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**Economic Analysis**

## **EU cohesion aid to Spain: a data set Part I: 2000-06 planning period**



# Abstract

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In this paper we construct a data set on EU cohesion aid to Spain during the planning period 2000-06. The data are disaggregated by region, year and function and attempt to approximate the timing of actual executed expenditure on assisted projects.

Key words: Structural Funds, EU Cohesion policy

JEL Classification: R58

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# 1. Introducción

One of the main difficulties faced by studies that attempt to evaluate the impact of EU cohesion support is the scarcity of appropriate data. While both the European Commission and the governments of member states publish an enormous amount of material on the subject, the available information on EU grants is disperse, unsystematic, heterogeneous, difficult to interpret and, in most cases, almost useless as an input for statistical analysis.

The existing data present multiple shortcomings. In many cases, the available information corresponds to ex-ante budget appropriations rather than to actual executed expenditure. When data on actual expenditure are available, they are typically not broken down by year. And when such a breakdown does exist, it often reflects payment flows that do not correspond to the execution of the underlying projects. The functional breakdown of expenditure is also far from ideal. The *axes, measures and fields of intervention* that are used by national governments and by the Commission to classify expenditure change over time, often combine actions of different economic nature and are not always precisely defined.

This document reports the first results of a project to construct a data set on cohesion support to the Spanish regions that can be used as an input in ex-post evaluations of the macroeconomic effects of EU aid. Using information provided by the Spanish Ministry of Finance, we have constructed annual series of EU grants and total assisted expenditure (including national cofinancing), disaggregated by region and by function, that try to approximate the timing of actual executed expenditure on assisted projects. The series reported in this paper cover only the 2000-06 planning period. We anticipate, however, that it will be possible to extend them back at least to 1994.

## 2. The primary data

This section describes the primary data on Structural and Cohesion Fund grants and total assisted expenditure used in the construction of the series corresponding to the 2000-06 planning period.<sup>1</sup> The data have been supplied by the Directorate General for European Funds of the Spanish Ministry of Finance (MEH). They include the Cohesion Fund and all the operative programs of the four Structural Funds (ERDF, ESF, the Guidance section of the Agricultural Fund and the Fisheries Instrument) but exclude the Community Initiatives that absorb a minor fraction of the resources of these Funds.

The Spanish Ministry of Finance has developed a sophisticated computer information system to keep track of the progress of projects that are partly financed by the EU's Structural and Cohesion Funds and to manage the flow of advances and payments to such projects.<sup>2</sup> Expenditure information is entered into the system by the beneficiaries of these projects, that is, by the different administrations in charge of their execution, which include municipalities and regional authorities, central government ministries and agencies and the public bodies and enterprises that manage various types of infrastructures. Beneficiaries advance payments to their suppliers (e.g. construction companies) and then submit claims for partial reimbursement from the Structural and Cohesion Funds that are collected and processed by the Ministry and then sent on to the Commission's services in Brussels for further processing and eventual disbursement.

The data supplied by the MEH correspond to the first stage of this process (to what are known as *expenditure certifications*) and, according to the Ministry's staff, should provide a good approximation to the timing of the execution of actual expenditure on the ground. As beneficiaries are billed by their suppliers, they enter expenditure data into the system. The date assigned in the system to such expenditure flows corresponds to the date of the billing by the final contractor and is not affected by the actual timing of reimbursements or by the controls that may be practiced before reimbursement claims are settled. Since beneficiaries have every incentive to certify expenditure as early as possible in order to accelerate the reimbursement process, Ministry officials are confident that annual totals for certified expenditure will be very close to actual expenditure during the year.

Payment claims are subject to a number of controls by national and European authorities. When such controls uncover irregularities such as expenditures that have not been adequately documented or contain items that are not eligible for EU aid, expenditures can be "decertified" after the fact. When decertifications occur, they are entered into the system as negative expenditures. The general procedure is to assign decertifications to the same date as the original expenditure items that have been (totally or partially) disallowed. As a result, the data on annual totals of certified expenditure provided by the Ministry are already net of any decertifications that have occurred up to the date the report has been produced. In certain atypical cases, however, this rule has not been strictly applied until recent years and, as a result, there are a small number of cells in the data that contain negative figures for certified expenditure. In these cases, we have set the entries that displayed a negative sign in the raw data equal to zero and reduced in the same amount the entries for the preceding year(s).

The primary data on Structural Fund expenditures are classified by operative programs. For each program, spending is broken down by region, year and type of intervention (using a national classification into *axes* and *measures* of intervention that is similar but not identical to the Commission's classification by field of intervention). The regional breakdown of expenditure is almost complete: 98.8% of all spending, including that corresponding to national programs managed by the Central Government, has been imputed to a specific region. For each (program-region-year-function) "cell," data are provided on both the amount of EU grants and total expenditure, including national public co-financing.

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1: For planning purposes, the European Union works with a multi-annual budget framework that is set out in its Financial Perspectives. Cohesion policy programs generally follow the same planning cycle. The data described in this section corresponds to grants financed by the programs that were operative during the 2000-06 period. It must be kept in mind that part of this expenditure was actually executed after 2006.

2: There are actually two separate systems, one for the Structural Funds and another for the Cohesion Fund. There are some minor differences between them that are partly due to the fact that in the case of the Cohesion Fund the relevant "unit" is a stand-alone infrastructure project that is managed individually, whereas in the Structural Funds the system is built around broader programs that may include many different projects and measures. The differences, however, are not important for our purposes here.

The data on Cohesion Fund expenditure are broken down by individual projects. For each project, the MEH has provided annual data on certified expenditure and a subsidy rate that can be used to calculate the corresponding EU grant. The listing classifies projects according to their nature into transport and water supply networks and environmental infrastructures and provides a brief description of each project. In most cases, the project's description can be used to assign it to a specific region. The main exceptions are two large items that are related with the construction of the high-speed train between Madrid and Barcelona. One of them contains expenditure on the electricity supply network and on signaling and communications systems for the entire line, and the other corresponds to the track assembly between Madrid and Lérida. We have allocated these two items across regions in proportion to their share in the total length of the corresponding segment of the track. Track lengths are approximated by road distances between frontier towns along a route between Madrid and Barcelona that approximates the one followed by the high-speed train.<sup>3</sup> After proceeding in this manner, only 0.01% of expenditure (mostly technical assistance programs) cannot be allocated to a specific region.

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3: See section 1 of Appendix 1 for further details.

### 3. Classification by type of expenditure

We have classified cohesion-related expenditure into the categories or functions listed in Table 1. The choice of these categories is determined by the economic nature of the different measures supported by the Structural and Cohesion Funds, by data availability and by the need to obtain series that are consistent with the existing data on regional investment flows and capital stocks that will be the other key input in any statistical analysis of the macroeconomic impact of EU aid.

Direct public investment is broken down into two categories. The first one (*productive infrastructure*) includes water works, urban infrastructures and transport networks. Other public investment projects are classified as *other direct public investment*. This category includes environmental infrastructures, information society projects and a great variety of other investments, including schools, hospitals and business parks.

*Aid to enterprises* comprises subsidies to private investment and various types of operating subsidies and services to enterprises and entrepreneurs (e.g. technical assistance and export-promotion plans). The first of these items includes, among many other measures, public co-financing for private energy and telecommunications networks. The remaining categories are *research and development* programs, investment in *human resources*, including both formal schooling and occupational training programs for employed and unemployed workers, various types of subsidies and other programs aimed at stimulating *employment creation* or increasing worker employability (many of which include a training component that is hard to isolate) and a miscellaneous grouping (*other*) where we have included anti-discrimination measures and technical assistance programs.

Table 1

#### Functional classification of cohesion-related expenditure

##### 1. Productive infrastructures

- 1.1. Transport infrastructures
- 1.2. Water works
- 1.3. Urban infrastructures

##### 2. Other direct public investment

- 2.1. Environmental infrastructures
- 2.2. Information society
- 2.3. Other investment

##### 3. Aid to enterprises

- 3.1. Subsidies to private investment
- 3.2. Operating subsidies and services to firms and entrepreneurs

##### 4. Human resources

- 4.1. Training of researchers and support personnel
- 4.2. Occupational training of employed and unemployed workers
- 4.3. Formal education, including vocational cycles

##### 5. Research and development

##### 6. Employment creation and employability

- 6.1. Aid to disadvantaged groups
- 6.2. General programs

##### 7. Other

- 7.1. Fight against discrimination
- 7.2. Technical assistance

Continued on next page

Table 1

**Functional classification of cohesion-related expenditure****Further detail:**

## 1.1. Transport infrastructures

Roads and highways

Railways and subways

Ports

Airports

Urban transport

Other: multi-modal transport centers

Source: xxxxxxxxxx

The classification of Cohesion Fund projects into the categories listed above poses no particular problems since this Fund only finances direct public investment in transport, water and environmental infrastructures. In the case of the Structural Funds, things are more complex. We have used the breakdown by axes of intervention and measures provided by the Spanish Ministry of Finance. The measures assigned to each of the different expenditure categories are listed in sections 1 and 2 of Appendix 2 (distinguishing between Objective 1 and Objective 2 regions, which have different sets of intervention measures). To classify the measures, we have used the descriptions included in the documents known as Program Complements (see for instance Ministerio de Economía y Hacienda and Junta de Andalucía, 2002).

In some cases, a given “measure” includes a variety of actions of different economic nature. Some measures, for instance, mix employment subsidies and occupational training programs and others combine different types of direct public investment with various kinds of aids to the private sector. Since no intra-measure breakdown of expenditure is generally available, we have assigned these measures to the expenditure type that seems to be dominant in each case according to the program description given in the available documentation-- a subjective procedure that has obvious limitations. Our doubts in this regard are greatest in connection with various measures financed by the guidance section of the Agricultural Fund (especially in the area of endogenous rural development) and by the Fisheries Instrument. The most problematic cases are identified with an asterisk in the listings given in Appendix 2.

Table 2

**Structural and Cohesion Funds, total assisted expenditure in Spain**

Millions of current euros	Structural funds			Cohesion fund		
	total expenditure	% of total	subsidy rate	total expenditure	% of total	subsidy rate
<b>1. Productive Infrastructure</b>	<b>26,266</b>	<b>39.1%</b>	<b>60.6%</b>	<b>8,751</b>	<b>66.8%</b>	<b>73.0%</b>
1.1. Transport	17,853	26.6%	61.0%	7,265	55.5%	72.1%
1.2. Water	6,585	9.8%	57.8%	1,486	11.3%	77.2%
1.3. Urban structures	1,827	2.7%	67.0%			
<b>2. Other direct pub. investment</b>	<b>10,794</b>	<b>16.1%</b>	<b>66.9%</b>	<b>4,341</b>	<b>33.1%</b>	<b>80.3%</b>
2.1. Environmental infrastructures	3,992	5.9%	69.1%	4,341	33.1%	80.3%
2.2. Information Society	1,042	1.6%	66.0%			
2.3. Other investment	5,760	8.6%	65.4%			
<b>3. Aid to private enterprises</b>	<b>15,061</b>	<b>22.4%</b>	<b>61.3%</b>			
3.1. Subsidies to private investment	11,847	17.6%	60.5%			
3.2. Current subsidies and services	3,214	4.8%	64.4%			
<b>4. Human resources</b>	<b>4,435</b>	<b>6.6%</b>	<b>66.0%</b>			
4.1. Training of researchers	624	0.9%	62.4%			
4.2. Occupational training	1,769	2.6%	68.2%			
4.3. Formal schooling	2,042	3.0%	65.2%			
<b>5. Research and development</b>	<b>4,235</b>	<b>6.3%</b>	<b>62.4%</b>			
<b>6. Employment creation</b>	<b>6,081</b>	<b>9.1%</b>	<b>67.9%</b>			
6.1. Aid to disadvantaged groups	1,387	2.1%	71.4%			
6.2. General programs	4,694	7.0%	66.9%			
<b>7. Other</b>	<b>315</b>	<b>0.5%</b>	<b>74.5%</b>	<b>3</b>	<b>0.0%</b>	<b>85.0%</b>
7.1. Fight against discrimination	72	0.1%	78.1%			
7.2. Technical assistance	243	0.4%	73.4%	3	0.0%	85.0%
<b>TOTAL</b>	<b>67,185</b>	<b>100.0%</b>	<b>63.0%</b>	<b>13,095</b>	<b>100.0%</b>	<b>75.4%</b>
Memo:						
1.1. Transport infrastructures	17,853	26.6%	60.6%	7,265	55.5%	72.1%
Airports	741	1.1%	46.5%	98	0.7%	42.0%
Roads and highways	9,760	14.5%	66.3%	541	4.1%	85.0%
Railways and subways	5,963	8.9%	55.4%	5,135	39.2%	76.8%
Ports	1,064	1.6%	48.4%	1,492	11.4%	53.4%
Multi-modal transport	216	0.3%	52.3%			
Urban transport	110	0.2%	69.2%			

Note: Planning period 2000-06, certified expenditure between 2000 and 2008. Includes national cofinancing.

Source: xxxxxxxx

Table 2 shows the functional breakdown of Structural and Cohesion Fund-assisted total expenditure in Spain during the period of interest as well as the average EU subsidy rate for each type of expenditure and each Fund. Adding up the two Funds, total assisted expenditure in Spain amounted to 80.3 billion euros during the 2000-06 planning period, 65% of which was financed by EU grants. The largest share of expenditure corresponds to productive infrastructure, which absorbed 43.6% of total spending, followed by other direct public investment (18.9%) and various types of aids to enterprises (18.8%). Training, R&D and employment promotion programs absorb the rest of spending, with each item accounting for between 5% and 8% of the total.



## 4. Deflators and series at constant prices

After adding up the Structural and Cohesion Funds, the series on total expenditure and EU aid are deflated to express them in constant prices of 2000. Table 3 shows the price indices that have been used to deflate different types of expenditure.

Table 3

### Price indices used to deflate the different expenditure series

Expenditure series	Price deflator
<b>1. Productive Infrastructure</b>	
1.1. Transport	productive infrastructures, FBBVA (2009)
1.2. Water	productive infrastructures, FBBVA (2009)
1.3. Urban structures	productive infrastructures, FBBVA (2009)
<b>2. Other direct pub. investment</b>	
2.1. Environmental infrastructures	productive infrastructures, FBBVA (2009)
2.2. Information Society	ITC investment goods, FBBVA (2009)
2.3. Other investment	other non-residential construction (excluding productive infrastructure), FBBVA (2009)
<b>3. Aid to private enterprises</b>	
3.1. Subsidies to private investment	non-residential investment excluding productive infrastructure, FBBVA (2009)
3.2. Current subsidies and services	GDP, CNE (INE, 2010)
<b>4. Human resources</b>	
4.1. Training of researchers	GDP, CNE (INE, 2010)
4.2. Occupational training	GDP, CNE (INE, 2010)
4.3. Formal schooling	GDP, CNE (INE, 2010)
<b>5. Research and development</b>	
<b>GDP, CNE (INE, 2010)</b>	
<b>6. Employment creation</b>	
6.1. Aid to disadvantaged groups	GDP, CNE (INE, 2010)
6.2. General programs	GDP, CNE (INE, 2010)
<b>7. Other</b>	
7.1. Fight against discrimination	GDP, CNE (INE, 2010)
7.2. Technical assistance	GDP, CNE (INE, 2010)

Source: xxxxxx

Due to the lack of specific price indices, most non-investment expenditure items are deflated using the Spanish GDP deflator, taken from the National Accounts (CNE) published by the National Statistical Institute (INE, 2010). Price deflators for investment items are taken primarily from FBBVA (2009). This source provides regional and national investment series for Spain broken down by different types of investment goods and measured both in current euros and in constant euros of 2000. The price indices used to deflate these series are constructed using National Accounts data and are common to all regions for each type of capital good. In each case, we have selected the price index for the type of capital good or broader investment aggregate that most closely approximates the expenditure categories used in this paper. For instance, direct public investment on things other than productive and environmental infrastructures and Information Society (expenditure category 2.3, comprised mostly by various types of structures) is deflated using the deflator for (national) non-residential construction (excluding productive infrastructures), while subsidies to private investment are adjusted using the deflator for (national) non-residential fixed capital formation excluding productive infrastructures.

The price series provided by FBBVA (2009) end in 2007. To extend these series to 2008, we have approximated the growth rate of the relevant price index between 2007 and 2008 as follows. In the case of ITC goods, we have taken the observed growth rate of prices between 2006 and 2007 in the FBBVA ITC series. In all other cases, we have used the growth rate between 2007 and 2008 of the closest investment aggregate that can be constructed using National Accounts data. In particular, for infrastructure construction and for other construction, we have used the change in the deflator for non-residential construction reported by INE (2010) and for other investment the change in the deflator for non-residential investment.

## 5. Stock measures of EU-assisted capital

Investment-related expenditure series, valued at constant prices, are accumulated using a perpetual inventory method with geometric depreciation to construct measures of the stock of EU-assisted capital that is used in production in each year. Table 4 lists the depreciation rates that have been used for each type of expenditure. They are taken mostly from Timmer et al (2003 and 2007) and are similar to the BEA rates given in Fraumeni (1997).

Table 4

### Assumed depreciation rates

<b>1. Productive Infrastructure</b>	
1.1. Transport	2.80%
1.2. Water	2.80%
1.3. Urban structures	2.80%
<b>2. Other direct pub. investment</b>	
2.1. Environmental infrastructures	2.80%
2.2. Information Society	31.5%
2.3. Other investment	2.80%
<b>3. Aid to private enterprises</b>	
3.1. Subsidies to private investment	7.09%

Source: xxxxxxxx

The depreciation rate for subsidies to private investment is a weighted average of the depreciation rates of the different assets included in non-residential private investment weighted by their shares in the corresponding total stock and are recovered from the relevant investment and capital stock series for Spain as a whole. The rates shown in Table 4 are obtained by averaging the annual depreciation rates corresponding to the last 5 years of the series.

The perpetual inventory method has been applied in a slightly different way to different types of expenditure. In the case of infrastructures and other construction expenditure (categories 1.1-1.3, 2.1 and 2.3), the capital stock at the end of period  $t$ ,  $KINF_t$ , has been calculated as

$$(1) KINF_t = (1-\delta) KINF_{t-1} + IINF_t$$

where  $\delta$  is the depreciation rate and  $IINF_t$  the flow of infrastructure investment during period  $t$ . Hence, we are assuming that investment in long-lived structures becomes operative and begins to depreciate only at the end of the period during which it is executed. In coherence with this assumption, the relevant stock variable (what we will call the *usable stock* of capital) will be the beginning of period stock:

$$(2) KUNIF_t = KINF_{t-1}$$

In the rest of cases (Information Society investment and subsidies to private investment), by contrast, we have assumed that investment becomes operative at half-year and begins to depreciate at that time. Hence, the end of period stock of these assets will be given by

$$(3) KUTHER_t = (1-\delta) KUOTER_{t-1} + (1 - 0.5 + \delta) IOTHER_t$$

and the corresponding usable stocks by

$$(4) KUTHER_t = KUOTER_{t-1} + 0.5 * IOTHER_t$$

## 6. Data file

The data constructed in this paper are summarized in the attached Excel file (CF+SF\_00\_06.xls). The file contains total assisted expenditure and EU grants corresponding to the sum of the Structural and Cohesion Funds, disaggregated by year, region and function using the classification given in Tables 1 and 2. It also contains stocks of assisted usable capital for certain investment aggregates. Expenditure and grant data are measured in thousands of current euros while stock variables are given in thousands of constant euros of 2000. All variables correspond to the 2000-06 programming period (executed between 2000 and 2008). There is a sheet for each region, counting the autonomous cities of Ceuta and Melilla as a single territory.

The file includes two additional sheets. One of them contains price deflators (equal for all regions) that can be used to obtain expenditure data at constant prices of 2000. The other sheet contains the depreciation rates that have been used to construct the stocks of EU-assisted capital.

# Appendix 1

## Regional allocation of some components of railroad investment

Table A.1 gives the road distances we have used to approximate the breakdown of track length by region. They are taken from the web site of the Michelin guide. The percentage breakdown of track length by region is derived from these data.

Table A.1

### Road distances between Madrid and Barcelona

Track segment		Region
Madrid-Guadalajara	58	Madrid
Guadalajara-Alcolea del Pinar	79	Castilla la Mancha
Alcolea del Pinar-Zaragoza	181	Aragón
Zaragoza-Fraga	122	Aragón
Fraga-Lérida	35	Cataluña
Lérida-Tarragona	91	Cataluña
Tarragona-Barcelona	92	Cataluña

Source: <http://www.viamichelin.es/viamichelin/esp/tpl/hme/MaHomePage.htm?redirect=true>

## Appendix 2

### Correspondence between intervention measures and the expenditure types given in Table 1

The Spanish government classifies interventions financed by the Structural Funds into axes and measures. This section lists the measures that have been assigned to each of the expenditure categories and subcategories listed in Table 1 of the text. The identification code for each measure has been constructed as 100\*Axis number + measure code according to the Ministry's classification scheme. We have retained the original names (in Spanish) of the different measures. An asterisk is used to identify those measures about whose classification we have some doubts.

#### 1.1. Classification scheme for Objective 1 regions

##### 1. Productive infrastructures

###### 1.1. Transport infrastructures

605 Aeropuertos (FEDER)

601 Carreteras y autovías (FEDER)

602 Autopistas (FEDER)

607 Acciones de seguridad y mantenimiento de la calidad de las infraestructuras de transporte (FEDER)

603 Ferrocarriles (FEDER)

656 Sistemas de transportes multimodales y centros de transporte (FEDER)

606 Sistemas de transportes multimodales y centros de transporte (FEDER)

604 Puertos (FEDER)

502 Mejora de los sistemas de transportes urbanos (FEDER)

###### 1.2. Water works

301 Abastecimiento de agua a la población y a las actividades económicas (FEDER).

302 Mejora de la eficacia de las infraestructuras existentes y de la utilización del agua (FEDER).

303 Saneamiento y depuración de aguas residuales (FEDER)

701 Gestión de recursos hídricos agrarios

711 Gestión de recursos hídricos agrarios: Actuaciones de SEIASAS

###### 1.3. Urban infrastructures

501 Rehabilitación y equipamiento de zonas urbanas (FEDER)

503 Infraestructura y equipamientos colectivos en municipios menores de 20.000 habitantes (FEDER)

#### 2. Other direct public investment

##### 2.1. Environmental infrastructure

304 Gestión integral de los residuos urbanos e industriales tratados (FEDER).

305 Actuaciones medioambientales en costas (FEDER).

306 Protección y regeneración del entorno natural (FEDER).

307 Vigilancia, control y reducción de la contaminación ambiental (FEDER).

308 Regeneración de suelos y de espacios (FEDER).

310 Acciones medioambientales derivadas de la conservación del paisaje y la economía agraria (FEOGA-O).

309 Silvicultura (FEOGA-O).

## **2.2. Information Society**

272 Acceso a infraestructuras y servicios digitales

275 Aplicaciones y sistemas dinamizadores de la Sociedad de la Información (CIUDADES DIGITALES)

207 Sociedad de la información (FEDER)

## **2.3. Other investment**

### **Agriculture**

702 Desarrollo y mejora de las infraestructuras de apoyo (FEOGA-O)

706 Recuperación de la capacidad de producción agraria dañada por desastres naturales y establecimiento de medios de prevención (FEOGA-O)

### **Educational centers**

401 Construcción, reforma y equipamiento de centros educativos y de formación (FEDER)

### **Social and medical facilities**

504 Infraestructura y equipamientos de apoyo a la integración social en el medio urbano (FEDER)

509 Infraestructuras y equipamientos sociales y sanitarios (FEDER)

### **Touristic and cultural infrastructures**

507 Infraestructuras turísticas y culturales (FEDER)

508 Conservación y rehabilitación del patrimonio histórico-artístico y cultural (FEDER)

### **Sports installations**

510 Instalaciones deportivas y de ocio (FEDER)

### **Industrial parks and similar installations**

103 Provisión y adecuación de espacios productivos y de servicios a las empresas (FEDER)

153 Provisión y adecuación de espacios productivos y de servicios a las empresas (FEDER)

## **3. Aid to enterprises**

### **3.1. Subsidies to private investment**

101 Apoyo a empresas industriales, comerciales y de servicios (FEDER)

104 Apoyo a empresas relacionadas con la economía social (FEDER)

105 Mejora de las condiciones de financiación de las empresas (FEDER)

151 Apoyo a empresas industriales, comerciales y de servicios (FEDER)

155 Mejora de las condiciones de financiación de las empresas (FEDER)

107 Promoción del capital organizativo de las empresas (FEDER)

102 Mejora de la transformación y comercialización de los productos agrícolas (FEOGA-O)

109 Apoyo a la transformación, promoción y comercialización de los productos pesqueros (incluida acuicultura) (IFOP)

109 Apoyo a la transformación y comercialización de los productos pesqueros (incluida acuicultura) (IFOP)

271 Potenciación del acceso a los nuevos servicios digitales: Acceso a Internet (TRAC)

274 Apoyo a la introducción de la Sociedad de la Información y del comercio electrónico en las PYMES (ARTEPYME II)

- 610 Ayudas a la eficiencia y ahorro energético de las empresas (FEDER)
- 608 Redes de distribución de energía (FEDER)
- 609 Energías renovables, eficacia y ahorro energético excepto las actuaciones contempladas en la medida 6.10. (FEDER)
- 759 Desarrollo endógeno de zonas rurales ligado a actividades no agrarias (FEDER)\*
- 709 Desarrollo endógeno de zonas rurales ligado a actividades no agrarias (FEDER)\*
- 703 Inversiones en explotaciones agrarias (FEOGA-O)
- 704 Instalación de jóvenes agricultores (FEOGA-O)
- 705 Desarrollo endógeno de zonas rurales, en el ámbito agrario: diversificación agraria y su reconversión (FEOGA-O)\*
- 755 Desarrollo endógeno de zonas rurales, en el ámbito agrario: diversificación agraria y su reconversión (FEOGA-O)\*
- 809 Estructuras pesqueras y acuicultura.\*

### **3.2. Current subsidies and services to firms and entrepreneurs**

- 110 Desarrollo, promoción y servicios a las empresas turísticas (FEDER)
- 156 Apoyo a la internacionalización y promoción exterior (FEDER)
- 157 Promoción del capital organizativo de las empresas (FEDER)
- 106 Apoyo a la internacionalización y promoción exterior (FEDER)
- 505 Fomento y apoyo a las iniciativas de desarrollo local (FEDER) \*
- 506 Apoyo a las iniciativas locales que contribuyan a la generación de empleo (FSE)
- 708 Prestación de servicios a las explotaciones agrarias, comercialización de productos agrarios de calidad e ingeniería fin. (FEOGA-O)

## **4. Human resources**

### **4.1. Training of researchers and support personnel**

- 201 Apoyar la inversión en capital humano en el ámbito de la investigación, la ciencia y la tecnología y la transferencia (FSE)

### **4.2. Occupational training programs for employed and unemployed workers**

- 402 Asegurar la actualización del nivel de competencias de los trabajadores (FSE)
- 707 Formación agraria en territorios, colectivos y contenidos que no queden cubiertos en los programas del FSE (FEOGA-O)

### **4.3. Formal education, including vocational training programs**

- 276 Aplicaciones para la Educación
- 412 Fomentar el acceso de todos/as a las enseñanzas de Formación Profesional y su extensión, en sus dos componentes: la Formación Profesional Base y la Formación Profesional Específica (FSE)
- 413 Desarrollar nuevas modalidades de oferta en Formación Profesional Inicial/Reglada (FSE)
- 414 Promover mecanismos de integración y mejora de la eficiencia de los subsistemas de Formación Profesional (FSE)
- 415 Proporcionar alternativas educativas enfocadas al mercado de trabajo a las personas que no superen la enseñanza obligatoria (FSE)

## **5. Research and development**

- 273 Fomento de la Investigación Técnica (PROFIT)
- 202 Proyectos de investigación, innovación y desarrollo tecnológico (FEDER)
- 203 Equipamiento científico-tecnológico (FEDER)

- 204 Transferencia tecnológica (FEDER)
- 205 Centros públicos de investigación y centros tecnológicos (FEDER)
- 252 Proyectos de investigación, innovación y desarrollo tecnológico (FEDER).
- 253 Equipamiento científico-tecnológico (FEDER).
- 254 Transferencia tecnológica (FEDER).
- 255 Centros públicos de investigación y centros tecnológicos (FEDER).
- 206 Grandes instalaciones (FEDER)

## **6. Employment creation and employability**

### **6.1. Aid to disadvantaged groups**

- 410 Apoyar la inserción de las personas discapacitadas en el mercado laboral (FSE)
- 411 Proponer oportunidades de integración a los colectivos en riesgo de exclusión del mercado de trabajo (FSE)
- 416 Mejorar la empleabilidad de las mujeres (FSE)
- 419 Apoyar la inserción de las personas discapacitadas en el mercado laboral
- 460 Apoyar la inserción de las personas discapacitadas en el mercado laboral (FSE)
- 461 Proponer oportunidades de integración a los colectivos en riesgo de exclusión del mercado de trabajo (FSE)
- 407 Combatir el paro prolongado mediante acciones de reinserción laboral de los desempleados de larga duración (FSE)
- 408 Ofrecer vías de inserción profesional a los jóvenes (FSE)
- 409 Apoyar la reincorporación a la vida laboral activa de las personas ausentes del mercado de trabajo (FSE)

### **6.2. General programs**

- 108 Favorecer la generación de nueva actividad que permita la creación de empleo (FSE).
- 403 Sostener la consolidación del empleo existente (FSE)
- 404 Fomentar los procesos de modernización de las organizaciones públicas y privadas que favorezcan la creación y la estabilidad del empleo (FSE)
- 406 Ofrecer a los desempleados posibilidades de inserción en el mercado laboral (FSE)

## **7. Other**

### **7.1. Combatting discrimination**

- 417 Fomentar la actividad empresarial de las mujeres (FSE)
- 418 Combatir la segregación horizontal y vertical así como la discriminación salarial y favorecer la conciliación de la vida familiar y laboral (FSE)

### **7.2. Technical assistance**

- 951 Asistencia técnica FEDER
- 901 Asistencia técnica FEDER
- 903 Asistencia técnica FEOGA-O
- 902 Asistencia técnica FSE
- 904 Asistencia técnica IFOP



## 1.2. Classification scheme for Objective 2 regions

### 1. Productive infrastructures

#### 1.1. Transport infrastructures

- 401 Carreteras y autovías (FEDER)
- 402 Ferrocarriles y metro (FEDER)
- 404 Sistemas de transportes multimodales y centros de transporte (FEDER)
- 403 Puertos (FEDER)
- 502 Mejora de los sistemas de transporte urbano (FEDER)

#### 1.2. Water works

- 201 Mejora de las infraestructuras existentes, abastecimiento de agua a la población y a las actividades económicas y saneamiento y depuración de aguas (FEDER)

#### 1.3. Urban infrastructures

- 501 Rehabilitación y equipamiento de zonas urbanas (FEDER)

### 2. Other direct public investment

#### 2.1. Environmental infrastructure

- 202 Gestión integral de los residuos urbanos y de los residuos industriales tratados (FEDER)
- 204 Protección y regeneración del entorno natural (FEDER)
- 205 Vigilancia y control de la contaminación ambiental (FEDER)
- 206 Recuperación de espacios degradados [cuando no sea posible la aplicación del principio de quien contamina, paga] (FEDER)

#### 2.2. Information Society

- 306 Sociedad de la información (FEDER)

#### 2.3. Other investment

##### Educational centers

- 509 Centros de formación profesional y agencias de desarrollo local (FEDER)

##### Social and medical facilities

- 503 Infraestructura y equipamientos de apoyo a la integración social en el medio urbano (FEDER)
- 507 Infraestructuras y equipamientos sociales (FEDER)

##### Touristic and cultural infrastructures

- 505 Infraestructuras turísticas y culturales (FEDER)
- 506 Conservación y rehabilitación del patrimonio histórico-artístico y cultural (FEDER)

##### Sports installations

- 508 Instalaciones deportivas y de ocio (FEDER)

##### Industrial parks and similar installations

- 102 Provisión, recuperación y adecuación de espacios productivos y de servicios a las empresas (FEDER)

### 3. Aid to enterprises

#### 3.1. Subsidies to private investment

- 101 Apoyo a las empresas industriales, artesanales, comerciales y de servicios (FEDER)
- 104 Mejora de las condiciones de financiación de las empresas (FEDER)
- 405 Redes de distribución de energía (FEDER)

406 Energías renovables, eficiencia y ahorro energético, excepto las actuaciones contempladas en la medida 4.7. (FEDER)

407 Ayudas a la eficiencia y ahorro energético (FEDER)

### **3.2. Current subsidies and services to firms and entrepreneurs**

105 Apoyo a la internacionalización y promoción exterior (FEDER)

106 Promoción del capital organizativo de las empresas (FEDER)

504 Fomento y apoyo a las iniciativas de desarrollo local (FEDER)

510 Apoyo a las iniciativas locales que contribuyan a la generación de empleo (FSE)

107 Refuerzo de la capacidad empresarial (FSE) \*

## **4. Human resources**

### **4.1. Training of researchers and support personnel**

301 Refuerzo del potencial humano en investigación, ciencia y tecnología (FSE)

### **4.2. Occupational training programs for employed and unemployed workers**

108 Refuerzo de la estabilidad y la adaptabilidad en el empleo (FSE)

## **5. Research and development**

302 Proyectos de investigación, innovación y desarrollo tecnológico (FEDER)

303 Equipamiento científico-tecnológico (FEDER)

304 Transferencia y difusión tecnológica (FEDER)

305 Centros públicos de investigación y centros tecnológicos (FEDER)

## **7. Other**

### **7.2. Technical assistance**

601 Asistencia técnica (FEDER)

601 Asistencia técnica (FEDER)

602 Asistencia técnica (FSE)

## References

Fraumeni, B. (1997). "The Measurement of Depreciation in the U.S. National Income and Product Accounts." Survey of Current Business, July, pp. 7-23.

Instituto Nacional de Estadística (INE, 2010). Contabilidad Nacional de España, base 2000. En base de datos electrónica INEbase: Economía. Cuentas Económicas. Contabilidad Nacional de España. Madrid.

<http://www.ine.es/jaxi/menu.do?type=pcaxis&path=%2Ft35%2Fp008&file=inebase&L=0>

Ministerio de Economía y Hacienda and Junta de Andalucía (2002). "Complemento de programa (version 0.1). Programa operativo integrado de Andalucía." Madrid.

<http://www.dgfc.sggp.meh.es/indexPrevio.jsp?Pag=2>

Mas, M., F. Pérez, E. Uriel, V. Cucarella, J. C. Robledo and L. Serrano (2007). El stock y los servicios del capital en España y su distribución territorial (1964-2005). Nueva metodología. Fundación BBVA, Bilbao. Fundación BBVA (2009). El stock y los servicios del capital en España y su distribución territorial.

[http://www.fbbva.es/TLFU/microsites/stock08/fbbva\\_stock08\\_index.html](http://www.fbbva.es/TLFU/microsites/stock08/fbbva_stock08_index.html)

Timmer, M., G. Ypma and B. van Ark (2003). "IT in the European Union: Driving Productivity Divergence?" Research Memorandum GD-67, Groningen Growth and Development Centre.

Timmer, M., T. van Moergastel, E. Stuijvenwold, G. Ypma, M. O'Mahony and M. Kangasniemi (2007). "EU KLEMS growth and productivity accounts. Version 1.0. Part I: Methodology." Mimeo, Groningen Growth and Development Centre.

Bureau of Economic Analysis (BEA, 2009). National Economic Accounts, Selected NIPA Tables. Table 5.3.4. Price Indexes for Private Fixed Investment by Type

<http://www.bea.gov/national/nipaweb/SelectTable.asp>

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