

The economic impact of objective 1 interventions
for the period 2000 - 2006



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This input-output analysis of the economic impact of the structural funds does not replace, but is a complement to other types of macroeconomic analysis. The views expressed in the study are not necessarily the views of the European Commission.

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Executive summary

Structural interventions of the Commission comprise expenditures for objective 1, objective 2 and objective 3. The three priority objectives of the Structural Funds are:

- promoting the development and structural adjustment of the regions whose development is lagging behind (objective 1);
- supporting the economic and social conversion of areas facing structural difficulties (objective 2);
- supporting the adaptation and modernisation of policies and systems of education, training and employment. (objective 3).

The purpose of this study is to quantify the economic impacts of objective 1 interventions of the Structural Funds for the period 2000 – 2006. The expenditures of the Structural Funds for objective 2 and objective 3, the Cohesion Fund, the Instrument for Structural Policies for Pre-accession (ISPA) and loans which are granted by the European Investment Bank (EIB) are not included in the analysis. The study quantifies how much of expected development can be attributed to objective 1 expenditures for

- Community interventions (Structural Funds),
- public interventions (Structural Funds, national public interventions) and
- total interventions (Structural Funds, national public interventions, private participation).

The study uses the autumn 2001 forecast and medium-term projection of Directorate-General for Economic and Financial Affairs of the European Commission in order to calculate a baseline for the impact assessment. Today, the forecast itself seems rather optimistic. However, this does not cause problems for the analysis in this report, because the objective is to estimate the impact of the structural funds. In other words the objective is to estimate, for example, the additional growth caused by the structural funds and not to forecast growth as such. Therefore, whether the forecast as such will materialise is of no consequence for the impact analysis in this study.

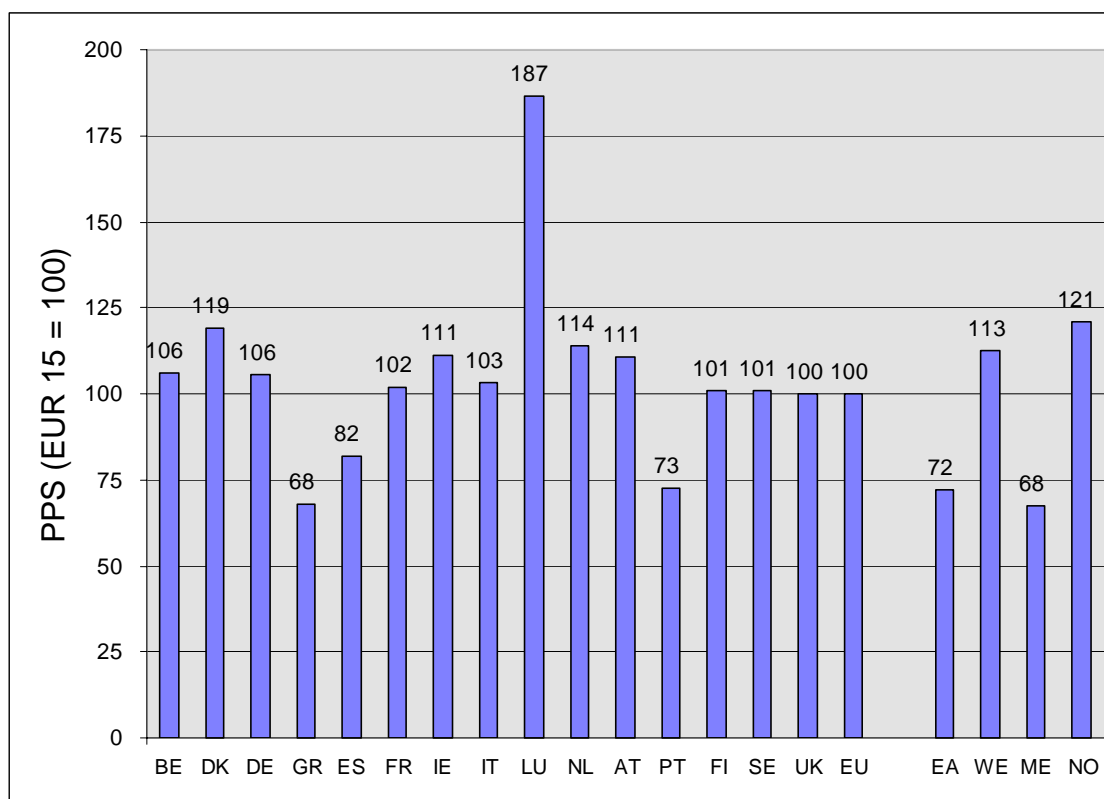
In Europe areas qualify as Objective 1 regions whose per capita gross domestic product measured in purchasing power parities are less than 75 percent of the Community's average. The development gap of the objective 1 regions in the European Union is significant. In 1998 the objective 1 regions reach only 70 percent of the European average. However, it had improved from with 63 percent in 1988. On a national level Greece, Portugal, Spain are lagging behind most. Among the larger regions the Mezzogiorno (Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia) and East Germany (Brandenburg, Mecklenburg-Pomerania, Saxony, Saxony-Anhalt, Thuringia, East Berlin) have significant development lags.

As widening regional disparities within Europe could threaten the successful realisation of the single market, the successful implementation of the Community Support Frameworks and other Community initiatives is an important step to market integration and equal opportunities within Europe.

In order to evaluate the economic impacts of Structural Funds interventions, an analysis system has been developed for the Directorate-General for Regional Policies including a harmonised data base and methodology for impact analysis. A macroeconomic analysis without a minimum of sectoral disaggregation allows only to study a few impacts of the Structural Funds. The evaluation of eco-

conomic impacts would remain cursory and potentially misleading. As the quantification of various structural effects is the main target of the analysis, it has been decided to implement an input-output approach covering a significant amount of branches. With a new set of harmonised input-output tables comprising labour and capital stock data, Eurostat is providing the appropriate data base for such analysis.

GDP per head in Member States 1999



EA = East Germany (Brandenburg, Mecklenburg-Pomerania, Saxony, Saxony-Anhalt, Thuringia, East Berlin)

WE = West Germany

ME = Mezzogiorno (Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia)

NO = Northern Italy

PPS = Purchasing power parities

Source: European Commission, Eurostat, Newcronos, April 2002.

With this impact analysis system, a valuable instrument was established for an assessment of the economic effects of Structural Funds intervention. The software of the dynamic input-output model encompasses impact analysis, follow-up and update of the Communities structural and regional operations. The analysis is focusing on the global economic impacts of Community assisted operations during the period 2000 - 2006 on economic variables such as growth, employment, capital use and leakage effects through trade.

The main task of the study is to analyse how far effects and impacts of the Structural Funds interventions affect the development and structural change of the target regions. The objective is to find comparable answers for the beneficiary Member States on the following main questions:

- How much of the expected economic growth can be attributed to the objective 1 interventions in general and to Community interventions in particular?
- How will the objective 1 interventions and the Community grants influence the economic aggregates and the structure of the beneficiary economies? In particular, what part of the Community

grants will be transformed into demand and production in the target region?

- How big a share of the interventions will lead to more prosperous regions via increased demand for imports?
- How can we assess the employment effects of the implementation of the priorities agreed for the objective 1 interventions, i.e. how many jobs depend upon the achievement of the actions of the objective 1 interventions, and more particularly upon the envisaged financial transfers from the Community?
- How is the capital stock affected by the objective 1 interventions?

For the period 2000-2006 the European Commission approved objective 1 interventions of 137 billion Euro.

Objective 1 interventions in the European Union 2000-2006

1999 Euro

	Community interventions 1)	Public interventions 2)	Total interventions 3)	Community interventions in percent of GDP	Public interventions in percent of GDP	Total interventions in percent of GDP
	Mio. Euro	Mio. Euro	Mio. Euro	%	%	%
Belgium	645	1 302	2 222	0.04	0.07	0.12
Denmark	0	0	0	0.00	0.00	0.00
Germany	20 602	32 936	50 064	0.14	0.22	0.33
Greece	21 321	31 758	42 275	2.18	3.25	4.33
Spain	38 043	57 198	58 912	0.85	1.27	1.31
France	3 946	7 453	8 770	0.04	0.07	0.08
Ireland	3 066	5 313	6 798	0.38	0.65	0.84
Italy	21 516	40 669	50 550	0.25	0.48	0.59
Luxembourg	0	0	0	0.00	0.00	0.00
Netherlands	126	407	471	0.00	0.01	0.02
Austria	271	365	860	0.02	0.02	0.06
Portugal	19 179	30 633	39 412	2.30	3.68	4.73
Finland	948	1 896	3 612	0.10	0.20	0.38
Sweden	748	1 360	2 049	0.04	0.08	0.12
United Kingdom	6 056	11 181	13 822	0.06	0.11	0.13
EU interregional cooperation	531	708	741	0.00	0.00	0.00
European Union	136 998	223 180	280 558	0.22	0.36	0.45

Source: European Commission, Directorate-General Regional Policies, Brussels 2002.

1) Community contribution (ERDF, ESF, EAGGF, FIFG)

2) Community contribution + national public contribution (central, regional, local, other)

3) Community contribution + national public contribution + national private participation

The aid package in favour of the least developed Community regions has sometimes rightly been compared to the European Recovery Programme (ERP), when in the period from April 1948 to June 1952 Western Europe received 12 billion dollars of aid, a sum that was equivalent to 2.1 percent of the average of the receiver nations' GDP. Indeed Community grants made available for major objective 1 areas during the seven year period from 2000 to 2006 represent a similar magnitude in terms of GDP.

The finance made available through the Funds almost doubled between 1989 and 1999, rising from 0.27 % to 0.46 % of EU GDP. In view of the development and structural adjustment needs of the regions whose development is lagging behind, the expenditure volume of objective 1 interventions is substantial in relation to expected gross domestic product. For 2000-2006 the highest expenditure levels of Community interventions in relation to gross domestic product (GDP) is attained by Portugal and Greece. The biggest recipient country is Spain.

For the seven year period 2000-2006 the total volume of objective 1 Community expenditures will constitute 0.22 % of GDP with 0.9 % for Spain, 2.3 % for Portugal and 2.2 % for Greece. As a result the average amount of aid per head will be maintained for the period 2000 to 2006 at the same level as in 1999 in the lagging regions. Overall, 60 percent of the total of Structural and Cohesion Funds will be allocated to Member States, which account for not more than 20 percent of EU GDP and 70 percent will be concentrated in lagging regions. The start of the new programming period in 2000 involved satisfying two requirements: the greatest possible integration of all structural assistance into the general strategy for combating unemployment and stimulating growth in the most disadvantaged areas.

On a national level, the share of objective 1 interventions in percent of GDP is too small in most member states to allow a macroeconomic analysis of the economic impacts of objective 1 interventions. Therefore, it was decided in cooperation with the Directorate-General Regional Policies to concentrate the impact analysis on the following nations/regions:

- East Germany (Brandenburg, Mecklenburg-Pomerania, Saxony, Saxony-Anhalt, Thuringia East Berlin)
- Greece
- Ireland
- Mezzogiorno (Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia)
- Portugal
- Spain

For 2000-2006 the objective 1 interventions comprise a total volume of 248.0 billion Euro (1999 prices) for the six regions considered in this study of which community grants account for a volume of 123.7 billion Euro. The Council of the European Union agreed that the resources of the Structural Funds should be evenly spent between 2000-2006.

Objective 1 interventions are mainly directed towards the creation of an productive environment, the development of human resources and the improvement of the basic infrastructure. The specific development priorities of the programmes include creation of economic infrastructure, support for productive investment and directly related infrastructures, development of human resources, agricultural and rural development, industrial conversion and restructuring, development of the region's growth potential and local development and technical assistance. The greater part of expenditure will be spent on investment in new physical infrastructure (buildings, other construction, machinery, equipment). A substantial part is allocated for salaries, allowances and transfer payments to develop

human resources. Only a negligible share will be spent on the purchase of materials and supplies for operations and maintenance.

Objective 1 interventions and gross domestic product 2000-2006

1999 Euro

	Community interventions	Public interventions	Total interventions	Community interventions in percent of GDP	Public interventions in percent of GDP	Total interventions in percent of GDP
	Mio. Euro	Mio. Euro	Mio. Euro	%	%	%
East Germany 1)	20 602	32 936	50 064	1.14	1.83	2.78
Greece	21 321	31 758	42 275	2.19	3.27	4.35
Ireland	3 066	5 313	6 798	0.38	0.66	0.84
Mezzogiorno 2)	21 516	40 669	50 550	1.16	2.19	2.72
Portugal	19 179	30 633	39 412	2.30	3.67	4.72
Spain	38 043	57 198	58 912	0.85	1.27	1.31
Total	123 726	198 507	248 011	0.85	1.27	1.31

1) Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt, Thuringia, East Berlin.

2) Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia.

Source: European Commission, Directorate-General Regional Policies, Brussels 2002.

As the general thrust of Structural Funds interventions is directed towards a strengthening of the economic structure in favour of more productive and competitive sectors of the areas concerned, positive economic impacts from the demand as well from the supply side can be expected. The demand induced impulses are of short term nature as they result directly or indirectly from the increase in final demand induced by the implementation of the priorities of the objectives of the Structural Funds. The supply side effects are of a longer term nature and they constitute the most decisive factor in the structural catching up process of the regions. These supply effects emanate from the creation of new productive capacities, from improving the qualifications of the labour force, from the opening up of the assisted regions by creating a network of suitable infrastructure, by the dissemination of technical progress and finally by increasing the technology level of production.

In the medium to longer term the supply side efforts of the Structural Funds should lead the backward regions to attain higher levels of productivity and competitiveness and by these means to converge with the average European living standards. It should however be recalled that economic convergence, which is the overriding goal of all Community assistance, is also a problem relating to the conduct of general economic policy. A carefully dovetailed interaction between Community operations and national economic policies will play a decisive role in ensuring that the anticipated effects of the Structural Funds intervention will be fully realised.

The Community Support Frameworks state that the Commission and the Member State shall ensure that the increase in the appropriations of the funds has a genuine additional economic impact in the regions concerned. It shall result at least in an equivalent increase in the total volume of official or similar (Community and national) structural aid in the Member state concerned, taking into account the macroeconomic circumstances in which the funding takes place. By agreeing to the Community Support Frameworks, the Member state also confirms its commitment to this legal obligation of ad-

ditionality. The Commission will check the application of this commitment on a regular basis by undertaking a periodic assessment of additionality throughout the period of implementation of the Community Support Frameworks. While national participation in the financing of the Community Support Frameworks is monitored by an internal follow-up system of the Directorate-General for Regional Policies, the following analysis tries to give a broad assessment of whether the Community interventions results in a genuine additional economic impact.

Financial plan of objective 1 interventions 2000-2006

Mio. 1999 Euro

	Productive environment	Human resources	Basic infrastructure	Miscellaneous	Total
Community interventions					
East Germany 1)	8 583	6 102	5 553	364	20 602
Greece	4 662	4 100	11 837	722	21 321
Ireland	939	824	1 288	15	3 066
Mezzogiorno 2)	10 428	4 137	6 294	657	21 516
Portugal	6 415	3 894	8 507	363	19 179
Spain	11 525	8 867	17 442	209	38 043
Total	42 551	27 924	50 922	2 330	123 726
Public interventions					
East Germany	14 241	9 169	9 026	500	32 936
Greece	6 631	5 467	18 547	1 114	31 758
Ireland	1 572	1 430	2 284	27	5 313
Mezzogiorno	20 027	6 216	13 117	1 310	40 669
Portugal	9 663	6 075	14 386	508	30 633
Spain	17 080	12 915	26 920	283	57 198
Total	69 214	41 272	84 280	3 742	198 507
Total interventions					
East Germany	21 648	13 937	13 719	760	50 064
Greece	11 619	5 687	23 777	1 191	42 275
Ireland	2 617	1 464	2 691	27	6 798
Mezzogiorno	27 040	6 393	15 778	1 339	50 550
Portugal	17 114	6 491	15 299	508	39 412
Spain	18 761	12 948	26 920	283	58 912
Total	98 799	46 920	98 184	4 108	248 011

1) Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt, Thuringia, East Berlin.

2) Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia.

Source: European Commission, Directorate-General Regional Policies, Brussels 2002.

Annual allocation of objective 1 interventions 2000-2006

Mio 1999 Euro

	2000	2001	2002	2003	2004	2005	2006	Total
Community interventions								
East Germany 1)	2 960	2 981	3 022	3 069	2 815	2 871	2 885	20 602
Greece	2 558	2 741	3 120	3 248	3 229	3 253	3 171	21 321
Ireland	644	579	513	442	312	317	259	3 066
Mezzogiorno 2)	2 948	3 278	3 371	3 448	2 763	2 824	2 884	21 516
Portugal	3 216	3 111	3 001	2 885	2 274	2 328	2 364	19 179
Spain	5 110	5 468	5 595	5 706	5 287	5 389	5 490	38 043
Total	17 436	18 157	18 622	18 797	16 680	16 981	17 053	123 726
Public interventions								
East Germany	4 669	4 753	4 856	4 957	4 552	4 571	4 578	32 936
Greece	3 811	4 134	4 654	4 886	4 751	4 803	4 721	31 758
Ireland	1 120	1 005	899	769	551	524	444	5 313
Mezzogiorno	5 511	6 265	6 426	6 534	5 204	5 311	5 419	40 669
Portugal	5 051	4 944	4 866	4 700	3 710	3 738	3 624	30 633
Spain	7 519	8 195	8 494	8 649	8 064	8 098	8 179	57 198
Total	27 681	29 296	30 196	30 494	26 832	27 045	26 964	198 507
Total interventions								
East Germany	7 266	7 237	7 398	7 458	6 930	6 881	6 894	50 064
Greece	5 073	5 609	6 232	6 540	6 220	6 331	6 269	42 275
Ireland	1 379	1 202	1 183	1 017	742	707	567	6 798
Mezzogiorno	6 822	7 604	7 764	8 284	6 520	6 704	6 853	50 550
Portugal	6 517	6 297	6 209	5 977	4 779	4 859	4 773	39 412
Spain	7 524	8 441	8 791	8 951	8 347	8 386	8 472	58 912
Total	34 582	36 390	37 577	38 228	33 538	33 868	33 828	248 011

1) Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt, Thuringia, East Berlin.

2) Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia.

Source: European Commission, Directorate-General Regional Policies, Brussels 2002.

The European Regional Development Fund (ERDF), the European Social Fund (ESF), the European Agricultural Guidance and Guarantee Fund (EAGGF), the Cohesion Fund and specific programmes for the development of industry and transport systems have participated in this ambitious activity. Community loans may partly help in financing important projects through the European Investment Bank (EIB). The impact of the Cohesion Fund and of loans however is not covered in the following analysis.

With a GDP per head of 23.684 Euro per head Ireland has attained a level which is well above the average European level. Therefore, it is planned to phase out objective 1 interventions in the near future. Greece is receiving twice the allocations per capita of Community interventions compared to the Mezzogiorno despite a comparable development lag. Portugal and East Germany are facing

more or less the same development gap. However, the Community contributions per capita for Portugal are significantly higher than for East Germany.

Community interventions for objective 1 in Member States 2000-2006

1999 Euro

	Population 1999	Community interventions 2000-2006	Community interventions per head	Share	Rank	GDP	GDP per head	Share	Rank
	1.000 persons	Mio. Euro	Euro/person	%		Mio. PPS	PPS/person	%	
East Germany 1)	13 936	20 602	1 478	116	(3)	214 597	15 399	95	(4)
Greece	10 538	21 321	2 023	159	(1)	152 979	14 517	89	(2)
Ireland	3 756	3 066	816	64	(6)	88 950	23 684	145	(6)
Mezzogiorno 2)	19 283	21 516	1 116	88	(4)	277 962	14 415	88	(1)
Portugal	10 079	19 179	1 903	150	(2)	156 464	15 524	95	(3)
Spain	39 626	38 043	960	75	(5)	692 647	17 480	107	(5)
Total	97 218	123 726	1 273	100		1 583 598	16 289	100	

1) Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt, Thuringia, East Berlin.

2) Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia.

Source: European Commission, Directorate-General Regional Policies, Brussels 2002.

To assess the impact of objective 1 interventions a dynamic input-output model was been implemented for Greece, Spain, Ireland and Portugal on the national level and for the Mezzogiorno and East Germany on the regional level.

Economic growth

The effort of the Community through its structural policy will be successful if the target regions perform ahead of Community average growth and if they change their economic structure towards innovative and competitive sectors. Nations and regions can only reduce the development gap if they perform above the European average. For the period 2000-2006 an average annual growth rate of 2.6 percent was forecast in the autumn of 2001 for the European Union. At the time Ireland (6.0 %), Greece (4.3 %) and Spain (3.2 %) were expected to grow above the European average, Portugal (2.4 %) slightly below. While East Germany (3.2 %) was expected to grow above the European average, and the Mezzogiorno (2.3 %) more or less to maintain its present position during the years 2000 – 2006.

The set of GDP growth rates was derived from the following sources:

- Eurostat: Newcronos (1999-2000)
- Directorate-General Economic and Financial Affairs, Economic Trends (2001-2003)
- Directorate-General Economic and Financial Affairs, Medium-term projections (2000-2005)

Economic growth 2000-2006

	GDP Mio. Euro 1999	Real growth rates in %							1999 Euro
		2000	2001	2002	2003	2004	2005	2006	Annual Average
Belgium	235 538	4.0	1.3	1.3	2.8	2.8	2.8	2.8	2.5
Denmark	163 216	3.2	1.3	1.6	2.5	2.5	2.5	2.5	2.3
Germany	1 974 300	3.0	0.7	0.7	2.8	2.8	2.7	2.7	2.2
Greece	117 065	4.3	4.1	3.5	4.2	5.0	5.0	5.0	4.4
Spain	565 483	4.1	2.7	2.0	3.2	3.2	3.7	3.8	3.2
France	1 350 159	3.1	2.0	1.5	2.6	2.6	2.8	2.8	2.5
Ireland	89 029	11.5	6.5	3.3	5.5	5.2	4.9	4.9	5.9
Italy	1 108 497	2.9	1.8	1.3	2.7	2.7	2.8	2.7	2.4
Luxembourg	18 449	9.5	4.0	3.0	5.4	5.4	4.9	4.8	5.3
Netherlands	373 664	3.5	1.5	1.5	3.1	3.1	2.9	2.9	2.6
Austria	196 658	3.0	1.1	1.2	2.4	2.4	2.5	2.5	2.2
Portugal	108 217	3.4	1.7	1.5	2.3	2.8	3.0	3.0	2.5
Finland	120 485	5.7	0.5	1.7	2.9	2.9	3.2	3.2	2.9
Sweden	227 607	3.6	1.4	1.6	2.6	2.6	2.9	2.9	2.5
United Kingdom	1 368 181	2.9	2.3	1.7	3.0	3.0	2.8	2.7	2.6
European Union	8 016 548	3.3	1.7	1.4	2.9	2.9	2.9	2.9	2.6
Mezzogiorno	243 133	2.0	1.7	2.7	2.7	2.2	2.2	2.2	2.3
East Germany	228 577	1.9	3.4	3.3	3.2	3.0	3.6	3.7	3.2

European Commission, Eurostat, Newcronos, April 2002.

European Commission, Directorate-General Economic and Financial Affairs, Economic Trends, October/November 2001.

European Commission, Directorate-General Economic and Financial Affairs, Medium-term projection 2000-2005, 2001.

The forecast from autumn 2001 until today seems somewhat optimistic. However, this does not affect the results for the impact analysis. According to our model results, Community interventions in 2000-2006 make the biggest contribution to the anticipated growth in the case of Portugal and Greece, where the level of GDP on average will be respectively 3.5% and 2.2% higher than it would have been without Community grants. The contribution of Community objective 1 interventions is also impressive in the Mezzogiorno (1.7 %), East Germany (1.6 %) and Spain (1.1 %). The efforts of Euro-solidarity towards these regions becomes particularly significant in the light of these findings: without the massive support from Community transfers none of the regions would experience enough economic dynamism to be able to achieve above European average growth, i.e. to close the development gap.

If all public objective 1 interventions (EU and national) were phased out and not substituted by other expenditures, the level of GDP would decline in Portugal (5.4 %), Greece (3.2 %), Mezzogiorno (3.1 %), East Germany (2.6 %) and Spain (1.6 %).

Objective 1 intervention and economic growth 2000-2006

Deviation from baseline level in %			
	Community interventions	Public interventions	Total interventions
East Germany 1)	1.6	2.6	3.9
Greece	2.4	3.5	4.4
Ireland	0.4	0.7	0.8
Mezzogiorno 2)	1.7	3.1	3.7
Portugal	3.5	5.4	7.5
Spain	1.1	1.6	1.7

1) Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt, Thuringia, East Berlin.

2) Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia.

Note: Deviation from baseline level in real terms (1999 prices).

If all objective 1 interventions would be withdrawn, the level of GDP would be lower in Portugal (7.5 %), Greece (4.0 %), East Germany (3.9 %), Spain (1.7 %) and Ireland (0.8 %). With the exception of Ireland, in all other instances there would be a considerable set back and Portugal in particular would be hard pressed to avoid sliding into recession. This is obviously a theoretical scenario. However, the estimation shows the overall weight of the CSF's in the economic development of the six nations/regions.

Investment

Investment is by far the most dynamic component of economic growth. The proportions of capital formation induced by the Structural interventions provide a rough indication of the Structural interventions influence on the supply potential of the economies concerned.

Real growth of capital formation has been weak since 2001 despite the initiatives in the previous period. Induced investment by Community interventions in 2000-2006 as a proportion of total investment are substantial in Portugal (8.9 % of total investment), Greece (8.1 %) and the Mezzogiorno (6.6 %). The participation rates reach 20.4 percent in Portugal, 16.5 percent in the Mezzogiorno and 16.2 percent in Greece if national expenditure in objective 1 interventions intervention is included. In this regard, the shares given clearly indicate the crucial importance of a steady implementation of the Community Support Frameworks for the potential growth of the six nations/regions, since a considerably lower growth in capital formation would be experienced without the positive capital transfers according to the Euro-solidarity effort.

Objective 1 intervention and capital formation 2000-2006

	% of GFCF depending on Community interventions	% of GFCF depending on public interventions	% of GFCF depending on total interventions
East Germany 1)	4.2	6.8	10.3
Greece	8.1	12.2	16.2
Ireland	1.2	2.1	2.8
Mezzogiorno 2)	6.6	12.8	16.5
Portugal	8.9	14.4	20.4
Spain	3.2	4.9	5.1

1) Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt, Thuringia, East Berlin.

2) Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia.

Note: Gross fixed capital formation in real terms (1999 prices).

Capital

In view of the participation rates of objective 1 interventions in gross fixed capital formation substantial effects have to be expected for the capital stock. It is estimated that in 2000-2006 approximately 1.7 percent of the capital stock in the covered countries is depending on Community interventions. The highest dependency is given in Portugal (5.1 %) and Greece (2.6 %). Therefore, there is a clear support to the creation of a modern capital stock in the Cohesion countries.

Objective 1 intervention and capital stock 2000-2006

	% of capital stock depending on Community interventions	% of capital stock depending on public interventions	% of capital stock depending on total interventions
East Germany 1)	1.7	2.7	4.1
Greece	2.6	3.6	4.2
Ireland	0.3	0.5	0.7
Mezzogiorno 2)	1.6	3.0	3.7
Portugal	5.1	7.8	12.1
Spain	1.1	1.7	1.7
Total	1.7	2.7	3.6

1) Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt, Thuringia, East Berlin.

2) Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia.

Note: Capital stock in real terms (1999 prices).

Employment

Given the importance of objective 1 interventions and of Community grants, substantial employment effects are to be expected from the realisation of the operations under the Community Support Frameworks and other interventions. During 2000-2006, approximately 1.4 million positions or 3.5 percent of the work force in the covered regions depend per annum upon the implementation of the total of actions foreseen. 1.8 percent of the work force or 0.7 million positions depend solely on Community grants. The impact of objective 1 interventions on employment as indicated here, does not represent in all cases new jobs created but certainly contributes to a reduction in unemployment in the assisted regions. The numbers given indicate how many positions during the period 2000-2006 depend on Community grants implemented through the objective 1 interventions.

Objective 1 interventions and employment 2000-2006

	Occupied population depending on Community interventions	Occupied population depending on public interventions	Occupied population depending on total interventions	% of occupied population depending on Community interventions	% of occupied population depending on public interventions	% of occupied population depending on total interventions
	1.000 persons			%		
East Germany 1)	101	160	243	1.6	2.6	3.9
Greece	100	143	175	2.5	3.5	4.4
Ireland	8	14	17	0.5	0.8	1.0
Mezzogiorno 2)	101	187	228	1.7	3.1	3.8
Portugal	187	290	410	3.7	5.7	8.1
Spain	209	311	319	1.3	1.9	1.9
Total	706	1 103	1 391	1.8	2.8	3.5

1) Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt, Thuringia, East Berlin.

2) Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia.

A very substantial amount of the labour force depends on a successful implementation of the various projects which are financed by objective 1 interventions, including the public and private participation in the Cohesion countries and other regions. During 2000-2006 in Portugal approximately 8.1 percent of the occupied population is attached to objective 1 interventions, in Greece 4.0 percent. For Community grants the dependence is significant for Portugal (3.7 %) and Greece (2.5 %).

The Directorate-General for Economic and Financial Affairs provided separate projections for capital, labour and value added for the period 2000 – 2006. These projections allowed to assess the productivity of capital of labour during the anticipated period. The productivity of capital is expected to be stagnant in the objective 1 regions throughout the period 2000 – 2006. However significant increases of the labour productivity can be expected for Ireland (4.3 %), Greece (3.6 %), East Germany (2.0 %), the Mezzogiorno (1.0 %) and Spain (0.9 %). As a result the wealth of the objective 1 regions will increase. This development is not only a consequence of the structural funds, and the actual outcome will depend on the extent to which the economic projection materialise, but the structural funds will make an important contribution to this positive development.

Labour and capital productivity 1999 and 2006

	Labour productivity			Capital productivity		
	1999	2006	Average annual growth rate	1999	2006	Average annual growth rate
	Euro/person	Euro/person	%	Euro/Euro	Euro/Euro	%
East Germany 1)	38 320	44 055	2.01	0.207	0.206	-0.04
Greece	29 948	38 346	3.59	0.227	0.229	0.13
Ireland	55 092	73 890	4.28	0.378	0.374	-0.15
Mezzogiorno 2)	42 911	45 984	0.99	0.209	0.211	0.08
Portugal	22 431	25 000	1.56	0.246	0.230	-1.00
Spain	37 284	39 767	0.93	0.248	0.244	-0.24
Total	36 382	40 864	1.67	0.236	0.234	-0.07

1) Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt, Thuringia, East Berlin.

2) Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia.

Labour productivity = GDP (Euro) per person

Capital productivity = GDP (Euro) per unit of capital (Euro)

Structural Change

The selection of the priorities in the objective interventions contribute to a structural change of the backward economies. Structural change in the objective 1 regions is moving in the appropriate direction. Agriculture is declining in importance in almost all regions while private services are gaining in importance. Selected industries will emerge as growth poles and the marketable service sector will benefit considerably from the approved projects and programs.

The impact of objective 1 interventions in general and of Community grants in particular are inducing more industrial production. This must be expected as most of the expenditure is investment oriented. Direct impacts on manufacturing and backward linkages with other industries will certainly help to improve the industrial base and export basis of Community Support Framework regions.

In all objective 1 regions which were covered in this study structural change is steering towards a significant development of private services, whereas government services is declining, with the ex-

ception of East Germany. In some countries and regions manufacturing is loosing momentum (East Germany, Greece, Portugal).

Table 20: Structural change 2000-2006

	Share in value added		Change
	1999	2006	
	%	%	%
		East Germany	
Agriculture, forestry and fishery	2.4	1.8	-0.5
Fuel and power	0.4	0.3	-0.1
Manufacturing	16.9	16.3	-0.5
Building and construction	11.9	11.1	-0.9
Private services	40.4	42.3	1.9
Government services	28.0	28.1	0.1
Value added	100.0	100.0	0.0
		Greece	
Agriculture, forestry and fishery	7.8	7.3	-0.5
Fuel and power	0.3	0.3	-0.1
Manufacturing	13.3	12.1	-1.3
Building and construction	7.4	8.1	0.6
Private services	50.8	54.7	3.9
Government services	20.3	17.6	-2.7
Value added	100.0	100.0	0.0
		Ireland	
Agriculture, forestry and fishery	3.8	3.5	-0.3
Fuel and power	0.1	0.1	0.0
Manufacturing	33.2	34.4	1.3
Building and construction	6.1	6.1	0.0
Private services	39.2	39.9	0.8
Government services	17.6	15.9	-1.7
Value added	100.0	100.0	0.0
		Mezzogiorno	
Agriculture, forestry and fishery	5.1	4.6	-0.5
Fuel and power	0.2	0.2	0.0
Manufacturing	14.0	13.9	0.0
Building and construction	5.6	4.9	-0.7
Private services	47.2	49.6	2.5
Government services	28.0	26.8	-1.2
Value added	100.0	100.0	0.0
		Portugal	
Agriculture, forestry and fishery	4.1	4.0	-0.1
Fuel and power	0.3	0.3	0.0
Manufacturing	22.3	21.9	-0.4
Building and construction	7.9	8.1	0.2
Private services	39.3	39.7	0.4
Government services	26.2	26.0	-0.2
Value added	100.0	100.0	0.0
		Spain	
Agriculture, forestry and fishery	4.2	3.4	-0.9
Fuel and power	0.3	0.2	-0.1
Manufacturing	22.3	22.7	0.4
Building and construction	7.7	6.5	-1.2
Private services	45.1	47.6	2.5
Government services	20.4	19.6	-0.8
Value added	100.0	100.0	0.0

Note: In real terms (1999 prices)

Foreign trade

Most of the covered nations and regions can be classified as small open economies with a narrow industrial base, where many capital products or parts of such goods which are vital for the implementation of the priorities of the Structural interventions are not produced at home but have to be imported from the industrialised EU-economies or from third countries. As a consequence, Community grants are only partially transformed into the gross domestic product of the regions concerned. The following table estimates the magnitude of the leakage effects due to increased imports induced by the Structural interventions.

The estimates indicate that production losses due to import leakages to countries outside the European Union do not constitute a problem of major concern. On average about 133 percent of objective 1 interventions is transformed in 2000-2006 into regional gross domestic product of the covered countries. For small open economies like Greece, Portugal and Ireland with their close links to EU member countries and other trade partners it must be expected that a substantial part of Community grants is leaking to other EU and third countries. Consequently, the more developed regions of the European Communities can expect to benefit indirectly from Community grants. For 2000-2006 it is estimated that 24 percent of Community interventions are leaking from the six areas considered to other EC countries (for the Cohesion countries 28%). Another 9 percent of Community interventions are leaking through induced imports from third countries outside the European Communities.

Import leakages of Community objective 1 interventions 2000-2006

	Induced regional GDP as % of objective 1 interventions	Induced leakages to EU countries as % of objective 1 interventions	Induced leakages to third countries as % of objective 1 interventions	Induced supply as % of objective 1 interventions
East Germany 1)	141.8	18.9	9.4	170.1
Greece	111.6	42.6	3.8	158.0
Ireland	100.4	26.7	11.1	138.2
Mezzogiorno 2)	143.4	17.4	8.6	169.5
Portugal	150.6	35.2	6.7	192.4
Spain	128.3	14.7	13.2	156.3
Total	133.1	24.2	9.1	166.3

1) Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt, Thuringia, East Berlin.

2) Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia.

Note: In real terms (1999 prices).

It is not surprising that some Community Support Framework expenditures are leaking to the rest of Europe or third countries. Certainly the greatest part of project expenditure will be spent in the target regions and result in contracts with national companies, especially construction companies. These private enterprises and government authorities may very well directly or indirectly import some commodities or services from abroad, especially capital goods which are required to establish a modern infrastructure in objective 1 regions. By far the greater parts of induced imports is im-

ported from EU countries recycling partly the contributions of the richer countries to finance the structural funds of the European Union.

Analytical approach

In the previous studies for the periods 1989-1993 and 1994-1999 the main issue was to identify the short-term supply and demand effects of the Community Support Frameworks for the objective 1 regions. The impact analysis system was designed as a comparative static input-output model to assess the quantitative impacts of the Structural Funds on economic growth, structural change, foreign trade and employment. The results have been presented in the annual report on the Structural Funds of the European Commission.

In extension of the previous studies a dynamic input-output model was developed which is capable to evaluate the long-term supply and demand effects of the Community structural policies. Expenditures of the Structural Funds will affect the structure and level of final demand but will also induce changes in technology, imports, labour and capital use. In particular the long-term effects on capital and labour, output and productivity are the focus of interest and will be covered by the dynamic input-output approach. A set of harmonised input-output tables with labour and capital stock data is used which has been established by Eurostat in co-operation with the author. The projected input-output tables are based on harmonised National Accounts of Eurostat and the latest economic forecasts of the Directorate General for Economic and Financial Affairs.

The dynamic input-output model is designed in line with the multiplier-accelerator analysis of macroeconomic theory. According to this theory it is expected that new capacities are required if final demand components are growing. Therefore, induced investment is estimated which can be related to the activities of the Structural Funds. In the first part of the model it is estimated how an increase of gross fixed capital formation will affect the economy which was financed by the Structural Funds to improve the infrastructure of public and private institutions. In the second part it is analysed how the contributions of Community interventions affect value added. In the third part of the impact analysis system a dynamic version of the input-output model is used to evaluate the long-term supply effects of the Structural Funds.

In the previous studies the impact of Structural Funds expenditure was analysed for individual years assuming that the Funds were still active in the previous year. The short-term impact of the Structural Funds activities revealed that the growth potential of the economy would be substantially reduced in individual years if the Structural Funds were not in existence. In the dynamic version of the model it is a sequence of years which will be affected and consequently the supply effects are more profound. The results of the dynamic input-output model reflect a different growth path of the economy which would be realised in the absence of the Structural Funds.

A. Introduction

Structural interventions of the Commission comprise expenditures for objective 1, objective 2 and objective 3. The three priority objectives of the Structural Funds are:

- promoting the development and structural adjustment of the regions whose development is lagging behind (objective 1);
- supporting the economic and social conversion of areas facing structural difficulties (objective 2);
- supporting the adaptation and modernisation of policies and systems of education, training and employment. (objective 3).

The purpose of this study is to quantify the economic impacts of objective 1 interventions of the Structural Funds for the period 2000 – 2006. The expenditures of the Structural Funds for objective 2 and objective 3, the Cohesion Fund, the Instrument for Structural Policies for Pre-accession (ISPA) and loans which are granted by the European Investment Bank (EIB) are not included in the analysis. The study quantifies how much of expected development can be attributed to objective 1 expenditures for

- Community interventions (Structural Funds),
- public interventions (Structural Funds, national public interventions) and
- total interventions (Structural Funds, national public interventions, private participation).

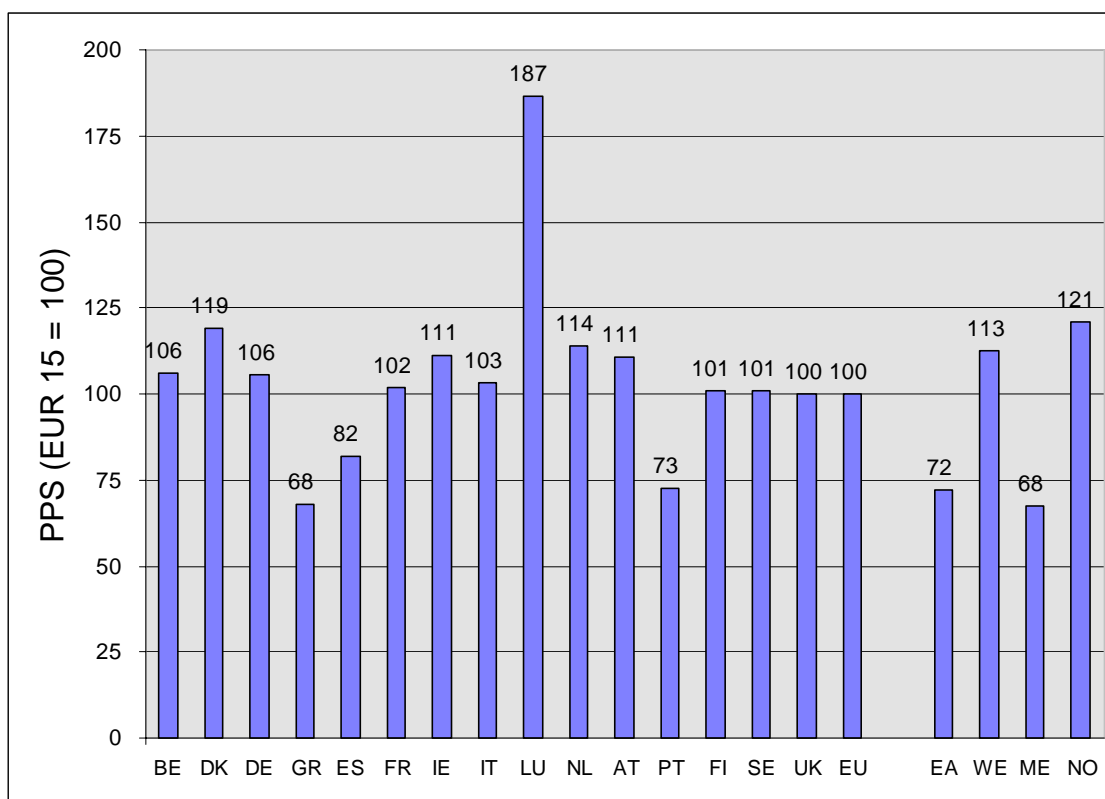
The study uses the autumn 2001 forecast and medium-term projection of Directorate-General for Economic and Financial Affairs of the European Commission in order to calculate a baseline for the impact assessment. Today, the forecast itself seems rather optimistic. However, this does not cause problems for the analysis in this report, because the objective is to estimate the impact of the structural funds. In other words the objective is to estimate, for example, the additional growth caused by the structural funds and not to forecast growth as such. Therefore, whether the forecast as such will materialise is of no consequence for the impact analysis in this study.

In Europe areas qualify as Objective 1 regions whose per capita gross domestic product less than 75 percent of the Community's average measured in purchasing power parities (PPS). The development gap of the objective 1 regions in the European Union is significant. In 1998 all objective 1 regions reach only 70 percent of the European average ¹. However, with 63 percent the development gap in 1988 was still much larger.

The corresponding results in **Figure 1** for all Member states of the Union have been calculated for the base year 1999 of the study. On a national level Greece, Portugal, Spain are lagging behind most. Among the larger regions the Mezzogiorno (Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia) and East Germany (Brandenburg, Mecklenburg-Pomerania, Saxony, Saxony-Anhalt, Thuringia, East-Berlin) have significant development lags.

As widening regional disparities within Europe could threaten the successful realisation of the single market, the successful implementation of the Community Support Frameworks and other Community initiatives is an important step to market integration and equal opportunities within Europe.

¹ European Commission: Unity, solidarity, diversity for Europe, its people and its territory. Second Report on Economic and Social Cohesion, Volume 2, Statistical annex. P. 64, Brussels 2001.

Figure 1: GDP per head in Member States 1999

EA = East Germany (Brandenburg, Mecklenburg-Pomerania, Saxony, Saxony-Anhalt, Thuringia, East Berlin)

WE = West Germany

ME = Mezzogiorno (Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia)

NO = Northern Italy

PPS = Purchasing power parities

Source: European Commission, Eurostat, Newcronos, April 2002.

In order to evaluate the economic impacts of Structural Funds interventions, an analysis system has been developed for the Directorate-General for Regional Policies including a harmonised data base and methodology for impact analysis. A macroeconomic analysis without a minimum of sectoral disaggregation allows only to study a few impacts of the Structural Funds. The evaluation of economic impacts would remain cursory and potentially misleading. As the quantification of various structural effects is the main target of the analysis, it has been decided to implement an input-output approach covering a significant amount of branches. With a new set of harmonised input-output tables comprising labour and capital stock data, Eurostat is providing the appropriate data base for such analysis.

With this impact analysis system, a valuable instrument was established for an assessment of the economic effects of Structural Funds intervention. The software of the dynamic input-output model encompasses impact analysis, follow-up and update of the Communities structural and regional operations. The analysis is focusing on the global economic impacts of Community assisted operations during the period 2000-2006 on economic variables such as growth, employment, capital use and leakage effects through trade.

At this stage attempts to quantify the impacts of the concentration of Community assistance in favour of the least developed regions using other types of analysis, is faced with considerable problems of a methodological and of a statistical nature. This is the case, in particular, for the medium to longer term consequences of the improvement of the supply factors, which should increase the

growth potential of the beneficiary regions. However, these evaluations rely essentially on the appropriate economic modelling of the possible development patterns of the Community as a whole and of the beneficiary regions in particular. Even if such modelling attempts are undertaken they are for the time being hardly comparable as they differ in methodology and in many other respects.

The main task of the study is to analyse how far effects and impacts of the Structural Funds interventions affect the development and structural change of the target regions. The objective is to find comparable answers for the beneficiary Member States on the following main questions:

- How much of the expected economic growth can be attributed to the objective 1 interventions in general and to Community interventions in particular?
- How will the objective 1 interventions and the Community grants influence the economic aggregates and the structure of the beneficiary economies? In particular, what part of the Community grants will be transformed into demand and production in the target region?
- What magnitude will leak away via increased demand for imports from more prosperous regions?
- How can we assess the employment effect of the implementation of the priorities agreed for the objective 1 interventions, i.e. how many jobs depend upon the achievement of the actions of the objective 1 interventions, and more particularly upon the envisaged financial transfers from the Community?
- How is the capital stock affected by objective 1 intervention?

In the previous studies for the periods 1989-1993 and 1994-1999 the main issue was to identify the short-term supply and demand effects of the Community Support Frameworks for the objective 1 regions. The impact analysis system was designed as a comparative static input-output model to assess the quantitative impacts of the Structural Funds on economic growth, structural change, foreign trade and employment. The results have been presented in the 'Sixth Annual Report on the Structural Funds 1994' of the European Commission.

In extension of the previous studies a dynamic input-output model was developed which is capable to evaluate the long-term supply and demand effects of the Community structural policies. Expenditures of the Structural Funds will affect the structure and level of final demand but will also induce changes in technology, imports, labour and capital use. In particular the long-term effects on capital and labour, output and productivity are in the focus of interest and will be covered by the dynamic input-output approach.

However, an input-output approach is only appropriate if the data base for the analysis system is not outdated. Eurostat is presently establishing a set of harmonised input-output tables for 2000 for the European Communities with labour and capital stock data in co-operation with the author. In the past, harmonised input-output tables for 1990 has been compiled for all member countries including a consolidated input-output table for the European Union. These tables include separate import matrices for goods and services which are imported from EC countries and other countries. In particular this information will allow the quantification of leakage effects of the CSF. With a new set of harmonised input-output tables Eurostat is providing the appropriate data base for the impact analysis.

The analytical system is based on the following sources:

SOURCES

Objective 1 Interventions 2000-2006

European Commission, Directorate-General Regional Policies, Brussels 2001.

Economic Forecasts 2001 - 2003

European Commission, Directorate-General Economic and Financial Affairs: Economic Trends, Autumn 2001 Forecasts, Brussels 2001.

Medium-term Projections 2000 - 2005

European Commission, Directorate-General Economic and Financial Affairs: Medium-term Projections 2000 - 2005, Brussels 2001.

Sectoral Forecasts 2000 - 2005

Cambridge Econometrics: Sectoral Analysis and Forecasts up to the Year 2005, Final Report for the Directorate-general Economic and Financial Affairs of the European Commission, Brussels 2001.

National Accounts

Eurostat: National Accounts (Newcronos), Luxembourg 2002.

Input-Output tables

Eurostat: Harmonised input-output tables 2000, Luxembourg 2001.

Regional Accounts

Eurostat: National Accounts (Newcronos), Luxembourg 2002.

A modern input-output methodology² will be used to project a sequence of input-output tables for 1994-99 for the aggregate regions of the CSF. The projected input-output tables are based on harmonised National Accounts of Eurostat and the latest economic forecasts of the Directorate General for Economic and Financial Affairs of the European Commission. In general, it can be assumed that the economic impacts of the Structural Funds are fully reflected in the macroeconomic projections of the Directorate-General for Economic and Financial Affairs including dynamic elements and multiplier effects. This is the main reason why we feel that it is not appropriate to develop further sophisticated econometric projection models for the analysis of these impacts.

Our main objective is to determine the extent of economic growth and structural change, as estimated in the macroeconomic projection, that can be attributed to objective 1 interventions. The presentation will focus on the economic impact of objective 1 interventions in 2000 and in 2006, the first and last years of the approved financial plans for 2000-2006. Annual results for the years in between are included in the statistical annex.

The dynamic input-output model is designed in line with the multiplier-accelerator analysis of macroeconomic theory. According to this theory it is expected that new capacities are required if final demand components are growing. Therefore, induced investment is estimated which can be related to the activities of the Structural Funds. In the first part of the model it is estimated how an increase

² See Penzkofer, H.; Schmalholz, H.; Scholz, L.; Beutel, J.: Innovation, Wachstum und Beschäftigung - Arbeitsmarktwirkungen moderner Technologien, de Gruyter, Berlin, New York 1989.

of gross fixed capital formation will affect the economy which was financed by the Structural Funds to improve the infrastructure of public and private institutions. In the second part it is analysed how the contributions of Community interventions affect value added. In the third part of the impact analysis system a dynamic version of the input-output model is used to evaluate the long-term supply effects of the Structural Funds.

In the previous studies the impact of Structural Funds expenditure was analysed for individual years assuming that the Funds were still active in the previous year. The short-term impact of the Structural Funds activities revealed that the growth potential of the economy would be substantially reduced in individual years if the Structural Funds were not in existence. In the dynamic version of the model it is a sequence of years which will be affected and consequently the supply effects are more profound. The results of the dynamic input-output model reflect a different growth path of the economy which would be realised in the absence of the Structural Funds.

B. Objective 1 interventions

For the period 2000-2006 the European Commission approved objective 1 interventions of 137 billion Euro. The aid package in favour of the least developed Community regions has sometimes rightly been compared to the European Recovery Programme (ERP), when in the period from April 1948 to June 1952 Western Europe received 12 billion dollars of aid, a sum that was equivalent to 2.1 percent of the average of the receiver nations' GDP. Indeed Community grants made available for major objective 1 areas during the seven year period from 2000 to 2006 represent a similar magnitude in terms of GDP.

In view of the development and structural adjustment needs of the regions whose development is lagging behind, the expenditure volume of objective 1 interventions is substantial in relation to expected gross domestic product. The finance made available through the Funds almost doubled between 1989 and 1999, rising from 0.27 % to 0.45 % of EU GDP. The transfers were most pronounced in the cohesion countries Spain, Portugal and Greece.

For 2000-2006 the highest expenditure levels of Community interventions in relation to gross domestic product (GDP) is attained by Portugal and Greece (**Table 1**). For the seven year period the total volume of objective 1 Community expenditures will constitute 0.22 % of GDP with 0.9 % for Spain, 2.3 % for Portugal and 2.2 % for Greece. As a result the average amount of aid per head will be maintained for the period 2000 to 2006 at the same level as in 1999. Overall, 60 percent of the total of Structural and Cohesion Funds will be allocated to Member States, which account for not more than 20 percent of EU GDP and 70 percent will be concentrated in lagging regions. The start of the new programming period in 2000 involved satisfying two requirements: the greatest possible integration of all structural assistance into the general strategy for combating unemployment and stimulating growth in the most disadvantaged areas.

Table 1: Objective 1 interventions in the European Union 2000-2006

1999 Euro

	Community interventions 1)	Public interventions 2)	Total interventions 3)	Community interventions in percent of GDP	Public interventions in percent of GDP	Total interventions in percent of GDP
	Mio. Euro	Mio. Euro	Mio. Euro	%	%	%
Belgium	645	1 302	2 222	0.04	0.07	0.12
Denmark	0	0	0	0.00	0.00	0.00
Germany	20 602	32 936	50 064	0.14	0.22	0.33
Greece	21 321	31 758	42 275	2.18	3.25	4.33
Spain	38 043	57 198	58 912	0.85	1.27	1.31
France	3 946	7 453	8 770	0.04	0.07	0.08
Ireland	3 066	5 313	6 798	0.38	0.65	0.84
Italy	21 516	40 669	50 550	0.25	0.48	0.59
Luxembourg	0	0	0	0.00	0.00	0.00
Netherlands	126	407	471	0.00	0.01	0.02
Austria	271	365	860	0.02	0.02	0.06
Portugal	19 179	30 633	39 412	2.30	3.68	4.73
Finland	948	1 896	3 612	0.10	0.20	0.38
Sweden	748	1 360	2 049	0.04	0.08	0.12
United Kingdom	6 056	11 181	13 822	0.06	0.11	0.13
EU interregional cooperation	531	708	741	0.00	0.00	0.00
European Union	136 998	223 180	280 558	0.22	0.36	0.45

Source: European Commission, Directorate-General Regional Policies, Brussels 2002.

1) Community contribution (ERDF, ESF, EAGGF, FIFG)

2) Community contribution + national public contribution (central, regional, local, other)

3) Community contribution + national public contribution + national private participation

On a national level, the share of objective 1 interventions as percent of GDP is too small in most nations to allow a macroeconomic analysis of the economic impacts. Therefore, it was decided in cooperation with the Directorate-General Regional Policies to concentrate the impact analysis on the following nations/regions:

- East Germany (Brandenburg, Mecklenburg-Pomerania, Saxony, Saxony-Anhalt, Thuringia, East-Berlin)
- Greece
- Ireland
- Mezzogiorno (Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia)
- Portugal
- Spain

The planned objective 1 interventions in East Germany, Greece, Ireland, the Mezzogiorno, Portugal and Spain are summarised in **Table 2** separately for Community interventions, public interventions (Community and national public) and total interventions (Community, national public, national private).

Table 2: Objective 1 interventions and gross domestic product 2000-2006

1999 Euro						
	Community interventions	Public interventions	Total interventions	Community interventions in percent of GDP	Public interventions in percent of GDP	Total interventions in percent of GDP
	Mio. Euro	Mio. Euro	Mio. Euro	%	%	%
East Germany 1)	20 602	32 936	50 064	1.14	1.83	2.78
Greece	21 321	31 758	42 275	2.19	3.27	4.35
Ireland	3 066	5 313	6 798	0.38	0.66	0.84
Mezzogiorno 2)	21 516	40 669	50 550	1.16	2.19	2.72
Portugal	19 179	30 633	39 412	2.30	3.67	4.72
Spain	38 043	57 198	58 912	0.85	1.27	1.31
Total	123 726	198 507	248 011	0.85	1.27	1.31

1) Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt, Thuringia, East Berlin.

2) Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia.

Source: European Commission, Directorate-General Regional Policies, Brussels 2002.

For 2000-2006 the objective 1 interventions comprise a total volume of 248.0 billion Euro (1999 prices) for the six regions considered in this study (**Figure 2**) of which Community grants constitute a volume of 123.7 billion Euro.

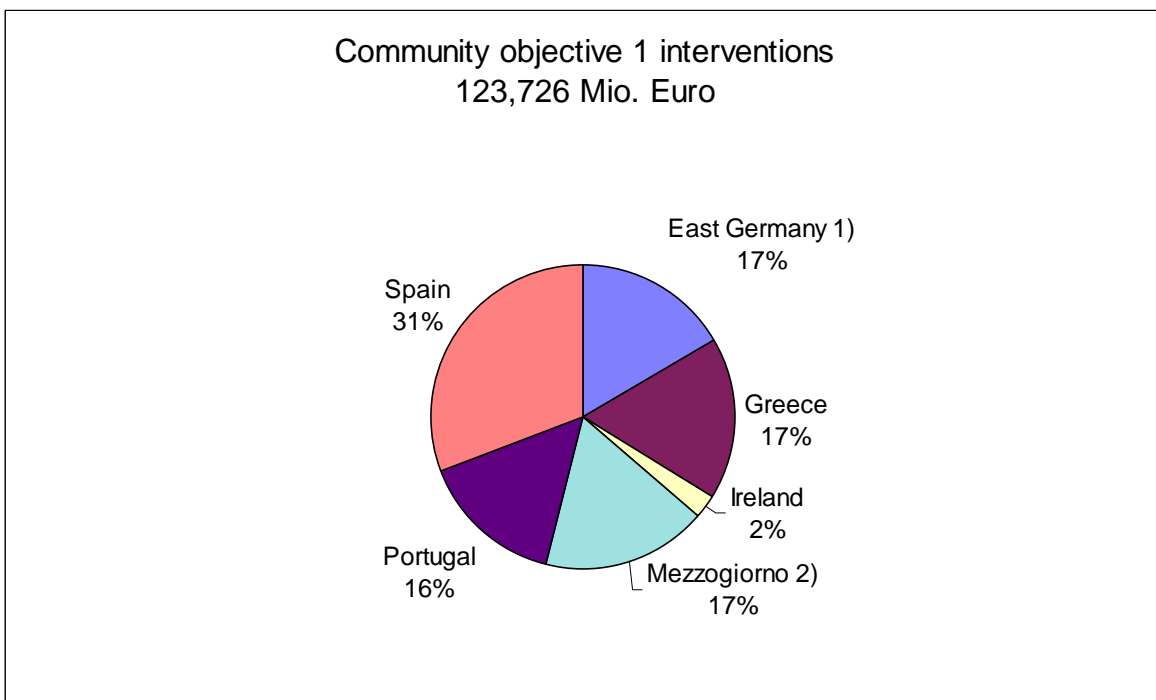
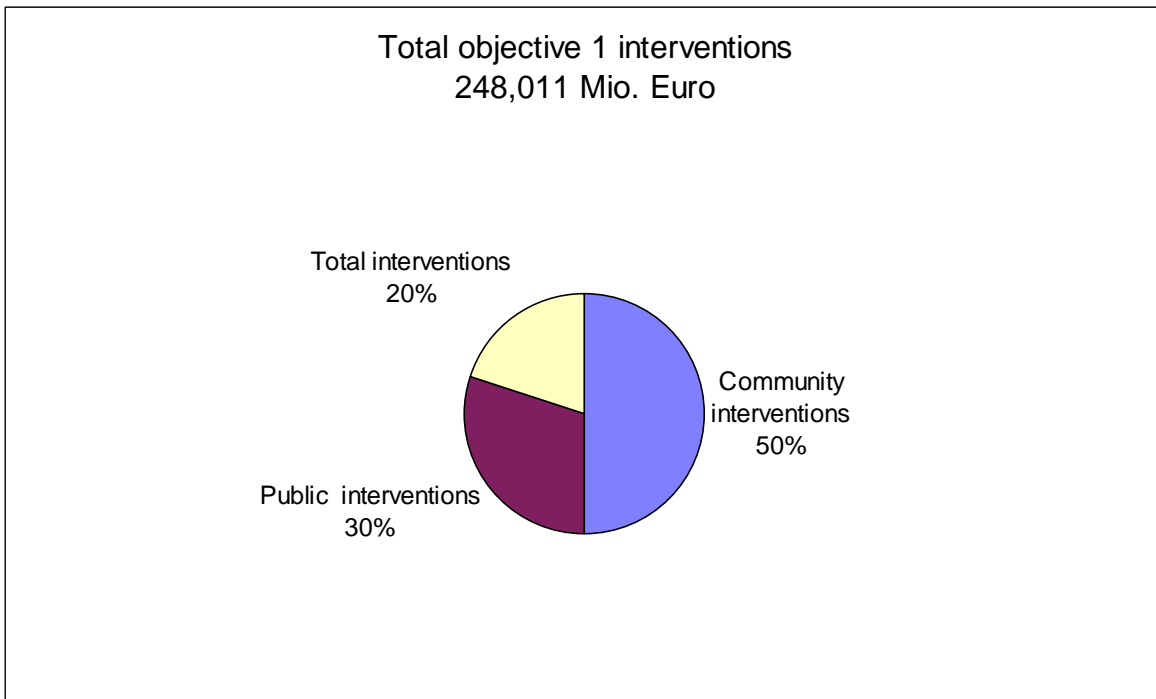
Objective 1 interventions are mainly directed towards the creation of an productive environment, the development of human resources and the improvement of the basic infrastructure. The specific development priorities of the programme include creation of economic infrastructure, support for productive investment and directly related infrastructures, development of human resources, agricultural and rural development, industrial conversion and restructuring, development of the region's growth potential and local development and technical assistance (**Table 3**). The greater part of expenditure will be spent on investment in new physical infrastructure (buildings, other construction, machinery, equipment). A substantial part is allocated for salaries, allowances and transfer payments to develop human resources. Only a negligible share will be spent on the purchase of materials and supplies for operations and maintenance.

The Council of the European Union agreed that the resources of the Structural Funds should be evenly spent between 2000-2006 (**Table 4**).

As the general thrust of Structural Funds interventions is directed towards a strengthening of the economic structure in favour of more productive and competitive sectors of the areas concerned, positive economic impacts from the demand as well from the supply side can be expected. The de-

mand induced impulses are of short term nature as they result directly or indirectly from the increase in final demand induced by the implementation of the priorities of the objectives of the Structural Funds. The supply side effects are of a longer term nature and they constitute the most decisive factor in the structural catching up process of the regions. These supply effects emanate from the creation of new productive capacities, from improving the qualifications of the labour force, from the opening up of the assisted regions by creating a network of suitable infrastructure, by the dissemination of technical progress and finally by increasing the technology level of production.

Figure 2: Objective 1 interventions 2000-2006



In the medium to long term the supply side efforts of the Structural Funds should lead the backward regions to attain higher levels of productivity and competitiveness and by these means to converge with the average European living standards. It should however be recalled that economic convergence, which is the overriding goal of all Community assistance, is also a problem relating to the conduct of general economic policy. A carefully dovetailed interaction between Community operations and national economic policies will play a decisive role in ensuring that the anticipated effects of the Structural Funds intervention will be fully realised.

Table 3: Financial plan of objective 1 interventions 2000-2006

Mio. 1999 Euro

	Productive environment	Human resources	Basic infrastructure	Miscellaneous	Total
Community interventions					
East Germany 1)	8 583	6 102	5 553	364	20 602
Greece	4 662	4 100	11 837	722	21 321
Ireland	939	824	1 288	15	3 066
Mezzogiorno 2)	10 428	4 137	6 294	657	21 516
Portugal	6 415	3 894	8 507	363	19 179
Spain	11 525	8 867	17 442	209	38 043
Total	42 551	27 924	50 922	2 330	123 726
Public interventions					
East Germany	14 241	9 169	9 026	500	32 936
Greece	6 631	5 467	18 547	1 114	31 758
Ireland	1 572	1 430	2 284	27	5 313
Mezzogiorno	20 027	6 216	13 117	1 310	40 669
Portugal	9 663	6 075	14 386	508	30 633
Spain	17 080	12 915	26 920	283	57 198
Total	69 214	41 272	84 280	3 742	198 507
Total interventions					
East Germany	21 648	13 937	13 719	760	50 064
Greece	11 619	5 687	23 777	1 191	42 275
Ireland	2 617	1 464	2 691	27	6 798
Mezzogiorno	27 040	6 393	15 778	1 339	50 550
Portugal	17 114	6 491	15 299	508	39 412
Spain	18 761	12 948	26 920	283	58 912
Total	98 799	46 920	98 184	4 108	248 011

1) Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt, Thuringia, East Berlin.

2) Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia.

Source: European Commission, Directorate-General Regional Policies, Brussels 2002.

The Community Support Frameworks state that the Commission and the Member State shall ensure that the increase in the appropriations of the funds has a genuine additional economic impact in the regions concerned. It shall result at least in an equivalent increase in the total volume of official or similar (Community and national) structural aid in the Member state concerned, taking into account the macroeconomic circumstances in which the funding takes place. By agreeing to the Community Support Frameworks, the Member state also confirms its commitment to this legal obligation of additionality. The Commission will check the application of this commitment on a regular basis by undertaking a periodic assessment of additionality throughout the period of implementation of the Community Support Frameworks. While national participation in the financing of the Community Support Frameworks is monitored by an internal follow-up system of the Directorate-General for Regional Policies, the following analysis tries to give a broad assessment of whether the Community interventions results in a genuine additional economic impact.

Table 4: Annual allocation of objective 1 interventions 2000-2006

Mio 1999 Euro

	2000	2001	2002	2003	2004	2005	2006	Total
Community interventions								
East Germany 1)	2 960	2 981	3 022	3 069	2 815	2 871	2 885	20 602
Greece	2 558	2 741	3 120	3 248	3 229	3 253	3 171	21 321
Ireland	644	579	513	442	312	317	259	3 066
Mezzogiorno 2)	2 948	3 278	3 371	3 448	2 763	2 824	2 884	21 516
Portugal	3 216	3 111	3 001	2 885	2 274	2 328	2 364	19 179
Spain	5 110	5 468	5 595	5 706	5 287	5 389	5 490	38 043
Total	17 436	18 157	18 622	18 797	16 680	16 981	17 053	123 726
Public interventions								
East Germany	4 669	4 753	4 856	4 957	4 552	4 571	4 578	32 936
Greece	3 811	4 134	4 654	4 886	4 751	4 803	4 721	31 758
Ireland	1 120	1 005	899	769	551	524	444	5 313
Mezzogiorno	5 511	6 265	6 426	6 534	5 204	5 311	5 419	40 669
Portugal	5 051	4 944	4 866	4 700	3 710	3 738	3 624	30 633
Spain	7 519	8 195	8 494	8 649	8 064	8 098	8 179	57 198
Total	27 681	29 296	30 196	30 494	26 832	27 045	26 964	198 507
Total interventions								
East Germany	7 266	7 237	7 398	7 458	6 930	6 881	6 894	50 064
Greece	5 073	5 609	6 232	6 540	6 220	6 331	6 269	42 275
Ireland	1 379	1 202	1 183	1 017	742	707	567	6 798
Mezzogiorno	6 822	7 604	7 764	8 284	6 520	6 704	6 853	50 550
Portugal	6 517	6 297	6 209	5 977	4 779	4 859	4 773	39 412
Spain	7 524	8 441	8 791	8 951	8 347	8 386	8 472	58 912
Total	34 582	36 390	37 577	38 228	33 538	33 868	33 828	248 011

1) Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt, Thuringia, East Berlin.

2) Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia.

Source: European Commission, Directorate-General Regional Policies, Brussels 2002.

The European Regional Development Fund (ERDF), the European Social Fund (ESF), the European Agricultural Guidance and Guarantee Fund (EAGGF), the Cohesion Fund and specific programmes for the development of industry and transport systems have participated in this ambitious activity. Community loans may partly help in financing important projects through the European Investment Bank (EIB). The impact of the Cohesion Fund and of loans however is not covered in the following analysis.

Table 5: Community interventions for objective 1 in Member states 2000-2006

1999 Euro									
	Population 1999	Community interventions 2000-2006	Community interventions per head	Share	Rank	GDP	GDP per head	Share	Rank
	1.000 persons	Mio. Euro	Euro/person	%		Mio. PPS	PPS/person	%	
East Germany 1)	13 936	20 602	1 478	116	(3)	214 597	15 399	95	(4)
Greece	10 538	21 321	2 023	159	(1)	152 979	14 517	89	(2)
Ireland	3 756	3 066	816	64	(6)	88 950	23 684	145	(6)
Mezzogiorno 2)	19 283	21 516	1 116	88	(4)	277 962	14 415	88	(1)
Portugal	10 079	19 179	1 903	150	(2)	156 464	15 524	95	(3)
Spain	39 626	38 043	960	75	(5)	692 647	17 480	107	(5)
Total	97 218	123 726	1 273	100		1 583 598	16 289	100	

1) Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt, Thuringia, East Berlin.

2) Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia.

Source: European Commission, Directorate-General Regional Policies, Brussels 2002.

With a GDP per head of 23.684 Euro per head Ireland has attained a level which is well above the average European level (**Table 5**). Therefore, it is planned to phase out objective 1 interventions in the near future. Greece is receiving twice the allocations per capita of Community interventions compared to the Mezzogiorno despite a comparable development lag. Portugal and East Germany are facing more or less the same development gap. However, the Community contributions per capita for Portugal are significantly higher than for East Germany.

The estimates for structural interventions related investments, salaries and materials in **Table 6** will be used to assess the impact of the programme in the input-output approach. Detailed information on the transformation of CSFs by priority axis to economic variables is included in the statistical annex.

Investment in new infrastructure will increase final demand and reduce constraints for economic growth. Education, vocational training and other training activities will improve the labour skills and efficiency in production. As these activities are labour intensive, a substantial amount will be spent for salaries and allowances mainly in the public domain increasing value added and national income. Higher income, however, will induce more consumption and possibly related investment. Expenditure for materials and other supplies will increase intermediate consumption of various pro-

duction activities. All three effects will jointly induce growth, improve skills and purchasing power of the population and reduce the development gap.

Table 6: Financial plan of structural interventions by category

Mio. 1999 Euro

	Gross fixed capital formation						
	Total	Total investment	Buildings	Machinery	Electrical equipment	Transport equipment	Value added
	1 = 2+7	2=3+4+5+6	(3)	(4)	(5)	(6)	(7)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Community interventions						
East Germany 1)	20 602	10 425	6 268	2 162	1 362	633	10 177
Greece	21 321	11 864	6 857	1 198	2 273	1 535	9 456
Ireland	3 066	1 554	939	217	270	128	1 512
Mezzogiorno 2)	21 516	9 798	4 909	1 843	2 286	759	11 718
Portugal	19 179	6 604	3 825	1 023	1 127	630	12 574
Spain	38 043	19 606	11 716	3 266	2 314	2 310	18 437
Total	123 727	59 851	34 515	9 710	9 632	5 995	63 875
	Public interventions						
East Germany 1)	32 936	17 396	10 357	3 755	2 303	982	15 540
Greece	31 758	18 798	10 971	1 830	3 327	2 670	12 961
Ireland	5 313	2 694	1 606	369	493	225	2 620
Mezzogiorno 2)	40 669	19 916	9 952	3 783	4 665	1 516	20 753
Portugal	30 633	11 779	6 788	1 859	1 982	1 150	18 854
Spain	57 198	30 410	17 867	4 937	3 539	4 067	26 788
Total	198 507	100 992	57 540	16 532	16 310	10 610	97 515
	Total interventions						
East Germany 1)	50 064	26 443	15 742	5 707	3 501	1 492	23 621
Greece	42 275	27 036	15 874	3 032	4 790	3 340	15 239
Ireland	6 798	3 509	1 855	442	868	344	3 290
Mezzogiorno 2)	50 550	27 159	13 523	5 581	6 028	2 028	23 390
Portugal	39 412	13 534	7 679	2 085	2 236	1 535	25 878
Spain	58 912	31 775	18 583	5 080	3 782	4 332	27 137
Total	248 011	129 457	73 256	21 926	21 204	13 070	118 554

1) Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt, Thuringia, East Berlin.

2) Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia.

The first and very important objective of the study was to transform each category of the indicative financial plans into macroeconomic variables such as gross fixed capital formation (buildings, civil engineering works, machinery, transport equipment) and primary inputs (salaries, allowances, sub-

sidies, transfer payments). The distributions are mainly drawn from a data base of the Directorate-General for regional policies. The data base has been discussed and verified with the responsible national authorities. Only in some cases was it necessary to make additional estimations in order to achieve a complete and consistent set of data for our purposes.

In 2000 -2006 on average 52 percent of aid is envisaged to be spent on infrastructure and plant and equipment (Table 6), giving in particular a considerable boost to the construction sector of the beneficiary economies as 30 percent of aid directly affects this sector. Besides the substantial concentration of financial resources on gross fixed capital formation, the priorities decided under the Community Support Frameworks also envisage an improvement of the skill endowment of the labour force. Increasing and modernising the capital stock and enhancing the skill level of human capital are two of the essential factors required to lift backward economies on to a permanently higher growth path, in order that they be able to sustain the longer term catching up process with the more prosperous parts of the European economy.

C. Macroeconomic outlook

The effort of the Community through its structural policy will be successful if the target regions perform ahead of Community average growth and if they change their economic structure towards innovative and competitive sectors. Nations and regions can only reduce the development gap if they perform above the European average.

Table 7: Economic growth 2000-2006

	GDP Mio. Euro 1999	Real growth rates in %							Annual Average
		2000	2001	2002	2003	2004	2005	2006	
Belgium	235 538	4.0	1.3	1.3	2.8	2.8	2.8	2.8	2.5
Denmark	163 216	3.2	1.3	1.6	2.5	2.5	2.5	2.5	2.3
Germany	1 974 300	3.0	0.7	0.7	2.8	2.8	2.7	2.7	2.2
Greece	118 007	4.3	4.1	3.5	4.2	5.0	5.0	5.0	4.3
Spain	565 483	4.1	2.7	2.0	3.2	3.2	3.7	3.8	3.2
France	1 350 159	3.1	2.0	1.5	2.6	2.6	2.8	2.8	2.5
Ireland	89 029	11.5	6.5	3.3	5.5	5.5	5.2	4.9	6.0
Italy	1 108 497	2.9	1.8	1.3	2.7	2.7	2.8	2.7	2.4
Luxembourg	18 449	9.5	4.0	3.0	5.4	5.4	4.9	4.8	5.3
Netherlands	373 664	3.5	1.5	1.5	3.1	3.1	2.9	2.9	2.6
Austria	196 658	3.0	1.1	1.2	2.4	2.4	2.5	2.5	2.2
Portugal	108 217	3.4	1.7	1.5	2.3	2.3	2.8	3.0	2.4
Finland	120 485	5.7	0.5	1.7	2.9	2.9	3.2	3.2	2.9
Sweden	227 607	3.6	1.4	1.6	2.6	2.6	2.9	2.9	2.5
United Kingdom	1 368 181	2.9	2.3	1.7	3.0	3.0	2.8	2.7	2.6
European Union	8 017 490	3.3	1.7	1.4	2.9	2.9	2.9	2.9	2.6
Mezzogiorno	243 133	2.0	1.7	2.7	2.7	2.2	2.2	2.2	2.3
East Germany	228 577	1.9	3.4	3.3	3.2	3.0	3.6	3.7	3.2

European Commission, Eurostat, Newcronos, April 2002.

European Commission, Directorate-General Economic and Financial Affairs, Economic Trends, October/November 2001.

European Commission, Directorate-General Economic and Financial Affairs, Medium-term projection 2000-2005, 2001.

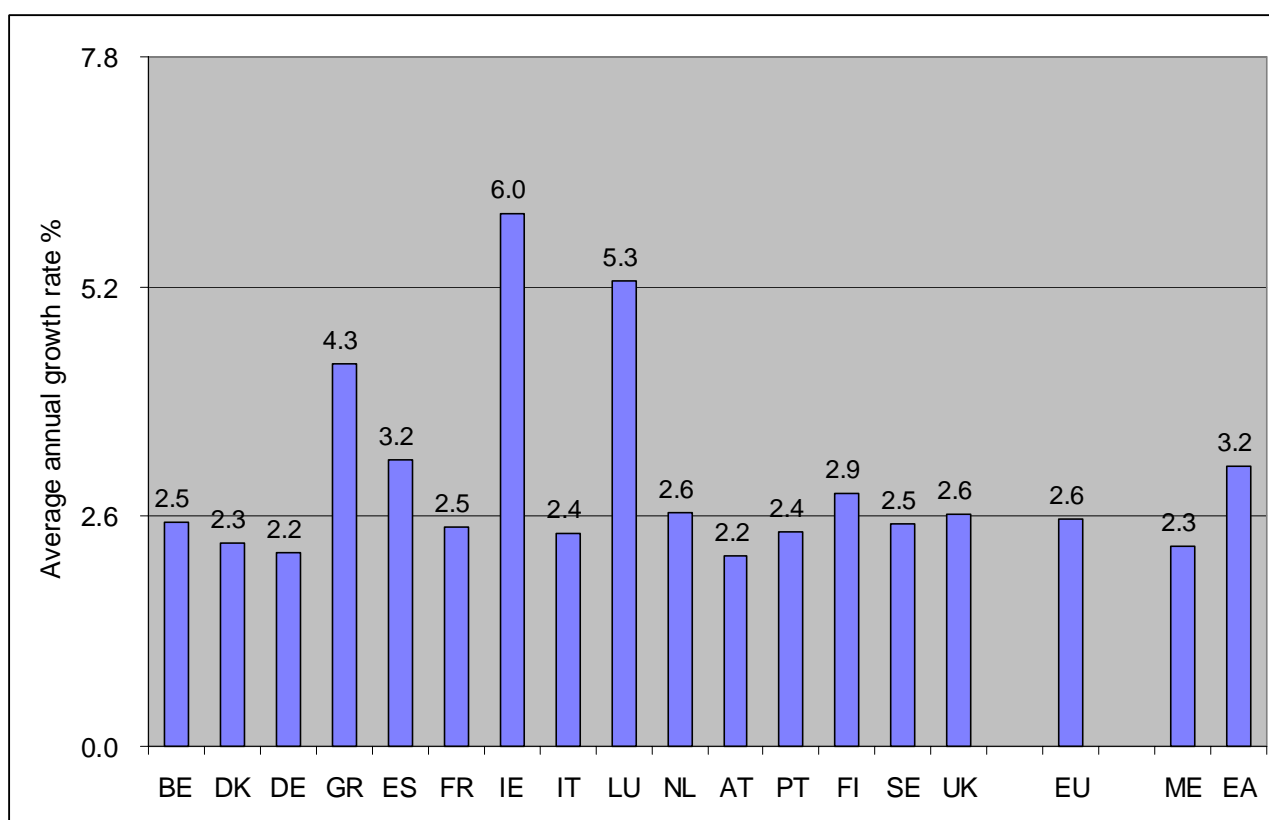
For the period 2000-2006 an average annual growth rate of 2.6 percent was forecast in the autumn of 2001 for the European Union. At the time Ireland (6.0 %), Greece (4.3 %) and Spain (3.2 %) were expected to grow above the European average, Portugal (2.4 %) slightly below. While East Germany (3.2 %) was expected to grow above the European average, and the Mezzogiorno (2.3 %) more or less to maintain its present position during the years 2000-2006 (**Table 7**). The combined average annual growth rate for the objective 1 regions combined (3.3 %) is expected to be higher than average of the European Union (2.6 %) (**Figure 3**).

The set of GDP growth rates was derived from the following sources:

- Eurostat: Newcronos (1999-2000)
- Directorate-General Economic and Financial Affairs, Economic Trends (2001-2003)
- Directorate-General Economic and Financial Affairs, Medium-term projections (2000-2005)

As mentioned in the introduction, at present this projection from autumn 2001 seems optimistic. However, this is of no consequence for the present analysis, which is mainly concerned with the impact of the objective 1 interventions and not with the forecasting of overall economic growth of the Member States.

Figure 3: Economic growth in Europe 2000-2006



Note: Average annual growth rates of gross domestic product in 1999 prices;
EU = European Union, ME = Mezzogiorno, EA = East Germany.

The macroeconomic forecast 2000-2006 of the Directorate-General for Economic and Financial Affairs³ has been disaggregated for 30 production activities. The main foundation for this sectoral disaggregation is given in the economic outlook by sector which has been recently established by Cambridge Econometrics⁴ for the European Commission. In addition, the projections for Germany, Spain and Italy have been separated for East and West Germany and Northern and Southern Italy (Mezzogiorno) using input-output techniques.

D. The economic impacts of objective 1 interventions

The economic impacts of objective 1 interventions have been estimated for the period 2000 -2006. The main element of this impact analysis is a system of harmonised input-output tables for the European Union which has been established for Eurostat for the year 2000. Within this study a set of harmonised input-output tables has been estimated for 1999 – 2006 at constant prices of 1999.

These estimates comprise

1. Germany, 2. Greece, 3. Ireland, 4. Italy, 5. Portugal, 6. Spain, 7. East Germany (Brandenburg, Mecklenburg-Pomerania, Saxony, Saxony-Anhalt, Thuringia, East Berlin) and 8. Mezzogiorno (Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia).

Table 8: Economic outlook for the six objective 1 regions combined 2000-2006

Category	Level Mio. Euro 1999	Percentage change at annual rate								MEMO EUR15 2000-06
		2000	2001	2002	2003	2004	2005	2006	2000-06	
Gross domestic product	1 351 348	3.8	3.0	2.5	3.3	3.5	3.6	3.6	3.3	2.6
Private consumption	784 213	3.4	2.7	2.0	3.1	3.4	3.5	3.5	3.1	2.8
Government consumption	272 292	2.6	1.8	1.9	1.6	1.9	1.9	1.9	1.9	2.0
Gross fixed capital formation	319 900	4.9	3.3	3.5	4.8	6.1	6.2	6.2	5.0	4.6
Change in stocks	5 366	-	-	-	-	-	-	-	-	-
Exports of goods and services	366 501	11.8	6.5	4.3	7.3	7.7	7.5	7.6	7.5	7.7
Imports of goods and services	396 924	10.4	6.1	4.8	7.1	7.9	7.8	7.8	7.4	7.9
Capital stock	5 736 701	2.8	3.5	3.9	3.3	3.4	3.7	3.3	3.4	2.9
Occupied population (1.000 persons)	37 143	1.9	1.3	1.2	1.1	1.1	1.1	1.1	1.6	1.2

East Germany, Greece, Ireland, Mezzogiorno, Portugal, Spain.

European Commission, Eurostat, Newcronos, April 2002.

European Commission, Directorate-General Economic and Financial Affairs, Economic Trends, October/November 2001.

European Commission, Directorate-General Economic and Financial Affairs, Medium-term projection 2000-2005, 2001.

³ European Commission, Directorate-General for Economic and Financial Affairs: Economic Trends, Autumn 2001 Forecasts for 2001-2003, Brussels October/November 2001; Medium-term Projections 2000 – 2005, Brussels 2001.

⁴ Cambridge Econometrics: Sectoral Economic Analysis and Forecasts up to the Year 2005, Draft Final Report for the Directorate-general Economic and Financial Affairs of the European Commission, Cambridge August 2001.

Table 9: Macroeconomic outlook 2000-2006 of objective 1 regions

Category	Mio. 1999 Euro								
	Level	Annual growth rate at 1999 prices in %							
	1999	2000	2001	2002	2003	2004	2005	2006	2000-06
EAST GERMANY									
Private consumption	116 905	1.5	3.2	3.2	3.3	3.4	3.4	3.4	3.0
Government consumption	56 276	1.2	1.3	1.7	1.7	1.7	1.7	1.7	1.6
Gross fixed capital formation	66 210	2.3	2.9	4.3	5.0	5.2	5.2	5.2	4.3
Change in stocks	918	-	-	-	-	-	-	-	-
Exports of goods and services	39 762	13.2	10.4	8.9	7.0	6.5	6.2	6.2	8.3
Imports of goods and services	51 494	10.2	11.1	9.3	7.2	6.6	6.4	6.4	8.2
Gross domestic product	228 577	1.9	3.4	3.3	3.2	3.0	3.6	3.7	3.2
Capital stock	1 106 440	2.3	4.5	4.6	2.4	2.5	3.1	3.1	3.2
Occupied population	5 965	1.7	0.6	0.2	1.4	1.3	1.4	1.3	1.1
GREECE									
Private consumption	83 259	1.5	3.1	2.7	2.9	3.8	4.0	4.0	3.1
Government consumption	17 602	1.2	1.8	0.5	0.6	0.9	1.0	1.0	1.0
Gross fixed capital formation	26 836	3.1	9.0	9.1	10.3	10.5	10.0	9.9	8.8
Change in stocks	- 745	-	-	-	-	-	-	-	-
Exports of goods and services	23 575	13.2	5.7	2.6	7.4	7.5	7.0	7.0	7.2
Imports of goods and services	33 462	10.0	5.6	4.1	6.8	7.2	7.2	7.2	6.9
Gross domestic product	117 065	4.3	4.1	3.5	4.2	5.0	5.0	5.0	4.5
Capital stock	515 231	3.1	3.5	4.0	4.4	4.8	5.2	5.2	4.3
Occupied population	3 909	-0.2	0.9	0.6	1.1	1.7	1.7	0.0	0.8
IRELAND									
Private consumption	42 904	10.0	6.2	4.2	5.6	5.5	5.3	5.3	6.0
Government consumption	12 465	5.4	6.0	3.8	2.7	3.5	3.5	3.5	4.1
Gross fixed capital formation	21 085	7.3	3.4	2.7	4.2	5.8	5.5	5.5	4.9
Change in stocks	193	-	-	-	-	-	-	-	-
Exports of goods and services	79 000	17.8	9.1	5.3	8.1	8.0	7.5	7.5	9.0
Imports of goods and services	66 618	16.6	8.5	6.0	8.1	8.5	8.1	8.1	9.1
Gross domestic product	89 029	11.5	6.5	3.3	5.5	5.2	4.9	4.9	5.9
Capital stock	235 529	5.8	6.0	6.3	6.2	6.2	6.1	6.1	6.1
Occupied population	1 616	1.4	4.8	0.7	1.9	1.4	1.0	0.1	1.6
MEZZOGIORNO									
Private consumption	665 782	2.9	1.8	1.3	2.7	2.8	2.8	2.8	2.4
Government consumption	200 599	1.6	1.2	1.6	0.9	1.0	1.0	1.0	1.2
Gross fixed capital formation	210 543	6.1	1.6	2.7	3.8	5.2	5.0	5.0	4.2
Change in stocks	8 442	-	-	-	-	-	-	-	-
Exports of goods and services	281 906	10.1	3.8	1.8	6.8	6.6	6.2	6.2	5.9
Imports of goods and services	259 973	8.3	3.8	3.9	7.2	7.5	7.0	7.0	6.4
Gross domestic product	1 107 299	2.9	1.8	1.3	2.7	2.8	2.7	2.7	2.4
Capital stock	5 256 223	2.2	2.4	2.5	2.7	2.9	3.1	0.9	2.4
Occupied population	22 687	1.6	-0.4	0.4	1.3	1.3	1.3	1.3	1.0
PORTUGAL									
Private consumption	67 562	2.6	1.1	1.2	1.8	2.5	2.7	2.7	2.1
Government consumption	21 210	2.5	1.9	1.1	0.9	1.5	1.5	1.5	1.6
Gross fixed capital formation	29 603	5.3	-1.0	2.2	3.7	4.5	4.5	4.5	3.4
Change in stocks	1 035	-	-	-	-	-	-	-	-
Exports of goods and services	32 115	8.1	6.2	2.0	5.2	6.3	6.3	6.3	5.7
Imports of goods and services	43 318	6.0	2.7	1.9	4.1	5.5	5.5	5.5	4.4
Gross domestic product	108 207	3.4	1.7	1.5	2.3	2.8	3.0	3.0	2.5
Capital stock	439 253	3.3	3.3	3.4	3.5	3.7	3.9	3.9	3.6
Occupied population	4 824	1.8	1.4	0.7	0.8	0.5	0.7	0.7	1.0
SPAIN									
Private consumption	335 822	4.0	2.6	1.6	3.1	3.5	3.5	3.5	3.1
Government consumption	98 602	4.1	2.0	2.4	2.2	2.5	2.5	2.5	2.6
Gross fixed capital formation	135 961	5.6	3.8	2.6	4.2	6.2	6.5	6.5	5.0
Change in stocks	2 562	-	-	-	-	-	-	-	-
Exports of goods and services	155 215	9.5	4.9	3.9	7.6	8.6	8.6	8.6	7.4
Imports of goods and services	162 825	9.8	5.0	3.8	7.4	9.0	9.0	9.0	7.5
Gross domestic product	565 337	4.1	2.7	2.0	3.2	3.7	3.8	3.8	3.3
Capital stock	2 278 989	3.3	3.3	3.4	3.5	3.7	3.9	3.9	3.6
Occupied population	15 163	3.0	2.3	0.9	2.1	2.9	2.7	2.7	2.4

European Commission, Eurostat, Newcronos, April 2002.

European Commission, Directorate-General Economic and Financial Affairs, Economic Trends, October/November 2001.

European Commission, Directorate-General Economic and Financial Affairs, Medium-term projection 2000-2005, 2001.

All macroeconomic data and projections are based on harmonised National Accounts and on economic forecasts of the Directorate-General for Economic and Financial Affairs of Autumn 2001.

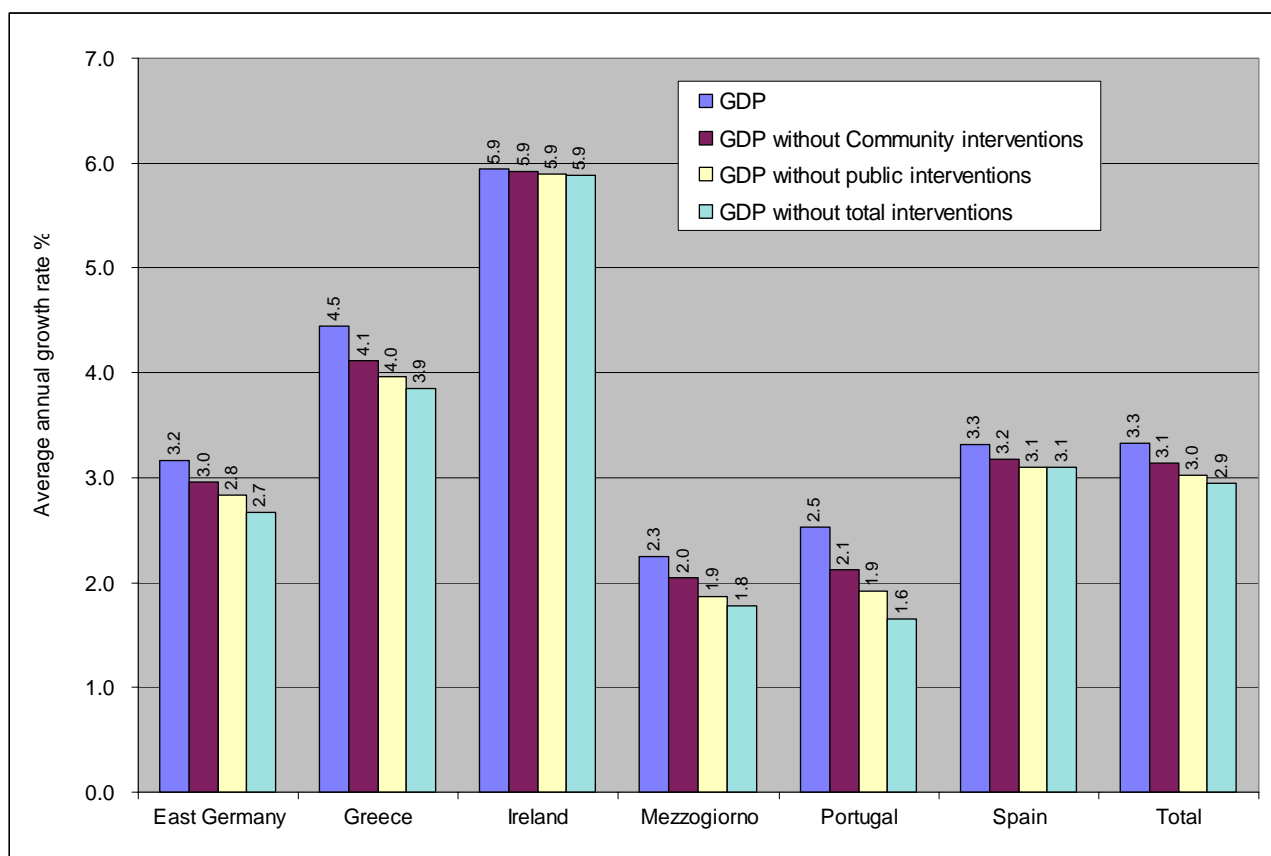
The direct and indirect impact of objective 1 interventions is fully reflected in the macroeconomic projections of the European Commission for the year 2000 – 2006. For this period the European Union is expected to realise an annual real growth rate of 2.6 for GDP. For the objective 1 regions East Germany, Greece, Ireland, Mezzogiorno, Portugal and Spain combined the corresponding growth rate is estimated at 3.3 percent (**Table 8**). Concerning the components of GDP it is expected that private consumption, gross fixed capital formation, the capital stock and employment will grow above the average level of the European Union.

In **Table 9** the macroeconomic outlook 2006 – 2006 is included which has been established for the covered objective 1 regions.

Economic Growth

The effort of the Community through its structural policy will be successful if the target regions perform ahead of Community average growth and if they change their economic structure towards innovative and competitive sectors.

Figure 4: Economic growth in objective 1 regions 2000-2006



In 1999 prices.

EA = East Germany (Brandenburg, Mecklenburg-Pomerania, Saxony, Saxony-Anhalt, Thuringia, East Berlin)

ME = Mezzogiorno (Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia)

Total = Objective 1 areas combined

A first assessment of the economic impact of Structural interventions is given in **Figure 4**. During the 2000-2006 period, the GDP of the European Union was expected in the autumn 2001 to grow at an average annual real growth rate of 2.6 percent. With 3.3 percent, the objective 1 regions under consideration were expected to grow above the average of the Community. Without Community grants, the Cohesion countries would grow at an annual rate of 2.5 percent. If all structural interventions including the national participation are withdrawn, the Cohesion countries would grow at an annual rate of 1.9 percent, well below the European average of 2.6 percent. This aggregate result clearly indicates that the Cohesion countries can only reduce the development gap if Community grants are provided.

During 2000-2006 Ireland (6.8 %), Greece (4.5 %), Spain (3.3 %) and East Germany (3.2 %) were expected to grow above the European average. Portugal would probably grow in line with the European average while the Mezzogiorno was forecast to slightly increase the development gap despite structural assistance from the European funds. According to these estimates the biggest contribution to anticipated economic growth in 2000-2006, namely around 0.4 percent per annum, can be assigned to Community grants for Greece and Portugal. In the Mezzogiorno the difference in the annual growth rate is 0.3 percent and in East Germany 0.2 percent.

The efforts of Euro-solidarity become particularly significant in the light of these findings, since in the absence of objective 1 interventions only Greece, Ireland and Spain would experience enough economic dynamism to be able to achieve above European average growth, i.e. to close the development gap. If Community interventions were phased out and not substituted by other expenditures, the Cohesion countries in 1994-99 would fall back from an average growth rate of 3.2 percent to 2.5 percent, increasing year by year the development gap with the rest of Europe.

The results in Tables 10-11 reflect the assessment of economic impacts on the basis of the dynamic analysis at the beginning and end of the reference periods.

In 2000 (**Table 10**) the objective 1 regions were realising a good amount of economic growth as many other member countries of the European Union. The gross domestic product in the objective 1 areas covered increased by 3.8 percent including all interventions. If all (national and EU) interventions were excluded the gross domestic product of the objective 1 regions would have declined in 2000 by 2.8 percent. In the absence of Community interventions the gross domestic product in 2000 would have been reduced by 1.7 percent.

For 2006 (**Table 11**) a real growth rate of 3.6 percent is projected for the covered objective 1 regions. If all interventions were withdrawn in that year the real growth rate would be reduced to 1.0 percent in the absence of all interventions, to 1.5 percent in the absence of all public interventions and to 2.3 percent in the absence of Community interventions.

The impact analysis system is comprising detailed information on the supply and demand side of the economy. The impact of the interventions can be verified for structural change (30 branches), economic growth (demand components), foreign trade (exports and imports), capital (equipment and buildings) and labour (wage and salary earners, self-employed).

In **Table 12**, two growth scenarios are envisaged for the 2000-2006 period. In column (1) gross domestic product of the covered objective 1 regions is presented including the full impact of the all objective 1 interventions. In column (2) the growth pattern of gross domestic product excluding all objective 1 interventions (Community, national public, national private) has been estimated while in

column (3) a projection of gross domestic product excluding all Public interventions and in column (4) a projection of gross domestic product excluding Community interventions has been calculated.

Table 10: The economic impact of objective 1 interventions in 2000 for the six areas combined

Category	Mio1999 Euro							
	Including total interventions		Excluding total interventions		Excluding public interventions		Excluding Community interventions	
	Level	Growth rate	Change induced	Growth rate	Change induced	Growth rate	Change induced	Growth rate
	Mio. Euro (1)	% (2)	Mio. Euro (3)	% (4)	Mio. Euro (5)	% (6)	Mio. Euro (7)	% (8)
STRUCTURAL CHANGE								
Agriculture, forestry, fishery	55 659	1.9	1 464	-0.7	1 100	-0.1	727	0.6
Fuel and power	3 600	-1.0	68	-2.9	55	-2.5	36	-2.0
Manufacturing	261 634	4.8	5 774	2.4	4 555	2.9	2 841	3.6
Building and construction	101 337	1.5	11 791	-10.3	9 174	-7.7	5 772	-4.3
Private services	585 787	4.9	14 861	2.2	11 293	2.9	7 099	3.6
Government services	301 344	2.8	11 191	-1.0	9 643	-0.4	6 439	0.6
Value added	1 309 361	4.0	45 150	0.4	35 820	1.1	22 915	2.1
VAT on products	93 335	1.5	1 203	0.2	916	0.5	580	0.9
Gross domestic product	1 402 696	3.8	46 353	0.4	36 736	1.1	23 496	2.1
ECONOMIC GROWTH								
Private consumption	810 666	3.4	6 044	2.6	4 290	2.8	2 758	3.0
Government consumption	279 488	2.6	13 542	-2.3	11 784	-1.7	7 893	-0.3
Gross fixed capital formation	335 434	4.9	36 546	-6.6	28 243	-4.0	17 570	-0.6
Change in stocks	5 614	4.6	- 13	4.9	- 5	4.7	9	4.5
Exports less imports	- 28 506	-6.3	- 9 766	-38.4	- 7 576	-31.2	- 4 734	-21.9
Gross domestic product	1 402 696	3.8	46 353	0.4	36 736	1.1	23 496	2.1
FOREIGN TRADE								
Exports to EU countries	275 512	10.0	1 132	9.6	838	9.7	565	9.8
Exports to third countries	134 369	15.7	402	15.4	299	15.5	189	15.6
Exports of goods and services	409 881	11.8	1 534	11.4	1 136	11.5	754	11.6
Imports from EU countries	236 292	7.6	8 452	3.7	6 400	4.7	4 020	5.7
Imports from third countries	202 095	14.0	2 848	12.4	2 312	12.7	1 468	13.2
Imports of goods and services	438 387	10.4	11 300	7.6	8 712	8.3	5 488	9.1
CAPITAL								
Equipment	1 253 386	2.7	52 698	-1.6	39 294	-0.5	25 171	0.6
Buildings	4 643 264	2.8	177 127	-1.1	135 551	-0.2	87 588	0.9
Capital stock	5 896 650	2.8	229 826	-1.2	174 845	-0.3	112 759	0.8
LABOUR (1.000 persons)								
Wage and salary earners	29 866	2.7	1 142	-1.2	901	-0.4	585	0.7
Self-employed	8 034	-0.5	314	-4.4	240	-3.5	154	-2.4
Occupied population	37 900	2.0	1 456	-1.9	1 141	-1.0	739	0.0

East Germany, Greece, Ireland, Mezzogiorno, Portugal and Spain

Table 11: The economic impact of objective 1 interventions in 2006 for the six areas combined

Category	Mio1999 Euro							
	Including total interventions		Excluding total interventions		Excluding public interventions		Excluding Community interventions	
	Level	Growth rate	Change induced	Growth rate	Change induced	Growth rate	Change induced	Growth rate
	Mio. Euro (1)	% (2)	Mio. Euro (3)	% (4)	Mio. Euro (5)	% (6)	Mio. Euro (7)	% (8)
STRUCTURAL CHANGE								
Agriculture, forestry, fishery	59 131	1.2	1 379	-1.1	1 040	-0.6	692	0.0
Fuel and power	3 774	1.1	57	-0.4	46	-0.1	29	0.3
Manufacturing	318 170	3.7	5 108	2.1	4 063	2.4	2 538	2.9
Building and construction	115 131	2.6	10 684	-6.9	8 315	-4.8	5 257	-2.1
Private services	739 532	4.3	14 589	2.3	11 200	2.7	7 063	3.3
Government services	352 549	3.0	10 774	-0.2	9 258	0.3	6 231	1.1
Value added	1 588 287	3.6	42 592	0.9	33 922	1.4	21 809	2.2
VAT on products	111 712	3.5	1 100	2.5	842	2.8	539	3.0
Gross domestic product	1 699 999	3.6	43 692	1.0	34 765	1.5	22 349	2.3
ECONOMIC GROWTH								
Private consumption	969 528	3.5	5 194	2.9	3 731	3.1	2 400	3.2
Government consumption	311 651	1.9	13 276	-2.5	11 566	-1.9	7 814	-0.7
Gross fixed capital formation	449 614	6.2	35 811	-2.3	27 719	-0.4	17 307	2.1
Change in stocks	14 967	0.3	12	0.2	12	0.2	16	0.2
Exports less imports	- 45 761	11.7	- 10 601	-14.2	- 8 264	-8.5	- 5 188	-0.9
Gross domestic product	1 699 999	3.6	43 692	1.0	34 765	1.5	22 349	2.3
FOREIGN TRADE								
Exports to EU countries	409 719	7.6	1 249	7.3	934	7.4	631	7.5
Exports to third countries	199 585	7.4	390	7.2	286	7.2	183	7.3
Exports of goods and services	609 304	7.6	1 639	7.3	1 220	7.3	814	7.4
Imports from EU countries	350 688	7.6	8 972	4.9	6 820	5.5	4 309	6.3
Imports from third countries	304 377	8.1	3 268	6.9	2 665	7.2	1 693	7.5
Imports of goods and services	655 065	7.8	12 241	5.8	9 484	6.3	6 002	6.8
CAPITAL								
Equipment	1 528 888	3.2	47 963	-0.1	36 089	0.7	23 264	1.6
Buildings	5 724 670	3.4	171 411	0.3	133 064	1.0	86 337	1.8
Capital stock	7 253 558	3.3	219 374	0.2	169 153	0.9	109 601	1.8
LABOUR (1.000 persons)								
Wage and salary earners	32 975	1.7	984	-1.4	790	-0.8	517	0.1
Self-employed	8 626	1.5	250	-1.5	192	-0.8	123	0.0
Occupied population	41 601	1.6	1 234	-1.4	981	-0.8	641	0.1

East Germany, Greece, Ireland, Mezzogiorno, Portugal and Spain

Table 12: Interventions and growth in objective 1 regions for the six areas combined

	GDP (1)	Objective 1		
		GDP without total interventions (2)	GDP without public interventions (3)	GDP without Community interventions (4)
Mio. Euro				
1999	1 351 348	-	-	-
2000	1 402 696	1 356 343	1 365 960	1 379 200
2001	1 444 243	1 395 722	1 405 399	1 419 812
2002	1 480 744	1 430 851	1 440 791	1 455 751
2003	1 529 511	1 479 102	1 489 407	1 504 433
2004	1 583 034	1 539 349	1 548 150	1 561 052
2005	1 640 259	1 596 327	1 605 237	1 617 948
2006	1 699 999	1 656 307	1 665 234	1 677 650
Growth rate in %				
2000	3.8	0.4	1.1	2.1
2001	3.0	-0.5	0.2	1.2
2002	2.5	-0.9	-0.2	0.8
2003	3.3	-0.1	0.6	1.6
2004	3.5	0.6	1.2	2.1
2005	3.6	0.8	1.4	2.2
2006	3.6	1.0	1.5	2.3
Average annual growth rate in %				
2000-06	3.3	2.9	3.0	3.1
Reduction of growth rates in %				
2000-06	-	0.4	0.3	0.2

The annual growth rates in the second part of the table refer to a situation in which the structural interventions were discontinued in one single year. Therefore the growth rates in columns (2)-(4) relate to the gross domestic product in column (1). If for instance all interventions would be implemented in the previous years but be discontinued in 2006 the real growth rate of gross domestic product of 3.6 percent would be reduced to 1.0 percent, a reduction by 2.6 percentage points in this single year. However, the average annual growth rates for 2000-2006 relate to a different growth path of the economy which is reflected in column (2) for a situation excluding all interventions, in column (3) for a situation excluding all public interventions and in column (4) for a situation excluding all Community interventions.

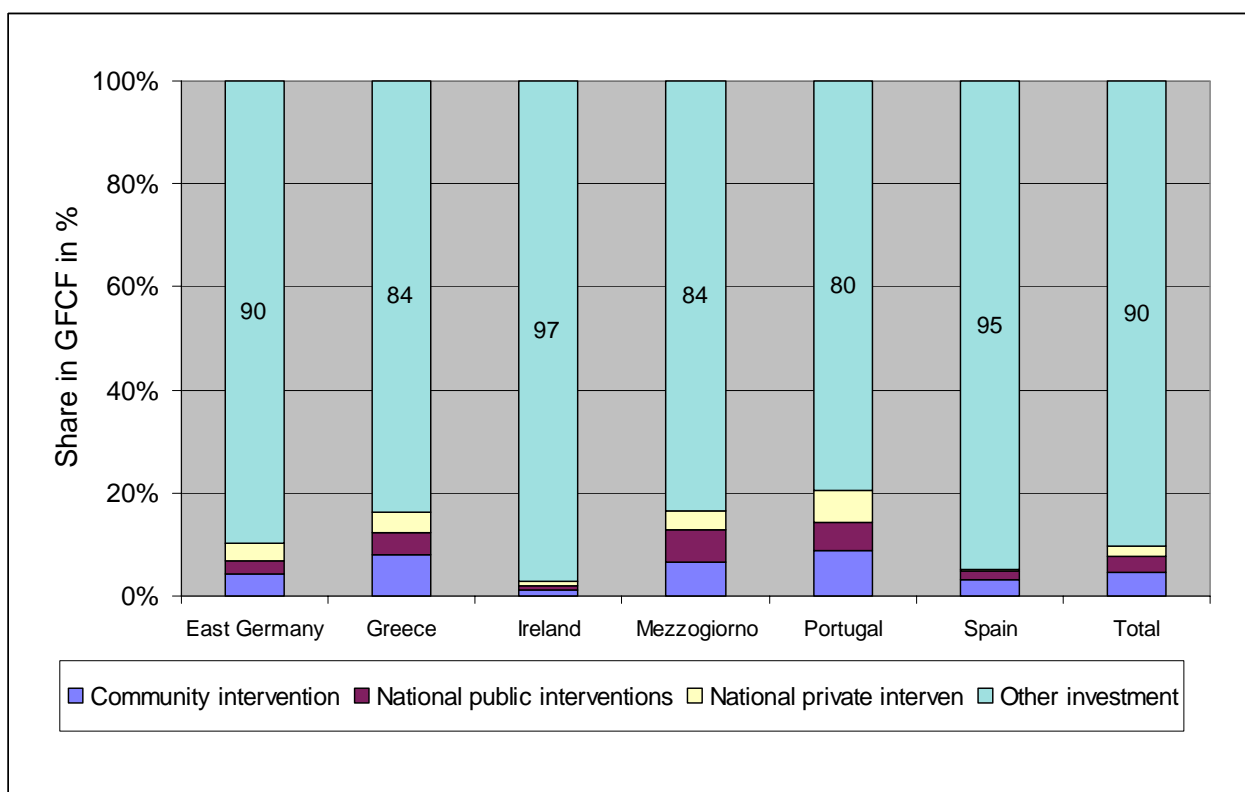
Investment

Even though the results below, showing the proportions of gross fixed capital formation that are due to objective 1 interventions, take into account only the demand effects of the interventions, they

provide a rough measure of the relative influence of Structural interventions on the supply potential of the economies concerned.

The shares of investment which is induced by objective 1 interventions to total gross fixed capital formation are given in **Figure 5**. These clearly indicate the crucial importance of a steady implementation of Structural interventions for the potential growth of the economies of above all Greece, Portugal, Ireland but also Spain. For all these economies the forecast investment growth is such that negative growth in capital formation would be experienced without the positive capital transfers of the Euro-solidarity effort. Indeed, only for Ireland and Spain, national efforts are such that an increase of capital formation would be expected without Community assistance.

Figure 5: Structural interventions and capital formation 2000 – 2006



Investment is by far the most dynamic component of economic growth. It is expected to gain some impetus at the end of the approved objective 1 interventions and obviously be enhanced by the building of a single market in Europe. However, real growth of capital formation has been weak since 2001 despite the initiatives in the previous period. Induced investment by Community interventions in 2000-2006 as a proportion of total investment are substantial in Portugal (8.9 % of total investment), Greece (8.1 %) and the Mezzogiorno (6.6 %). The participation rates reach 20.4 percent in Portugal, 16.5 percent in the Mezzogiorno and 16.2 percent in Greece if national expenditure in objective 1 interventions intervention is included (**Table 13**).

Investment is an important indicator of the growth potential of an economy. Investment as measured by gross fixed capital formation (GFCF) is higher in relation to GDP in the objective 1 areas under consideration (East Germany, Greece, Ireland, Mezzogiorno, Portugal, Spain) than in the European Union. The investment ratio (share of investment in GDP) of the objective 1 areas under consideration is rising 23.7 % in 1999 to 26,4 % in 2006 while the investment ratio of the European Union is only expected to rise from 21.1 % to 22.3 %.

Table 13: Impact of objective 1 interventions on gross fixed capital formation 2000-2006

	Expected annual growth rate of GFCF including objective 1 interventions	% of GFCF depending on total interventions	% of GFCF depending on public interventions	% of GFCF depending on Community interventions
	%	%	%	%
East Germany	4.3	10.3	6.8	4.2
Greece	8.8	16.2	12.2	8.1
Ireland	4.9	2.8	2.1	1.2
Mezzogiorno	4.2	16.5	12.8	6.6
Portugal	3.4	20.4	14.4	8.9
Spain	5.0	5.1	4.9	3.2
Total	5.0	9.8	7.6	4.7

In real terms (1999 prices).

The level of investment, however, differs significant between the objective 1 areas. In the European Union the three nations respectively regions with the lowest level of GDP per head (Greece, East Germany, Portugal) have the highest investment in relation to GDP, while the prospects for the Mezzogiorno (18.9 %) will most likely only allow investment to guarantee the replacement requirements.

Table 14: Investment ratio

Gross fixed capital formation in % of GDP

	1999	2000	2001	2002	2003	2004	2005	2006
	Objective 1 regions							
East Germany	29.0	29.1	28.9	29.2	29.7	30.3	30.8	31.3
Greece	22.9	22.7	23.7	25.0	26.5	27.8	29.1	30.5
Ireland	23.7	22.8	22.1	22.0	21.7	21.9	22.0	22.1
Mezzogiorno	16.5	17.2	17.2	17.2	17.4	17.9	18.4	18.9
Portugal	27.4	27.9	27.1	27.3	27.7	28.1	28.5	29.0
Spain	24.0	24.4	24.7	24.8	25.1	25.7	26.3	27.0
Total	23.7	23.9	24.0	24.2	24.6	25.2	25.8	26.4
	European Union							
EU15	21.1	21.3	21.1	21.1	21.3	21.6	22.0	22.3

Capital

In view of these participation rates of objective 1 interventions in gross fixed capital formation significant effects have to be expected for the capital stock (**Table 15**). It is estimated that in 1999 approximately 3.8 percent of the capital stock in the cohesion countries is depending on Community interventions. The highest dependency is given in Portugal (5.1 %) and Greece (2.2 %) with a clear

trend from 1989-93 to 1994-99 to support the creation of a modern capital stock in the Cohesion countries.

For the six areas considered, in view of these participation rates of objective 1 interventions in gross fixed capital formation substantial effects have to be expected for the capital stock. In Portugal, for instance approximately 20.4 % of GFCF are depending on objective 1 expenditures. Consequently, the impact on the capital stock must be significant. It is estimated that in 2000-2006 approximately 1.7 percent of the capital stock in the covered countries is depending on Community interventions. The highest dependency is given in Portugal (5.1 %) and Greece (2.2 %) with a clear trend to support the creation of a modern capital stock in the objective 1 areas.

Table 15: Community interventions and capital stock 2000-2006

Mio. 1999 Euro

	Average capital stock 2000 - 2006	of which dependent on Community interventions	% of capital stock depending on Community interventions	of which dependent on public interventions	% of capital stock depending on public interventions	of which dependent on total interventions	% of capital stock depending on total interventions
	Mio. Euro	Mio. Euro	%	Mio. Euro	%	Mio. Euro	%
East Germany 1)	1 261 729	21 716	1.7	34 119	2.7	51 834	4.1
Greece	603 684	15 632	2.6	21 868	3.6	25 586	4.2
Ireland	300 215	933	0.3	1 617	0.5	2 190	0.7
Mezzogiorno 2)	1 273 094	20 844	1.6	38 752	3.0	46 924	3.7
Portugal	504 423	25 772	5.1	39 342	7.8	61 197	12.1
Spain	2 617 107	29 550	1.1	44 018	1.7	45 447	1.7
Total	6 560 251	114 446	1.7	179 717	2.7	233 178	3.6

1) Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt, Thuringia, East Berlin.

2) Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia.

Total objective 1 interventions: Community interventions + national public interventions + private interventions.

Public objective 1 interventions: Community interventions + national public interventions.

Employment

Given the importance of objective 1 interventions and of Community grants, substantial employment effects are to be expected from the realisation of the operations under the Community Support Frameworks and other interventions. During 2000-2006, approximately 1.4 million positions or 3.5 percent of the work force in the covered regions depend per annum upon the implementation of the total of actions foreseen. 1.8 percent of the work force or 0.7 million positions depend solely on Community grants (**table 16**). The impact of objective 1 interventions on employment as indicated here, does not represent in all cases new jobs created but certainly contributes to a reduction in unemployment in the assisted regions. Therefore, the numbers given indicate how many positions during the period 2000-2006 depend on Community grants through the implementation of objective 1 interventions.

A very substantial amount of the labour force depends on a successful implementation of the various projects which are financed by objective 1 interventions, including the public and private participation in the Cohesion countries and other regions. During 2000-2006 in Portugal approximately 8.1 percent of the occupied population is attached to objective 1 interventions, in Greece 4.0 percent. For Community grants the dependence is significant for Portugal (3.7 %) and Greece (2.5 %).

Table 16: Objective 1 interventions and employment 2000-2006

	Average Occupied population 2000 - 2006	of which dependent on Community interventions	% of labour force depending on Community interventions	of which dependent on public interventions	% of labour force depending on public interventions	of which dependent on total interventions	% of labour force depending on total interventions
	1.000 persons	1.000 persons	%	1.000 persons	%	1.000 persons	%
East Germany 1)	6 228	101	1.6	160	2.6	243	3.9
Greece	4 021	100	2.5	143	3.5	175	4.4
Ireland	1 749	8	0.5	14	0.8	17	1.0
Mezzogiorno 2)	5 961	101	1.7	187	3.1	228	3.8
Portugal	5 045	187	3.7	290	5.7	410	8.1
Spain	16 627	209	1.3	311	1.9	319	1.9
Total	39 632	706	1.8	1 103	2.8	1 391	3.5

1) Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt, Thuringia, East Berlin.

2) Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia.

Total objective 1 interventions: Community interventions + national public interventions + private interventions.

Public objective 1 interventions: Community interventions + national public interventions.

The Directorate-General Economic and Financial Affairs provided Finance and separate projections for capital, labour and value added for the period 2000 – 2006. These projections allowed to assess the productivity of capital of labour during the anticipated period. The productivity of capital is expected to be stagnant in the objective 1 regions throughout the period 2000 – 2006. However significant increases of the labour productivity can be expected for Ireland (4.3 %), Greece (3.6 %), East Germany (2.0 %), the Mezzogiorno (1.0 %) and Spain (0.9 %). This achievement will help to reduce the development gap in the European Union and the increase the wealth of objective 1 regions.

Table 17: Labour and capital productivity 1999 and 2006

	Labour productivity			Capital productivity		
	1999	2006	Average annual growth rate	1999	2006	Average annual growth rate
	Euro/person	Euro/person	%	Euro/Euro	Euro/Euro	%
East Germany 1)	38 320	44 055	2.01	0.207	0.206	-0.04
Greece	29 948	38 346	3.59	0.227	0.229	0.13
Ireland	55 092	73 890	4.28	0.378	0.374	-0.15
Mezzogiorno 2)	42 911	45 984	0.99	0.209	0.211	0.08
Portugal	22 431	25 000	1.56	0.246	0.230	-1.00
Spain	37 284	39 767	0.93	0.248	0.244	-0.24
Total	36 382	40 864	1.67	0.236	0.234	-0.07

1) Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt, Thuringia, East Berlin.

2) Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia.

Labour productivity = GDP (Euro) per person

Capital productivity = GDP (Euro) per unit of capital (Euro)

Table 18: Effectiveness indicator of Community interventions on employment

	Employment in persons induced per Mio. Euro of Community interventions						
	East Germany	Greece	Ireland	Mezzogiorno	Portugal	Spain	Total
2000							
Wage and salary earners	35	25	18	26	48	34	34
Self-employed	3	10	2	9	22	5	9
Occupied population	38	35	20	35	70	39	42
2006							
Wage and salary earners	30	23	14	23	44	34	30
Self-employed	2	7	2	8	21	4	7
Occupied population	32	30	16	31	64	38	38

The higher participation rates of labour compared to the participation rates of capital indicate that the objective 1 interventions support a modest substitution of capital by labour. In other words, the results reveal that objective 1 interventions in general and Community grants in particular, relatively speaking support more the creation of new jobs than of capital.

The highest effectiveness of Community grants on employment can be observed in Portugal. In this country 70 employees in 2000 would be laid off if the Community withdrew grants of the magnitude of 1 Mio Euro (**Table 18**). Spain is also reported with a relatively high effectiveness indicator for the impact of Community grants on employment. In 2000, approximately 39 positions per 1 Mio ECU depend on Community grants. The lowest value can be observed in Ireland.

Table 19: Weighted effectiveness indicators of objective 1 interventions on employment

at 1999 prices

	% of employment induced by Community interventions / Community interventions as % of GDP		% of employment induced by public interventions / Public interventions as % of GDP		% of employment induced by total interventions / Total interventions as % of GDP	
	2000	2006	2000	2006	2000	2006
	West Germany	1.45	1.40	1.43	1.38	1.43
Greece	0.98	1.04	0.98	1.03	0.98	1.01
Ireland	1.20	1.20	1.19	1.17	1.14	1.13
Mezzogiorno	1.49	1.41	1.46	1.39	1.43	1.36
Portugal	1.06	1.07	1.06	1.07	1.07	1.07
Spain	1.46	1.51	1.44	1.49	1.44	1.48
Total	1.41	1.41	1.40	1.39	1.40	1.38

A given grant is capable of creating fewer jobs in a country with higher incomes. Therefore, a standardisation is necessary on the basis of the value of the grant relative to the national GDP. To identify the effectiveness of interventions on employment, a weighted indicator was developed in which the employment supported is related to the volume of interventions in relation to gross domestic product (**Table 19**). The lowest indicator can be observed in Greece and Spain while Spain has the highest with increasing efficiency over time. The interpretation to be put on these results is that Spain has the most employment-oriented objective 1 interventions, while in Greece and Portugal the interventions are least directed to sustaining employment.

Structural Change

The selection of the priorities in the objective 1 interventions contributes to a structural change of the backward economies. Structural change in the objective 1 regions is moving in the appropriate direction. Agriculture is declining in importance in almost all regions while private services are gaining in importance. Selected industries will emerge as growth poles and the marketable service sector will benefit considerably from the approved projects and programs.

Table 20: Structural change 2000-2006

	Share in value added		Change
	1999	2006	
	%	%	%
		East Germany	
Agriculture, forestry and fishery	2.4	1.8	-0.5
Fuel and power	0.4	0.3	-0.1
Manufacturing	16.9	16.3	-0.5
Building and construction	11.9	11.1	-0.9
Private services	40.4	42.3	1.9
Government services	28.0	28.1	0.1
Value added	100.0	100.0	0.0
		Greece	
Agriculture, forestry and fishery	7.8	7.3	-0.5
Fuel and power	0.3	0.3	-0.1
Manufacturing	13.3	12.1	-1.3
Building and construction	7.4	8.1	0.6
Private services	50.8	54.7	3.9
Government services	20.3	17.6	-2.7
Value added	100.0	100.0	0.0
		Ireland	
Agriculture, forestry and fishery	3.8	3.5	-0.3
Fuel and power	0.1	0.1	0.0
Manufacturing	33.2	34.4	1.3
Building and construction	6.1	6.1	0.0
Private services	39.2	39.9	0.8
Government services	17.6	15.9	-1.7
Value added	100.0	100.0	0.0
		Mezzogiorno	
Agriculture, forestry and fishery	5.1	4.6	-0.5
Fuel and power	0.2	0.2	0.0
Manufacturing	14.0	13.9	0.0
Building and construction	5.6	4.9	-0.7
Private services	47.2	49.6	2.5
Government services	28.0	26.8	-1.2
Value added	100.0	100.0	0.0
		Portugal	
Agriculture, forestry and fishery	4.1	4.0	-0.1
Fuel and power	0.3	0.3	0.0
Manufacturing	22.3	21.9	-0.4
Building and construction	7.9	8.1	0.2
Private services	39.3	39.7	0.4
Government services	26.2	26.0	-0.2
Value added	100.0	100.0	0.0
		Spain	
Agriculture, forestry and fishery	4.2	3.4	-0.9
Fuel and power	0.3	0.2	-0.1
Manufacturing	22.3	22.7	0.4
Building and construction	7.7	6.5	-1.2
Private services	45.1	47.6	2.5
Government services	20.4	19.6	-0.8
Value added	100.0	100.0	0.0

Note: In real terms (1999 prices)

The impact of objective 1 interventions in general and of Community grants in particular are inducing more industrial production. This must be expected as most of the expenditure is investment oriented. Direct impacts on manufacturing and backward linkages with other industries will certainly help to improve the industrial base and export basis of Community Support Framework regions.

In all objective 1 regions which were covered in this study structural change is steering towards a significant development of private services, whereas government services is declining, with the exception of East Germany. In some countries and regions manufacturing is losing momentum (East Germany, Greece, Portugal).

Foreign trade

Most of the covered nations and regions can be classified as small open economies with a narrow industrial base, where many capital products or parts of such goods which are vital for the implementation of the priorities of the Structural interventions are not produced at home but have to be imported from the industrialised EU-economies or from third countries. As a consequence, Community grants are only partially transformed into the gross domestic product of the regions concerned. The following table estimates the magnitude of the leakage effects due to increased imports induced by the Structural interventions.

The estimates indicate that production losses due to import leakages to countries outside the European Union do not constitute a problem of major concern (**Table 21**). On average about 133 percent of objective 1 interventions is transformed in 2000-2006 into regional gross domestic product of the covered countries. For small open economies like Greece, Portugal and Ireland with their close links to EU member countries and other trade partners it must be expected that a substantial part of Community grants is leaking to other EU and third countries. Consequently, the more developed regions of the European Communities can expect to benefit indirectly from Community grants. For 2000-2006 it is estimated that 24 percent of Community interventions are leaking from the sic areas to other EC countries (28 percent for the cohesion countries). Another 9 percent of Community interventions are leaking through induced imports from third countries outside the European Communities.

Table 21: Import leakages of Community objective 1 interventions 2000-2006

	Induced regional GDP as % of objective 1 interventions	Induced leakages to EU countries as % of objective 1 interventions	Induced leakages to third countries as % of objective 1 interventions	Induced supply as % of objective 1 interventions
East Germany 1)	141.8	18.9	9.4	170.1
Greece	111.6	42.6	3.8	158.0
Ireland	100.4	26.7	11.1	138.2
Mezzogiorno 2)	143.4	17.4	8.6	169.5
Portugal	150.6	35.2	6.7	192.4
Spain	128.3	14.7	13.2	156.3
Total	133.1	24.2	9.1	166.3

1) Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt, Thuringia, East Berlin.

2) Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia.

Note: In real terms (1999 prices).

It is not surprising that some Community Support Framework expenditures are leaking into the rest of Europe or third countries. Certainly the greatest part of project expenditure will be spent in the target regions and result in contracts with national companies, especially construction companies. These private enterprises and government authorities may very well directly or indirectly import some commodities or services from abroad, especially capital goods which are required to establish a modern infrastructure in objective 1 regions. By far the greater parts of induced imports is imported from EU countries recycling partly the contributions of the richer countries to finance the structural funds of the European Union.

Conclusions

The aim of the study was to assess the results of the structural policies in objective 1 areas over the last programming period. The study is based on the latest macroeconomic forecast of the European Commission and the most realistic financial plan of objective 1 interventions at this stage of operations. The analysis focuses on the extent to which appropriations for objective 1 interventions have actually been accepted. Not yet accepted projects have been included in the analysis to reflect the full size of the programme. At each stage of the analysis a separate treatment of accepted and not yet accepted projects is possible.

We demonstrated already that a convergence of GDP per head in objective 1 regions could be observed during the period 1988-1998 towards EU average. Defined in purchasing power parities (PPS) terms, objective 1 areas on average reduced their development gap from 63 % of the EU average in 1988 to 70 % in 1998. This is a profound achievement towards integration and cohesion of the European Union.

The objective of the study is to find comparable answers for the beneficiary Member States on the following main questions:

- How much of the expected economic growth can be attributed to the objective 1 interventions in general and to Community interventions in particular?

During the period 2000-2006 the covered objective 1 areas (East Germany, Greece, Ireland, Mezzogiorno, Portugal, Spain) are expected to grow at an annual rate of by 3.3 %, without Community interventions the real growth rate would decline to 3.1 % and to 2.9 % without all objective 1 interventions.

- How will the objective 1 interventions and the Community grants influence the economic aggregates and the structure of the beneficiary economies? In particular, what part of the Community grants will be transformed into demand and production in the target region?

For the objective 1 areas combined the calculation indicate that objective 1 interventions during the period 2000-2006 induce a regional GDP of 133.1 %. Each 1.0 Mio. Euro intervention is transformed into regional GDP of 1.3 Mio. Euro changing the demand structure towards more investment and the supply structure towards the development of human resources in the anticipated way. The input-output approach allows to assess the various multipliers in the process of interdependent production.

- What magnitude will leak away via increased demand for imports into the more prosperous regions?

Due to the integration of the European market it must be expected that objective 1 interventions are leaking away through induced imports into the more prosperous regions of the European Union. For smaller objective 1 areas higher interregional exports and imports are induced through objective 1 interventions than for larger regions or even nations. For 2000-2006 24.2 % of objective 1 interventions are leaking to EU countries and 9.1 % are leaking to third countries. It is estimated that approximately 1/3 of objective 1 interventions is leaking away to other countries through induced imports. The overall multiplier for total supply (GDP + imports) is estimated at 166.3 %. Consequently, the more prosperous regions of the European Union can expect to regain a substantial part of their contributions to finance the Community Support Frameworks.

- How can we assess the employment effect of the implementation of the priorities agreed for the objective 1 interventions, i.e. how many jobs depend upon the achievement of the actions of the objective 1 interventions, and more particularly upon the envisaged financial transfers from the Community?

For the period 2000-2006 on average 3.5 % or 1.4 million persons of the occupied population in the covered objective 1 areas (East Germany, Greece, Ireland, Mezzogiorno, Portugal, Spain) is depending on objective 1 interventions (Community, national public, private). Approximately 1.8 % or 0.7 million persons of the work force are depending on Community interventions in objective 1 areas. Significant difference in labour productivity can be observed for objective 1 areas. The labour productivity is expected to increase by 1.7 % per year in objective 1 areas while the capital productivity remains more or less the same at comparable levels.

- How is the capital stock affected by objective 1 intervention?

Almost with the same rate as employment the capital stock of objective 1 areas is depending on objective 1 interventions. For 2000-2006 it is estimated that 3.6 % of the capital stock (buildings, machinery, transport equipment) can be related to objective 1 interventions. Approximately 1.7 % of the capital stock is depending on Community interventions. By far the highest dependency can be observed in Portugal.

E. The impact of objective 1 interventions in each region

1. East Germany

East Germany is a region with a significant development lag in relation to Europe. In 1999 it realised a per capita GDP of 72.2 percent of the Community average. To reach the average level of West Germany (Früheres Bundesgebiet) or the European Union, East Germany (Neue Bundesländer und Berlin-Ost) has still to go a long way. Since the reunification of Germany in 1989 East Germany has experienced a fundamental transformation of the economic system. The gross domestic product is the leading indicator to measure the output of a region.

During the period 1991 - 1998 the GDP of East Germany (Neue Länder) has grown at an annual rate of 5.4 %. In the same period West Germany and the European Union witnessed substantially lower growth rates of 1.3 % and 1.6 % respectively. In consequence East Germany could reduce its development gap towards West Germany and the European Union. However, it must be noted that East

Germany mainly realised this reduction in 1992 – 1996. The growth rate of East Germany in the years 1997 and 1998 was lower than in West Germany.

The high growth rates in the early years after the reunification are reflecting the induced demand and supply which was caused by substantial transfers from western to eastern regions of Germany. The reduction of growth rates in the later years was caused on the one side by the expected normalisation of the construction activity, on the other side they are also reflecting that the dynamics of the east German economy is still too low.

The productivity of a regions is a decisive factor for the wealth of a region. In 1991 the GDP per person in East Germany was substantially lower than in West Germany or the European Union. However, during the period 1991 – 1998 productivity in East Germany was growing at the remarkable rate of 8.3 % per year. During the same period productivities in West Germany (1.9 % per year) and in the European Union (1.8 % per year) were increasing at a much lower pace but starting from much higher levels. In consequence East Germany was successful in reducing development lags during the period 1991 – 1998.

Macroeconomic outlook

The substance of the macroeconomic projection for East Germany⁵ was derived from the Regional Statistics of Eurostat in the Newcronos data bank. For this study a regional input-output table for East Germany was compiled which is reflecting the main features of the macroeconomic data which are available for East Germany. It was fortunate that we could derive from the Cronos data bank time series on value added and employment by sector for 1995 – 1999. During this period real GDP grew at an average real growth rate of 1.3 percent followed by a stagnation of employment at around 9.0 Mio. Persons.

Gross domestic product of East Germany was expected to grow by 3.2 percent on average during the 2000-2006 period according to the autumn 2001 forecast (**Table 22**). This is considerably higher than the expected growth rate of 2.6 percent for the European Union. The main driving forces are gross fixed capital formation and exports.

Germany as a nation is expecting a real growth rate of 2.1 % during 2000-2006. This period was hampered by a recession in 2001 and 2002, which reduced the growth rate in Germany to 0.7 % in both years. The decline in production growth was partly caused by the negative impact of the deceleration in world demand. The relatively high share of capital goods in German exports and the decline of foreign demand in this sector affected the Germany economy in these years. However, in 2003 a strong acceleration for exports is expected mainly due to the assumed growth profile for the United States of America.

In East Germany private consumption is expected to grow at an average annual rate of 3.0 % during 2000-2006 compared to 1.8 % for Germany. Government consumption with 1.6 % is expected to grow in line with Germany (1.5 %). While gross fixed capital formation in Germany is only expected to grow at an annual rate of 2.2 %, investment in East Germany is more dynamic (4.6 %). Imports and exports of services of East Germany are projected to grow at an annual rate of 8.2 %

⁵ European Commission, Directorate-General for Economic and Financial Affairs: European Economy, Financial Trends, Autumn 2001 Forecasts for 2001-2003, October/November 2001; Medium-term projection 2000-2005, June 2001.

indicating a significant amount of interregional trade with the European Union and the rest of Germany.

Table 22: Economic outlook for East Germany

Mio. 1999 Euro

Category	Level Mio. Euro 1999	Percentage change at annual rate								Memo EUR15 2000-06
		2000	2001	2002	2003	2004	2005	2006	2000-06	
Gross domestic product	228 577	1.9	3.4	3.3	3.2	3.0	3.6	3.7	3.2	2.6
Private consumption	116 905	1.5	3.2	3.2	3.3	3.4	3.4	3.4	3.0	2.8
Government consumption	56 276	1.2	1.3	1.7	1.7	1.7	1.7	1.7	1.6	2.0
Gross fixed capital formation	66 210	2.3	2.9	4.3	5.0	5.2	5.2	5.2	4.3	4.6
Change in stocks	918	-	-	-	-	-	-	-	-	-
Exports of goods and services	39 762	13.2	10.4	8.9	7.0	6.5	6.2	6.2	8.3	7.7
Imports of goods and services	51 494	10.2	11.1	9.3	7.2	6.6	6.4	6.4	8.2	7.9
Capital stock	1 106 440	2.3	4.5	4.6	2.4	2.5	3.1	3.1	3.2	2.9
Occupied population (1.000 persons)	5 965	1.7	0.6	0.2	1.4	1.3	1.4	1.3	1.1	1.2

Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt, Thuringia, East Berlin.
Own estimates

The realisation of this macroeconomic scenario will depend to a large extent on the implementation of a medium-term programme for restructuring public finances. It is assumed that national authorities will set restrictive ceilings on overall non-interest expenditure and that another marked increase in public investment will be accommodated by a strong effort of current expenditure moderation.

Objective 1 interventions

The strategy for the regional policy for East Germany⁶ is to create the conditions for higher long term sustainable growth and real convergence with the rest of the EU in terms of GDP per capita. Its implementation will take place though the use of some 20.6 billion euros for objective 1 interventions of Structural Funds during the period 2000-2006.

The broad strategy aims are further specified in the priorities below which must be seen as complementary in achieving the set objectives:

- Enhancing competitiveness for sustainable development (productive environment)
- Development of human resources and employment promotion (human resources)
- Development of basic infrastructure for regional development (basic infrastructure)

⁶ European Commission, Directorate-General Regional Policies: Gemeinschaftliches Förderkonzept, Teil 1 und Ziel 1 – Übergangunterstützung in Deutschland 2000-2006, Brüssel 2001.

Table 23: Financial programming of objective 1 interventions in East Germany

Source : Directorate General for Regional Policies with some own estimates for the allocations on categories.

The basis for the data are the financial tables of the programs.

Mio. 1999 Euro

Code	Description	Community contribution of CSF (1)	National public contribution of CSF (2)	Public contribution (1) + (2) (3)	National private participation (4)	Total (3) + (4) (5)
10	Productive Environment	0	0	0	0	0
11	Agriculture	921	479	728	728	2 127
12	Forestry	101	34	70	70	204
13	Promoting the adaptation and the development of rural areas	394	1 158	1 847	1 847	5 399
14	Fisheries	0	0	0	0	0
15	Assisting large business organisations	708	637	699	699	2 044
16	Assisting SMEs and the craft sector	2 652	2 238	2 543	2 543	7 432
17	Tourism	227	206	225	225	657
18	Research	1 580	908	1 294	1 294	3 782
1	Productive Environment	8 583	5 658	7 406	7 406	21 648
20	Human Resources	0	0	0	0	0
21	Labour market policy	2 062	1 082	1 635	1 635	4 779
22	Social inclusion	1 257	607	969	969	2 834
23	Developing educational and vocational training (persons)	950	497	753	753	2 200
24	Workforce flexibility	1 269	599	971	971	2 839
25	Positive labour market actions for woman	563	282	439	439	1 284
2	Human Resources	6 102	3 067	4 768	4 768	13 937
30	Basic Infrastructure	0	0	0	0	0
31	Transport infrastructure	3 173	2 054	2 718	2 718	7 945
32	Telecommunications infrastructure and information society	172	119	151	151	442
33	Energy infrastructures (production)	12	9	11	11	31
34	Environmental infrastructure (including water)	1 248	609	966	966	2 823
35	Planning and rehabilitation	947	682	848	848	2 477
36	Social infrastructure and public health	0	0	0	0	1
3	Basic Infrastructure	5 553	3 473	4 694	4 694	13 719
40	Miscellaneous	0	0	0	0	0
41	Technical assistance and innovative actions (ERDF)	364	136	260	260	760
4	Miscellaneous	364	136	260	260	760
	TOTAL	20 602	12 334	17 128	17 128	50 064
		Annual distribution				
	2000	2 960	1 710	2 597	2 597	7 266
	2001	2 981	1 772	2 484	2 484	7 237
	2002	3 022	1 834	2 542	2 542	7 398
	2003	3 069	1 888	2 502	2 502	7 458
	2004	2 815	1 737	2 378	2 378	6 930
	2005	2 871	1 700	2 310	2 310	6 881
	2006	2 885	1 692	2 317	2 317	6 894
	2000-06	20 602	12 334	17 128	17 128	50 064
		in percent of GDP				
	2000	1.3	0.7	1.1	1.1	3.1
	2001	1.2	0.7	1.0	1.0	3.0
	2002	1.2	0.7	1.0	1.0	3.0
	2003	1.2	0.7	1.0	1.0	2.9
	2004	1.1	0.7	0.9	0.9	2.6
	2005	1.0	0.6	0.8	0.8	2.5
	2006	1.0	0.6	0.8	0.8	2.4
	2000-06	1.1	0.7	1.0	1.0	2.8

The objective to create a productive environment in a region comprises the intention to provide a system of business support by assisting business organisations, small and medium establishments (SME), the craft sector and tourism. Another aspect is the support of rural development and fishing for its sustainable development. The principal aims are the mobilisation of private investment together with supporting actions, and the promotion of quality, with interventions at the level of farming operations, processing and marketing of products. Another priority is the protection of natural resources and the environment, and the implementation of integrated programmes for rural development. Concerning fisheries, priority is given to the modernisation of the production tools according to the rules of quality and environment in order to obtain a sustainable and balanced development of the sector.

The development of human resources is crucial for long term economic growth. Actions focuses on strengthening the employability of the labour force, in particular through the improvement of the education and vocational training systems and the adoption of preventative and individualised policies to fight unemployment, on promoting equal opportunities for all, enhancing entrepreneurship and adaptability, diffusing technological innovation, and promoting the information society.

The development of basic infrastructure includes the replacement and enlargements of the physical infrastructure which is required for modern production activities, the improvement of infrastructures for transportation, telecommunications and energy, the environmental infrastructure, social infrastructure and public health. The improvement of the environmental infrastructure includes investment into water distribution and sewage treatment plants, reduction of gas emissions and energy consumption, as well as investments into waste disposal.

The following impact analysis is based on the approved objective 1 interventions 2000-2006 for East Germany (**Table 23**).

The economic impact of the objective 1 interventions

Despite substantial economic growth of 3.2 percent in the reference period according to the autumn 2001 forecast, employment is only expected to grow at an average annual rate of about 1.1 percent. The objective 1 interventions, however, will support a substantial amount of existing positions and induce various new job opportunities in many fields. It is estimated that in 2000 (2006) approximately 270.000 (216.000) positions or 4.4 (3.3) percent of the occupied population are depending on objective 1 interventions (**Table 24** and **Table 25**). Community grants alone will guarantee 112.000 (92.000) positions or 1.8 (1.4) percent of all jobs.

On the supply side in the year 2000 (2006), 10.377 (9.464) million euro or 4.5 (3.3) percent of gross domestic product are directly or indirectly induced by objective 1 interventions, and 4.290 (4.017) million euro or 1.8 (1.4) percent of GDP on Community interventions. Capital goods producing sectors are participating way above average in objective 1 interventions, in particular machinery, electrical goods and building and construction. But also many other sectors will benefit indirectly through intermediate supplies and intersectoral trade. It is estimated that the GDP would be reduced in 2000 (2006) by 1.8 (1.4) percent if Community grants could not be transferred in this particular year. In this situation East Germany would realise a growth rate in 2000 (2006) of 0.0 (2.2) percent instead of 1.9 (3.7) percent.

Table 24: Economic impact of objective 1 interventions 2000 in East Germany

Mio1999 Euro								
Category	Level 2000	Growth rate 2000	Change induced by total interventi ons	Growth rate excludin g total intervent ions	Change induced by public interventi ons	Growth rate excludin g public intervent ions	Change induced by Communi ty interventi ons	Growth rate excludin g Communi ty intervent ions
	Mio. Euro	%	Mio. Euro	%	Mio. Euro	%	Mio. Euro	%
STRUCTURAL CHANGE								
Agriculture, forestry and fishery	5 037	-0.2	266	-5.5	171	-3.6	113	-2.4
Fuel and power	791	-6.5	9	-7.6	6	-7.2	3	-6.9
Manufacturing	37 800	5.0	1 305	1.3	841	2.6	532	3.5
Building and construction	24 777	-2.8	2 805	-13.8	1 803	-9.8	1 143	-7.2
Private services	90 052	4.4	3 005	0.9	1 933	2.2	1 225	3.0
Government services	60 560	1.2	2 830	-3.5	1 819	-1.8	1 208	-0.8
Value added	219 017	2.6	10 220	-2.2	6 573	-0.5	4 225	0.6
VAT on products	13 899	-8.2	157	-9.3	101	-8.9	66	-8.7
Gross domestic product	232 916	1.9	10 377	-2.6	6 674	-1.0	4 290	0.0
ECONOMIC GROWTH								
Private consumption	118 608	1.5	631	0.9	404	1.1	262	1.2
Government consumption	56 969	1.2	3 406	-4.8	2 187	-2.7	1 458	-1.4
Gross fixed capital formation	67 702	2.3	8 048	-9.9	5 175	-5.6	3 250	-2.7
Change in stocks	1 370	-	20	-	21	-	22	-
Exports less imports	- 11 733	0.0	- 1 728	-14.7	- 1 113	-9.5	- 701	-6.0
Gross domestic product	232 916	1.9	10 377	-2.6	6 674	-1.0	4 290	0.0
FOREIGN TRADE								
Exports to EU countries	25 376	13.2	77	12.9	49	13.0	33	13.1
Exports to third countries	19 633	13.1	45	12.9	29	13.0	20	13.0
Exports of goods and services	45 009	13.2	122	12.9	78	13.0	53	13.1
Imports from EU countries	30 774	1.6	1 241	-2.5	798	-1.1	502	-0.1
Imports from third countries	25 968	22.5	609	19.6	393	20.7	252	21.3
Imports of goods and services	56 742	10.2	1 850	6.6	1 191	7.9	754	8.7
CAPITAL								
Equipment	201 580	2.3	7 814	-1.7	5 028	-0.2	3 227	0.7
Buildings	929 818	2.2	44 736	-2.7	28 764	-0.9	18 586	0.2
Capital stock	1 131 398	2.3	52 550	-2.5	33 792	-0.8	21 813	0.3
LABOUR (1.000 persons)								
Wage and salary earners	5 543	1.7	250	-2.9	161	-1.3	103	-0.2
Self-employed	524	2.3	20	-1.5	13	-0.2	8	0.7
Occupied population	6 067	1.7	270	-2.8	174	-1.2	112	-0.2

Table 25: Economic impact of objective 1 interventions 2006 in East Germany

Mio1999 Euro								
Category	Level 2006	Growth rate 2006	Change induced by total interventi ons	Growth rate excludin g total intervene ntions	Change induced by public interventi ons	Growth rate excludin g public intervene ntions	Change induced by Communi ty interventi ons	Growth rate excludin g Communi ty intervene ntions
	Mio. Euro	%	Mio. Euro	%	Mio. Euro	%	Mio. Euro	%
STRUCTURAL CHANGE								
Agriculture, forestry and fishery	4 941	-0.5	224	-5.0	149	-3.5	100	-2.5
Fuel and power	886	1.7	8	0.8	5	1.1	3	1.3
Manufacturing	43 864	2.7	1 022	0.3	680	1.1	427	1.7
Building and construction	29 753	3.8	2 421	-4.6	1 607	-1.8	1 011	0.3
Private services	113 585	4.1	2 913	1.4	1 933	2.3	1 216	3.0
Government services	75 567	4.0	2 742	0.3	1 822	1.5	1 203	2.4
Value added	268 596	3.7	9 330	0.1	6 197	1.3	3 960	2.2
VAT on products	15 689	2.7	134	1.8	89	2.1	57	2.3
Gross domestic product	284 285	3.7	9 464	0.2	6 285	1.4	4 017	2.2
ECONOMIC GROWTH								
Private consumption	144 151	3.4	595	3.0	394	3.1	255	3.2
Government consumption	62 847	1.7	3 172	-3.4	2 105	-1.7	1 394	-0.6
Gross fixed capital formation	88 848	5.2	7 626	-3.8	5 065	-0.8	3 163	1.5
Change in stocks	8 057	-	7	16.3	6	16.3	6	16.3
Exports less imports	- 19 618	7.2	- 1 936	-3.4	- 1 285	0.1	- 801	2.8
Gross domestic product	284 285	3.7	9 464	0.2	6 285	1.4	4 017	2.2
FOREIGN TRADE								
Exports to EU countries	39 266	6.3	102	6.0	67	6.1	45	6.1
Exports to third countries	30 318	6.2	58	6.0	39	6.1	26	6.1
Exports of goods and services	69 584	6.2	160	6.0	106	6.1	71	6.1
Imports from EU countries	48 629	6.5	1 408	3.4	934	4.4	584	5.2
Imports from third countries	40 573	6.4	689	4.6	456	5.2	288	5.6
Imports of goods and services	89 202	6.4	2 096	3.9	1 391	4.8	872	5.4
CAPITAL								
Equipment	244 134	2.9	7 056	-0.1	4 689	0.9	2 993	1.7
Buildings	1 135 605	3.2	42 184	-0.7	28 021	0.6	17 996	1.5
Capital stock	1 379 739	3.1	49 241	-0.6	32 710	0.7	20 989	1.5
LABOUR (1.000 persons)								
Wage and salary earners	5 911	1.3	201	-2.1	133	-0.9	85	-0.1
Self-employed	542	0.7	15	-2.0	10	-1.1	6	-0.4
Occupied population	6 453	1.3	216	-2.1	143	-1.0	92	-0.2

As most of the structural interventions expenditure is investment oriented, private consumption is not much affected. However, it must be acknowledged that large wage awards, an increase in real income and purchasing power, will increase private consumption with a certain time lag. Government consumption and gross fixed capital formation are the components of final demand which are affected most. In 2000 (2006) about 2.6 (2.2) percent of government consumption depends on Community grants given mainly by the European Social Fund. Most of this expenditure is spent for salaries and training activities to improve human resources. As was indicated in Table 23, most of structural interventions are expenditure allocated to improve physical infrastructure. In 2000 (2006), 11.9 (8.6) percent of total investment is spent on objective 1 interventions related investment, 4.8 (3.6) percent of which is funded by Community grants. It can be expected that a more modern infrastructure will attract new activities and encourage private initiative.

A modern infrastructure and better labour skills will tend to improve the export potential of a region. So far, only a modest impact of the structural interventions on exports is envisaged. Imports and the corresponding leakage effects are far more important. As East Germany is a small, open economy highly integrated with the German market, many capital goods or parts of capital goods which are required for structural interventions projects can not be produced in East Germany but will be imported from West Germany, other European countries or even from outside the EU. If the objective 1 interventions are successful in generating more growth, imports will tend to rise. For 2000 (2006), it is estimated that 754 (872) million euro or 1.3 (1.0) percent of total imports depend on Community grants. A first quantification of leakage effects of Community grants, is indicating that the leakages to EU countries (including West Germany) from induced imports in 2000 (2006) amount to 17.0 (19.7) percent of Community grants while leakages to third countries reach 8.8 (9.7) percent contributing to the total leakage effect of 25.5 (29.5) percent.

Structural change seems to be guided in the right direction. Selected industries will emerge as growth poles and services are benefiting a lot on indirect levels. Many new positions are created in various sectors. In 2000 (2006), a total of 270.000 (216.000) positions will be financed by the structural interventions, with a substantial part of new positions in private services and in government services to improve education and vocational training. The building and construction sector will participate positions mainly in various projects to improve the physical infrastructure. Although the potential of the East German industry in the field of producing machinery and electrical equipment is still limited, the mid-term perspective of the structural interventions offers good prospects for these industries.

Increased expenditure for government services may induce structural change towards more government participation in economic activities despite the official strategy for privatisation. However, the objective to improve labour skills and the education system is so important, that a higher government participation in economic activities is acceptable for a limited time. The accelerating process towards the development of key industrial sectors and innovative services sectors is certainly the best policy.

In **Table 26**, the annual results are summarised for gross domestic product. For 2000 it is expected that the gross domestic product of East Germany will grow by 1.9 percent including all actions of objective 1 interventions. If all objective 1 interventions are excluded, the GDP growth rate would decline to -2.6 percent. For 2006, an annual growth rate of 3.7 percent is expected. The growth rate would be reduced to 0.2 percent if all objective 1 interventions were to be discontinued in this year. For the period 2000-2006 an average annual growth rate of 3.2 percent is expected for East Germany. If objective 1 interventions were not implemented at all, the average growth would be reduced to 2.7 percent. If all public objective 1 interventions (Community + national), the average annual growth rate would be reduced to 2.8 percent. If finally it is assumed that only the Community

grants were cancelled, an average annual growth rate of 3.0 percent may be expected for the period 2000-2006 on the basis of the autumn 2001 forecast.

Table 26: Objective 1 interventions and growth in East Germany

Mio1999 Euro

	GDP	Objective 1		
		GDP without total interventions	GDP without public interventions	GDP without Community interventions
	(1)	(2)	(3)	(4)
	Mio. Euro			
1999	228 577	-	-	-
2000	232 916	222 539	226 242	228 626
2001	240 886	230 643	234 155	236 608
2002	248 856	238 442	242 014	244 543
2003	256 869	246 454	249 943	252 526
2004	264 654	255 043	258 340	260 699
2005	274 267	264 769	267 954	270 248
2006	284 285	274 821	278 000	280 268
	Growth rate in %			
2000	1.9	-2.6	-1.0	0.0
2001	3.4	-1.0	0.5	1.6
2002	3.3	-1.0	0.5	1.5
2003	3.2	-1.0	0.4	1.5
2004	3.0	-0.7	0.6	1.5
2005	3.6	0.0	1.2	2.1
2006	3.7	0.2	1.4	2.2
	Average annual growth rate in %			
2000-06	3.2	2.7	2.8	3.0
	Reduction of growth rates in %			
2000-06	-	0.5	0.3	0.2

Given the enormous task of restructuring the economy, it does not seem likely that East Germany can reach a good foundation for self-sustained economic growth by 2006. Many of the approved and anticipated projects had helped and will help to establish a modern physical and human infrastructure. This, despite certain pressures on prices and inflation, will encourage private initiative and participation in gross fixed capital formation. A modern infrastructure will reduce several constraints for growth and development. However, only if modern production facilities are in place which match the public infrastructure, can rising incomes and competitive prices be realised.

2. Greece

Like Portugal, Greece is a member state with a very significant development lag. In 1999, the country realised only 68 percent of the Community average for GDP per capita. To this extent Greece is, like Portugal, a reference country for this study.

Macroeconomic outlook

The projection of input-output tables for 2000-2006 is based on

- the latest national input-output table for Greece of 1994,
- the latest macroeconomic data of Eurostat and
- the autumn 2001 macroeconomic projection of the European Commission ⁷.

Following successful stabilisation efforts undertaken for a number of years, macroeconomic fundamentals have improved markedly in Greece and stability has been enforced although domestic price performance remains vulnerable particular to external shocks. In real terms, the catching-up process of the new Member of the euro zone, as of January 2001, is accelerating. Despite an acceleration in exports, the external balance deteriorated in 2000, as most of the expanding components of domestic demand, in particular investment in equipment and private consumption, have strong import content (**Table 27**).

Real GDP growth has been above the EU average since 1996. Economic activity accelerated further rising by 4.3 % in 2000. As total investment was rising much faster than total output, its relative share in GDP reached 23 % in 2000 from 18 % in 1995. Tax reforms and falling interest rates resulted in a sharp increase in consumer credit and are supporting private consumption which increased strongly in 2001. In view of the preparation of the Olympic Games of 2004 and of accelerating financial flows from EU structural funds, investment growth is expected to rise further in the period ahead, partly compensating for the slowdown in world demand. Total investment is expected to approach an impressive 30.5 % of GDP in 2006. During 2000-2006 real GDP is forecast to grow at an annual average rate of 4.5 %.

Despite buoyant economic activity, the situation in the labour market improved only marginally until 2000. After peaking to almost 12 % in 1999, the rate of unemployment fell to 11.1 % in 2000. Total employment also fell by 0.3 % in 2000, as the increase in employment in the service sectors could not compensate for continuing job losses in the manufacturing and the agricultural sectors. During 2000-2006 employment is estimated to increase by 0.8 % per year inducing a further decline in the unemployment rate. Sustained activity and the continuation of structural reform efforts are expected to support an improvement in the situation of the labour market during the forecast period.

Investment, both in equipment and buildings, is expected to strengthen on the assumption that structural reform measures will start producing positive effects on the supply side and, more directly, by the large infrastructure programme which is supported by the European Communities.

The macroeconomic strategy of the structural interventions therefore is that, under the circumstances, appropriate measures need to be taken if essential public investment is not to be jeopardised. At the same time, increasing the efficiency of investment will be likely to lead to faster economic growth. The Greek authorities are aware of the need to pursue a macroeconomic strategy aimed at rectifying the public finance situation.

⁷ European Commission, Directorate-General for Economic and Financial Affairs: European Economy, Financial Trends, Autumn 2001 Forecasts for 2001-2003, October/November 2001; Medium-term projection 2000-2005, 2001.

Table 27: Economic outlook for Greece

Mio. 1999 Euro

Category	Level Mio. Euro 1999	Percentage change at annual rate								MEMO EUR15 2000-06
		2000	2001	2002	2003	2004	2005	2006	2000-06	
Gross domestic product	117 065	4.3	4.1	3.5	4.2	5.0	5.0	5.0	4.5	2.6
Private consumption	83 259	1.5	3.1	2.7	2.9	3.8	4.0	4.0	3.1	2.8
Government consumption	17 602	1.2	1.8	0.5	0.6	0.9	1.0	1.0	1.0	2.0
Gross fixed capital formation	26 836	3.1	9.0	9.1	10.3	10.5	10.0	9.9	8.8	4.6
Change in stocks	- 745	-	-	-	-	-	-	-	-	-
Exports of goods and services	23 575	13.2	5.7	2.6	7.4	7.5	7.0	7.0	7.2	7.7
Imports of goods and services	33 462	10.0	5.6	4.1	6.8	7.2	7.2	7.2	6.9	7.9
Capital stock	515 231	3.1	3.5	4.0	4.4	4.8	5.2	5.2	4.3	2.9
Occupied population (1.000 persons)	3 909	-0.2	0.9	0.6	1.1	1.7	1.7	0.0	0.8	1.2

Having achieved correction of severe fiscal imbalances, the stance of fiscal policy seems to have turned neutral. The general government deficit was reduced to 1.1. % of GDP in 2000. In the budget for 2002, the government is targeting a surplus of 1.3 % of GDP, marginally lower than the target of 1.5 % included in the Greek Stability Programme presented in December 2000 under the requirements of the Stability and Growth Pact.

The strengthening and modernisation of the financial sector and of industry should make for better allocation of resources, to the benefit of sectors with a higher value added component. Labour market rigidities and an inadequate education system are also impeding the smooth operation of the economy.

Objective 1 interventions

The Greek Community Support Framework (CSF) 2000-2006⁸ aims at contributing to a deepening of Greece's integration in the EU and in the knowledge-based world economy by promoting structural change and exploiting the potential for higher productivity and employment. The strategy is expected to create the conditions for higher long term sustainable growth and real convergence with the rest of the EU in terms of GDP per capita.

Its implementation will take place through the use of some 22.7 billion euros of Structural funds, for some 3.3 billion euros of the Cohesion Funds and loans and guarantees of the European Investment Bank and European Investment Fund. 21.3 billion euros of the Structural funds will be devoted to objective 1 interventions (**Table 28**).

Productivity is the key factor determining the sustainable long run growth rate and thus the conditions for improved living standards. With Greece joining the European Monetary Union (EMU) in

⁸ European Commission, Directorate-General Regional Policies: Summary of the Community Support Framework Greece 2000-2006, Brussels 2001.

January 2001 productivity growth combined with the appropriate cost developments will be of particular relevance for Greece's competitiveness. The CSF's priorities are focused on the types of investment in physical, human and knowledge capital that are most conducive to increases in Greek productivity and growth in 2000-2006. The CSF envisages also increased efforts in the fields of natural and cultural environment, health and welfare, as well as a territorial balance in the development of the Greek regions.

The broad strategy aims are further specified in the priorities presented below, which must be seen as complementary in achieving the set objectives:

- Development of human resources and employment promotion
- Enhancing competitiveness for sustainable development
- Communications
- Rural development and fisheries
- Quality of life
- Information society
- Regional development

Table 28: Financial programming of objective 1 interventions in Greece

Source : Directorate General for Regional Policies with some own estimates for the allocations on categories.
The basis for the data are the financial tables of the programs.

Mio. 1999 Euro

Code	Description	Community contribution (1)	National public contribution (2)	Public contribution (1) + (2) (3)	National private participation (4)	Total (3) + (4) (5)
10	Productive Environment	0	0	0	0	0
11	Agriculture	1 004	417	1 415	1 415	2 837
12	Forestry	130	44	13	13	187
13	Promoting the adaptation and the development of r	1 121	426	290	290	1 836
14	Fisheries	299	105	181	181	585
15	Assisting large business organisations	136	109	400	400	646
16	Assisting SMEs and the craft sector	964	486	1 775	1 775	3 226
17	Tourism	584	231	645	645	1 461
18	Research	422	151	269	269	842
1	Productive Environment	4 662	1 970	4 988	4 988	11 619
20	Human Resources	65	22	8	8	94
21	Labour market policy	768	256	1	1	1 025
22	Social inclusion	742	247	4	4	993
23	Developing educational and vocational training (pe	1 438	479	1	1	1 919
24	Workforce flexibility	734	245	162	162	1 141
25	Positive labour market actions for woman	352	117	45	45	514
2	Human Resources	4 100	1 367	220	220	5 687
30	Basic Infrastructure	0	0	0	0	0
31	Transport infrastructure	6 625	4 610	3 812	3 812	15 047
32	Telecommunications infrastructure and informatio	1 518	557	521	521	2 597
33	Energy infrastructures (production	419	414	728	728	1 560
34	Environmental infrastructure (including water)	580	213	5	5	798
35	Planning and rehabilitation	1 423	505	163	163	2 091
36	Social infrastructure and public health	1 272	413	0	0	1 685
3	Basic Infrastructure	11 837	6 710	5 230	5 230	23 777
40	Miscellaneous	228	86	0	0	314
41	Technical assistance and innovative actions (ERDF	494	306	77	77	877
4	Miscellaneous	722	392	77	77	1 191
	TOTAL	21 321	10 438	10 516	10 516	42 275
		Annual distribution				
	2000	2 558	1 253	1 262	1 262	5 073
	2001	2 741	1 392	1 475	1 475	5 609
	2002	3 120	1 534	1 578	1 578	6 232
	2003	3 248	1 637	1 655	1 655	6 540
	2004	3 229	1 522	1 470	1 470	6 220
	2005	3 253	1 550	1 528	1 528	6 331
	2006	3 171	1 550	1 548	1 548	6 269
	2000-06	21 321	10 438	10 516	10 516	42 275
		in percent of GDP				
	2000	2.1	1.0	1.0	1.0	4.2
	2001	2.2	1.1	1.2	1.2	4.4
	2002	2.4	1.2	1.2	1.2	4.7
	2003	2.4	1.2	1.2	1.2	4.8
	2004	2.2	1.1	1.0	1.0	4.3
	2005	2.2	1.0	1.0	1.0	4.2
	2006	2.0	1.0	1.0	1.0	3.9
	2000-06	2.2	1.1	1.1	1.1	4.4

Investment in human and knowledge capital is crucial for long term economic growth. Action focuses on strengthening the employability of the labour force, in particular through the improvement of the education and vocational training systems and the adoption of preventative and individualised policies to fight unemployment, on promoting equal opportunities for all, enhancing entrepreneurship and adaptability, diffusing technological innovation, and promoting the Information Society. The increase of the employment rate, in particular that of women, is also an objective. In order to boost human capital and improve quality, Greece will further promote certification, and apply market driven approaches and open tendering procedures. Overall, the interventions of human resources will be closely linked to the European Employment Strategy.

As regards competitiveness, the intention is to provide the system of business support increasing the focus on small and medium sized enterprises (SME) and business start-ups, putting tourism on a more competitive business footing, introducing new types of financial products and intermediaries (for example offering loan guarantees), promoting training and education actions with investment in buildings and equipment, and finally supporting the liberalisation of energy markets and the achievement of the Kyoto target.

Investment in transport communications infrastructure, aiming at reducing peripherality vis-à-vis the rest of Europe, and reduce transactions costs, will enhance integration with the rest of the EU and better access to Central Europe for greater opportunities for domestic competition and trade and improve efficiency of internal linkages in the domestic market by reducing bottlenecks, particularly in the main traffic corridors and urban areas. With a view to sustainable development, specific attentions will be given to investment needed for ensuring a rational management of environmental resources.

With regard to agriculture, rural development and fishing, priority is given to the overall competitiveness of the rural areas against a background of sustainable and balanced development. The principal aims are the mobilisation of private investment together with supporting actions, and the promotion of quality, with interventions at the level of farming operations, processing and marketing products. Another priority is the protection of the natural resources and the environment, and the implementation of integrated programmes for rural development. Concerning fisheries, priority is given to the modernisation of the production tools according to the rules of quality and environment in order to obtain a sustainable and balanced development of the sector.

Quality of life refers to natural and cultural environment, health and welfare. As regards the environment, a reinforced effort is foreseen to meet fully EU Directives concerning the quality of drinking water, and the treatment of waste water. Major progress should be made in installing a proper system for the management of solid and toxic waste. The financing of environmental action should be reformed to reflect the principle that the polluter pays. As regard culture, there will be a balance of effort covering both the cultural heritage and the development of modern cultures. As regards the health sector, the focus will be mainly on supporting a reform of the management of this sector through the reorganisation of health units and services, and completing the mental health reform.

The development of Information Society in Greece is key factor to enhance competitiveness of enterprises and raise the efficiency of public authority actions. This priority refers to several fields as a part of a wider development strategy. Promoting digital literacy according to the conclusions of the Lisbon summit and the policy orientations of the European Commission will be a central aim. A major effort of modernisation of the public administration is also foreseen. Finally, this priority also

includes support for local services companies in a framework of liberalisation of the telecommunications market.

Regional development aims at a sustainable development and at a territorial balance in the development of the Greek regions by strengthening competitiveness, economic development, employment, social cohesion and inclusion in the regions and employment in the regions. These programmes will reflect a development strategy determined by the regions themselves but in line with guidelines established in the CSF. These guidelines foresee as substantial effort in favour of rural areas, especially remote, island and mountainous areas, and in favour of rural areas in the plains dependent and that are vulnerable to present and future changes in the Common Agricultural Policy. Support will also be given to territorial employment pacts and other local initiatives, as well as to care services for children and elderly as means to promote gender equality.

The economic impact of the structural interventions

Due to partly to substantial grants, Greece was expected to grow at an average annual growth rate of 4.5 percent in 2000-2006 according to the autumn 2001 forecast, well above the Community average of 2.6 percent. Greece would accordingly be able to reduce the development gap with respect to the European average. This encouraging performance can partly be attributed to the relatively high investment quota of 26.7 percent of GDP on average during the 2000-2006 period.

In 2000-2006 Community grants were helping to finance 8.1 percent of gross fixed capital formation. The economic growth in 2000 (2006) of 4.3 (5.0) percent is to a large extent depending on Community grants (**Table 29** and **Table 30**). If this money for objective 1 interventions were not available, the gross domestic product of Greece in 2000 (2006) would decline to 1.9 (2.7) percent. Without all objective 1 interventions in 2000 (2006), Greece would be facing a stagnating gross domestic product with a growth rate of 0.0 (0.9) percent.

Among the components of final demand, gross fixed capital formation, government consumption and imports are affected most by objective 1 interventions. If all objective 1 interventions were withdrawn in 2000 (2006) gross fixed capital formation would not grow at an annual rate of 3.1 (9.9) % but decline by -15.7 (-4.3) %.

Even more significant is the impact of objective 1 interventions on the labour market. In 2000, an unemployment rate of 11.1 % was realised in Greece, more than the average unemployment rate of 8.9 % for the Euro area. It is estimated that in 2000 (2006) approximately 158,000 (165,000) positions were dependent on objective 1 interventions. This is equivalent to 4.1 (4.0) % of the occupied population. Concerning Community interventions it is estimated that in 2000 (2006) approximately 89,000 (96,000) positions were dependent on objective 1 interventions. This is equivalent to 2.3 (2.3) % of the occupied population.

Quite in contrast to the labour force, the capital stock is expected to grow in line with GDP throughout the 2000-2006 period. If in 2000 (2006) all objective 1 interventions were withdrawn the capital stock could be reduced by 21,438 (26,673) million Euro or by 4.0 (3.9) %.

In 1993 agriculture, forestry and fishing had still a share of 13.8 % in total value added. In 2000 this share was reduced to 7.1 % and is expected to decline to 6.7 % in 2006. This decline is well in line with the anticipated structural change of the economy. Growth in industrial production can be attributed to the implementation of priority projects co-financed by Community grants. Community grants will induce corresponding industrial production in many ways. This effect is equivalent to 1.4

percent of manufacturing and 10.2 % of construction in 2000. Gross domestic product induced by Community grants in 2000-2006 amounts to 111.6 % of the grants.

Table 29: Economic impact of objective 1 interventions 2000 in Greece

Mio1999 Euro								
Category	Level 2000	Growth rate 2000	Change induced by total interventi ons	Growth rate excludin g total interventi ons	Change induced by public interventi ons	Growth rate excludin g public interventi ons	Change induced by Communi ty interventi ons	Growth rate excludin g Communi ty interventi ons
	Mio. Euro	%	Mio. Euro	%	Mio. Euro	%	Mio. Euro	%
STRUCTURAL CHANGE								
Agriculture, forestry and fishery	8 696	3.8	117	2.4	76	2.9	54	3.2
Fuel and power	336	-1.5	11	-4.6	9	-4.0	6	-3.3
Manufacturing	14 644	2.3	387	-0.4	298	0.2	200	0.9
Building and construction	8 450	5.9	1 668	-15.0	1 280	-10.1	860	-4.8
Private services	57 599	5.8	1 501	3.0	1 150	3.7	795	4.3
Government services	22 255	2.2	1 236	-3.5	1 141	-3.1	845	-1.7
Value added	111 980	4.4	4 921	-0.2	3 954	0.7	2 760	1.8
VAT on products	10 116	3.0	158	1.4	126	1.7	87	2.1
Gross domestic product	122 096	4.3	5 079	0.0	4 080	0.8	2 847	1.9
ECONOMIC GROWTH								
Private consumption	84 471	1.5	657	0.7	471	0.9	330	1.1
Government consumption	17 819	1.2	1 652	-8.2	1 537	-7.5	1 139	-5.2
Gross fixed capital formation	27 662	3.1	5 039	-15.7	3 782	-11.0	2 513	-6.3
Change in stocks	2 277	-	6	-	3	-	1	-
Exports less imports	- 10 133	2.5	- 2 276	-20.5	- 1 713	-14.8	- 1 136	-9.0
Gross domestic product	122 096	4.3	5 079	0.0	4 080	0.8	2 847	1.9
FOREIGN TRADE								
Exports to EU countries	14 426	13.2	60	12.8	37	12.9	26	13.0
Exports to third countries	12 260	13.2	21	13.0	13	13.0	9	13.1
Exports of goods and services	26 686	13.2	81	12.9	50	13.0	36	13.0
Imports from EU countries	28 763	10.0	2 189	1.7	1 633	3.8	1 084	5.9
Imports from third countries	8 056	10.1	168	7.8	130	8.3	88	8.9
Imports of goods and services	36 819	10.0	2 357	3.0	1 763	4.8	1 172	6.5
CAPITAL								
Equipment	102 904	3.5	4 485	-1.0	3 635	-0.1	2 527	1.0
Buildings	428 296	3.0	16 954	-1.1	14 665	-0.5	10 558	0.5
Capital stock	531 200	3.1	21 438	-1.1	18 300	-0.5	13 085	0.6
LABOUR (1.000 persons)								
Wage and salary earners	2 173	0.7	110	-4.4	92	-3.5	65	-2.3
Self-employed	1 727	-1.4	48	-4.2	36	-3.5	25	-2.8
Occupied population	3 900	-0.2	158	-4.3	128	-3.5	89	-2.5

Table 30: Economic impact of objective 1 interventions 2006 in Greece

Mio1999 Euro								
Category	Level 2006	Growth rate 2006	Change induced by total interventi ons	Growth rate excludin g total intervene ntions	Change induced by public interventi ons	Growth rate excludin g public intervene ntions	Change induced by Communi ty interventi ons	Growth rate excludin g Communi ty intervene ntions
	Mio. Euro	%	Mio. Euro	%	Mio. Euro	%	Mio. Euro	%
STRUCTURAL CHANGE								
Agriculture, forestry and fishery	10 668	3.9	145	2.5	93	3.0	66	3.2
Fuel and power	366	1.9	9	-0.6	7	0.0	5	0.7
Manufacturing	17 599	3.7	426	1.2	331	1.7	225	2.4
Building and construction	11 756	6.1	1 904	-11.1	1 468	-7.1	988	-2.8
Private services	79 593	6.0	2 054	3.3	1 578	3.9	1 089	4.5
Government services	25 648	3.0	1 523	-3.1	1 409	-2.7	1 043	-1.2
Value added	145 630	5.0	6 060	0.6	4 886	1.5	3 416	2.6
VAT on products	13 159	5.0	209	3.3	167	3.7	115	4.1
Gross domestic product	158 789	5.0	6 269	0.9	5 053	1.7	3 531	2.7
ECONOMIC GROWTH								
Private consumption	103 329	4.0	762	3.2	543	3.5	381	3.6
Government consumption	18 868	1.0	2 084	-10.2	1 943	-9.4	1 441	-6.7
Gross fixed capital formation	48 447	9.9	6 265	-4.3	4 725	-0.8	3 144	2.8
Change in stocks	3 161	-	13	3.6	8	3.7	6	3.8
Exports less imports	- 15 016	7.8	- 2 855	-12.7	- 2 166	-7.8	- 1 441	-2.6
Gross domestic product	158 789	5.0	6 269	0.9	5 053	1.7	3 531	2.7
FOREIGN TRADE								
Exports to EU countries	20 680	7.0	84	6.6	52	6.7	37	6.8
Exports to third countries	17 558	7.0	30	6.8	18	6.9	13	6.9
Exports of goods and services	38 238	7.0	114	6.7	70	6.8	50	6.9
Imports from EU countries	41 605	7.2	2 729	0.2	2 049	1.9	1 363	3.7
Imports from third countries	11 649	7.2	240	5.0	187	5.5	128	6.0
Imports of goods and services	53 254	7.2	2 969	1.2	2 236	2.7	1 490	4.2
CAPITAL								
Equipment	137 248	5.6	5 481	1.4	4 469	2.1	3 116	3.2
Buildings	555 098	5.1	21 192	1.1	18 413	1.6	13 267	2.6
Capital stock	692 346	5.2	26 673	1.1	22 882	1.7	16 383	2.7
LABOUR (1.000 persons)								
Wage and salary earners	2 415	-0.2	121	-5.2	103	-4.5	73	-3.2
Self-employed	1 726	0.3	44	-2.3	33	-1.6	23	-1.0
Occupied population	4 141	0.0	165	-4.0	136	-3.3	96	-2.3

Table 31: Objective 1 interventions and growth in Greece

Mio1999 Euro

	GDP (1)	Objective 1		
		GDP without total interventions (2)	GDP without public interventions (3)	GDP without Community interventions (4)
		Mio. Euro		
1999	117 065	-	-	-
2000	122 096	117 017	118 016	119 249
2001	127 104	121 482	122 668	124 046
2002	131 555	125 280	126 540	128 059
2003	137 078	130 498	131 817	133 440
2004	143 988	137 763	138 901	140 393
2005	151 205	144 871	146 059	147 581
2006	158 789	152 520	153 736	155 258
		Growth rate in %		
2000	4.3	0.0	0.8	1.9
2001	4.1	-0.5	0.5	1.6
2002	3.5	-1.4	-0.4	0.8
2003	4.2	-0.8	0.2	1.4
2004	5.0	0.5	1.3	2.4
2005	5.0	0.6	1.4	2.5
2006	5.0	0.9	1.7	2.7
		Average annual growth rate in %		
2000-06	4.5	3.9	4.0	4.1
		Reduction of growth rates in %		
2000-06	-	0.6	0.5	0.3

The leakage effects through imports are estimated at 46.4 % of Community grants resulting from imports from EC countries at 42.6 % and imports from other countries at 3.8 %. The total supply multiplier of objective 1 interventions is estimated at 158 %.

The corresponding average annual growth rate for the period 2000-2006 is estimated at 4.5 percent including all objective 1 interventions (**Table 31**). Without objective 1 interventions the average annual growth rates would be reduced to 3.9 %. If all public objective 1 interventions were withdrawn the growth rate would be reduced to 4.0 %. If only Community interventions would be excluded the average annual growth rate would decline to 4.1 %.

3. Ireland

In 1999, Ireland realised 111.6 % of the Community average for gross domestic product per inhabitant in purchasing power parities (PPS). Already in 1991 Ireland was crossing the border line of 75 % for areas which qualify as objective 1 regions. During the period 1991-2000 Ireland realised a phenomenal average annual growth rate of 7.9 % as compared to 2.1 % for the European Union (EU15). During the period 1989-1993 and 1994-1999 Ireland received the highest allocations of Community grants per inhabitant although the development gap was not the greatest among the cohesion countries. This substantial support helped to reduce the development gap in a rather short period of time. Today Ireland qualifies as a nation whose welfare is well above the European average. This achievement can be attributed to a great extent to a successful European regional policy.

Macroeconomic outlook

Ireland is a small open economy in the huge integrated European market. Therefore, the macroeconomic dimension is very important to the structural interventions for Ireland. The success of the development effort cannot be guaranteed by simply increasing investment in selected sectors. An appropriate macroeconomic environment and an overall economic development strategy is essential if accelerated convergence is to be achieved.

During the period of the previous CSF from 1994 to 1999, Ireland had an average real GDP growth rate of over 8 % per year, and an annual average increase of 4.5 % in employment. Despite these developments, inflation in the same period remained low, and averaged just 2.1 %. Since the beginning of 2000, however, inflation has picked up sharply and reached over 5 percent in May 2000. While this pick-up reflects a decision (based on health concerns) to substantially increase tobacco taxes, as well as the impact of a weak Euro and rising oil prices in a very open economy, it also reflects significant domestic pressures, notably from labour market developments.

A dramatic manifestation of economic strength in recent years has been the major improvement in public finances. There has been a general government surplus since 1997 and the Government debt ratio is well below the 60 % limit set in the Maastricht Treaty. It fell to 52 % of GDP in 1999 and is estimated to fall to 36 % by the end of 2002.

The Irish economy⁹ experienced its sixth consecutive year of exceptionally strong growth in 1999. The impact of rapid economic expansion spilled into the labour market. Unemployment continued to fall significantly, declining from 7.8% in 1998 to 4.2 % in 2000. Long-term unemployment (LTU) fell even faster to 2.5 %. Taken together, these trends indicate that the Irish labour market has tightened appreciably in the recent past. Despite policy efforts to increase the labour supply, labour force growth has not kept pace with employment expansion over the period 1994 to 1999. Although the labour force rose by 18 % (256,000) during this period with rising participation playing a major role, employment increased by a much stronger 370,000. As a consequence, unemployment fell by 114,000 over this period with the unemployment rate declining from 14.7% to 5.7% of the labour force. This represents a fundamental structural transformation of the Irish labour market in the space of just 5 years.

⁹ European Commission, Directorate-General for Economic and Financial Affairs: European Economy, Financial Trends, Autumn 2001 Forecasts for 2001-2003, October/November 2001; Medium-term projection 2000-2005, 2001.

Table 32: Economic outlook for Ireland

Category	Level Mio. Euro 1999	Percentage change at annual rate								MEMO EUR15 2000-06
		2000	2001	2002	2003	2004	2005	2006	2000-06	
Gross domestic product	89 029	11.5	6.5	3.3	5.5	5.2	4.9	4.9	5.9	2.6
Private consumption	42 904	10.0	6.2	4.2	5.6	5.5	5.3	5.3	6.0	2.8
Government consumption	12 465	5.4	6.0	3.8	2.7	3.5	3.5	3.5	4.1	2.0
Gross fixed capital formation	21 085	7.3	3.4	2.7	4.2	5.8	5.5	5.5	4.9	4.6
Change in stocks	193	-	-	-	-	-	-	-	-	-
Exports of goods and services	79 000	17.8	9.1	5.3	8.1	8.0	7.5	7.5	9.0	7.7
Imports of goods and services	66 618	16.6	8.5	6.0	8.1	8.5	8.1	8.1	9.1	7.9
Capital stock	235 529	5.8	6.0	6.3	6.2	6.2	6.1	6.1	6.1	2.9
Occupied population (1.000 persons)	1 616	1.4	4.8	0.7	1.9	1.4	1.0	0.1	1.6	1.2

The national accounts for 2000 (**Table 32**) show record real GDP growth of 11.5 %. In 2001 activity has slowed significantly under the combined influence of supply constraints, especially labour shortages, and several exogenous shocks. The economy also suffered under the international slowdown, although moderated by the later slowdown of European markets, the destination for a significant part of exports. Finally, the world-wide retrenchment in the ICT sector added to the overall easing. Compared to other European nations the growth rate for 2001 of 6.5 % is still impressive.

The fundamental determinants of private consumption have been high growth earnings per capita, significant direct tax relief and a healthy rise in employment. Nonetheless, the pace of private consumption growth witnessed in 2000 is unlikely to have been sustained, because of falling confidence levels and a “normalisation” of sales after record figures. Investment in equipment is expected to rise more moderately in view of lower business confidence. Housing completion in the private sector are expected to fall, although this is partly offset by a rise in social housing construction. By contrast, other construction is forecast to grow strongly as a result of rising public expenditure on infrastructure under the National Development Plan. Finally, the high annual growth rates of exports and imports mask a significant weakening through the year, given the international slowdown and some loss in competitiveness after several years of gains.

The economy is expected to pick up strongly from about the middle of 2002. Nevertheless, in the absence of a significant carry-over from 2001, annual growth will be far below potential in 2002, entailing a rise in unemployment. For 2003, the projections assume that the economy will recover to a rate close to that commonly thought to be sustainable in the medium term, making a distinct shift from a phase characterised by double-digit growth due to exceptional increases in the labour supply and productivity.

The re-emergence of a current account deficit in 2000 after a decade of surpluses is explained by the fact that the growing trade surplus failed to fully offset the steadily increasing deficits on both the service balance and the balance of primary incomes. This trend is expected to persist over the fore-

cast period, with the relatively big drop in 2001 caused by a reduction in exports of foodstuffs and tourism services.

The steady fall in unemployment since 1996 finally came to a halt in end-2000, with a rate around 4 %. This achievement of effectively full employment has been accompanied by growing shortages of both skilled and unskilled labour. The economic slowdown is expected to lead to employment growth temporarily below labour force growth in 2002, even though the latter is on a downward trend. As a result, the forecast envisages a rise in the unemployment rate in 2002 to around 4.5 % and a similar level is projected for 2003.

The state of the public finances remains healthy, with the debt ratio declining further to close to 25 % of GDP in 2003, but with significantly lower surpluses than the 4.5 % of GDP seen in 2000. In line with the National Development Plan, capital spending will rise strongly over the forecast period, taking general government fixed investment in nominal terms to 4.9 % of GDP from 3.8 % in 2000.

For Ireland, an average annual growth rate of 5.9 % is expected for gross domestic product during the period 2000-2006 according to the autumn 2001 forecast. This is well above the European average annual growth rate of 2.6 %. Beginning in 2003, a substantial increase of investment is expected which is closely linked to various projects within the Community Support Framework and other initiatives.

Objective 1 interventions

The development strategy proposed in the Community Support Framework¹⁰ focuses on improving the competitiveness and expanding the capacity of the internally traded sectors of the economy. Meanwhile, the employment potential of economic growth is to be enhanced. The strategy of sustainable, essentially export-led growth and high employment creation will be supported by a restrictive fiscal policy, a stable monetary policy and a tight income policy. The employment target, while realistic, is to sustain the achieved level of almost full employment.

The following key national objectives will be underpinned by the strategy for the National Development Plan 2000-2006

- Continuing sustainable national economic and employment growth;
- Consolidating and improving Ireland's international competitiveness;
- Fostering balanced regional development;
- Promoting Social Inclusion.

The above are the broad national objectives of the Plan which will apply to both the Border, Midland and Western Region (Objective 1) and the Southern & Eastern Region (Objective 1 in transition). Within the regions, there will be different emphasis, as appropriate, to meet the diverse challenges arising in the regions. In pursuing these objectives, Community co-financing will contribute to the protection and improvement of the environment.

An essential pre-condition for the success and feasibility of the major level of investment proposed in the Plan is the continuation of macroeconomic and budgetary policies conducive to economic

¹⁰ European Commission, Directorate-General Regional Policies: Ireland, Community Support Framework 2000-2006, Brüssel 2001.

stability. Accordingly, the annual allocations and ultimately the overall Plan commitment, will have to be kept to a level that respects the public expenditure ceilings set by the Government to underpin sustainability of economic and employment growth. Flexibility in the implementation of the Plan is expressly important in a situation where increasing evidence of supply-side constraints are emerging. Unless tackled these constraints may either inhibit growth or lead to inflationary developments with negative effects on Ireland's cost competitiveness. Given the openness of the economy and dependence on capital inflows, losses in international comparative competitiveness would be detrimental to the achievement of the objectives of the Plan.

A continuation of the successful policies from the previous Plan period plays an essential role in sustaining Ireland's economic and employment growth. The framework of this strategy consists of low inflation, moderate wage developments, prudent budgetary policies and continuation of the Social Partnership model.

Balanced regional development is a fundamental objective of the Plan. This commitment is not simply about policies to develop regions which are lagging behind. It also encompasses policies to ease the pressure on urban infrastructure, to tackle urban and rural poverty and, over the long term, to better integrate physical and economic planning through more effective land use in particular.

The Plan responds to the National Employment Action Plan process as developed in the framework of the EU Co-ordinating Employment Strategy and will also involve a major integrated approach to promoting social inclusion. A key element of the overall strategy is the continuation of sustainable economic growth to promote jobs. There will also be substantial investment in education and training, childcare and recreational infrastructure and investment in people through lifelong learning and skills development, community development and family services. The objective is that employment is opened up to all sectors of society as this is the best way to counter poverty and social exclusion. However, the Plan also recognises that ensuring the correct overall economic environment for job creation is not sufficient on its own to alleviate poverty in areas and groups throughout the community. Targeted interventions are therefore provided for, primarily in the Regional Operational Programmes, to deal with such problems.

The National Development Plan will involve an investment of 57.1 billion euro in 1999 prices over the period 2000-2006 through a combination of public, EU and private funds. The publicly funded element (including EU and Public Private Partnership sources) of the investment will be matched by an estimated 8.1 billion euro of private investment. During the same period objective 1 interventions (**Table 33**) comprise a total volume of 6.8 billion euro.

Community contributions for objective 1 interventions in 2000-2006 constitute a package of 3.0 billion euro, out of which 0.9 billion euro are spent for "Productive Environment", 0.8 billion euro on "Human Resources" and 1.3 billion euro on "Basic Infrastructure".

The strategy of the Plan is to continue sustainable national economic and employment growth and to consolidate and improve Ireland's international competitiveness together with fostering balanced regional development and promoting social inclusion.

The National Development Plan is designed to underpin the development of a dynamic competitive economy over the period 2000-2006. It aims to build on the unprecedented economic progress of recent years and to strengthen the foundation for further strong and sustainable progress in the years ahead. The central challenge, which is addressed in the Plan, is the implementation of public poli-

cies which will increase the capacity of Ireland's economy to maintain strong and sustainable output and employment.

Table 33: Financial programming of objective 1 interventions in Ireland

Source: Directorate General for Regional Policies with some own estimates for the allocation on categories.

The basis for the data are the financial tables of the programs.

Mio. 1999 Euro

Code	Description	Community contribution of CSF (1)	National public contribution of CSF (2)	Public contribution (1) + (2) (3)	National private participation (4)	Total (3) + (4) (5)
10	Productive Environment	0	0	0	0	0
11	Agriculture	119	85	279	279	483
12	Forestry	32	19	37	37	87
13	Promoting the adaptation and the development of r	41	28	17	17	87
14	Fisheries	97	36	124	124	257
15	Assisting large business organisations	0	0	0	0	0
16	Assisting SMEs and the craft sector	299	219	110	110	628
17	Tourism	55	38	101	101	194
18	Research	297	207	377	377	882
1	Productive Environment	939	633	1 045	1 045	2 617
20	Human Resources	0	0	0	0	0
21	Labour market policy	49	35	0	0	84
22	Social inclusion	205	143	34	34	382
23	Developing educational and vocational training (pe	400	291	0	0	691
24	Workforce flexibility	161	128	0	0	289
25	Positive labour market actions for woman	10	9	0	0	18
2	Human Resources	824	606	34	34	1 464
30	Basic Infrastructure	0	0	0	0	0
31	Transport infrastructure	931	699	0	0	1 630
32	Telecommunications infrastructure and informatio	101	125	381	381	607
33	Energy infrastructures (production	43	25	0	0	68
34	Environmental infrastructure (including water)	213	147	26	26	386
35	Planning and rehabilitation	0	0	0	0	0
36	Social infrastructure and public health	0	0	0	0	0
3	Basic Infrastructure	1 288	996	406	406	2 691
40	Miscellaneous	0	0	0	0	0
41	Technical assistance and innovative actions (ERDF	15	13	0	0	27
4	Miscellaneous	15	13	0	0	27
	TOTAL	3 066	2 247	1 485	1 485	6 798
		Annual distribution				
	2000	644	476	259	259	1 379
	2001	579	426	197	197	1 202
	2002	513	386	284	284	1 183
	2003	442	327	248	248	1 017
	2004	312	239	191	191	742
	2005	317	207	183	183	707
	2006	259	185	123	123	567
	2000-06	3 066	2 247	1 485	1 485	6 798
		in percent of GDP				
	2000	0.6	0.5	0.3	0.3	1.4
	2001	0.5	0.4	0.2	0.2	1.1
	2002	0.5	0.4	0.3	0.3	1.1
	2003	0.4	0.3	0.2	0.2	0.9
	2004	0.3	0.2	0.2	0.2	0.6
	2005	0.2	0.2	0.1	0.1	0.6
	2006	0.2	0.1	0.1	0.1	0.4
	2000-06	0.4	0.3	0.2	0.2	0.8

Crucial associated challenges are the better distribution of the fruits of economic growth both regionally and throughout society and an appropriate balance between the environment and development. The objective of the Irish Government for regional policy in the Plan is to achieve more balanced regional development in order to reduce the disparities between and within the two Regions and to develop the potential of both to contribute to the greatest possible extent to the continuing prosperity of the country. Policies to secure such development must be advanced in parallel with policies to ensure that this development is sustainable with full regard to the quality of life, social cohesion and conservation of the environment as well as the protection of natural and cultural heritage.

A key component of the government's Regional Development Policy will be to facilitate further development of the existing major gateways and the focused development of a limited number of strategically-placed centres, as regional gateways, which are already displaying the potential to achieve strong and sustainable economic growth driven essentially by the interplay of market forces, location and accessibility and to promote such growth within their zones of influence. The challenge, therefore, is to create the conditions whereby a second tier of larger urban centres can start to act as regional gateways, thus spreading economic growth more widely across both Regions. Development of regional gateways as a means of wider regional development is a long-term strategy requiring an incremental, planned and consistent approach to investment. However, the approach must also be flexible enough to adapt to challenging economic and social conditions.

The economic impact of the structural interventions

In 2000, about 13,000 positions of the occupied population were dependent on Community grants for objective 1 interventions (**Table 34**). This is equivalent to 0.8 % of the occupied population. Without total objective 1 interventions (Community, national public, private) total employment would be reduced by 26,000 position or 1.6 % of the labour force.

With 22.8 (22.1) % of GDP, the Irish investment quota in 2000 (2006) is above the critical borderline of 20 %. However, the projected level is only slightly more than for the average of the European Union (EU15) of 20.6 (20.0) in 2000 (2003) and certainly not enough to support sustainable growth rate in the range of 5.0 % in the later phase of the programming period.

In 2000-2006, 1.2 % of gross fixed capital formation and 0.3 % of the capital stock are depending on Community grants for objective 1 interventions. Besides labour, investment in modern buildings and machinery is one of the key macroeconomic variable to induce growth. In 2000 (2006) Ireland is expected to grow at an annual growth rate of 11.5 (4.9) % (**Table 34** and **Table 35**). This growth rate would be reduced to 10.2 (4.7) % if Community grants in this single year were suddenly eliminated. If all objective 1 interventions were cut, the growth rate would fall to 10.0 (4.5) %.

Quite in contrast to the past, the results indicate that economic growth in Ireland is not anymore depending on Community actions. Community grants in 2000 are contributing 0.7 percentage points to actual growth and total objective 1 interventions approximately 1.5 percentage points.

Table 34: Economic impact of objective 1 interventions 2000 in Ireland

Mio1999 Euro								
Category	Level 2000 Mio. Euro	Growth rate 2000 %	Change induced by total interventi ons Mio. Euro	Growth rate excludin g total internve ntions %	Change induced by public interventi ons Mio. Euro	Growth rate excludin g public internve ntions %	Change induced by Communi ty interventi ons Mio. Euro	Growth rate excludin g Communi ty internve ntions %
STRUCTURAL CHANGE								
Agriculture, forestry and fishery	3 414	11.3	6	11.1	4	11.1	3	11.2
Fuel and power	108	3.8	1	3.0	1	3.2	0	3.5
Manufacturing	30 134	13.0	174	12.4	138	12.5	81	12.7
Building and construction	5 532	12.4	260	7.1	222	7.9	129	9.8
Private services	35 501	12.7	358	11.6	252	11.9	144	12.3
Government services	15 652	10.9	532	7.1	479	7.5	275	8.9
Value added	90 341	12.4	1 331	10.8	1 096	11.1	633	11.6
VAT on products	8 923	3.0	38	2.5	32	2.6	19	2.7
Gross domestic product	99 264	11.5	1 370	10.0	1 128	10.2	651	10.8
ECONOMIC GROWTH								
Private consumption	47 192	10.0	138	9.7	68	9.8	38	9.9
Government consumption	13 137	5.4	672	0.0	609	0.5	351	2.6
Gross fixed capital formation	22 626	7.3	996	2.6	789	3.6	453	5.2
Change in stocks	929	-	8	-	8	-	8	-
Exports less imports	15 380	24.2	- 444	27.8	- 345	27.0	- 199	25.8
Gross domestic product	99 264	11.5	1 370	10.0	1 128	10.2	651	10.8
FOREIGN TRADE								
Exports to EU countries	58 680	12.5	18	12.5	9	12.5	5	12.5
Exports to third countries	34 380	28.1	79	27.8	67	27.8	38	27.9
Exports of goods and services	93 060	17.8	97	17.7	76	17.7	44	17.7
Imports from EU countries	47 860	16.5	390	15.5	297	15.7	170	16.0
Imports from third countries	29 820	16.8	151	16.2	124	16.4	73	16.6
Imports of goods and services	77 680	16.6	541	15.8	420	16.0	243	16.2
CAPITAL								
Equipment	61 098	6.0	684	4.9	534	5.1	308	5.5
Buildings	188 099	5.7	2 339	4.4	1 789	4.7	1 029	5.1
Capital stock	249 197	5.8	3 023	4.5	2 323	4.8	1 337	5.2
LABOUR (1.000 persons)								
Wage and salary earners	1 381	5.0	23	3.2	20	3.5	11	4.1
Self-employed	258	-14.3	3	-15.2	2	-15.0	1	-14.7
Occupied population	1 639	1.4	26	-0.2	22	0.1	13	0.6

Table 35: Economic impact of objective 1 interventions 2006 in Ireland

Category	Mio1999 Euro							
	Level 2006	Growth rate 2006	Change induced by total interventi ons	Growth rate excludin g total intervene ntions	Change induced by public interventi ons	Growth rate excludin g public intervene ntions	Change induced by Communi ty interventi ons	Growth rate excludin g Communi ty intervene ntions
	Mio. Euro	%	Mio. Euro	%	Mio. Euro	%	Mio. Euro	%
STRUCTURAL CHANGE								
Agriculture, forestry and fishery	4 282	3.6	5	3.5	4	3.5	4	3.5
Fuel and power	139	3.7	0	3.5	0	3.6	0	3.7
Manufacturing	41 808	5.4	59	5.3	43	5.3	21	5.4
Building and construction	7 400	4.7	112	3.1	91	3.4	54	3.9
Private services	48 492	5.3	144	4.9	96	5.1	54	5.1
Government services	19 261	3.3	224	2.1	195	2.2	116	2.7
Value added	121 382	4.9	544	4.4	429	4.5	249	4.7
VAT on products	11 990	4.9	16	4.7	13	4.8	8	4.8
Gross domestic product	133 372	4.9	560	4.5	442	4.5	257	4.7
ECONOMIC GROWTH								
Private consumption	64 517	5.3	58	5.2	27	5.3	15	5.3
Government consumption	16 460	3.5	279	1.7	244	2.0	143	2.6
Gross fixed capital formation	29 479	5.5	417	4.0	317	4.3	185	4.8
Change in stocks	1 108	-	- 11	2.7	- 11	2.7	- 11	2.7
Exports less imports	21 808	4.2	- 183	5.0	- 135	4.8	- 76	4.5
Gross domestic product	133 372	4.9	560	4.5	442	4.5	257	4.7
FOREIGN TRADE								
Exports to EU countries	90 957	7.5	9	7.5	4	7.5	3	7.5
Exports to third countries	53 283	7.5	37	7.4	30	7.4	18	7.5
Exports of goods and services	144 240	7.5	46	7.5	34	7.5	20	7.5
Imports from EU countries	75 430	8.1	167	7.9	122	7.9	69	8.0
Imports from third countries	47 002	8.1	62	8.0	48	8.0	27	8.1
Imports of goods and services	122 432	8.1	229	7.9	169	8.0	96	8.0
CAPITAL								
Equipment	88 713	6.4	298	6.0	221	6.1	127	6.2
Buildings	267 785	6.0	1 024	5.6	748	5.7	435	5.8
Capital stock	356 498	6.1	1 322	5.7	970	5.8	562	5.9
LABOUR (1.000 persons)								
Wage and salary earners	1 490	0.0	8	-0.5	6	-0.4	4	-0.2
Self-employed	315	0.3	1	0.0	1	0.0	1	0.1
Occupied population	1 805	0.1	9	-0.4	7	-0.3	4	-0.2

Table 36: Objective 1 interventions growth in Ireland

Mio1999 Euro				
	GDP	Objective 1		
		GDP without total interventions	GDP without public interventions	GDP without Community interventions
	(1)	(2)	(3)	(4)
Mio. Euro				
1999	89 029	-	-	-
2000	99 264	97 894	98 136	98 613
2001	105 725	104 526	104 709	105 137
2002	109 204	108 019	108 293	108 682
2003	115 217	114 197	114 435	114 766
2004	121 205	120 473	120 653	120 896
2005	127 145	126 460	126 635	126 843
2006	133 372	132 812	132 930	133 115
Growth rate in %				
2000	11.5	10.0	10.2	10.8
2001	6.5	5.3	5.5	5.9
2002	3.3	2.2	2.4	2.8
2003	5.5	4.6	4.8	5.1
2004	5.2	4.6	4.7	4.9
2005	4.9	4.3	4.5	4.7
2006	4.9	4.5	4.5	4.7
Average annual growth rate in %				
2000-06	5.94	5.88	5.89	5.91
Reduction of growth rates in %				
2000-06	-	0.06	0.05	0.03

During the period 2000-2006, the Irish economy was expected to grow at an average annual rate of 5.94 % according to the autumn 2001 forecast. This forecast includes all objective 1 interventions. Without Community grants in each year of the reference period (**Table 36**) the Irish economy would grow at an average annual rate of 5.91 %. If the all objective 1 interventions did not exist, gross domestic product would grow at an annual rate of 5.88 %. From a macroeconomic point of view Ireland has made it. The structural interventions in 1989-1993 and 1994-1999 have been so successful that Ireland in the future can dispense with objective 1 interventions on a national scale. In view of the greater development gaps in other objective 1 regions of the European Union, Community grants for objective 1 interventions in Ireland will re-evaluated and gradually phased out.

The leakage effects of Community grants in 2000-2006 are estimated at 37.8 %, with 26.7 % due to induced imports from EU member countries and another 11.1 % being imports from third countries. The total supply multiplier of objective 1 interventions in Ireland is estimated at 138.2 %.

4. Mezzogiorno

During the decade 1990-99, the Mezzogiorno went through a relatively negative economic phase compared with other Italian regions and Europe in general. In terms of development, the North-South divide became more marked: the recorded growth was less than expected. In the first five years of the last decade, employment in Italy fell by over a million, half of which was in the Mezzogiorno. In the last two years, after a period of stagnation, it has shown signs of recovery. However, employment still remains below the levels reached in the first half of the 1990s.

The production structure in the Mezzogiorno is still distinguished by considerable structural weakness. The agricultural sector employs a higher proportion of the workforce than in the rest of Italy, (9.4 % of employed persons, compared to the national average of 5.4 %), manufacturing industry is 23.5 % compared to the national average of 32 %, the proportion of low-productivity private services is large, and there is a very high number of employees in Public Administration. The structure of manufacturing industry has a very high ratio of small sized businesses.

The adoption of new economic policy trends – based on a reduction of financial transfers, administrative decentralisation and the use of assessment tools for selecting investments – and the existence of clear signs of change (mainly the cities showing a greater capacity for government and a change of course of the criminal presence) have allowed important elements of economic and social viability to emerge, mainly attributable to decisions made by private investors.

However, the persistence of a major structural weakness of the Mezzogiorno economy is manifested by the simultaneous presence of a low rate of activity, high unemployment and a large underground economy. The unemployment rate was 21.9 % in 1998 and 22.4 % in July 1999. Among the unemployed, about 75 % have been so for over twelve months. Unemployment reaches extremely high rates in young people (in the age band up to 24 years it is well over 50 %) and women (over 30 %), who suffer more than other groups from a poor availability of prospects and inadequate information on job opportunities.

Among the most significant failings, mention should be made of the infrastructure situation in rural areas. In the southern regions, a very high percentage of the population (about 50 %) is resident in areas characterised by rural features, in terms of density of inhabitants and levels of agricultural employment. With regard to size, rural areas constitute over 80 % of the territory of the Mezzogiorno. The agricultural activity should therefore be placed in a wider economic and territorial context, in relation to the capacity to generate income by exploiting natural, scenic and cultural resources, also with contributions from other sectors (such as tourism and the craft industry).

Macroeconomic outlook

The economic slowdown of Italy in 2001 has turned out steeper than expected, with real GDP stalling due to declining investment activity and weaker net exports. In 2002, the pace of economic expansion is forecast to remain slow at first, as private households postpone major purchases and firms remain cautious, with the uncertain outlook likely to outweigh the benefits of the tax incentive scheme for investment approved by Parliament in October 2001. However, with emerging signs of the assumed global recovery, domestic demand is expected to pick up swiftly. Investment expenditures especially is forecast to accelerate as firms try to bring forward some of their investment plans to take advantage of the tax incentive scheme before its expiry at the end of the year 2002. Private consumption is also expected to strengthen, reflecting gained confidence. Despite the assumed recovery in world trade, net exports are expected to remain weak. Import growth will be particularly

strong due to the high import content of investment, while the appreciation of the real effective exchange rate will weigh on traditionally price sensitive Italian exports. For 2002 GDP of growth is forecast for Italy to average 1.3 % with much better prospects for the Mezzogiorno (2.7 %).

As for East Germany, the substance of the macroeconomic projection for the Mezzogiorno was derived from the Regional Statistics of Eurostat in the Newcronos data bank. For this study a regional input-output table for the Mezzogiorno was compiled which is reflecting the main features of the macroeconomic data which are available for this area.

Table 37: Economic outlook for the Mezzogiorno

Mio. 1999 Euro

Category	Level Mio. Euro 1999	Percentage change at annual rate								MEMO EUR15 2000-06
		2000	2001	2002	2003	2004	2005	2006	2000-06	
Gross domestic product	243 133	2.0	1.7	2.7	2.7	2.2	2.2	2.2	2.3	2.6
Private consumption	137 761	2.9	1.8	1.3	2.7	2.8	2.8	2.8	2.4	2.8
Government consumption	66 137	1.6	1.2	1.6	0.9	1.0	1.0	1.0	1.2	2.0
Gross fixed capital formation	40 205	6.1	1.6	2.7	3.8	5.2	5.0	5.0	4.2	4.6
Change in stocks	1 403	-	-	-	-	-	-	-	-	-
Exports of goods and services	36 834	9.6	3.8	1.8	6.7	6.5	6.1	6.2	5.8	7.7
Imports of goods and services	39 207	8.4	3.8	3.9	7.2	7.5	7.0	7.0	6.4	7.9
Capital stock	1 161 259	1.3	2.3	3.7	2.6	2.3	2.6	0.5	2.2	2.9
Occupied population (1.000 persons)	5 666	1.7	1.5	0.4	1.3	1.3	1.4	1.2	1.2	1.2

Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia.

During the 2000-2006 period the gross domestic product of the Mezzogiorno ¹¹ is expected to grow at an average annual growth rate of 2.3 % according to the autumn 2001 forecast (**Table 37**), a growth rate below the average for the European Union (2.6 %). As a consequence the Mezzogiorno would enlarge its development gap towards the average of the European Union despite substantial interventions of the Structural funds.

In the Mezzogiorno private consumption is expected to grow at an average annual rate of 2.4 % during 2000-2006 more or less in line with Italy as a nation. Government consumption with 2.4 % is expected to grow stronger than at the national level (1.2 %). Gross fixed capital formation in Italy is expected to grow with the same rate of 4.2 % in the Mezzogiorno and the rest of the nations. Exports of goods and services of the Mezzogiorno are projected to grow at an annual rate of 5.8 % and the import requirements by 6.4 % indicating a significant amount of interregional trade with the European Union and the rest of the world.

¹¹ European Commission, Directorate-General for Economic and Financial Affairs: European Economy, Financial Trends, Autumn 2001 Forecasts for 2001-2003, October/November 2001; Medium-term projection 2000-2005, 2001.

Objective 1 interventions

A “break with the past” strategy is proposed in the form of the concerted action of the Community Support Framework¹² and complementary policies at national level. These policies as a whole can lead to a permanent improvement in the economic, social and environmental context and generate a discontinuity in the behaviour and attitudes of economic operators.

The general aims of the CSF may be defined as follows:

- to achieve by the fourth year of the seven-year period 2000-06 a rate of growth in the Mezzogiorno considerably higher than that of the European Union;
- to drastically reduce social hardship.

The structuring of the CSF in priorities is aimed at encouraging the application of the principles of consistency, concentration and integration. The priorities are:

- Priority I – Exploitation of natural and environmental resources (Natural Resources);
- Priority II – Exploitation of cultural and historical resources (Cultural Resources);
- Priority III – Exploitation of human resources (Human Resources);
- Priority IV – Expansion and exploitation of local development systems (Local Development);
- Priority V – Improvement in quality of cities, local institutions and the associated life (Cities);
- Priority VI – Reinforcement of service nodes and networks (Service Nodes and Networks).

This identification is based on the strategic choice of an integrated approach, whereby the lines of action which sustain each priority consist of clusters of inter-connected sectorial assistance packages orientated towards common aims.

The strategy is so structured that the aim of environmental sustainability is shared by all the priorities. Priority I aims to improve the usability of natural resources and allow their correct and efficient utilisation in the Mezzogiorno, in order to reduce the North-South divide and promote development. The other priorities are instead orientated towards the aim of environmental sustainability by a choice of strategies involving infrastructures, production, services and research which reduce factors of pressure on the environment.

In addition, the strategic decisions as a whole offer firm opportunities to implement the principle of equality between men and women. Alongside the specific actions planned in favour of female employment and the improvement of access to the labour market, the other priorities include lines of strategy in favour of utilising resources for achieving aims which are directly instrumental in creating better conditions of equal opportunities.

¹² European Commission, Directorate-General Regional Policies: Community Support Framework for Objective 1 Italian Regions (2000-06), Summary, Brussels 2001.

Table 38: Financial programming of objective 1 interventions in the Mezzogiorno

Source: Directorate General for Regional Policies with some own estimates for the allocation on categories.

The basis for the data are the financial tables of the programs.

Mio. 1999 Euro

Code	Description	Community contribution (1)	National public contribution (2)	Public contribution (1) + (2) (3)	National private participation (4)	Total (3) + (4) (5)
10	Productive Environment	18	20	0	0	38
11	Agriculture	1 605	1 138	2 062	2 062	4 805
12	Forestry	231	175	63	63	470
13	Promoting the adaptation and the development of r	1 759	1 253	551	551	3 562
14	Fisheries	198	200	111	111	509
15	Assisting large business organisations	191	208	232	232	631
16	Assisting SMEs and the craft sector	2 412	2 581	2 597	2 597	7 589
17	Tourism	1 541	1 768	862	862	4 171
18	Research	2 474	2 256	536	536	5 265
1	Productive Environment	10 428	9 599	7 013	7 013	27 040
20	Human Resources	0	0	0	0	0
21	Labour market policy	1 157	589	47	47	1 794
22	Social inclusion	227	123	1	1	350
23	Developing educational and vocational training (pe	1 597	809	33	33	2 439
24	Workforce flexibility	766	366	88	88	1 219
25	Positive labour market actions for woman	390	192	8	8	591
2	Human Resources	4 137	2 079	178	178	6 393
30	Basic Infrastructure	0	0	0	0	0
31	Transport infrastructure	1 570	1 743	412	412	3 725
32	Telecommunications infrastructure and information	1 038	1 086	187	187	2 310
33	Energy infrastructures (production	348	384	660	660	1 392
34	Environmental infrastructure (including water)	1 681	1 855	1 255	1 255	4 791
35	Planning and rehabilitation	1 390	1 473	133	133	2 996
36	Social infrastructure and public health	267	281	15	15	563
3	Basic Infrastructure	6 294	6 822	2 661	2 661	15 778
40	Miscellaneous	257	342	8	8	608
41	Technical assistance and innovative actions (ERDF	400	310	20	20	731
4	Miscellaneous	657	653	29	29	1 339
	TOTAL	21 516	19 152	9 881	9 881	50 550
		Annual distribution				
	2000	2 948	2 562	1 311	1 311	6 822
	2001	3 278	2 987	1 340	1 340	7 604
	2002	3 371	3 055	1 338	1 338	7 764
	2003	3 448	3 087	1 749	1 749	8 284
	2004	2 763	2 440	1 316	1 316	6 520
	2005	2 824	2 486	1 393	1 393	6 704
	2006	2 884	2 535	1 434	1 434	6 853
	2000-06	21 516	19 152	9 881	9 881	50 550
		in percent of GDP				
	2000	1.2	1.0	0.5	0.5	2.7
	2001	1.3	1.2	0.5	0.5	3.0
	2002	1.3	1.2	0.5	0.5	3.0
	2003	1.3	1.2	0.7	0.7	3.1
	2004	1.0	0.9	0.5	0.5	2.4
	2005	1.0	0.9	0.5	0.5	2.4
	2006	1.0	0.9	0.5	0.5	2.4
	2000-06	1.2	1.0	0.5	0.5	2.7

The national part-financing is established indicatively, since with the adoption of programming additions the percentage of participation of the Structural Fund concerned will be specified for each measure, the shares of national part-financing for Priorities indicated in the CSF and operational programmes may be increased or reduced, without affecting the commitments on the part of the Italian authorities in terms of verifying additionality. The public national partfinancing of operational programmes is ensured by State and regional/local resources.

The CSF proposes to maximise the involvement of the private sector in the financing and management of the operations, especially infrastructure projects. Greater involvement of private capital should lead to more effective design, selection and management of projects, and is consistent with the recent innovation introduced in the national legislative framework (which gives priority to projects that can be financed with private capital).

The above considerations show the need for the administrations to equip themselves in terms of technical capability for preparing and monitoring the financial plans for the work they intend to promote with recourse to private capital, defining contract documents suitable for managing the public-private relationship and ensuring rapid procedures for obtaining authorisations. For these reasons, recourse to project finance for financing operations to be carried out within the framework of the Operational Programmes constitutes a significant element among the reference criteria for allocating the performance reserve.

The following impact analysis is based on the approved objective 1 interventions 2000-2006 for the Mezzogiorno (**Table 38**).

The economic impact of the objective 1 interventions

In the year 2000 (2006), 9.577 (9.185) million euro or 3.9 (3.2) percent of gross domestic product are depending on objective 1 interventions of all kinds (Community, national public, private), and 4.299 (4.023) million euro or 1.7 (1.4) percent of GDP on Community interventions (**Table 39** and **Table 40**). Without Community grants the economy would hardly grow. It is estimated that the GDP would be reduced in 2000 (2006) by 1.7 (1.4) percent if Community grants would not be available to finance objective 1 interventions. In this situation the Mezzogiorno would realise in 2000 (2006) a growth rate of 0.3 (0.8) % instead of 2.0 (2.2) %.

It had to be expected that government consumption and gross fixed capital formation are the components of final demand which are affected by objective 1 interventions in a significant way. In 2000 (2006) about 2.0 (1.8) % of government consumption and 7.0 (5.4) % of gross fixed capital formation depend on Community grants.

The impact on labour and capital is very profound. In 2000 (2006) approximately 227.000 (203.000) positions are depending in objective 1 interventions of which Community grants are providing 102.000 (89.000) positions. The impact of objective 1 interventions on labour and capital is at comparable levels. If Community grants were withdrawn in 2000 (2006) the growth rate of employment of 1.7 (1.2) % would be reduced by 1.8 (1.4 %) to -0.1 (-0.2) %. In the same situation the growth rate of capital of 1.3 (0.5) % would be reduced by 1.7 (1.5) % to -0.4 (-1.0) %.

The most profound impact on branches has been identified for the branch "Building and construction". If all objective 1 interventions were cancelled, the valued added of this sector would decline

by 18.6 (15.9) % in 2000 (2006). In the case of Community grants the value added of the construction sector would decline by 7.9 (6.5) %.

Table 39: Economic impact of objective 1 interventions 2000 in the Mezzogiorno

Mio1999 Euro								
Category	Level 2000	Growth rate 2000	Change induced by total interventi ons	Growth rate excludin g total intervene ntions	Change induced by public interventi ons	Growth rate excludin g public intervene ntions	Change induced by Communi ty interventi ons	Growth rate excludin g Communi ty intervene ntions
	Mio. Euro	%	Mio. Euro	%	Mio. Euro	%	Mio. Euro	%
STRUCTURAL CHANGE								
Agriculture, forestry and fishery	11 404	0.5	319	-2.3	245	-1.7	142	-0.8
Fuel and power	432	1.4	9	-0.7	7	-0.3	4	0.5
Manufacturing	31 794	1.8	1 314	-2.4	1 041	-1.6	550	0.0
Building and construction	12 605	0.0	2 339	-18.6	1 870	-14.9	990	-7.9
Private services	108 487	2.8	3 456	-0.5	2 784	0.2	1 455	1.4
Government services	63 486	1.3	1 883	-1.7	1 749	-1.5	1 040	-0.4
Value added	228 208	2.0	9 320	-2.2	7 696	-1.5	4 181	0.1
VAT on products	19 865	3.0	257	1.6	215	1.9	118	2.4
Gross domestic product	248 073	2.0	9 577	-1.9	7 912	-1.2	4 299	0.3
ECONOMIC GROWTH								
Private consumption	141 801	2.9	1 359	1.9	1 123	2.1	592	2.5
Government consumption	67 216	1.6	2 385	-2.0	2 235	-1.7	1 338	-0.4
Gross fixed capital formation	42 654	6.1	7 334	-12.2	5 747	-8.2	3 000	-1.4
Change in stocks	- 1 488	-	- 34	-	- 27	-	- 15	-
Exports less imports	- 2 110	-11.1	- 1 467	-72.9	- 1 166	-60.2	- 617	-37.1
Gross domestic product	248 073	2.0	9 577	-1.9	7 912	-1.2	4 299	0.3
FOREIGN TRADE								
Exports to EU countries	22 629	3.5	122	2.9	98	3.0	55	3.2
Exports to third countries	17 755	18.7	74	18.2	61	18.3	32	18.4
Exports of goods and services	40 384	9.6	196	9.1	159	9.2	87	9.4
Imports from EU countries	23 939	-0.7	1 114	-5.3	882	-4.4	466	-2.6
Imports from third countries	18 555	22.9	549	19.3	443	20.0	237	21.3
Imports of goods and services	42 494	8.4	1 663	4.1	1 325	5.0	703	6.6
CAPITAL								
Equipment	258 901	1.2	9 891	-2.7	8 008	-1.9	4 320	-0.5
Buildings	918 003	1.4	34 318	-2.4	28 656	-1.8	15 614	-0.3
Capital stock	1 176 904	1.3	44 210	-2.5	36 664	-1.8	19 934	-0.4
LABOUR (1.000 persons)								
Wage and salary earners	4 187	1.9	167	-2.2	139	-1.5	77	0.0
Self-employed	1 574	1.1	60	-2.8	48	-2.0	25	-0.5
Occupied population	5 761	1.7	227	-2.3	187	-1.6	102	-0.1

Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia.

Table 40: Economic impact of objective 1 interventions 2006 in the Mezzogiorno

Mio1999 Euro								
Category	Level 2006	Growth rate 2006	Change induced by total interventi ons	Growth rate excludin g total intervene ntions	Change induced by public interventi ons	Growth rate excludin g public intervene ntions	Change induced by Communi ty interventi ons	Growth rate excludin g Communi ty intervene ntions
	Mio. Euro	%	Mio. Euro	%	Mio. Euro	%	Mio. Euro	%
STRUCTURAL CHANGE								
Agriculture, forestry and fishery	11 912	0.5	312	-2.1	235	-1.5	136	-0.6
Fuel and power	478	1.9	7	0.5	5	0.9	2	1.5
Manufacturing	36 360	2.2	1 212	-1.2	939	-0.5	491	0.8
Building and construction	12 881	0.2	2 046	-15.7	1 599	-12.2	841	-6.3
Private services	129 693	2.9	3 481	0.2	2 744	0.7	1 427	1.8
Government services	70 052	1.5	1 877	-1.2	1 710	-1.0	1 015	0.0
Value added	261 376	2.2	8 935	-1.3	7 232	-0.6	3 912	0.7
VAT on products	22 807	2.7	250	1.6	204	1.8	111	2.2
Gross domestic product	284 183	2.2	9 185	-1.1	7 435	-0.5	4 023	0.8
ECONOMIC GROWTH								
Private consumption	163 189	2.8	1 332	2.0	1 079	2.1	568	2.4
Government consumption	71 867	1.0	2 317	-2.3	2 128	-2.0	1 267	-0.8
Gross fixed capital formation	53 590	5.0	7 302	-9.3	5 597	-6.0	2 902	-0.7
Change in stocks	1 349	-	- 5	-35.9	- 2	-36.1	2	-36.3
Exports less imports	- 5 812	15.6	- 1 761	-19.4	- 1 366	-11.6	- 716	1.4
Gross domestic product	284 183	2.2	9 185	-1.1	7 435	-0.5	4 023	0.8
FOREIGN TRADE								
Exports to EU countries	30 710	6.2	146	5.7	114	5.8	64	6.0
Exports to third countries	23 950	6.1	86	5.7	70	5.8	36	5.9
Exports of goods and services	54 660	6.2	232	5.7	184	5.8	100	6.0
Imports from EU countries	34 055	7.0	1 348	2.7	1 041	3.7	546	5.2
Imports from third countries	26 417	7.1	646	4.5	509	5.0	270	6.0
Imports of goods and services	60 472	7.0	1 994	3.5	1 550	4.3	816	5.6
CAPITAL								
Equipment	295 634	0.4	9 415	-2.8	7 456	-2.2	3 990	-1.0
Buildings	1 054 296	0.5	33 852	-2.7	27 653	-2.2	14 972	-0.9
Capital stock	1 349 930	0.5	43 267	-2.8	35 109	-2.2	18 962	-1.0
LABOUR (1.000 persons)								
Wage and salary earners	4 526	1.2	150	-2.2	122	-1.5	67	-0.3
Self-employed	1 654	1.4	53	-1.8	41	-1.1	22	0.1
Occupied population	6 180	1.2	203	-2.1	163	-1.4	89	-0.2

Campania, Apulia, Basilicata, Calabria, Sicily, Sardinia.

Table 41: Objective 1 interventions and growth in the Mezzogiorno

Mio1999 Euro				
	GDP	Objective 1		GDP without Community interventions
	(1)	GDP without total interventions	GDP without public interventions	(4)
	(1)	(2)	(3)	(4)
	Mio. Euro			
1999	243 133	-	-	-
2000	248 073	238 496	240 161	243 774
2001	252 403	241 747	243 422	247 626
2002	259 206	248 389	250 046	254 322
2003	266 075	254 649	256 852	261 127
2004	272 005	263 090	264 722	268 073
2005	278 009	268 904	270 628	274 016
2006	284 183	274 998	276 748	280 160
	Growth rate in %			
2000	2.0	-1.9	-1.2	0.3
2001	1.7	-2.6	-1.9	-0.2
2002	2.7	-1.6	-0.9	0.8
2003	2.7	-1.8	-0.9	0.7
2004	2.2	-1.1	-0.5	0.8
2005	2.2	-1.1	-0.5	0.7
2006	2.2	-1.1	-0.5	0.8
	Average annual growth rate in %			
2000-06	2.3	1.8	1.9	2.0
	Reduction of growth rates in %			
2000-06	-	0.5	0.4	0.2

Foreign trade of the Mezzogiorno contains exports and imports with other Italian regions and trade with EU countries and third countries. Within the scope of this study it was not possible to estimate the interregional trade of East Germany and the Mezzogiorno with the rest of Germany respectively with the rest of Italy. However, the input-output approach allows to assess at least the magnitude of trade effects for both regions outside their nation. In the case of the Mezzogiorno it is estimated that in 2000 (2006) approximately 3.9 (3.3) % of all imports were induced by objective 1 interventions.

If we consider the volume of all objective 1 interventions in 2000 (2006) of 6,822 (6.853) million euro, it can be said that approximately 1,663 (1,994) euro or 24.4 (29.1 %) of objective 1 interventions are leaking away through induced imports from the rest of Italy and other countries. By far the larger part is leaking to the more prosperous areas of the European Union.

To evaluate the economic impact of objective 1 interventions on economic growth, the annual results of the impact analysis for the Mezzogiorno are summarised in **Table 41** for gross domestic product. For 2000 (2006) it is expected that the gross domestic product of the Mezzogiorno will grow by 2.0 (2.2) % below the average of the European Union of 3.3 (2.9) %. If all objective interventions are excluded, the GDP growth rate would decline to -1.9 (-1.1). For the entire period 2000-2006 an average annual growth rate of 2.3 % is projected for the Mezzogiorno.

If objective 1 interventions were not implemented at all, the average growth would be reduced to 1.8 %. If all public objective 1 interventions (Community grants + national public interventions), the average annual growth rate would be reduced to 1.9 %. If we assume that only Community grants are cancelled and the national programme remains in place, then the average annual growth rate of 2.3 % would decline to 2.0 % on the basis of the macroeconomic forecast of the European Commission from the autumn 2001.

5. Portugal

In the past, and benefiting from substantial support from the European Union via the financial contributions from the Funds and other structural instruments and provided for by the Community Support Framework (CSF) for 1989-1993 and 1994-1999, Portugal achieved major economic progress in terms of nominal and real convergence and financial discipline so that ambitious objectives in the period 2000-2006 can be aimed at. However, Portuguese economic growth must be based on new factors of competitiveness, adopting a development model with better conditions of sustainability.

This attention to the new factors of competitiveness takes into account the recent development of the national economy which was reflected in profound changes in the country's structure of production. Among these changes, the rapid modernisation of the service sector, the establishment of a dynamic focus in the processing industry around transport equipment and machinery and electric and electronic equipment, the development of the "chain of value" of some traditional industries which are heavily export-orientated, the intense effort in the implementation of public works and construction for housing, and the decline of the contribution of the primary sector to total gross value added, stand out in particular.

The third CSF for 2000 – 2006¹³ covers the following three priority spheres of intervention:

- **Human potential**
Priority for the evaluation of human potential results from the finding that low levels of productivity constitute a weakness of the Portuguese economy. Indeed, progress in convergence which had been remarkable in various spheres still proved very inadequate as regards people's level of skills and the results obtained in productivity terms.
- **Productive activity**
The aim is to achieve growth in competitiveness through support for business strategies and consideration of other decisive factors, such as scientific progress and technological innovation and the boosting of the services provided for undertakings. At the same time, provision is made for measures to support agriculture, rural development and fisheries.
- **Structuring of the territory**
Considering the territory as an element of cohesion of everything national and of the integration of Portugal in the global and European economy leads in turn to major guidelines as regards the construction of infrastructures compatible with the preservation of the environment and support for the development of Portuguese regions, with a view to rectifying the main imbalances and regional disparities.

¹³ European Commission, Directorate-General Regional Policies: Community Support Framework Portugal 2000-2006, Brussels 2001.

On 1 July 1999, the Commission adopted its “Guidelines for Programmes in the period 2000-2006”, which the Member States had to consider when drawing up their Regional Development Plans. These guidelines defined basic strategic priorities:

- the promotion of economic and social cohesion by according priority to sustainable growth and regional competitiveness so as to ensure the creation of employment;
- coherence between economic growth, social cohesion and the protection of the environment, with a view to stimulating sustainable development by not only integrating the environment in the policies pursued but also guaranteeing equal opportunities for men and women;
- equilibrium in land-use development, as a requisite for interlinking the policies implemented and as a requirement for the establishment of efficient and operative partnerships.

In general, the Guidelines referred to are applied to national territory as a whole and tallied with the economic and social development strategy proposed by the Portuguese authorities and negotiated with the Commission.

Consideration of these Guidelines led, in general, to economic and social cohesion being assumed as a priority of the development process supported by the intervention of Community funds. Thus, as regards human resources, training and employment, the third CSF pursues differentiated and complementary policies aiming to guarantee growth in employment and the effective utilisation of human resources.

The development of the information society is a requirement common to the different operational programmes, with the third CSF contributing to meeting the needs of the private sector and public institutions in this sphere. With this in view, special efforts are being made to facilitate the use of new technologies and information networks and communication by individuals and undertakings.

The financing of infrastructures, and especially transport infrastructures, obeys principles of efficiency and integration and is based, to a great extent, on methods of financing which associate the public and private sectors. Linking to trans-European networks remains a basic objective. Policies are provided which aim at increasing Portuguese competitiveness in national and Community plans and which are reflected in the increase in regional competitive capacities, contributing towards improved equilibrium between the development of coastal and inland regions; the different measures for the development of towns provided for in the regional programmes of the third CSF constitute a powerful factor in promoting this balance.

Finally, although of fundamental importance as an essential dimension of Community intervention, environmental sustainability is a necessary component of the development process and it does not only give rise to major investments as regards the improvement of living conditions and environmental protection but constitutes a dimension whose presence is sought in all the operational measures of the third CSF.

Macroeconomic outlook

As a general rule, the situation of the Portuguese economy in the period covered by the two previous Community Support Frameworks (1989-1999) was characterised by a positive macroeconomic development which made major gains possible in terms of nominal and real convergence, by a broad process of structural adjustment, brought about essentially by the deepening of European integration

and (the main negative aspect of a globally favourable picture) by an inadequate rate of convergence of productivity, which may be seen through the persistence of a pattern of specialisation in which products and processes of low technological intensity, deficient organisational capacities and not very high levels of skill among human resources predominate.

The progress achieved in terms of nominal convergence allowed Portugal to be part, from the outset, of the group of Member States participating in economic and monetary union. In terms of the per capita GDP, and for the period between 1993 and 1999, the difference in relation to the average of the 15 countries of the European Union decreased by more than 5 percentage points. Indeed, the rates of growth of the Portuguese economy have been greater than those of most of the rest of the Member States and it may be anticipated that this situation will continue until 2003, if the current positive trends of the national economy persist: heavy private consumption, resulting from a favourable situation on the labour market, high levels of public and private investment, stimulated by low rates of interest in the Euro zone and by greater stringency in the management of public finances and the acceleration of exports as a result of a favourable international economic situation.

The economy is expected to pick up strongly from about the middle of 2002. Nevertheless, in the absence of a significant carry-over from 2001, annual growth will be far below potential in 2002, entailing a rise in unemployment. For 2003, the projections in the autumn 2001 were that the economy will recover to a rate close to that commonly thought to be sustainable in the medium term, making a distinct shift from a phase characterised by double-digit growth due to exceptional increases in the labour supply and productivity.

The re-emergence of a current account deficit in 2000 after a decade of surpluses is explained by the fact that the growing trade surplus failed to fully offset the steadily increasing deficits on both the service balance and the balance of primary incomes. This trend is expected to persist over the forecast period, with the relatively big drop in 2001 caused by a reduction in exports of foodstuffs and tourism services.

The steady fall in unemployment since 1996 finally came to a halt in end-2000, with a rate around 4 %. This achievement of effectively full employment has been accompanied by growing shortages of both skilled and unskilled labour. The economic slowdown is expected to lead to unemployment growth temporarily below labour force growth in 2002, even though the latter is on downward trend. As a result, the forecast envisages a rise on the unemployment rate in 2002 to around 4.5 % and a similar level is projected for 2003.

The state of the public finances remains healthy, with the debt ratio declining further to close to 25 % of GDP in 2003, but with significantly lower surpluses than the 4.5 % of GDP seen in 2000. In line with the National Development Plan, capital spending will rise strongly over the forecast period, taking general government fixed investment in nominal terms to 4.9 % of GDP from 3.8 % in 2000.

The main macroeconomic data of the macroeconomic projection for 2000-2006¹⁴ from the autumn of 2001 are summarised in **Table 42**. The pace of economic growth is estimated to decelerate from 3.4 % in 2000 to about 1.7 % in 2001, as the slowdown in the growth contribution of domestic demand is only partly offset by an improvement of exports. In particular, growth of private consumption has seen a sharp deceleration and investment growth is expected to decline by, reflecting a weakening in residential construction and business investment. Public investment, by contrast,

¹⁴ European Commission, Directorate-General for Economic and Financial Affairs: European Economy, Financial Trends, Autumn 2001 Forecasts for 2001-2003, October/November 2001; Medium-term projection 2000-2005, 2001.

picked up in 2001 partly due to a catch-up effect following problems with the new Community Support Framework in 2000 and an investment cycle due to local elections. Export growth is estimated to slow down from 8.1 % in 2000 to 6.2 % in 2001, partly reflecting a decline in exports market growth. At the same time, weakening domestic demand brought about a strong deceleration in import growth from 6% in 2000 to about 2.7 % in 2001. Consequently, the contribution of net exports to output growth improved by about 1% of GDP.

Table 42: Economic outlook for Portugal

Mio. 1999 Euro

Category	Level Mio. Euro 1999	Percentage change at annual rate								MEMO EUR15 2000-06
		2000	2001	2002	2003	2004	2005	2006	2000-06	
Gross domestic product	108 207	3.4	1.7	1.5	2.3	2.8	3.0	3.0	2.5	2.6
Private consumption	67 562	2.6	1.1	1.2	1.8	2.5	2.7	2.7	2.1	2.8
Government consumption	21 210	2.5	1.9	1.1	0.9	1.5	1.5	1.5	1.6	2.0
Gross fixed capital formation	29 603	5.3	-1.0	2.2	3.7	4.5	4.5	4.5	3.4	4.6
Change in stocks	1 035	-	-	-	-	-	-	-	-	-
Exports of goods and services	32 115	8.1	6.2	2.0	5.2	6.3	6.3	6.3	5.7	7.7
Imports of goods and services	43 318	6.0	2.7	1.9	4.1	5.5	5.5	5.5	4.4	7.9
Capital stock	439 253	3.3	3.3	3.4	3.5	3.7	3.9	3.9	3.6	2.9
Occupied population (1.000 persons)	4 824	1.8	1.4	0.7	0.8	0.5	0.7	0.7	1.0	1.2

The annual growth rate in 2001 was 1.7 %. A pick-up in economic activity was forecast from the first half of 2002 onwards, reflecting the assumption of favourable developments in the world economy. However, in view of the negative overhang from 2001, output growth is expected to reach only 1.5 % in 2002 before reviving to an annual growth rate of 2.3 % in 2003.

Private consumption is expected to remain subdued throughout the forecast period as consumer confidence is currently low and the households' saving rate is assumed to rebound from the historically low level reached in 1999. Moreover, the demand for durables is expected to fall back from the high levels reached in 2000, reflecting some saturation effects and the slowdown in residential construction which is expected to have a negative impact on the demand for domestic appliances.

Total investment growth is projected to strengthen to 2.2 % in 2002 after a decline of 1.0 % in 2001. This acceleration reflects improved prospects for export growth and the implementation of the new Community Support Framework. Investment in equipment is expected to be fairly robust while construction should remain subdued as a consequence of the ongoing slowdown in residential construction – which represents some 40% of total investment – as a consequence of the projected correction in households' indebtedness levels.

In 2002, export market growth is estimated to decelerate to 2.0 % from 8.1 % in 2000. As export market growth progressively gathers pace over the forecast period, total export growth is projected to gain momentum. The total import elasticity of final demand is estimated to decline in 2001, because of the marked slowdown in the demand for durables, which have a high import content. With

the gradual revival of investment and exports, the import elasticity should edge up again at the end of the forecast period. Overall, the contribution of net exports to output growth is forecast to be close to zero over the forecast period.

Employment is estimated to grow by about 1.8 % in 2001. However, due to a concomitant rise in the labour force, the unemployment rate is expected to remain unchanged at about 4 %. Employment growth is forecast to slow down to 1.4 % in 2001, whereas the unemployment rate is expected to rise moderately to 4.5 % by 2003.

Objective 1 interventions

The present CSF defines the main strategic priorities of intervention from the Structural Funds in Portugal for the period 2000-2006, reflecting the results of the negotiations between the Portuguese authorities and the European Commission which allowed specific objectives for the spheres of intervention accepted to be identified. The third CSF will contribute towards pursuing Objective 1 in Portugal, through the balanced and sustainable development of economic activities, employment and human resources, with the correction of social inequalities still being favoured. As transversal dimensions for the different main priorities, the third CSF ensures the protection and improvement of the environment, the promotion of equality between men and women and the development of a knowledge-based society and innovation. The sums provided for by way of financial support from the Structural Funds are evidently adequate for the objectives laid down, as there is equilibrium between the strategy proposed and the financial resources planned.

Considering the general objective of an increase in productivity, viewed as a necessary condition for remedying Portugal's structural backwardness, as the main thread of the action of the Structural Funds in the present programming period, the CSF is adopting the following priority spheres of action:

- Maximising human potential
- Support for productive activity
- Structuring of the territory

The priority given to maximising human potential stems from the finding that low levels of productivity result, in the first place, from the relative backwardness of the country as regards education and training of the population.

The improvement of the population's qualifications constitutes the indispensable prerequisite for the modernisation of Portuguese society and the affirmation of the factors of competitiveness of the economy, especially with a view to the establishment and consolidation of a knowledge-based society. This priority of public action entails significant efforts in the sphere of education, training and employment, as well as the setting of ambitious objectives as regards reducing national backwardness in the field of innovation, science and technology. At the same time, measures are supported which focus on the consolidation of social solidarity and take into account the needs of citizens, mainly from the most disadvantaged strata of the population. With this in mind, the third CSF provides for specific measures in the sectors of health, social development and culture.

In the context of support for productive activity, measures are established which are directed at the overhaul of the economy, the modernisation of the scientific and technological system and the improvement of basic economic infrastructures, where this is compatible with the imperatives of the conservation of the environment. The pursuit of these objectives involves the continuation of the

structural reforms of the Portuguese economy, particularly the reforms of markets for goods and services, the stock market and the labour market and, at the same time, coordinated action of public policies on the legal and administrative integration of economic activity, with a view to facilitating the necessary changes in the national business fabric.

In the economic and financial perspective, the intention is to consolidate the foundations of a continuous process of wealth creation which makes it possible, in the long term, to go beyond deficit situations in terms of public finances and the balance of current transactions. The existence of higher levels of income is indispensable to generate tax revenues which allow the significant impact of Community funds in the Portuguese economy to be substituted at the opportune time.

The objective of increasing productivity is part of a long-term strategy and requires principles of prudent management of the territory which prevent the weakening of resources and natural spaces to be applied. Under these conditions, the development of the country is based on principles of environmental sustainability and economic and financial sustainability.

The principle of the effective utilisation of the territory justifies the priority attached to regional development and the environment, and determines the importance granted to Portugal's geostrategic position as Europe's first Atlantic platform. It further demands close coordination between the measures intended to strengthen basic infrastructures in the country, including transport infrastructures and - especially prominent - environment and basic sanitation and those whose objective is the balanced development of Portuguese regions.

Financial programming of objective 1 interventions in Portugal (**Table 43**) comprise a total volume of 39.4 billion euro in 1999 prices over the period 2000-2006 through a combined effort of public, EU and private funds. The Community contribution will be complemented by national public contributions of 11.4 billion euro and private investment of 8.7 billion euro.

Community contributions for objective 1 interventions in 2000-2006 ¹⁵ constitute a package of 19.1 billion euro, out of which 6.4 billion euro are spent for "Productive Environment", 3.8 billion euro for "Human Resources" and 8.5 billion euro for "Basic Infrastructure".

Table 43: Financial programming of objective 1 interventions in Portugal

Source: Directorate General for Regional Policies with some own estimates for the allocation on categories.
The basis for the data are the financial tables of the programs.

Mio. 1999 Euro

Code	Description	Communi	National	Public	National	Total
		ty	public	contribu	private	
		contri	contri	tion	participati	
		on of CSF	on of CSF	on	on	
		(1)	(2)	(1) + (2)	(4)	(3) + (4)
		(1)	(2)	(3)	(4)	(5)
10	Productive Environment	0	0	0	0	0
11	Agriculture	1 174	435	1 700	1 700	3 308
12	Forestry	394	237	220	220	851
13	Promoting the adaptation and the development of r	773	389	226	226	1 388
14	Fisheries	212	75	153	153	440
15	Assisting large business organisations	124	127	15	15	265
16	Assisting SMEs and the craft sector	2 657	1 195	5 062	5 062	8 914
17	Tourism	394	198	46	46	638
18	Research	688	593	29	29	1 310
1	Productive Environment	6 415	3 249	7 450	7 450	17 114
20	Human Resources	0	0	0	0	0
21	Labour market policy	401	224	36	36	661
22	Social inclusion	679	397	32	32	1 108
23	Developing educational and vocational training (pe	2 488	1 347	287	287	4 122
24	Workforce flexibility	276	188	60	60	524
25	Positive labour market actions for woman	51	25	1	1	76
2	Human Resources	3 894	2 181	416	416	6 491
30	Basic Infrastructure	1	1	0	0	3
31	Transport infrastructure	3 239	3 184	457	457	6 881
32	Telecommunications infrastructure and informatio	502	282	0	0	785
33	Energy infrastructures (production	473	602	4	4	1 078
34	Environmental infrastructure (including water)	738	289	2	2	1 029
35	Planning and rehabilitation	1 711	836	428	428	2 975
36	Social infrastructure and public health	1 842	684	22	22	2 548
3	Basic Infrastructure	8 507	5 879	913	913	15 299
40	Miscellaneous	0	0	0	0	0
41	Technical assistance and innovative actions (ERDF	363	146	0	0	508
4	Miscellaneous	363	146	0	0	508
	TOTAL	19 179	11 455	8 779	8 779	39 412
		Annual distribution				
	2000	3 216	1 835	1 467	1 467	6 517
	2001	3 111	1 833	1 353	1 353	6 297
	2002	3 001	1 865	1 342	1 342	6 209
	2003	2 885	1 815	1 277	1 277	5 977
	2004	2 274	1 437	1 069	1 069	4 779
	2005	2 328	1 410	1 121	1 121	4 859
	2006	2 364	1 260	1 149	1 149	4 773
	2000-06	19 179	11 455	8 779	8 779	39 412
		in percent of GDP				
	2000	2.9	1.6	1.3	1.3	5.8
	2001	2.7	1.6	1.2	1.2	5.5
	2002	2.6	1.6	1.2	1.2	5.4
	2003	2.4	1.5	1.1	1.1	5.1
	2004	1.9	1.2	0.9	0.9	3.9
	2005	1.9	1.1	0.9	0.9	3.9
	2006	1.8	1.0	0.9	0.9	3.7
	2000-06	2.3	1.4	1.1	1.1	4.7

The economic impact of the structural interventions

In 2000 the economy grew by 3.4 percent and it was forecast in the autumn 2001 to grow by 3.0 percent in 2006 (**Table 44** and **Table 45**). Without Community grants in these individual years this growth rate would be reduced to -1.1 (0.2) %. If all objective 1 interventions were withdrawn GDP would decline by 6.2 (3.1) %. These results clearly indicate a substantial dependency of the Portuguese economy on objective 1 interventions.

The sector "Buildings and construction" would lose 30.7 (19.5) % of its value added in 2000 (2006) if all objective interventions were cancelled. But also "Agriculture, forestry and fishery" are affected with 10.0 (6.5) % , "Private services" with 9.7 (6.1) % and "Government services" with 9.2 (5.8) % are affected in a significant way.

Among the components of final demand gross capital formation is affected most by objective 1 interventions. Including all interventions Portugal is expected to realise very high investment ratios in 2000 and 2006. With 27.9 (29.0) % of GDP the projected level for 2000 (2006) is substantially than the expected average of the European Union (EU15) of 20.6 (20.0). This high ratio is one of the fundamental requirements to achieve high economic growth.

In 2000 (2006) approximately 11.1 (7.0) % of gross fixed capital formation and 6.5 (4.0) % of the capital stock are depending on Community grants for objective 1 interventions. If we relate the impact to all objective 1 interventions then 24.9 (15.6) % of gross fixed capital formation and 15.5 (9.4) % of the capital stock are depending on Community grants.

During the period 2000-2006, the Portuguese economy was expected to grow at an average annual rate of 2.5 % according to the autumn 2001 forecast, which is more or less in line with the forecast for the European Union (2.6 %). This forecast of the Commission includes all objective 1 interventions. Without Community grants in each year of the reference period (**Table 46**) the Portuguese economy would grow at an average annual rate of 2.1 %. If the all objective 1 interventions were not in existence, gross domestic product would only grow at an annual rate of 1.6 %.

In the case of Portugal, the derived leakage effects and national GDP multiplier are impressive. It is estimated that approximately imports of 41.9 % of objective 1 interventions are leaking into other nations, of which 35.2 % are imported from other Member countries of the European Union. The domestic GDP multiplier is estimated at 150.6 % of all interventions. The total supply multiplier combined (GDP and imports) of objective 1 interventions in Portugal is estimated at 192.4 %. In consequence: If objective 1 interventions of 1.0 million euro were cancelled in Portugal, then it must be expected that the GDP of Portugal would decline by 1.506 million euro, total imports by 419 million SR, imports from EU countries by 352 million euro, imports from third countries by 67 million euro and total supply by 1.924 million euro.

Table 44: Economic impact of objective 1 interventions 2000 in Portugal

Category	Mio1999 Euro							
	Level 2000	Growth rate 2000	Change induced by total interventions	Growth rate excluding total interventions	Change induced by public interventions	Growth rate excluding public interventions	Change induced by Community interventions	Growth rate excluding Community interventions
	Mio. Euro	%	Mio. Euro	%	Mio. Euro	%	Mio. Euro	%
STRUCTURAL CHANGE								
Agriculture, forestry and fishery	3 906	3.1	390	-7.2	254	-3.6	173	-1.5
Fuel and power	298	4.2	19	-2.3	13	-0.4	8	1.2
Manufacturing	21 375	3.1	1 157	-2.5	811	-0.8	515	0.6
Building and construction	7 584	3.9	2 330	-28.0	1 624	-18.4	1 038	-10.3
Private services	37 794	3.6	3 681	-6.5	2 324	-2.8	1 543	-0.6
Government services	25 095	3.2	2 298	-6.2	1 980	-4.9	1 329	-2.2
Value added	96 052	3.4	9 874	-7.2	7 006	-4.1	4 607	-1.6
VAT on products	15 828	3.4	490	0.2	338	1.2	219	2.0
Gross domestic product	111 880	3.4	10 364	-6.2	7 344	-3.4	4 826	-1.1
ECONOMIC GROWTH								
Private consumption	69 340	2.6	2 616	-1.2	1 587	0.3	1 089	1.0
Government consumption	21 750	2.5	2 360	-8.6	2 064	-7.2	1 384	-4.0
Gross fixed capital formation	31 177	5.3	7 761	-20.9	5 452	-13.1	3 451	-6.3
Change in stocks	807	-	- 15	-	- 11	-	- 9	-
Exports less imports	- 11 194	-0.1	- 2 359	-21.1	- 1 747	-15.7	- 1 089	-9.8
Gross domestic product	111 880	3.4	10 364	-6.2	7 344	-3.4	4 826	-1.1
FOREIGN TRADE								
Exports to EU countries	28 927	8.2	446	6.5	252	7.2	173	7.5
Exports to third countries	5 787	7.8	116	5.6	64	6.6	44	7.0
Exports of goods and services	34 714	8.1	562	6.3	316	7.1	218	7.4
Imports from EU countries	34 494	1.9	2 456	-5.3	1 740	-3.2	1 099	-1.3
Imports from third countries	11 414	20.4	465	15.5	323	17.0	208	18.2
Imports of goods and services	45 908	6.0	2 921	-0.8	2 063	1.2	1 307	3.0
CAPITAL								
Equipment	150 202	3.1	21 931	-11.9	14 228	-6.7	9 420	-3.4
Buildings	303 551	3.4	46 858	-12.6	29 846	-6.8	19 945	-3.4
Capital stock	453 753	3.3	68 789	-12.4	44 074	-6.7	29 365	-3.4
LABOUR (1.000 persons)								
Wage and salary earners	3 533	2.0	339	-7.8	235	-4.8	154	-2.5
Self-employed	1 376	1.2	148	-9.7	107	-6.7	71	-4.0
Occupied population	4 909	1.8	487	-8.3	342	-5.3	225	-2.9

Table 45: Economic impact of objective 1 interventions 2006 in Portugal

Mio1999 Euro								
Category	Level 2006	Growth rate 2006	Change induced by total interventi ons	Growth rate excludin g total interven tions	Change induced by public interventi ons	Growth rate excludin g public interven tions	Change induced by Communi ty interventi ons	Growth rate excludin g Communi ty interven tions
	Mio. Euro	%	Mio. Euro	%	Mio. Euro	%	Mio. Euro	%
STRUCTURAL CHANGE								
Agriculture, forestry and fishery	4 407	2.5	287	-4.1	184	-1.7	130	-0.5
Fuel and power	357	3.8	14	-0.3	10	1.0	6	1.9
Manufacturing	24 281	2.8	808	-0.6	555	0.4	362	1.3
Building and construction	8 938	3.3	1 744	-16.8	1 189	-10.4	779	-5.7
Private services	43 905	3.1	2 687	-3.2	1 662	-0.8	1 130	0.5
Government services	28 773	3.0	1 683	-3.1	1 421	-2.1	975	-0.5
Value added	110 661	3.0	7 223	-3.7	5 020	-1.7	3 382	-0.1
VAT on products	18 239	3.0	367	0.9	248	1.6	165	2.1
Gross domestic product	128 900	3.0	7 590	-3.1	5 268	-1.2	3 547	0.2
ECONOMIC GROWTH								
Private consumption	78 089	2.7	1 824	0.3	1 091	1.3	768	1.7
Government consumption	23 645	1.5	1 742	-6.0	1 493	-4.9	1 025	-2.9
Gross fixed capital formation	37 333	4.5	5 834	-11.8	4 007	-6.7	2 600	-2.8
Change in stocks	1 073	-	- 9	0.8	- 6	0.6	- 5	0.5
Exports less imports	- 11 240	2.4	- 1 801	-14.0	- 1 317	-9.6	- 841	-5.3
Gross domestic product	128 900	3.0	7 590	-3.1	5 268	-1.2	3 547	0.2
FOREIGN TRADE								
Exports to EU countries	39 603	6.3	386	5.3	214	5.7	151	5.9
Exports to third countries	7 892	6.3	99	4.9	54	5.5	38	5.8
Exports of goods and services	47 495	6.3	485	5.2	267	5.7	189	5.9
Imports from EU countries	44 133	5.5	1 919	0.9	1 334	2.3	865	3.4
Imports from third countries	14 602	5.6	367	2.9	250	3.8	165	4.4
Imports of goods and services	58 735	5.5	2 286	1.4	1 584	2.7	1 030	3.7
CAPITAL								
Equipment	183 857	3.7	16 805	-5.8	10 680	-2.3	7 246	-0.4
Buildings	377 694	4.0	36 140	-6.0	22 565	-2.2	15 444	-0.3
Capital stock	561 551	3.9	52 945	-5.9	33 245	-2.3	22 691	-0.3
LABOUR (1.000 persons)								
Wage and salary earners	3 699	0.7	225	-5.4	154	-3.5	103	-2.1
Self-employed	1 457	0.8	101	-6.1	72	-4.1	49	-2.5
Occupied population	5 156	0.7	326	-5.6	226	-3.7	152	-2.2

Table 46: Objective 1 interventions growth in Portugal

Mio1999 Euro

	GDP	Objective 1		
		GDP without total interventions	GDP without public interventions	GDP without Community interventions
	(1)	(2)	(3)	(4)
	Mio. Euro			
1999	108 207	-	-	-
2000	111 880	101 516	104 536	107 054
2001	113 776	103 721	106 548	109 080
2002	115 489	105 536	108 354	110 948
2003	118 141	108 576	111 266	113 785
2004	121 501	113 881	116 097	118 088
2005	125 145	117 406	119 702	121 646
2006	128 900	121 310	123 632	125 353
	Growth rate in %			
2000	3.4	-6.2	-3.4	-1.1
2001	1.7	-7.3	-4.8	-2.5
2002	1.5	-7.2	-4.8	-2.5
2003	2.3	-6.0	-3.7	-1.5
2004	2.8	-3.6	-1.7	0.0
2005	3.0	-3.4	-1.5	0.1
2006	3.0	-3.1	-1.2	0.2
	Average annual growth rate in %			
2000-06	2.5	1.6	1.9	2.1
	Reduction of growth rates in %			
2000-06	-	0.9	0.6	0.4

4. Spain

Objective 1 regions¹⁵ cover a total of 76.1% of Spanish territory but are home to only 58.5% of the population. At 60.4 inhabitants per km² in 1996, population density is very low and below the Community average of 116.8 inhabitants per km².

The per capita GDP in all Spanish Objective 1 regions grew relative to the Community average between 1994 and 1997. Taking all the regions together, the per capita GDP measured in purchasing power standards increased from 66% of the average for the Community of 15 in 1994 to 68% in 1997. However, convergence has not been the same in all regions: while the per capita GDP in Asturias, the Canary Islands, Cantabria, Castile-Leon and the Community of Valencia was already 75% of the Community average in 1997, the other regions saw less pronounced growth.

Nevertheless, the situation on the labour market in these regions is still less favourable than in the Community as a whole and in the rest of Spain. The activity rate and the employment rate are ap-

¹⁵ European Commission, Directorate-general Regional Policies: Community Support Framework (2000-2006) for Spanish Objective 1 Regions (Summary), Brussels 2001.

preciably below the average for the European Union and, in 1998, the rate of unemployment in Spanish Objective 1 regions was still double the average for the Community of 15.

The relative backwardness of the Objective 1 regions is closely linked to the specialised nature of their economies and their weak business base.

The basic features of specialisation in these regions can be summarised as follows:

- a relative large primary sector,
- considerable specialisation in industries with low added value and low technology content,
- a scarcity of advanced services,

Considerable sums of public productive capital have been invested over the last ten years, particularly in transport infrastructures, which have significantly reduced the relative weakness of the Objective 1 regions compared with the Spanish and Community averages. These regions nevertheless continue to show important structural deficiencies.

Generally speaking, the technological capital of the Objective 1 regions shows serious shortcomings. This is in essence the result of a lack of spending on research and technological development in Spain, in particular in Objective 1 regions. Spending on R&D is only 0.53% of GDP, and even less in the private sector. In addition, public technology transfer systems do not appear to be producing the results expected.

Finally, as regards access to the information society, which will be a major driving force for business activity and improvements in living standards over the coming years, the Objective 1 regions lag far behind the other Spanish regions when it comes to computerisation and access to and use of the internet.

Macroeconomic outlook

Little progress was made on the convergence of the Spanish economy with that of the rest of the European Union in the 1990s, because of the 1992/93 recession that hit Spain harder than it did many other EU economies. However, the tendency to diverge seen at the beginning of the nineties was turned around after 1994 when the growth of Spanish GDP in real terms again outstripped the Community average.

According to Commission forecasts, although GDP growth was 1.3% faster in real terms than the average for the Community of Fifteen between 1996 and 1999, this could fall to 0.4% in 2000 as the economy of the Community as a whole improves.

During the first half of the nineties, Spain had the worst labour market situation in the European Union. There has, however, been a turnaround since the job losses recorded until 1994 - when unemployment peaked at 24.1% - and job creation since 1995 has been such that the unemployment rate is now less than 15%. Growth in employment, expected to continue at a rate of almost 3%, could bring the unemployment rate down to below 11% from 2002.

The state of public finances has improved markedly during the process of integration into the European Monetary Union (EMU). The reduction in the public deficit from 6.9% of GDP in 1995 to 1.1% of GDP in 1999 is a notable achievement. Tax consolidation has been achieved principally by reductions in current expenditure, including lower interest payments as a result of a reduction in in-

terest rates and in the national debt. However, there has also been a slight reduction in public investment, which has decreased from around 4% to around 3% of GDP.

GDP rose strongly by 4.1% in both 1999 and 2000. However, economic activity has weakened significantly in 2001, at first partly due to the negative impact from oil and unprocessed food price hikes earlier in the year and subsequently in response to the general international downturn. Domestic demand has moderated, while an earlier improving trend of the external sector has reversed. GDP growth of 2.7% in 2001 was expected. Domestic demand is envisaged to moderate further in 2002 while external demand should recover slightly. For 2002 as a whole, heavily influenced by the weakness in the second half of 2001, output growth is expected to be 2.0%, markedly lower than in 2001 but with a recovery gaining strength through the year. In 2003 growth is forecast to recover to 3.2%, roughly in line with estimated potential.

In 2001 economic growth slowed with weakening of all domestic demand components and exports. Private consumption growth has moderated as a consequence of slower job creation and growth of disposable income, while worsening expectations have caused growth of investment in equipment to fall sharply; in addition, although still dynamic, residential construction activity has moderated. As for the external demand, exports have slowed down markedly as the international setting has become less favourable. Despite a deceleration of imports in line with domestic demand, the contribution from the net external demand is expected to remain negative. As a result, output growth was set to moderate to 2.7% with a particularly weak second half of 2001.

The further fall of average growth in 2002 is based on more moderate growth of domestic demand and a neutral contribution from the external demand. These are, nevertheless, whole-year results, and cover a significant pick-up during the year to above trend growth by the end of the year. This recovery should take place along with an improvement in the international setting. Annual average growth of private consumption is expected to continue decelerating due to slower employment and wage growth and to non-indexation of income tax brackets, resulting in a moderation in growth of households' gross disposable income. In this context, the saving ratio is expected to increase after having reached a minimum in 2000. Growth in investment in equipment should remain moderate given the still adverse macroeconomic scenario in the first half of the year, while residential construction should show a decelerating trend only partially offset by robust infrastructure investment. With a slowdown in growth matched on the side of exports their net contribution to output growth should be neutral.

The pick-up in economic activity in 2003 is underpinned by a recovery of domestic expenditure, as the contribution from the net external demand will turn negative. Employment, as measured by full-time equivalent jobs, was foreseen to rise by 2.3% in 2001 although on a clearly decelerating path in line with labour market indicators. In 2002, growth is expected to moderate further to 0.9%. This is mainly based on an expected deceleration of activity in more labour-intensive branches, especially construction and services, which have seen the more dynamic job creation in the recent past. In 2003, employment should accelerate following the stronger economic growth. Despite less vigorous job growth and with little change in the activity rate, the unemployment rate continues to decrease during the forecast period.

The following impact analysis is based on the macroeconomic forecast for Spain of Autumn 2001¹⁶, which is summarised in **Table 47**. Gross domestic product of Spain in the 2000-2006 period is expected to grow at an average annual rate of 3.3 percent, well above the average of the European

¹⁶ European Commission, Directorate-General for Economic and Financial Affairs: European Economy, Financial Trends, Autumn 2001 Forecasts for 2001-2003, October/November 2001; Medium-term projection 2000-2005, 2001.

Union of 2.6 %. The growth rates of gross fixed capital formation remain relatively low. The moderate expected growth is mainly driven by capital formation and exports.

Table 47: Economic outlook of Spain

Mio. 1999 Euro

Category	Level Mio. Euro 1999	Percentage change at annual rate								MEMO EUR15 2000-06
		2000	2001	2002	2003	2004	2005	2006	2000-06	
Gross domestic product	565 337	4.1	2.7	2.0	3.2	3.7	3.8	3.8	3.3	2.6
Private consumption	335 822	4.0	2.6	1.6	3.1	3.5	3.5	3.5	3.1	2.8
Government consumption	98 602	4.1	2.0	2.4	2.2	2.5	2.5	2.5	2.6	2.0
Gross fixed capital formation	135 961	5.6	3.8	2.6	4.2	6.2	6.5	6.5	5.0	4.6
Change in stocks	2 562	-	-	-	-	-	-	-	-	-
Exports of goods and services	155 215	9.5	4.9	3.9	7.6	8.6	8.6	8.6	7.4	7.7
Imports of goods and services	162 825	9.8	5.0	3.8	7.4	9.0	9.0	9.0	7.5	7.9
Capital stock	2 278 989	3.3	3.3	3.4	3.5	3.7	3.9	3.9	3.6	2.9
Occupied population (1.000 persons)	15 163	3.0	2.3	0.9	2.1	2.9	2.7	2.7	2.4	1.2

Sound macroeconomic management will be necessary for the economy to be kept on a smooth path of favouring investment and reducing unemployment, as well as price stability and sufficient external balance. The structural objectives of the Regional Development Plan require, moreover, that this be combined with appropriate policies at the microeconomic level, particularly as regards the labour market.

Objective 1 interventions

The basic priorities of the development strategy set out in the CSF for 2000-06 reflect the principal factors that influence the competitiveness of the regions. They take into account not only the results of previous CSFs but also current trends, which point to a future increasingly open to competition and demand, and a more rapid transition, from a development strategy designed to promote economic development by improving the basic factors influencing the competitiveness of the regions, to a more complex strategy centred on the productive base, investment and innovation. Additional priorities consist in guaranteeing that economic growth in the regions creates the jobs necessary to maintain the rate of fall in unemployment seen over recent years and that growth is compatible with the generally accepted requirement that development does not harm the environment.

Table 48: Financial programming of objective 1 interventions in Spain

Source: Directorate General for Regional Policies with some own estimates for the allocation on categories.

The basis for the data are the financial tables of the programs.

Mio. 1999 Euro

Code	Description	Community contribution of CSF (1)	National public contribution of CSF (2)	Public contribution (1) + (2) (3)	National private participation (4)	Total (3) + (4) (5)
10	Productive Environment	0	0	0	0	0
11	Agriculture	1 540	806	1 606	1 606	3 952
12	Forestry	884	456	0	0	1 340
13	Promoting the adaptation and the development of r	2 329	1 204	68	68	3 602
14	Fisheries	853	471	7	7	1 331
15	Assisting large business organisations	1 084	439	0	0	1 524
16	Assisting SMEs and the craft sector	2 358	1 077	0	0	3 435
17	Tourism	536	299	0	0	835
18	Research	1 940	803	0	0	2 743
1	Productive Environment	11 525	5 555	1 681	1 681	18 761
20	Human Resources	23	8	0	0	31
21	Labour market policy	4 159	2 016	0	0	6 175
22	Social inclusion	530	201	2	2	733
23	Developing educational and vocational training (pe	1 248	688	0	0	1 936
24	Workforce flexibility	2 669	1 069	30	30	3 769
25	Positive labour market actions for woman	238	65	0	0	303
2	Human Resources	8 867	4 048	32	32	12 948
30	Basic Infrastructure	0	0	0	0	0
31	Transport infrastructure	9 017	5 644	0	0	14 661
32	Telecommunications infrastructure and informatio	359	170	0	0	529
33	Energy infrastructures (production	293	300	0	0	593
34	Environmental infrastructure (including water)	3 778	1 654	0	0	5 432
35	Planning and rehabilitation	2 325	960	0	0	3 284
36	Social infrastructure and public health	1 671	749	0	0	2 420
3	Basic Infrastructure	17 442	9 478	0	0	26 920
40	Miscellaneous	6	2	0	0	7
41	Technical assistance and innovative actions (ERDF	204	72	1	1	276
4	Miscellaneous	209	73	1	1	283
	TOTAL	38 043	19 154	1 714	1 714	58 912
		Annual distribution				
	2000	5 110	2 409	6	6	7 524
	2001	5 468	2 727	246	246	8 441
	2002	5 595	2 900	297	297	8 791
	2003	5 706	2 943	302	302	8 951
	2004	5 287	2 777	283	283	8 347
	2005	5 389	2 709	288	288	8 386
	2006	5 490	2 689	293	293	8 472
	2000-06	38 043	19 154	1 714	1 714	58 912
		in percent of GDP				
	2000	0.9	0.4	0.0	0.0	1.3
	2001	0.9	0.5	0.0	0.0	1.4
	2002	0.9	0.5	0.0	0.0	1.4
	2003	0.9	0.5	0.0	0.0	1.4
	2004	0.8	0.4	0.0	0.0	1.3
	2005	0.8	0.4	0.0	0.0	1.2
	2006	0.8	0.4	0.0	0.0	1.2
	2000-06	0.8	0.4	0.0	0.0	1.3

The strategy and funding for the CSF for 2000-06 is accordingly based on five basic priorities, which relate to the factors which are decisive in improving competitiveness and creating jobs, and a sixth priority, aimed at ensuring sustainable development:

- Improving competitiveness by diversifying and modernising production, organisation and technology.
- Promoting the knowledge society by increasing technological capacity and developing the information society.
- Making better use of and improving the qualifications of human resources.
- Developing and improving communications and energy supply infrastructures.
- Tapping the regions' indigenous growth potential by promoting local and urban development.
- The sixth and final strategic priority consists in making development sustainable by ensuring that it takes account of environmental concerns. This is a horizontal priority that must be reflected in all the other priorities.

The financial programming of objective 1 interventions¹⁷ in Spain is presented in **Table 48**. The striking element of the financial allocation compared to other objective 1 regions is the fact that presently virtually no private participation is included in objective 1 interventions. While in all objective 1 areas combined (East Germany, Greece, Ireland, Mezzogiorno, Portugal, Spain) Community contributions constitute 49.9 % of all objective 1 interventions, Spain is planning to realise a contribution of 64.6 % of the Community in all Spanish objective 1 interventions. In our view this distortion is unacceptable.

The financial programming of objective 1 interventions allocates 30.3 % of total expenditure for “productive Environment”, 23.3 % for “Human Resources”, 45.8 % for “Basic Infrastructure” and 0.5 % for “Miscellaneous”. Special emphasis is laid to improve the physical infrastructure of the country, in particular in transportation.

Economic impact of the objective 1 interventions

In 2000 (2006), Community grants were inducing about 1.2 (1.0) percent additional growth in Spain as compared to the previous year (**Table 49** and **Table 50**). If all objective 1 interventions in 2000 (2006) are excluded, the economy of Spain would have grown by 2.4 (2.2) percent instead of a growth rate of 4.1 (3.8). In this calculation it is assumed that all objective 1 interventions are only excluded in the respective individual year of 2000 (2006). If we assume that only Community grants are withdrawn in 2000 (2006) then the expected growth rate of 4.1 (3.8) % would decline to 2.9 (2.8) %.

In absolute terms the sector “Private services” is affected most with a dependency of value added by 2.860 (3.311) million euro in 2000 (2006) on objective 1 interventions, followed by the sector “Buildings and construction” and the sector “Government services”.

¹⁷ European Commission: Directorate-General for Regional Policies, Community Support Framework (2000-2006) for Spanish objective 1 Regions, Brussels 2001.

Among the final demand components investments into buildings, machinery and transport equipment in the magnitude of 7.367 (8.367) million euro is induced by objective 1 interventions in 2000 (2006). In view of the total allocations for objective 1 interventions of 7.524 (8.472) million euro it can be said that through various multipliers induced investment corresponds to expenditure level for objective 1 interventions.

The impact of objective 1 interventions on foreign trade is particularly significant for induced imports. It is estimated that imports from EU countries of 1.062 (1.401) million euro are induced by such interventions. If we argue in terms of total supply it can be said that objective 1 interventions of 7.524 (8.472) million euro in 2000 (2006) are inducing a total supply of 11.555 (13.291) of which 17.0 (20.1 %) can be attributed to imports. In consequence the leakage effect of objective 1 interventions for the 2000-2006 period is estimated in the range of 17-20 %.

Due to the magnitude of objective 1 interventions the impact on capital and employment is very profound in Spain. It is estimated that in 2000 (2006) approximately 288.000 (316.000) persons of the occupied population are depending on interventions for objective 1 regions. This is 1.8 (1.8) % of the labour force in y country which is severely affected by unemployment (14. 1% unemployment rate in 2000). Almost the same dependency can be identified for the capital stock. If all objective 1 interventions were withdrawn he capital stock of Spain could decline by 1.7 (1.6) % with the corresponding effects on investment and the capital goods producing industries.

In **Table 51** it is shown by how many percentage points the annual real GDP growth rate would be affected if objective 1 interventions were withdrawn and on the other side by how many percentage points the real growth rate would decline, if the Community grants were withdrawn through the period 2000-2006. If all objective 1 interventions were cancelled throughout the period, the GDP growth rate would decline by 0.2 %, and by 0.1 % in the absence of Community interventions. During the period 1000-2006 Spain is capable to reduce its development gap, not by a substantial margin but at a steady pace. Without objective 1 interventions in 2000-2006 Spain (3.3 %) is still expected to grow above the European average of 2.6 % per annum. The European Union should be encouraged to support Spain as much as possible to close the development gap in the near future. Like in the case of Ireland, this would release more funds for other deserving regions in the European Union.

Table 49: Economic impact of objective 1 interventions 2000 in Spain

Category	Mio1999 Euro							
	Level 2000 Mio. Euro	Growth rate 2000 %	Change induced by total interventions Mio. Euro	Growth rate excluding total interventions %	Change induced by public interventions Mio. Euro	Growth rate excluding public interventions %	Change induced by Community interventions Mio. Euro	Growth rate excluding Community interventions %
STRUCTURAL CHANGE								
Agriculture, forestry and fishery	23 202	1.0	366	-0.6	350	-0.5	242	-0.1
Fuel and power	1 635	0.1	20	-1.1	20	-1.1	14	-0.7
Manufacturing	125 887	4.2	1 438	3.0	1 426	3.0	964	3.4
Building and construction	42 389	2.0	2 388	-3.8	2 374	-3.7	1 612	-1.9
Private services	256 354	4.9	2 860	3.8	2 849	3.8	1 938	4.1
Government services	114 296	3.6	2 411	1.4	2 475	1.4	1 742	2.0
Value added	563 763	4.1	9 484	2.3	9 494	2.3	6 510	2.9
VAT on products	24 704	4.1	104	3.7	104	3.6	72	3.8
Gross domestic product	588 467	4.1	9 587	2.4	9 598	2.4	6 582	2.9
ECONOMIC GROWTH								
Private consumption	349 254	4.0	643	3.8	638	3.8	446	3.9
Government consumption	102 597	4.1	3 068	0.9	3 152	0.9	2 222	1.8
Gross fixed capital formation	143 613	5.6	7 367	0.2	7 298	0.3	4 902	2.0
Change in stocks	1 719	-	1	-	1	-	2	-
Exports less imports	- 8 716	14.5	- 1 492	-5.1	- 1 492	-5.1	- 991	1.5
Gross domestic product	588 467	4.1	9 587	2.4	9 598	2.4	6 582	2.9
FOREIGN TRADE								
Exports to EU countries	125 474	9.6	410	9.3	393	9.3	272	9.4
Exports to third countries	44 554	9.3	66	9.2	65	9.2	45	9.2
Exports of goods and services	170 028	9.5	476	9.2	458	9.2	317	9.3
Imports from EU countries	70 462	9.8	1 062	8.1	1 050	8.1	699	8.7
Imports from third countries	108 282	9.8	906	8.9	900	8.9	609	9.2
Imports of goods and services	178 744	9.8	1 968	8.6	1 949	8.6	1 308	9.0
CAPITAL								
Equipment	478 701	2.9	7 893	1.2	7 861	1.2	5 369	1.8
Buildings	1 875 497	3.4	31 923	1.6	31 830	1.6	21 856	2.2
Capital stock	2 354 198	3.3	39 816	1.6	39 692	1.6	27 225	2.1
LABOUR (1.000 persons)								
Wage and salary earners	13 049	3.8	253	1.8	254	1.8	175	2.4
Self-employed	2 575	-0.7	35	-2.0	34	-2.0	23	-1.6
Occupied population	15 624	3.0	288	1.1	288	1.1	198	1.7

Table 50: Economic impact of objective 1 interventions 2006 in Spain

Mio1999 Euro								
Category	Level 2006	Growth rate 2006	Change induced by total interventi ons	Growth rate excludin g total internve ntions	Change induced by public interventi ons	Growth rate excludin g public internve ntions	Change induced by Communi ty interventi ons	Growth rate excludin g Communi ty internve ntions
	Mio. Euro	%	Mio. Euro	%	Mio. Euro	%	Mio. Euro	%
STRUCTURAL CHANGE								
Agriculture, forestry and fishery	22 921	0.1	407	-1.7	375	-1.5	257	-1.0
Fuel and power	1 548	-0.5	19	-1.7	18	-1.6	13	-1.3
Manufacturing	154 258	4.1	1 581	3.0	1 516	3.1	1 012	3.4
Building and construction	44 403	1.1	2 458	-4.5	2 361	-4.3	1 584	-2.5
Private services	324 264	4.6	3 311	3.5	3 188	3.6	2 146	3.9
Government services	133 248	3.1	2 725	1.0	2 701	1.0	1 878	1.6
Value added	680 642	3.8	10 500	2.2	10 159	2.2	6 890	2.7
VAT on products	29 828	3.8	125	3.4	121	3.4	83	3.5
Gross domestic product	710 470	3.8	10 625	2.2	10 281	2.3	6 973	2.8
ECONOMIC GROWTH								
Private consumption	416 253	3.5	624	3.4	597	3.4	412	3.4
Government consumption	117 964	2.5	3 682	-0.7	3 653	-0.7	2 543	0.3
Gross fixed capital formation	191 917	6.5	8 367	1.8	8 009	2.0	5 314	3.5
Change in stocks	219	-	17	-70.3	17	-70.4	18	-70.5
Exports less imports	- 15 883	16.4	- 2 064	1.2	- 1 995	1.7	- 1 314	6.7
Gross domestic product	710 470	3.8	10 625	2.2	10 281	2.3	6 973	2.8
FOREIGN TRADE								
Exports to EU countries	188 503	8.6	523	8.3	483	8.3	331	8.4
Exports to third countries	66 584	8.5	80	8.4	75	8.4	52	8.4
Exports of goods and services	255 087	8.6	603	8.3	559	8.3	383	8.4
Imports from EU countries	106 836	9.0	1 401	7.6	1 340	7.6	883	8.1
Imports from third countries	164 134	9.0	1 265	8.2	1 215	8.2	814	8.5
Imports of goods and services	270 970	9.0	2 666	7.9	2 554	8.0	1 697	8.3
CAPITAL								
Equipment	579 302	3.5	8 908	1.9	8 573	2.0	5 792	2.5
Buildings	2 334 192	4.0	37 018	2.3	35 663	2.4	24 223	2.9
Capital stock	2 913 494	3.9	45 926	2.3	44 236	2.3	30 015	2.8
LABOUR (1.000 persons)								
Wage and salary earners	14 934	2.7	279	0.8	272	0.8	185	1.4
Self-employed	2 932	2.8	37	1.5	35	1.6	23	2.0
Occupied population	17 866	2.7	316	0.9	306	1.0	209	1.5

Table 51: Objective 1 interventions and growth in Spain

Mio1999 Euro

	GDP (1)	Objective 1		
		GDP without total interventions (2)	GDP without public interventions (3)	GDP without Community interventions (4)
		Mio. Euro		
1999	565 337	-	-	-
2000	588 467	578 880	578 869	581 885
2001	604 349	593 604	593 895	597 315
2002	616 434	605 185	605 544	609 198
2003	636 131	624 728	625 094	628 788
2004	659 681	649 100	649 437	652 903
2005	684 488	673 917	674 258	677 614
2006	710 470	699 845	700 189	703 497
		Growth rate in %		
2000	4.1	2.4	2.4	2.9
2001	2.7	0.9	0.9	1.5
2002	2.0	0.1	0.2	0.8
2003	3.2	1.3	1.4	2.0
2004	3.7	2.0	2.1	2.6
2005	3.8	2.2	2.2	2.7
2006	3.8	2.2	2.3	2.8
		Average annual growth rate in %		
2000-06	3.3	3.1	3.1	3.2
		Reduction of growth rates in %		
2000-06	-	0.2	0.2	0.1

Appendix on Methodology

In a time of structural change and innovation a macroeconomic analysis without sectoral disaggregation would only allow the study of a few and possibly less important impacts of the structural interventions. In this case, the analysis would remain cursory and potentially misleading. As a quantification of various structural effects is the main target of the analysis, it has been decided to implement an input-output approach. For Europe in general and an integrating market in particular, this type of impact analysis of structural interventions seems to be the best choice.

In the previous studies for the periods 1989-1993 and 1994-1999 the main issue was to identify the short-term supply and demand effects of the Community Support Frameworks for the objective 1 regions. The impact analysis system was designed as a comparative static input-output model to assess the quantitative impacts of the Structural Funds on economic growth, structural change, foreign trade and employment. The results have been presented in the 'Sixth Annual Report on the Structural Funds 1994' of the European Commission.

In extension of the previous studies a dynamic input-output model was developed which is capable to evaluate the long-term supply and demand effects of the Community structural policies. Expenditures of the Structural Funds will affect the structure and level of final demand but will also induce changes in technology, imports, labour and capital use. In particular the long-term effects on capital and labour, output and productivity are in the focus of interest and will be covered by the dynamic input-output approach. A set of harmonised input-output tables with labour and capital stock data is used which has been established by Eurostat in co-operation with the author. The projected input-output tables are based on harmonised National Accounts of Eurostat and the latest economic forecasts of the Directorate General for Economic and Financial Affairs.

The dynamic input-output model is designed in line with the multiplier-accelerator analysis of macroeconomic theory. According to this theory it is expected that new capacities are required if final demand components are growing. Therefore, induced investment is estimated which can be related to the activities of the Structural Funds. In the first part of the model it is estimated how an increase of gross fixed capital formation will affect the economy which was financed by the Structural Funds to improve the infrastructure of public and private institutions. In the second part it is analysed how the contributions of Community interventions affect value added. In the third part of the impact analysis system a dynamic version of the input-output model is used to evaluate the long-term supply effects of the Structural Funds.

In the previous studies the impact of Structural Funds expenditure was analysed for individual years assuming that the Funds were still active in the previous year. The short-term impact of the Structural Funds activities revealed that the growth potential of the economy would be substantially reduced in individual years if the Structural Funds were not in existence. In the dynamic version of the model it is a sequence of years which will be affected and consequently the supply effects are more profound. The results of the dynamic input-output model reflect a different growth path of the economy which would be realised in the absence of the Structural Funds.

1. Data Base

An input-output approach is only appropriate if the data base for the analysis system is not outdated. In recent years some countries have considerably reduced the time lag for the publication of input-output tables. However, the problem remains that many applications of input-output analysis are obsolete because the data base is outdated. It is costly to establish harmonised input-output tables

for the European Union as they rely to a great extent on surveys and primary statistics. Therefore, Eurostat decided in the past to establish a sequence of five-yearly input-output tables. As supplement for the years in between, but also to cover the time lag between the last input-output table and the latest set of national accounts, Eurostat is updating input-output tables based on new a methodology. At present, the submission of annual supply and use tables and five-yearly symmetric product-by-product input-output tables is an integral part of the official submission programme for the European System of Accounts 1995 (ESA 1995) for all Member countries of the European Union.

The main element of the data base is a set of harmonised input-output tables for the EU (Figure 6) which have been established by Eurostat. It comprises matrices for domestic production of goods and services, imports from member countries of the European Communities, imports from third countries and value added. As supplement matrices an employment matrix is given for occupied population and wage and salary earners and a capital stock matrix for buildings and equipment. In the future it may be extended by other satellite systems on energy, pollutants and waste.


As sectoral information in the national accounts of Eurostat is given for 30 branches (P31) it has been decided to update and project Eurostat input-output tables (**Figure 7**) according to the following classification of activities:


No Activities

- 1 Products of agriculture, hunting and forestry
- 2 Fishing products
- 3 Mining and quarrying of energy producing materials
- 4 Mining and quarrying except energy producing materials
- 5 Food products, beverages and tobacco
- 6 Textiles and textile products
- 7 Leather and leather products
- 8 Wood and wood products
- 9 Pulp, paper and paper products; publishing and printing
- 10 Coke, refined petroleum products and nuclear fuels
- 11 Chemicals, chemical products and man-made fibres
- 12 Rubber and plastic products
- 13 Other non-metallic mineral products
- 14 Basic metals and fabricated metal products
- 15 Machinery and equipment n.e.c.
- 16 Electrical and optical equipment
- 17 Transport equipment
- 18 Products of manufacturing n.e.c.
- 19 Electricity, gas and water supply
- 20 Construction work
- 21 Wholesale and retail trade services; repair of motor vehicles, motorcycles and personal and household goods
- 22 Hotels and restaurants services
- 23 Transport, storage and communication services
- 24 Financial intermediation services
- 25 Real estate, renting and business services
- 26 Public administration and defence services; compulsory social security
- 27 Education services
- 28 Health and social work services
- 29 Other community, social and persona services
- 30 Private households with employed persons

Figure 7: Input-output table and satellite systems

	Input of production activities				Final use of goods and services						Output (1-36)	
	Agri culture	Ener gy	Indu stry	Ser vices	Pri vate con sump tion	Govern ment con sump tion	Gross fixed capital forma tion	Chan ge in stocks	Export to EU	Export to third coun tries		
	1	:	:	30	31	32	33	34	35	36	37	
Agriculture	1											Dome stic pro duction
Energy	:											
Industry	:											
Services	30											
Agriculture	31											Import from EU
Energy	:											
Industry	:											
Services	60											Import from Third
Agriculture	61											
Energy	:											
Industry	:											
Services	90											Value added
Capital consumption	91											
Taxes on production	92											
Salaries and allowances	93											
Operating surplus	94											
Input (1-94)	95											
CAPITAL STOCK												
Equipment	1											
Buildings	2											
Total	3											
EMPLOYMENT												
Wage and salary earners	1											
Self-employed	2											
Occupied population	3											
ENERGY												
Coal	1											
Lignite	2											
Coke	3											
Crude oil	4											
Oil products	5											
Natural gas	6											
Electricity	7											
Produced gases	8											
Steam	9											
Nuclear fuels	10											
Total	11											
POLLUTANTS												
Waste	1											
Gases	2											
Heat	3											
Sewage	4											
Noise	5											
Radiation	6											

 = values (ECU)

 = values (ECU) and quantities (tons, barrels, kwh, cubic meter, joule)

 = quantities (persons, tons, cubic meter, joule)

The economic outlook for Italy and Germany has to be regionalized, as only the southern respectively the eastern part of the country is affected by the actions of the Structural Funds. Based on the projected national input-output tables 2000-2006, aggregate regional input-output tables have been estimated for the north and south Italy and West and East Germany respectively. These regional input-output tables do not include estimates of interregional trade within Italy and Germany (shaded areas in **Figure 8**). However, these tables comprise complete estimates on trade with EU countries and the rest of the world. To take into account interregional trade flows, which could affect the impact of the Structural Funds, these tables may be substituted in the future by the social accounting matrix for the Mezzogiorno or various regional input-output tables for individual regions.

Figure 8: Regional input-output table

	North			South			Output (1-72) 73
	Agri culture	Export to third count ries		Agri culture	Export to third count ries		
	1	:	: 36	37	:	: 72	
Agriculture Energy Industry Services	1 : : 30	Domestic intermediates		Imports from North		Pro duction North	
Agriculture Energy Industry Services	31 : : 60	Imports from South		Domestic intermediates		Pro duction South	
Agriculture Energy Industry Services	61 : : 90	Other Imports		Other imports		Import EU/third	
Consumption of fixed capital Taxes on production less subs. Salaries and allowances Operating surplus	91 92 93 94	Value added		Value added		Value added	
Input (1-94)	95	Production North		Production South			

2. Availability of input-output tables

Input-output tables constitute an ideal data base to identify direct and indirect impacts of the structural interventions on regional development and structural change in Europe. However, innovation, technology and structural change are so dynamic that in many cases the last available input-output table is outdated and does not reflect the real situation in the region concerned. Therefore, essential requirements for the use of input-output tables within the impact analysis system are up-to-date structures, solid foundation on basic sources (surveys, production statistics, foreign trade statistics etc.) and harmonised sectoral disaggregation. On behalf of the Directorate-General for Regional Policies we have conducted a survey on existing regional input-output tables for areas which are affected by the CSF. This showed that an impact analysis, based on regional input-output tables, is feasible and can be recommended.

Harmonised five-yearly input-output tables have been published since the early sixties and are available in the input-output tables database of Eurostat. The available years and countries are shown in **Table 52**. The national input-output tables, produced by the National Statistical Offices and sent to Eurostat, are expressed in national currencies. Based on them, Eurostat computes consolidated tables for the European Community in euro.

Table 52: Five-yearly input-output tables of Eurostat

		1959	1965	1970	1975	1980	1985	1990	1995	2000
Belgium	B	x	x	x	x	x	e	e	e	-
Denmark	DK	-	-	x	x	x	x	e	e	-
Germany	D	x	x	x	x	x	x	e	e	e
Greece	GR	-	-	-	-	e	e	e	e	e
Spain	E	-	-	-	x	x	x	e	e	e
France	F	x	x	x	x	x	x	e	e	-
Ireland	IRL	-	-	x	x	e	x	e	e	e
Italy	I	x	x	x	x	x	x	e	e	e
Luxembourg	L	-	x	x	-	e	x	e	e	-
Netherlands	NL	x	x	x	x	x	x	e	e	-
Portugal	P	-	-	-	-	x	e	e	e	e
United Kingdom	UK	-	-	x	x	x	x	e	e	-
Austria	AT								e	
Finland	FI								e	
Sweden	SE								e	
EUR12		-	-	-	-	e	e	e	-	-
EUR15		-	-	-	-	-	-	-	e	-

x = available

e = estimated by Eurostat

Eurostat is presently engaged to establish a new series of harmonised input-output tables for 2000 on the basis of the latest national input-output tables (**Table 53**). As soon as possible these input-output tables will be substituted which have to be submitted to Eurostat as part of the official data submission programme for the ESA 1995.

So far aggregate input-output tables for the year 2000 with 30 branches have been established Germany, Greece, Ireland, Italy, Portugal and Spain. The tables comprise imports matrices and export vectors for trade with EU countries and third countries and supplementary matrices for labour and capital. In the future, the input-output system of the European Union will incorporate satellite systems on energy requirements and emission of pollutants. This will help to carry out environmental evaluations of structural interventions.

Table 53: Latest national input-output tables of the European Union

No.	Country	Year	Rows	Columns	Total supply	Domestic output	Import matrix	ESA 1995
1	Belgium	1990	59 products	59 products	x	x	x	
2	Denmark	1995	130 industries	130 industries		x	x	x
3	Germany	1995	59 products	59 products	x	x	x	x
4	Greece	1994	60 products	60 products	x	x	x	1)
		1995	25 products	25 products		x		x
		1996	25 products	25 products		x		x
5	Spain	1995	71 products	71 products	x	x	x	x
6	France	1995	39 products	39 products	x			
		1995	114 products	-	x			
7	Ireland	1993	41 products	41 products	x			
8	Italy	1992	92 products	92 products	x	x	x	
9	Luxembourg							
10	Netherlands	1995	104 industries	104 industries		x		
		1996	104 industries	104 industries		x		
		1997	104 industries	104 industries		x		
		1998	104 industries	104 industries		x		
11	Austria	1990	178 products	178 industries		x		
		1995	55 products	55 products	x	x	x	x
12	Portugal	1994	49 products	49 products	x			2)
		1994	49 products	49 products	x			3)
		1995	49 products	49 products	x			2)
		1995	49 products	49 products	x			4)
		1995						x
		1996						x
		1997						x
13	Finland	1995	68 industries	68 industries		x		x
14	Sweden							
15	United Kingdom	1990	123 products	123 industries	x	x	x	2)

1) Mixed ESA 79 and ESA 95

2) ESA 79

3) In constant prices of 1993

4) In constant prices of 1994

3. Projection of input-output tables


In recent years, some countries have considerably reduced the time lag for the publication of input-output tables. However, the problem remains that many applications of input-output analysis are obsolete because the data base is outdated. It is costly to establish harmonised input-output tables for the European Communities, as they rely to a great extent on surveys and primary statistics. Therefore, Eurostat decided to establish a sequence of five-yearly input-output tables. As supplement for the years in-between, but also to cover the time lag between the last input-output table and the latest set of national accounts, Eurostat is updating input-output tables based on a new methodology. The new updating procedure for input-output tables avoids arbitrary changes of important input coefficients, which sometimes occur if traditional RAS-procedures are applied.


The following assumptions form the basis of the new update procedure: Substitution processes are changing inputs (rows), production effects are influencing outputs (columns) and price effects are affecting inputs and outputs. The new update method EURO avoids the shortcomings of projection methods like RAS, MODOP, Linear Programming Method or the Statistical Correction Method. All these methods have been the cause of theoretical dispute and practical problems.

EURO corresponds to the basic idea of the RAS¹⁸ approach. However, it encompasses all the elements of an input-output table and, consequently, all quadrants of an input-output table in an activity analysis approach. In this interpretation, the columns of the input-output table represent basic activities which are treated on an equal basis. The basic idea of the new update method is to use only official relevant information or macroeconomic forecasts as exogenous input for the iterative procedure. Column and row vectors for intermediate consumption and final demand are derived as endogenous variables, rather than accepted as exogenous variables from unspecified sources.

Figure 9: Projection of input-output tables

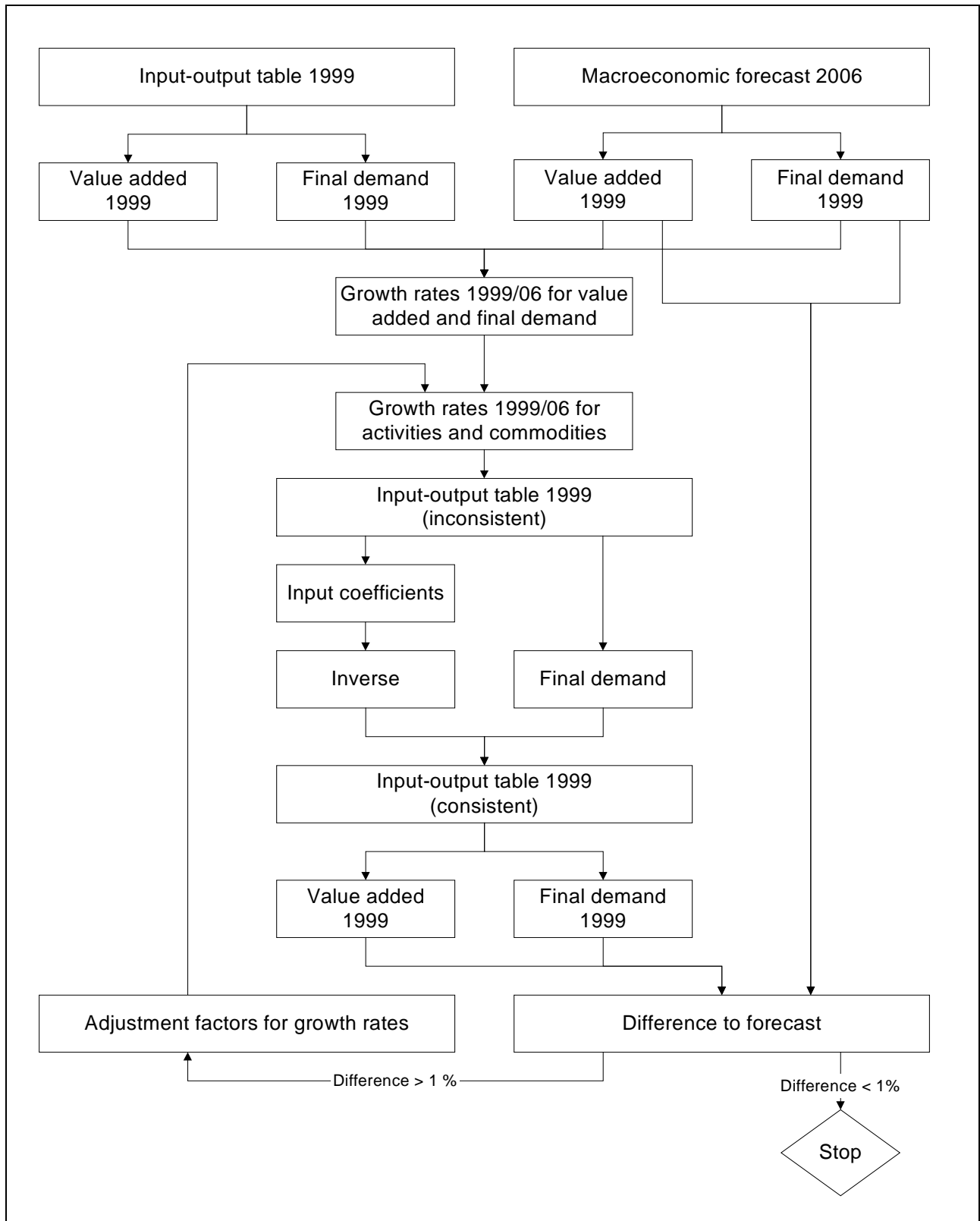
	Input of production activities				Final use of goods and services						Output (1-36)	
	Agriculture	Energy	Industry	Services	Private consumption	Government consumption	Gross fixed capital formation	Change in stocks	Export to EU	Export to third countries		
	1	:	:	30	31	32	33	34	35	36	37	
Agriculture	1											Domestic production
Energy	:											
Industry	:											
Services	30											
Total (1-30)	31											
Agriculture	32											Imports
Energy	:											
Industry	:											
Services	61											
Total (32-61)	62											
Consumption of fixed capital	63											Value added
Taxes on production	64											
Salaries and allowances	65											
Operating surplus	66											
Value added (63-66)	67											
Input (31+62+67)	68	Domestic production				Final demand						

 = Forecast of real growth rates for final demand components

 = Forecast of real growth rates for value added by branch

¹⁸ Stone, R.; Brown, J.A.C.: A long-term growth model for the British Economy, in: R.C. Geary (ed.): Europe's Future in Figures, North-Holland, Amsterdam 1962; Bacharach, M.: Estimating non-negative matrices from marginal data, in: International Economic Review 1965, Vol. 6, pp. 294.

Figure 10: Projection of input-output tables



With this methodology, a new procedure to update and project input-output tables¹⁹ on the basis of macroeconomic forecasts has been implemented in empirical research. The basic idea of the approach is to derive a set of input-output tables, which is consistent with official macroeconomic forecasts for GDP but avoids arbitrary adjustments of input coefficients to ensure a consistent system. With the following methodology, column and row totals for intermediate consumptions are derived rather than accepted as exogenous variables. No macroeconomic forecast is referring to a projection of intermediate consumption. Normally a projection of GDP, final demand and value added of selected sectors (see shaded elements in **Figure 9**) is given. With the following procedure real growth rates for output (activity levels) are derived, which are consistent with the official macroeconomic forecast of the Commission.

Starting point of the iteration procedure is an input-output table which comprises six quadrants for domestic production, imports and value added. The iteration procedure starts with the assumption that, in the first iteration, the given growth rates for value added will be used to define a starting point for the unknown growth rates characterising the activity levels of output sectors and input sectors. Later on, these growth rates will be marginally changed until the projected exogenous variables are reproduced. The growth rates for domestic input and output correspond during the process of iteration, while the growth rates for imported commodities drift away from the corresponding growth rates for domestic commodities, until the projected level of total imports is reproduced.

Each element of all six quadrants is weighted in an iterative procedure with the growth rates for the activity levels of the corresponding input and output sector. After the process of weighting the transactions it can not be expected that the resulting input-output table will be consistent. Therefore, a traditional input-output model with projected final demand and new technology is solved to guarantee the consistency of the system in terms of supply and demand.

In a second step, a consistent input-output table is calculated by applying the quantity model of input-output analysis. In a third step, the projected real growth rates for value added and final demand components are compared with the macroeconomic forecast. If deviations occur, growth rates for input and output levels of the corresponding sectors are marginally changed for the next iteration. It must be noted that sectoral growth rates for value added and output of a sector only correspond in the first iteration. The general approach is presented as flow chart in Figure 10.

The projection is completed, if the model results correspond to the projected macroeconomic variables at a one percent margin or less. In contrast to the RAS procedure, this method guarantees that innovative sectors gain in relative importance in all activities, while declining sectors decrease in importance everywhere. Consequently irrational changes of individual coefficients against the trend of technology and market forces are avoided which arise when RAS with given row and column totals is applied. Innovation and technical trends and not the enforcement of consistency have priority in the new update procedure.

However, this methodology is no substitute for original input-output tables which rely to a great extent on primary sources and survey results. It is a valuable instrument to project input-output structures for specific purposes at low cost. It will help to reduce the undue time lag of official input-output tables. A basic feature of the new methodology is the fact that all economic activities are

¹⁹ Jörg Beutel (with M. de March, J. Heuschling und P. Ungar) Harmonized input-output data for the European Union, in: Verband der Automobilindustrie and International Input-Output Association (Ed.): The role of the automobile industry as a key sector - An application of input-output analysis, Frankfurt 1994. An earlier version of the update methodology was presented in: Penzkofer, H.; Schmalholz, H.; Scholz, L.; Beutel, J.: Arbeitsmarktwirkungen moderner Technologien - Innovation, Wachstum und Beschäftigung, de Gruyter, Berlin 1989.

treated equally in this approach. From an activity point of view an input-output table encompasses all economic activities represented by the various columns in the table. In modern times, private households are more interested in generating certain consumption activities (recreation, journey to work, cooking, living, hobbies etc.) than merely purchasing certain quantities of goods and services. Consequently, private consumption activities are treated similar to production activities in projecting input-output tables. The essential feature of the methodology is to project unknown growth rates for all activity levels including final demand activities.

Step 1: Updating intermediate and final inputs

For the update, all transactions of quadrants I to IV are weighted with the arithmetic mean of the corresponding output growth rates (w_o) and input growth rates (w_i).

$$(1) T_2 = w_o * T_1$$

$$(2) T_3 = T_1 * w_i$$

$$(3) T_4 = (T_2 + T_3)/2 \text{ Arithmetic mean}$$

respective

$$(4) T_4 = \sqrt{T_2 \# T_3} \quad \text{Geometric mean}$$

T_1 = intermediate consumption and final demand of goods and services ($r \times p$)

T_2 = matrix of weighted transactions with growth rates of commodity output ($r \times p$)

T_3 = matrix of weighted transactions with growth rates of activities ($r \times p$)

T_4 = matrix of weighted transactions for quadrants I to IV ($r \times p$)

w_o = diagonal matrix of growth rates of domestic output and imports by commodity ($r \times r$)

w_i = diagonal matrix of growth rates of production and final demand activities ($r \times p$)

r = number of domestic and imported commodities

p = number of activities (production and final demand)

Step 2: Updating value added by sector

Value added by sector is updated by multiplying value added of the base year with the diagonal matrix of input growth rates (w_i).

$$(5) T_5 = va * w_i$$

T_5 = row vector of weighted transactions for value added with growth rates of input sectors ($1 \times p$)

va = value added by sector ($1 \times p$)

w_i = diagonal matrix of growth rates of input sectors ($r \times p$)

p = number of activities (production and final demand)

Step 3: Aggregation input-output table A

A first approximation of the updated input-output table is established through horizontal concatenation. Input and output levels are still inconsistent after step 3. The result is called input-output table A.

Step 4: Calculation of input coefficients for input-output table

In step 4, it is assumed that the new technology is represented by the input structure of input-output table A. The complete set of input coefficients is calculated for domestic commodities, imports and value added.

$$(6) a_{ij} = x_{ij}/x_{.j}$$

$$(7) b_{ij} = m_{ij}/x_{.j}$$

$$(8) c_{.j} = v_{.j}/x_{.j}$$

a_{ij} = input coefficients for domestic goods and services

b_{ij} = input coefficients for imported goods and services

$c_{.j}$ = input coefficients for value added

x_{ij} = intermediate consumption of domestic goods and services

m_{ij} = intermediate consumption of imported goods and services

$v_{.j}$ = value added

$x_{.j}$ = domestic production

Step 5: Input-output model

Based on the input coefficients of step 4, the inverse is calculated and then multiplied with the vector of final demand which was derived from input-output table A.

$$(9) X = (I-A)^{-1}Y$$

X = column vector of output (domestic production)

A = matrix of input coefficients a_{ij}

I = unit matrix

$(I-A)^{-1}$ = matrix of cumulative input coefficients (inverse)

Y = column vector of final demand

Step 6: Input requirements

The input requirements are calculated to determine the transaction for the balanced input-output table, which will be aggregated in the next step.

$$(10) Z = B*(I-A)^{-1}Y$$

B = Matrix of input coefficients for domestic and imported intermediates and value added

Z = input requirements

Step 7: Aggregation of input-output table

The consistent input-output table B is established through vertical concatenation. However, the levels for value added and final demand components do not correspond to the exogenous projection. Therefore, the following iteration is started.

Step 8: Iteration

Growth rates for output (w_o) and input (w_i) are marginally changed during the iteration until the projected growth rates for value added and final demand in input-output table B correspond with the given projection. The higher the number of iterations (k), the better the projected variables will be reproduced. The growth rates are adjusted in k iterations until the projected values for final demand and value are reproduced at an 1 % error margin.

The deviation between projected macroeconomic variables and model results is defined as:

$$(11) \text{ dev} = \text{pro}/\text{mod}$$

dev = deviation

pro = exogenous projection of macroeconomic variables

mod = input-output projection (model result)

The observed deviations can directly be used to correct the growth rates w_o and w_i in an additive procedure. In this case, the multipliers and the adjustment functions of type A are defined as:

For $\text{dev} > 0$

$$(12) \text{ mult} = \text{dev} - 1$$

$$(13) w_o = w_o + \text{mult}$$

$$(14) w_i = w_i + \text{mult}$$

For $\text{dev} < 0$

$$(15) \text{ mult} = 1 - \text{dev}$$

$$(16) w_o = w_o - \text{mult}$$

$$(17) w_i = w_i - \text{mult}$$

The adjustment functions A are efficient in finding a solution without too many iterations but cyclical fluctuations can lead to instability of the system.

A convex adjustment function of type B can be recommended to adjust the growth rates during the iteration in a more careful procedure. If the model underestimates (overestimates) the projected macroeconomic variables, the corresponding growth rates w_o and w_i respectively are increased (decreased) according to the convex adjustment function. The adjustment elasticity in the graph was set at $c=0.5$.

The function is defined as:

$$(18) w_o = w_o * \text{mult}$$

$$(19) w_i = w_i * \text{mult}$$

where

$$(20) \text{ mult} = 1 + [(\text{dev}-1)100]^c/100 \text{ for dev} > 0$$

$$(21) \text{ mult} = 1 - [(1-\text{dev})100]^c/100 \text{ for dev} < 0$$

mult = diagonal matrix of adjustment multipliers for growth rates

wo = diagonal matrix of growth rates for domestic and imported commodities

wi = diagonal matrix of growth rates for production and final demand activities

c = adjustment elasticity

In concluding this section, the following comments are in order. Macroeconomic analysis without sectoral disaggregation in a time of structural change and innovation can be misleading. The main advantages of the new update procedure EURO are:

- robust update procedure at low costs
- limited data requirements
- only official sources are used for the update
- integrated estimation of all four quadrants of the input-output table
- no arbitrary changes of input coefficients
- row and column totals for intermediate consumption are derived within the procedure
- structural composition of final demand are estimated during the iteration
- consistency of supply and demand is provided by input-output model
- dual version with input or output coefficients

Certain disadvantages mainly result from the simple structure of the update procedure and the underlying theory. It is certainly a constraint that primary forecasts for output levels are not normally available. So far, the structural composition of final demand estimates are not based on econometric functions. The impact of relative prices and other important economic variables such as innovation, technical progress, and productivity is not fully anticipated. In a sophisticated econometric model, intermediate consumption would be derived in a cost minimisation approach.

However, limited data requirements, low costs and the potential for a high degree of automation are the benefits of EURO. Updates for Portugal, Greece, Ireland, Italy and Spain have been successfully implemented and ex post tests for a time series of existing input-output tables of Germany indicate that a useful tool has been developed which will help to update input-output statistics. The purpose of EURO is to fill the gap between the five-yearly harmonised input-output tables of Eurostat. Another objective is to update the official input-output tables according to the latest results of national accounts as reflected in the Cronos data bank of Eurostat.

4. Impact analysis

The same analytical approach is used for entire countries (Greece, Ireland, Portugal, Spain) and regions (East Germany, Southern Italy). Input-output tables are not available for all European regions which are affected by the CSFs. In these cases, derivative regional input-output tables and other secondary sources are used.

The first task is to establish the data base for the base year for the reference periods 1999-2006 of the structural interventions. With the projection of the input-output table 1999 the foundation for the impact analysis system is given. The objective 1 interventions were approved in constant prices of

1999. Therefore, all results and in particular the sequence of input-output tables for 1999-2006 will be projected in constant prices of 1999.

The main objective of the impact analysis is to estimate net effects which are induced by the structural interventions. Therefore, three input-output tables for each reference year will be projected. The first table is including the full impact of the structural interventions corresponding to the official macroeconomic forecast of the European Commission. The second input-output table is reflecting the situation without the structural interventions a third table the situation without Community grants.

The flow chart in **Figure 11** represents the general features of the impact analysis system²⁰. The analysis will place the Directorate-General for Regional Policies in a position to evaluate and monitor the various economic impacts of the structural interventions on the basis of a harmonised approach. If the structural interventions are successfully implemented, significant impacts on economic development and structural change may be expected. A quantification of these effects is the main objective of the impact analysis. In broad terms, the structural interventions will affect the structure and level of final demand, in particular of investment, but will also induce changes in technology, employment and imports and the wage bill. The main advantage of an input-output approach is that all results may be disaggregated by sector and separated into individual and integrated segments.

Thus, it will be possible to identify the economic impact of the structural interventions which is induced through

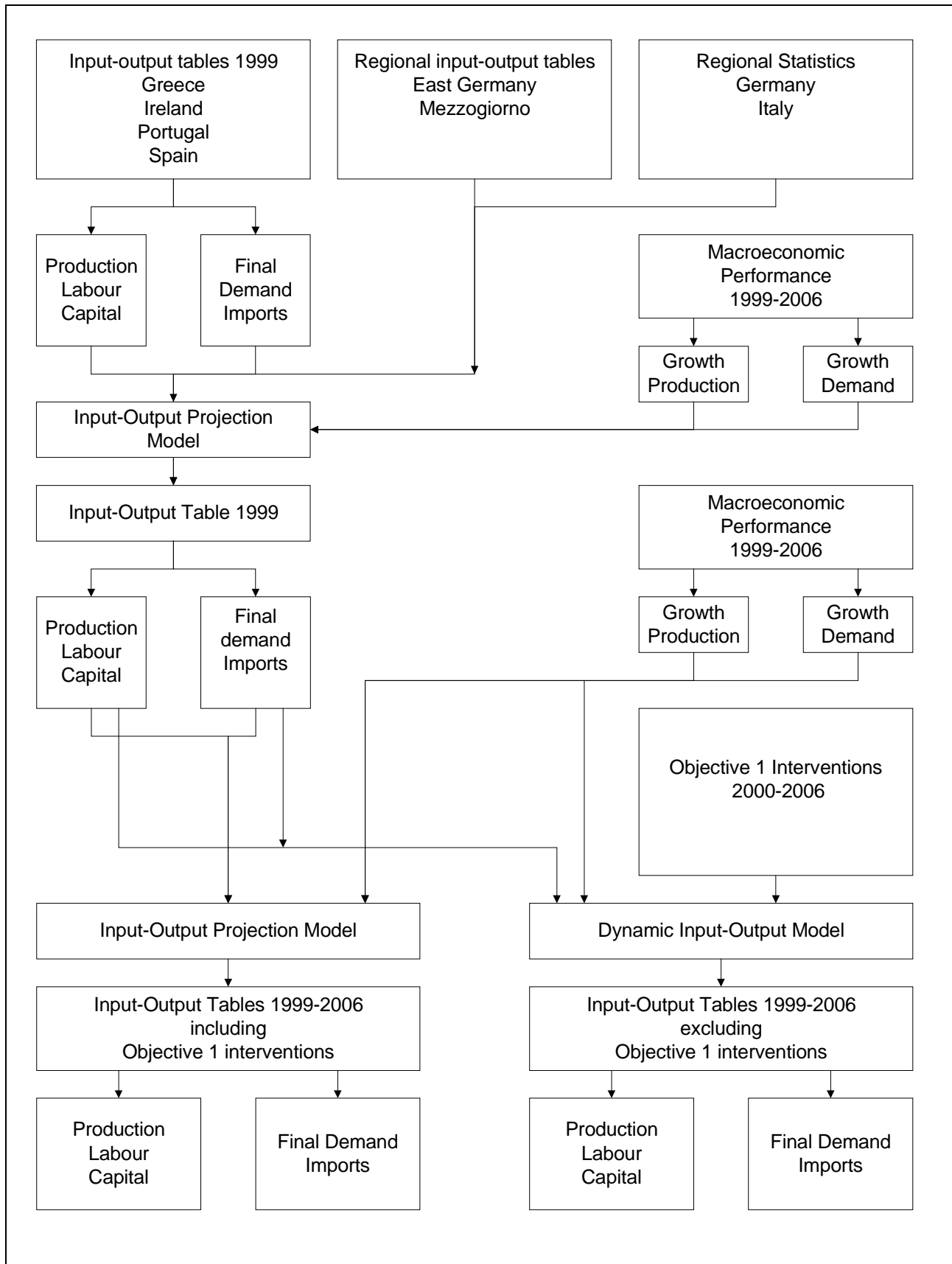
- change in final demand (consumption, investment, exports),
- change in economic integration (foreign trade) and
- change in technology (primary and intermediate inputs).

Presently, the latest set of harmonised input-output tables which is available is for the year 1995 and 1999. Therefore, these tables are the starting point of analysis. They comprise detailed information on production for (30 branches) and on final demand components (private consumption, government consumption, gross fixed capital formation, change in stocks, exports to EU, exports to third countries, imports from EU, imports from third countries) and separate matrices for employment and capital stock data.

In the future, Eurostat may include supplementary elements such as, energy flows and emission of pollutants. These elements in particular indicate the potential of the approach for a careful and profound analysis. It is this data base which is the ideal framework for impact analysis, as all structural interventions and CSF priority projects and activities can be identified in the various segments of the table.

²⁰ An earlier version of the impact analysis system is included in: Gerstenberger, W.; Beutel, J. u.a.: Analyse der Strukturellen Entwicklung der Deutschen Wirtschaft - Strukturberichterstattung 1980, Textband und Methodenband, Berlin 1989.

Figure 11: Impact analysis system of Structural Interventions



The first objective of the study is to update and project a sequence of input-output tables for 1989-1993 and 1994-1999 on the basis of official Eurostat statistics and the macroeconomic forecast of the Directorate-General for Economic and Financial Affairs. It is assumed that the macroeconomic forecast fully reflects the impacts of the Community Support Frameworks and all other interventions.

In a second step, the objective 1 interventions 2000-2006 are transformed into macroeconomic variables (gross fixed capital, primary inputs, operations and maintenance) and deducted from the various quadrants of the projected input-output tables

5. The dynamic input-output model

Expenditures of the Structural Funds will affect the structure and level of final demand, in particular investment, but will also induce changes in technology, imports, value added and labour and capital use

Autonomous investment

In the first step it will be estimated how a reduction of final demand will affect the economy. In matrix notation a traditional model of input-output analysis will be used to quantify the effects.

$$(1) AX + Y = X$$

$$(2) (I-A)X = Y$$

$$(3) (I-A)^{-1}Y = X$$

X = column vector of output

Y = column vector of final demand

I = unit matrix

A = matrix of input coefficients for intermediates

$(I-A)^{-1}$ = matrix of cumulative input coefficients (inverse)

Wages and salaries

In the second step the contributions of Community grants to the components of value added are reflected. If for instance the contributions of the Social Funds for various training activities are withdrawn it must be expected that the wage and salary bill of supported branches will be reduced. As a consequence the absorptive capacity of the economy will be reduced and the purchasing power of final demand is affected.

$$(4) \begin{vmatrix} I-A & -D \\ \hline B & 0 \end{vmatrix} \cdot \begin{vmatrix} X \\ \hline Z \end{vmatrix} = \begin{vmatrix} Y \\ \hline L \end{vmatrix}$$

$$(5) \begin{vmatrix} I-A & -D \\ \hline B & 0 \end{vmatrix}^{-1} \cdot \begin{vmatrix} Y \\ \hline L \end{vmatrix} = \begin{vmatrix} X \\ \hline Z \end{vmatrix}$$

X = output
 Y = final demand
 Z = final demand of constrained branches
 I = unit matrix
 A = input coefficients for intermediates
 $(I-A)^{-1}$ = cumulative input coefficients (inverse)
 B = input coefficients for primary inputs
 D = dummy variables for endogenous final demand
 L = primary inputs of constrained branches

An alternative would be to assume that a reduction of value added by reduced contributions of the Structural Funds for salaries and allowances will affect the absorptive capacity of the economy. This approach has been used in the study in the following way:

$$(6) \quad \left| \begin{array}{c|c} A-I & R \\ \hline B & 0 \end{array} \right| \cdot \left| \begin{array}{c} X \\ Y \end{array} \right| = \left| \begin{array}{c} 0 \\ W \end{array} \right|$$

$$(7) \quad \left| \begin{array}{c|c} A-I & R \\ \hline B & 0 \end{array} \right|^{-1} \cdot \left| \begin{array}{c} 0 \\ W \end{array} \right| = \left| \begin{array}{c} X \\ Y \end{array} \right|$$

X = output
 Y = final demand
 W = primary inputs
 I = unit matrix
 A = input coefficients for intermediates
 $(I-A)^{-1}$ = matrix of cumulative input coefficients (inverse)
 B = input coefficients for primary inputs
 R = input coefficients for final demand

Induced investment

Step 1 (final demand) and step 2 (primary inputs) were both directed to evaluate short-term demand and supply effects. However, the activities of the Structural Funds are directed towards the long-term goal to reduce the development gap of objective 1 regions. Therefore, it is important to cover the long-term supply effects of the Community Support Frameworks. In step 3 (induced investment) a dynamic input-output model has been designed which covers these long-term effects.

Intermediates reflect the flows of goods between sectors which were purchased for current production needs during a particular period of time. However, some inputs contribute to the production process but are not immediately used up during production. In other words, a sector has a certain capital stock of machinery, buildings and transport equipment that is also necessary for production.

The dynamic input-output models are designed in line with the multiplier-accelerator analysis of macroeconomic theory. According to this theory it is expected that investment is induced if final demand is expected to grow.

If we assume that induced investment is a function of expected growth, the typical equations of the dynamic input-output model would become:

$$(8) \quad X_t = AX_t + C_t + I_t$$

$$(9) I_t = BX_{t+1} - BX_t$$

$$(10) X_t = AX_t + C_t + BX_{t+1} - BX_t$$

$$(11) (I-A+B)X_t = C_t + BX_{t+1}$$

The production of period t is defined:

$$(12) X_t = (I-A+B)^{-1} (C_t + BX_{t+1})$$

while the production of period t+1 is determined by:

$$(13) X_{t+1} = B^{-1} [(I-A+B)X_t - C_t]$$

C = exogenous final demand

I = induced investment

This is a system of linear difference equations, since the values of the variables are related for different periods of time. Practical problems relate to the matrix B of capital coefficients. Only a few of the branches produce capital goods. Therefore it can not be expected that the matrix B has an inverse. There is a large literature on the singularity problem in the dynamic input-output model and many problems remain for empirical applications.

If we assume that investment in period t+1 is a function of actual growth, the dynamic input-output model is defined as:

$$(14) X_{t+1} = AX_{t+1} + C_{t+1} + I_{t+1}$$

$$(15) I_{t+1} = BX_{t+1} - BX_t$$

$$(16) X_{t+1} = AX_{t+1} + C_{t+1} + BX_{t+1} - BX_t$$

$$(17) (I-A-B)X_{t+1} = C_{t+1} - BX_t$$

The production of period t+1 is determined by:

$$(18) X_{t+1} = (I-A-B)^{-1} (C_{t+1} - BX_t)$$

If all branches are producing at full capacities the accelerator mechanism can result in unstable fluctuations depending on the parameters estimated. Therefore, we decided to relate induced investment to the stable components of final demand, namely consumption and exports.

A substantial part of investment is required for replacement of capital goods. New capacities are required if the final demand components are growing. Capacities, on the other hand, have to be reduced if final demand is reduced. The growth of final demand which may be attributed to CSF expenditures has been estimated in the previous steps. In the third part of the model, induced investment is estimated which can be related to the activities of the Structural Funds. With this model element it will be possible to quantify the long-term direct and indirect impact of the Structural

Funds on gross fixed capital formation.

The design of the dynamic model ²¹ which has been implemented in this study is as follows:

$$(19) X_t = AX_t + C_t + I_t$$

$$(20) I_t = B(ZC_t - ZC_{t-1})$$

$$(21) Z = (I-A)^{-1}$$

$$(22) X_t = AX_t + C_t + B(ZC_t - ZC_{t-1})$$

$$(23) X_t = Z\{C_t + BZ[C_t - C_{t-1}]\}$$

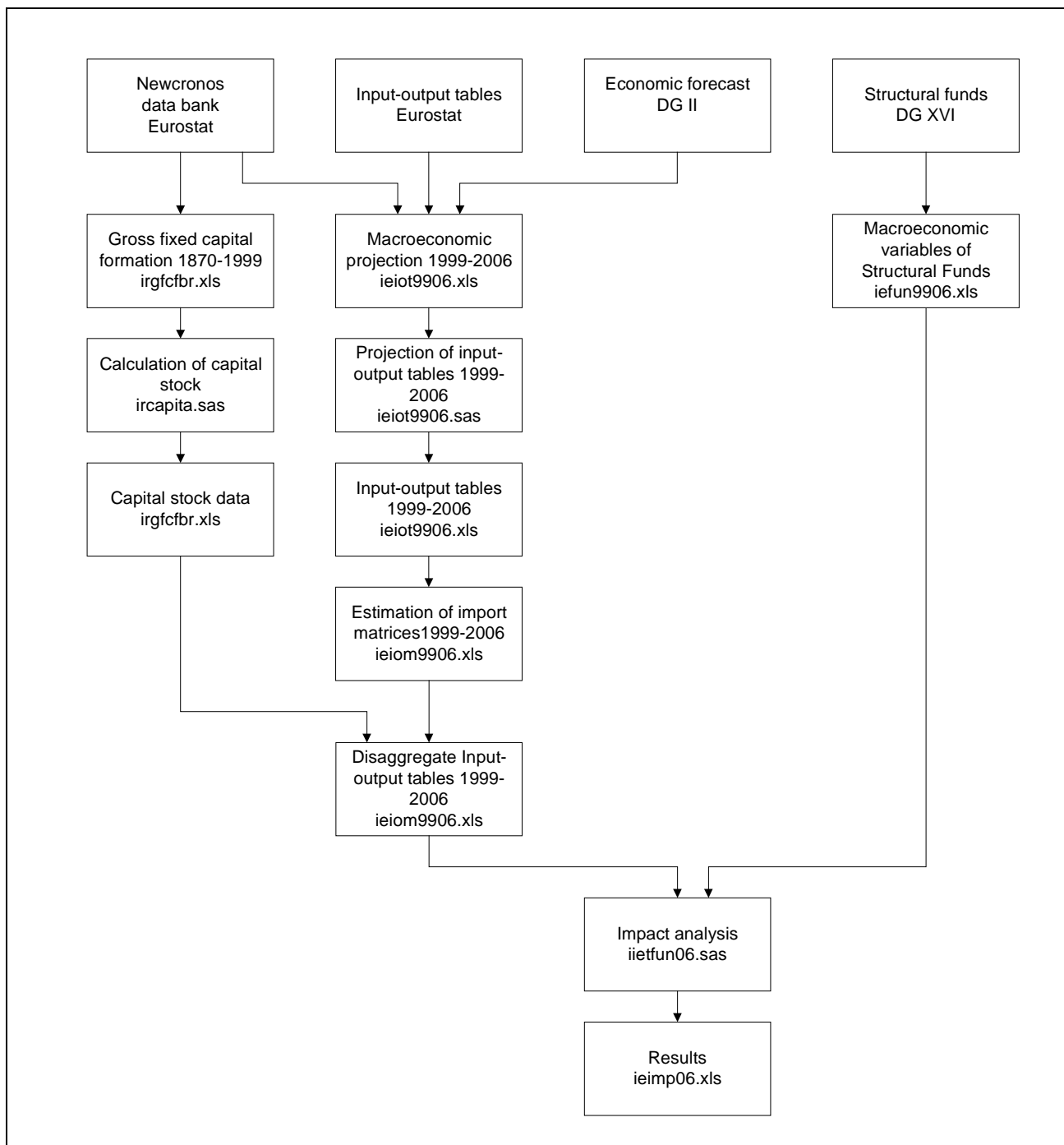
Induced investment is a function of actual growth of exogenous final demand.

²¹ Eurostat: Input-Output Manual, Chapter 15: Applications (Author: Joerg Beutel), forthcoming, Luxembourg 2002.

Documentation

The empirical results have been estimated with the Statistical Analysis System (SAS) and Excel spreadsheet using the dynamic data exchange between the two software systems. Required are SAS Release 8.2 and Excel 2000. The flow chart of the impact analysis system is include in **Figure 12**.

Figure 12: Software for the impact analysis system



SAS software for impact analysis 2000-2006 (Reference case Ireland)**1. Input-output table for base year**

ieiotnat93a.xls Input-Output table of Ireland 1993 (41 branches)
ieiotnat93a.xls Aggregated input-output tables of Ireland 1993 (P31)

2. Projection of input-output tables at current prices

ieiot9300b.xls Input-Output table of Ireland 1998-2000 at current prices (P31)
ieiot9300b.sas Projection of input-output tables 1998-2000

3. Projection of input-output tables at constant prices of 1999

ieiot9906b.xls Input-output tables of Ireland 1999-2006 at 1999 basic prices
ieiot9906b.sas Projection of input-output tables 1999-2006

4. Input-output tables at constant prices of 1999 with intra EU and extra EU trade

ieiom9906b.xls Input-output tables of Ireland 1999-2006 with intra EU and extra EU imports and exports

5. Evaluation of Objective 1 interventions

iefun9906c.xls Financial tables 2000-2006
ietfund06c.sas Evaluation of total Objective 1 interventions (Community, national public, private)
ieefund06c.sas Evaluation of Community Objective 1 interventions
iepfund06c.sas Evaluation of public Community Objective 1 interventions (Community, national public)
ieimp06c.xls Results of impact analysis

6. Final Report

d:\beutel\dg16\final\objective1p.doc Final report
d:\beutel\dg16\final\csfmult06g.xls Tables and figures

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Statistical Annex