

# On Delegating the Distribution Role of Central Government to State Governments: Some Political Economy Issues

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**Abstract:** While empirical findings remain unsettled on whether greater fiscal decentralization would improve state level equity, there is no unique theoretical model that provides for such basis. Simultaneously, there is rather scant knowledge on the theoretical consequences of deepening fiscal federalism on the trade-off between efficiency and equity in delivering local public goods. Hence, the purpose of this paper is to bridge these gaps and develop a hypothetical scenario of ascertaining the effects of delegating conventional central government's commitment to combat income inequality to state-level governments instead. Our results unfold that devolvement of such responsibility may improve state level equity but at the expense of state level efficiency under specific circumstances. However, our findings are indeed susceptible to the magnitude of specific random events affecting local states relative to federal government and the degree of commitment of state governments. Further scenarios are discussed to track the endogeneity of local politicians and bureaucrats in this redistributive process. In particular, their strategic motives are found to yield contradictory, if not ambiguous, results that question out the entire issue of delegation.

**JEL Classification:** H7, H72, H77

**Key Words:** Intergovernmental Relations, Fiscal Federalism, State and Local Government Budget and Expenditures

## I. INTRODUCTION

Fiscal decentralization has been perceived as a major practical arrangement between central and state governments in conducting fiscal actions that would result in better efficiency in the allocation of public goods and services (Tiebout, 1956; Musgrave, 1959; Oates, 1972; and Tanzi, 1995; amongst others). Such arrangement in fact is based on the premise that local preferences would be best reflected in the provision and supply of public and hence local goods. The informational advantage which local governments possess helps them to capture the median voter's set of preferences for local public goods better. Lane (1993) and Paul (1988) have argued that efficiency in the delivery of local services would be ensured whenever information and knowledge are properly disseminated, the pertinent characteristics of local populations are captured and scale economies are reaped. Needless to say, the benefits of localizations in terms of reduced transport costs and better co-ordination of fiscal actions, through

proper management of resources, would culminate into an efficient delivery of local public goods.

Whether fiscal decentralization would actually bring about an improvement in efficiency depends very much on a host of institutional factors. Empirical results have shown that political economy considerations, particularly encompassing bureaucrats and local politics, may have a significant bearing on the effective use of public sector resources at the state level. The scenario is indeed further complicated when locally elected parties do not belong to the same ruling party at the centre level and who may be reluctant to adhere to administrative principles and standards set by the centre. Resulting clashes and conflicts undeniably upset the entire fiscal exercise, whereby local revenue, expenditure and grants may fail to yield desirable efficient outcomes. On the other hand, in an environment void of political conflicts in which bureaucrats are more responsible and accountable, then decentralization would breed the expected efficient outcomes.<sup>1</sup>

Similarly, to what extent may fiscal decentralization lead to equity gains remains yet a puzzle and more so due to its intertwining relationship with efficiency. It is well known in the literature of public finance that there exists a trade off between equity and efficiency (See Grueber, 2006; and Musgrave, 1959) in providing general public sector services. Equity gains may be derived for the current generations through well-crafted channels that target specific marginalized segments of the local population, for instance, educational transfers (vouchers), social insurance programs and support-grants that may not necessarily entail efficient outcomes (Grueber, 2006). Pauley (1973) and Brown and Oates (1987) have also highlighted the role of state governments in alleviating poverty and redistribution issues. But, there are interactive elements characterized by institutional imperfections that would prevent a socially-desirable output quality. Oates (1985) has further highlighted that equity gains may be problematic if Tiebout scheme of taxes predominates whenever people vote with their feet. Moreover, it has been shown that equity gains may be distorted due to political economy complexities, such as the existence of local pressure groups, lobbying, strategic bureaucrats and self-interested politicians.<sup>2</sup> Mismanagement of funds may lead to x-inefficiency that would not necessarily guarantee equity gains. An

improvement in efficiency may not, for certainty, be complemented with an improvement in equity. Keen at maximizing their chances of being re-elected, local politicians may blatantly inflate local budgets and choose to provide more financial assistance to the deprived ones. Clearly, this policy would culminate as adverse local public budget deficits should tax liabilities remain constant. In this context, the vote maximizing politician,<sup>3</sup> being the sponsor, may collude with the budget maximizing bureaucrat, as an agent in the whole redistributive framework, to achieve collective selfish ends.

Altogether, equity issues may be analyzed from an inter-temporal perspective in which current exploitation of some form of natural resources imposes a liability on future generations. Local administration of minerals, for instance, in a particular state rich in such natural resources is believed to provide more efficient allocation of resources outcomes. Proximity, local expertise and closer monitoring would help towards better management. However, there is no guarantee from what has been said above with respect to principal-agent problems and political economy intricacies that such devolvement of responsibilities would improve income distribution within and across generations. It can thus be deduced that efficiency or equity gains would largely depend on the strategic roles played by sponsors and administrators involved in providing local public goods.

To date, theoretical models of fiscal federalism that elucidate the potential relationship between equity and efficiency and the consequences of delegating the distributive role of the centre to state governments have been undermined. There is a lot of emphasis however that state governments may be better placed to reduce income inequality and combat poverty especially in developing economies (see for instance, Ramessur, 2006; World Bank, 2003; Foster et al 2001; Ladd and Doolittle, 1992; and Pauley, 1973). But, there is no formal approach to elucidate these consequences and the potential political economy implications in this direction. Thus, the purpose of this paper is to fill up this gap by constructing a theoretical scenario in which there is delegation of this specific fiscal role. Rest of the paper is organized as follows; in section 2 a theoretical framework is designed and which is further augmented in section 3 to address some more pertinent political economy issues, while the last section concludes.

## II. THE FRAMEWORK

We hypothesize a scenario in which the distributive role of the centre is delegated to each state level government under the following assumptions:

- A trade-off exists at the central government level between equity and efficiency (this follows from Grueber, 2006; and Musgrave, 1959).<sup>4</sup> In a median voter's setting one could refer to Sobhee (2003) and Cornes and Sandler (1996) who highlighted that there is a crowding effect in trying to cater for larger populations in supplying public goods that result automatically in poor quality of service delivery.
- Central government is at the very outset more concerned in delegating efficiency than equity to lower levels of government, which is the conventional approach to federalism emphasized by Oates (1972).
- Efficiency in the model relates to management of consolidated public expenditure levels, sound delivery of public goods and services and monitoring of overall public sector administration while equity would refer to the evolving status of income (in)equality.
- Both equity and efficiency of the centre are based on an equally weighted average of all states' levels of equity and efficiency.
- A stochastic variable also influences the trade-off relationship due to unanticipated shocks or events. It is common place to include this variable to capture deviations from anticipated outcomes.

Recognizing a trade-off between the two objectives, that is, in achieving efficiency and in yielding equity gains, the social planner is assumed to derive utility by minimizing deviations from targeted values or bliss points for these two aggregates (equity and efficiency). Hence, any distortionary element that triggers this deviation results in a loss of utility. We consider two scenarios of delegation and no-delegation of the redistributive role of the centre to compare outcomes. These are discussed below sparingly.

### In the Absence of Delegation (The Conventional Model of Fiscal Decentralization)

Based on the above definitions, we posit that the central government faces the following problem:

$$e_t - e^* = g_t + u_t \quad (1)$$

Where “e” = efficiency level and “e\*” relates to that bliss level of efficiency which will minimize inequality, “g”, to neutrality, particularly, in the absence of disturbances<sup>5</sup>, captured by the term “u”. While “g” would refer to a standard measure of inequality such as the Gini coefficient, the efficiency variable could be tracked by another standard measure (following the definitions provided in O’Dwyer and Ziblatt, 2006) where total of Central Government Consolidated Expenditure is divided by total of Public Sector Employees. An increase in “g” would thus indicate greater inequality while an increase in “e” would reflect greater productivity in providing social goods. The term “u” has well behaved first and second moments with zero mean and constant variance. The presence of the term “u” makes the model stochastic rather than deterministic to reflect the reality whenever unanticipated events alter the course of informed decision-making. As is customary, “t” stands for time subscript. In addition, the relationship given in equation (1) between equity and efficiency is inverse as postulated earlier. An increase in inequality of income indicated by an increase in “g” leads to a rise in efficiency level captured by a higher value of “e”.

Equation (1) can be re-written for the sake of tractability in terms of:

$$e_t = e^* + g_t + u_t \quad (2)$$

Moreover,  $e = \frac{1}{n} \sum_i^n e_i$  and  $g = \frac{1}{n} \sum_i^n g_i$ , where letter “i” refers to an individual state.

The model assumes that hypothetically “n” number of states falls under the responsibility of the central government. Thus, the efficiency level and the income inequality status are derived from an unweighted average of the state level conditions for these two aggregates.

Therefore, with these properties, the centre faces the following quadratic social loss function:

$$L(g_t, e_t) = \frac{1}{2}(g_t - g^*)^2 + \frac{1}{2}b(e_t^c - e^*)^2 \quad (3)$$

In this equation, “b” is a positive parameter which also captures the degree of commitment of the central government to reduce the deviation between actual and expected level of efficiency and also acts as an inequality-averse parameter. Besides,  $e_t^c$  represents a complete and consistent definition of government as is normally defined by the consolidated central government expenditure.

Using definitions given for  $e_t^c$  and equation 2, by substituting  $g^* = 0$  in equation (3), we have:

$$L(g_t, e_t) = \frac{1}{2}(g_t)^2 + \frac{1}{2}b(e_t - e^*)^2$$

$$L(g_t, e_t) = \frac{1}{2}(g_t)^2 + \frac{1}{2}b(e^* + g_t + u_t - e^*)^2$$

$$L(g_t, e_t) = \frac{1}{2}(g_t)^2 + \frac{1}{2}b(g_t + u_t)^2$$

In the first instance, central government assumes the responsibility of combating income inequality as reckoned in the standard literature on decentralization.

Taking first order conditions, we have:

$$\begin{aligned} \frac{\partial L}{\partial g} &= g_t + b(g_t + u_t) = 0 \\ \Rightarrow g_t(1 + b) + b(u_t) &= 0 \end{aligned}$$

$$\text{such that, } g = \frac{b(-u)}{(1+b)} \quad (4)$$

Equation (4) indicates that optimal inequality is determined by the stochastic term  $u$  and the parameter that characterizes the quadratic social loss function, in particular, the inequality-averse parameter “ $b$ ”. For more profound analysis in terms of tracking the variability of “ $g$ ” across different time periods, we choose to find the variance of this aggregate as follows:

$$\text{Var } g = \left( \frac{b^2}{(1+b)^2} \right) (\sigma^2 u) \quad (5)$$

Equation (5) shows that the variance of “ $g$ ” would depend positively and uniquely on the variability of the disturbance. Put differently, unanticipated shocks affecting the central government decision-making on efficiency and equity would create more instability in the redistributive role of the government.

### **In the Presence of Delegation**

Now, we consider an alternative scenario in which the central government opts for delegating to the state government the responsibility of combating income inequality at the regional level itself. In this scenario, the whole optimization exercise would be rekindled and undertaken at the state government level<sup>6</sup>, precisely as indicated below:

$$L(g_{it}, e_{it}) = \frac{1}{2} (g_{it})^2 + \frac{1}{2} b_i (e^c_{it} - e_i^*)^2 \quad (6)$$

Where  $b_i < b$ , since state level government (indicated by the *ith* order here) would be more concerned with reducing poverty and inequality rather than efficiency. In other words, this lower level government would be more inequality-averse in comparison to the centre. The term  $e_i$  in this modified specification would reflect efficiency at the state

level measured as total expenditure on local public goods divided by total employment by the state government. Henceforth, the choice of  $b_i$  would be as follows:

$$\text{Select } b_i \in (0, b) \text{ such that } b_i = \text{Max} (b - b_i)$$

Under such assumptions, the following result is obtained by symmetry for the inequality variable.

$$g_i = \frac{b_i(-u_i)}{(1+b_i)} \quad (7)$$

Hence, equation (7) conveys that in this proposed framework of devolution, where state governments are empowered fiscally to combat inequality, the resulting outcome on inequality would depend on the magnitude of error term  $u_i$  and how tough the state government would be in combating income inequality. Additionally, if we consider the variance of (7), for the sake of comparing with (5), the following output is generated:

$$\text{Var } g_i = \left( \frac{b_i^2}{(1+b_i)^2} \right) (\sigma^2 u_i) \quad (8)$$

This equation shows that if the variance of unanticipated shocks occurring at the state level is equalized to that of the central government's we would expect  $\text{Var } g_i < \text{Var } g$ . This is precisely when we consider normalizing the variances of shocks and considering them to be a numeraire identical to unity. What also follows from such assumption is a corresponding increase in the variability of efficiency at the state level. From our definition of efficiency, it follows that employment at state level departments would be rising faster than output of state level governments translating into lower quality of service delivery for local public goods.<sup>7</sup> More formally, the decline in efficiency can be expressed in terms of:

$$e = 1/n \sum_1^n e_i = e^* + [1/n \sum_1^n g_i] + u_i$$

Lower values of  $e$  would simply increase  $g$ , implying that an improvement in intra-state equity  $g_i$  would lead to intra-state and, other factors remaining constant, increasing central government inefficiency too.

However, we do not constrain our model by simply normalizing the error terms but go further to unveil other implications whenever the shocks are allowed to vary. The variability of the inequality index as revealed by equation (7) would depend on the variability of the random error term associated with unanticipated events that ultimately impact policy making occurring at the state level. It is actually this error term that determines whether state level government would be more effective in combating income inequality. Clearly, sometimes there are events which are specific to a given state or region especially when size of a country is large like the US, Argentina, India and China that may not adversely affect the whole country. For instance, a specific shock such as a huge hurricane or spread of agricultural diseases affecting a given state may have a significant bearing on the local economy. Hurricane Katrina affecting the New Orleans has had disastrous consequences on the local economy while having unparallel impact on other states and the federal government. Alternatively, there might be policy shocks due to unanticipated international events that would affect badly the central government but that do not necessarily transcend into wide shocks and impact equivocally state governments. By and large these random phenomena illustrate how and why local decision making could be a complex process that may easily deviate from targeted objectives.

These results should be treated with care at this stage since politicians, as sponsors, and bureaucrats, as agents, involved in the decision-making process of local public goods, have not been considered so far. In the next section, we extend our model and results to encompass the strategic roles played by these two groups. Our approach builds and stretches the principal-agent interaction in the fiscal decentralization literature as established by Tanzi (1995), Prud'homme (1994) and Oates (1994).

### III. ENDOGENOUS POLITICIANS AND BUREAUCRATS AND THE POLARIZATION OF POLICIES

Bureaucrats and politicians may not always be exogenous when it comes to providing local public goods. They could easily strategize their status and become influential in the decision-making framework and hence distort the whole delivery exercise of local goods and services. In fact, empirical results on the impacts of decentralization on equality of income are rather mixed indicating that it is not always easy to predict whether greater devolution would necessarily have a positive outcome on efficiency and equity. Tanzi (1995) and Prud'homme (1994) clearly provide channels through which decision making at the local level may be subjected to the whims and caprices of bureaucracy and local politics. Hence, this section introduces certain attributes that characterize “b” – the inequality-averse parameter to encompass local politics involved in policymaking. Put differently, parameter “b” now becomes a variable element that would be determined by an interactive process and dictated by politicians and bureaucrats. The power, and hence influence, of each group of agent depends on the type of information set - its completeness, degree of accuracy and accessibility. It is instructive to note that politicians who are the sponsors are also vote-maximizers while the bureaucrats are budget-maximizers looking for perquisites and fame.

In this respect, the optimization model is revitalized and posited as follows:

$$\text{Max } L(g_i, e_i) = \frac{1}{2} (g_i)^2 + \frac{1}{2} \left[ \left( (b)^\gamma \right)^\alpha \right]_i (e_i - e_i^*)^2$$

Where  $\gamma$  and  $\alpha$  denote respectively the influence of politicians and bureaucrats. Both are positive and the more complete the information set, the greater will be the value of the inequality-averse parameter. The effects of differing levels of power on the value of ‘b’ and hence on equity and efficiency trade-off would be subject to the following scenarios:

**Scenario I: Case of stable politics (centre and state belong to the same regime or are void of conflicts) and passive bureaucrats**

Here,  $\gamma = 1$  and  $\alpha = 1$ , such that  $b^*_i = \left( (b)^\gamma \right)^\alpha = b_i$ , as in the original model. Here there is no ambiguity in predicting the established results.

**Scenario II: Case of stable politics (centre and state belong to the same regime or are void of conflicts) but active and strategic bureaucrats**

Here,  $\gamma = 1$  and  $\alpha > 1$ , such that  $b^*_i > b_i$ , where this time devolution may worsen income inequality but improve efficiency. Local government output increases faster than local government employment. The improvement in efficiency would reflect an increase in state-level budgets consistent with the objective of a bureaucrat as well, albeit carefully crafted such that his strategic behavior is not called into question.

**Scenario III: Case of unstable politics (centre and state do not belong to the same regime or are not void of conflicts) and passive bureaucrats**

Here,  $\gamma > 1$  and  $\alpha = 1$ , such that  $b^*_i > b_i$ , where again devolution may worsen income inequality but improve efficiency, whether the outcomes would be worse than in scenario II would depend on the completeness of information set. If bureaucrats have superior information, they will be more influential and hence inequality may not be worse than in II.

**Scenario IV: Case of unstable politics (centre and state do not belong to the same regime or are not void of conflicts) and active bureaucrats**

Here,  $\gamma > 1$  and  $\alpha > 1$ , such that  $b^*_i > b_i$ , where once more devolution may worsen income inequality but improve efficiency. This would be the worse scenario, with highest adverse impact on income inequality. So here also, it is expected that public budgets would increase at the state level but the magnitude may not be as high as in Scenario II. An improvement in efficiency suggesting an overall commitment in the supply of local goods by local administrators and the sponsors may bring more votes, especially in a state where poverty or the segmented population may have little political say or is a minority.

**Scenario V: Case of neutral inequality-aversion**

Here,  $\gamma = 0$  and  $\alpha = 0$ , such that  $b^*_i = 1$ . If these values are replaced in the state-inequality reduced form function, the following result is obtained (assuming normalized errors as discussed above):

$$g_i = [(-u_i)/(2)] > g$$

In other words, state-inequality, after devolution, would depend uniquely on the random elements as captured by the shock variable  $u_i$ . If these shocks are lower than those of the centre, unambiguously, state level income equality will improve.

#### **IV. CONCLUDING REMARKS**

This paper has developed a theoretical framework in which the central government delegates its fiscal responsibility to the state-level government of combating inequality of income through a process of devolution. We assume that the social planner optimizes its welfare function by minimizing a quadratic-loss function which encompasses a trade-off between equity and efficiency in managing fiscal affairs. It is found that greater fiscal decentralization, through delegation, would result in more equity that would however compromise with efficiency whenever state government is empowered to combat inequality of income. This result is conditional upon the policy shocks that affect the central and local governments and the degree of commitment of the latter to achieve equity gains. Under the strict assumption of identical shocks, it is found that delegation as is understood in this paper would result in greater equity. However, when policy shocks are asymmetric and typically significant, they may influence adversely the inequality variable and make it worse than the case of no delegation. Worsening efficiency would indicate an increase in employment in state level departments faster than state level spending on public goods. The overall delivery of local goods and services would be sluggish or inferior in quality. Such results are consistent as long as politicians and bureaucrats do not have vested interest to start influencing the end results through manipulation of budgetary motives. Five scenarios are worked out to capture the potential endogeneity of bureaucrats and politicians in the local decision-making framework. In fact, it is observed that, under varying political economy assumptions, inequality would differ in magnitude and direction depending on who really holds an informational advantage. All in all, it is also deduced that the interaction of

such agents would complicate the redistribution outcomes that may worsen rather than improve inequality.

## ENDNOTES

<sup>1</sup> In fact, the paper by Tanzi (1995) highlights several potential avenues through which efficiency gains would either depend or be constrained by local bureaucracy as well as local politics.

<sup>2</sup> Bahl (1990) and Tordoff (1988) dispute the cases of developing countries in which there are failures in redistributing wealth through fiscal decentralization instruments.

<sup>3</sup> See Rogoff and Siebert (1988) and Nordhaus (1975) with respect to models of vote-maximizing politicians.

<sup>4</sup> Standard public economics literature provides several instances on such trade-off, for instance, in determining optimal taxation or minimizing dead-weight losses across economic agents or in using means-tested schemes to help low income households.

<sup>5</sup> Observe here that if we apply the expectations operator E to this equation conditional on a complete information

set  $\Omega$  such as:  $[E_t / \Omega_t] = E_t [(e_t - e^*) / \Omega_t] = E_t (g_t)$ , we would obtain  $e_t - e^* = g_t$

<sup>6</sup> Without loss of generality, we maintain the same assumptions for the state governments as well regarding the trade off between equity and efficiency, as the latter is assumed to be a national phenomenon.

<sup>7</sup> This could still be rationalized as there may be additional recruitment of staff at the local level to shoulder the additional responsibility of combating income inequality but this arrangement may not necessarily result into efficiency in supplying state level products.

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