

# Chapter Summaries

## Chapter 23: Grants-in-Aid

Grants-in-aid are transfers between governments, typically from higher level to lower level governments in the federalist hierarchy. Chapter 23 discusses the two main economic issues surrounding grants-in-aid, one theoretical and one empirical. The theoretical issue is the appropriate role for grants-in-aid. The empirical issue is the response of receiving governments to grants-in-aid.

The chapter begins with the theoretical issue.

1. According to the conventional model of fiscal federalism, grants-in-aid have only one role to play, to correct for externality spillovers across jurisdictional boundaries.
2. External spillovers can be addressed in one of two ways. The first is to move the decision-making authority to a higher level government whose boundaries include all the spillover effects. The other is to use grants-in-aid to adjust the decisions of the lower level governments to correctly account for the spillovers. The grants-in-aid would be designed exactly as Pigovian taxes or subsidies are designed to correct for externalities arising from private market activity. It would matter, for example, whether the spillovers constitute an aggregate or an individualized externality.
3. The problem with this theory is that it is essentially ignored, at least in the U.S. Table 23.1 lists the ten largest U.S. federal grants-in-aid to the states and localities (FY 2004). Eight of the ten are motivated by distributional concerns, and the two that have an efficiency motivation are not designed along Pigovian lines.
4. The alternative dynastic social welfare model under federalism presented in Chapter 21 captures the distributional motivation behind most of the major grants, but in other ways the grants are not designed in accordance with the model. They are conditional rather than unconditional, no-strings-attached grants; they are sometimes

per-unit subsidies (e.g. Medicaid) rather than lump-sum transfers; and there are no negative components to the grants (i.e., no governments are taxed, just subsidized). Because the basic theories of federalism are not directly helpful in understanding the motivations for grants-in-aid, economists have developed other criteria for motivating grants. The text offers two examples, a model of *fiscal equalization* proposed by Julian LeGrand, and a model of *cost disease* proposed by William Baumol and Wallace Oates.

LeGrand argued that grants-in-aid should be used to promote fiscal equalization across the lower level governments, a concept roughly in line with the alternative model of federalism in Chapter 21.

5. LeGrand's proposed grant formula is  $G = t \left( Y_T \left( \frac{P_t}{P_T} \right) - Y \right)$ , where G is the grant-in-aid

to a locality,  $t$  is the tax rate in the locality (a measure of the locality's fiscal effort),  $Y_T$  is a target level of income,  $Y$  is the income of the locality,  $P_t$  is a price index for the public services in the locality, and  $P_T$  is the price index for the public services in the target locality, with the grant and income terms measured per capita. LeGrand refers to this grant formula as equalizing localities' purchasing power-to-effort ratios. The ratio  $Y/P$  is also commonly referred to as the fiscal capacity of a locality.

If both grants and taxes (negative grants) are employed, then LeGrand's formula

levels all localities to the target level of purchasing power,  $\frac{Y_T}{P_T}$ .

6. If, realistically, the grants must be positive or zero, and the budget for grants-in-aid is limited by the legislature, then the granting government has to make two decisions:

how high to set the target real income level  $\frac{Y_T}{P_T}$ , and how much of the gap to close for

localities below the target. The answers determine how many localities receive aid and the average grant per locality.

7. Many countries do use grants for partial fiscal equalization of lower level governments' fiscal capacities.

The Baumol–Oates model of cost disease presented in the text has the following characteristics: Labor is used to produce a private good,  $Y$ , and a public good,  $G$ , under constant returns to scale; the labor force is fixed; production of the private good  $Y$  experiences technical change that increases the productivity of labor in producing  $Y$  by  $r\%$  per year, but production of the public good  $G$  experiences no productivity increases;

the market for Y and labor is competitive; and the public good is financed by a tax on wage income. The model has a number of dramatic results.

8. Because it does not experience technical change, the public good suffers from costdisease relative to the private good. The ratio of the marginal costs of G to Y, and hence the price ratio,  $\frac{P_G}{P_Y}$ , rises continuously by r% per year. This is a relative price effect that is independent of the underlying rate of inflation.
9. If the citizens want a constant level of G over time, then setting a single tax rate on labor income generates sufficient revenue to finance G over time.
10. If the citizens want a constant proportion of G to Y over time, then more and more of the constant labor force must be allocated to the production of G over time. Also, the tax rate on labor income has to be increased each year to be able to finance the increase in G. In the limit, the labor allocated to the production of G approaches the entire labor force and the tax rate on labor income approaches 100%. Still, citizens always have enough income left after paying their taxes to finance their increasing demand for Y.
11. The second case appears to be the more realistic since the demand for state and local services has risen over time. If so, then Baumol and Oates argue that citizens are more likely to accept the financing of G through a progressive income tax, which can be designed to have a fixed set of graduated tax rates and collect the required tax revenue to finance the increased demand for G over time. The tax revenues increase as income increases because an ever-higher percentage of income is taxed at the higher graduated rates. Since the federal government is more likely to use a progressive income tax, the federal government should collect the tax revenues and transfer them to the state and local governments through grants-in-aid. Hence the cost disease of state and local public services such as public safety and education is the motivation for the grants-in-aid.

The chapter turns next to the question of the *response of receiving governments to grants-in-aid*.

12. Grants-in-aid can be conditional or unconditional, matching or non-matching, and closed or open-ended.
13. Only matching grants can be open-ended, and if they are open-ended they have both a substitution and income effect favoring the aided category.
14. All closed-ended grants have only an income effect if the receiving government spends more on the aided item than is financed by the grant, which is true of all the major closed-ended grants-in-aid. Furthermore, such grants should have the same

effect on *all* items of expenditure in the receiving government's budget even if they are categorical, since they are equivalent to unconditional grants.

15. *The politics surrounding grants-in-aid* are an important consideration in determining how local governments respond to them, and it is not clear how to model the political process.
16. The political model most favored by economists in empirical analysis is the median voter model, which assumes that political decisions are made in a direct democracy in which the voter with the median preferences is decisive.
17. In developing estimating equations for specific categories of state and/or local services, the econometrician assumes that the median voter also has the median characteristics of all the personal characteristics that are used as explanatory variables in the estimating equations. Data on median incomes, age, property values, and so forth are available for states and localities.
18. Closed-ended categorical grants are entered on a per capita basis in the estimating equations, and the coefficient estimate on the grants variable is compared with the coefficient estimate on the median income variable to see how governments respond to grants-in-aid.
19. The value to the median voter of a dollar of a per-capita grant-in-aid is less than the value of a dollar of income by the ratio  $\frac{V_{med}}{V_{mean}}$ , where  $V_{med}$  is the property value of the

median voter and  $V_{mean}$  is the mean property value. Given the distribution of property wealth,  $V_{med}$  is less than  $V_{mean}$ .

20. In fact, the coefficient estimate on the per-capita grant-in-aid is often larger than the coefficient estimate on income in the estimating equations, a result called the *flypaper effect*: grant money appears to stick where it hits.
21. Economists have no convincing explanations for the flypaper effect, in part because they have no convincing model of the political behavior of the receiving governments to bring to the data.
22. Problems with the median voter estimation include: the median voter is unlikely to be decisive in most localities since the political process is usually not a direct democracy; the median voter almost certainly does not have the median personal characteristics as assumed (e.g. low income people are much less likely to vote); and it is difficult to know the full response of a rational voter to the receipt of grants-in-aid, since voters also pay taxes to the higher level governments to pay for these grants and almost all empirical studies of grants-in-aid ignore the tax side.