
Macroeconomic effects of Catalan fiscal deficit with the Spanish state (2002–2010)

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According to Eurostat Regional data for the period 1996–1999 Catalan convergence with the EU's most dynamic regions has been blocked. In this paper, with the aim to analyse how Catalonia can converge with the EU in the forthcoming years, some simulations of Catalan GDP growth in the 2010 horizon have been estimated, considering different reduction scenarios of Catalan fiscal deficit with the Spanish state (between 7–9% of Catalan yearly GDP). Looking at the results obtained, the current Catalan stagnation will persist for the next few years if the above-mentioned fiscal deficit does not change. Thus, Catalonia will only converge with most dynamic EU regions if there is a significant reduction of Catalan fiscal deficit with the Spanish state.

I. Introduction

In recent years Catalonia has ceased to be the most dynamic Autonomous Community (AC) in the Spanish state. Catalan economy, which was traditionally considered the 'factory of Spain' in the 19th and 20th centuries, shows that at the beginning of the new century tourism and construction has replaced industry and services in Catalan productive structure. Thus, in 2000 Navarra was the first Spanish AC considering the percentage of employment engaged in the highest value-added manufacturing sectors. At the same time Madrid was the first Spanish AC, when considering the percentage of employment occupied in intensive knowledge services (Eurostat, 2002). This fact can be attributed mainly, among other reasons, to globalization impact on the Catalan economy (Vives, 2002) and to the actual political structure of the Spanish state: the limited autonomy of Catalan

government can not hold up the continual fiscal deficit with the Spanish state and implies the non-existence of a real regulating Catalan power over economic activity.

Considering the first reason mentioned above, it is important to notice that the EU enlargement process implies that Catalan industry is beginning to lose some of its most labour-intensive manufacturing sectors. It has been estimated that half of Catalan manufacturing sectors will be seriously affected by the removal of multinational investment and production to EU candidate countries and other emerging countries (Gual, 2002). On the other hand, the non-existence of a real regulating Catalan autonomous power implies that regulated activity sectors move from Catalonia to Madrid. For example, to be near the real and effective policy-maker, the Catalan pharmaceutical industry is relocating to Madrid, where financial services and multinational

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central offices have been concentrating in recent years.

However, EU enlargement is not necessarily bad for the Catalan economy. For example, some multinational investment which since 1986 have been choosing Catalonia, will relocate to the emerging countries; in this instance Catalan integration in the EU has been extremely positive for Catalan industry. Thus, as a supplier of large industrial multinationals, there have appeared in Catalonia thousands of small and medium size Catalan manufacturing enterprises. And even some of these, having increased their size, have become Catalan industrial multinationals which invest abroad (Fontrodona and Hernández, 2001). In this way, 1999 was the first year in which Catalan industrial investment abroad was larger than foreign industrial investment in Catalonia (Molina, 2002). Thus, the European economic and monetary integration process would have specially benefited Catalan economy: from 1993 the convergence in interest rate (which remained at 15% during the period 1988–1993) and the peseta's depreciation (which was artificially appreciated in that period) would principally have benefited industrial and exporter Spanish regions as Catalonia. This benign monetary policy executed in Spain since 1994 would have had a significant unequal territorial effect (Tremosa and Pons, 2001), which at the same time would have been the main reason for the spectacular growth of Catalan exports between 1994 and 1998¹ (Costa and Tremosa, 2003).

On the other hand, and in spite of Catalan autonomy, the centralism of the Spanish state negatively affects the Catalan economy. Fiscal policy is still concentrated in European States, and Catalonia is a 'richer region' of a 'poor country'. With a GDP per capita of 99% of EU GDP per capita average in 2000, similar regions in France are net receiver regions of EU funds and French State funds, while Catalonia is a net taxpayer in the EU and in the Spanish state. Thus, there are interterritorial redistribution policies of the Spanish state that affects specially Catalan economy, which has been continuously its main AC contributor. In this way, there is a significant academic consensus in Spain, considering that fiscal imbalance of Catalonia with the Spanish state has supposed a systematic outlay of wealth estimated between 7–9% of Catalan GDP in recent years (Castells *et al.*, 2000). Spanish public

investment in Catalonia has been, in the last 50 years, lower than the Spanish average (Castells, 2002).

In this paper, the aim is to analyse how Catalonia can converge with the most dynamic EU regions in future years. This has been done by estimating some simulations of Catalan GDP growth in the 2010 horizon, considering different scenarios of reduction of Catalan fiscal deficit with the Spanish state. The paper is organized as follows: Section II presents the evolution of Catalan economy in recent years, in the Spanish and European context, presenting the main estimations of Catalan fiscal deficit with the Spanish state. Section III describes the methodology that has been used, related to economic growth simulations. Section IV presents the main results obtained and Section V concludes.

II. Catalan Economy in Spain and in the EU

Catalonia in Spanish context

Even though from the beginning of the 20th century there exists academic research about Catalan fiscal deficit with the Spanish state, it is not until the 1970s that this deficit becomes important. Modernization and growing intervention of the Spanish state in the economy (in 1982 public expenditure/GDP was only 16%, in 1993 was about 48% and in 2001 it was 43%) has led to the Catalan fiscal deficit becoming really important, as is shown in Table 1. Thus, in spite of Spanish decentralization process, until 2001 the Central Government in Spain collected 90% of all Spanish taxes. At the same time public expenditure was relatively decentralized. Of the total Spanish public expenditure, in 1998 66% belonged to Central Government, 21% to regional governments, AC, and 13% to local governments (Ministerio de Economía y Hacienda, 1999). In this way, 2001 Spanish financial AC reform has increased the share in the main Spanish taxes to 20%, eliminating slow and inefficient transfers from Central Government to regional and local governments. But with this reform it can not be said that regional and local governments will dispose of a significantly higher volume of resources (they have only got financial autonomy).

Thus, in Catalonia in 1998 84% of total taxes were collected by the Spanish Central Government

¹Catalan industry is a clear example of the relationship between openness and productive specialization. Today in Catalan manufacturing plays a leading part in four sectors: chemical, automobile, machinery, and food which, in 2001, represented a 60% of the total industrial production (in 1990 it was 32%). In the same period, Catalan export/GDP ratio has grown from 17.5% to 43%.

Table 1. Catalan fiscal deficit with the Spanish state—fiscal deficit in current million euros

Year	% GDP	Deficit
1986	7.5	2722.6
1987	8.0	3269.5
1988	7.3	3359.6
1989	8.9	4687.9
1990	8.8	5180.7
1991	8.9	5745.7
1992	7.5	5198.8
1993	4.5	3185.4
1994	6.0	4627.8
1995	5.6	4693.9
1996	6.3	5607.4
1997	8.1	7723.0
1998	7.8	7969.4

Sources: 1986–1994, Coldeforns and Martínez (1999); 1995–1998, López and Martínez (2000).

Year	% GDP	Deficit
1995	0.9	700.6
1996	2.2	1871.2
1997	4.9	4390.0
1998	5.4	5194.0
1999	7.7	8032.9
2000	8.8	10 035.4
2001	8.9	10 746.4

Source: Alcaide and Alcaide (2002).

Note: Catalan GDP data is not exactly the same as provided by IDESCAT.

(30.240 millions €), 9% by the Catalan government (3.240 millions €) and 7% by local governments (2.520 millions €). Catalan tributary pressure (total taxes/GDP) in 1998 reached 38%, being the EU average in that year at 43%. On the other hand, in Catalonia public expenditure was executed by the Spanish Central Government (48%, 13.200 millions €), by the Catalan government (34%, 9.350 millions €) and by local governments (18%, 4.950 millions €). Catalan fiscal pressure (total public expenditure/GDP) in 1998 reached 28%, being the EU average in that year at 48% (Ros *et al.*, 2002). It can be concluded that Catalonia pays taxes as a European country but receives public expenditure as a South American country and it can also be said that Catalonia pays taxes as a social democratic country but receives public expenditure as a liberal country.

Table 1 presents the amount of Catalan fiscal deficit (as the difference between all taxes paid by Catalonia and all public expenditure and investment received in Catalonia) with the Spanish state

and the share that this deficit has represented every year.

As a result of this fiscal deficit with the Spanish state, Catalonia presents a trend in the Spanish context of a slow but persistent drop. If Spanish GDP per capita average is equal to 100, in 2000 Catalan GDP per capita was 121.9 (FUNCAS, 2001), compared to 122.8 in 1998 and 124.2 in 1985 (also it was 128.5 in 1975 and 160.7 in 1955). Thus, in 2001 Catalan GDP reached its historical minimum, when it represented only 18.6% of Spanish GDP. This percentage coincides with the emergence of Madrid economy in the Spanish context, with a value of 17.4% of Spanish GDP in 2001, when in 1995 it was only 16% (and Catalan GDP weight in Spanish GDP in 1995 was 19.5%).² In this sense, Catalan fiscal deficit with the Spanish state supposes a growing opportunity cost for the Catalan economy, more especially as it is not growing as well as it could (and as the most dynamic EU regions are growing). Thus, in 2000 Catalan GDP would have been 31.3% bigger than it was (152 867 millions € instead of 116 413 millions €) if all the amount of Catalan fiscal deficit with the Spanish state had been invested in public capital in Catalonia (Ros *et al.*, 2003).

However, this continued flow of fiscal deficit not only limits Catalan's possibility of growing, it also has a special importance on the personal income of the Catalans. In this sense, the analysis of the variables provided by the Spanish Foundation FUNCAS (2001) for Spanish AC shows which impacts on the successive flows of Catalan fiscal deficit with the Spanish state. Adjusted for purchasing power parity, Catalan personal income has dropped from second position in 1985 (value 117.5, if Spanish average is 100) to seventh position in 2000 (104.3). In this year Catalonia is surpassed by Navarra (121.8), Balearic Islands (121.5), Madrid (116.2), La Rioja (115.4), Aragon (113.2) and Castile-Leon (109.0).

Catalonia in the European context

In the European Union context the last available report of economic convergence at regional level is provided by Eurostat and is referred to year 2000 (Eurostat, 2003). However, Eurostat awards to Spanish GDP per capita the value 82, if EU GDP per capita average is 100. It is important to notice that Spanish GDP per capita presents a poor convergence with the EU GDP per capita average,

²Data available at www.ins.es, The Spanish Statistics Institute.

Table 2. Regional GDP per capita in the EU and candidate countries in PPS (Purchasing Power Standard)–EU-15 average = 100

	1996	2000
Madrid	101	110
Navarra	98	105
Basque country	92	101
Catalonia	99	99

Source: Eurostat (1999, 2003).

considering that in 1991 Spanish GDP per capita was 78% of EU average. It is considered that the cause of this weak result is the redistributive public policy of the Spanish state (Sala-i-Martin, 1997), which has systematically decided to invest according to solidarity criteria (investing principally in the AC in which the GDP per capita is lower) instead of investing according to economic efficiency criteria (investing in the AC in which the ratio public capital/private capital is lower). This second case is the situation of Catalonia, in which every monetary unit invested could generate a greater multiplier effect on GDP (the greatest in Spain).

Table 2 presents the evolution of GDP per capita indexes of the most dynamic Spanish ACs (in purchasing power standard) between 1996 and 2000, in which is confirmed the convergent evolution of Madrid, Basque Country and Navarra, while Catalonia is blocked. It is important to notice that the Basque Country and Navarra enjoy a self-sufficient financial agreement with the Spanish state (*concerto económico*), by which all taxes are collected by both autonomous governments; in fact, these two ACs are financially independent, and they only transfer to Central government the amounts equivalent to the services that it provides. In the case of Madrid, this AC represents only 1% of the Spanish stock, but in 1998 already concentrates 10% of Spanish public capital stock (FBBVA, 2002). All Spanish transport infrastructure (e.g. the high velocity trains) are radially designed to operate from Madrid and only Madrid airport is the unique Spanish intercontinental airport (when Milan, Frankfurt, Hamburg or Munich offers several intercontinental flights).

Comparing Catalan fiscal imbalance with the Spanish state in the European context, it is important to notice that only the Italian regions of Lombardy and Emilia Romagna present similar percentages of regional GDP in contributing to its Central Government (Castells, 1998). However, in 2000 these two Italian regions had a larger GDP per capita than Catalonia, namely 136 and 130

respectively (Eurostat, 2003). Thus, Catalan fiscal deficit of 1997 (8.1% of 1997 Catalan GDP) was considerably larger than other contributor regions e.g. Bayern (3.5%), Baden-Württemberg (4.4%), Île-de-France (4.4%), South East (6.7%) and Stockholm (7.6%). International comparison emphasizes and accentuates the Catalan fiscal deficit with the Spanish state.

A Bank of Spain working paper (Desmet and Ortuño, 2001) concludes that less developed Italian regions do not have incentives to improve and grow, while public transfers from the Italian Government still continue. The authors call this behaviour 'rational underdevelopment' and affirm that while the subventions arrive less developed Italian regions have no incentives to converge.

III. Methodology and Statistic Information

Previous considerations

In the economics literature a number of techniques have been described to quantify the impact of public expenditure programmes. Thus, Nordhaus (2002) quantifies the economic cost for the USA of the Iraq war. Abadie and Gardeazabal (2001) study the terrorism impact on Basque Country economy and Sosvilla and Herce (1998 and 1999) study the EU cohesion funds on the Spanish economy. In this research an autoregressive vector model has been used because of its flexibility, there is enough information available to build this kind of model, and because this methodology has been used to carry out similar research in other countries. The work of Roca and Pereira (1998) for the Spanish economy, Blanchard and Perotti (1999) for the USA and, finally, Mitnik and Neumann (2001) for Canada, France, the UK, Japan, Netherlands and Germany may be cited.

At the end of the 1980s there appeared studies that analysed the significance of public infrastructures on the productivity of countries and regions. The majority of these studies have calculated the elasticity of product to public capital, using a production function (normally a Cobb–Douglas). In spite of this, the studies that obtained this above-mentioned elasticity have received some methodological criticism. One of the main limitations is that feedback effects can be observed between the variables considered, which can be important. It means that a simultaneous relationship can exist between production growth and public capital growth.

To overcome this limitation it is proposed to use multiequational time series techniques

(VAR models), which incorporate GDP, employment, private capital and public capital. These models allow relationships between these variables over a period of time to be observed by impulse-response functions. Dynamic feedback effects are essential in providing the relationship between public capital and the rest of the variables included in the model, more especially because it allows the way public capital affects GDP, employment and private capital to be considered. It is also possible to see how these variables affect public capital growth, in a process which retro feeds it.

Statistical information

In the present study the following variables have been used: GDP at constant prices, employment, private capital and public capital. The statistical information refers to Catalan economy for the period 1965–1999. Information about GDP and employment come from *Renta Nacional de España y su distribución provincial* published by *Fundación BBVA*. Moreover, information about private and public capital come from *El stock de capital en España y sus comunidades autónomas*, also published by *Fundación BBVA*. In this last case, values of private and public capital of Catalan economy have been extrapolated for 1999 starting on the values of these variables for Spain.

This is a time series but is not particularly long; also information about production and employment are provided in biannual format. Even so, applied studies mentioned earlier with reference to the Spanish economy also present this limitation and use a similar time series. Finally, it is important to notice that the VAR model being estimated was used to calculate some economic growth simulations of Catalan economy, having used IDESCAT (Catalan Statistic Institute) time series of Catalan GDP at constant prices and employment.³

VAR model specification

This econometric methodology demands stationary time series. To study stationarity of the variables considered unit root tests have been used as is common in the literature. The results obtained confirm that the original time series, expressed in logarithms, are stationary in first differences. Thus, econometric analysis has been done considering first differences of the four variables mentioned above.

Moreover, using the Johansen test it is not possible to reject that the four time series used present a cointegration relation. Even so, it is important to consider with care the results of both test (stationarity and cointegration), because the sample is of limited size.

Thus, the VAR model used for the estimation is expressed as follows⁴:

$$\mathbf{X}_t = \mu + A_1 \cdot X_{t-1} + A_2 \cdot X_{t-2} + \dots + A_p \cdot X_{t-p} + u_t$$

in which vector \mathbf{X}_t includes the four variables considered in this analysis, namely gross domestic product (GDP), employment (OCU), private capital (KPRI) and public capital (KPUB) all expressed as logarithms and in first differences. Moreover, A_i ($i=1, 2, \dots, p$) is the parameter matrix that it is desirable to estimate, μ is a deterministic components vector, p is the model VAR order and, finally, u_t is the residual vector. Thus, considering the four variables in logarithms and in first differences, use is made of the growth rate of the time series mentioned above.

In the VAR model specification it is necessary to select the deterministic components (constant and trend), and also the order of the model. The use of Akaike's AIC and Schwartz's SBIC criteria suggest that the VAR model order is $p=1$ and that, at the same time, it is necessary to incorporate in the model a constant and a trend, as its deterministic components.

The analysis of the effects of public capital growth as a result of a reduction of Catalan fiscal deficit with the Spanish state, is based on the impulse-response functions associated with the VAR model. These functions pick up the effect of variation of one variable (in the present case, public capital) on all the other variables included in the model. Moreover, these functions also allow the long term effect of a change in public capital in a predetermined time to be obtained. Definitively, through impulse-response functions, it is determined how Catalan GDP and employment will vary if infrastructure investment increases and, simultaneously, how this variation will be distributed in the following years.

Table 3 presents impulse-response functions for the four variables considered and for the first five years. It is important to notice that because of the VAR model definition, when a change of a standard deviation in public capital in the year $t=1$ is imposed, the effects on the rest of the variables

³ This Catalan economy statistical information comes from IDESCAT website: <http://www.idescat.es>

⁴ The philosophy and statistical foundations of these models can be consulted in Greene (1998).

Table 3. Impulse-response functions

Year	GDP	EMP	KPRI	KPUB
1	–	–	–	0.0283
2	0.0091	0.0051	0.0106	0.0177
3	0.0034	0.0022	0.0110	0.0121
4	0.0017	0.0007	0.0079	0.0072
5	0.0005	0.0002	0.0051	0.0040

Note: Changes when it produced a variation of standard deviation in public capital.

Table 4. Temporary distribution of a GDP and employment increase (in %)

Year	GDP	EMP
1	–	–
2	61.7	62.7
3	23.6	27.3
4	11.7	8.1
5	3.0	1.9
Total	100.0	100.0

considered (GDP, employment and private capital) begin in $t=2$, and these effects extend until $t=5$.⁵

The results in Table 3 allow the determination of which measure will change GDP, employment and private capital (although the present analysis will focus only on the two first variables) when it produces an increase of 1.0% in public capital in the Catalan economy. Thus, an increase of 1.0% in public capital produces a cumulated variation in the following five years of 0.52% in the case of GDP and of 0.29% in the case of employment. In Table 4 is shown the distribution, in five years, of this increase in percentage of GDP and employment. In this way it is shown that the effects over GDP and employment of a 1.0% in public capital increase is concentrated mainly in the second year (61.7% of total effect) and in the third (23.6% of total effect).

Moreover, there is an alternative way to interpret these results. The effect on Catalan GDP of a euro increase in public capital investment can be considered. Thus, an increase of one euro in public capital implicates, at the end of the following five years, a GDP increase of 1.43 €. The distribution of this result shows that in the second year the GDP increase is 0.84 €, in the third year the GDP increase is 0.34 €, in the fourth year the GDP increase is 0.17 € and, finally, in the fifth year the GDP increase is 0.04 €. However, it is possible to use the same

Table 5. Catalan economy scenarios, 2002–2010 – annual growth rate (in %)

	Intermediate	Pessimistic	Optimistic
GDP	3.2	1.5	4.2
GDP deflator	3.0	2.0	3.6
Employment	1.5	0.5	2.4
Nominal productivity	4.7	3.0	5.4
Real productivity	1.7	1.0	1.8

Table 6. Catalan nominal GDP

	Nominal GDP (millions of euros)	Nominal GDP per capita (euros)
Year 2001	125 444	19 713
Year 2010		
Intermediate scenario	216 628	32 728
Pessimistic scenario	170 867	25 814
Optimistic scenario	248 949	37 611

Notes: To obtain Catalan GDP/capita it has been supposed that the Catalan population 2010 will be 6619 035 people. This figure has been obtained from the trend estimated for IDESCAT and its population projections can be consulted on its web site www.idescat.es. The 2001 information was obtained from the Spanish Statistics Institute (www.ine.es) which gives a figure of 6 343 110 people.

approach for interpreting these results for employment: to create one job per year a public investment of 38.000 € is sufficient.

IV. Results

Three scenarios of future Catalan economy evolution have been defined, based on projections of IDESCAT (Costa and Muñoz, 2001) and Spanish *Ministerio de Economía*. In Table 5 is presented the annual growth for every year of the period 2002–2010, for the different variables considered and for three defined scenarios.

For each of these three scenarios the growth rate in nominal GDP, real GDP, GDP deflator, and productivity has been quantified for this period of nine years for the Catalan economy. In Table 6 is shown, for every scenario, what could be the Catalan nominal GDP and nominal GDP per capita in 2010. At the same time, these amounts are compared with those of 2001.⁶

⁵ $t=5$ has been chosen as the last year of the impact since in the following years the original effects of this original shock are practically nil.

⁶ For further information and to comment on these results, please contact the authors.

Table 7. Nominal GDP year 2010 and fiscal deficit reduction suppositions

	Without reduction of fiscal deficit	Yearly reduction 1%/GDP	Yearly reduction 3%/GDP	Yearly reduction 5%/GDP
Intermediate scenario	216 628	237 925	286 184	342 889
Pessimistic scenario	170 867	189 546	232 116	282 478
Optimistic scenario	248 949	271 993	324 038	384 947

Note: Amounts are expressed in millions of euros. In year 2001 Catalan nominal GDP was estimated in 125 044 millions euros.

Table 8. Employment year 2010 and fiscal deficit reduction suppositions

	Without reduction of fiscal deficit	Yearly reduction 1%/GDP	Yearly reduction 3%/GDP	Yearly reduction 5%/GDP
Intermediate scenario	2827.4	2999.4	3372.6	3788.1
Pessimistic scenario	2586.3	2748.4	3101.4	3496.1
Optimistic scenario	3061.2	3239.3	3625.1	4053.4

Note: Amounts are expressed in thousands. In year 2001 Catalan employment was of 2472.8 thousands.

In the case of the optimistic scenario, the Catalan economy would probably reach a weak approach to the most dynamic developed European regions (in terms of GDP per capita, expressed in purchasing power standard). A backward movement is indicated in the case of the pessimistic scenario and a maintenance of the situation, as has been observed in the period 1996–2000, in the case of the intermediate scenario (according to EUROSTAT, in 2000 Catalan GDP per capita in PPS was a 99% of EU-15 GDP per capita average). In spite of this, if there was a significant reduction of Catalan fiscal deficit with the Spanish state in the period 2002–2010, the estimated VAR models show that at the end of 2010, the Catalan economy situation would be more favourable. This favourable position is observed in terms of GDP (Table 7) and also in terms of employment (Table 8) and productivity.

Thus, for instance, in the case of intermediate scenario, if in every year of the period 2002–2010 Catalan fiscal deficit with the Spanish state was reduced by 1% of Catalan GDP, in 2010 Catalan GDP per capita would be larger at 9.8%. If this reduction was equivalent to 3% of Catalan GDP, in 2010 Catalan GDP per capita would be larger by

32.1%. And finally, if this reduction was equivalent to 5% of Catalan GDP, in 2010 Catalan GDP per capita would be larger by 58.3%.

Definitively, considering that without any reduction of Catalan fiscal deficit with the Spanish state and also that the Catalan economy grows at the intermediate scenario (and if this economic growth does not defer of the EU-15 GDP growth average), Catalonia will not converge with most dynamic EU regions in the next ten years. Catalonia can only reach an appreciable convergence if there is a significant reduction of Catalan fiscal deficit with the Spanish state in the period 2002–2010, and if recovered flows are invested in public capital in Catalonia.

Moreover, maintaining the suppositions mentioned above, if Catalan fiscal deficit reduction were equivalent to 1% of Catalan GDP (which for recent years this was estimated to be between 7–9% of Catalan GDP), in 2010 Catalonia would be between 108–112, based on an EU-15 GDP per capita average=100. If Catalan fiscal deficit reduction were equivalent to 3% of Catalan GDP, in 2010 Catalan GDP per capita would be between 120–130. Finally, if Catalan fiscal deficit reduction were equivalent to 5% of Catalan GDP, in 2010 Catalan GDP per capita would be between 135–150.

This larger growth of Catalan economy, reached through a reduction of Catalan fiscal deficit with the Spanish state, would mean that Catalonia would become one of the the most dynamic group of European regions, as shown in Table 9.

V. Conclusions

According to Eurostat Regional data, the Catalan economy has been blocked in recent years while Madrid, Navarra and the Basque Country have converged vigorously with the EU Regional GDP per capita average (in 2000 these three Spanish Autonomous Communities clearly surpassed Catalonia: see Table 2). It is suggested that the main reason for this stagnancy is the Catalan fiscal deficit with the Spanish state, estimated in recent years to be between 7% and 9% of Catalan GDP. Fiscal deficit does not exist in Navarra and the Basque Country (because of their particular financial system called *concierto económico*, that is equivalent and independent, self-sufficient administration) and it is significantly lower in Madrid, clearly the most dynamic Spanish region in recent years (only 1–2% of Madrid yearly GDP). Because of this continual extraction of Catalan resources and wealth, Catalonia is losing economic growth opportunities

Table 9. Catalan GDP per capita: year 2010

Yearly fiscal deficit reduction	Without reduction	1%/GDP	3%/GDP	5%/GDP
Catalan GDP per capita (PPS) (EU-15 = 100)	97–101	108–112	120–130	135–150
European regions with similar indexes (year 2000)	Rheinland-Pfalz (97) Saarland (97) Bratislavsky (98) East Wales (98) Balears (98) Eastern Scotland (100) Basque Country (101) Umbria (101)	Liguria (108) East Anglia (109) Hampshire (109) Madrid (110) Nordrhein-Westfalen (109) Vlaams Brabant (112)	Piemonte (120) Praha (121) Baden-Württemberg (122) Valle d'Aosta (123) Groningen (124) Bayern (124) Antwerpen (125) Hessen (129) Emilia Romagna (129)	Lombardia (135) Trentino-AltoAdige(136) Utrecht (140) Bremen (143) Uusimaa (143) Stockholm (147) Darmstadt (149)

Source: EUROSTAT and own calculation.

in the EU context, and according to the estimates derived in this study this stagnancy will continue in future years if the Catalan fiscal deficit with the Spanish state is not reversed. Catalonia will converge with the most dynamic EU regions only if there is a significant reduction of the Catalan fiscal deficit.

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