Fiscal decentralization and economic growth reconsidered

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Abstract

Recent studies examining the relation between fiscal decentralization and economic growth have failed to take account of the extent of the independent taxing powers available to sub-national governments and thus have substantially overstated the degree of effective decentralization. Results from a cross section study of 19 OECD member countries suggest that when the measure of fiscal decentralization is limited to the revenues over which sub-national governments have full autonomy, its impact on economic growth is not statistically significant.

Keywords: Fiscal decentralization; Sub-national governments; Autonomy; Economic growth

1. Introduction

The relationship between fiscal decentralization and long-run economic growth is ambiguous. Several economists have made the case for fiscal decentralization as a means of promoting long-run economic growth based on the view that it leads to better resource allocation and a more productive, and possibly smaller, public sector. This might be because locally determined policies are better able to take account of regional and local conditions in the provision of public goods, such as infrastructure and education (Oates [1]), or that competition among different levels of government promotes lower tax rates and the efficient production of public goods under...
revenue constraints (Brennan and Buchanan [2]), or that it provides incentives for local governments to innovate in the production and supply of public goods and services (Vazquez and McNab [3]), or because there are greater incentives to save when public goods are tailored under fiscal federalism to young and old workers (Brueckner [4]). In contrast, others (e.g., Tanzi [5] and Ter-Minassian [6]) have stressed the problems that fiscal decentralization can create for macroeconomic policy coordination generally, and for implementing stabilization policies in particular.

The relatively few empirical studies of the relationship between fiscal decentralization and economic growth have tended to have rather mixed results. Most empirical studies have focused on the share of sub-national government revenue or expenditure in consolidated (national and sub-national) government revenue or expenditure as the measure of fiscal decentralization. Studies that have reported a positive and statistically significant impact using these measures include: Iimi [7], who reported a significant and positive impact of expenditure decentralization on per capita GDP growth in a panel of 51 developed and developing countries covering 1997–2001; Akai and Sakata [8], who found that the ratios of local government revenue and expenditure to combined state and local government revenue and expenditure had a positive and statistically significant impact on state GDP in a panel study of US states covering 1992–1996 (though when the revenue measure was restricted to ‘own’ revenues of sub-national governments the results were no longer statistically significant); Yilmaz [9], who distinguished between unitary and federal states in a panel study of 46 developed and developing countries using annual data for 1971–1990, and found that fiscal decentralization had a positive and statistically significant impact on growth in unitary states; Thießen [10], who reported a positive relation between decentralization and growth when decentralization is increasing from low levels, but that as decentralization increased, the relation eventually turned negative in a cross section of high-income OECD economies using annual data for 1973–1998; and Lin and Liu [11] who reported that the marginal retention rate of national budget revenues collected at the provincial level had a positive and statistically significant impact on the growth of real per capita GDP in China following the fiscal decentralization of the 1980s. In contrast, Zang and Zou [12] found a negative relation between fiscal decentralization and the growth of provincial incomes in China during 1980–1992. Studies that have found no significant statistical relation between growth and fiscal decentralization, include: Davoodi and Zou [13], who reported a negative but not statistically significant effect of expenditure decentralization on economic growth for developing countries and no clear relationship for developed countries using panel data for 46 developed and developing countries covering the period 1970–1989; Woller and Phillips [14], who reported no significant relationship between the ratios of sub-national revenues and expenditure to total revenue and expenditure using average data for 1974–1991 for 23 developed and developing countries; and Xie, Zou and Davoodi [15], who found no such statistically significant relationship when looking at fiscal decentralization and state income in the USA.1

A serious problem with much of the literature on the macroeconomic impact of fiscal decentralization is that it fails to make an appropriate distinction between “administrative” and “substantive” decentralization by not recognizing that high sub-national revenue and spending shares do not necessarily indicate high local autonomy. This is particularly the case in the empirical literature where the measures of decentralization used are often poor proxies for the degree of autonomy that sub-national governments have in practice. For example, revenue decentralization

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1 In a related study, Stansel [16] defined fiscal decentralization in terms of the number of municipalities and counties per 100,000 residents and reported a positive and statistically significant relation between these variables and metropolitan area growth in the United States; however, his study did not consider financial indicators of fiscal decentralization.
is typically measured as the proportion of tax revenues accruing to sub-national governments and makes no distinction between revenues from tax sharing that involve little real autonomy on the part of sub-national governments, and these governments’ ‘own-source’ tax revenues, where they exercise some degree of control over the tax rate, the tax base, or both. Similarly, measures of expenditure decentralization usually make no distinction between sub-national governments’ ‘own’ expenditures and those mandated by national governments. Thus, recent surveys of fiscal relations by Jourmard and Kongsrud [17] and Darby, Muscatelli and Roy [18] show that limits on the discretion of sub-national governments to determine tax rates and tax bases significantly reduce local fiscal autonomy. In addition, tax sharing arrangements sometimes leave sub-national governments with little or no power to influence the revenues accruing to them individually, and even when they have such powers they are sometimes reluctant to use them. Accordingly, this note re-examines the issue of fiscal decentralization and economic growth focusing on a measure of revenue decentralization that is indicative of the true financial autonomy of sub-national governments. Regression results from a cross-section study of high income OECD economies suggest that, when measured in this way, the impact of fiscal decentralization on economic growth is not statistically significant.

2. Data and methodology

In a recent study, the OECD [19] measured the degree of revenue autonomy of sub-national governments in 19 OECD member countries in 1995 by calculating the amount of their revenue stemming from the tax rates and the tax base over which they had full discretion.2 Of the 19 countries, sub-national governments had full discretion over own-revenues in only four of them, in a further nine countries they had full discretion over less than two thirds of their revenues, and in a further five countries they had full discretion over less than 15 percent of own-tax revenues. A reasonable annual time series proxy for the revenues over which sub-national governments have full discretion can be constructed by weighting annual data on total tax revenues received by sub-national governments (in percent of the total of national and sub-national government revenues) by the 1995 share of these revenues over which they have full discretion. Figure 1 relates average total tax revenues of sub-national governments to their average discretionary revenues calculated in this way for the period 1980–2000.3 The vertical axis shows the annual average tax revenue received during 1980–2000 by sub-national governments relative to total tax revenue (national and sub-national) received and the horizontal axis plots the revenue over which they had full discretion relative to total tax revenue (national and sub-national) received in the period. The great majority of countries are located in the south-west corner of the figure and are those in which the sub-national governments have the least degree of autonomy.

The cross section comprises the 19 OECD economies for which data on the degree of revenue autonomy is available. The dependent variable in the cross section is average real GDP growth

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2 Specifically, the OECD used a classification of sub-national tax revenues ranging from (a) where the sub-national government can set both the tax rate and the tax base, to (e) where the central government sets both the base and the tax rate. Tax sharing schemes are divided into four categories from (d.1) where the sub-national government can determine the revenue split, to (d.4) where the national government can decide the revenue split. The countries included in the study were Austria, Belgium, Czech Republic, Denmark, Finland, Germany, Hungary, Iceland, Japan, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

3 The sample period was ended in 2000 because of fiscal reforms in the late 1990s that changed the degree of autonomy over revenues in several of the countries, increasing it in some and reducing it in others (see Jourmand and Kongsrud [17]).
Fig. 1. Average annual total and discretionary tax revenue of sub-national governments, 1980–2000 (in percent of national and sub-national tax revenue).

per capita for each country, $\Delta Y_{\text{pop}}$, during 1980–2000 and the independent variables are the average tax revenues of sub-national governments stemming from the tax base and tax rates over which they have full discretion, $OWNREV$, as discussed above, and a variable to test for the notion of a non-linear hump-shaped relation between fiscal decentralization and growth proposed in the Thießen [10] study, which is a quadratic indicator of $OWNREV$, $(OWNREV)^2$.

In addition, there are control variables common in the economic growth literature (e.g., Barro [20]) for initial income per capita at the beginning of the sample period (1980), $Y_{80}$, the average investment-to-GDP ratio in the period, $I/Y$, human capital, $SCHOOL$, which is proxied by the average secondary school enrollment ratio over the period, and for the average growth of the population of working age over the period, $\Delta WPOP$. Finally, a dummy variable is included to distinguish federal from unitary government structures in the sample period, $FDUM$, which takes the value of 1 in the case of a federal structure and zero otherwise. Thus, the basic cross section equation is:

$$\Delta Y_{\text{pop}}^{i} = \alpha + \beta_1(Y_{80})_{i} + \beta_2(I/Y)_{i} + \beta_3(SCHOOL)_{i} + \beta_4\Delta WPOP_{i} + \beta_5 OWNREV_{i} + \beta_6(OWNREV)^2 + \beta_7 FDUM_{i} + \varepsilon_i$$

(1)

where the variables are as previously defined and $\varepsilon$ is a random error term. The expected signs of the coefficients are $\beta_1, \beta_4 < 0$ and $\beta_2, \beta_3 > 0$; and on $\beta_5, \beta_6$ and $\beta_7$ they are not clear because

4 In all cases, data are annual averages for the period 1980–2000, with the exceptions of the Czech Republic (1993–2000), Hungary (1991–2000), and Poland (1991–2000). Data on the share of sub-national government tax revenue in total tax revenue is from the annual OECD publication Revenue Statistics. The data on the revenues from the tax base and tax rates over which sub-national governments have full autonomy is constructed from OECD [19], as described in the text. Data for real GDP per capita and the ratio of gross investment to GDP are from the Penn World Table (version 6.1); the secondary school enrollment ratio is from the United Nations, UNESCO Statistical Yearbook; and working age population growth is from the World Bank’s World Development Indicators database.
of the ambiguity of the impact of revenue decentralization on growth. Given the relatively small sample size, the estimation technique was ordinary least squares with all variables converted to natural logarithms with the exception of the growth rates of real GDP per capita and of the working population.5

3. Empirical results

Selected regression results are reported in Table 1. The results suggest that, when measures of fiscal decentralization are limited to the revenues over which sub-national governments have real autonomy, there is no statistically significant relationship between fiscal decentralization and economic growth. The control variables (Y80, I/Y, SCHOOL, and ΔWPOP have the expected signs and are statistically significant at the 1 percent level). Thus, growth of real GDP per capita reflects income convergence, investment in physical and human capital, and the growth of the working age population. However, when the indicators of fiscal decentralization are included in the equations, OWNREV and (OWNREV) ∗ (OWNREV), they are not statistically significant. Similarly, the dummy variable for federal countries (FDUM) is not statistically significant. In sum, when

Table 1
OLS results for average growth rate of real GDP per capita 1980–2000

<table>
<thead>
<tr>
<th>Variables/equation</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>−5.7199</td>
<td>−6.0156</td>
<td>−5.8377</td>
</tr>
<tr>
<td></td>
<td>(5.0274)</td>
<td>(4.8301)</td>
<td>(5.0148)</td>
</tr>
<tr>
<td>Y80</td>
<td>−1.4099**</td>
<td>−1.4807**</td>
<td>−1.5758**</td>
</tr>
<tr>
<td></td>
<td>(0.4639)</td>
<td>(0.4266)</td>
<td>(0.4376)</td>
</tr>
<tr>
<td>I/Y</td>
<td>3.5331**</td>
<td>3.5309**</td>
<td>3.5356**</td>
</tr>
<tr>
<td></td>
<td>(0.8844)</td>
<td>(0.8559)</td>
<td>(0.8889)</td>
</tr>
<tr>
<td>ΔWPOP</td>
<td>0.9407**</td>
<td>0.9454**</td>
<td>0.8033**</td>
</tr>
<tr>
<td></td>
<td>(0.2394)</td>
<td>(0.2315)</td>
<td>(0.2169)</td>
</tr>
<tr>
<td>SCHOOL</td>
<td>2.1111**</td>
<td>2.3137**</td>
<td>2.4898**</td>
</tr>
<tr>
<td></td>
<td>(0.9092)</td>
<td>(0.7832)</td>
<td>(0.8032)</td>
</tr>
<tr>
<td>OWNREV</td>
<td>0.2767</td>
<td>0.2401</td>
<td>0.0078</td>
</tr>
<tr>
<td></td>
<td>(0.2170)</td>
<td>(0.1970)</td>
<td>(0.0955)</td>
</tr>
<tr>
<td>(OWNREV) ∗ (OWNREV)</td>
<td>−0.0922</td>
<td>−0.0819</td>
<td>0.0075</td>
</tr>
<tr>
<td></td>
<td>(0.0631)</td>
<td>(0.0576)</td>
<td></td>
</tr>
<tr>
<td>FDUM</td>
<td>−0.1435</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.2935)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R² adj.</td>
<td>0.554</td>
<td>0.582</td>
<td>0.549</td>
</tr>
<tr>
<td>Standard error</td>
<td>0.428</td>
<td>0.414</td>
<td>0.430</td>
</tr>
<tr>
<td>F-statistic</td>
<td>4.192</td>
<td>5.179</td>
<td>5.387</td>
</tr>
</tbody>
</table>

Figures in parenthesis are standard errors. Variables are in logarithms with the exception of the dependent (ΔY^{pop}) and ΔWPOP.

** Statistical significance at the 1% level.

5 While the use of ordinary least squares in this context implies that the explanatory variables are exogenous, which may be problematic, the relatively small sample prevents the use of an alternative instrumental variables method. As one of the referees also pointed out, an additional shortcoming is that the measure of fiscal decentralization is available only in 1995 whereas the GDP per capita growth rate is measured over 1980–2000 and local autonomy may have changed before and after 1995. However, as the Jourmand and Kongsrund [17] study indicates, the fiscal decentralization reforms that changed the degree of autonomy over revenues in the sample of countries used were concentrated largely in the late 1990s and, as such, should not have impacted greatly on the empirical results.
revenue decentralization is measured by only those own-revenues over which sub-national governments have full discretion, fiscal decentralization does not appear to effect economic growth in mid to high income countries.

4. Conclusions

Much of the literature on the macroeconomic impact of fiscal decentralization has not distinguished appropriately between administrative and substantive decentralization in that it has failed to recognize that high sub-national government revenue and expenditure shares do not necessarily indicate high local autonomy. In particular, recent studies on the relation between fiscal decentralization and economic growth generally have failed to take account of the extent of the independent taxing powers available to sub-national governments in measuring revenue decentralization and, as a result, have substantially overstated revenue decentralization in practice. The empirical results presented here suggest that when the measure of revenue decentralization is limited to the revenues over which sub-national governments have full autonomy, its impact on economic growth in OECD economies has not been statistically significant.

Acknowledgments

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References


