



# Fiscal Decentralization and Economic Growth

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**Summary.** — Fiscal decentralization may indeed have a direct impact on economic growth but the theoretical underpinnings for this relationship remain largely undeveloped. A fair summary of the empirical search for a direct relationship between fiscal decentralization and economic growth is that it remains an open question. Much less attention has been devoted in the literature to the indirect channels through which fiscal decentralization may affect economic growth. We argue that much work remains to be done before policy advisors and decision makers can formulate and implement decentralization programs on the basis of improving the rate of economic growth.  
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## 1. INTRODUCTION

This paper reviews the current knowledge in the economics literature on the causal relationship between fiscal decentralization and economic growth, whether this relationship is uni-directional or bi-directional, and to what extent synergies appear to exist between fiscal decentralization, on the one hand, and economic growth, on the other.<sup>1</sup> Over the past decade most developing and transitional countries have either embarked upon or stated their intention to embark upon some type of fiscal decentralization initiative.<sup>2</sup> Often, one of the stated primary policy objectives of fiscal decentralization is to foster economic growth. The interest in fiscal decentralization as an engine for economic growth is not limited to developing and transitional economies, but has also emerged to the forefront of the policy agendas of most OECD countries.<sup>3</sup> These broad-based policy agendas call for a closer examination of the potential relationship between fiscal decentralization and economic growth.

The increased interest in fiscal decentralization has several roots. First, the renewed focus on fiscal decentralization appears to be fueled by the widespread belief that fiscal decentral-

ization is an effective tool for increasing the efficiency of public expenditures, even though it may carry some risks *vis-à-vis* other desirable objectives for government policy, such as horizontal fiscal imbalances across subnational governments and macroeconomic stability.<sup>4</sup> Second, the rush to decentralize can also be seen as a reaction to the failures over the past two decades of large centralized bureaucracies under very different political regimes in developing and transitional countries. Decentralization is also seen as a way to break the central government's grip on the economy by shifting fiscal authority to subnational governments.<sup>5</sup> As Taillant (1994) has put it, the issue in many of these countries has become not "whether to" but "how best to" decentralize.

Decentralization may actually appear to be more popular among developing and transitional countries than it truly is because there is often a confusion in terminology. What some transitional and developing governments call fiscal decentralization is actually nothing more than the geographical deconcentration of central government bureaucracy and service delivery.<sup>6</sup> Deconcentration can be described as a

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process geared to increasing the effectiveness and flexibility of the provision of government services by providing previously centralized services through regional and local offices but, other than geographic similarities, deconcentration has little to do with fiscal decentralization. Although there are several ways to describe the process of fiscal decentralization, its essence is captured by the two related processes of either "delegation" or "devolution" of fiscal authority. In either case, decision-making power on the composition of expenditures and often on the composition and level of revenues is shifted to separately elected subnational governments.<sup>7</sup>

While there has been a myriad of policy discussions on the application and influence of fiscal decentralization, in contrast, there has been limited empirical work quantifying the effects of fiscal decentralization. The lack of empirical research is surprising given that economic efficiency is the central argument for fiscal decentralization and that the potential negative impacts of fiscal decentralization on the distribution of resources across subnational jurisdictions and macroeconomic stability are the central arguments against fiscal decentralization.<sup>8</sup> Curiously, most of the recent empirical work has focused more on the direct impact of fiscal decentralization on economic growth, which has not been among the more conventionally addressed effects of decentralization.<sup>9</sup> The focus on the direct impact of fiscal decentralization on economic growth is also surprising because there has been little effort to define the theoretical links between the immediate effects of decentralization (economic efficiency, disparity in the distribution of public resources among subnational governments, and macroeconomic stability) and economic growth. The failure of the empirical work thus far to provide a conclusive answer to what the overall impact of fiscal decentralization on economic growth is may be due in part to the lack of understanding of how fiscal decentralization relates directly and, more importantly, indirectly to economic growth.

The unfinished agenda in the theory and practice of fiscal decentralization is to understand how fiscal decentralization affects the traditional economic objectives of economic efficiency, horizontal fiscal equality, and macroeconomic stability; and how these may, in turn, affect economic growth. Understanding these linkages, and quantifying any potential tradeoffs associated with them, should help

produce more informed policies for fiscal decentralization in developing and transitional economies. As we discuss in this paper, the debate over fiscal decentralization in developing and transitional economies has, for the most part, focused on intuition, case studies, and evidence from individual country studies of developed economies. While these approaches are not wrong and, in many ways, have been invaluable to understanding the role played by each country's history and institutions, panel-based (crosscountry, time-series) studies can also provide important insights on the likely economic effects of fiscal decentralization.

The rest of the paper is organized as follows. First, we review the traditional lack of attention to economic growth in the fiscal decentralization literature. Second, we present the empirical findings to date regarding the potential relationship between fiscal decentralization and economic growth. Third, we discuss the possible theoretical linkages between fiscal decentralization and growth and outline an empirical methodology for testing these potential linkages. The last subsection sums up and reviews the policy implications from our current knowledge of the issues.

## 2. ECONOMIC GROWTH HAS NOT BEEN A TRADITIONAL CONCERN IN THE THEORY OF FISCAL DECENTRALIZATION

Traditionally, the theory and practice of fiscal decentralization has given little attention to the objective of economic growth. Only quite recently have normative discussions of fiscal decentralization added economic growth to the traditional list of public finance objectives of efficiency in the allocation of resources, horizontal fiscal imbalances, and economic stabilization.<sup>10</sup>

Instead the traditional argument for fiscal decentralization is that it may provide greater economic efficiency in the allocation of resources in the public sector.<sup>11</sup> Under the assumption that public officials respond to the desires of their constituents, subnational governments are better able to match differing preferences across jurisdictions. Gains in efficiency are enhanced if taxpayers are mobile because they can migrate or sort themselves out among the jurisdictions that best match their preferred tax-expenditure package, as first discussed by Tiebout (1956).<sup>12</sup> In short, if pref-

erences for public goods differ across regions or individuals, the level of welfare achieved through a uniform provision of public goods by a central government is inferior to that which can be attained by a decentralized provision which allows for differences across jurisdictions.<sup>13</sup>

Efficiency is one of the three objectives, the other two being income redistribution and macroeconomic stability, initially stated by Musgrave (1959) and widely accepted as guides to government policy. But if decentralized governments can play an important role in efficiency, there is some agreement that the objectives of income redistribution and macroeconomic stability may be better pursued by the central or federal governments.<sup>14</sup> Even though subnational governments may differ in their preferences for income redistribution, the mobility of households and businesses will tend to make differences in redistributive policies self-defeating because the rich would move out of and the poor would move into the jurisdiction.<sup>15</sup> Attempts to implement macroeconomic stabilization by subnational governments are also believed to be ineffective because of the considerable economic “leakages” associated with local expenditures.<sup>16</sup>

More recently, some have argued that decentralization may also serve to preserve and promote the development of markets. Weingast (1995), McKinnon (1997), and others suggest that appropriately structured inter-governmental fiscal arrangements may create sufficient incentives for subnational governments to foster markets. Under central assumptions, if the central government is a source of policy inefficiency, decentralization may improve resource allocation, foster market development, and, in turn, promote economic growth.<sup>17</sup> A problem, however, is that this argument may be susceptible to Prud'homme's (1995) contention that subnational governments in developing and transitional economies lack sufficient capacity relative to the central government. If true, this line of reasoning would suggest that subnational governments in these economies would lack the capacity and resources to respond to the incentives generated by the new fiscal arrangements. Even if we explicitly assume that subnational governments operate on the same production frontier as central governments, whether internal markets free of internal barriers actually exist in developing and transitional countries is an unanswered question.<sup>18</sup>

Overall, the lack of direct concern with the objective of economic growth in the theory and practice of fiscal decentralization has its roots in the lack of attention given to this objective in public sector economics. But, public sector economics has paid indirect attention to the objective of economic growth by focusing on issues such as how taxation may distort economic incentives toward savings and investment, how to evaluate the relative worthiness of public investment projects (as for example in the theory of cost-benefit analysis), or how to improve the performance of private markets through spending on education and health systems or investments in basic infrastructure. The general implicit assumption in public sector economics has been that economic growth is fueled by the growth in the quantity and quality of economic inputs (labor, capital, and natural resources) and by technological change in the private sector. The role of the public sector is to facilitate, or not to impede, this process.

### 3. WHAT DO WE KNOW ABOUT THE EFFECT OF DECENTRALIZATION ON ECONOMIC GROWTH?

A significant feature of the current state of the fiscal decentralization literature is the paucity of empirical information regarding the effects of decentralization, not only on economic growth, but also on the traditional objectives of economic efficiency, income redistribution, and macroeconomic stability. As we discuss below, the analysis of the direct role of the public sector in economic growth is a relatively new area of study, with the contribution of fiscal decentralization to economic growth only emerging in the last decade. In the following paragraphs we discuss the existing empirical evidence on the potential relationship between fiscal decentralization and growth.

#### (a) *From economic growth to fiscal decentralization*

Even though there has been little research on the causation line from decentralization to growth, interestingly, there has been extensive empirical analysis of the reverse question: to what extent is the level of decentralization a function of the level of economic development? It is well documented that most measures of fiscal decentralization across countries, such as

share of expenditures or revenues of subnational governments in the general government budget, are positively correlated with the level of economic development, generally measured by per capita income.<sup>19</sup> There is less agreement in the literature about how to interpret the fact that decentralization is a more common and deeper phenomenon in industrialized countries. One possible explanation is that decentralization is like a superior good. It is only at relatively high levels of per capita income that decentralization is demanded or becomes "attractive" to taxpayers in the sense that its benefits can be more fully exploited without the problems or disadvantages that tend to be more present in countries at lower levels of development (Bahl & Linn, 1992). This correlation between economic development and the depth of decentralization may also be due to the fact that many developing countries inherited highly centralized systems at the time of their independence from their colonial powers.<sup>20</sup> There appears, however, to be wide agreement with Oates' (1993) assessment that the empirical correlation between the level of development and the presence of fiscal decentralization should not be interpreted to say that there is a monotonic relationship between the two such that decentralization intensifies without bound with per capita income,<sup>21</sup> or that a decentralized system of public finances will not offer advantages to countries at lower levels of economic development.<sup>22</sup>

(b) *From fiscal decentralization to economic growth*

While several recent studies have attempted to quantify the role of government expenditures on economic growth, the question of what impact decentralized government expenditures have on economic growth remains largely unanswered. Aschauer (1989) and Barro (1990) find that an increasing share of central government consumption in GDP is negatively associated with growth in per capita income. In an earlier study, Ram (1986) found a positive relationship between central government consumption in GDP and growth in per capita income. Devarajan, Swaroop, and Zou (1996) examine the impact of the composition of public expenditures on economic growth and find that while an increase in the share of current central government expenditure has a positive and statistically significant effect on growth, the capital component of public ex-

penditure has a negative impact on per capita growth. They conjecture that developing country governments may have been allocating too many resources to capital investments at the cost of more productive current expenditures. On the other hand, other researchers have found that public infrastructure spending has a positive significant impact on growth (Aschauer, 1989; Easterly & Rebelo, 1993). There is also some evidence that the efficiency of public expenditures can differ considerably across countries. Gupta, Honjo, and Verhoeven (1997) assess the efficiency of government expenditures on education and health in 38 countries in Africa and find that, on average, countries in Africa are less efficient than countries in Asia and the Western Hemisphere. They do suggest that the observed inefficiencies may be a result of relatively high government wages and the intra-sectoral allocation of government resources.

None of the studies above is concerned with the potential impact of the degree of decentralization (or intergovernmental composition of public expenditure or revenue assignment) on economic growth. An emerging line of research has attempted to test the presence of a direct link between fiscal decentralization and economic growth with mixed results. Zhang and Zou (1997) find that different measures of fiscal decentralization seem to have a positive and sometimes significant effect on regional economic growth in India. Lin and Liu (2000) conclude that fiscal decentralization positively and significantly influences economic growth in China. Thiessen (2000) finds a positive and direct relationship between decentralization and growth for panels of high-income, Western European and middle-income countries. This contrasts with the opposite general finding that fiscal decentralization is associated with slower growth for the case of China by Zhang and Zou (1998), for the United States by Davoodi, Xie, and Zou (1995), and for a full sample of both developing and developed countries by Davoodi and Zou (1998). Woller and Phillips (1998) and Martinez-Vazquez and McNab (2002), on the other hand, fail to find a statistically significant and robust relationship between fiscal decentralization and economic growth for separate panels of developing countries.<sup>23</sup> The results so far might be best characterized as inconclusive.

Although the theoretical underpinnings of this literature still need to be further developed, as discussed below, these studies have

not only provided the first empirical estimates of the potential effect of decentralization on economic growth but have also provided insights into different aspects of this relationship. For example, if fiscal decentralization could be measured, as is done in this literature, in a single dimension (for example, the share of expenditures or revenues of subnational governments in the general government) then we should not expect a monotonic relationship between decentralization and growth (Davoodi & Zou, 1998). That is, it is not necessarily true that the more decentralized a country's fiscal system becomes, the faster its economy will grow, but rather, we should expect that there exists an optimal degree of fiscal decentralization which is less than full decentralization (subnational governments' share of expenditures (revenues) is 100%). Of course, the bounds are imposed by the fact that there are some public goods, those with nationwide benefits, that can be more efficiently provided at the national level. But, within the context of more complex, multidimensional definitions of decentralization (for example, an index encompassing tax autonomy and budgetary discretion), it may be possible to obtain multiple optima, and even a monotonic relationship between decentralization and economic growth. Whether it will be possible to construct a multidimensional measure of decentralization given the limitations of the existing data is an unanswered question. The recent literature on the empirical relationship between decentralization and growth also raises several estimation issues for future work, which we address next.

(c) *Empirical issues in the estimation of a relationship*

Several estimation issues will need to be addressed in the future to strengthen our confidence in the empirical results on the role of fiscal decentralization in economic growth. First, there is the issue of *possible misspecification* of the empirical estimation models. The literature on economic growth suggests that long-term growth may be a function of many variables such as economic freedom and basic legal structure, savings rates, investment behavior, and general capital accumulation, human capital, technological development and change, and so on. Excluding some of the necessary control variables across countries or over time may result in omitted variable bias

leading to the false conclusion that a statistically significant relationship exists between growth and fiscal decentralization.<sup>24</sup> In short, there is a need to verify that the estimated relationships between decentralization and growth are consistent and robust under alternative specifications of the estimation model. Levine and Renelt (1992) note the general lack of robustness in the empirical growth literature that has tried to identify the impact of diverse government policies on growth. Using cross-country time-series data, they conclude that the significant correlation between measures of economic policy and economic growth found in many previous studies are fragile. In particular, they find that the statistical significance for those economic policy variables is lost by the inclusion of other explanatory variables in the estimation equation. This is the fate of a wide array of fiscal-expenditure variables, monetary policy indicators, and political stability indices. The only robust correlations they find are for the share of investment in GDP and for the share of international trade in GDP and economic growth.

To date, many of the studies directly linking fiscal decentralization and economic growth employ Barro's (1990) endogenous growth model, where the production function for the economy has multiple inputs including private capital and multiple public spending by the three levels of government.<sup>25</sup> While Davoodi and Zou (1998), for example, use the Levine-Renelt conditioning variables (investment, population growth, human capital) to test the fragility of the estimate for fiscal decentralization, they do not control for the impact of the external sector.<sup>26</sup> Many of the other studies of the relationship between fiscal decentralization and economic growth also fail to properly condition their estimates. Without properly conditioning the parameter estimates, we may, as noted below, be willing to accept results based on spurious correlations.

The question of bi-directional causality between fiscal decentralization and economic growth and decentralization and other economic variables has not been adequately addressed in the literature. If fiscal decentralization and economic growth are endogenously related then failure to control for this econometric issue would result in inconsistent parameter estimates. An additional problem in testing and controlling for endogeneity is the lack of control variables that are

correlated with decentralization, uncorrelated with growth, and available across countries and time. The literature to date has focused primarily on the contemporaneous relationship between decentralization and growth; ignoring for the most part the potential for time-wise causality.

Second, the *measurement of fiscal decentralization* used by the majority of empirical studies as an explanatory variable is, at least, problematic. The issue is that there is no single or best measure of decentralization. The empirical literature has evolved significantly in the precision with which the explanatory variable for fiscal decentralization is measured. Initially public expenditures were disaggregated into recurrent or consumption and capital expenditures, later into different levels of government, and finally into types of expenditures by sector at different levels of government. All these measures of fiscal decentralization are, however, defined on the basis of a single dimension of decentralization, expenditures going through the subnational budgets or revenues raised by subnational governments. We are sure to misrepresent decentralization when we use a single dimension, no matter how detailed or disaggregated. Clearly, fiscal decentralization is multidimensional. There are many aspects of a country's fiscal affairs that can be more or less decentralized.<sup>27</sup> Even if one country has a greater share for subnational governments in general expenditures or tax revenues, it can be the case that a second country may be more decentralized overall because its subnational governments have more significant autonomous sources of revenue or discretion over tax rates, or greater freedom in how to make expenditure decisions on education, health or other services provided at the subnational level. Even worse, a country may have a high share of general government expenditures going through subnational budgets, but *de facto* the level of decentralization may be small because regional and/or local officials are not democratically elected and are only accountable to central government authorities. It would be desirable in future empirical research to attempt to capture the multidimensionality of fiscal decentralization in estimating the impact of fiscal decentralization on economic growth. A possible point of departure could come from quantifying the minimum conditions for effective fiscal decentralization such as discretion in the margin to raise own revenues or

the use of democratic elections, as suggested in the literature.<sup>28</sup> Unfortunately, however, we cannot readily address these issues with the available data and, as Oates (1972) concluded, are left with the standard, albeit imperfect, measures of fiscal decentralization based on revenue and expenditure data.<sup>29</sup>

Third, given that our understanding of how decentralization may affect growth is not well developed, there is a danger of accepting too willingly the product of *spurious correlations*. This is a difficult problem to control, but a serious one given that decentralization and growth are broad concepts which themselves are correlated with many other variables. Consider the following: Mauro (1995, 1996) finds that corruption lowers investment, thereby lowering economic growth. But Mauro also finds that corruption is highly correlated with ethno-linguistic fractionalization (which measures the probability that two persons drawn at random in the country will not belong to the same ethno-linguistic group).<sup>30</sup> In general, we should expect decentralization to be highly correlated with ethno-linguistic fractionalization because the tensions associated with diversity in population are often addressed through more decentralization. In these circumstances it would not be the case that decentralization slows growth, but that there may be more corruption with fractionalization and, therefore, less growth. The problem of spurious correlation can only be controlled with better data and careful specification of the estimating equations.

Fourth, even if we control for misspecification, endogeneity, data quality, and spurious correlations, there is the additional danger of incorrectly interpreting the sign of the decentralization coefficient in the growth equation. If, for example, the sign of the decentralization coefficient is negative, this may not mean that decentralization negatively affects economic growth at all levels of decentralization. We can also interpret this result to mean that some optimal level of decentralization has been passed and that the further decentralization may directly impede economic growth. Furthermore, if, as we argue in this paper, there are other channels by which decentralization may influence economic growth, then the overall effect of decentralization may depend on the combination of the direct and indirect effects. Care therefore must be exercised when interpreting the decentralization coefficient.

#### 4. THEORETICAL LINKAGES BETWEEN FISCAL DECENTRALIZATION AND ECONOMIC GROWTH: WHAT SHOULD WE BE TESTING?

The review of the empirical literature shows clearly that we may be far from understanding and therefore properly testing the relationship between decentralization and economic growth. The empirical work on the potential impact of fiscal decentralization on economic growth has offered thus far little detailed discussion of why we should expect this relationship to exist. Answering this basic question should allow us to construct better and more discerning empirical tests. The lack of a theoretical framework has also hampered the statistical work. There is also wide agreement on the desirability of developing such a theoretical framework.<sup>31</sup> In this section we examine in some detail the avenues through which fiscal decentralization may affect economic growth. This may provide the basis for the development of a theoretical framework in the future.

##### (a) *Is there a direct linkage?*

The first question is whether we can expect a direct linkage to exist between decentralization and growth. Oates (1993) argues that, intuitively, the static proposition that fiscal decentralization enhances economic efficiency should have a parallel in the dynamic setting of economic growth. Thus, expenditures for infrastructure and the social sector that respond to regional or local differences are likely to be more effective in enhancing economic development than central policies which may ignore those differences.<sup>32</sup> Oates is not, however, very explicit about what this means. The basic question is why, for example, \$1 million spent on roads or education at the subnational level should be more growth-enhancing than the same amount of money spent at the national level. The direct effect, pointed out by Oates, indicates that if subnational governments have an advantage in making public expenditures more efficient (by better satisfying the needs and preferences of local taxpayers based on better knowledge of these preferences), then this "static" advantage can also be present in a "dynamic" sense by having subnational government expenditures be more growth enhancing.<sup>33</sup> On closer look, this argument would seem to need further development. It should also make a difference whether governments at

different levels are social welfare maximizers, or are leviathan self-seeking entities, or even Niskanen-type bureaucrats. In the latter cases, growth may not be forthcoming from decentralization.

##### (b) *Indirect linkages between fiscal decentralization and economic growth*

Even if there is no direct linkage between fiscal decentralization and growth derived from Oates' (1993) argument, there would appear to be several potential indirect linkages between fiscal decentralization and economic growth.

##### (i) *The nature of efficiency and its measurement*

What is well accepted in the theory and practice of fiscal decentralization is that, given certain conditions, subnational governments can be more efficient. This can mean two things. First, the same amount of funds spent at the subnational level rather than at the national level can result in increased individual welfare. This can be true for some services since local and regional governments are better at discerning the preferences and needs of their constituencies and can more easily adapt their expenditure policies to fulfill them. This increase in welfare through decentralized expenditures can be termed the greater *consumer or allocative efficiency* of decentralized expenditures.

Second, it is also possible, but by no means a foregone conclusion, that spending the funds through subnational governments can lead to greater *producer efficiency*. That is, the same services or infrastructure can be put in place at a lower cost, or a particular budget can yield larger quantities or better quality of services and infrastructure when the funds are spent at the subnational level.

In general, there would be little dispute with the contention that fiscal decentralization can result in greater *consumer efficiency*. The lack of disagreement is not because there have been measurements of these effects. In fact, tests of this nature have been few and far between.<sup>34</sup> This is because of the *a priori* belief that a decentralized system can be more responsive to differences in demands among taxpayers and to their basic needs. It can be argued that differences in preferences are not likely to be that important in developing and transitional economies (Prud'homme, 1995) but, in fact, subnational governments can be more efficient than the central government even if all

individuals have identical preferences or if they lack mobility. Central governments may have a greater tendency to spend funds, for example, on national defense when the priorities of taxpayers may be better reflected, for example, by greater expenditures on education and sanitation.

The assertion that fiscal decentralization can result in greater *producer efficiency* would be disputed by many. What kind of evidence is there on differences in producer efficiency? The question put forward by Prud'homme (1995), Tanzi (1996), and others is whether local governments operate on the same production frontier as the central government and whether this question would receive the same answer in developed and developing and transitional economies.<sup>35</sup> On the other hand, Shah (1999) argues that the institutional environment in developing countries necessitates a greater degree of decentralization because of the high transaction and administrative costs implied by centralized systems. Appropriately structured decentralization may also improve the incentives for resource allocation, particularly in developing and transitional economies. Decentralization, in this line of reasoning, assists in the preservation of markets as the central government is a major source of inefficient policy and corruption.<sup>36</sup> In addition, decentralization may lead to greater producer efficiency in that it fosters experimentation and innovation in the provision of goods and services.<sup>37</sup> In practice, subnational governments in many countries have been in the vanguard of privatization of public services (World Bank, various years). But on the whole, there is little empirical evidence one way or another about whether local governments are more or less producer efficient than central governments.

For the sake of argument, let us assume that at least in some cases decentralization leads to greater consumer and producer efficiency. It is very significant that neither of these two potential effects of decentralization, greater consumer efficiency and greater producer efficiency, are recorded in the national income accounts. Greater consumer efficiency translates into greater individual welfare but no independent measures of this exist. Public expenditures with different levels of consumer efficiency are identically recorded in the income accounts: by the level of expenditures at the national or subnational level. Similarly, equal expenditure programs with very different levels of producer efficiency will provide the same

reading in the national income and product accounts.<sup>38</sup> If the greater efficiency associated with fiscal decentralization is not directly accounted for in the conventional measures of output and economic growth, how is it that greater efficiency may affect measured growth?

(ii) *Increases in economic efficiency and measured economic growth*

If fiscal decentralization leads to greater producer efficiency, then the indirect link between fiscal decentralization and growth is somewhat intuitive. National accounts measure public output by the level of expenditures, regardless of which level of government spends the funds. But if decentralized governments can produce more output (or better quality output) than the central government, with the same level of expenditures, then greater producer efficiency at the subnational level is occurring. Eventually the higher quantity or quality of the locally-provided public services, the true output, would result in increased income and, therefore, in measured growth.

In the case of consumer efficiency, the relationship is less intuitive. Several complex elements are at play. On the positive side, by better matching the preferences of citizens and increasing their individual welfare, there may be secondary effects on work effort, savings, and private investment, all of which would have a positive impact on measured economic growth at a later date. It is also possible that if public resources are "more efficiently spent" at the subnational level, this would mean, for example, that a better educated and healthier labor force or faster, less costly, transportation will result in greater (measured) economic growth in the future.

In this sense, tighter empirical tests of the impact of decentralization on economic growth should focus on whether fiscal decentralization, other things being equal (such as expenditure levels, per capita income, and so on), results in improved test scores or other measures of education, or better health status indices.<sup>39</sup> This means that we should test for the presence of direct impacts of fiscal decentralization on the basic components of the growth equation (better quantity and quality of inputs) rather than just directly on economic growth *per se*. But, the intermediate effect of decentralization on the quantity or quality of some public services, such as roads built by subnational governments, is likely to be more difficult to quantify.

On the negative side, it is conceivable that the mix of recurrent and capital expenditures and the sectoral composition of these expenditures (into roads, education, parks, and so on) that maximize the welfare of local residents may not be the mix that maximizes *measured* economic growth over time. The issue is whether there are other mixes of public expenditures that will have a greater positive impact on measured economic growth and whether some of these mixes may be more easily achieved through a centralized system of public finances. The underlying premise of socialist planned economies and central management and planning in many market economies in past decades was that centralized systems were superior in this respect. The poor performance of centralized systems has put into question their alleged superiority.<sup>40</sup> In general, however, there is no reason to expect that the allocation of resources that maximizes voters' welfare through a fiscally decentralized and a democratically representative process is the one that maximizes growth of measured output. In practical terms this means that it would be empirically possible to find that decentralization and measured economic growth are not positively correlated.

(iii) *Other indirect effects on growth through decentralization*

The theory of design of fiscal decentralization emphasizes a number of tradeoffs between efficiency and other objectives such as balanced distribution of resources across regions or macroeconomic stability (Guess *et al.*, 1997). The issue is whether or not changes in income distribution and in macroeconomic stability resulting from fiscal decentralization will also have an indirect but measurable impact on economic growth.<sup>41</sup>

Empirically, estimating the indirect impact of fiscal decentralization through horizontal fiscal imbalances and macroeconomic stability will require two sets of estimations. First, is fiscal decentralization actually associated with, or does it result in, a more unequal distribution of resources across regions and a more unstable macroeconomic environment? Second, what are the quantitative tradeoffs between macroeconomic stability (assuming that it comes from decentralization) and economic growth? That is, how much does macroeconomic instability retard economic growth? In addition, how much does the unequal distribution of income across regions affect the rate of economic growth? Let us take first the issue of

macroeconomic stability. There is considerable controversy in the fiscal decentralization literature as to whether fiscal decentralization works against macroeconomic stability. As pointed out above, Prud'homme (1995) and Tanzi (1996) are among those that have issued warnings on these negative potential effects of decentralization but McLure (1995), Sewell (1996), and Spahn (1997), among others, have questioned the validity of this link. So far, there has been no empirical test of the link between decentralization and macroeconomic stability.<sup>42</sup> But even if there is no inexorable link between fiscal decentralization and macroeconomic instability, there is wide consensus that poorly designed systems (for example, allowing subnational governments to borrow without controls with central governments covering any defaults) lead to instability. In these cases, fiscal decentralization could lead to less growth because there is some evidence that macroeconomic instability retards growth (Fischer, 1993). But curiously, what most researchers point to as an example of decentralization gone awry, the crises in Argentina and Brazil during the late 1980s and early 1990s may not be attributable, at least entirely, to decentralization policies. Easterly (2000) finds that, in general, economic and fiscal policies improved during this period for the countries in this region and that economic shocks, not poor policies, were to blame for the debt crises and recessions of this period. The empirical evidence on the influence of fiscal decentralization on central and subnational government deficits is also inconclusive, suggesting that decentralization *per se* may not indirectly increase macroeconomic stability through increased deficit spending at the central and subnational levels of government.

Let us now take on the issue of the distribution of public resources across subnational governments. The first issue is whether decentralization causes a more unequal distribution of public resources. Again, there has been no empirical test of this proposition. *A priori*, however, there may be some agreement with Prud'homme's (1995) argument that, all else being equal, unfettered fiscal decentralization is likely to lead to a concentration of resources in a few geographical locations and thus increase fiscal disparities across subnational governments. The accompanying presumption is that more centralized public sectors will attempt to produce a geographically more balanced distribution by channeling resources from richer

areas to poorer ones. Conversely, centralized systems could create inequitable distributions of public resources by favoring politically important jurisdictions over jurisdictions with greater needs but of less political importance.<sup>43</sup> But again, neither of these two propositions, that unfettered decentralization leads to the geographical concentration of resources and that centralized public sectors yield more geographically balanced distributions, has been empirically tested. There is also little evidence regarding how inequality across regions affects long-term economic growth.<sup>44</sup> This is another area that awaits testing.

A different issue is how the distribution of resources among subnational jurisdictions actually affects economic growth. Economists have given considerable attention to understanding the links between income distribution and economic growth. But, this research has concentrated on income inequality across the population and not with income disparities across regions. Whether lower levels of income inequality across the population translate into increased economic growth is still a matter of debate, with more recent studies suggesting that increased inequality retards economic growth.<sup>45</sup> While the findings of these studies suggest that policies to reduce inequality will positively influence economic growth, however, caution must be used when interpreting these results. Significant problems do exist when attempting to compare income inequality across countries and across time. First, two different measures of inequality are typically used in the analysis: those measures based upon income distribution and those measures based on the distribution of consumption. For the class of countries with income-based measures of inequality, differences exist between those countries that measure inequality on the basis of gross income versus those that measure inequality on the basis of net income. Finally, while some countries use the household as the unit of measurement, other countries measure inequality using the individual as the unit of measurement.<sup>46</sup>

(iv) *Subnational government competition and economic development*

A quite different perspective on the impact of fiscal decentralization on economic growth is that fiscal decentralization for better or worse can provide subnational officials with the ability to actively pursue economic development policies. Often, subnational governments' de-

velopment policies include several forms of competition among regional and local governments. These may include granting tax privileges and offering other forms of assistance to businesses willing to locate in a particular jurisdiction. This is an issue surrounded by considerable controversy in North America and in Western Europe.<sup>47</sup> Less research and discussion has been addressed to these issues in developing and transitional countries, but it would appear that similar policies are at play there as well. At stake is whether interjurisdictional competition can actually help promote economic growth in a country or whether it is actually a zero-sum or even a negative-sum game among local and regional governments for a fixed set of resources or economic activity. On the positive side, there is the possibility that interjurisdictional competition (of whatever form) forces government officials to deliver services at minimum feasible cost, thus enhancing producer efficiency at the subnational level. The lack of competition at the central government level may mean that costs of public services are higher than they ought to be. On the negative side, competition may lead subnational governments to underprovide public services and basic infrastructure (Break, 1967; Strumpf, 1999). This, of course, would retard growth.

(v) *Corruption, capture, and fiscal decentralization*

Does fiscal decentralization result in increased corruption or the capture of local governments, and, if so, how does it affect economic growth? Some researchers have suggested that corruption is likely to increase when central government authority declines or fails and that corruption is more prevalent in federal systems.<sup>48</sup> Corruption is likely to be more prevalent at the local level because there is more opportunity and pressure by local interests, and local officials may have more discretion and fewer obstacles because of the often blurred distinction between politicians and bureaucrats.<sup>49</sup> Treisman (1999, 2000a) argues that federal states may be perceived to be more corrupt than unitary states due to three factors: federal states are typically larger than unitary states, implying diminishing returns to reducing corruption; the existence of separate police forces at multiple levels of government; and a higher likelihood of having a bicameral legislature where the upper house is regionally elected and possesses veto power.<sup>50</sup> However,

these results appear to be sensitive to the inclusion of other variables and may also suffer from omitted variable bias (Gurgur & Shah, 2000).

In some developing countries there is a widespread belief that corruption is deeply ingrained in local government institutions.<sup>51</sup> Corrupt behavior on the part of local officials, of course, reduces the potential benefits of fiscal decentralization. Corrupt behavior would also reduce private incomes (as citizens must pay bribes to receive public services for which they have already paid taxes) and increase income inequality (as the tax structure is modified to favor those who have sufficient resources to influence government officials).

Several counterarguments have been made to this proposition. Decentralization may reduce opportunities for corruption since local policymakers are more visible to their constituents and thus corrupt behavior is more likely to be noticed than at the central level of government.<sup>52</sup> Corruption is enhanced by the presence of monopoly powers and discretion, and is diminished by the presence of accountability (Klitgaard, 1988). If decentralized governance limits monopoly political power and makes government more accountable to the local constituencies, then decentralization may help reduce corruption. In addition, the potential for the realization of economic rents may be larger in the case of central government policies such as import quotas or tax privileges. The damage inflicted by corruption at the central level can be several orders of magnitude greater than what can be inflicted at the local level due to increased access to resources and capital markets. Local officials have limited powers and budgets. Thus the return to rent-seeking behavior at the local level of government may be small relative to the center.

While the relationship between fiscal decentralization and corruption has been the subject of increased attention in the literature, there has only been limited empirical analysis of this issue. Huther and Shaw (1998), in the first empirical study of this issue, found a negative correlation between fiscal decentralization and corruption. Fisman and Gatti (2000) also found empirical evidence to support the argument of a negative relationship but Treisman (2000a) finds that corruption is more prevalent in federal states. More recently, Shah (2000), using a cross-section of developed and developing countries, found that decentralization negatively influences corrup-

tion and enhances accountability in the public sector. Decentralization, in this study, appears to have a more significant, negative influence on corruption in unitary rather than in federal countries. Further empirical study will be required on the topic of decentralization and corruption and how it may impact economic growth.

Another potential effect of fiscal decentralization, which may affect expenditure efficiency and ultimately affect economic growth, is that local officials, even if they are popularly elected, may be subservient to the needs of the local elites.<sup>53</sup> Local capture creates a series of problems including overstatement of the cost of provision of local public goods, corruption, and diversion of local public goods to nonintended groups.<sup>54</sup> The local elite may also wish to understate the demand for local public goods in order to lower revenue requirements and taxes. If the preferences of the local elites differ significantly from those of the majority of voters, decentralization reduces local expenditure efficiency and eventually retards economic growth. This, of course, assumes that centralized systems can be more responsive to the tastes and preferences of local voters. But, if the central government is itself controlled by a cadre of national elites, then it is possible, as population heterogeneity increases, that decentralization might still deliver a more efficient allocation of resources, especially if local preferences differ significantly from those at the center. In addition, competition among regional interest groups may lower the return to "capture by elites" at the subnational level relative to the central level of government.<sup>55</sup>

In practice, democratic governance, including frequent and open elections, a free press and mass media, and rule of law may serve to prevent local (and national) capture of public resources by a minority elite.<sup>56</sup> Case studies of democratic decentralization in developing and transitional countries suggest that many new constituencies gain representation through public office (Blair, 1998). This suggests that the concern over local elite capturing the allocative efficiency gains may be overstated. In summary, it is not clear whether capture by local elites and divergence from local preferences will be more pronounced under decentralized or centralized systems and therefore how fiscal decentralization may indirectly affect economic growth. These questions await empirical research.

## 5. SUMMARY AND CONCLUSIONS

The impact of fiscal decentralization on growth is more than an academic question. Whether decentralization affects economic growth has become an important policy issue for developing and transitional countries. This is an issue of importance both for large countries such as China and India and also for small countries such as the Baltic Countries or those in Central America.

In general, our knowledge of how decentralization affects economic growth is too limited at the present time to allow us to proffer advice. We have seen that the empirical evidence of the correlation between the extent of decentralization and economic growth is mixed and that this empirical evidence may not be entirely reliable because of several potential problems with the methodological approaches followed to derive those tests. On a theoretical level, we have also seen that the overall impact of fiscal decentralization on economic growth may be uncertain. In terms of a direct impact, if Oates' (1993) argument is correct, we should expect higher growth associated with decentralization. But this dynamic superiority of decentralized over centralized public expenditures is by no means obvious. We have also seen that there are potentially a multiplicity of indirect effects of decentralization on growth including those through consumer efficiency, producer efficiency, the geographical distribution of resources, macroeconomic stability, corruption, and capture by elites. Through these indirect effects there are forces at work that will link decentralization to higher economic growth but there are others that work in the opposite direction. At the present time, we are not even in a position to capitalize on what we know with more certainty is a significant determinant of economic growth: capital spending.<sup>57</sup> Currently, we have little knowledge about whether decentralized fiscal systems dedicate fewer resources to public investment than centralized ones. Moreover we know little about differences in the effectiveness or quality of public investment undertaken by different levels of government.<sup>58</sup>

The question that remains is where to go from here? Theoretically, studies of the potential influence of fiscal decentralization on economic growth should allow for the direct, and more importantly we argue, indirect effects of fiscal decentralization. We would suggest that this line of research should rely less on

representative agent models that explicitly assume away the allocative efficiency grounds for fiscal decentralization and more on models that impose fewer restrictions on the preferences of agents and allocation of resources. The use of enhanced Solow-growth models is perhaps a step in the right direction with much work remaining to be done in this area. Even if we successfully model the relationship between fiscal decentralization and economic growth, much work remains to be done on why and how preferences differ between different levels of government and how these preferences may result in different expenditure priorities between centralized and decentralized systems.

Empirically, we have noted, much work remains to be done on the potential direct effect of fiscal decentralization on economic growth and the hypothesized indirect effects of decentralization on growth through macroeconomic stability, economic efficiency, and the distribution of resources. While the current empirical evidence suggests a uni-directional, nonmonotonic relationship exists from decentralization to economic growth, we have noted that work needs to be done on incorporating the proper control variables into the analysis. We have also argued that there is a paucity of work on the indirect effects of decentralization. Only recently have scholars examined the question of the relationship between decentralization and inflation, leaving the question of the relationship between decentralization and macroeconomic stability for future research. Whether decentralization improves efficiency in developing and transitional economies is also a relatively unaddressed question, one that could be addressed by examining whether outcomes are relatively better in decentralized systems. Finally, whether decentralization induces or controls corruption is, to date, a question with no certain answer.

In light of the lack of consistent knowledge on the impact of decentralization on growth, it would seem safe to argue that policy advice and international aid must still focus on improving the design of fiscal decentralization in developing and the transitional economies. Even if we were to find at some later date that decentralization retards economic growth, this effect would need to be weighed against the positive impact of decentralization on the efficient allocation of economic resources and other possible benefits such as democratic governance and enhanced accountability. We must also

caution, as noted above, policy advisors and decision makers to be aware of the limits of our current knowledge on the effects of decentralization. We are uncertain as to the specific and aggregate effects of decentralization on growth, equity, and macroeconomic stability. We believe that until these effects are theoretically explored and empirically quantified that cau-

tion must be used when formulating decentralization policy on the assumption that its implementation will improve growth, equity, or macroeconomic stability. A contribution of this review, we hope, is to begin to outline a research agenda which may allow us a better understanding of the direct and indirect effects of fiscal decentralization.

## NOTES

1. It is not our intention to review here the now vast and still fast growing literature on fiscal decentralization. For reviews of the literature see Oates (1991a, 1991b, 1999), Prud'homme (1991), Rondinelli and Nellis (1986), Rubinfeld (1987), Shah (1994), and Ter-Minasian (1997).
2. See, for example, Dillinger (1994).
3. See World Bank (various years).
4. See, for example, Oates (1972), Bahl and Linn (1992), Guess, Loehr, and Martinez-Vazquez (1997), Spahn (1997), Burki, Perry, and Dillinger (1999), Shah (1999), and Martinez-Vazquez and McNab (2002).
5. Brennan and Buchanan (1980) is the classical exposition of how fiscal decentralization can control the Leviathan. See Ehdaie (1994) for empirical evidence that decentralization may reduce the size of the public sector. More recently, the market-preserving fiscal federalism literature argues that central governments are a source of policy inefficiency which may be reduced by appropriately structured intergovernmental fiscal arrangements (Jin, Qian, & Weingast, 2000; McKinnon, 1997; Weingast, 1995).
6. For example, actual deconcentration efforts in the guise of decentralization is a common process in countries in transition such as the Central Asia republics (Martinez-Vazquez, McLure, & Wallace, 1999), Ukraine (Martinez-Vazquez, McLure, & Wallace, 1995) or even Vietnam (McLure & Martinez-Vazquez, 1997).
7. See Bird (1993), Bird and Vaillancourt (1997), Martinez-Vazquez and McNab (1998), and Ebel and Yilmaz (2001) for a discussion of the difference between delegation, devolution, and deconcentration of fiscal authority.
8. Several recent studies examine the relationship between fiscal decentralization and other policy objectives. These include: Grote and von Braun (2000), who investigate whether decentralization reduces poverty; Treisman (2000a) who examines the relationship between decentralization and the quality of government; De Mello (2000) who studies the relationship between fiscal decentralization and intergovernmental fiscal relations; and Treisman (2000b) and Martinez-Vazquez and McNab (2002) who investigate the relationship between decentralization and inflation.
9. The list of recent empirical investigations focusing on the direct relationship between fiscal decentralization and economic growth includes: Zhang and Zou (1997, 1998), Davoodi and Zou (1998), Woller and Phillips (1998), Lin and Liu (2000); and Thiessen (2000), among others.
10. See, for example, Bird and Vaillancourt (1997). The lack of preoccupation with economic growth in the fiscal decentralization literature is evidenced by the fact that there is no discussion of this objective in textbooks on the subject; for example, Fischer (1993).
11. See, for example, Oates (1972) and Boadway and Wildasin (1984).
12. Using Hirshman's terminology, Oates (1993) describes the two systems for conveying preferences for public goods to local government officials through "voice" (voting elections and responsiveness to the local electorate) and "exit" (fiscal mobility or taxpayers voting with their feet by moving across jurisdictions).
13. A number of researchers have questioned whether developing and transitional countries have the preference revelation mechanisms (voting and geographical mobility) or the institutional capacity to realize the full gains resulting from fiscal decentralization. See Bahl and Nath (1986), Conyers (1990), Prud'homme (1991, 1995), Tanzi (1996, 2000), Litvack, Ahmad, and Bird (1998), and Dethier (1999, 2000).
14. See, for example, Prud'homme (1995) and Tanzi (1996, 2000). But see McLure (1995), Sewell (1996),

- Spahn (1997), and Shah (1999) for a dissenting point of view.
15. In practice, however, subnational governments do engage in redistribution policies. See, for example, Bahl, Martinez-Vazquez, and Wallace (1996).
  16. Macroeconomic stability in decentralized systems may be more easily attained if shocks to the economy are not symmetrically distributed (Gramlich, 1993; Spahn, 1997); if decentralization results in a more transparent assignment of responsibilities across levels of government (Shah, 1999); or if quality of economic management is higher due to the increased focus of centralized governments in decentralization systems (King & Ma, 2001).
  17. Weingast (1995) notes that market-preserving federalism may occur if: (a) decentralized governments have primary regulatory responsibility over the economy; (b) the economic system is characterized by a market with no internal restraints to trade; and (c) subnational governments face a hard budget constraint.
  18. See Rodden and Rose-Ackerman (1997) for a critique of the market-preserving federalism literature.
  19. See Oates (1972), Pommerehne (1977), Kee (1977), Bahl and Nath (1986), Wasylenko (1987), and Panizza (1999). This type of study has been criticized for performing intercountry comparisons using aggregate measures of fiscal decentralization, such as the share of subnational government in overall expenditure or revenues of the general government (Bird, 1986).
  20. Conyers' (1990) conjecture would suggest that, other things equal, the level of decentralization across developing countries should vary directly with the time period they have been independent and with some proxy of how centralized the colonial administration systems were. These control variables have not been introduced so far in the empirical literature.
  21. The ups and downs of the extent of decentralization in the United States (Shannon, 1997; Wallis & Oates, 1988) are clear witnesses that no such monotonic relationship does exist.
  22. Other variables that have been found to be positively related to the level of decentralization across countries include: population size (Bahl & Nath, 1986; Oates, 1972; Pommerehne, 1977); a federalist constitution (Bahl & Nath, 1986; Kee, 1977; Oates, 1972; Wasylenko, 1987); more urbanized population (Bahl & Nath, 1986; Kee, 1977); less open economies (Kee, 1977; Wasylenko, 1987); more equal distribution of income (Pommerehne, 1977); greater geographical sectionalism (Oates, 1972), and greater ethnic fractionalization (Panizza, 1999).
  23. These studies use different levels of disaggregation of expenditures and revenues at different levels of government. For example, Davoodi *et al.* (1995), Davoodi and Zou (1998), and Woller and Phillips (1998) and Martinez-Vazquez and McNab (2002) concentrate on the role of aggregate spending of different levels of government while Zhang and Zou (1997, 1998) carry this analysis further by looking at the impact of the sectoral composition of public expenditures at different levels of government on economic growth. Lin and Liu (2000) use the marginal revenue retention rate as a measure of fiscal decentralization.
  24. More significantly, we must explicitly assume that the omitted variables are uncorrelated with each of the regressors for the error term to also be uncorrelated with the regressors. If one or more of the omitted variables is, in fact, correlated with each of the regressors, then the parameter estimates may be inconsistent. See Baltagi (1995) and Wooldridge (2002), among others, for further information on omitted variable bias in panel data models.
  25. Recently, Lin and Liu (2000), Thiessen (2000), and Martinez-Vazquez and McNab (2002) follow Mankiw, Romer, and Weil (1992) and specify a Solow (1956) model of economic growth that assumes decreasing returns to all forms of reproducible capital.
  26. Feder (1983) and McNab and Moore (1998) show that increases in exports are significantly and robustly associated with economic growth. This may be an important omission especially for developing and transitional countries, where external trade plays a critical role.
  27. See Guess *et al.* (1997).
  28. See, for example, Bird (1986).
  29. While the International Monetary Fund's Government Finance Statistics (GFS) system reports information on grants and transfers between the various levels of government, it does not contain information on whether the grants and transfers are under the control of the central or recipient level of government or if the grants are conditional, block, or lump-sum. The GFS system also does not report information on the nature of transfers. Cross-sectional and time-series data on the number and size of subnational governments are sketchy

at best for developed countries and virtually nonexistent for developing and transitional countries, except in those cases where technical assistance providers have conducted surveys of subnational governments. It is this lack of information that has led to the use of a measure of fiscal decentralization that is typically constructed as a ratio of subnational government expenditures (revenues) to general government expenditures (revenues).

30. Mauro (1995, 1996) conjectures that more fractionalization may lead to more corruption because bureaucrats may favor members of their same group. Shleifer and Vishny (1993) also suggest that more heterogeneous societies may be subject to more corruption than homogeneous societies. Easterly and Levine (1997) argue that fractionalization affects economic performance by creating political instability. Collier (2000), on the other hand, argues that ethnic diversity reduces the probability of conflict.

31. See, for example, Oates (1993), Bird (1993), Prud'homme (1995), and Peterson (1996).

32. Of course, the direct linkage between decentralization and growth can be derailed if fiscal decentralization does not function effectively. The same is true for the greater efficiency of decentralization in a static sense. Oates (1993) and others have questioned whether voting mechanisms, mobility, or competition, for example, function well enough in developing and transitional economies to allow the realization of efficiency gains associated with decentralization.

33. Testing for the existence of the hypothesized dynamic efficiency effect would be, at best, complicated. Adding total public spending as an explanatory variable to control for crosscountry variations in public spending might be of benefit, once one controlled for the potential endogeneity between public spending and economic development and growth. Testing instead for the effect of decentralized expenditures on outcomes, rather than outputs, may be a more beneficial route to exploring the potential dynamic efficiency effects of fiscal decentralization.

34. The public finance literature has concentrated on testing how well local budgets may satisfy the demand for public services from representative taxpayers based on statistical tests and surveys. There are no quantitative studies comparing the relative (consumer) efficiency of decentralized versus centralized fiscal systems.

35. Prud'homme (1995) argues that there are reasons, such as better paying jobs and career prospects, to believe that central government bureaucracies are likely

to operate closer to the technical production frontier, even though both central and local bureaucracies probably operate quite far from this frontier. For dissenting views see Sewell (1996), who argues that well-functioning subnational bureaucracies exist in many countries and Bardhan (1997) who notes that putting decision-making authority in the hands of those who have information on local tastes and preferences provides strong incentives for the more efficient provision of local public goods.

36. See Weingast (1995, 2000), Montinola, Qian, and Weingast (1995), McKinnon (1997), Jin *et al.* (2000), among others, for discussions of market-preserving federalism.

37. Gramlich (1987) and Salmon (1987) are among those who argue that decentralization results in increased competition among subnational governments and fosters innovation in the provision of public goods. See Strumpf (1999) for a dissenting view to this line of reasoning.

38. Somewhat ironically, the regressions of measures of fiscal decentralization on growth are viewed in the recent empirical literature as a test of the "efficiency proposition" of fiscal decentralization. See, for example, Davoodi and Zou (1998) and Zhang and Zou (1997, 1998). The truth, however, is that the efficiency gains associated with decentralization are not captured in measures of economic growth. The theoretical approach in this literature is also inadequate especially if there is a desire to put emphasis on the efficiency gains associated with decentralization. Typically, this literature assumes the presence of a simple representative agent with utility as a function of private consumption, and government expenditures at all levels of government. Consequently, this type of theoretical framework omits by force the consideration of consumer efficiency gains associated with decentralization which require the presence of several agents with different preferences or tastes for public goods. There is no attempt in this literature either to try to capture any differences in "producer efficiency." A dollar of expenditure in these models produces the same level of public good at all levels of government.

39. See Diamond (1990) for a discussion of the measurement and estimation of the efficiency of public services.

40. See, for example, Rondinelli and Nellis (1986).

41. See Shah (1999) for a review of the literature on the relationship between fiscal decentralization and macroeconomic stability. Little crosscountry research has been

undertaken on the relationship between fiscal decentralization and horizontal fiscal imbalances across subnational governments.

42. Burki *et al.* (1999), using a panel data set of 32 countries, found that there is an almost 1-to-1 correspondence between increases in subnational deficits and central government expenditures and deficits in the subsequent period. They failed, however, to examine whether this translated into greater macroeconomic instability. While Treisman (2000b) finds that decentralization “locks in” the current rate of inflation, King and Ma (2001) and Martinez-Vazquez and McNab (2002) find that decentralization enhances macroeconomic management in separate samples of developed and developing countries, respectively.

43. See Bird and Rodriguez (1999) for the case of the Philippines.

44. We do not understand well either how growth may affect regional disparities. Prud'homme (1995) cites a number of studies showing that regional disparities do not disappear with economic development. On the other hand, there is evidence of a substantial narrowing of regional income differentials in the long run in the United States (see Barro & Sala-i-Martin, 1992, 1995).

45. See Persson and Tabellini (1994), Birdsall, Ross, and Sabot (1995), Deininger and Squire (1996), Perotti (1996), and Forbes (2000). Barro (1999) offers a dissenting view by noting that the previous studies failed to condition the results for the fertility rate, and once one does so, the coefficient on income inequality is statistically insignificant.

46. See Deininger and Squire (1996), Dollar and Kraay (2000), Srinivasan (2000), and Atkinson and Brandolini (2001) for further discussion of the measurement issues associated with income inequality.

47. In the United States early research found that this type of competition would appear to have little effect on business location. But, more recent research (for example, Bartik, 1985; Wasylenko & McGuire, 1985) finds that there is some effect.

48. While not specifically addressing the question of whether fiscal decentralization results in increased cor-

ruption, Shleifer and Vishny (1993) argued that rent-seeking activities increase when the role of the central government in society declines.

49. Prud'homme (1995), Tanzi (1994, 1996), Rose-Ackerman (1997), and Carbonara (2000) have argued that decentralization in developing and transitional economies increases the likelihood of rent-seeking activities by public officials.

50. See Tanzi (1998) and Gurgur and Shah (2000) for reviews of the literature on the relationship between decentralization and corruption.

51. Corruption, in fact, takes many forms, from the formal inclusion of exemptions in the tax structure that favor certain segments of society to bribes to tax assessors, kickbacks or other side payments in the awarding of contracts or through political patronage in the appointment of local employees. See World Bank (various years).

52. See Murphy, Libonatti, and Salinardi (1995), Sewell (1996), Guess *et al.* (1997), and Gurgur and Shah (2000).

53. See, among others, Conyers (1990), Oates (1993), Tanzi (1996), Bardhan and Mookherjee (1998), Martinez-Vazquez and McNab (1998), and Alesina (1999).

54. See Bardhan and Mookherjee (1998, 1999) and Dethier (1999, 2000).

55. See Shleifer (1997) for an examination of the effects of capture on economic development in Russia relative to Poland since the beginning of transition.

56. See, for example, Blair (1998), Martinez-Vazquez and McNab (1998), Burki *et al.* (1999), and Dethier (1999, 2000).

57. Capital investment also seems to be a decisive factor in helping the poor (Deininger & Squire, 1996).

58. To complicate things further, it is not entirely clear that greater public investment/expenditures (as opposed to public consumption expenditures) lead to higher economic growth (Devarajan *et al.*, 1996).

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