since 1990.

These changes in the RCA may indicate a certain upgrading in Spanish manufacturing industry. Thus, resources are shifting from traditional activities to others with larger capital and technological content, higher value added, more possibilities to exploit economies of scale and better prospects as regards the expected demand in the international markets.

The performance of manufacturing trade since 1981 can be divided into three different periods. In the first half of the eighties the RCA improved slightly (3 percentage points) as a consequence of weak domestic demand, the protection still provided to domestic production and the depreciation of the peseta, which amounted to 30% in cumulative terms. By contrast, the opening of Spanish markets to external competition after the entry into the EC in 1986 and the expansionary cycle as from 1987 led to a rapid worsening of the external balance. The decline in the RCA in the second half of the eighties (around 30 points) is explained more by the boost recorded in import demand than by a significant reduction in export activity. Thus while real exports decelerated from an annual rate of growth of 7.5% in 1980-85 to 5% in the second half of the eighties, real import growth soared from 3.6% to 23% in 1986-1990.

The fall of the RCA has decelerated markedly since 1990 in parallel with the slowdown in domestic demand. From that year to 1992 RCA rose by one percentage point and strong and medium demand branches, where foreign investment was preferably concentrated, recorded modest gains (5 and 3 points, respectively). Weak demand branches, however, continued losing ground (-7 points) despite the significant deceleration in domestic demand.

A number of factors can be identified to explain the sharp worsening in Spanish external trade that the RCA show, in particular in the second half of the eighties. The higher growth of domestic demand as

compared to the main trade partners; the removal of trade barriers and the significant reduction in tariffs; and the relative strength of the peseta were all factors leading to the deterioration of the external accounts. From the industrial standpoint some other specific factors also contributed to the emergence of trade deficits:

a) Declining competitiveness in labour-intensive branches. The very negative figures recorded by some branches (such as 'textile and footwear' or 'wooden and other industries') might be explained by the obsolescence of their capital equipment and their relatively sticky labour costs. These features are common to a number of countries and stem from the structural shift of resources from low- to high-value-added industries in the modern economies. Given that in these branches the ability to differentiate the product is small, competitiveness has to be gained basically through cost moderation. Thus, the supply of industrial goods with a low capital content is increasingly being furnished by the newly industrialized countries (NICs) which experience a much lower level of labour costs. The lack of competitiveness of domestic production is well reflected in the greater deterioration of the RCA in these branches in the early nineties as compared to the second half of the eighties: it suggests that when domestic demand slows down, external trade may worsen in some branches if consumers shift their demand from domestic goods to cheaper foreign products.

b) The huge investment that took place in the second half of the eighties led to a large increase in the demand for capital goods which was to a large extent provided by foreign supply (imports of capital goods increased at an annual rate of 22% in real terms from 1985 to 1990). This process was especially important for some branches such as 'mechanical engineering', 'electrical engineering' and 'office machinery'. The end of this investment cycle in 1990 and the improvement in the competitive stance of Spanish firms, brought about by that capital deepening, would explain the increase in the RCA recorded in these sectors in the last few years.

c) An important change in consumption patterns could also partly explain the poor performance of external trade in the second half of the eighties. The opening up of new markets provided a new range of goods previously unknown to Spanish consumers. The better quality and design of foreign products, accompanied by a certain measure of curiosity and 'snobbery'[19], attracted a considerable demand in 'textile and footwear', 'wooden furniture and other', 'food & drink' and 'means of transport'. From 1985 to 1990 the imports of non-food consumer goods grew in real terms by 27% annually. Obviously, this also mirrored the lack of response by Spanish producers to that new demand and, in particular, a relative worsening in non-price competitiveness factors.

All these factors led to a relative decline in industrial output as compared to that of services. The absence of factors limiting price moderation in services, given the limited role played by foreign competition, together with the rapidly rising demand recorded by this sector, meant that economic resources were increasingly shifted towards services. As observed in graph 21, there is a certain link between the share of industrial production and the external balance of the nation: the lower the relative industrial output the higher the external deficit. Thus, insufficient progress in industrial catching-up has also had consequences for the external accounts, which further stresses the importance of a strong manufacturing sector to make the overall process of real convergence endure.

In any case, the decline in the RCA in the Spanish manufacturing industry after EC entry, despite the lower labour costs (and, possibly lower prices), stresses the importance of non-price factors on competitiveness. Furthermore, it suggests that in those sectors where the product can be differentiated, price considerations are not essential to compete.

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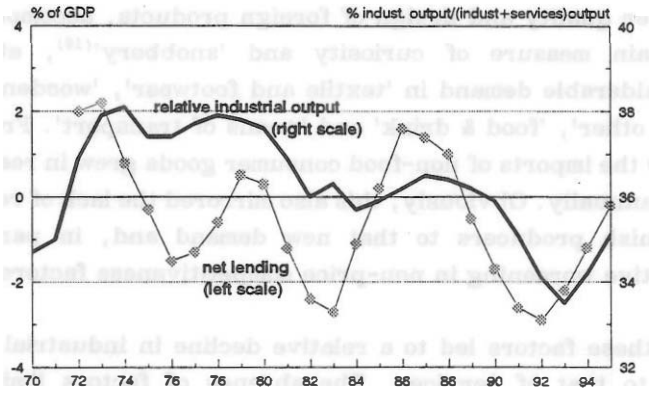
[19] Lluch (1992) refers to this consumption upturn as having a 'Veblenian inertia'.

GRAPH 21

NET LENDING AND RELATIVE INDUSTRIAL OUTPUT



Source: Eurostat and Commission services
Net lending is a 3-year moving average

Accordingly, a thorough competitiveness policy should not be limited to enhancing price and cost moderation in the traditional way but should pay more attention to the improvement in the quality and design of the product, the capacity to innovate, marketing features, post-sale assistance and so on, which altogether would contribute to promote the 'trade-mark' of the country (see Martin, 1989). In this sense, the most important 'trade barrier' prevailing in the European single market is probably the high level of quality of production required by most countries.

These increasingly important non-price competitive factors should be reinforced by the increase in public and private investment in human capital and research and development activities together with the support to companies in order to open international commercial networks, as proposed by Martin (1992a). As recently shown by Argimón et al. (1993), public investment in infrastructures (transport and communications) contributes significantly to increase the productivity in the private sector.

The improvement in competitiveness is seemingly the basic issue at which economic policy should aim in the future. Mauleón (1992) stressed the strong correlation existing between the catching-up process and the improvement in competitiveness. On the one hand, domestic growth appears as highly dependent on external growth, which suggests that if the catching-up process is to be preserved, the growth differential has to be sustained by other additional elements, which should be mainly competitiveness gains. On the other hand, higher domestic growth would normally result in higher external deficits, the correction of which calls for gains in competitiveness.

6. CONCLUSIONS

The process of increasing the relative GDP per capita in one country as compared to others, the so-called 'catching-up' process, can be seen as generated by the performance of relative labour productivity and employment. This real convergence process resumed in 1986 in Spain, coinciding with the accession to the EC, but the recent economic recession brought it to a halt. At present, Spanish GDP per capita is around 76% of the EC average.

The different performance of the two components of the catching-up process in Spain must be stressed. Thus, Spanish labour productivity is notably close to the EC average while, by contrast, relative employment remains far from the Community level. So, Spain's backwardness is explained by the low proportion accounted for by employment in relation to the total population. The inability to use thoroughly the human resources available hinders the possibility of increasing the relative income of the country. Thus, employment creation should be emphasized as the main basis for the catching-up process. Moreover, the increase in employment would contribute decisively to a better income distribution with beneficial effects on fiscal policy and the overall standard of living.

Lower relative employment, however, coexists with a level of compensation per employee (measured in PPS) close to that in the EC, which points to a clear segmentation in the labour market. Likewise, it has been shown that the increase in compensation per employee is related to the reduction in relative employment and the worsening in real convergence. Additional rises in compensation per employee as compared to the EC average would tend to discourage employment and weaken the competitive position of the country.

The increase in employment needs to be supported by sustained progress on the competitiveness front, stemming both from price moderation and from the improvement in non-price competitiveness features. As regards labour costs, greater attention in wage setting to productivity considerations, the competitiveness stance of individual

companies and the performance of competitors' costs would substantially benefit the catching-up process.

The catching-up process in the manufacturing industry, after running quite close to the overall real convergence process at the beginning of the eighties, stagnated in the years following Ec accession, notwithstanding the parallel investment boom, as the large productive capacity was not fully used and domestic demand was increasingly supplied by foreign producers. The lack of competitiveness of Spanish industrial output was at the core of the scant contribution made by this sector to the overall real convergence process and helps to explain the deterioration of the external accounts in the late eighties and early nineties. The peseta depreciation contributed to increase competitiveness and industrial output though further structural improvement in the industrial field is still needed. In any case, given that external imbalances often require a painful process of adjustment to restore the lost competitiveness, an adequate performance of the manufacturing industry seems essential to ensure the achievement of sustained progress in the catching-up process.

The main conclusions stemming from the analysis of the manufacturing industry are as follows:

- The proportion of manufacturing employment to total employment in Spain is similar (21%) to that in the biggest EC countries, with the exception of Germany. The notably lower level of labour costs (in terms of a common currency) should be maintained to protect competitiveness, favour the expansion of investment in manufacturing activities, and foster economic growth in other sectors (mainly construction and services).

- In general terms, there is some correlation between labour costs and productivity levels in the Spanish manufacturing industry. From a dynamic point of view, however, no clear correlation is observed between productivity gains and wage increases.

- Employment and unit labour costs have often moved in opposite directions. In particular, the strong increase in employment from 1986 to

1989 coincided with a reduction in the rate of growth of unit labour costs. Unfortunately, in the early nineties unit labour costs deflated by industrial prices soared and employment resumed its fall. The depreciation of the peseta in 1992-1993 helped recoup competitiveness, redress the profit margin and smooth the negative effects of recession on employment. To prevent these effects from being short-lived, the competitiveness gains should be backed up by cost moderation.

- The Spanish industry structure is more concentrated on weak demand activities than EC4 (Germany, France, Italy and United Kingdom). Foreign direct investment, which concentrated relatively more on the strong demand group, helped to progress in the shift of resources from low to high-value-added activities. Larger productivity dispersion in Spain, attributable to a technology less evenly distributed, is not followed by the labour cost structure which is equally homogeneous. Labour costs per head remained well below the EC4 average both in PPS and ECU terms. However, in some sectors the compensation per employee in PPS terms exceeds that recorded by other EC4 countries.

- Industrial price increases converged with those in the other European countries in the last few years. However, the pressures stemming from a higher growth of labour costs, in a setting where industrial prices were exogenously fixed and the exchange rate was kept strong, reduced the ability of industrial companies to compete. To keep prices under control, the manufacturing industry had to resort both to cutting margins (and henceforth investment) and obtaining productivity gains by shedding labour.

- Though it was partly motivated by a domestic demand relatively stronger than in the main partners, the decline of the revealed comparative advantage (RCA) since EC entry pointed to a competitiveness problem. The competitive position of Spanish companies should be enhanced by a greater attention to non-price features which play a major role in the competitiveness of various sectors. In this respect, the large domestic market, currently very dependent on imports, is a good opportunity for the domestic firms to adjust their production to the new patterns of consumption.

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ANNEX 1

NACE-CLIO DIVISIONS OF MANUFACTURING INDUSTRY

BRANCHES	DESCRIPTION
STRONG DEMAND	
Chemical industry	Chemical industry & man-made fibres industry
Office machinery	Office machinery, data-processing machinery & instrument engineering
Electrical engineering	
MEDIUM DEMAND	
Mechanical engineering	
Means of transport	Manufacture of motor vehicles, parts, and other means of transport
Food & drink	Food, drink & tobacco industry
Paper & printing	Manufacture of paper and paper products; printing and publishing
Plastic & rubber	Processing of rubber and plastics
WEAK DEMAND	
Metallic minerals	Extraction and preparation of metalliferous ores
	Production and preliminary processing of metals
Non-metallic minerals	Extraction of minerals other than metalliferous
	Manufacture of non-metallic mineral products
Metal articles	Manufacture of metal articles
Textile & footwear	Textile, leather goods, footwear & clothing industry
Wooden industry & others	Timber and wooden furniture industry and other manufact. industries

Source: Eurostat

	TOTAL	Metallic minerals 1	Non-metallic 2	Chemical industry 3	Metallic products 4	Mechan. engin. 5	Office machin. 6	Electric. engin. 7	Transport equipment 8	Food & drink 9	Textile & footwear 10	Paper & printing 11	Plastics & rubber 12	Wooden & others 13	Strong 3+6+7	Medium 5+8+9+ +11+12	Low 1+2+4+ +10+13
1990 average manufacturing=100																	
Value added per head	100.0	185.9	120.7	162.1	77.7	96.9	139.9	96.9	102.0	132.8	60.6	106.6	123.2	49.4	126.6	116.1	78.4
Compensation per employee	100.0	150.4	100.6	128.4	94.5	107.5	114.5	119.4	117.4	93.6	73.1	103.4	109.3	69.2	122.7	104.9	87.3
Comp. per empl./value added (%)	63.8	51.6	53.1	50.5	77.6	70.8	52.2	78.6	73.3	45.0	76.9	61.8	56.6	89.3	61.8	57.6	71.0
Idem avg=100	100.0	80.9	83.3	79.2	121.6	110.9	81.8	123.2	115.0	70.5	120.6	97.0	88.7	140.1	96.9	90.4	111.4
Annual average growth rates																	
Real value added 1985/80	0.6	0.6	-2.8	2.3	-2.5	0.1	25.2	2.6	0.6	2.2	-1.6	1.3	1.3	-2.0	4.6	1.4	-1.8
1990/85	3.9	-0.5	5.7	6.1	5.4	2.8	-0.3	5.3	7.5	2.3	0.6	4.0	2.8	3.7	5.2	3.8	3.2
Employment 1985/80	-2.6	-5.7	-5.6	-0.3	-3.7	-7.1	4.1	-2.3	-1.7	-1.5	-1.8	-2.9	-4.1	-1.1	-0.7	-2.5	-3.6
1990/85	2.7	-6.0	4.2	1.5	3.9	5.4	8.1	5.8	2.9	2.1	0.5	6.6	2.5	2.5	3.8	3.2	1.5
Labour productivity 1985/80	3.3	6.7	3.0	2.6	1.2	7.8	20.3	5.0	2.3	3.8	0.2	4.3	5.6	-0.9	5.3	4.1	1.8
1990/85	1.2	5.9	1.4	4.5	1.4	-2.5	-7.8	-0.5	4.5	0.2	0.1	-2.4	0.3	1.2	1.3	0.5	1.6
Compensation per employee																	
1985/80	12.7	14.6	12.1	13.4	11.4	13.0	8.6	13.3	12.1	13.5	13.0	12.9	13.2	11.1	12.9	13.0	12.4
1990/85	7.1	8.5	7.2	6.3	7.2	6.9	7.4	7.9	6.8	6.7	7.2	7.3	7.7	6.7	7.0	6.9	7.3
Industrial prices																	
1985/80	11.7	12.2	15.0	12.3	10.3	10.8	9.8	10.8	11.5	12.1	11.3	13.4	13.0	8.7	11.5	12.1	11.7
1990/85	2.9	-0.5	4.4	0.0	3.9	5.5	4.0	3.5	5.0	2.9	3.2	3.8	3.0	3.3	1.8	3.8	3.1
Real unit labour costs (ULC deflated by industrial price increases in each branch)																	
1985/80	-2.3	-4.3	-5.3	-1.6	-0.2	-5.4	-17.8	-2.6	-1.8	-2.4	1.3	-4.6	-5.2	3.1	-3.6	-3.1	-1.1
1990/85	2.9	3.0	1.2	1.7	1.7	3.9	12.0	4.7	-2.6	3.5	3.8	6.0	4.3	2.1	3.9	2.6	2.4

Source: National accounts. For 1990, labour cost increases are proxied by ESA (wage survey).

COMPARISON BETWEEN THE SPANISH MANUFACTURING SECTOR AND THE EC4 AVERAGE

ANNEX 3

	TOTAL	Metallic minerals 1	Non-metallic 2	Chemical industry 3	Metallic products 4	Mechan. engin. 5	Office machin. 6	Electric. engin. 7	Transport equipment 8	Food & drink 9	Textile footwear 10	Paper & printing 11	Plastics & rubber 12	Wooden & others 13	STRONG 3+6+7	MEDIUM 5+8+9+ +11+12	LOW 1+2+4+ +10+13
Employment per branch 1990																	
Spain	100.0	2.7	7.0	5.5	11.0	4.6	1.2	7.1	10.0	15.7	15.9	5.9	3.4	10.1	13.8	39.6	46.7
EC4	100.0	3.1	5.1	6.3	9.6	11.2	2.9	10.2	10.1	9.9	12.2	7.6	4.5	7.2	19.4	43.3	37.2
1990 EC4 average=100																	
Compens. per employee in PPS terms	79.3	99.0	79.7	77.5	78.5	82.3	85.6	87.2	81.5	79.4	82.2	76.3	88.3	71.6	84.2	80.0	79.2
Differential in the annual average growth rates (Spain-EC4)																	
Real valueadded 1985/80	0.0	0.4	-0.6	-2.8	-1.6	1.4	18.6	-0.7	0.4	2.1	-0.7	0.7	-0.6	-0.3	0.2	1.4	-0.7
1990/85	0.9	-2.8	2.3	1.9	3.5	-2.5	-4.4	1.4	6.0	2.8	-3.2	-0.8	0.8	0.0	1.2	1.1	0.1
Employment 1985/80	0.4	0.4	-1.7	1.8	0.3	-4.2	4.8	0.6	1.9	0.4	2.7	-1.4	-2.1	2.1	1.6	-0.0	0.6
1990/85	2.6	-3.7	3.4	0.7	3.1	5.0	8.0	5.4	3.3	2.7	2.7	5.3	-0.4	1.6	3.3	2.8	1.9
Labour productivity 1985/80	-0.4	-0.0	1.2	-4.7	-2.0	6.1	12.9	-1.4	-1.6	1.7	-3.6	2.2	1.7	-2.5	-1.5	1.5	-1.4
1990/85	-1.7	1.1	-1.1	1.2	0.4	-7.3	-11.8	-4.0	2.6	0.1	-6.0	-5.9	1.2	-1.6	-2.1	-1.7	-2.0
Compensation per employee (national currencies)																	
1985/80	2.2	4.0	2.4	2.9	1.1	3.1	-2.0	1.6	1.9	3.3	2.2	2.3	3.4	1.1	1.8	2.8	2.1
1990/85	1.0	1.4	0.9	-0.1	0.7	1.6	1.8	1.6	0.5	0.7	1.4	1.6	1.3	1.5	0.9	1.0	1.3
Industrial prices (national currencies)																	
1985/80	4.6	5.5	8.5	5.4	3.7	3.6	4.6	5.4	5.8	5.0	3.7	6.2	6.6	2.3	5.6	5.4	4.8
1990/85	0.0	-2.5	0.8	-1.4	0.1	0.6	1.0	1.1	0.8	0.7	0.5	0.4	0.0	-0.7	-0.4	0.1	-0.2
Real unit labour costs (ULC deflated by industrial price increases in each branch)																	
1985/80	-1.8	-1.4	-6.5	2.1	-0.5	-6.2	-15.7	-2.2	-2.1	-3.3	2.1	-5.6	-4.4	1.3	-1.9	-3.7	-1.2
1990/85	2.7	2.7	1.2	0.2	0.2	8.2	13.4	4.4	-2.7	-0.1	6.7	7.1	0.0	3.7	3.5	2.7	3.3

Source: Eurostat and Commission services.

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