**LONG–RUN ECONOMIC GROWTH IN SPAIN
SINCE THE NINETEENTH CENTURY:
AN INTERNATIONAL PERSPECTIVE**

Leandro Prados de la Escosura[1][2]
Teresa Dabán Sánchez[2]
Jorge C. Sanz Oliva[2]

DGP–D–92006

[1]   Universidad Carlos III, Madrid
[2]   Dirección General de Planificación

I. Introduction.

Over the last two centuries Spain has evolved from a declining imperial power to an emerging, but still relatively backward nation in the Western European periphery. Despite being an interesting case of retarded or failed growth, Spain's economic performance has not deserved a tiny proportion of the attention payed to her political history during the interwar years and the Civil War (1936-1939)[1].

Spain's absence in historical debates on European industrialization has been associated to the lack of quantitative research and economic analysis in Spanish economic history until recent times when progress along the lines drawn by quantitative and analytical economic historians has proceeded very rapidly[2]. Still some shortcomings are to be overcome. In the first place, there is no overall picture of economic performance in modern Spain[3]. Most historical research has dealt with the nineteenth century while post-World War I history has been

---

[1] Spain has been absent from major debates in modern European economic history, i.e., the impact of the Napoleonic Wars, the role of colonies in the metropolis' economic development, or late-comers' strategies of development, have been analysed and conclusions drawn with no regard to the lessons that could be extracted from Spanish history.

[2] Modern economic history is a very young subject in Spain and most now classical works are less than a quarter of century old. Cfr. (Sánchez-Albornoz, 1968); (Tortella, 1973); (Nadal, 1975); (Donges, 1976).

[3] Cf. recent attempts by (Tortella, 1992) and (Prados, 1992).

abandoned to ocassional explorations by economists[4]. As a consequence, perceptions of economic performance in modern Spain are derived from the nineteenth century experience despite the fact that growth and structural change are mostly twentieth century features[5].

A second feature in Spanish economic history is the lack of a consistent comparative approach despite ocassional implicit comparison to a European pattern of development[6]. Explicit and systematic attempts to compare Spain's performance to other European experiences or models have hardly taken place[7]. In addition, most explanatory hypothesis have not been put to the test with the available quantitative evidence and the use of modern economics. A major obstacle to accomplish it has been the lack of consistent, reliable and homogeneous macroeconomic data, in particular, historical national accounts that prevented Spain's historians from performing systematic comparisons with other

---

[4] Only in the last years the interwar period has captured some attention from economic historians. Cf. (Martín Aceña, 1984); (Fraile, 1991).

[5] Evidence to support such a statement can be derived from the lively debate on the causes of poor performance over the period 1815-1913 where endogenous and exogenous explanations for failure, retardation and underdevelopment are proposed in sharp contrast with the widely accepted consensus about twentieth century economic modernization.

[6] When depicting pre-World War I Spain, historians emphasize the failure to replicate an industrial revolution along the British path, the retardation within the European set or just features of underdevelopment as shown in today's Third World.

[7] Cf. as exceptions (Tortella, 1992); (Molinas & Prados, 1989); (Fraile, 1991).

European experiences. During the last decade quantitative evidence on major macroeconomic variables has been gathered and attempts to establish the pace of growth have taken place. Benchmarks and annual series are now available for GDP but strong discrepancies among alternative estimates suggest a still weak and incomplete quantitative basis.

It is the aim of this paper to provide a quantitative assessment of Spanish economic growth over the long-run taking the Napoleonic Wars as a starting point, and to place her performance within the context of Western European Industrialization. Section two presents new evidence on trends in real gross domestic product per head. Section three compares economic performance between Spain and the leading European nations and provides evidence for an assessment of retardation and convergence. Historical explanations for Spanish relative backwardness are explored in section four. Finally, an agenda for further research is suggested.

II. New evidence on Spain's economic growth.

Spanish national accounts started to be published in 1954 and more detailed accounts only appeared in 1964[8]. For earlier periods only index numbers of real output were built up by the official Consejo de Economía Nacional (CEN) estimates, that go back till 1906, and by Alcaide's revision of the

---

[8] The best updated, homogeneous set of macroeconomic data is in 1980-base series by (Corrales and Taguas, 1989).

CEN series that start in 1901[9]. In the last decade an attempt to provide long-run GDP series from the expenditure side back to mid-nineteenth century was produced by Carreras[10]. A shortcoming of the three annual series for real product is the neglect of the services sector. In the CEN estimates physical output series for agriculture and manufacturing were weighted by 0.4 and 0.6 co-efficients, and smoothed by a de-trended index of nupciality to incorporate yearly fluctuations. Alcaide followed an analogous procedure for agriculture and industry and assumed that output in services moved with the labour force employed in this sector. The implication is that while CEN estimates implicitly assume that output per worker in services was a weighted average of agricultural and industrial labour productivity, Alcaide assumed no growth at all for services' labour productivity[11]. In the case of Carreras' estimates services are, in the best of the cases, clearly under-represented. In addition to annual series, GDP estimates for seven benchmarks over the period 1800-1930 that included services output were built up by Prados de la Escosura[12]. A common feature to all available estimates is to be real output indices and not direct calculations of

---

[9] (CEN, 1945, 1965); (Alcaide, 1976).

[10] (Carreras, 1985). Besides, annual estimates were derived for shorter periods by (Schwartz, 1977), for 1940-1960, and (Naredo, 1991), for 1920-1954.

[11] Cf. (Tortella, 1987) for a critique of Alcaide's estimates.

[12] (Prados de la Escosura, 1988). Benchmark indices for real output were also obtained by indirect methods by (Bairoch, 1976) and (Crafts, 1984) for the 19th century.

gross domestic product. They all suffer from the index number problem and their economic significance declines as one moves away from the base year. Unfortunately, only contemporary observers have produced direct estimates of national income for the period prior to 1954[13].

Our purpose in providing a new yearly series of real output is to offer an alternative to existing series that incorporates some aspects previously neglected[14]. The new GDP index has been obtained from the output side and it starts from a de-aggregated data base that incorporates the results of major independent research on agriculture, manufacturing and services over the last two decades. It has been built up from spliced homogeneous series for agriculture, manufacturing and services with 1913 and 1954 as base years in an attempt to include changes in the product mix and in the price structure[15]. Carreras' pathbreaking research on manufacturing provides the basis for an industrial output index updated and improved by recent work by Morellà[16]. Benchmark estimates for agricultural final output built up by Simpson have been linked to an annual series derived from a large sample of goods in an attempt to

---

[13] Cf. (Schwartz, 1977).

[14] (Prados de la Escosura, Dabán and Sanz, 1992).

[15] In the case of industry three base years are used: 1913, 1929 and 1958.

[16] The sources for industrial output are (Carreras, 1984) and (Morellà, 1992).

represent year-to-year fluctuations[17]. Services' output has been derived from independent physical indicators for a large sample of subsectors, including transportation and communications, housing rents, public administration, banking, trade and liberal professions. Although only a step into the larger endevour of producing historical national accounts for Spain, the new index represents an improvement in our perception of Spanish economic growth reconciling scattered knowledge about performance at the sub-sectoral level with an aggregated view of economic activity. In addition, the series has been constructed with an analogous method to early nineteenth century benchmarks built up by Prados and it allow us, therefore, to splice both sets of estimates in order to produce an overall picture for one hundred and fifty years[18]. Finally, the series can be linked to available national account series for the post-1954 period[19].

---

[17] Simpson's benchmarks are averages for final output, that is, total production less seed and animal feed, 1891/95, 1897/1901,1909/13,1929/33. The annual series used to allow for short term fluctuations covers around 50 per cent of output and include cereals, pulses, olives and must and covers the period 1882-1935. A physical output index is available for the 1940-1954 period. Lack of sources for the years prior to the 1880's make highly conjectural any numbers for agricultural output. Unsatisfactory fiscal data on crop tax have been deflated by the price of wheat and spliced with the post-1882 series. The results, however, fit to qualitative and scattered quantitative evidence.

[18] (Prados de la Escosura, 1988), chap. 1.

[19] (Corrales and Taguas, 1989), revised and updated by the authors who kindly allowed us to use it.

Table 1 presents growth rates for the new series over significant periods in the pre-national accounts era and compares the results to those derived from earlier estimates.

TABLE 1

Growth in real GDP per head in Spain since XIX Century (%)
(exponential fitting) (annual growth rates)

	New	Carreras	CEN	Alcaide
1860–1890	1.5	1.0	–	–
1890–1913	0.8	1.0	–	–
1913–1929	1.4	0.8	1.1	1.2
1929–1935	–0.8	–1.4	–0.5	0.5
1935–1940	–2.5	–6.8	–7.6	–6.9
1940–1954	1.5	1.7	3.0	2.7
1929–1950	–0.7	–2.1	–2.1	–1.4
1800–1860	0.2[a]	–	–	–
1860–1913	0.9	0.9	–	–
1913–1950	0.1	–1.0	–0.8	–0.2
1800–1950	0.6[a]	–	–	–
1860–1950	0.8*	0.3*	–	–
1860–1990	1.4	1.0	–	–

Note: compound growth rate between centered three year averages.
Sources: (Prados, Dabán & Sanz, 1992a); (Carreras, 1985); (CEN, 1965); (Alcaide, 1976).

The new series improves the picture of Spanish economic performance in the previous century to 1950, in particular for the early twentieth century. After negligible per capita growth over the early nineteenth century, in which increases

in output of goods and services were cancelled out by an acceleration in population growth, a sustained gain in product per head took place up to World War I[20]. There is a significant agreement between Carreras estimates and our new ones over the late nineteenth century pace of growth despite discrepances for shorter periods: the new series, against Carreras', emphasizes the acceleration of growth in the free-trading years (1860-1890) and the decline that followed the closure of the economy brought by the return to high tariff barriers in 1891 and the delayed effects of giving up the peseta's gold convertibility[21]. Much stronger discrepancies emerge over the early twentieth century's poor performance: the new series suggests a slowing down in the rate of growth against the lack of growth or the absolute decline suggested by previous estimates. Substantial differences appear with Carreras' series which represents the interwar years as a period of deceleration, while the new index suggests a phase of remarkable acceleration in growth and structural change took place from 1913 till 1929. A milder intensity of the 1930's crisis , a less steep fall in the level of economic activity during the Civil War (1936-1939), and a slower growth in the autarkic post-war years are responsible for the discrepancies between the new series and earlier estimates about the decline in output per head from 1929 to the early 1950's. To conclude: a more gradual, more optimistic picture emerges from the new estimates that depicts early 20th century Spain as an accelerating

---

[20] Population grew at 0.9 per cent between 1816 and 1857, according to (Pérez Moreda, 1985), against 0.4 per cent over the 18th century. It appears that the main contribution to growth from this period was escaping from the malthusian trap.

[21] Cf. (Tena, 1992); (Martín Aceña, 1985).

economy up to the Great Depression, abruptly interrupted by the Civil War, from which recovered only slowly under the Dictatorship's economic autarky that lasted until the late 1950's.

A last remark deserves regional dualism within Spain as suggested by strong deviation of regional output per head from the national average during the early twentieth century[22]. Such a remarkable regional disparities from the national pattern suggests that the conclusions emerging from this section should be used with extreme caution when inferences at regional level are attempted.

III. Spanish economic growth: an international perspective.

Despite perceptions of retardation, backwardness or underdevelopment in Spanish history that implicitly suggest the existence of a European or international pattern, historical assessments of Spain's economic performance pay little regard to the international context. Evidence to support such a contention can be obtained from accounts of early industrialization and progress in the 1830's and 1840's, of the Spanish "wirtchaftswunder" of the 1960's, or even of the expansion occurred since Spain's admission in the EEC in 1986. This section aims at providing the evidence to revise some "stylized facts" about long-run comparative growth of Spain.

---

[22] Cf. (Prados, 1992), p. 34, the co-efficient of variation remained over 35 per cent between 1900 and 1950.

The departing point is Kuznets' definition of modern economic growth that emphasizes sustained changes in real output per head and per worker accompanied by structural change, that allow us to define retardation as slower growth relative to neighbour countries together with deviations from patterns of structural change exhibit by leading industrialized countries[23]. Within this context Spain's levels and growth rates of real per capita income and labour productivity will be related to those of major Western European countries and the U.S.A. in order to establish her relative performance and to qualify previous historical assessments.

Graphs 1, 2 and 3 and Table 2 present evidence for Spain's comparative performance with real GDP per head expressed in 1990 "international" dollars and adjusted for the peseta's purchasing power parity[24]. Levels of real product per person for 1990 as estimated by OECD were projected backwards with the new series for Spain's GDP per head and a similar procedure was used to derive annual series for other countries in 1990 "international" dollars[25]. Unfortunately,
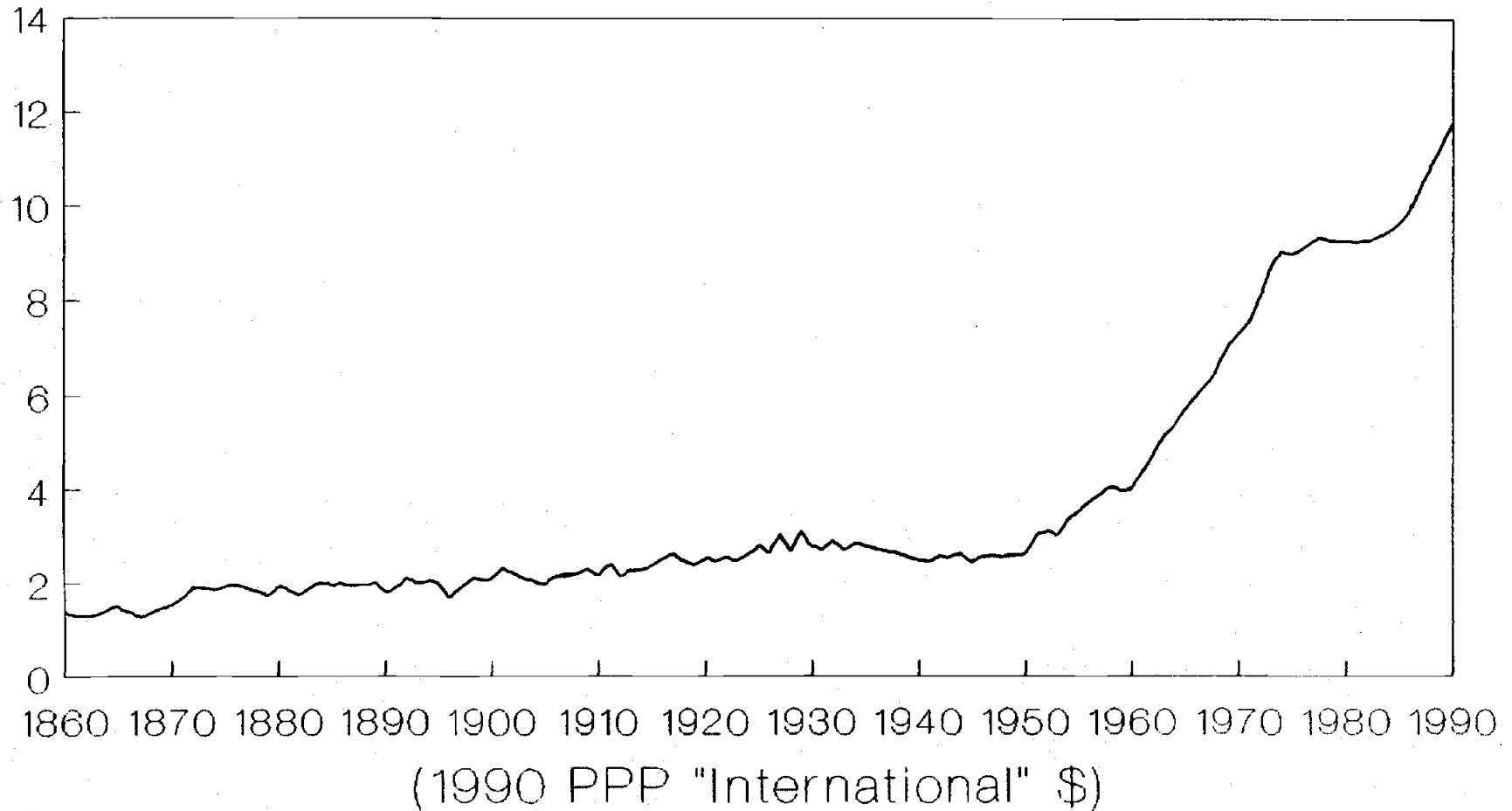
---

[23] (Kuznets, 1966), p. 1.

[24] OECD's 1990 PPP "international" dollars were prefered to existing alternatives for 1985, where estimates by (Summers and Heston, 1991) show strong discrepancies with OECD's similar estimates or with (Maddison's 1991) Paasche PPP estimates for Spain's real GDP per head (We are indebted to Angus Maddison for pointing to me such discrepancy). Besides, the gap between the trading exchange rate and the PPP rate is narrower for 1990 than for 1985 making the resulting figures more easily understandable.

[25] Together with (OECD, 1992) PPP levels of real product per head expressed in 1990 "international" dollars, annual indices of national real output derived from (Maddison, 1991, 1992), for all countries, and (Prados de la Escosura, Dabán and Sanz, 1992), for Spain.

GRAPH 1
REAL GDP PER HEAD IN SPAIN. 1860-1990

(1990 PPP "International" $)

GRAPH 2
REAL GDP PER HEAD (USA=100)

(1990 PPP "International" $)

■ SPAIN ⋯⋯ GERMANY ── FRANCE ━━ UNITED KINGDOM
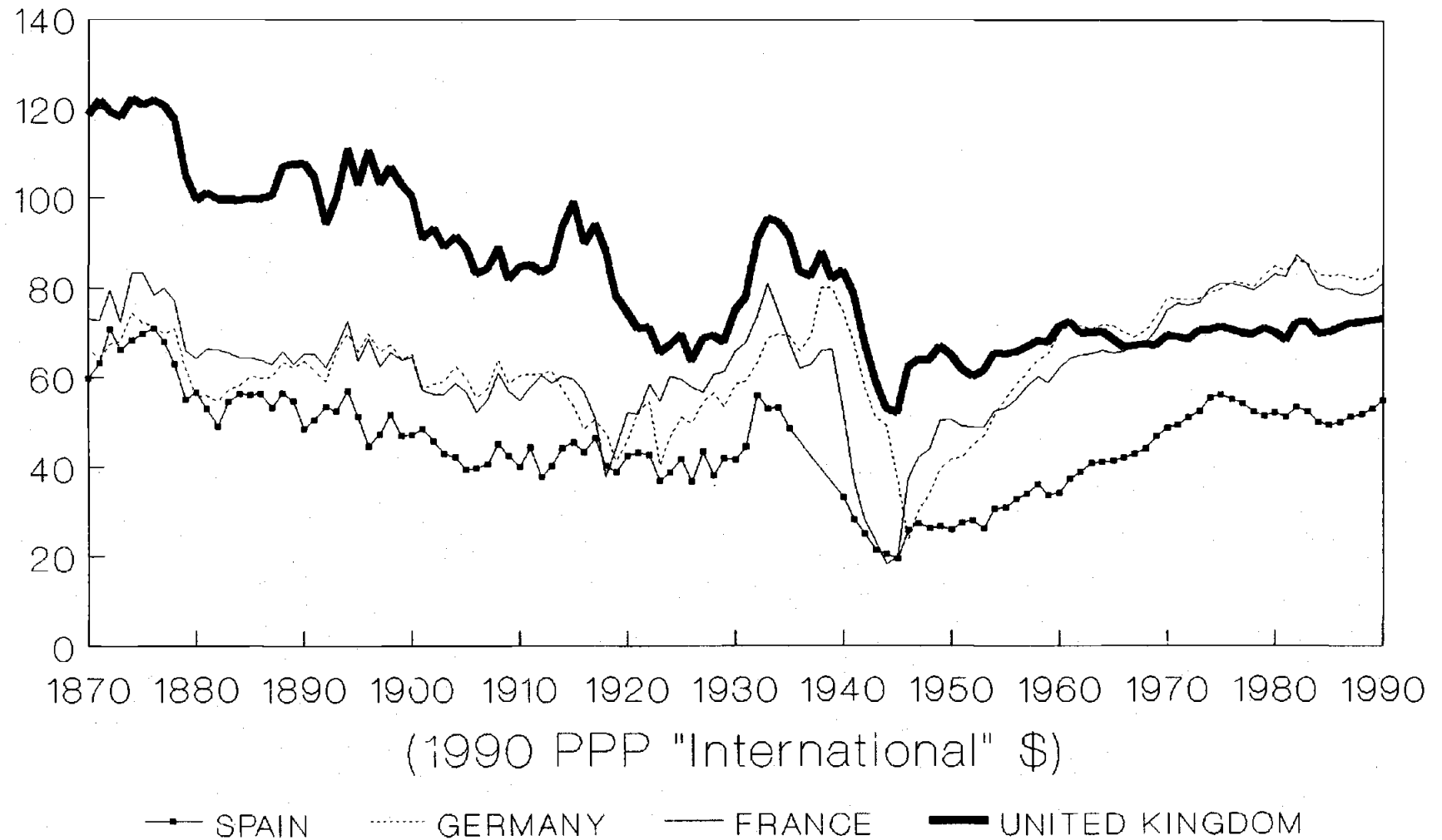
GRAPH 3
REAL GDP PER HEAD (USA=100)

(1990 PPP "International" $)

....•.... SPAIN   —— ITALY   ········ GERMANY
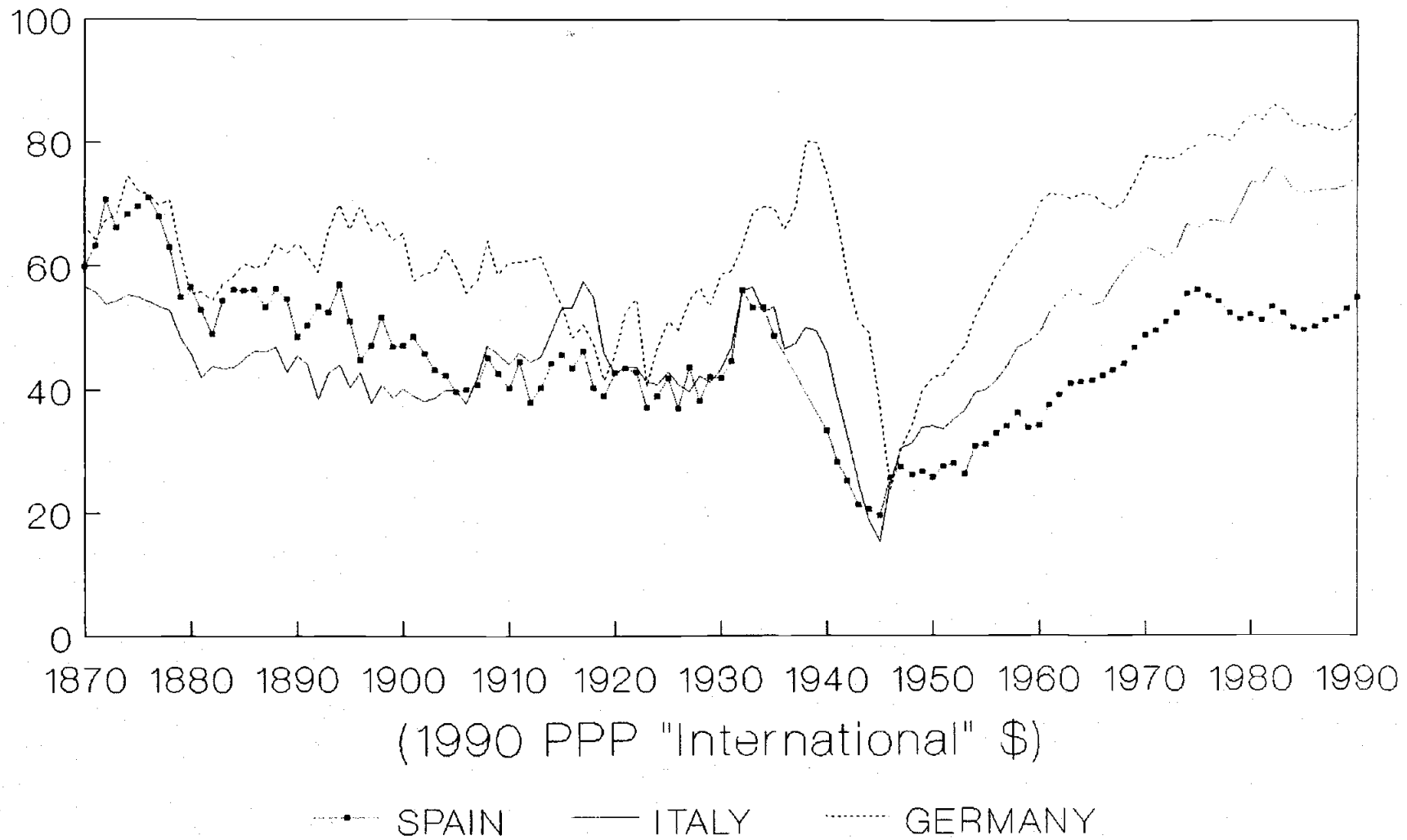
index number problems arise as we move away from the present and economies experienced the changes in relative prices and in the composition of output that are associated to structural change[26]. Therefore, the evidence offered here only allows us to provide rough orders of magnitude for Spanish economic performance within the international context.

---

[26] Cf. (Eichengreen, 1986) for a critique of the procedure followed.

TABLE 2

Real GDP Per Capita Growth in European Countries, 1860-1990
(annual rates. exponential fitting)

	Spain	Italy	France	Germany	U.K.
1860-1890	1.48	0.38	1.08	1.36	1.08
1890-1913	0.83	2.38	1.29	1.69	0.87
1919-1938	0.97**	1.01	1.66	2.71	1.34
1950-1960	4.09	5.13	3.59	6.51	2.39
1960-1973	5.73	4.08	4.57	3.48	2.42
1950-1973	5.11	4.79	4.23	4.52	2.38
1973-1990	0.99	2.76	1.53	1.98	2.02
1860-1913	0.91	0.90	1.09	1.55	1.03
1860-1938	0.93*	1.21	1.13	1.26	0.81
1950-1990	3.53	3.91	3.27	3.27	2.19
1860-1990	1.45	1.87	1.71	1.82	1.23

Notes: t co-efficients are highly significant.
          * For Spain, 1860-1935; ** For Spain, 1914-1935.
Sources: All countries, except Spain, (Maddison, 1991, 1992); Spain,
          (Prados, Dabán and Sanz, 1992b).

Several distinctive features of the Spanish economy emerge from placing her into the international context. The remarkable increase in Spain's real per capita income, ten times over one hundred and sixty years, only represents a moderate pace of growth compared to industrial European nations if Britain is excluded. Spain departed from a lower stand-point in terms of output per person since practically stagnated over the early decades of the nineteenth century while Western European nations industrialized and, therefore, her international position deteriorated. It appears, thus, that the catching-up hypothesis in which growth rates correlate inversely to departing levels do not seem to apply to Spain's historical experence. When evidence about the pace of growth is completed with comparative levels of real output per head, the non-convergence case is reinforced.

In the search for differentials in Spanish economic performance several significant periods emerge. Within the period from mid-nineteenth century up to the Spanish Civil War (1936), only the moderately free-trading years 1860-1890 and, to a lesser extent the late 1910s and 1920s, represent a mild attempt to catch-up with Western European industrial nations. In the late twentieth century the 1960-1975 period is another attempt to closing up the gap. Conversely, three periods appear to be resposible for the widening gap between Spain and the advanced Western European nations: the turn of the century and the decade prior to World War I seems to be a lost opportunity for closing the gap as the

comparison with Giolittian Italy suggests[27]. Despite traditional accounts stress the poor economic performance under autarky in the 1940s, in comparative terms the 1950s emerge as a decade of failed catching-up, as the ups-and-down in real output per head and the comparison with Italy's performance tend to suggest. In the 1950's, as forces making for growth and convergence were stronger, countries like Spain that fail to catch-up paid a heavier penalty than would have been the case in phases of slowing down[28]. Countries that remained closed and did not compete in international markets for similar goods did not share the productivity growth benefits deriving from the leading nations. However, the largest loss in relative levels of income per head during more than one and a half centuries appears to derive from the years between General Franco's death (1975) and the admission of Spain in the EEC (1986). The comparison with Italy seems to be once again particularly relevant. Research on the period is lacking and only superficial hypothesis relating poor performance to the difficult transition to a democratic regime could be argued as explanations. However, deeper institutional reasons seem to be underneath, i.e., an over-regulated, heavily protected economy, cut-off from the international market are explanatory hypothesis that need to be explored.

---

[27] Not only Italy but Sweeden, and Hungary and Russia, to a lesser extent, reduced distances with respect to Britain and France over the 1900-1913 period. Cf. (Berend and Ranki, 1982).

[28] Cf. (Baumol, 1986).

When assessing differences in the level of efficiency across countries partial or total factor productivity measures are used. Over the long-run only reliable partial productivity estimates can be obtained for Spain. Labour productivity measurements provide a reasonable index for productive potential, influenced by both factor endowments, technology and organization. Lower participation rates, largely unexplored, improve Spanish relative position but the picture of retardation drawn for real product per head remains basically unaltered[29].

IV. Retardation and Catching-up in Spain: A Search for Determinants.

Both Gerschenkronian explanations for backwardness and convergence and catching-up hypothesis are related to the search for the causes of growth. Economists have emphasized the role of technological progress, partly embodied in new capital, and the social capability for innovative adoption of the leader's technology and organization to the resource endowment and particular conditions of the follower, as crucial elements for reducing the productivity gap among countries[30]. The pace at which catching-up takes place depends on the

---

[29] Cfr. (Prados de la Escosura, 1992) for a discussion and evidence. Gender and age structure of the labour force, urbanization, educational patterns and levels of unemployment all influence participation rates and contribute to explain differentials across countries.

[30] Cf. (Baumol, 1986); (Abramovitz, 1986); (Dowrick & Gemmell, 1991); (Barro, 1991).

diffusion of knowledge, the reduction of intersectoral desequilibria through structural change, physical and human capital accumulation, and the degree of openness, besides an institutional framework that favours economic progress through an adequate system of incentives.

Testing the plethora of explanatory hypothesis for growth and convergence in modern Europe is a challenge for economic historians that obviously goes beyond the scope of this paper. However, the definition of backwardness along *kuznetsian* lines, could allow us to know the extent to which structural change in a peripheral country like Spain was experienced as a convergent process towards Europe's industrial nations[31]. Patterns of development for Spain within a European framework built up along the lines defined by Chenery and Syrquin and Crafts are offered in Table 3[32]. Simulations allow us to compare structural change in Spain and in an "ideal" European country with the same size and income per head as Spain. Convergence would take place if as real income per head grows, structural differences are reduced. Conversely, divergence would imply backwardness. In Table 3 Spain's deviations from the European pattern are presented in percentage terms. The results seem to provide enough evidence to sustain that for most of the period considered human and physical capital

---

[31] As defined above, it would imply a widening differential in per capita incomes with regard to advanced countries together with a structural divergence as real product per head grows.

[32] (Chenery & Syrquin, 1975); (Crafts, 1984). The underlying equations derive from a forthcoming paper by (Prados, Dabán and Sanz, 1992b).

accumulation remained in Spain below European standards and only converged towards them at high levels of per capita income not reached before the 1960's. A large agricultural sector in Spain, with a relatively low productivity –up to 1913, and again in recent years–, together with a slower and delayed release of labour from the countryside seem to be another explanatory element of retardation. Recent research on European agricultural productivity confirms our findings as it suggests that even in 1980 a large gap in value added per worker existed between Spain and western European nations[33].

A smaller degree of openness up to the 1980's, divergent from the European pattern, completes a picture in which structural convergence is not clear[34].

---

[33] Cf. (O'Brien and Prados de la Escosura, 1992).

[34] Cf. (Tena, 1992).

TABLE 3

Patterns of Development in Spain, 1860–1990
(centered five-year averages))

	1860	1890	1900	1913	1929	1950	1960	1975	1990
Y/pop	1359	1776	2079	2307	3133	2625	4022	8973	11791
Pop. (m)	15.6	17.8	18.6	20.3	23.2	27.9	30.3	35.5	39.2
%INVT/GDP	5.5	7.3	9.6	11.9	17.1	15.2	18.0	27.9	26.0
Dev.(%)	−43	−35	−13	−1	13	−27	−13	24	4
%CON/GDP	88.4	86.6	82.8	75.5	75.6	72.1	65.4	65.7	64.0
Dev.(%)	2	11	9	2	−1	2	0.1	3	8
%SCHOOL	39.0		36.0	30.6	26.0	30.1	49.0	76.0	86.0**
Dev.(%)	26		−10	−41	−43	−33	−10	13	26
%IND/GDP	14.9	20.0	21.2	21.6	21.9	25.8	35.2	41.9	39.1
Dev.(%)	−56	−37	−34	−28	−35	−36	−7	10	1
%AG/GDP	45.2	38.5	38.3	37.7	36.7	29.9	23.7	9.6	6.3*
Dev.(%)	15	9	11	13	22	−2	−6	16	4*
%Lag/L	63.5	65.3	66.3	66.0	45.5	47.6	39.0	23.4	11.8
Dev.(%)	17	25	27	25	10	4	4	29	−17
Agriculture's relative productivity									
	0.71	0.59	0.58	0.57	0.81	0.63	0.56	0.41	0.34*
Dev.(%)	−2	−16	−16	−15	12	−6	−10	−13	11*

Notes: * year 1985. ** year 1980.
Dev.(%), deviation from the European norm (difference between the log of the actual value for Spain and the log of the European norm).
Y/Pop, real GDP per head in 1990 "international" dollars.
Pop. (m), million inhabitants.
%AG/GDP, agriculture's share in GDP.
%IND/GDP, industry's share in GDP.
%Lag/L, share of agriculture in total active population.
%INVT/GDP, share of domestic investment in GDP, expressed in real terms.
%CON/GDP, share of domestic consumption in GDP, expressed in real terms.
% SCHOOL, percentage of population aged 5 to 19 in school.
Sources: (Prados, Dabán and Sanz, 1992b) (forthcoming).

V. Conclusions.

Moderate growth, retardation and incomplete attempts to catch-up emerge from a brief quantitative assessment of Spain's economic performance over almost two centuries. No persuasive explanations have been provided but a long agenda for research emerges from the questions put by the empirical evidence gathered. Why the release of labour from the countryside took so long? Is there any responsability in the "urban" economy? Why human and physical capital accumulation proceeded at such a slow pace? What prevented Spanish industrialists from having access to international markets?. Only a comparative, quantitative approach seems adequated to provide the answers.

Bibliography

ABRAMOVITZ, M. (1986), "Catching-Up, Forging Ahead, and Falling Behind", *Journal of Economic History*, XLVI, 2, pp. 385-406.

ALCAIDE, J. (1976), "Una revisión urgente de la serie de renta nacional en el siglo XX", in: *Datos básicos para la Historia financiera de España*, Instituto de Estudios Fiscales, Madrid, 2 vols., pp. 1126-1150.

BARRO, R. (1991), "Economic Growth in a Cross Section of Countries", *Quarterly Journal of Economics*, CVI, 2, pp. 407-447.

BAUMOL, W.J. (1986), "Productivity Growth, Convergence and Welfare: What the Long-Run Data Show", *American Economic Review*, LXXVI, 5, pp. 1072-1085.

BEREND, I.T. & G. RANKI (1982), *The European Periphery and Industrialization, 1780-1914*, Cambridge University Press, Cambridge.

CARRERAS, A. (1984), "La producción industrial española, 1842-1981: construcción de un índice anual", *Revista de Historia Económica*, II, 1, pp. 127-157.

CARRERAS, A. (1985), "Gasto Nacional Bruto y Formación de Capital en España, 1849-1958: primer ensayo de estimación", in: P. Martín Aceña & L. Prados de la Escosura (eds.), *La Nueva Historia Económica en España*, Tecnos, Madrid, pp. 17-51.

CHENERY, H.B.& M. SYRQUIN (1975), *Patterns of Development 1950-1970*, Oxford University Press, Oxford.

CONSEJO DE ECONOMIA NACIONAL (CEN) (1945), *La Renta Nacional de España*, 2 vols., C.E.N., Madrid.

CONSEJO DE ECONOMIA NACIONAL (CEN) (1965), *La Renta Nacional de España, 1906-1965*, C.E.N. Madrid.

A. CORRALES & D. TAGUAS (1989), *Series macroeconómicas para el período 1954-1988: un intento de homogeneización*, Instituto de Estudios Fiscales, Madrid.

CRAFTS, N.F.R. (1984), "Patterns of Development in Nineteenth Century Europe", *Oxford Economic Papers*, XXXVI, 4, pp. 438-458.

DONGES, J.B. (1976), *La industrialización en España. políticas, logros, perspectivas*, Oikos Tau, Barcelona.

DOWRICK, S. & N. GEMMELL (1991), "Industrialization, Catching-Up and Economic Growth: A Comparative Study Across the World's Capitalist Economies", *Economic Journal*, CI, 1, pp. 263-275.

EICHENGREEN, B, (1986), "What Have We Learned from Historical Comparisons of Income and Productivity", in: P.K. O'Brien, (ed.), *International Productivity Comparisons and Problems of Measurement*, Bern.

FRAILE, P. (1991), *Industrialización y grupos de presión. La economía política de la protección en España*, 1900-1950, Alianza, Madrid.

KUZNETS, S. (1966), *Modern Economic Growth: Rate, structure, and Spread*, Yale University Press, Yale.

MADDISON, A. (1991), *Dynamic Forces in Capitalist Development*, Oxfor University Press, Oxford.

MADDISON, A. (1992), "El crecimiento económico italiano, 1861-1989: una revisión", in: L. Prados de la Escosura & V. Zamagni. (eds.), *El desarrollo económico en la Europa del sur: España e Italia en perspectiva histórica*, Alianza, Madrid, pp. 81-100.

MARTIN ACEÑA, P. (1984), *La política monetaria en España, 1919-1935*, Instituto de Estudios Fiscales, Madrid.

MARTIN ACEÑA, P. (1985), "Déficit público y política monetaria en la Restauración 1874-1923", in: P. Martín Aceña & L. Prados de la Escosura, (eds.), *La Nueva Historia Económica en España*, Tecnos, Madrid, pp. 262-284.

MOLINAS, C. & L. PRADOS DE LA ESCOSURA (1989), "Was Spain Different? Spanish Historical Backwardness Revisited", *Explorations in Economic History*, XXVI, 4, pp. 385-402.

MORELLA, E. (1992), "Indices sectoriales de producción industrial de posguerra (1940-1958)", *Revista de Historia Económica*, X, 1.

NADAL, J. (1975), *El fracaso de la Revolución industrial en España, 1814-1913*, Ariel, Barcelona.

NAREDO, J.M. (1991), "Crítica y revisión de las series históricas de renta nacional de la postguerra", *Información Comercial Española*, 698, pp. 133-152.

O'BRIEN P.K. & L. PRADOS DE LA ESCOSURA, "Agricultural Productivity and European Industrialisation, 1890-1980", *Economic History Review*, XLV, 3.

PEREZ MOREDA, V. (1985), "La evolución demográfica española en el siglo XIX (1797-1930): tendencias generales y contrastes regionales", in: *La popolazione Italiana nell'Ottocento*, Bologna, pp. 45-113.

PRADOS DE LA ESCOSURA, L. (1988), *De imperio a nación. Crecimiento y atraso económico en España (1780-1930)*, Alianza, Madrid.

PRADOS DE LA ESCOSURA, L. (1992), "Crecimiento, atraso y convergencia en España e Italia: introducción", in: L. Prados de la Escosura & V. Zamagni, (eds.): *El desarrollo económico en la Europa del sur: España e Italia en perspectiva histórica*, Alianza, Madrid, pp. 27-55.

PRADOS DE LA ESCOSURA, L., T. DABAN & J. SANZ (1992a), *An Index for Real GDP in Spain, 1860-1954*, Mº de Economía y Hacienda (mimeo).

PRADOS DE LA ESCOSURA, L., T. DABAN & J. SANZ (1992b), *Patterns of Development in Europe, 1820-1990*, Mº de Economía y Hacienda (mimeo).

SANCHEZ-ALBORNOZ, N. (1968), *España hace un siglo: una economía dual*, Península, Barcelona.

SUMMERS, R. & A. HESTON (1991), "The Penn World Table (Mark 5): An Expanded Set of International Comparisons, 1950-1988", *Quarterly Journal of Economics*, CVI, 2, pp. 327-368.

TENA, A. (1992), "Protección y competitividad en España e Italia, 1890-1960", in: L. Prados de la Escosura & V. Zamagni, (eds.), *El desarrollo económico en la Europa del sur: España e italia en perspectiva histórica*, Alianza, Madrid, pp. 321-355.

TORTELLA, G. (1973), *Los orígenes del capitalismo en España*, Tecnos, Madrid.

TORTELLA, G. (1987), "El sector terciario en España antes de 1936: una nota de escepticismo sobre las estimaciones al uso", *Revista de Historia Económica*, V, 2, pp. 587-597.

TORTELLA, G. (1992), "La Historia económica de España en el siglo XIX: un ensayo comparativo con los casos de Italia y Portugal", in: L. Prados de la Escosura & V. Zamagni, (eds.), *El desarrollo económico en la Europa del sur: España e italia en perspectiva histórica*, Alianza, Madrid, pp. 56-80.