Intergovernmental Transfers As Instruments to Increase the Efficiency of the Fiscal System

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Intergovernmental Grants and Optimal Fiscal Decisions

- The optimal tax literature provides a solid foundation for the analysis of intergovernmental grants in federations.
- It can shed light on the nature of:
  - Vertical and horizontal fiscal imbalances
  - Fiscal capacity
  - Fiscal needs
  - Matching rates for conditional grants to correct fiscal externalities
  - Fiscal responses to intergovernmental grants (e.g. the flypaper effect).

The Marginal Cost of Public Funds (MCF)

- The MCF is a measure of the efficiency cost of raising tax revenue.
- It measures the burden that is imposed on a society when the government raises an additional unit of tax revenue through a tax rate increase.
- The MCF concept can be augmented to reflect the incidence of taxes on different income groups in a society.
- The distributionally-weighted MCF will be referred to as the *social marginal cost of public funds (SMCF)*.

An Optimal Fiscal System

- An optimal taxation system is characterized by the condition:
  - $SMCF_{ti} = SMCF_{tj}$
- Optimal expenditures satisfy the condition:
  - $SMB_{gh} = SMCF(MC_{gh} – R_{gh})$
  - Where SMB_{gh} is the social marginal benefit from spending on g_h, MC_{gh} is the marginal cost of production, and R_{gh} is the additional tax revenues generated by providing g_h.

Optimal Unconditional Transfers in a Federation

- *Vertical fiscal balance in taxation* is achieved when the SMCF is equalized between the central government and the subnational governments.
  - Justifies unconditional transfers from central governments to subnational governments
- *Horizontal fiscal balance in taxation* occurs when the SMCF is the same for all subnational governments.
  - Justifies fiscal equalization transfers to subnational governments with low “fiscal capacity”.

The Vertical Fiscal Gap

- Can be defined as the proportion of subnational government spending that is financed by transfers from the central government.
- With the optimal fiscal gap, the SMCFs of the two levels of government will be equalized.
- Subnational governments' tax bases are usually more tax sensitive than the central government's tax bases.
- The optimal fiscal system usually involves relatively high taxes at the federal level and transfers to subnational governments.

Vertical Revenue Sharing

- Rules that oblige the central government to transfer a fixed percentage of certain tax revenues to subnational governments.
- Distorts the central government's tax mix if it has to share some sources of tax revenues, but not others.
- Raises the central government's MCF, reducing its expenditure on its public goods and services.

The Incentive Effects of Unconditional Transfers

- The incentive to increase spending: the Flypaper Effect
- The incentive to reduce tax collection effort.
- The incentive to increase the number of municipalities when per capita transfers are inversely related to a municipality’s population.

The Flypaper Effect

- Econometric studies indicate that a lump-sum transfer increases subnational government spending by four to five times as much as an equivalent increase in personal income.
  - Blanco (2006) study of Brazilian municipalities spending.
- Our model predicts that the flypaper effect will be larger if:
  - the subnational government’s taxes are a small share of personal income,
  - the income elasticities of the tax base and the demand for the public service are low,
  - the subnational government’s MCF is high.

The Flypaper Effect is “Intrinsic” & not an “Anomaly”

- The flypaper effect is a predicted consequence of the use of distortionary taxes to finance subnational governments’ spending.
- The flypaper effect has been interpreted as indicating a bias towards excessive spending by subnational governments.
- The optimal taxation approach interprets a large flypaper effect as indicative of a high MCF and correspondingly low levels of public services provided by subnational governments.
  - Higher transfers to subnational governments may be welfare improving if the central government has a lower MCF than subnational governments.

Tax Collection Effort

- Our model predicts that a subnational governments will reduce its tax rates and the resources devoted to tax collection activity when it receives a lump-sum transfer.
- With the optimal level of tax enforcement, the marginal cost of raising revenue by devoting more resources to tax collection is equal to the government's marginal cost of raising revenues through a tax rate increase (SMCF).

Tax Collection Effort

- The model predicts that tax enforcement activity should be higher when a government has a high SMCF and additional tax enforcement generates significantly higher tax revenues.
- Reduced tax effort by the subnational government, accompanied by higher tax effort by the central government, would reduce the costs of tax administration to the public sector as a whole if the central has a lower SMCF than the subnational governments.

The Creation of New Municipalities

- Between 1982 and 2007, the number of municipalities in Brazil increased by 41 percent.
- Caused the incentive to create new municipalities because per capita transfers increase as the population of a municipality decreases?
- Whether the creation of new, smaller municipalities is a good or bad policy depends upon whether the number existing municipalities is “optimal”.

Creation of New Municipalities

- Are there too many or too few municipalities in a democracy?
- Variant of the Alesina and Spolaore (1997) model:
  - Individuals living in outlying regions of a municipality may seek improvements in the quality of public services they receive by voting in a referendum to form a new municipality that will provide “better” services.

Creation of New Municipalities

- The model suggests that there may be a democratic bias in favour of creating too many municipalities.
  - A majority of the population will favour dividing a municipality even though social welfare is reduced.
- Our model shows that adding a municipality to a region reduces social welfare if the level of public service provided by each municipality declines.
- Transfers to municipalities that are inversely related to population would only increase the incentive to create more municipalities, resulting in potentially greater social welfare losses.

Optimal Fiscal Equalization Grants

- The optimal fiscal equalization grants equalize SMCFs among the subnational governments, thereby eliminating horizontal fiscal imbalances.
- Transfers based on measures of fiscal capacity and fiscal need.

Fiscal Capacity

- Fiscal capacity is the ability of a government to raise revenues at a low SMCF.
- Fiscal capacity depends not only on the size of a government's tax base, but also on the tax sensitivity of its tax base.
- The greater the tax sensitivity of the base, the lower a government's fiscal capacity because its MCF will be higher.

Expenditure Needs

- Can be defined as the amount a subnational government would spend on providing public services if it had the same SMCF as other subnational governments.
- Based on:
  - the cost of producing public services,
  - the strength of the preference for local public services,
  - equity considerations, and
  - the SMCF

Fiscal Externalities and Conditional Grants

- *Horizontal expenditure externalities* occur when a public service provided by one subnational government:
  - benefits the residents of other subnational governments, and/or:
  - affects the revenues or expenditures of other subnational governments.
- Some activities, such as expenditure on municipal transportation infrastructure, produce both types of expenditure externalities.

Matching Grants

- The conventional rule:
  - *Set the matching grant rate equal to the proportion of the marginal benefit of the activity that accrues to non-resident*
  - It is based on the assumption of non-distortionary taxation.
- The optimal matching rate depends on whether the SMCFs for subnational and central governments have been equalized.
- If the central government has a lower SMCF than the subnational governments, the matching rate should be increased to shift more of the costs of the activity to the central government.

Applications

- This framework does not provide ready-made, simple solution to the design of intergovernmental grants.
- It provides justification for conditional and unconditional transfers in federation.
- It provides some insights concerning the design and the magnitudes for intergovernmental transfers.

Tax Reform

- In most countries, expenditure reform is a key to tax reform.
  - Tax reductions are often required to achieve tax reforms.
- In federations, changes to the intergovernmental transfer system may be a necessary part of any tax reform.
- Tax reform is not a zero sum game.
  - The gains from the reform can be used to compensate “losers” from tax reform.

Brazilian Tax Reform

- Simplification and consolidation of federal taxes on goods and services.
- Simplification of the ICMS and shift to destination basis.
- Creation of an equalization fund--Fundo de Equalização de Receitas (FER).
- Creation of a regional development fund--Fundo Nacional de Desenvolvimento Regional (FNDR).

Revenue Sharing: Current Arrangements

- 21,5% das receitas do IR e do IPI são destinados ao Fundo de Participação dos Estados (FPE),
- 23,5% ao Fundo de Participação dos Municípios (FPM) e
- 3% aos fundos constitucionais de financiamento.
- 10% da receita do IPI é destinada aos Estados, proporcionalmente às exportações de produtos industrializados (FPEX).

Revenue Sharing: Proposed

11. Novo Modelo (base: 2006) (R$ bilhões)

	Sem DRU	*Com DRU*
(A) Base I: IR + IPI + IVA-F (1)	**308,0**	**246,4**
(B) Vinculações (% de A)	**154,9**	**125,4**
Seguridade Social (38,8%)	119,5	95,6
FAT/BNDES (6,7%)	20,6	16,5
I.E. de transportes, etc. (2,5%) (2)	7,7	6,2
Educação Básica (2,3%) (2)(3)	7,1	7,1
(C) Base II: (A) - (B) (3)	**153,1**	**153,1**
(D) Partilha Federativa (% de C)		
FPE (21,5%)	32,9	32,9
FPM (23,5%)	36,0	36,0
FNDR (4,8%)	7,3	7,3
FER (1,8%)	2,8	2,8

Determining the Level of Unconditional Grants

- Revenue Sharing (Brazil):
  - Formula based, difficult to amend
  - Disincentive to raise tax rates on shared tax bases
  - Pro-cyclical transfers to, and spending by, subnational governments.
- Revenue Assignment (Australia)
  - Based on one revenue source, difficult to change
  - Adequacy difficult to judge
- Discretion of the Federal Government (Canada)
  - Inflexible in the short-run, but flexible over the long-run
  - A constant source of antagonism between the federal government and most of the provinces.

Variations in Municipal Transfers Under the ICMS

12. Transferências de ICMS para os Municípios (R$/ano, dados de 2006)

	Transferências de ICMS per capita				Maior/Menor
	Média	Mediana	Maior	Menor	
Pará	133,04	81,03	826,56	21,83	37,9
Bahia	137,48	79,01	4.620,02	43,45	106,3
Goiás	274,37	215,62	1.488,85	10,94	136,1
São Paulo	446,87	358,30	8.492,43	61,44	138,2
Rio Grande do Sul	405,51	336,09	3.369,15	49,03	68,7

- Huge variations in municipal transfers based on sharing the ICMS are inconsistent with the theory of intergovernmental grants.

Conclusion

- Tax reform often has to be combined with expenditure reform and changes to the intergovernmental transfer system.
- Tax reform should reduce reliance on sources of tax revenue with high SMCFs and intergovernmental transfer reform should reduce the variations in the SMCFs among the governments in the federation.
- Although there is not a simple set of solutions to these problems, the approach we have outlined can provide some guidance for the directions for the reform of the tax and intergovernmental transfer systems.