State and Local Government Expenditures

131 Undergraduate Public Economics
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OUTLINE

Chapter 10

10.1 Fiscal Federalism in the United States and Abroad

10.2 Optimal Fiscal Federalism

10.3 Redistribution Across Communities

10.4 Conclusion

**optimal fiscal federalism**: The question of which activities should take place at which level of government.
10.1

Fiscal Federalism in the United States and Abroad

**FIGURE 10-1**

**Changing Fiscal Federalism**
In the last hundred years, the federal government has grown significantly relative to state and local governments.

Source: 1902–1977 data from Walls and Oates (1998), Table 5.1; 2005 data on direct expenditures (grant spending attributed to recipient level of government) from Office of Management and Budget (2006a), Table 15.2, with state and local expenditures divided according to the proportion of direct spending in U.S. Bureau of the Census (2006a), Table 443.

**Intergovernmental grants**
Payments from one level of government to another.
SPENDING AND REVENUE OF STATE AND LOCAL GOVERNMENTS

**Property tax**: The tax on land and any buildings on it, such as commercial businesses or residential homes.

Main source of revenue from local governments due to:

1) **History**: real estate property is visible and hence taxable even in archaic economies with informal businesses

2) **Immobile tax base**: the real estate tax base cannot flee to another jurisdiction (mobility of the tax base is an issue for local governments)

Today, property tax is about 1/3 of revenue raised by state+local government (rest is 1/3 income tax, 1/3 sales taxes)
### Fiscal Federalism in the United States and Abroad

#### Spending and Revenue of State and Local Governments

**TABLE 10-1**

<table>
<thead>
<tr>
<th>Comparison of State Spending and Revenue Across the United States</th>
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<tbody>
<tr>
<td><strong>Spending</strong></td>
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Fiscal Federalism in the United States and Abroad

Fiscal Federalism Abroad

**TABLE 10-2**

<table>
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<tr>
<th>Subnational Government Spending/Revenue as Share of Total Government Spending/Revenue in 2001</th>
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<tr>
<td>Spending %</td>
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<td>-------------</td>
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<tr>
<td>Greece</td>
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<td>Portugal</td>
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<td>France</td>
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<td>Norway</td>
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<td>United States</td>
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<td>Denmark</td>
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<td>OECD Average</td>
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Source: Joumard and Kongsrud (2003), Table 1.

Compared to the subnational governments of other nations, state and local governments in the United States account for a relatively large portion of total government activity.

**fiscal equalization**

Policies by which the national government distributes grants to subnational governments in an effort to equalize differences in wealth.
THE TIEBOUT MODEL

What is it about the private market that guarantees optimal provision of private goods that is missing in the case of public goods?

Tiebout’s insight was that the factors missing from the market for public goods were shopping and competition.

The situation is different when public goods are provided at the local level by cities and towns. Competition will naturally arise because individuals can vote with their feet: if they don’t like the level of public goods provision in one town, they can move to the next town.

This threat of exit can induce efficiency in local public goods production.
THE TIEBOUT FORMAL MODEL

We consider a very simple model to illustrate Tiebout’s insight and theorem.

Suppose there are $2 \cdot N$ families with identical income $Y$ and 2 towns with $N$ homes each.

Each town supplies level $G$ of local public schools.

There are 2 types of families:

1) $N$ families with kids, with utility $U^K(C, G)$, value private consumption $C$ and schools $G$.

2) $N$ elderly families, with utility $U^E(C)$, value only private consumption $C$. 
THE TIEBOUT EQUILIBRIUM DEFINITION

Allocation of families across towns is a Tiebout Equilibrium if and only if:

1) In each town, \( G \) is decided by median voter and financed equally by town residents with budget \( Y = G/N + C \)

\[ \Rightarrow \text{If majority in town is elderly then } G = 0 \text{ as this maximizes } U^E(Y - G/N) \]

\[ \Rightarrow \text{If majority in town is families with kids then } G = G^* \text{ that maximizes } U^K(Y - G/N, G) \]

2) No 2 families want to exchange locations across towns
THE TIEBOUT THEOREM

Tiebout Theorem Part I: In equilibrium, families will sort themselves in towns according to their taste for public good (1 town with elderly only, 1 town with families with kids only)

Proof: Suppose elderly dominate in town 1 and $G_1 = 0$, then kids dominate in town 2 and $G_2 = G^*$. If there is a family with kids in town 1, then there is an elderly family in town 2 and they are willing to switch $\Rightarrow$ not an equilibrium.

Tiebout Theorem Part II: In each town, the level of local public good is efficient

Proof: In elderly town, $G = 0$ which is efficient as nobody values $G$.

In kids town, $G^*$ maximizes $U^K(Y - G/N, G)$ so that $-U^K_C/N + U^K_G = 0 \Rightarrow U^K_G/U^K_C = 1/N \Rightarrow \sum U^K_G/U^K_C = \sum MRS_{GC} = N/N = 1 = MC$ which is the Samuelson rule
THE TIEBOUT MODEL

People can shop with their feet by choosing the locality that best fits their tastes and provides the best public goods given the tax.

The main message of the model is that competition across local jurisdictions places competitive pressures on the provision of local public goods:

1) Public goods need to reflect tastes of local residents

2) Public goods need to be efficiently provided (without waste)
PROBLEMS WITH THE TIEBOUT MODEL

The Tiebout model requires a number of assumptions that may not hold in reality:

1) Individuals must not only want to vote with their feet, they must be able to actually carry out that vote (low mobility costs)

2) Individuals have perfect information on the benefits they receive from the town and the taxes they pay.

3) Individuals must be able to freely choose among a range of towns that might match their taste for public goods.

4) The provision of some public goods requires sufficient scale or size.

5) There must be enough towns so that individuals can sort themselves into groups with similar preferences for public goods.
PROBLEMS WITH THE TIEBOUT MODEL

The Tiebout model requires equal financing of the public good among all residents.

**Lump-sum tax**: A fixed taxation amount independent of a person’s income, consumption of goods and services, or wealth. Sometimes called a poll tax.

Towns typically finance their public goods instead through a property tax where rich pay more than poor (because they live in nicer houses). The problem that property taxation causes is that the *poor chase the rich* (rich also want to be with rich)

Two mechanisms prevent poor from chasing the rich:

1) **Housing prices**: places with rich people have high housing prices

2) **Zoning**: Restrictions that towns place on the use of real estate (e.g., each house must sit on a parcel of at least 6000 sq feet)

Zoning regulations protect the tax base of wealthy towns by pricing lower-income people out of the housing market.
PROBLEMS WITH THE TIEBOUT MODEL

No Externalities/Spillovers

The Tiebout model assumes that public goods have effects only in a given town and that the effects do not spill over to neighboring towns.

Many local public goods have similar externality or spillover features: police; public works; education

With spillovers across towns, public goods will be underprovided as each town does not take into account positive externality effects of its public good decisions.
EVIDENCE ON THE TIEBOUT MODEL

Tiebout Sorting: Resident Similarity Across Areas

A testable implication of the Tiebout model is that when people have more choice of local community, the tastes for public goods will be more similar among town residents than when people do not have many choices.

This fact is indeed pretty well established.

More Efficiency when there is more Tiebout sorting

This fact is controversial.

Hoxby (2000) considers public school districts in the US. She compares cities where:

A) There are few large school districts and hence little choice for residents (such as Miami)

B) There are many small school districts and hence a lot of choice for residents (such as Boston)

2 key findings:

I) Cities with few districts have less sorting across neighborhood (in terms of school quality) than cities with many districts (this result is well established)

II) Cities with many districts have higher test scores on average: this result is controversial (Rothstein, 2010)
EVIDENCE ON THE TIEBOUT MODEL

Capitalization of Fiscal Differences into House Prices

**house price capitalization**: Incorporation into the price of a house of the costs (including local property taxes) and benefits (including local public goods) of living in the house.

⇒ High property taxes (relative to public goods quality) depresses housing prices

⇒ Low property taxes (relative to public goods quality) increases housing prices

Example: Suppose $1 cut in property tax (in perpetuity) with no change in value of local public good

Capitalized value: $\Delta V = 1 + 1/(1 + r) + 1/(1 + r)^2 + ... = 1/[1 - 1/(1 + r)] = (1 + r)/r = $21 \text{ if } r = 5\%$
EVIDENCE FOR CAPITALIZATION FROM CALIFORNIA’S PROPOSITION 13

California’s Proposition 13 became law in 1978. Proposition 13 mandated that the maximum amount of any tax on property could not exceed 1% of the “full cash value” of the property. The full cash value was defined as the value as of 1976, with annual increases of 2% at most.

Each $1 of property tax reduction increased house values by about $7.

Full capitalization of lower property taxes into house prices would imply that house prices should rise by the present discounted value of reduced future tax payments.

In principle, the fall in property taxes would result in a future reduction in public goods and services, which would lower home values.

The fact that house prices rose by almost the present discounted value of the taxes suggests that Californians did not think that they would lose many valuable public goods and services when taxes fell.
KEY CONSEQUENCE OF TIEBOUT MODEL

It is very hard for a local government to redistribute from rich to poor:

If local redistribution is high ⇒

1) Poor flock to the city which provides welfare benefits

2) Rich flee to other cities to avoid paying for redistribution ⇒ Local redistribution program will break down

Redistribution programs work better if implemented at higher level: state or federal (harder to leave the state or country). At local level, need to have tax-benefit linkage to avoid migration

**tax-benefit linkages**: The relationship between the taxes people pay and the government goods and services they get in return.
REDCISTRIBUTION ACROSS COMMUNITIES

There is currently enormous inequality in both the ability of local communities to finance public goods and the extent to which they do so.

Should We Care?
It depends on the extent to which the Tiebout model describes reality.

Tools of Redistribution: Grants
If higher levels of government decide to redistribute across lower levels of government, they do so through intergovernmental grants.

We assume in graphical analysis that local community chooses public spending and private spending according the preferences of Median voter in the community
Redistribution Across Communities

Tools of Redistribution: Grants

**Figure 10-2**

A Town’s Choice Between Education and Private Goods  
- With $1 million to spend on some combination of education and private goods, Lexington chooses point X on its budget constraint AB, spending $500,000 on each, at the point where its indifference curve, $IC_1$, is tangent to its budget constraint.
Intergovernmental Grants

Higher level government can provide grants to redistribute across communities and incentivize communities to spend on public goods.

Three main forms of grants:

1) **Matching grant**: A grant, the amount of which is tied to the amount of spending by the local community.

2) **Block grant**: A grant of some fixed amount with no mandate on how it is to be spent.

3) **Conditional block grant**: A grant of some fixed amount with a mandate that the money be spent in a particular way.
Redistribution Across Communities

Tools of Redistribution: Grants

Matching Grants

The Impact of a Matching Grant on the Town’s Budget Constraint

- When Lexington is offered a matching grant for educational spending, with $1 of grant for each $1 of local spending, the budget constraint pivots outward from AB to AC. Lexington chooses point Y on AC, as it spends $250,000 more on education (with education spending rising from $500,000 to $750,000) and $125,000 more on private goods.
Redistribution Across Communities

Tools of Redistribution: Grants

Block Grant

The Impact of an Unconditional Block Grant on the Town's Budget Constraint

When Lexington is offered an unconditional block grant of $375,000, the budget constraint shifts outward from $AB$ to $DE$. Lexington chooses point $Z$ on $DE$, as it spends $75,000 more on education (with education spending rising from $500,000 to $575,000) and $300,000 more on private goods.
Redistribution Across Communities

Tools of Redistribution: Grants

Conditional Block Grant

**Figure 10-5**

*The Impact of a Conditional Block Grant on Town Spending* - When the town is offered a conditional block grant for education spending, it can spend up to $375,000 on education while still spending $1 million on private goods. Beyond point $F$, the conditional block grant operates like the unconditional block grant, so the budget constraint is $AFE$. For towns that already have high educational spending, like Lexington, the conditional grant has the same effect as the unconditional grant, causing education spending to rise by $75,000.*
KEY PREDICTION OF THEORY: CROWD-OUT

In the theory presented, a $1000 increase in private income has the same effect as a $1000 increase in Fed block grant: both shift the budget in the same way and lead to the same outcome.

Example: $1000 private income increase leads to $800 more in private consumption and $200 more in taxes and public spending. $1000 extra fed grant leads to $200 extra in public good spending and $800 cut in local taxes and hence $800 extra in private consumption.

Similarly, with multiple public goods (e.g., schools and police), an extra $1000 Fed grant for school has the same effect on schools and police than a $1000 Fed grant for police.

Money is fungible: only total resources matter for the allocation across private good and public goods at the local level.
THE FLYPAPER EFFECT

Hines and Thaler found that the crowd-out of state spending by federal spending is low and often close to zero. Economist Arthur Okun described this as the flypaper effect because “the money sticks where it lands” instead of replacing state spending.

As Knight noted, states that get grants are the ones that like spending the most. He also noted that highway grants from the federal government to states are determined by the strength of the state’s political representatives.

Knight compared the level of spending in treatment states that see increases in the power of their congressional delegations with the level of spending in control states that see decreases in the power of their congressional delegations

He found that each additional $1 of federal grant money increase due to rising congressional power leads to a $0.90 reduction in the state’s own spending

Additional studies show that there is a flypaper effect in the short-run but that there is substantial crowd-out from block grants in the long-run
School finance equalization: Laws that mandate redistribution of funds across communities in a state to ensure more equal financing of schools.

Without school finance equalization, huge disparity in property tax base and hence school funding (per pupil) across areas (example from Bay Area: Lafayette is very wealthy, Richmond is poor)

Many states (including California) impose equalization: take away local taxes and redistribute them across districts

Equalization often imposed by courts without thinking carefully about economic consequences
REDISTRIBUTION IN ACTION: SCHOOL FINANCE EQUALIZATION

The Structure of Equalization Schemes

School finance equalization schemes can take very different forms. Some states have systems that attempt to completely or nearly completely equalize spending across school districts.

The Effects of Equalization

**Tax price:** For school equalization schemes, the amount of revenue a local district would have to raise in order to gain $1 more of spending

With no equalization, the tax price is $1 (local govt keeps all its revenue)

With perfect equalization, the tax price is infinite (raising local revenue has zero impact on local spending)
CALIFORNIA SCHOOL EQUALIZATION

In 1960s-1970s, California used to have one of the best public school systems in the nation, now it has one of the worst

California used to have no school finance equalization and hence big disparities across areas

1976: Serrano vs. Priest case: Supreme court ruled that disparities above a threshold were not constitutional

⇒ Wealthy districts forced to give all their tax revenue above the threshold to the common pool to fund poor districts

⇒ local government has no incentive to raise taxes ⇒ taxes and school funding fall in rich districts

⇒ Property taxes no longer able to fund schools adequately
School Finance Equalization and Property Tax Limitations in California

If residents perceived that property taxes were “too high” in California, why did they wait until 1978 to lower them?

Proposition 13 was actually a response to a court case that led to school finance equalization in California. The key feature of this decision was that it broke the link between local property taxes and spending on schools.

Taxes were no longer a price: they were just taxes. As a result, it was natural for communities to vote to lower taxes, since they did not perceive any benefit from them anymore.

Wealthy voters would have opposed Proposition 13 in the absence of the school finance equalization because their high taxes were paying for schooling they desired for their town without subsidizing anyone else’s schooling. Thus, these wealthy taxpayers were happy to approve Proposition 13.
CONCLUSION

In every country, the central government collects only part of the total national tax revenues and does only part of the national public spending.

When spending is on goods for which local preferences are relatively similar, and where most residents can benefit from those goods, the Tiebout model suggests that the spending should be done locally.
CONCLUSION

When spending is for goods that benefit only a minority of the population, the Tiebout model suggests that it might be difficult to do this spending locally because the majority of people who do not benefit will “vote with their feet” and move elsewhere.

Higher levels of government are able to implement redistribution across lower levels of government either directly with means-tested programs for individuals (such as Food stamps) or through grants to local governments (such as Medicaid).

In the same way that 100% tax on individuals is counterproductive, 100% confiscation of local taxes (as in the most drastic school equalization schemes) is counterproductive (leads local governments to abandon their taxes).

Higher level government should have primary responsibility for redistribution.