

FISCAL DECENTRALISATION AND ECONOMIC GROWTH IN SPAIN

Josep Lluís Carrion-i-Silvestre

Regional Quantitative Analysis (AQR) Research Group, Dept. of Econometrics, Statistics and Spanish Economy, University of Barcelona.

Marta Espasa

Department of Public Finance, University of Barcelona and Barcelona Institute of Economics (IEB), Barcelona, Spain

Toni Mora

School of Economic & Social Sciences, Universitat Internacional de Catalunya (UIC)

Correspondence to: Marta Espasa, Department of Public Finance, University of Barcelona, Economics Faculty, Av. Diagonal, 690, 08034-Barcelona, Spain. Tel. number +34934021811, Fax number +34934021813, mespasa@ub.edu.

Acknowledgements.

The authors would like to thank Nuria Bosch for their helpful comments. Marta Espasa would like to thank research support from SEC2003-01388 (M^o de Ciencia y Tecnología) and 2001SGR-30 (Generalitat de Catalunya).

Abstract

The aim of this paper is to empirically analyze the contribution of the Spanish fiscal decentralisation process to economic growth. Its impact on both the global economy and regional growth is estimated. A panel data approach is applied. Our main conclusion is that the process of decentralisation of responsibilities to Autonomous Communities has had a positive effect on both global and regional economic growth.

Keywords: Fiscal Decentralisation, Economic Growth

JEL classification: C33, H77, E62, O47.

FISCAL DECENTRALIZATION AND ECONOMIC GROWTH IN SPAIN

1. INTRODUCTION

The effect of decentralisation on economic growth is a controversial issue that has been widely discussed in both theoretical and empirical terms. Neither the theoretical arguments for the positive impact of fiscal decentralisation on economic growth due to the presence of economic efficiency gains, nor the scarce empirical evidence for it are conclusive. The empirical approaches also differ in several aspects: the selection of different economies, the time period chosen, the economies' level of development and the estimation methodology.

The main aim of this paper is to include further evidence in this debate. Our objective is thus to review the empirical evidence for a positive link between the fiscal decentralization process and economic growth for the Spanish regional case. However, in order to obtain an initial approximation to this topic, we will estimate the sign of the decentralisation process for overall Spanish growth using a longer time period covering the period from 1980 to 1998. The second stage of the analysis will focus on the influence of the three levels of government in Spain (state, regional and local governments) on regional growth in the period 1991-1996. The lack of statistical information for overall decentralized data shortens the time period of our analysis, and leads to the application of panel data techniques to assess whether there is a relationship between fiscal decentralization and economic growth.

The paper is structured as follows. The second section synthetically analyses the main theoretical arguments of the influence of decentralisation over economic growth. We include a summary of the previous empirical evidence on this subject. The third section briefly describes the Spanish decentralisation process from 1978 to our days. The fourth section starts uses a model to explain Spanish economic growth (global and regional) by means of the effects of decentralisation indicators. The final section summarises the main paper's conclusions.

2. FISCAL DECENTRALISATION AND ECONOMIC GROWTH: THEORY AND EMPIRICAL ASPECTS

Traditionally, the theoretical and empirical analysis of fiscal federalism has given little attention to the objective of economic growth. The Fiscal Federalism Theory has focussed on the perspective of efficiency and the distributive consequences of a fiscal decentralisation. Although the traditional argument for fiscal decentralisation is that it may provide greater economic efficiency in the allocation of resources in the public sector (Oates 1972), the relationship (direct and indirect) between efficiency and economic growth has been analysed to a very limited extent.¹

The “Decentralisation Theorem” maintains that if there are different preferences for public goods between jurisdictions, the uniform provision of these goods by central government will generally achieve a lower level of efficiency than one that can be attained by a decentralised provision that allows for differences across jurisdictions (Oates 1972). Introducing the mobility of people into this model generates incentives for individuals to move to the jurisdiction that is perceived as supplying the best combination of public services and local tax rate. Gains in efficiency are thus enhanced (Tiebout 1956). From this perspective, decentralizing revenue raising and spending decisions is seen as a way to improve the public sector efficiency, cut the budget deficit, and promote economic growth (Bird 1993; Gramlich 1993; Oates 1993). At this point, the authors assume that the subnational governments know better than the central government the potential factors of growth, that is, their territory needs in infrastructures, education or innovation and research. Thus, if they have expenditure autonomy, they can design a strategy of growth more adapted to the reality of their territory.

Nevertheless, if there are economies of scale in the production of the public good decentralised provision may be more inefficient than when it is centralised (Rothenberg 1970). The same occurs when there are spillover effects between jurisdictions, (Prud’homme 1995). Although the existence of externalities is undoubtedly plausible, whether or not such external effects do indeed lead to economically important efficiency losses is the subject of intense debate (Wilson 1999). Finally, there may be some inefficiency due to corruption in the assignment of some services. These losses

can generate lower growth, because they can be greater than the possible gains of *producer efficiency* that could be produced in a context of fiscal decentralization².

Elsewhere, Brennan and Buchanan (1980) argued that sub-national governments may have incentives to maximise their budget (they can convert to Leviathan), and this is not efficient. However, the authors warn that fiscal decentralisation may contribute to containing the size of their budgets and thus restraining the overall size of the public sector. This may happen when sub-central governments compete in objectives other than revenue maximisation, such as keeping tax rates stable or even lowering them, and the efficient production of public goods under certain revenue constraints.

Another aspect related with fiscal decentralisation concerns the incentive to innovate in the production and supply of public goods in order to reduce production costs and, hence, increase public sector productivity. This is an important argument that favours decentralisation (Feld *et al.* 2004) and economic growth. It is due to the fact that the experimentation and innovation in the provision of local or regional public goods and services may generate greater producer efficiency. Hence, subnational governments can produce more output (or better quality output) than the central government, with the same level of expenditures. Eventually, the higher quantity or quality of the locally-provided public services could generate a higher income increase, and this is a measure of growth.

There are also other potential shortcomings of fiscal decentralisation that can may affect the quality of fiscal decentralisation and, therefore, economic growth. According to Thießen (2003), these potential shortcomings are the variance of incomes between households and regions which produce inequities under fiscal decentralisation, the lack of sub-national governments' incentives to act counter-cyclically, the quality of governments and of local democracy, low per capita income levels, a country's small size, the scarcity of good local taxes, the low degree of urbanization and the lack of goods and services that qualify as public under the strict definition.

In conclusion, the theoretical arguments analysing the relationship between fiscal decentralisation and economic growth are not conclusive. However, this lack of consensus is not specific to the theoretical framework. In this regard, several empirical

studies have attempted to quantify the impact of decentralisation on the achievement of higher levels of economic growth. The literature shows a variety of studies, which take into account multiple definitions of decentralisation as well national-regional level estimations. Empirical results differ among state-regional level and the consideration of developed and non-developed countries. All these studies use different definitions of decentralisation measures and economic control variables in the specification of the growth equation. Most of them start up from a neoclassical growth model, while some have used partial considerations derived from endogenous growth models (basically from Barro 1990). The neoclassical approach identifies which would be the factors to consider under a Cobb-Douglas production function or the best ones for estimation in a β -convergence framework. In any case, the criticisms of the robustness of the estimations of the chosen neoclassical model (Levine and Renelt 1992), on the one hand, or the suggestion that the mean average would not be representative for the economies considered as a whole (Quah 1997), on the other, lead us to consider the habitual estimation model without going too far in our conclusions. We will thus proceed to estimate what the effects of decentralisation on economic growth would have been in accordance with other empirical studies. The results cannot be thus considered as long-run speeds towards a common unique steady state.

There have been few empirical studies that analyse the relationship between fiscal decentralisation and economic growth, and unfortunately the evidence on this topic is inconclusive. According to the argument by Oates (1993) and Bird (1993), there are studies that point to fiscal decentralisation's positive effect on growth, measured from either the revenue or expenditure point of view (see Zhang and Zou 2001 for a panel data study of sixteen major Indian states over 1970-1994 and Akai and Sakata 2002 for a cross-section analysis of the fifty US states over the 1992-1996 period). However, although there is a vast amount of theoretical literature on the potential positive effect of decentralisation, most empirical studies have not reported any significant relationship between these variables. Davoodi and Zou (1998) analyse a panel data set of forty-six developed and developing countries using a specification based on the Barro (1990) model. These authors did not find any relationship between fiscal decentralisation and growth for the developed countries set. More interestingly, they reported a negative relationship for both the whole panel data set and the panel data set of developing countries. This negative relationship was also found by Woller and Phillips (1998) for

twenty-three less developed countries, by Zhang and Zou (2001) for the Chinese provinces, and by Xie, Zou and Davoodi (1999) for the US.

Among the reasons that explain the presence of differences among the signs of the relationships we can think of two relevant factors: (i) the economic development level and (ii) the fiscal decentralisation threshold that has been exceeded in each central-regional decentralisation process. In addition, there is a problem with the indicator that is chosen to measure the fiscal decentralisation. Although Martínez-Vázquez and McNab (2003) point out that decentralisation is multidimensional, empirical literature has evolved in the selection of the measure of fiscal decentralisation. Both budget sides are considered in empirical models together with a combination of these (expenditures and tax revenues).

3. FISCAL DECENTRALISATION IN SPAIN

The adoption of the Spanish Constitution in 1978 heralded the beginning of the democratic period, and the division of the State territory into Autonomous Communities (regions), provinces and municipalities. There are thus three current levels of government: central, regional (intermediate) and local.

The regional level was created by the democratic Constitution of 1978, in recognition of the right to autonomy of the regions and nationalities in Spain, and comprises 17 Autonomous Communities (ACs). The local government level consists of two administrative strata: municipalities (around 8,000) and provinces (50). The municipality is the basic local entity of State organisation, and the province is a local entity which includes a number of municipalities. There is an abundance of Spanish municipalities because most of them are small (86% have less than 5,000 inhabitants). The Constitution warrants this territorial organisation across the state territory, without prejudice to the creation of other local entities. Nevertheless, it should be mentioned that there are six regions of a uniprovincial nature. These ACs have to all intents and purposes integrated their provincial administration into the autonomous administration, including budgeting.

The distribution of power by levels of government in Spain is regulated by the Constitution, the Statutes of Autonomy of the 17 ACs, and the Local Government Act. The central government has exclusive power in matters of defence, foreign affairs, economic stabilisation and social security with regard to pensions and unemployment subsidies. The central government also has public order responsibilities, although it shares policing responsibilities with the regional governments of the Basque Country and Catalonia. As far as the responsibilities assigned to the ACs are concerned, we should distinguish between two types of Communities, depending on the access route taken to autonomy, which may be either the route indicated in article 143 or article 151 of the Constitution. The fundamental difference between them, as far as the level of responsibilities and expenditures is concerned, is that on the one hand, the route mentioned in article 143 involves access only to common responsibilities, and temporarily excludes two basic functions, *i.e.* health and education, which account for a large volume of expenditure. On the other hand, article 151 Communities have these responsibilities immediately. Any reference to article 143 ACs is thus synonymous with a low level of responsibilities, whereas article 151 ACs are indicative of a high level of responsibilities during a period of time. Nevertheless, there has been an ongoing process whereby ACs with the lower level of responsibilities have taken responsibilities pertaining to health and education. In specific terms, responsibilities in education were gradually transferred to article 143 ACs between 1995 and 1999, while health responsibilities were transferred to all these ACs in 2002.

In any case, there are some differences even between ACs that are regarded as having the same level of responsibilities, since the Statutes that govern the responsibilities of each region have been individually adopted via different processes. The Constitution establishes the division of powers between the State and the ACs, but does not refer to the responsibilities of local governments. These powers are regulated in the Local Government Act, which establishes a minimum level of obligatory services per size of municipal population, with a larger population requiring more services. Furthermore, the Local Government Act grants responsibilities to provinces. It should be made clear that in most cases, responsibilities are shared by the central government and the regional governments, as occurs in major roads and transportation, housing, social services and development policy. Similarly, the local governments have an equal share in the provision of these services. On the other hand, the distribution of responsibilities at

regional and local levels of government is not always clear, as there is some overlapping. The Local Government Act is very ambiguous in the assignment of powers. Similarly, while the central and regional parliaments may enact laws of the same category, the central government has the right to establish basic legislation in the areas of education, health and public order.

In Spain, the process of decentralisation of the public sector has enjoyed great prominence ever since the return of democracy. The different ACs were gradually established between 1979 and 1983, and the State began to transfer responsibilities and services to them. Table 1 and Figure 1 show the evolution of the relative importance of the Spanish public sector at different levels of government though consolidated data pertaining to public expenditure. For each level of government, the expenditure data corresponds to non-financial direct expenditure, excluding grants to other levels of government. The change in the degree of decentralisation in the 1980-2001 period shows an increasing pattern. Specifically, central public sector spending in 1980 accounted for 89.5% of the whole, while in 2001 it had fallen to 60.5%. Regional government spending increased from 0% to 26.4% in the same period. Finally, local governments have not succeeded in increasing their specific weight in the Spanish public sector in the period analysed. This level of government represented 10.5% of total public expenditure in 1980 and 13.1% in 2001. Forecasts for the year 2002, when responsibilities for health were to be transferred to all article 143 ACs, show that the distribution of expenditure by level of government would be: 56% for central government, 31% for regional government and 13% for local government.

INSERT TABLE 1 AROUND HERE

INSERT FIGURE 1 AROUND HERE

While there is a considerable degree of decentralisation in public spending in Spain, comparable to countries with a long-standing federal tradition, when we measure the degree of decentralisation on the revenues side, decentralisation is significantly lower, due to the effect of intergovernmental grants, in consolidated data –see Table 2.

INSERT TABLE 2 AROUND HERE

The evolution of public revenue consolidated by level of government from 1988 to 2001 shows that the process of decentralisation of revenue was not comparable to that of expenditures. As can be seen in Table 2, in 1988 the central government had 85.8% of the total public revenue from the Spanish public sector at its disposition, the ACs had 6.3% and the local governments had 7.9%. For 2001, the last year for which data is available, these figures are 78.5%, 12.5% and 9.0%, respectively, which shows that there was a serious lack of symmetry between the decentralisation of expenditure and that of revenue, especially at a regional level (see Figure 2).

INSERT FIGURE 2 AROUND HERE

The ACs financing system is based on article 157 of the Constitution and on the Basic Financing Act of the Autonomous Communities (LOFCA). The Constitution includes two systems of autonomous financing. The first is applicable to the regions that have historical charters on fiscal and economic matters, the Basque Country and Navarre. This is known as the “foral” regime, and is based on the transfer of the revenue and the management of most State taxes to the provincial administration of these regions, as well as some regulatory powers regarding those State taxes. An annual fee is paid by these regions to the central government for the financing of general State burdens. The second system is applicable to the rest of the ACs, which is known as the common regime. The common regime financing system has gradually taken shape over time, in line with the growth in areas of responsibility and services provided by those autonomous regional authorities.

During the early years of the ACs’ development, the central Administration would transfer to them the necessary resources to fund their specific areas of responsibility. The goal was to furnish the ACs with the adequate resources to enable them to provide the public services included within their scope of authority. This financial system would be complemented by the incorporation of a highly redistributive resource fund. There would be a gradual transfer of taxes to the ACs, allowing tax revenues to become a source of autonomous funding for such communities. In fact, the first draft of the LOFCA set forth the taxes that could be transferred to the ACs. These included the tax

on inheritance and gifts, the general property tax, transfer tax and official legal documents and the taxes and charges on gaming.

Alongside this process was the beginning of the transfer of public health and support services to certain ACs. From the beginning of these transfers until the year 2001, these services were funded through the allocation of resources that came from different public health funding arrangements, which calculated the amounts to be transferred to each of the autonomous communities and their growth. Returning to the issue of the funding of common services, the different financing arrangements began to work and reflect on the need to grant the autonomous communities with economic independence and tax responsibility. The first step was to assign the regions a percentage of the tax liability of the personal income tax declared by the residents within their specific territories. The second step produced on July 2001. Then, a new agreement for financing the “common regime” ACs was approved. The new financing model has many advances on legal principles that define autonomous financing: financial autonomy, sufficiency of resources and solidarity. The new model also integrates health financing into the general model³. Thus, ACs resources can be grouped into two broad types: a) income from taxation and resources assigned from the State’s general budgets. Income from taxation is obtained from transferred taxes –totally or partially- from the State⁴. The second block of autonomous resources is composed by those resources transferred from the State’s general budgets: the Sufficiency Fund and Specific health service funds. The Sufficiency Fund ensures ACs needs.

The Local Finance Act of 2002 currently regulates Spanish local finance. In the field of principles, the law refers only to those arising from the principles of autonomy and sufficiency. More specifically, the Local Finance Act bases local sufficiency on two basic financial mechanisms: own taxes – property tax, Business Tax and Motor Vehicles Tax, among others– and sharing in State revenue. Furthermore, Spanish local governments can access other resources such as those derived from the exploitation of their own property, as well as resorting to credit.

4. EMPIRICAL ANALYSIS: THE SPANISH DECENTRALISATION CASE

Due to theoretical controversy, we cannot come to any conclusions about the final sign of the relation between growth and decentralisation, but we can specifically forecast these effects for a specific economy where the dimensions coincide between government's levels. This is our case for study. As a first approximation, we will undertake to estimate this relation from an aggregated point of view and, after that, we will conduct the analysis focusing on the Spanish ACs.

4.1. Spain, 1980-1998. The aggregated evidence

Like Xie, Zou and Davoodi (1999), we test the impact of fiscal decentralisation on Spanish overall growth from 1980 to 1998. Our specification model expresses a linear approximation. Economic growth, measured as the variations in the logarithm of the GDP per capita (Δy_t), would thus be explained as follows:

$$\Delta y_t = x_t' \gamma + u_t \quad (1)$$

$t = 1980 \dots 1998$, where x_t expresses the degree of fiscal decentralisation, and the other variables are useful to explain the determinants of growth. The measure of fiscal decentralisation is the ACs' and local share of total government spending. The numerator of the fiscal decentralisation variable is direct spending by regional and local government, *i.e.* their spending net of intergovernmental transfers. The denominator is the sum of spending by the national, regional and local governments net of the intergovernmental transfers. A *ceteris paribus* rise in the ACs or in the local government's share indicates a higher degree of fiscal decentralisation. Our selected variables focus on those usually applied in the literature on economic growth and decentralisation: tax burden rate, the growth in the labour force (we have considered both population growth and active population growth), the degree of the economy's openness (measured as the share of the sum of exports and imports over the GDP), the investment rate over the GDP value, the investment in human capital (approximated by the difference on the proportion of at least secondary educated employees), the inflation rate and a measure of the volatility of data (σ -convergence) in order to correct the

robustness of estimated results. Some other inequality measures as the indexes of Gini and Atkinson were also considered. All variables were measured in constant terms (1986 Euros). The data on fiscal decentralisation is taken from the Ministry of Public Administrations, the macroeconomic variables are taken from the Spanish National Accounts (www.ine.es), and the estimates regarding human capital are obtained from the *Institut Valencià d'Investigacions Econòmiques* (IVIE, www.ivie.es). Table 3 shows the results of the estimation of the model.

INSERT TABLE 3 AROUND HERE

The base model starts by considering only the decentralisation indexes as regressors. Model (2) differs from model (1) in that it includes the tax burden rate as an additional indicator. As can be seen from Table 3, both models report only mild significance for the local expenditure level although the sign of the two measures of decentralisation is positive. Obviously, any economic growth equation should consider some additional economic variables of control. Following the suggestions in the growth literature, we have proceeded to introduce some economic variables in the model, which produces the estimation denoted as model (3). Neither of the variables that measures the decentralisation level nor the inflation rate are now significant. However, these results might be influenced by the presence of multicollinearity, provided that the joint significance can be rejected. At this point we proceeded in two stages. First, we dropped the tax rate from the model, provided that this variable was not significant in the previous specification. The new estimate, denoted as model (4), shows that the inflation rate is not significant. More interestingly, the investment in human capital appears as a non significant variable. This is not surprising if we note that the human capital in model (3) shows mild significance, but with a negative sign. One potential explanation for this sign would be the correlation that might exist between the expenditure variables and the human capital given that, firstly, educational policy is transferred to some of the ACs and, secondly, almost the total amount of expenditure on education is assumed by regional and local governments. Models (4) and (5) discard the tax burden rate – multicollinearity would be affecting its significance – the inflation rate and the investment in human capital. Looking at these estimates we can see that the ACs expenditure turns out to be significant, but not the local one.

If we remove these two variables from the specification, we obtain the estimates displayed in equation (5). At this point, only the share of local expenditures over global expenditure is not significant. The share of ACs in global expenditures shows a positive sign, so that decentralisation to ACs level would be positive in order to achieve higher global growth rates for the Spanish economy. In addition, the economic control variables that show an expected positive sign are the growth of labour force, the openness rate and the share of private investment over the GDP value. Finally, the significance of the σ -convergence negative coefficient would indicate that volatility must be considered in order to achieve estimation robustness. This would confirm the empirical evidence that growth is lower in those economies that show higher fluctuation (Ramey and Ramey 1995).

4.2. The Spanish ACs, 1991-1996. The disaggregated evidence

In order to explain what the effects of decentralisation on Spanish regional growth would have been, we have analysed the period 1991-1996. The data set corresponds to the ACs' level of decentralisation. The selection of this short period of time is a result of the exclusive availability of the central expenditure by ACs for these years (see Castells *et al.* 2000). Our model has considered the sensibility of growth versus the decentralisation choice between central-regional government expenditures and regional-local ones. Growth would thus be explained by these decentralisation choices. We have taken both budget sides into account in terms of different fiscal decentralisation indicators. Expenditure shares and tax revenue rates are thus considered. Figures 3 and 4 show what the effect of both shares on ACs economic growth would have been. The specification of the growth ($g_{i,t}$) equation is given by:

$$g_{i,t} = \gamma_i + \gamma_1(d_{i,t}^c, d_{i,t}^a, d_{i,t}^l) + X_{i,t}\gamma_2 + \varepsilon_{i,t} \quad (2)$$

$i = 1 \dots 17$, $t = 1991 \dots 1997$, where d_t corresponds to fiscal decentralisation indicators. In specific terms, the consolidated expenditure share of each level of government in the total consolidated public expenditure has been calculated for each AC. The subscript c is for the central level, a for the autonomous level and l for the local level. Thus, we have computed our decentralization variable as the share of regional expenditure over

global expenditure, where this global expenditure is defined as the sum of direct spending by the national, regional and local governments for each AC. Therefore, this ratio measures the weight of regional government relative to the public sector in this region.

Equation (2) includes the individual fixed effects (γ_i) provided that we are working with all the individuals – the Spanish ACs give the population. These individual effects are introduced in the model to control heterogeneity in budgetary behaviour. Below, we also estimate a model which instead of including individual effects, controls for the initial disposition to assume powers from the constitutional framework – articles 141 and 153 and foral regimes. Finally, the regressors in $X_{i,t}$ aim to explain growth by means of variables that could reflect regional growth heterogeneity. We have essayed the growth of the labour force, the growth of the human capital – measured as the share of qualified workers, *i.e.* those with at least secondary school education, over the total amount of workers –, the investment share by government level and the ACs fiscal deficit per capita.

INSERT FIGURE 3 AROUND HERE

INSERT FIGURE 4 AROUND HERE

Table 4 explains the ACs growth using decentralisation indexes for the period 1991-1996. The first three models differ in terms of expenditure, revenue tax, and both sides of decentralisation. The qualitative conclusion that can be drawn from these three models is that decentralisation contributes positively to regional growth. This conclusion is robust for the inclusion of economic control variables. In this regard, we have analysed the effect of the investment that is made at the various government levels. If we look at the estimates of Model (4), we can see that this variable is not significant for the central and local levels, although it is significant but with a negative sign when it is carried out by the ACs' governments. This is a surprising result considering that we expected investment to make a positive contribution to growth. However, this negative effect can be explained in terms of the low autonomy degree of the expenditure that corresponds with the ACs, provided that most of these investments are included in the AC budgets but are planned by central government. Taking of investment in human

capital into consideration increases the overall performance of the model. This variable is highly significant and shows a positive sign. In addition, we have included one variable that measures the fiscal deficit (fiscal balance per capita) of each AC with regard to the central government. The surprising result here is that this variable enters negatively into the growth, showing that the fiscal deficit has to be understood in terms of equity and not in terms of helping the poor regions to increase their growth. Furthermore, those regions with a fiscal deficit grow at a lower rate. Those ACs that promote education attainment or present a higher positive fiscal deficit would thus be obtaining higher growth rates – we should remember that during the chosen time period the Interterritorial Compensation Funds were in operation. As far as the sign of the ACs’ investment share is concerned, it would indicate that the investment share made by the AC level is less significant for growth than central government investment. The main infrastructures accounting for higher growth rates are central government responsibilities.

In all, we can conclude that decentralisation and growth are positively correlated. Expenditure shares show higher elasticities than revenue tax shares. Those ACs that are more decentralised would therefore be favoured with a higher growth rate. Other variables are also significant. The variation in the stock of human capital is thus positively correlated, while the ACs share in overall investment and the fiscal deficit show a negative correlation. These results are accompanied with the fact that the chosen time period is characterised by significant enhances in expenditure shares without the corresponding rise in tax revenue rates, as shown in Figures 3 and 4.

INSERT TABLE 5 AROUND HERE

Finally, Table 5 shows the final estimated equations when we consider dummies differentiating ACs regimes. Both models show lower global significance. Only the share of ACs expenditure and the ACs fiscal deficit remains significant. Meanwhile, only the foral regime identifier is significant with a negative sign.

5. CONCLUSIONS

The Spanish decentralisation process has focused on the transference of responsibilities from central government level to AC regional level. Our results show a positive relationship between the decentralisation process undertaken in Spain and overall Spanish growth. As far as the regional growth of the 17 ACs is concerned, there is also evidence that it was positive. Due to the exclusive availability of data, the chosen time period for the second analysis is shorter. As a result, these results could not be extrapolated as long-run growth evidence. In any case, the results show the positive impact of decentralisation on the Spanish economy. With regard to local level, its decentralisation would have a negative impact on overall growth, but a positive one when focusing on the regional one.

Therefore, our overall results would be in line with the literature that analyses developed economies, by Akai and Sakata (2002), and Davoodi and Zou (1998), among others. This fact would be further evidence of the presence of a development level threshold. Above this level, decentralisation would have therefore higher effects on economic growth. As Rodrik, Subramanian and Trebbi (2002) point out, factors such international economic development, legal and political institutions would be determinant on economic growth.

NOTES

¹ Important surveys on these subjects are those by Martinez-Vazquez and McNab (2003) and Feld, Zimmermann and Döring (2004).

² Martinez-Vazquez and McNab (2003)

³ Therefore, the Social Security transfers, that was formerly made to finance health services transferred to the ACs disappears. These services are now financed like other ACs services.

⁴ At present, these are: Inheritance and gift tax, wealth tax, property transfers and documented legal acts, gaming taxes, 33% of income tax (autonomy's share of this tax), 35% of VAT, 40% of the special tax on hydrocarbons, 40% of the special tax on alcohol, 40% of the special tax on tobacco processes, the tax on electricity, the special tax on certain means of transport and the tax on retail sales of certain hydrocarbons.

REFERENCES

- Akai, N., and M. Sakata. 2002. Fiscal Decentralization Contributes to Economic Growth: Evidence from State-Level Cross-Section Data for the United States. *Journal of Urban Economics* 52:93-108.
- Barro, R. 1990. Government spending in a simple model of endogenous growth. *Journal of Political Economy* 98:S103-S125.
- Bird, R. 1993. Threading the Fiscal Labyrinth: Some Issues in Fiscal Decentralization. *National Tax Journal* 46:207-227.
- Brennan, G. and J. Buchanan. 1980. *The Power to Tax: Analytical Foundations of a Fiscal Constitution*. Cambridge University Press.
- Castells, A., R. Barberán, N. Bosch, M. Espasa, F. Rodrigo, and J. Ruíz-Huerta. 2000. *The Fiscal Balance of the Autonomous Communities. Analysis of the Fiscal Flows among the Autonomous Communities and the Central Government, 1991-96*. Barcelona: Ariel Economía-Fundació Pi Sunyer.
- Davoodi, H., and H. Zou. 1998. Fiscal decentralization and economic growth: a cross-country study. *Journal of Urban Economics* 43:244-257.
- Feld, L.P., H. Zimmermann, and T. Döring. 2004. Federalism, Decentralization, and Economic Growth. Discussion Paper Series Fiscal federalism and national growth n° 1, Philipps-University Marburg, Public Finance Group.
- Gramlich, E.M.. 1993. A policy-maker's guide to fiscal decentralization. *National Tax Journal* 46(2):229-235.
- Levine, R., and D. Renelt. 1992. A sensitivity analysis of cross-country growth regressions. *The American Economic Review* 82(4):942-963.
- Martínez-Vázquez, J., and R.M. McNab. Fiscal Decentralization and Economic Growth. *World Development* 31(9):1597-1616.
- Oates, W.E. 1972. *Fiscal Federalism*. New York: Harcourt Brace Jovanovich.
- . 1993. Fiscal Decentralization and Economic Development. *National Tax Journal* 46(3):237-243.
- Prud'homme, R. 1995. On the Dangers of Decentralization. *World Bank Economic Review* 10:201-220.
- Quah, D.T. 1997. Empirics for growth and distribution: Stratification, polarization and convergence. *Journal of Economic Growth* 2:27-59.

- Ramey, G., and V.A. Ramey. 1995. Cross-country evidence on the link between volatility and growth. *The American Economic Review* 85(5):1138-1151.
- Rodrik, D., A. Subramanian, and F. Trebbi. 2002. Institutions Rule: The Primacy of Institutions over Geography and Integration in Economic Development, NBER WP n° 9305, Cambridge.
- Rothenberg, J. 1970. In *The Analysis of Public Output: Local decentralization and the theory of optimal government*, ed. J. Margolis. New York: National Bureau of Economic Research, Columbia University Press.
- Thießen, U. 2003. Fiscal decentralization and economic growth in high-income OECD countries. *Fiscal Studies* 24(3):237-274.
- Tiebout, Ch.M. 1956. A Pure Theory of Local Expenditures. *Journal of Political Economy* 64:416-424.
- Wilson, J.D. 1999. Theories of Tax Competition. *National Tax Journal* 52:139-148.
- Woller, G.M., and K. Phillips. 1998. Fiscal Decentralization and LDC Econometric Growth: An Empirical Investigation. *The Journal of Development Studies* 34(4):139-148.
- Xie, D., H.F. Zou, and H. Davoodi. 1999. Fiscal Decentralization and Economic Growth in the United States. *Journal of Urban Economics* 45:228-239.
- Zhang, T., and H.F. Zou. 2001. The Growth Impact of Intersectoral and Intergovernmental Allocation of Public Expenditure: With Applications to China and India. *China Economic Review* 12:58-81.

Table 1. Distribution of public expenditure by levels of government

	1980		2001	
	% of total	% GDP	% of total	% GDP
Central Government	89.5	26.4	60.5	25.0
Regional Government (ACs)	-	-	26.4	10.9
Local Government	10.5	3.1	13.1	5.4
TOTAL	100.0	29.5	100.0	41.3

Source: The Spanish Ministry of Finance and Taxation: La Descentralización del gasto público en España and the Spanish Ministry of Public Administrations: Informe Económico-Financiero de las Administraciones Territoriales.

Figure 1. Distribution of public expenditure by level of government, 1980-2002

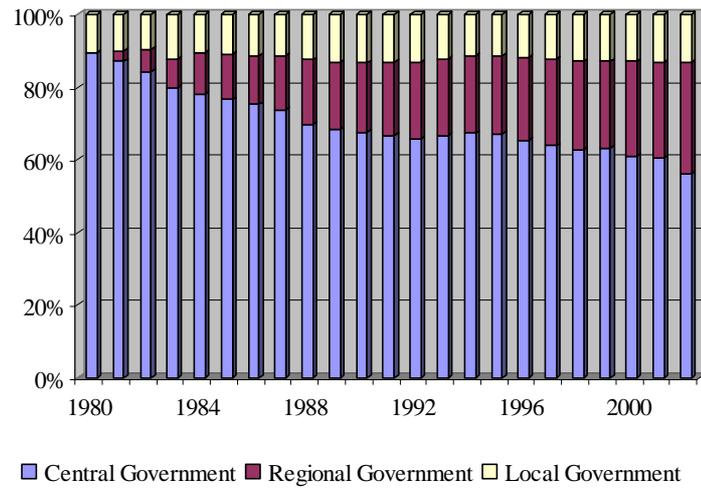


Table 2. Distribution of public revenues by levels of government

	1988		2001	
	% of total	% GDP	% of total	% GDP
Central Government	85.8	29.0	78.5	31,6
Regional Government (ACs)	6.3	2.1	12.5	5,0
Local Government	7.9	2.7	9.0	3,6
TOTAL	100.0	33.8	100.0	40,2

Source: Spanish Ministry of Public Administrations: *Informe Económico-Financiero de las Administraciones Territoriales*.

Figure 2. Distribution of public revenues by level of government, 1988-2001

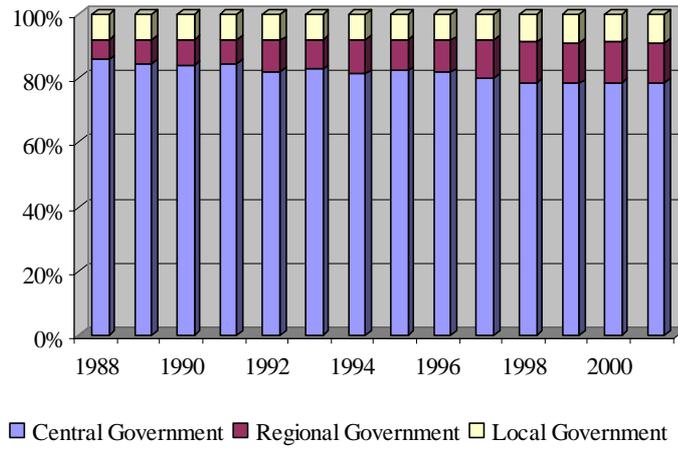


Table 3. Growth equation for the Spanish economy as a whole: 1980-1998.

	(1)	(2)	(3)	(4)	(5)	(6)
Constant	-0.088	0.016	5.360 ^a	4.505 ^a	4.306 ^a	3.973 ^a
Share of ACs expenditure	0.000	0.002	0.001	0.004 ^b	0.002 ^c	0.002 ^b
Share of local expenditure	0.009 ^c	0.014 ^b	-0.012	-0.007	-0.007	-0.008
Tax burden rate		-0.006	0.008			
Growth of labour force			2.695 ^a	2.213 ^a	1.848 ^a	1.635 ^a
Openness			0.280 ^c	0.177 ^b	0.144 ^b	0.137 ^b
Inflation rate			0.453	0.324		
Investment in Human Capital			-1.736 ^c	-1.175	-0.841	
Share of private investment over GDP			1.373 ^a	1.302 ^a	1.273 ^a	1.276 ^a
σ -convergence index			-6.343 ^a	-5.146 ^a	-4.853 ^a	-4.487 ^a
R2 adjusted	0.186	0.061	0.705	0.678	0.813	0.698
Durbin-Watson	1.886	2.034	2.221	2.202	2.048	2.236
Probability (F-statistic)	0.192	0.285	0.008	0.006	0.003	0.001

Note: subscripts *a*, *b* and *c* denotes significance at the 1, 5 and 10% respectively.

Figure 3. Regional ACs growth versus rises in expenditure shares.

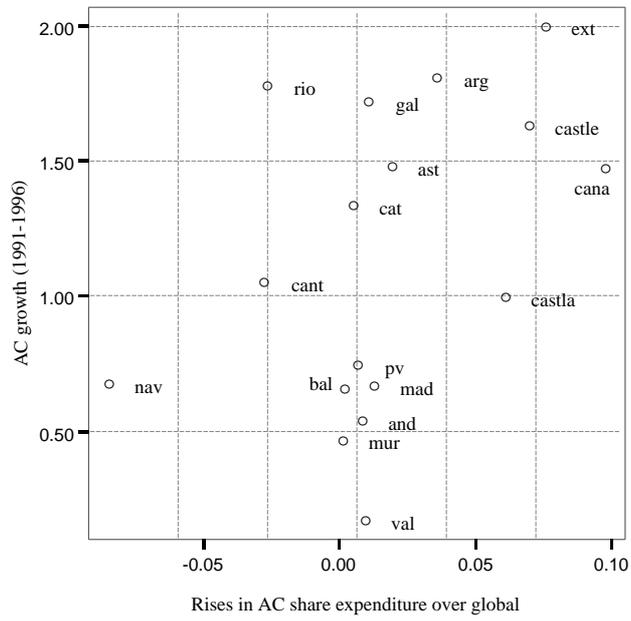


Figure 4. Regional ACs growth versus rises in revenue tax shares.

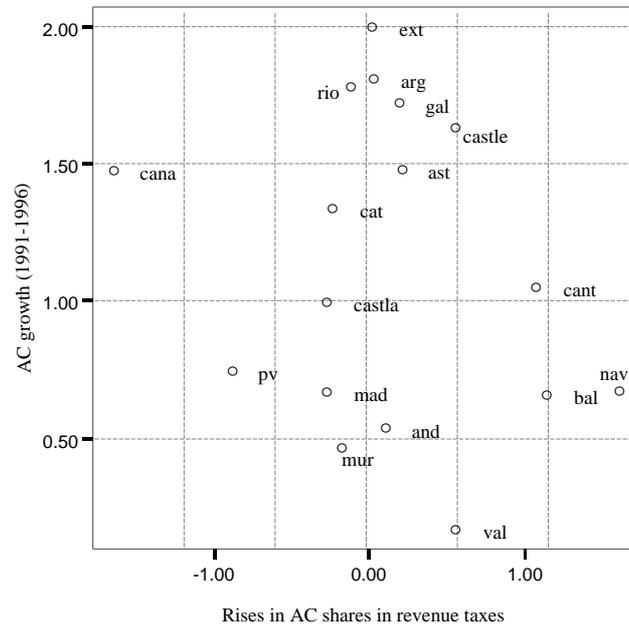


Table 4. Growth equation, panel data approach: 1991-1996.

	(1)	(2)	(3)	(4)	(5)	(6)
Share of ACs expenditure	0.502		5.154 ^b	21.451 ^a	6.111 ^a	14.748 ^a
Share of local expenditure	70.064 ^a		141.759 ^a	134.315 ^a	182.713 ^a	177.756 ^a
Share of ACs tax revenue rate		0.758 ^a	0.712 ^a	0.554 ^a	0.763 ^a	0.756 ^a
Share of local tax revenue rate		0.248 ^a	0.022	-0.375 ^c	0.326 ^a	0.377 ^a
Share of central investment				-5.330		
Share of ACs investment				-13.489 ^a		-2.550 ^c
Share of local investment				-2.750		
Dif. stock of human capital					17.540 ^a	15.294 ^a
ACs fiscal deficit					-0.072 ^a	-0.073 ^a
Fixed effects						
_and	-7.437	-2.750	-19.680	-14.344	-21.065	-22.520
_arg	-7.229	-1.156	-19.261	-11.835	-27.027	-26.956
_ast	-3.070	-1.327	-10.707	-1.942	-14.350	-13.828
_bal	-9.908	-4.067	-25.360	-16.293	-35.467	-34.804
_cana	-10.240	-10.687	-32.592	-22.472	-43.528	-44.812
_cant	-5.709	-3.485	-16.065	-8.380	-21.819	-21.744
_castla	-7.375	-1.772	-18.886	-10.488	-25.281	-25.119
_castle	-6.864	-1.366	-17.882	-10.839	-23.511	-23.570
_cat	-8.531	-2.683	-23.454	-17.324	-38.001	-39.326
_val	-8.823	-3.493	-22.730	-18.283	-32.285	-34.052
_ext	-5.689	-0.011	-16.277	-5.776	-22.302	-21.454
_gal	-4.680	-0.752	-15.024	-10.528	-19.432	-21.031
_mad	-4.972	-1.906	-13.611	-7.588	-19.157	-19.380
_mur	-7.141	-3.514	-17.026	-7.727	-23.262	-22.748
_nav	-7.050	-38.086	-52.412	-39.263	-61.549	-63.014
_pv	-14.446	-12.735	-32.954	-11.655	-60.007	-64.523
_rio	-5.574	-1.737	-16.784	-3.529	-23.526	-22.005
R2 adjusted	0.014	0.370	0.453	0.461	0.902	0.892
Durbin-Watson	2.206	2.212	2.087	2.101	2.028	2.024
Probability (F-statistic)	0.000	0.000	0.000	0.000	0.000	0.000

Note: superscripts *a*, *b* and *c* denote significance at 1, 5 and 10% respectively.

Table 5. Growth equation, panel data including dummies for regimes: 1991-1996.

	(5b)	(6b)
Share of ACs expenditure	9.156 ^a	8.508 ^a
Share of local expenditure	-6.802	-7.221
Share of ACs tax revenue rate	0.011	0.007
Share of local tax revenue rate	0.053	0.055
Share of ACs investment		0.442
Dif. stock of human capital	3.005	2.457
ACs fiscal deficit	-0.008 ^c	-0.008 ^c
Dummies		
Common regime	0.839	0.832
Foral regime	-3.794 ^b	-3.557 ^c
Art. 151 regime	-1.160	-1.023
R2 adjusted	0.075	0.069
Durbin-Watson	2.091	2.104
Probability (F-statistic)	0.052	0.073

Note: superscripts *a*, *b* and *c* denote significance at 1, 5 and 10% respectively.