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**EDUCATION AND INTERNATIONAL
DEVELOPMENT, 1960-2000:
Economic Studies of OECD
Countries, Latin America, Europe,
Africa and Asia**

Guisan, M.C. · Aguayo, E. · Exposito, P.

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**EDUCATION AND INTERNATIONAL DEVELOPMENT, 1960-2000:
ECONOMIC STUDIES OF OECD COUNTRIES, LATIN AMERICA,
EUROPE, AFRICA AND ASIA**

GUISAN, María-Carmen
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Abstract: This book, EE11, presents a summary of several international studies published by the authors on international development for the period 1960-2000.. EE11 includes 5 chapters: 1) Evolution of Gross Domestic Product and Population in the World for the 20th century and indicators of Education and Production per capita by sector in 21 areas of America, Europe, Eurasia, Africa, Asia and Pacific. in years 1980 and 1999. The chapter also includes a summary of several international models of World development estimated by our research team for the period 1960-2000. 2) International panel models of OECD countries for the 20th century: Production, Employment, Wage and Consumption. 3) Production by sector in OECD countries: Agriculture, Industry, Building and Services. 4) Studies related with economic development of Latin American countries (Education, Trade and Production per capita) for the period 1960-2000. The analyzes highlight the positive impact of Education on international development. 5) A comparison of regional development in Europe and the United States for 1960-2000. This book is scheduled to be followed by another book, EE12, with contents of our research on international development for the period 2001-2023

JEL codes: C51, O5, O51, O52, O57

Keywords: Growth and Development, OECD countries in the 20th century, European Regions, Production and Employment by Sector, Latin America in the 20th century, Africa, Asia, Studies of the period 1960-2000.

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Prologue

EE11 is a book of the Series EE, published by the AHG with the cooperation of the Euro-American Association of Economic Development Studies (EAAEDS). It includes references to econometric studies, published by our research team for 1975-2005, with samples of the period 1960-2000.

Chapter 1 analyses the evolution of World Production, Population and Production per capita for the 20th century and indicators of Education and Production by sector in 21 areas of the World in years 1980 and 1999. It also cites several international models, published by our research team, relating Education and Development for the second half of that century.

Chapter 2 presents the estimation of several equation for Gross Domestic Product per capita, real Wage and Employment with a panel of 6 OECD countries (France, Germany, Italy, Spain, UK and USA) for the period 1960-2000, and the analysis of causality between Consumption and Production per capita, with a sample of 625 observatios of 25 OECD countries in 25 years.

Chapter 3 includes references to studies of production and employment by sector in OECD countries: Agriculture, Industry, Building and Services.

Chapter 4 analyzes the results of several studies of Education and Development in Latin American countries: model by Guisan(1984), presented at the EADI Conference at Madrid, the study by Guisan, Aguayo and Neira(1997), at the EADI Conference at Paris, the model by Guisand et al(1997) on Centroamerica, and the studies by Neira et al(1997) and (1998). We also cite 3 studies on regional development in Latin American countries.

Chapter 5 includes contents related with regional development in Europe and the USA for the period 1960-2000.

Since year 2001 we have published many electronic and printed journals, books, reports and documents, on international development, which are available at Ideas.Repec and at: <https://www.usc.gal/economet/eaat.htm>

EE12 is a book scheduled to appear in year 2023 including international studies, of econometric models of development, published by our research team with samples of the period 2001-2023.

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Santiago de Compostela. 15h May of 2023.

<https://www.usc.gal/economet/ahg.htm>

<https://www.usc.gal/economet/guisan2.htm>

CHAPTER 5
A COMPARISON OF REGIONAL DEVELOPMENT IN THE
EUROPEAN UNION AND THE UNITED STATES, 1960-2000,
MARIA-CARMEN GUISAN

5.1. Interregional models of European and OECD countries, 1960-2000

Guisan and Aguayo(2001), in Chapter 1 of the book EE5 of this series, present an overview of 11 Regional Models of the United States, for the period 1960-200, including contributions by Klein, Glickman , Ballard and other authors. Besides we include a list of 9 interregional models with samples of several European countries, and interregional model of only one European country, as well as a list of Doctoral Dissertations on Regional Development.

Guisan and Aguayo(2022), in Chapter 2 of the book EE9, cite several interregional models of Europe, and other areas, published by Guisan and Frias, Guisan and Cancelo, Guisan and Aguayo, and other authors many of them corresponding to the period 1980-2000, They include an Annex with links to 24 interregional models of Europe and other areas. Our studies analyze real production, employment, wages, human capital (including Education and Research) and quality of life. The great development of several countries and regions of the OECD is explained by their high levels of education, industrial development and quality of social organization.

Guisan(2023), in RSES, includes an analysis of development and population in large regions of the United States for 1960-2021 and presents some comparisons with European countries and regions. Here we highlight some of the main conclusions of that comparison, for the period 1960-2000.

Other interesting studies on OECD countries are the study by Belot and Ederveen(2012) on cultural barriers to migration movements among OECD countries, and the paper by Cavaleri, Luu and Caus(2021), published by the OECD, which present the results of interregional gravity models for each of 14 OECD countries, with different periods for each of them: in the United States for 1997-2018, but in some countries only for years after 2002 or 2008. In Guisan(2023) we expect to include references to other studies of our research team on regional development of European and American countries for the period 2001-2023.

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5.2. Population evolution in EU5 and Large US Regions for 1960-2000

Population of a group of 5 major European countries (EU5): France, Germany, Italy, Spain and the United Kingdom), increased by 46 million for the period 1960-2000, which represents a 18.3% Population growth.

The sum of Net immigration of the EU5 countries, having into account data published by Guisan(2005), amounted approximately to 12.5 for 1960-2000 (including internal migration among countries of UE5), very close to the figure from World Bank of 12.493 million.

The total increase of Population in EU5 was 46 million and the increase due to natural growth of population was around 33.5 million. Net immigration amounted approximately to a 27% of the total increase of Population of EU5.

Table 5.1 shows data of EU5 countries and table 5.2 of Regions of the US.

Table 5.1. Population of EU5, for the period 1960-2000 (thousand people)

	Popula tion 1960	Popula tion 2000	Inc rease	% of Increase	Net migration	Density 2000
Germany	72674	82212	9538	13	7544	236
Spain	30583	40500	9917	32	1186	95
France	45684	60913	15229	33	3244	111
Italy	50200	56942	6742	13	318	201
UK	52373	58893	6520	12	201	243
EU5	251514	297640	46126	18	12493	152

Source: Elaborated by author from OECD and World Bank statistics.

The highest increase, among EU5 countries for 1960-2000. corresponded to France, Spain and Germany, and the lowest to the UK and Italy. The highest percentages of population growth for the period corresponded in France was 33% and in Spain 22%.

The average percentage of Population growth, in the area EU5, was 18%. Density of Populaltion in EU5 increased from 123 inhabitants per square Km in year 1960 to 145 in year 2000. Population Density per square km in year 2000 was higher in EU5 (151) than in the United States (29) and in the World (46).

Table 5.2 includes data of Population in the 8 Regions of the Bureau of Economic Analysis (BEA) in year 2000, the land surface of each Region and the density of Population per km² in year 2020.

Table 5.2 Population (thousand), Land Area and Density per km², year 2000

BEA Regions	Popula tion 1960	Popula tion 2000	% Increa se	km ² land area	density per km ² 2000
New England	10532	13923	26	162363	86
Mideast	38597	46324	20	629114	74
Great Lakes	36290	45155	24	162363	278
Plains	15424	19238	25	1314730	15
Southeast	38885	69282	78	1364599	51
Southwest	14235	31252	120	1462615	21
Rocky Mountain	4350	9224	112	1323726	7
Far West	21659	47024	117	2603113	18
Total	179972	281422	56	9826675	29

Source: Elaborated by author from Census Data by State and FRED data.

Figure 5.1 includes the lists of states of each BEA Region.

Figure 5.1. States by each of the 8 BEA Regions

BEA Region	States
1. New England	Connecticut, Main, Massachusetts, New Hampshire, Rhode Island, Vermont (CD1)
2. Mideast	New Jersey, New York, Pennsylvania (CD2) Delaware, District of Columbia, Maryland (CD4)
3. Great Lakes	Illionis, Indiana, Michigan, Ohio, Wisconsin (CD3)
4. Plains	Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota (CD4)
5. Southeast	Alabama, Kentucky, Mississippi, Tennessee (CD6) Arkansas, Louisiana (CD7); Florida, Georgia, North Carolina, South Carolina, Virginia, West Virginia (CD5)
6. Southwest	Arizona, New Mexico (CD8); Oklahoma, Texas (CD7)
7. Rocky Mountain	Colorado, Idaho, Montana, Utah, Wyoming (CD8)
8. Far West	Alaska, California, Hawaii, Oregon, Washinton (CD9) Nevada (CD8)

Source: Elaborated from US-BEA and Census classification. It includes 50 States and District of Columbia. Note: CD1 to CD9 are the Census Divisions.

Population of the BEA Regions increased by 101 million pepole, for the period 1960-2000, which represents 56 % Population growth. Aproximately 41% of the increase (41 million= came from foreign countries (with figures

of the World Bank for 1961-2000), and the 59% (60 million) corresponded to domestic increase of Population.

Density of Population in the United States evolved from 19 inhabitants per square Km in year 1960 to 29 in year 2000., below World average (47).

The highest % of Population growth corresponded to the Regions with the low Density. Franklin(2003) analyzes the changes of the share of regions on total Population.

5.3. Regional development in EU5 and the United States,1960-2000

Table 5.3 shows the increase of real Production per capita, as an indicator of Income per capita, in EU5 countries in years 1960 and 2000, and table 5.4 the values of real income per capita in BEA regions. Real income per capita might be a value around 80% of real GDP per capita in some cases or even lower in other cases.

Table 5.3. Real GDP per capita in EU5 for 1960-2000
(Dollars at 2000 Prices and Exchange Rates)

	Germany	Spain	France	Italy	UK
1960	8680	3360	7754	5936	10503
2000	22762	14338	22548	19188	25091
Increase	14082	10978	14794	13252	14588
% Increase	62	227	91	124	39

Source: Elaborated by M.C. Guisan from OECD statistics.

Table 5.4. Real Income per capita in BEA Regions (Dollars at 2000 prices)

Code	BEA regions	1960	2000	Increase	% of Increase
91000	New England	13027	37349	24322	187
92000	Mideast	13663	35160	21497	157
93000	Great Lakes	12671	30305	17634	139
94000	Plains	11177	29040	17863	160
95000	Southeast	8897	27337	18440	207
96000	Southwest	10463	27285	16822	161
97000	Rocky Mountain	11668	29120	17452	150
98000	Far West	14625	32775	18150	124
	Total USA	11999	30672	18673	156

Source: Elaborate from BEA statistics, applying to current value of year 1960 the index of Consumption Prices to express the value at constant prices of year 2000.

In the EU5 countries the difference in income per capita at country level was 213% in 1960 and diminished to 75% in year 2000. Real Disposal income per capita would be lower than real Gross Domestic Product per capita.

In the United States there was a difference of 64 % between the highest and the lowest values of real income per capita of the 8 BEA Regions in year 1960 while in year 2000 the difference was only 37 %.

Comparison of 86 regions from Europe and 51 from the United States

Guisan (2004), in RSES analyzes economic development of 151 regions of 15 European Union countries in year 2000, with data expressed in Dollars at 2000 prices and purchasing power parities. Among the EU5 countries with Production per head (PH) as an indicator of regional Income per capita, we found a big difference between the lowest value (the minimum of the Spanish regions with 11381) and the highest value (the maximum of France with 36637), what amounts of a 222%.

The mean of production per capita in 86 region of EU5 countries in year 2000 was 20400 Dollars, the standard deviation was 5520 and the coefficient of variation was 28% ($5630 \cdot 100 / 20400$). There was less disparity among the 51 regions of the US, with a mean of 29551, a standard deviation of 5012 and a Coefficient of Variation of 17% ($(5012 \cdot 100 / 29551)$).

Table 5.5 indicates 4 groups of EU5 regions by the value of Production per capita, in Dollars at 2000 prices and purchasing power parities.

Table 5.5 Production per capita in 86 European regions, year 2000 (Dollars).

Group 1 (<15)	Spain: 10 regions. Italy: 6 regions
Group 2 (15 to 20)	Germany: 5 regions Spain:7 regions France:9 regions. Italy:
Group 3 (20 to 30)	Germany: 9 regions, France: 12 regions. Italy: 11 regions UK 11 regions
Group 4 (>30)	Germany: 3 regions (Bremen, Hamburg, Hessen). France: 1 region (Ile de France)

Source: Elaborated by author from table by Guisan(2004), based on Eurostat statistics.

The top regions of EU5 in value of Production per capita, corresponded to 3 German regions (Bremen, Hamburg and Hessen) and to the French region of Île de France.

The top regions of the US, by Income per capita (higher than 50 thousand Dollars) in year 2000 were Connecticut, Massachusetts, New Jersey and Washington DC. The lowest values, between 31 and 35 thousand Dollars,

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corresponded in year 2000 to Alabama, Arizona, Arkansas, Georgia, Idaho, Kentucky, Mississippi, New Mexico, South Carolina, Utha and West Virginia.

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