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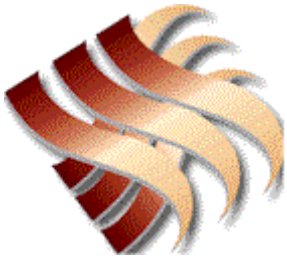

Regional Policy Dialogue

TRADE AND INTEGRATION DIALOGUE

ECONOMIC INTEGRATION AND REAL CONVERGENCE: LESSONS FROM THE SPANISH EXPERIENCE IN THE EUROPEAN ECONOMIC AND MONETARY UNION

W O R K I N G P A P E R

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Economic Integration and Real Convergence: Lessons from the Spanish Experience in the European Economic and Monetary Union

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I. Introduction

One of the most characteristic traits in the international economic landscape of recent decades is the proliferation of Regional Integration Treaties of all types: from simple Preferential Treatment Agreements to more intense and complex forms of integration such as that reached by the twelve countries that form the European Economic and Monetary Union (EMU). Aside from other possible political motives (e.g. consolidation of democratic regimes), this fact is explained by the growing notion that adoption of Integration Treaties improves efficiency in the assignment of resources and, therefore, growth and economic welfare in the signatory countries.

Even though the notion that integration favors growth was already accepted in conventional models developed during the 60's and 70's, it is reinforced in the new models of endogenous growth that surface in the mid-80's. These new models distinguish additional sources of incentive for efficiency and economic welfare to those presented by the traditional theories on economic integration. In short, the use of economies of scale, augmentation of consumer demand options, improvements in international dissemination of technology and increase in negotiating capacity of the

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groups of partners in international markets and organizations are some of the fundamental sources of stimulus.

Now, contrary to the traditional theory of integration, the recent models are not always optimistic regarding the possibility that integration conveys an improvement in real convergence of *per capita* income levels for member countries. Facing these contradicting predictions, empiric evidence suggests that participation in an integration process tends to be favorable, but in no way does it guarantee convergence among the partners' income levels. In this respect, empirical studies also suggest that, by means of applying adequate macro and microeconomic policies, governments may play an important role in achieving less-developed partners' aspirations of convergence.

In this context, the purpose of this paper is, precisely, to reflect on the most appropriate policies to take advantage of the economic welfare that may originate from an integration process in favor of lesser-developed partners.

II. Economic Integration and Real Convergence: Main Theoretic Hypotheses

The traditional economic integration models developed in the 60's and 70's, stemming from pioneering works by Viner (1950) and sharing the assumptions of the neoclassic theory of growth (Solow, 1956, 1957), predict that integration favors growth and convergence of the *per capita* revenue levels of partner countries. Assuming technologies are exogenous and identical, the dynamics of revenue convergence are based on a supposition of decreasing capital returns. Thus, in countries with smaller capital endowments and inferior revenue levels, capital would have a superior productivity and profitability. Consequently, openness to trade and an international mobility of factors, which are connected to integration processes, would give way to a process of real convergence in the revenues of the least advanced countries, in that it would capital to flow in their direction, seeking better profitability. This creates a process leading to an equalization of the partners' relative factorial endowments, and therefore to the equalization of prices for goods and factors and the countries' revenues.

However, the models created since the mid-80's, stemming from the new theories on growth,[1] do not predict that integration processes necessarily lead to a convergence of incomes among partners. Thus, in one of his first contributions, Romer (1986) questions that capital returns of scale are decreasing. Lucas (1988), aside from advocating for the crucial role of human capital in growth, argues that it can have increasing returns of scale that give way to a "brain drain" movement, that is, a displacement of the most qualified labor force (human capital) from the countries with the worst concentration of this factor. Likewise, some versions of the recent models of endogenous growth, that is, those that hold that Research and Development (R&D) investments are what drives growth, admit the possibility for the creation of permanent breaks in the technological and economic development in the countries, that integration could not solve. Moreover, they contemplate the possibility that, under certain circumstances, in particular the presence of economies of agglomeration in any of the variables of capital, such breaks can be accentuated in an integration context. The reason is that economies of agglomeration, defined as positive externalities associated to the spatial concentration of production activities, may make investments made in countries (regions) with higher endowments of capital and higher levels of development more productive and profitable. Therefore, capital would move to the more advanced countries (regions), thereby fueling a tendency to the polarization of capital and economic wealth (or income distribution) (Ottaviano and Puga, 1998).

At any rate, even as the most recent and reputable literature contemplates the likelihood that integration processes heighten a divergence between the countries' income levels, it is considered more plausible that they contribute to convergence by promoting technological spillovers transmitted through trade and direct international investment.[2] To this respect, the more elaborate models additionally point out that human capital is an essential ingredient to an adequate use of the technology generated by R&D efforts, both local and foreign (technological spillovers).[3] One can affirm that the more human

[1] Barro and Sala-i-Martin (1995), Grossman (1996) and Aghion and Howitt (1998) offer a detailed background on these models, and Temple (1999) offers a survey of empiric evidence.
[2] Note that these models consider that the technological capacity of the countries depends mainly on their R&D investments and the diffusion and assimilation of the R&D spillovers from the countries they do business with. See Coe and Helpman (1995); Nadiri and Kim (1996); Baldwin, Braconier and Forslid (1999); Keller (1999) and Martín, Velázquez and Crespo (2001).
[3] See Cannon (2000) and references cited.

capital a country has, the better it can take advantage of the growth boost brought on by integration processes.

Moreover, some studies suggest that integration with more developed countries, those which carry a good reputation in terms of macroeconomic stability, broadens financing possibilities in international markets at a lower cost and, therefore, favors growth and real convergence. In addition, other studies observe that lesser developed partners may by some measure offset economies of agglomeration effects in terms of polarization of wealth in the more affluent partners through investments in infrastructure, in particular transportation and communication, and within these especially those associated with new information and communications technologies.[4]

In sum, specialized literature unanimously recognizes that integration provides a significant gain in the partner group welfare. However, predictions on the distribution of these gains are not concurrent. A majority of recent models, based on the latest developments in growth theory, questions that integration processes spontaneously lead to the convergence of *per capita* income rates among the member countries. Moreover, some suggest the possibility that they dominate diverging tendencies and in consequence a polarization of the economic wealth within the area of integrated countries.

Consequently, at least from a fairness standpoint, it is easy to find arguments to justify the application of policies that allow a more equitable distribution of the economic gains that result from regional integration agreements.

In fact, a study of regional integration agreements in effect reveals that, in practice, signatory countries have normally applied policies to face possible adjustment costs or problems in spatial distribution of income, both of these related to higher competition conveyed by integration. The European Union is a clear example of this tendency, where this sort of policies has been enacted more intensely, not only towards national budgets but also, and gradually more toward the communitarian budget.

[4] To this respect, see Aschauer (2000) and references cited there. The particular influence of the telecommunications infrastructure is analyzed, for example, by Crandall (1997) and Koski and Majumdar (2000).

III. The Spanish Experience in the European Integration Process

Having examined the main ideas on the impact integration agreements have on real convergence of lesser developed partners, and their economic policy implications, we will consider Spain's experience, an illustrative example of an integrating economy with other generally more developed nations. However, due to the necessary briefness of this paper, it will only be possible to present a few stylized features of its experience.

To begin, we must point out that since Spain's incorporation to the European integration process in 1985,[5] it has successfully reduced its income *per capita* gap compared to the EU average, expressed in Standard Purchasing Power Parity (PPPs), by more than ten percentage points, from 71% to 82%. As observed in DIAGRAM 1, this convergence pattern was also registered in the other three EU members with lower development rates: Ireland, Portugal and Greece. These along with Spain are known as the group of cohesion, as they are the four partners more likely to benefit from the Cohesion Fund.[6] However, the convergence process intensity significantly varies among them. Ireland is in first place, Greece in last, while Spain and Portugal occupy the middle.

Therefore, the convergence path taken in the four cohesion countries suggests on one hand that integration has not harmed the growth and convergence possibilities of the least developed partners, but quite the opposite, and on the other, that these possibilities, far from a spontaneous result of integration, are determined also by each one's economic characteristics and the specific policies they have applied through time.[7]

Using a simple mathematic operation, the advancement in convergence of the GDP *per capita* rates can be broken down into its different components. Thus, it is shown that a country's GDP *per capita* growth hinges on an increase in labor productivity (which in

[5] From its adhesion in 1986, Spain has participated in every subsequent advancement in the European integration process, which is to say the unification of the market, formally reached on January 1, 1993, and the launch of the Monetary Union in 1999.
[6] The Cohesion Fund was created in 1983 under the Maastricht Treaty to aid the EU least developed partners to adapt to the requirements of the Economic and Monetary Union.
[7] The last detail is inferred from disparities between the countries as well as the fact that in each country's convergence trajectory differences can be perceived.

turn can be broken down into variations in working time and in hourly productivity), and on employment rate growth. (The APPENDIX offers a more detailed explanation). The break down results of the GDP *per capita* growth rate for Spain since its accession to the EU are presented in CHART 1. As can be expected, increases in GDP *per capita* are a fundamental result of improvements in labor productivity. In short, respectively almost 57% and 85% of *per capita* GDP growths of Spain and the EU during that period are a result of productivity improvements.

To this respect, as we have anticipated, the most recent theoretic and empiric evidence points out that the level and direction of physical and intangible endowments of capital (in particular of human and technologic capital) are the factors that explain in a great extent productivity and therefore growth. Now, what has happened in the case of Spain and the rest of the EU countries?

To answer this question see CHART 2, which presents a revised estimate of physical capital stocks (productive private and public), and of human and technological capital for some reference countries (Martín, 2000, chapter 2).[8] It points out, firstly, that behind Spain's superior *per capita* growth there is also a superior investment effort, which has allowed for an approach of the physical capital levels (both public and private) by Spanish worker to the highest EU averages. In this respect, it is appropriate to point out that public investment dynamism has been especially intense and in great part directed toward achieving a substantive improvement in the transportation infrastructure. Note however that investments to expand infrastructures for exploiting innovations in the information and communications technologies have been quite limited. This explains in part the lag shown by Spain in relation to the other EU partners regarding its application of new Internet technologies. (See CHART 3).

Back to CHART 2, one may also infer that Spain has developed a higher investing effort in education and Research and Development (R&D), which has caused a reduction of the existing gap between its human and technological capital as compared to EU averages.

[8] That paper offers a detailed explanation on the estimation method, with the sole exception of the productive physical capital. In short, this calculation procedure is different from the one presented in that

Significant inflows of foreign direct investment in Spain have greatly contributed to this country's investing effort, which in turn has enabled higher growth rates and a substantial catch up of Spanish income *per capita* rate to the highest of their European partners. The role of foreign direct investment (FDI) has been important as a source of financing as well as a support factor for modernizing productive structures.

In response to the gradual openness and integration process, foreign trade has oriented towards European markets with spectacular growth, especially regarding imports. This is logical keeping in mind that Spain boasted higher protection levels. Therefore, even though exports have risen more than partner country averages, the trade balance has deteriorated. Additionally, like has happened with production, the restructuring made to the composition of exports has allowed Spain's trade specialization to approach that of the most advanced EU countries. Specifically, Spain's exports have seen an increase in the most intensive human and technological capital sectors, while at the same time there was a substantial increase in intra-industrial trade.

Nevertheless, the productive system modernization process undergone in order to adapt to an environment of rising competitive pressures linked to integration has had significant adjustment costs in terms of unemployment. Even when these costs are partly unavoidable, in Spain they have unnecessarily expanded as a consequence of existing problems and inflexibilities in the European labor market. To this respect, even as Spain's unemployment rate has by far exceeded the EU average, there have not been, as can be expected, migrations towards the more advanced partner countries with lower unemployment levels.[9]

To conclude this brief review of the most significant facts in the Spanish experience since it joined the construction project for a unified Europe, we must mention the

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paper (regarding physical capital) in our treatment of residential construction investments which have, naturally, been excluded.

[9] Among the reasons given to explain the low workforce mobility in the EU, the most important ones are: the availability, even in the least developed member countries, of a reasonable income level along with a fairly developed social benefits program, which contribute to curb migration, noticeable unemployment levels even in countries which traditionally received immigrants, and deficiencies in labor and real estate markets. Add to these the discouraging effects on migration effected by financial aids, basically Structural Funds and Cohesion Funds, distributed under the European Regional Policy to boost economic growth in the least developed EU regions and countries.

gradual synchrony achieved between its economic cycle and that of the other countries and, above all, the common advancements in macroeconomic stability. It is noteworthy, however, that these advances occurred in fairly recent dates –the mid-90's- and have been achieved due to efforts to overcome the nominal convergence criteria established by the Maastricht Treaty to form part of the Monetary Union.

Therefore, the Spanish adhesion to the European economic integration process has been, at least up to now, positive. This is shown, among other things, by the considerable growth rates registered which, being higher than the EU average, have allowed for a substantial advance of the Spanish income *per capita* rate convergence towards the EU median.

IV. The role of economic policy

It is important to remark that the success of the Spanish experience, an example of integration among uneven economies, has not been only a spontaneous consequence of integration. It has also been based on the application of an economic policy that has favored the convergence process of Spain's economic welfare levels.

To this respect, CHART 4 outlines the main points of the economic policies applied in each area, from Spain's incorporation in 1986 to the construction process of a United Europe, briefly commenting on their results.

The Regional Policy applied with financing from the EU Budget has also contributed to Spain's accomplishments in terms of revenue convergence. To this respect, note that the funds received have progressed in hand with integration as it has deepened through time, from the customs union to the economic and monetary union. During the previous budget period, 1994-1999, these funds formed 1.5% of the GDP.[10]

[10] Note, however, that relative aid (in GDP percentage) received by other Cohesion countries was higher, particularly in Greece (see European Commission, 2001). Martín (2000, chapter 11) and bibliographical references mentioned there give details on the EU regional policy and Spain's participation.

Now, Spain's experience provides some useful lessons in the design of adequate adjustment policies for countries that reach regional integration agreements with more developed partners. Among these, we highlight the following:

- In order to take advantage of stimuli on efficiency and productivity created by competitive pressures from more developed partners; lesser-developed country governments should boost investments in education, R&D and infrastructures. This would cause a direct positive impact on the economic system's productivity and competitiveness as well as an indirect impulse by improving adaptation and assimilation possibilities of technology coming from more developed partners, a technological influx that may be further boosted by augmentations in trade and FDI.

- In order to create a favorable environment for investment, it seems important that governments apply policies that guarantee macroeconomic stability, especially regarding inflation control and budget balance.

- Likewise, it is advisable that governments attempt to create a favorable legal and economic framework to attract FDI.

- The Spanish experience suggests that adjustment costs, associated to the required adaptation of the productive system to a context of trade openness, will be lower according to the flexibility and efficiency of the labor market.

- In any case, in order to palliate inevitable adjustment costs in terms of unemployment, it is advisable for governments to maintain a system of social benefits that at least prevents social exclusion situations.

- Moreover, if the country in question is significantly less developed than its partners, its government should negotiate some sort of economic compensation, which should correlate to the agreed integration level. In this respect we insist that economic aids –which grew as integration progressed- received by Spain and the other lesser-developed EU members, originated in the Communitarian

budget, have been important in offsetting the market tendency towards income concentration in the most prosperous countries.

- At any rate, the fact that the cohesion group country which has received the most EU transfers in relation to its GDP, Greece, is however the one with the least progress in terms of real convergence, suggests the importance not only of the magnitude of the aid but also the efficiency of their negotiations. Therefore, we can argue that the formation of competent teams within the public administrations of the countries that receive such aid should also be a high-priority in the policies established to enable lesser-developed partners to take complete advantage of the opportunities presented by integration agreements.

To conclude, it is suitable to admit that the preceding suggestions contain only the most general outline of a possible economic policy strategy for those countries that establish integration agreements with more developed partners. Due to their general character, these recommendations may be applicable as orienting principles in a wide variety of situations. However, their application to a specific case would require more detail as well as an expansion with additional measures specific to the case in point. Therefore, for example, taking reference in the Free Trade Area of the Americas (FTAA), it would be necessary to contemplate complementary actions adapted to the clear situation of underdevelopment faced by some of its potential signatory countries.

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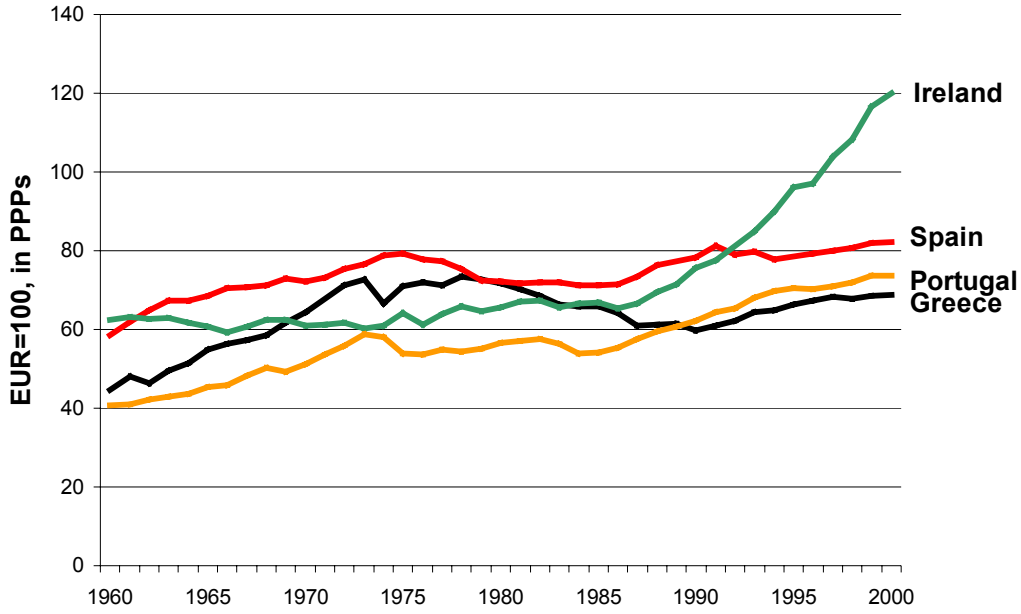
Diagram 1. GDP per capita (1960-2000)



Source: European Commission: European Economy and EUROSTAT: Statistics in Focus. Economy and Finance.

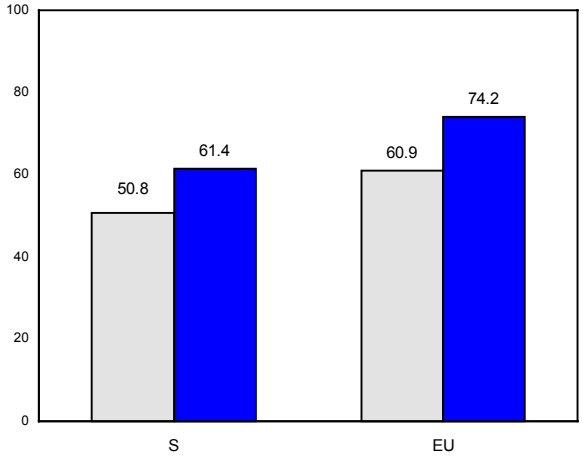
CHART 1. BREAKDOWN OF GDP PER CAPITA GROWTH IN SPAIN AND THE EU AND OF THE CONVERGENCE BETWEEN BOTH. 1986-1999

	Spain		European Union		
	Increase	**Growth Input**	**Increase**	**Growth Input**	**Convergence Spain/EU**
GDP per capita	51,5	100,0	31,9	100,0	14,9
Labor productivity	26,2	56,6	26,1	85,0	0,1
Hourly productivity	31,5	65,1	31,4	97,8	0,1
Working Time	-4,1	-8,5	-4,1	-12,8	0,0
Employment rate	20,1	43,4	4,6	15,0	14,8
Employment/Active population	6,0	13,7	-2,8	-8,9	9,1
Activity rate	8,2	18,7	3,5	11,3	4,5
Working age population/population	4,8	11,0	4,0	12,8	0,8

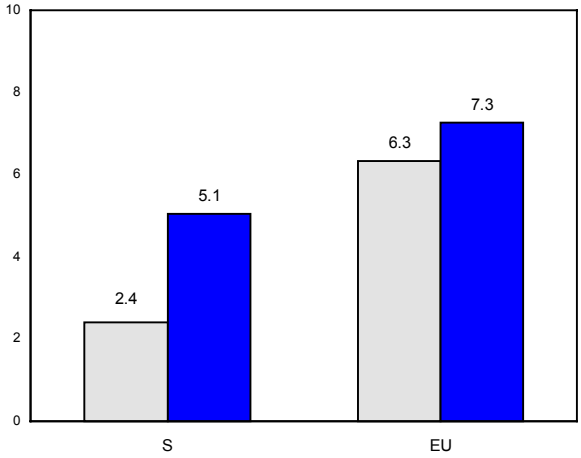
Source: EUROSTAT, OECD, ILO and own studies

CHART 2. ENDOWMENT OF PHYSICAL, HUMAN AND TECHNOLOGICAL CAPITAL

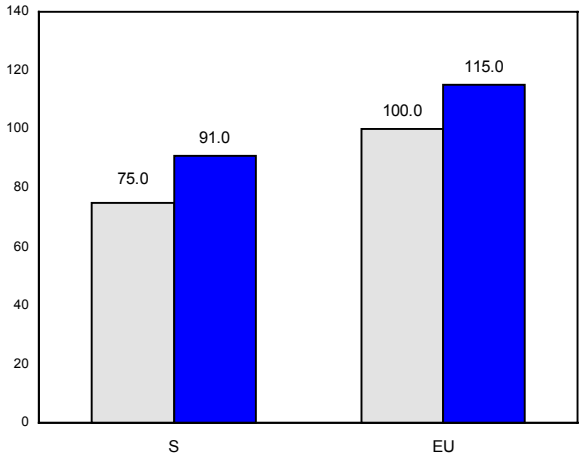
Productive private capital
In thousands of 1999 euros per employee



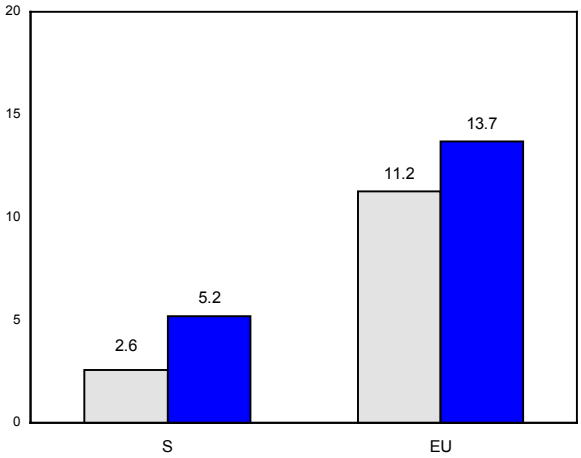
Public physical capital
In thousands of 1999 euros per capita



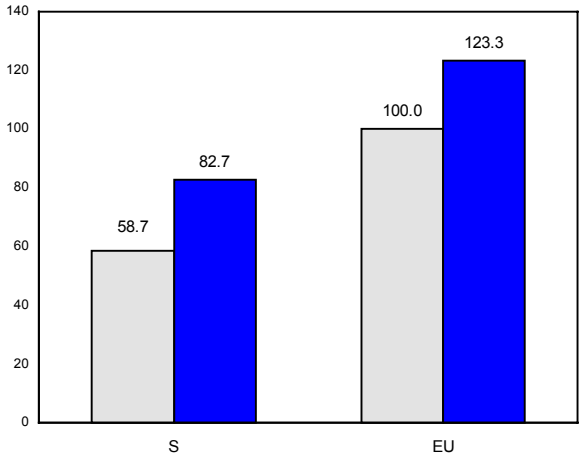
Transportation Infrastructure
EU in 1986 = 100

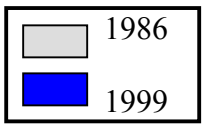


Technological Capital
% of GDP



Human Capital
EU in 1986 = 100





Sources: OECD: Main Science and Technology Indicators; OECD: National Accounts. Main Aggregates; OECD: National Accounts. Detailed Tables; OECD: Education at a Glance; OECD: Basic Science and Technology Statistics; OECD: Labour Force Statistics; EUROSTAT: National Accounts ESA. Detailed Tables by Sector; UNESCO: Statistics Yearbook; UNECE: Annual Bulletin of Transport Statistics for Europe and North America and own studies.

CHART 3. INFORMATION AND COMMUNICATIONS TECHNOLOGIES INDICATORS

Units per 100 people

	Spain	EU-15	USA	Spain relating to the EU (EU=100)
INFRASTRUCTURES				
Internet hosts (June 2001)	2	5	26	45
Web servers (June 2001)	0,4	2	7	22
Secure web servers* (June 2001)	19	36	223	52
Lines of communication (Dec. 1999)	42	47	64	90
Kilometers of fiber optics (Dec. 1999)	0,1	0,5	14	27
Mobile telephones (Dec. 2000)	61	62	41	99
USERS				
Internet users (July 2001)	19	41	64	46
Registered domains (July 2000)	0,7	2	4	33
Electronic commerce users* (July 1999)	1	3	18	41

(*) Per million people

Source: Network Wizards: Internet Domain Survey, Telcordia Technologies: Netsizer, Netcraft: Web Survey by Domain, OECD: Communications Outlook 2001, European Information Technology Observatory 2001, NUA Surveys: How Many on Line.

CHART 4. MAIN ECONOMIC POLICIES DURING THE INTEGRATION PROCESS OF SPAIN TO THE EU

POLICY AREA	TYPE OF IMPLEMENTED REFORM	UTILIZED INSTRUMENTS	RESULTS
Trade Policy	• Gradual elimination of trade barriers • Liberalization of Foreign Direct Investment	• Tariff elimination (1986-92) • Compliance with nearly 300 directives established in the "Single Act" for the unification of the European market (1987-92)	• Export and import increase (trade deficit accentuated) • Intense reception of foreign direct investments • Increased internationalization of businesses
Industrial Policy	• Support industrial restructuring and improvement of the industry's competitiveness	• Subsidies in support of restructuring mature sectors. • Diverse horizontally reaching support to improve quality of productive inputs (human and technological capital)	• Capacity reduction of traditional sectors and improvement of its productivity • Improvement of the technical content and quality of the products
Monetary Policy	• Increased coordination until unification of the monetary policy with a single currency (the euro) is reached.	• Adhesion to the European Monetary system (1989) • Bank of Spain Autonomy Act (1994) • Irreversible fixation of the exchange rate and centralized policy applied by the European Central Bank (1999)	• Compliance with Convergence Criteria (exchange rates, interest rates, prices) required to be part of the European Monetary Union
Financial Policy	• Complete financial system liberalization process	• Liberalization of the stock markets and creation of the National Stock Market Commission (as supervising entity) • Liberalization of bank rates • Strengthening of the Security Deposit Fund • Full bank regulation and supervision powers granted to the Bank of Spain	• Modernization of the Financial System • Reduction of intermediary margins • Prevention and potential solutions for bank crisis.

POLICY AREA	TYPE OF IMPLEMENTED REFORM	UTILIZED INSTRUMENTS	RESULTS
		• Elimination of capitals controls	
Fiscal Policy	• Increase the Welfare State (until early 90's) • Improve efficiency in income and expense management. • Increase in tax collection capacity	• Successive reforms to direct taxation • VAT introduced (1986) • Expense decentralization and fiscal co-responsibility of regional governments	• Public deficit reduction • Improved coverage of public services • Though difficulties to sustain the budgetary equilibrium
Labor Policy	• Reforms to improve flexibility and efficiency in the labor market • Foment employment, particularly, in groups with higher unemployment rates (women, youngsters and long-term unemployed)	• Increase type of contracts • Suppress labor Ordinances (system that obstructed functional and geographical mobility of workers) • Application of active policies to foment employment including subsidies (deductions on Social Security payments) • Measures towards achieving an increased decentralization in collective bargaining	• Reduction of unemployment rate • Increased proportion of temporal employment (supposed around 30% of employment)
Education Policy	• Democratize education	• Extension of free obligatory education up to age 16 (Organization of the Educational System General Act, LOGSE) • Universities Act of 1983	• Substantive increase of enrollment rates at all education levels
Technology Policy	• Encourage R&D • Favor transfers of scientific advances to business innovation	• Science and Technology Stimulation Act of 1986. • National Scientific Investigation and Technological Development	• Convergence in R&D • Technological modernization of businesses • Nonetheless, still insufficient

POLICY AREA	TYPE OF IMPLEMENTED REFORM	UTILIZED INSTRUMENTS	RESULTS
		Plans • Programs to encourage application of new information and communication technologies	technological sector
Market Liberalization Policy and Competition Policy	• Deregulate highly intervened markets • Eliminate monopolies (gas, telephones, electricity, transportation, and others) and favor competition	• Creation of the Competition Defense Tribunal • Creation of Independent Regulatory Organisms (in Energy and Telecommunications) • Privatization of State Enterprises	• Competition increase • Price reductions, though modest

Methodological Appendix

BREAKDOWN OF GDP GROWTH

In this respect, on the basis of a simple arithmetic exercise, it is possible break down the GDP *per capita* growth of every country into its components. Thus, it is shown that a country's GDP *per capita* growth hinges on an increase in labor productivity -which in turn can be broken down into variations in working time and in hourly productivity- and on employment rate growth.

Breakdown of the GDP per capita (*GDPpc*):

$$GDPpc = \frac{GDP}{Pop} = \frac{GDP}{L}\frac{L}{Pop} = Lp^{*}\ Er$$

where,

GDP: Gross Domestic Product
Pop: Population
L: Employment
Lp: Labor productivity
Er: Employment rate

Decomposition of Labor productivity (*Lp*):

$$Lp = \frac{GDP}{L} = \frac{GDP}{L^{*}\ h}h = Hp^{*}\ h$$

where,

h: Working time (in yearly hours per person)
Hp: Hourly productivity

Decomposition of the Employment rate (*Er*)

$$Er = \frac{L}{Pop} = \frac{L}{Lf}\frac{Lf}{Eap}\frac{Eap}{Pop}$$

where,

Lf: Labor force
Eap: Economically active population