Regional and Local Public Economics

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Recap: Roadmap of the Course

I. Theory

1.   **Income** Decentralization: taxation (8 lectures) with Andreu

2.   Government Levels and Functions & **Expenditure** Decentralization (4 lectures)

3.   **Provision of Public Goods** & Intergovernmental Grants (3 lectures)

II. Cases and Policies

4.   International **Comparison** (Spain **vs** Canada, China, Germany, US, etc.; 5 lectures)

5.   Application: **Policy** Analysis (education, health, transportation, development, etc.; 5 lectures)

III. International Fiscal Federalism (1 lecture) with Andreu

Intergovernmental Grants
Lecture 1 Definition and functions of grants

April 4, 2024

Reading for this lecture: **Chapter 9**: "Intergovernmental grants?"

State and Local Public Finance, by Ronald C. Fisher

From Expenditure Decentralization to Intergovernmental Grants

- Last Unit: Local government's responsibilities: Optimal size for public goods/services provision

- Gaps!

  - Local govt revenue vs expenditure

  - Regional inequality

Basics of the Unit: Intergovernmental Grants

Three lectures on "**Inter-governmental Grants**", discussing the following topics:

1. Introduction to Inter-governmental grants

2. Analysis of Economic Consequences of Inter-governmental Grants

3. (TBC) equalizing grants

Today's Agenda

1. Stylized Facts and Motivation: Why grants?

2. Basic Framework: How to conceptualize grants?

      Types, Characteristics
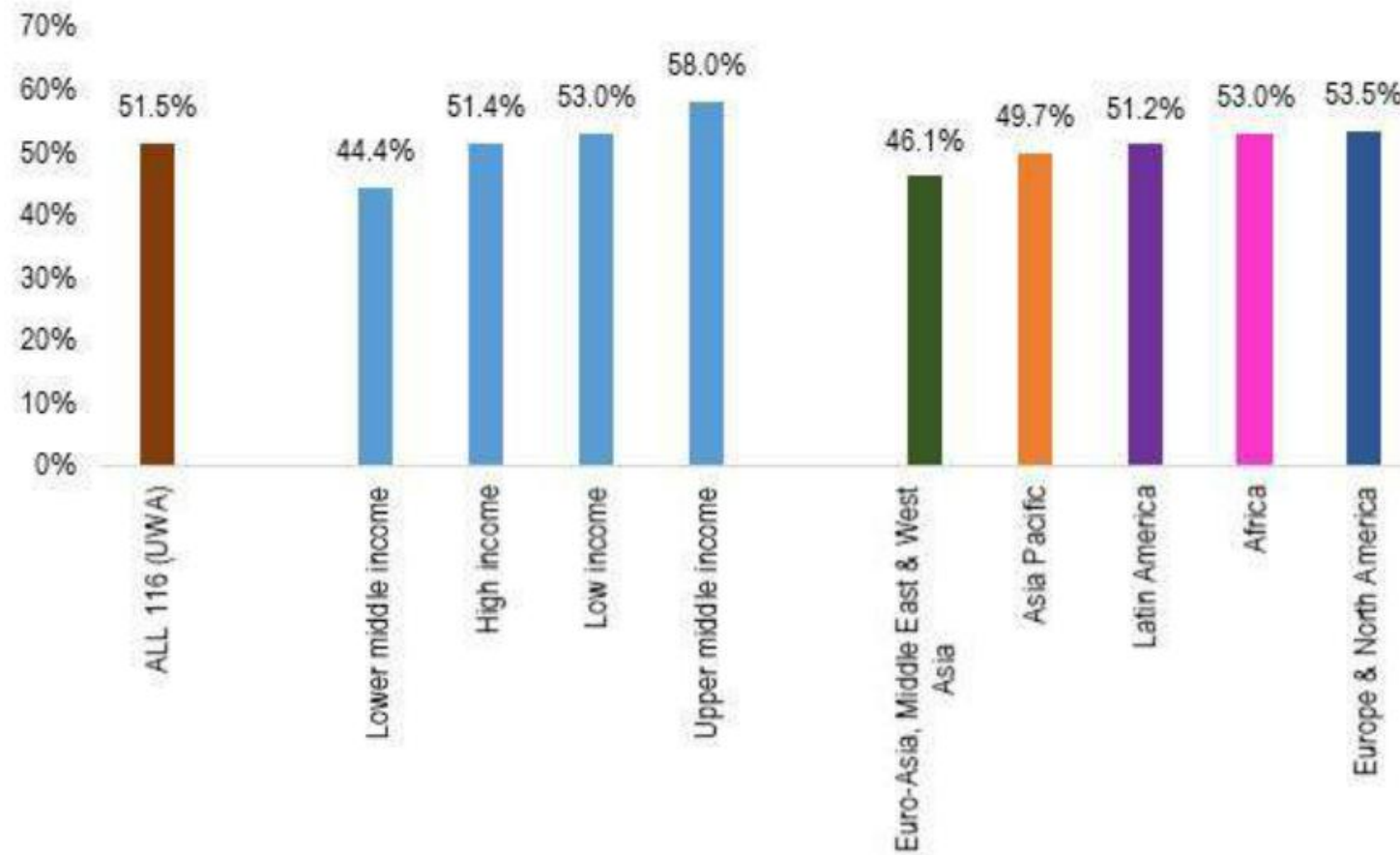
What are intergovernmental grants?

Definition

Transfers of funds from one government to another, *most often* from a higher-level government to lower-level ones

- not only in federal states but also in non-federal countries with multiple levels of governments

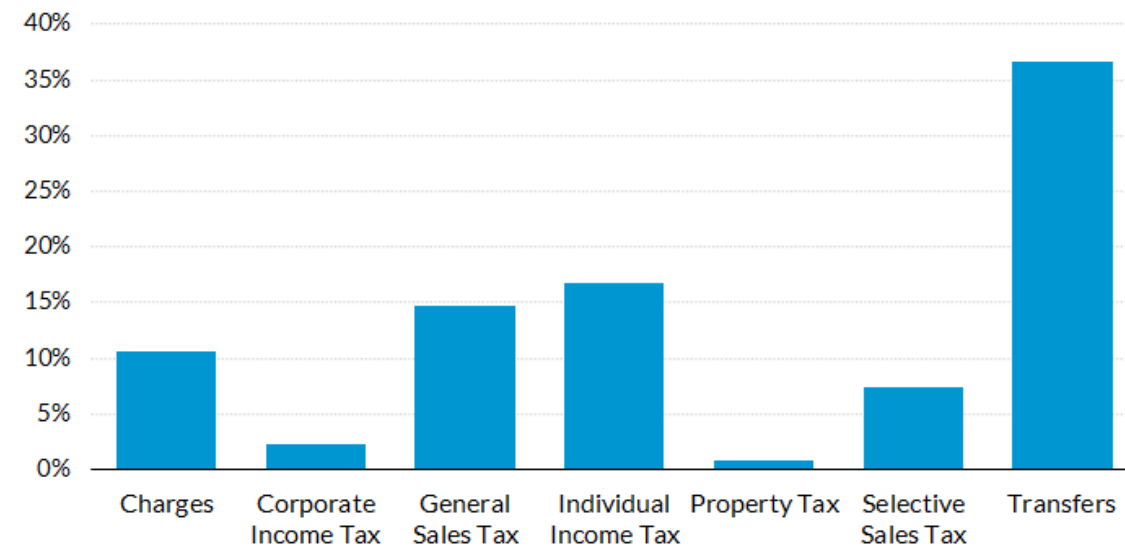Grants and subsidies as a share of SNG revenue by income group and world region (2020)

Source: OECD (2022), *2022 Synthesis Report World Observatory on Subnational Government Finance and Investment*, OECD Publishing, Paris, https://doi.org/10.1787/b80a8cdb-en.

The Case of the US
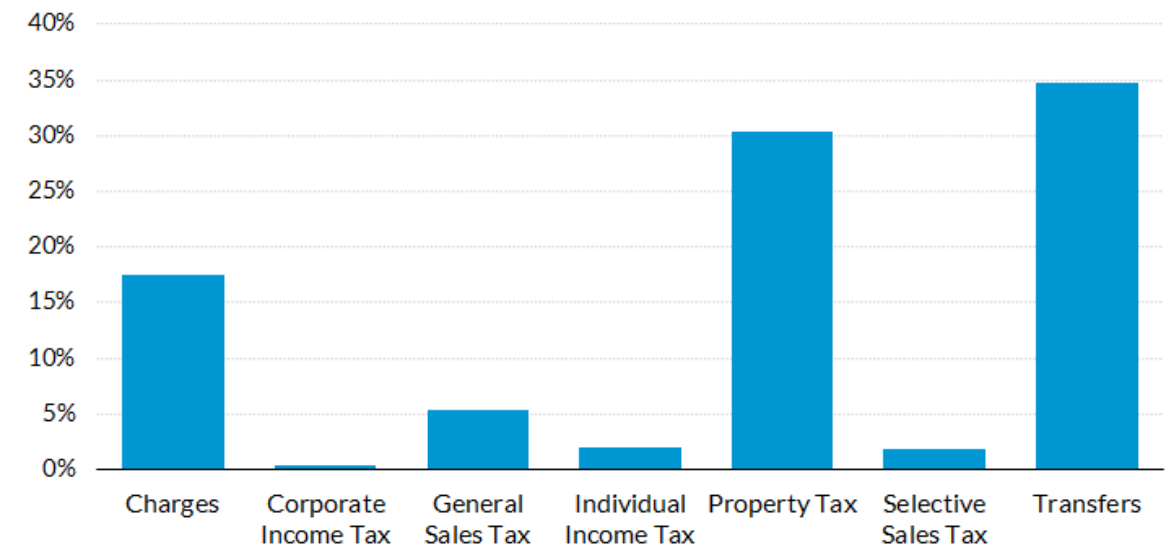

Sources of State General Revenue
Share of total state general revenues, by source, 2020

Source: US Census Bureau Annual Survey of State and Local Government Finances, 1977-2020 (compiled by the Urban Institute via State and Local Finance Data: Exploring the Census of Governments; accessed 30-Sep-2022 06:07), https://state-local-finance-data.taxpolicycenter.org.

URBAN INSTITUTE

Sources of Local General Revenue
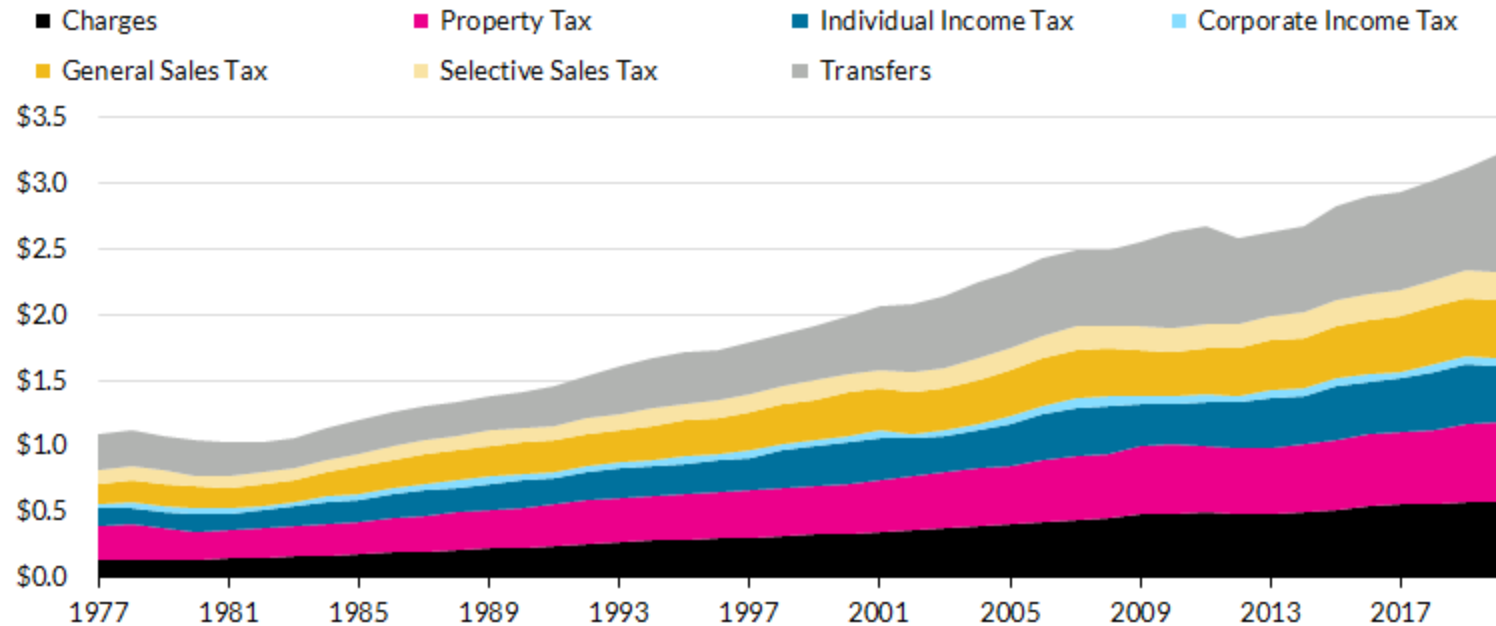Share of total local general revenues, by source, 2020

Source: US Census Bureau Annual Survey of State and Local Government Finances, 1977-2020 (compiled by the Urban Institute via State and Local Finance Data: Exploring the Census of Governments; accessed 30-Sep-2022 06:07), https://state-local-finance-data.taxpolicycenter.org.

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Source: State and Local Backgrounders, Urban Institute (2022)

The Case of the US

Sources of State and Local General Revenue

Trillions of real 2020 dollars, by source, 1977–2020

- ■ Charges
- ■ Property Tax
- ■ Individual Income Tax
- ■ Corporate Income Tax
- ■ General Sales Tax
- ■ Selective Sales Tax
- ■ Transfers

Source: US Census Bureau Annual Survey of State and Local Government Finances, 1977-2020 (compiled by the Urban Institute via State and Local Finance Data: Exploring the Census of Governments; accessed 30-Sep-2022 06:07), https://state-local-finance-data.taxpolicycenter.org.
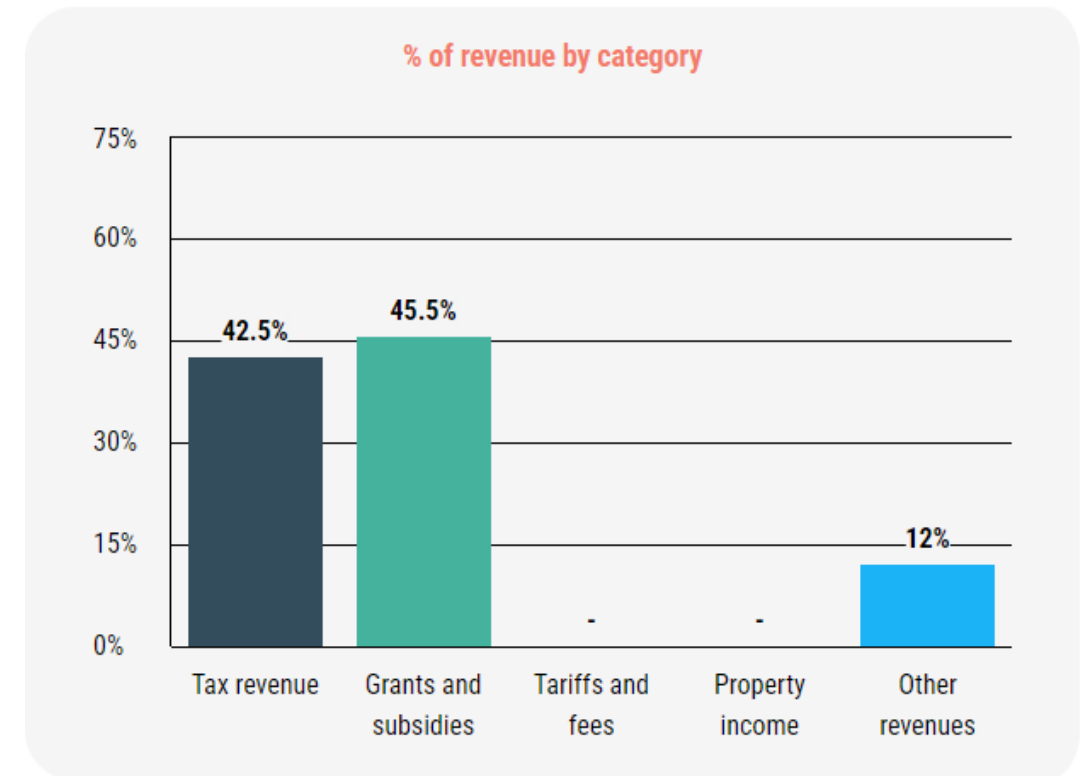
URBAN **INSTITUTE**

Source: State and Local Backgrounders, Urban Institute

The Case of China

SUBNATIONAL GOVERNMENT REVENUE BY CATEGORY

2020	DOLLARS PPP / INHABITANT	% GDP	% GENERAL GOVERNMENT	% SUBNATIONAL GOVERNMENT
Total revenue	3 386	19.7%	79.4%	100.0%
Tax revenue	1 438	8.4%	50.9%	42.5%
Grants and subsidies	1 541	9.0%	-	45.5%
Tariffs and fees	0	0.0%	-	0.0%
Income from assets	0	0.0%	-	0.0%
Other revenues	408	2.4%	-	12.0%

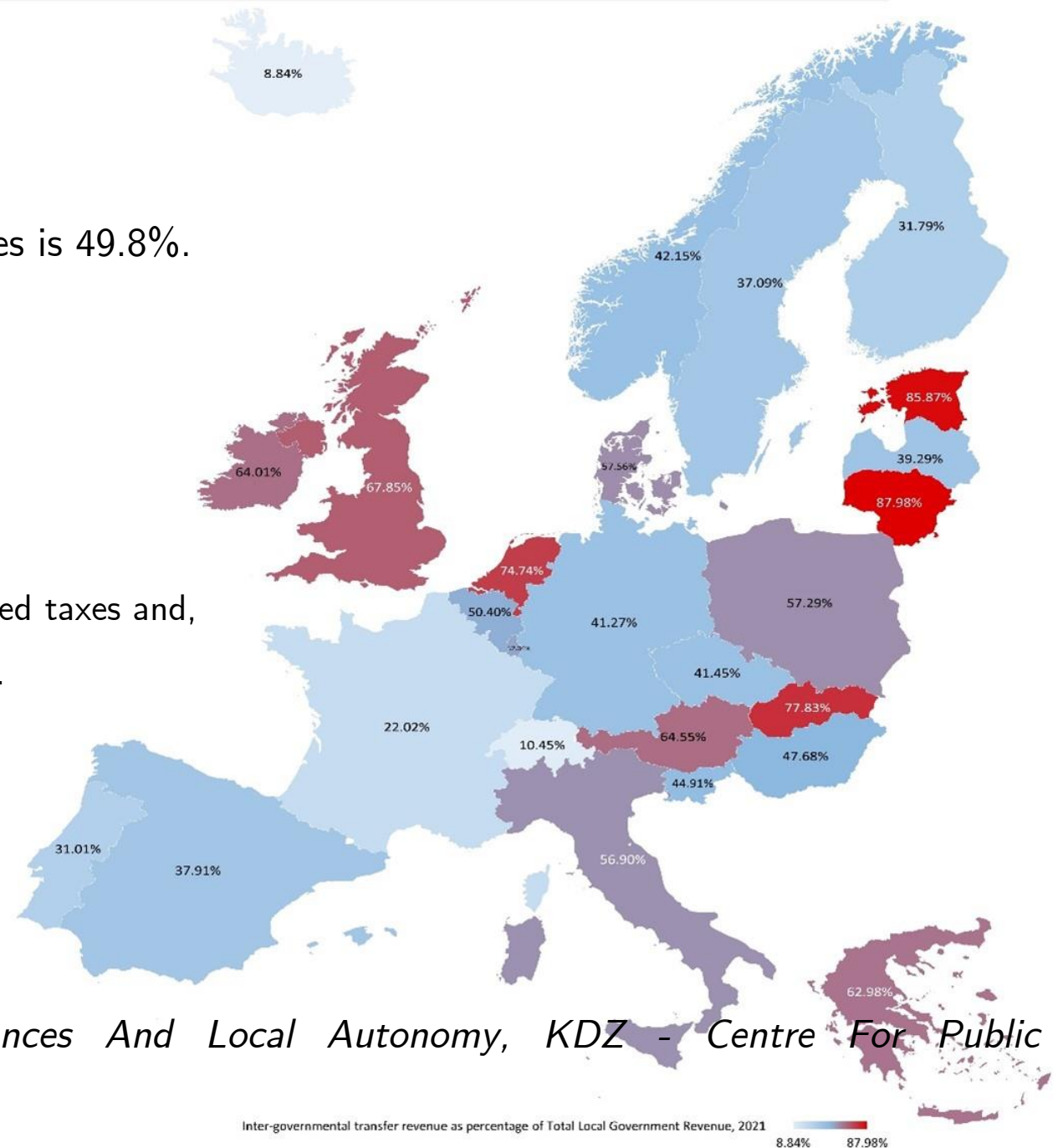
% of revenue by category

Source: OECD (2020), SNG-WOFI Database

Europe:

The average for the OECD-European countries is 49.8%.

* Intergovernmental transfers can also include shared taxes and,

in some countries (e.g. Italy), regional budgets too.

Inter-governmental transfer revenue as percentage of Total Local Government Revenue, 2021
8.84%   87.98%

Source: European Local Government Finances And Local Autonomy, KDZ - Centre For Public Administration Research, 2022

Some additional data to check if interested

"OECD Fiscal Decentralisation Database": Inter-governmental transfer revenue as percentage of total revenue for each level of government

Purposes of grants

According to economic theory:

1. **Vertical** imbalances

   1. Close vertical fiscal **gaps** (VFG)

2. **Horizontal** imbalances

   1. Macroeconomic **stabilization**

   2. Explicit **redistribution** of resources among regions or localities

      - "Equalization grants"

   3. Improve the **efficiency** of fiscal decisions of sub-national governments

      - e.g., correcting for externalities

Purpose 1 VFG

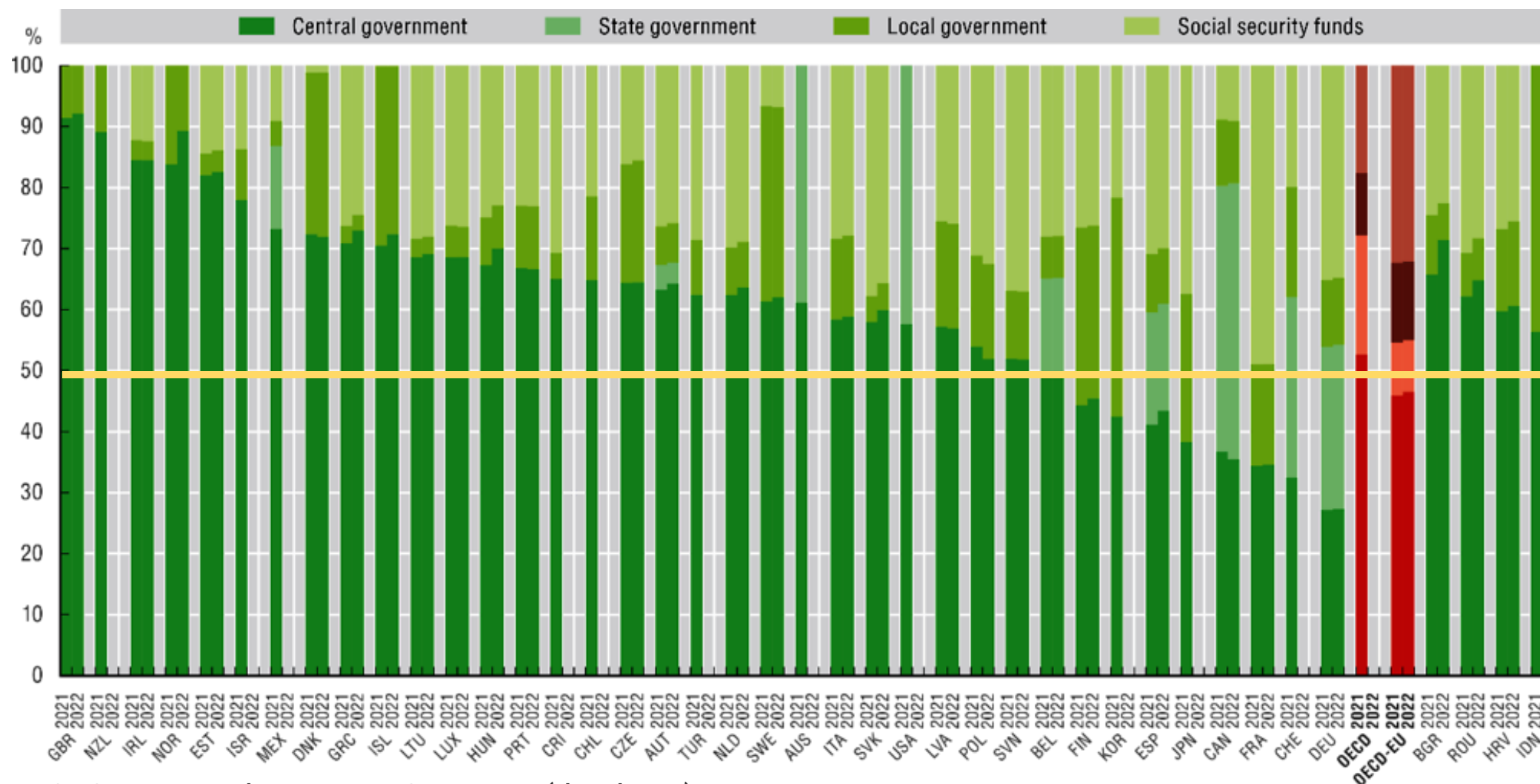Fiscal Gap: the difference between revenue means and expenditure needs

- Central government (+) raises more revenue than needed

    - redistribute the excess to support SNG (-).

The existence of a VFG:

1. Easier and more efficient to decentralize expenditures than taxes

2. Necessary for the central govt to transfer funds to SNGs to fulfill its responsibility for achieving efficiency and equity, and have some political control
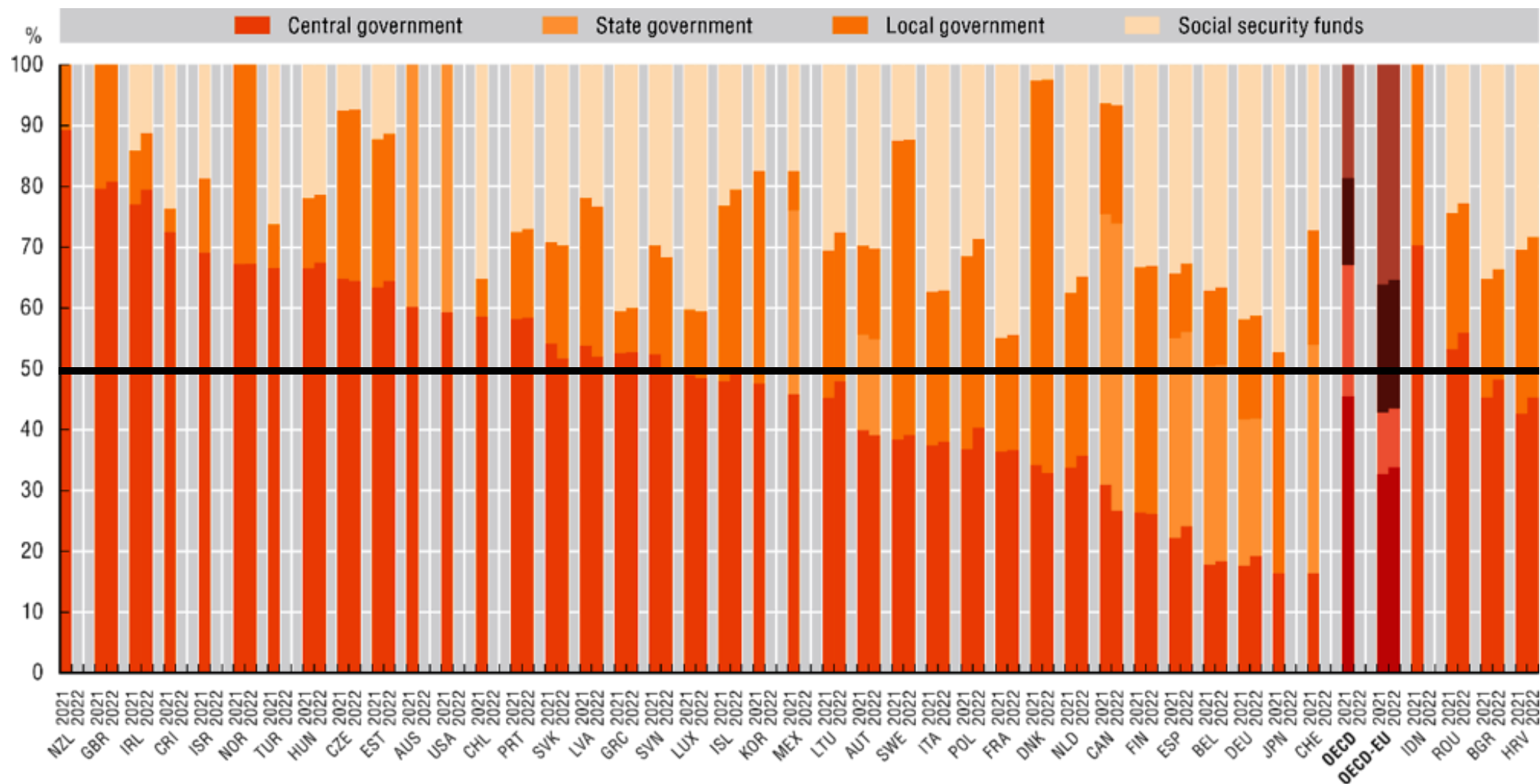
General Government Revenues across Levels of Government, 2021 and 2022

Source: OECD National Accounts Statistics (database).

General Government Expenditure across Levels of Government, 2021 and 2022

Source: OECD National Accounts Statistics (database).

Purpose 2-1 Macroeconomic Stabilization

Different regions may be affected by different shocks at different times, because

1) a country's economic structure is geographically heterogeneous

   - e.g., more textile industry in one area, more tourism in the other

2) natural phenomena can influence local economies

   - e.g., droughts, hurricanes, earthquakes

3) the country's demographic structure is geographically heterogeneous

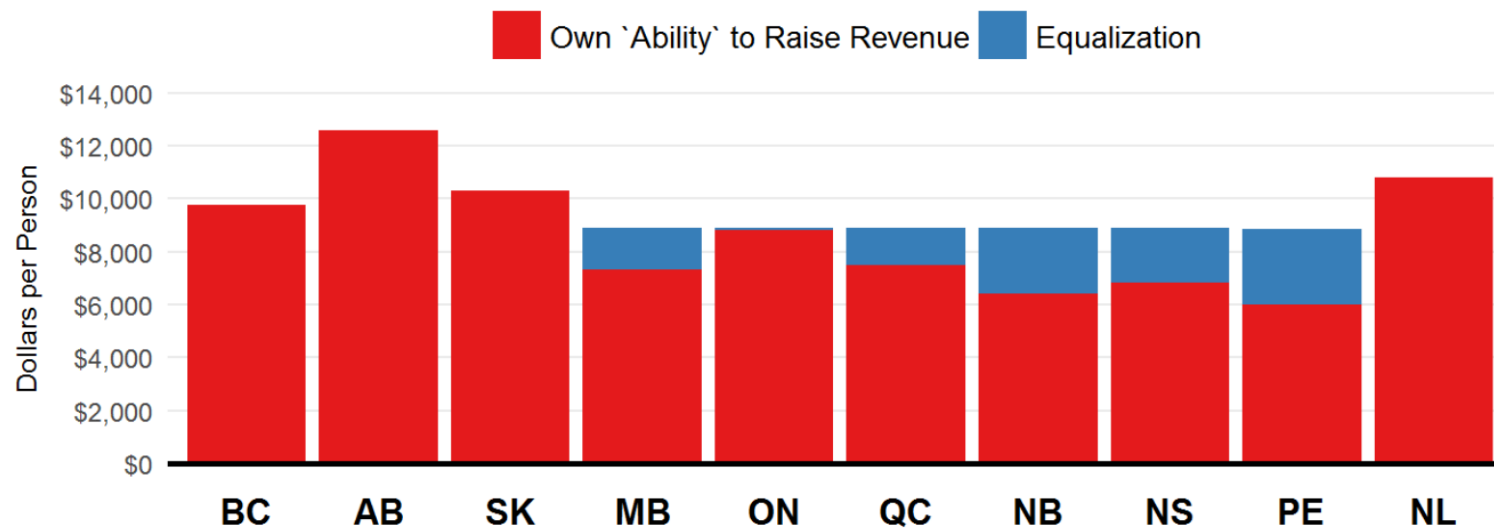   - e.g., more youth in one area, more retirees in the other

Purpose 2-2 Inter-regional redistribution

So-called "equalization grants".

- How do we calculate a "fair" method to redistribute resources?

- Will those grants reach the desired objective of helping low-income residents?

Fiscal Capacity and Equalization, by Province (FY 2018-19)

Displays each province's own fiscal capacity, the equalization payment required to bring it up to an `average` level, and the `adjustment payment` to fix the pool of equalization paid. In 2018/19, adjustments totalled $1.76b.

■ Own `Ability` to Raise Revenue ■ Equalization

Source: Federal Equalization Workbooks, Table 1. Graph by @trevortombe

Purpose 2-3 Spillovers and mobility

- In the presence of inter-jurisdictional externalities/spillovers, decisions of individual sub-national governments can be inefficient

- Migration among communities may impose extra costs on residents

If nonresidents benefit from a good/service provided by a local government, but their benefits are not taken into account when deciding on the amount provided, **social marginal benefits are underestimated** and sub-optimally low quantity is decided for.

Part 2 Conceptualization

SO!

      Grants are important.

BUT…

      What are they, specifically speaking?

      How do we design them?

Today's Agenda

1. Stylized Facts and Motivation: Why grants?

2. Basic Framework: How to conceptualize grants?

    Types, Characteristics

Scenario 1: Too many Darios

Dario is a (fiscal) resident in Madrid but comes to Barcelona every summer for a break.

- He enjoys free health services here!! Barcelona is paying

A non-negligible number of "Dario"s—inducing inefficient fiscal decisions of both Madrid and Barcelona

- Can use inter-govt grants to "correct" for this

In-class **News Reading** *(English translation in handout):* https://govern.cat/salapremsa/notes-premsa/135733/boi-ruiz-demana-ana-mato-fons-compensacio-territorial-financar-atencio-sanitaria-dels-pacients-procedents-altres-comunitats-autonomes

How should we design a grant?

Categorical grants

- Conditions on use: **Categorical**/Activity-specific (e.g. education, health, environment...)

- Allocated based on

  - a formula (e.g. based on local wealth, resident counts, etc.)

  - a specific project (with an associated budget)

- Amount

  - Lump-sum

  - **Matching**: CG covering for xx% of the actual expenditure (either w/ or w/o an upper limit)

Scenario 2: COVID

COVID hits the country! SNGs are facing a large mismatch between rising costs and falling revenues.

> "*In addition to helping these governments address the revenue losses they have experienced as a result of the crisis, it will help them cover the costs incurred due to responding to the public health emergency and provide support for a recovery...*"

> "*Intergovernmental transfers were relatively high in 2020 because of federal spending in response to the COVID-19 pandemic. In 2020 and 2021, Congress transferred a large amount of funds to state governments as part of the* [CARES Act](#)*, the* [Coronavirus Response and Relief Supplemental Appropriations Act](#) *(part of the December 2020 omnibus bill), and the* [American Rescue Plan](#)*.* "

The central government will give grants to help SNGs bridge the sudden gaps in all aspects.

How should we design such a grant, according to the criteria above?

Design your transfer to deal with COVID

In-class practice: **5-min independent** thoughts!

> ## Topic: How should we design such a grant?
>
> SNGs are facing a gap mismatch between rising costs and falling revenues due to
>
> COVID. The central government will give grants to help bridge the gaps in all aspects.
>
> How will you design such a grant, according to the criteria above?

- Within 5 minutes, describe your grant(s) in these dimensions.

- Please briefly justify for your grant design.

> *To have a clear mind,*
> *and know how to design a policy according a framework.*

Discussion (10 min)

> **Topic: How should we design such a grant?**
>
> SNGs are facing a gap mismatch between rising costs and falling revenues due to COVID. The central government will give grants to help bridge the gaps in all aspects. How will you design such a grant, according to the criteria above?

- Now **discuss** in groups of two or three.

- Compare and contrast your plan with your colleague's.

> *To have a structured mind,*
> *be able to compare and contrast different policy recommendations.*

General grants

- Conditions on use: **General**/NOT activity-specific

- Allocated based on

  - a formula

- Amount

  - Lump-sum

  - **Revenue-sharing**: CG transferring xx% of some income to SNG

A side note: gaps between SNG revenue and expenditure are common in real life under specific revenue and expenditure responsibility sharing schemes a country adopts (not necessarily due to shocks like COVID.)

Summary: how to categorize grants

Four dimensions:

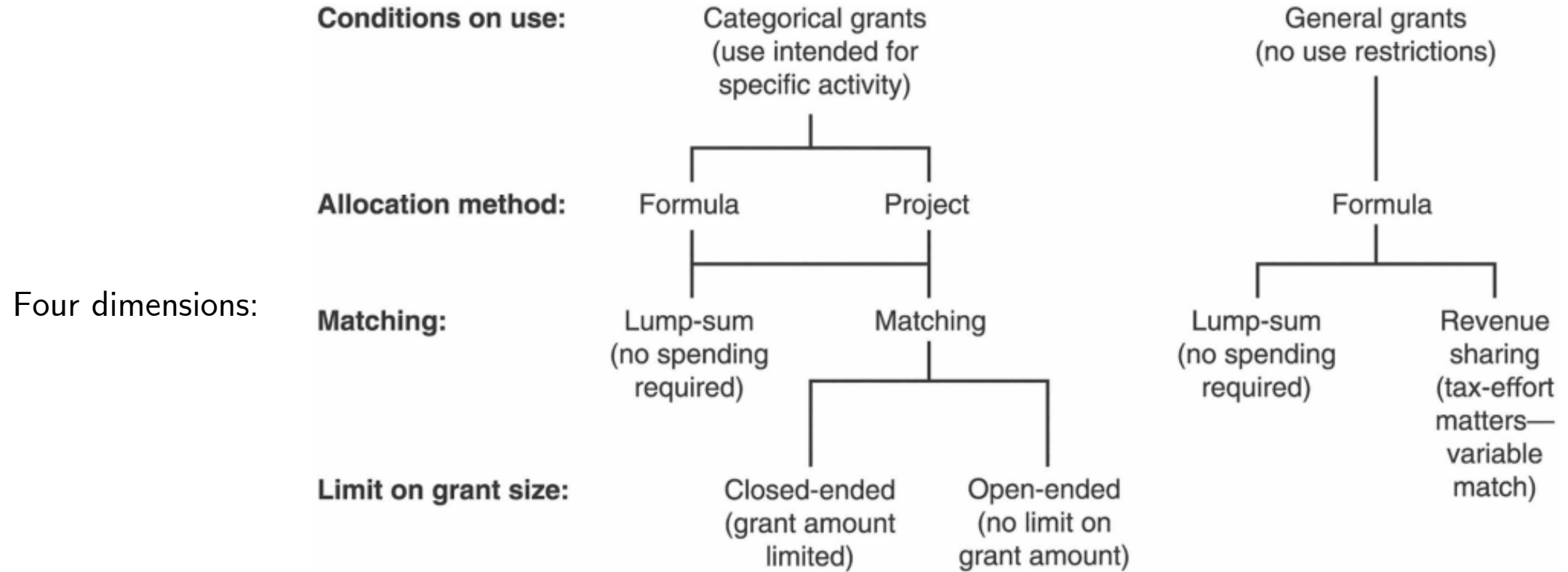| Conditions on use:	Categorical grants (use intended for specific activity)		General grants (no use restrictions)	
Allocation method:	Formula	Project	Formula	
Matching:	Lump-sum (no spending required)	Matching	Lump-sum (no spending required)	Revenue sharing (tax-effort matters—variable match)
Limit on grant size:		Closed-ended (grant amount limited) — Open-ended (no limit on grant amount)		

Figure 9.3 Types of intergovernmental grants

You can **categorize these grants differently**, according to the most important element in your analysis!

Takeaways today

1. A sense of how important transfers are

2. Important characteristics of grants & how to categorize them accordingly

Next Lecture

1. Some more details of different dimension of a grant

2. Analyze the effects of intergovernmental grants

Takeaways today

1. A sense of how important transfers are

2. Important characteristics of grants & how to categorize them accordingly

Next Lecture

Analyze the effects of intergovernmental grants

Intergovernmental Grants
Lecture 2 Effects of grants: theory

April 15, 2024

Reading for this lecture: **Chapter 9**: "Intergovernmental grants?"

State and Local Public Finance, by Ronald C. Fisher
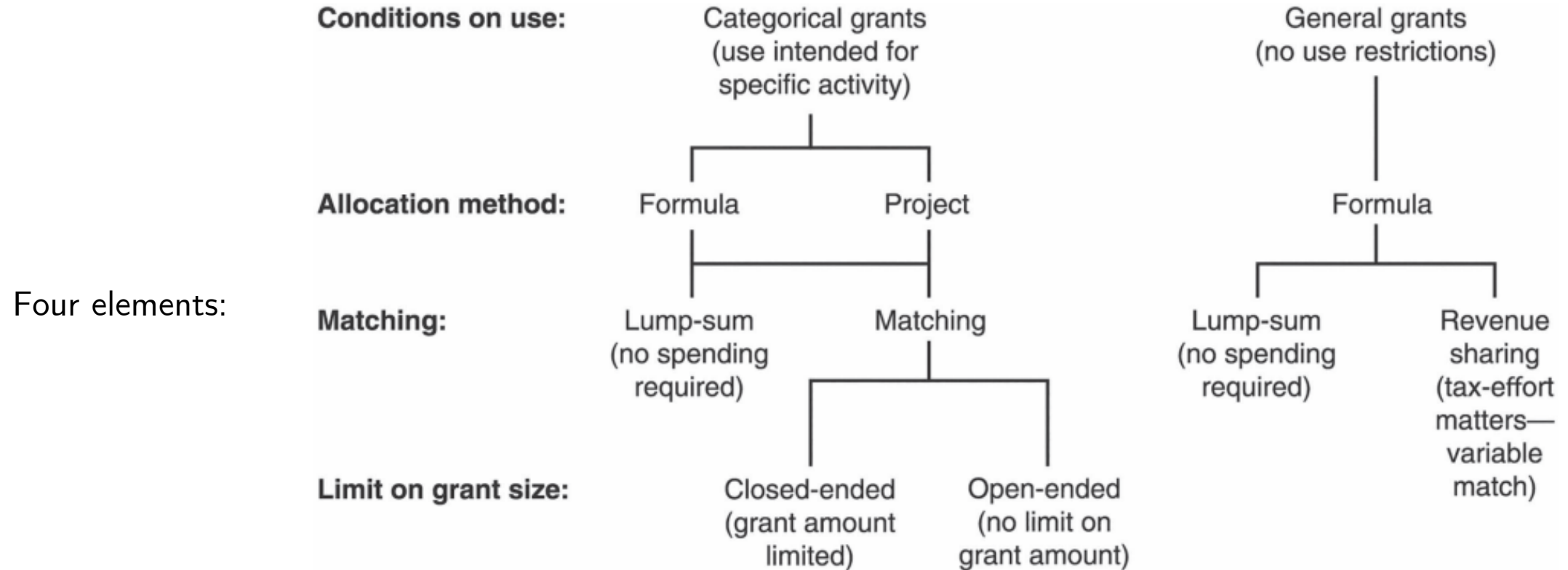
Summary: how to categorize grants

Four elements:

Figure 9.3 Types of intergovernmental grants

You can **categorize these grants differently**, according to the most important element in your analysis!

Allocation Methods: Project & Formula

Matching & Revenue-sharing grants

- Both reflect "shared responsibility".

- R = matching rate (or sharing rate)—1 euro spent or collected by the receiving government is "matched" with R euro grant money.

- M = share of spending financed by the grant:

$$M = R/(1 + R)$$

- Reduce marginal price (cost) of local goods/services for the recipient government

$$P = 1 - M = \frac{1}{1 + R}$$

Economic Thinking: How to analyze the effect of grants?

Recall from Last Unit:

Factors → Models (Assumptions, Derivations, Conclusion(s), Illustrations)

Here we also start from the basic elements listed above

Recall from Last Unit:

Factors → Models (Assumptions, Derivations, Conclusion(s), Illustrations)

Here we also start from the basic elements

BUT WAIT...

Effects on what? OR, what are the axes?

Demand and Supply of Public Services

prices, income, and various characteristics $\rightarrow$ demand for goods and services provided through SNGs.

Each individual's demand for government service is influenced by that individual's budget:

$$Y_i \;=\; C_i \;+\; t_i(T)$$

The budget for the state or local government is

$$E \;=\; T \;+\; G$$

Effects: achieve purposes

Two main effects:

- Income effect: ↑↑ the resources available to provide government services.

- Price effect ("substitution effect"): ↓↓ the (marginal) costs of additional services shouldered by the receiving SNG—esp. for matching grants.

Fiscal effects of grants: Economic theory

Lump-sum grant - only income effect

demand goes from E0 to E1

Matching grant - also price effect
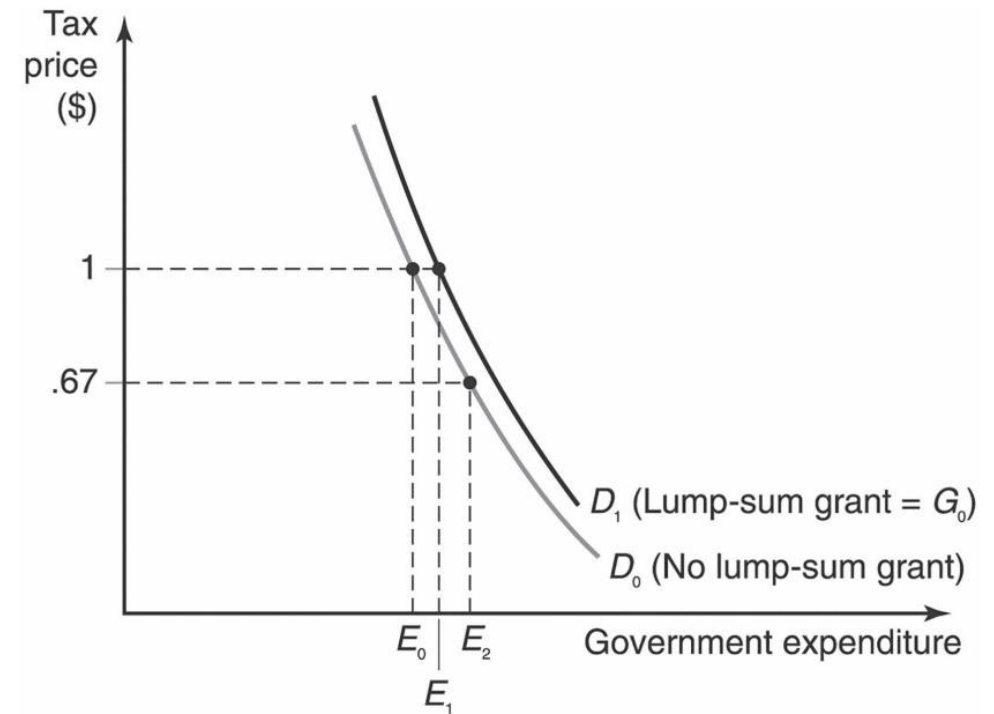
demand goes from E0 to E2

Figure 9.4 Income and price effects of a grant

Implication: Lump-sum versus matching grants

An (open-ended) matching grant vs an 'equal size' lump-sum grant,

- The former would increase government expenditure on the aided service by a greater amount

equal size: a lump-sum grant large enough to allow the government the same expenditure as selected with the matching grant
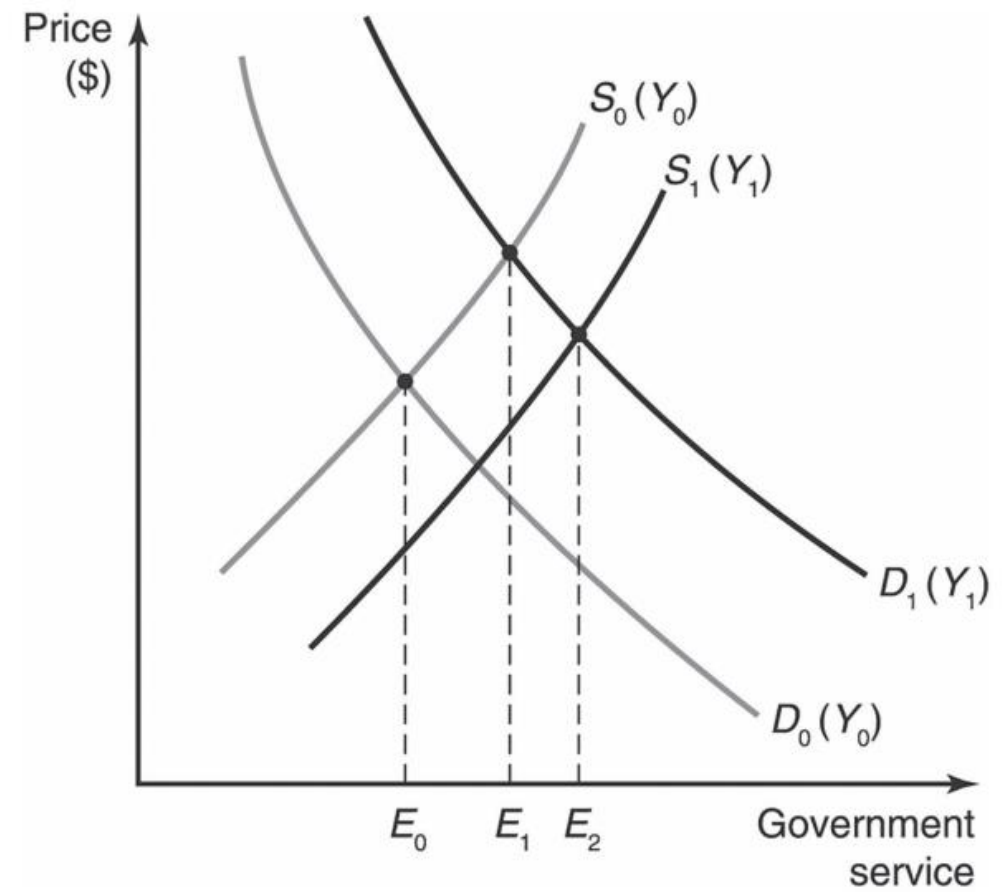
Figure 9.6 Increases in income can affect both demand and cost for government service

Fiscal effects of grants: Evidence

1. Government structures → public finance

2. The three functions

3. Your first analysis: Centralization vs decentralization

Some useful sources: *Government at a Glance*; <u>OECD-WOFI</u> database, …

Intergovernmental Grants

Lecture 3 Effects of grants: empirics

April 18, 2024

Reading for this lecture: **Chapter 9**: "Intergovernmental grants?"

State and Local Public Finance, by Ronald C. Fisher

Summary of the Unit

A quiz to help you learn

Regional and Local Public Finance, Unit 2
Government: Levels and Functions

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