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Fiscal Federalism and Subnational Finance: A Comparative Analysis of State and Provincial Government Budgets and Revenue Systems

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ABSTRACT

This paper examines the structure, performance, and challenges of subnational public finance through the lens of fiscal federalism theory. Focusing primarily on U.S. state governments and drawing comparative evidence from India, Germany, and Canada, the paper analyzes how revenue-raising authority, expenditure responsibility, and intergovernmental transfers are allocated between central and subnational governments and how these arrangements shape budgetary outcomes. The analysis situates subnational finance within the classical theoretical framework established by Musgrave, Oates, and Tiebout. It evaluates the practical instruments states and provinces use to balance budgets, manage debt, and respond to revenue volatility. The paper finds that while decentralization can improve allocative efficiency and government responsiveness, it also generates persistent problems of vertical fiscal imbalance, horizontal inequity among jurisdictions, and pro-cyclical budgeting that undermine long-run fiscal stability. The paper concludes with a discussion of contemporary reform proposals, including rainy-day fund design, revenue diversification, and intergovernmental grant restructuring.

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1. Introduction

State and provincial governments occupy a distinctive position in the architecture of public finance. Positioned between national governments, which typically control monetary policy and the largest tax bases, and local governments, which deliver the most immediate public services, subnational governments in federal systems are simultaneously revenue collectors, service providers, and intermediaries for intergovernmental transfers. In the United States alone, state governments collectively raised more than USD 2 trillion in own-source revenue and administered budgets covering education, healthcare (notably Medicaid), transportation, and public safety. Understanding how these governments raise revenue, allocate expenditure, and manage fiscal risk is therefore central to understanding the fiscal health of federal systems as a whole.

This paper addresses three interrelated questions. First, what theoretical rationale justifies assigning specific revenue and expenditure functions to subnational governments rather than centralizing them at the national level? Second, how do actual state and provincial finance systems compare across federal countries in terms of revenue composition, transfer dependency, and budgetary constraints? Third, what structural vulnerabilities and reform opportunities emerge from this comparative analysis, particularly with respect to revenue volatility, vertical fiscal imbalance, and fiscal rules?

2. Theoretical Framework of Fiscal Federalism

The academic study of fiscal federalism originates in the work of Musgrave (1959), who distinguished three functions of government allocation, distribution, and stabilization and argued that these functions are not equally suited to decentralization (Musgrave, 1959, pp. 5–15). Stabilization policy, Musgrave argued, is best retained at the national level because subnational governments cannot control monetary policy or capture the full macroeconomic benefits of countercyclical spending (Musgrave, 1959, p. 181). Redistribution is similarly difficult to decentralize because factor mobility allows residents to relocate in response to generous or restrictive redistributive policy, producing a race to the bottom. Allocation of public goods, however, is well suited to decentralization when preferences for public goods vary geographically (Musgrave, 1959, pp. 179–184).

Tiebout (1956) formalized the efficiency case for decentralized allocation through the concept of "voting with one's feet". If households can freely relocate among jurisdictions offering different bundles of local taxes and public services, competition among jurisdictions will tend to match residents to their preferred service levels (Tiebout, 1956, p. 418). While the Tiebout model rests on strong assumptions of perfect mobility, full information, and an absence of externalities, it remains foundational to arguments in favor of subnational fiscal autonomy (Tiebout, 1956, pp. 420–422).

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Oates (1972) synthesized these ideas into the decentralization theorem: in the absence of cost savings from centralized provision, welfare is maximized when public goods are provided by the level of government that most closely matches the geographic scope of their benefits, because this allows service levels to be tailored to local preferences (Oates, 1972, pp. 33–37). Oates also identified the core justification for intergovernmental transfers, namely the correction of spillover effects (externalities) between jurisdictions and the equalization of fiscal capacity among jurisdictions with unequal tax bases (Oates, 1999, p. 1122).

2.1 Vertical and Horizontal Fiscal Relationships

Two dimensions of fiscal imbalance recur throughout the federalism literature. Vertical fiscal imbalance refers to a mismatch between the revenue-raising capacity assigned to a level of government and the expenditure responsibilities assigned to it; in most federations, subnational governments are assigned expenditure responsibilities (education, health, welfare administration) that exceed their independent revenue capacity, necessitating transfers from the central government (Rodden, 2006, pp. 15–19). Horizontal fiscal imbalance refers to disparities in fiscal capacity among subnational units at the same level, for example, a resource-rich province with a large tax base relative to a poorer, more populous one. Equalization transfers are the primary policy instrument used to address horizontal imbalance, while general-purpose and categorical grants are used to address vertical imbalance (Bird & Vaillancourt, 1998, pp. 42–48).

2.2 Second-Generation Fiscal Federalism and Market-Preserving Federalism

Where the first generation of fiscal federalism theory (Musgrave, Oates, Tiebout) largely assumed that subnational officials act as benevolent maximizers of resident welfare, a "second generation" literature associated with Weingast (1995) and Qian and Weingast (1997) instead treats subnational officials as self-interested political actors and asks what institutional conditions cause decentralization to produce good economic outcomes rather than corruption or fiscal indiscipline. Weingast (1995) defines market-preserving federalism as an institutional arrangement in which subnational governments have primary regulatory authority over their economies, the central government maintains a common market by preventing subnational protectionism, and, critically, subnational governments face a tight budget constraint and the credible expectation that they will not be bailed out if they run persistent deficits (Weingast, 1995, pp. 4–7).

The hard-budget-constraint condition has become a central concern in subsequent scholarship because political-economy incentives frequently push in the opposite direction. Rodden (2002) shows empirically that subnational governments with greater access to transfers and borrowing, combined with an expectation of central government bailout in a crisis, exhibit systematically larger deficits than those facing harder constraints, a dynamic often termed the "common pool" problem of fiscal federalism (Rodden, 2002, pp. 670–674). This literature provides the theoretical rationale for the fiscal rules discussed in Section 7: absent credible constraints, decentralized borrowing authority combined with a soft budget constraint can generate deficit bias even when no single actor intends fiscal irresponsibility.

2.3 Empirical Evidence on Fiscal Decentralization and Economic Outcomes

A separate empirical literature has tested whether fiscal decentralization is in fact associated with the efficiency gains predicted by first-generation theory. Oates (1993) finds mixed evidence that decentralization improves economic growth, noting that the relationship depends heavily on the quality of subnational institutions and the design of intergovernmental transfers (Oates, 1993, pp. 237–241). Using cross-country panel data, Davoodi and Zou (1998) find a negative relationship between expenditure decentralization and economic growth in developing countries, but not in developed countries, suggesting that decentralization's effects are conditional on administrative capacity (pp. 251–256). More recently, Rodríguez-Pose and Ezcurra (2011) find that fiscal decentralization is associated with reduced regional economic disparities only above a threshold level of central government quality, implying that decentralization reforms undertaken without adequate central oversight may worsen rather than improve regional equity (Rodríguez-Pose & Ezcurra, 2011, pp. 632–637). Taken together, this literature cautions against treating decentralization as uniformly welfare-improving and underscores the importance of the institutional design questions examined in the remainder of this paper.

3. Revenue Structures of Subnational Governments

Subnational government revenue can be organized into three broad categories: own-source revenue (taxes and fees the jurisdiction levies and controls), intergovernmental transfers (grants and shared revenues from higher levels of government), and borrowing (debt issuance to finance capital projects or, in some jurisdictions, to smooth short-term revenue shortfalls).

3.1 Own-Source Revenue

The composition of own-source revenue varies considerably across federations, largely due to constitutional tax assignment rules. In the United States, states rely primarily on general sales taxes and individual income taxes, with corporate income taxes, excise taxes, and severance taxes on natural resources providing smaller shares. Notably, several U.S. states (including Texas, Florida, and Washington) levy no broad-based individual income tax, relying instead more heavily on sales and property-adjacent revenue sources, illustrating the degree of policy latitude states retain under the U.S. system.

Property taxes, while often the dominant revenue source for local governments, are typically a secondary revenue source at the state level. User fees, tuition at public universities, toll revenue, and licensing fees account for an increasing share of subnational own-source revenue in many federations, reflecting a broader shift toward benefit-based financing of specific services.

3.2 Intergovernmental Transfers

Intergovernmental transfers take several forms. Unconditional (general-purpose) grants provide subnational governments with discretion over how funds are spent and are typically justified on grounds of equalization. Conditional (categorical) grants are earmarked for specific purposes, such as highway construction or public health programs, and often require matching funds from the recipient government. Block grants combine some of the flexibility of general-purpose grants with a defined policy area, such as social services or community development.

In the United States, federal grants-in-aid to states, most significantly the federal match for Medicaid, constitute a substantial share of state budget revenue, in many states exceeding 30 percent of total state spending (National Association of State Budget Officers, 2023, p. 42). This dependency creates a structural vulnerability: because federal matching formulas and eligibility rules are set at the national level, state budgets are exposed to federal policy changes over which state governments have limited control (Rodden, 2006, pp. 55–60).

3.3 Subnational Borrowing and Debt

Most federations distinguish between operating and capital budgets, permitting subnational borrowing for capital investment (infrastructure, school construction) while restricting or prohibiting borrowing to finance ongoing operating deficits. In the United States, this distinction is enforced primarily through state constitutional or statutory balanced-budget requirements applicable to the operating budget. At the same time, capital projects are financed through the municipal bond market (National Association of State Budget Officers, 2023, pp. 8–11). Bond ratings assigned by agencies such as Moody's and S&P serve as an informal but powerful fiscal-discipline mechanism, since a credit downgrade raises a state's borrowing costs and can trigger contractual covenants.

4. Expenditure Responsibilities and the Budgeting Process

Subnational expenditure responsibility typically concentrates in areas requiring geographically differentiated service delivery: primary and secondary education, public higher education, healthcare administration, transportation infrastructure, corrections, and public safety. In the U.S. context, education and healthcare (principally Medicaid) together typically account for well over half of state general-fund expenditure, making these two categories the primary drivers of both structural budget growth and budget stress during downturns (National Association of State Budget Officers, 2023, pp. 20–24).

The subnational budgeting process generally follows an annual or biennial cycle involving executive budget proposal, legislative appropriation, and (in most U.S. states) a constitutional or statutory requirement that the enacted budget be balanced at the point of adoption. This requirement does not guarantee that revenues and expenditures remain balanced in execution; unanticipated revenue shortfalls during the fiscal year frequently require mid-year budget revisions, use of reserve funds, or emergency spending cuts.

Revenue forecasting is therefore a critical and imperfect input to subnational budgeting. Because major state revenue sources, such as income and sales taxes in particular, are pro-cyclical, states tend to face the greatest fiscal stress precisely when demand for countercyclical services (unemployment assistance, Medicaid enrollment) is highest, a dynamic sometimes termed the "fiscal squeeze" of subnational budgeting.

5. Comparative Case Studies

The design of subnational finance systems varies significantly across federations, reflecting differences in constitutional history, degree of fiscal decentralization, and political economy. Table 1 summarizes the comparative structure of revenue assignment, equalization mechanisms, and borrowing constraints in four federal systems.

Table 1. Comparative Structure of Subnational Finance in Selected Federations

Country	Subnational Unit	Primary Own-Source Revenue	Key Equalization Mechanism	Borrowing Constraint
United States	States	Sales tax, individual/corporate income tax	No formal federal equalization; informal via categorical grants	Balanced-budget rules in 49 states (operating budget); capital borrowing via bonds
India	States	State GST share, sales tax on exempted goods, stamp duty, personal and corporate income tax	Finance Commission horizontal tax devolution formula	State borrowing capped under the FRBM Act, routed through central government approval
Germany	Länder	Shared income and VAT revenue (joint taxes)	Länderfinanzausgleich (inter-state fiscal equalization)	Debt brake (Schuldenbremse) constitutionally limits structural deficits
Canada	Provinces	Personal/corporate income tax, sales tax, resource royalties	Equalization Program (federal transfer based on fiscal capacity)	No federal constraint; provinces self-impose fiscal rules of varying strength
Australia	States/Territories	Payroll tax, stamp duty, land tax (no state income tax)	Commonwealth Grants Commission horizontal fiscal equalization of GST revenue	No federal constraint; states subject to independent credit-rating discipline
Brazil	States	State VAT (ICMS), vehicle tax, inheritance tax	Constitutional revenue-sharing funds (FPE) with a population/income-based formula	Federally imposed debt renegotiation and borrowing-limit framework (Fiscal Responsibility Law)

5.1 United States

U.S. states retain substantial constitutional autonomy over taxation and expenditure, subject to federal constraints imposed through conditional grants and, more rarely, direct federal mandates. Forty-nine states operate under some form of balanced-budget requirement for their operating budgets (Vermont is the exception). However, the stringency and enforceability of these requirements vary considerably (National Association of State Budget Officers, 2023, pp. 8–11). Rainy-day funds reserve accounts built up during periods of revenue growth and drawn down during downturns have become a standard, though unevenly funded, tool of state fiscal management since the 2001 and 2008–09 recessions (National Association of State Budget Officers, 2023, pp. 30–33).

5.2 India

India's states operate within a constitutionally defined division of taxing powers, with the 2017 introduction of the Goods and Services Tax (GST) substantially restructuring state revenue by replacing a patchwork of state-level indirect taxes with a shared national GST. The Finance Commission, a constitutionally mandated body convened every five years, determines the formula for vertical and horizontal tax devolution from the central government to the states, incorporating criteria such as population, income distance, and fiscal discipline (Fifteenth Finance Commission of India, 2020, pp. 30–38). State borrowing is constrained by the Fiscal Responsibility and Budget Management (FRBM) framework and requires central government consent for external borrowing (Fifteenth Finance Commission of India, 2020, pp. 112–115).

5.3 Germany

Germany's Länder participate in a system of joint taxation in which major taxes, income tax and value-added tax, are collected under uniform national rules and then shared among the federal government, the Länder, and municipalities according to constitutionally specified formulas (German Federal Ministry of Finance, n.d., pp. 2–5). The Länder finanzausgleich mechanism redistributes revenue among Länder to narrow disparities in fiscal capacity (German Federal Ministry of Finance, n.d., pp. 6–9). Since a 2009 constitutional amendment, Germany's "debt brake" (Schuldenbremse) imposes strict limits on structural deficits at both the federal and Länder levels, representing one of the most stringent fiscal rules among major federations.

5.4 Canada

Canadian provinces hold extensive autonomous taxing authority, including independent personal and corporate income taxes and, in resource-rich provinces such as Alberta and Saskatchewan, substantial revenue from natural resource royalties. The federal Equalization Program transfers unconditional funds to provinces with below-average fiscal capacity, while the Canada Health Transfer and Canada Social Transfer provide funding tied to healthcare and social program spending (Government of Canada, Department of Finance, 2023, pp. 4–9). Unlike Germany or India, Canada imposes no federal constitutional constraint on provincial borrowing, leaving fiscal discipline to provincial-level rules and the bond market.

5.5 Australia

Australia presents a distinctive case within the comparative sample because its states levy no income tax; the Commonwealth (federal) government collects both income tax and the Goods and Services Tax (GST), and all GST revenue is redistributed to the states (Warren, 2006, pp. 12–15). The Commonwealth Grants Commission determines the distribution using a horizontal fiscal equalization (HFE) methodology intended to give each state the capacity to provide services at the same standard, if it makes the same effort to raise revenue and operates at the same level of efficiency (Warren, 2006, pp. 20–24). Because state own-source revenue is narrow limited primarily to payroll tax, land tax, and stamp duty Australian states are among the most transfer-dependent subnational governments of any advanced federation, a dependency that has generated recurring political disputes over the HFE formula, particularly from resource-rich states such as Western Australia that argue the formula redistributes an excessive share of their mining royalty revenue (Warren, 2006, pp. 27–30).

5.6 Brazil

Brazil's states derive most own-source revenue from the Tax on Circulation of Goods and Services (ICMS), a state-level value-added tax who's base and rate-setting authority is fragmented across 27 states, a structure widely identified as a source of destructive interstate tax competition (the so-called "fiscal war") as states offer ICMS incentives to attract investment (Afonso & Araujo, 2006, pp. 165–170). Constitutionally mandated revenue-sharing funds, including the Fundo de Participação dos Estados (FPE), redistribute a share of federal tax revenue to states using a formula weighted toward population and inverse income, providing a partial equalization mechanism (Ter-Minassian, 2012, pp. 8–11). Following a series of state fiscal crises in the 1990s, Brazil adopted the Fiscal Responsibility Law (2000), which imposes binding ceilings on subnational personnel spending and debt, along with a federally administered debt renegotiation framework, an institutional response to the same soft-budget-constraint dynamic identified by Rodden (2002) as central to subnational fiscal indiscipline (Ter-Minassian, 2012, pp. 15–19).

6. Persistent Challenges in Subnational Finance

6.1 Vertical Fiscal Imbalance

Across nearly all federations examined, subnational expenditure responsibility outpaces subnational own-source revenue capacity, necessitating transfers from central governments (Rodden, 2006, pp. 15–19). This imbalance creates an inherent tension: central governments that provide substantial transfer revenue often seek to attach conditions to that funding, constraining subnational fiscal autonomy in practice even where constitutional authority is nominally decentralized (Rodden, 2006, pp. 55–60).

6.2 Horizontal Fiscal Imbalance and Equalization

Disparities in tax bases, population densities, and economic structures produce significant differences in fiscal capacity among subnational units within the same country. Equalization mechanisms the Länder finanzausgleich in Germany, Finance Commission devolution in India, and the Equalization Program in Canada attempt to narrow these disparities, but design choices (the formula used to measure fiscal capacity, the frequency of recalculation, and whether transfers are conditional) significantly affect both the equity and the incentive effects of these programs (Bird & Vaillancourt, 1998, pp. 60–65). A commonly cited concern is that overly generous equalization transfers can dull the incentive of recipient jurisdictions to develop their own tax base (Bird & Vaillancourt, 1998, pp. 70–72).

6.3 Revenue Volatility and Pro-Cyclicality

Because major subnational tax bases (income and sales) are closely tied to the business cycle, subnational revenue tends to be pro-cyclical, falling sharply during recessions precisely when balanced-budget requirements and limited access to deficit financing force expenditure cuts or tax increases (Chernick et al., 2020, pp. 772–774). This pro-cyclicality has been widely identified as one of the most damaging structural features of subnational public finance, as it can amplify rather than dampen macroeconomic downturns (Poterba, 1994, pp. 808–810).

6.4 Interjurisdictional Tax Competition

Subnational tax autonomy also creates the potential for destructive tax competition, as jurisdictions lower tax rates or offer targeted incentives to attract mobile capital and high-income residents. While some degree of competition can discipline inefficient government spending (consistent with the Tiebout framework), excessive competition can erode the aggregate revenue base available to fund public goods, particularly for jurisdictions least able to compete on tax incentives alone (Bird & Vaillancourt, 1998, pp. 75–79). Brazil's ICMS-driven "fiscal war" among states represents one of the most extensively documented cases in which such competition produced a race-to-the-bottom outcome that ultimately required federal intervention to contain (Afonso & Araujo, 2006, pp. 168–170).

7. Fiscal Rules and Budget Constraints

Fiscal rules numerical constraints on deficits, debt, or expenditure growth—are widely used to discipline subnational budgeting and to address the time-inconsistency problem inherent in deficit finance (the incentive for current officeholders to shift fiscal costs onto future administrations). Balanced-budget requirements, the most common form of subnational fiscal rule in the United States, vary in stringency: some require only that the proposed budget be balanced at the time of enactment (a relatively weak constraint). In contrast, others require in-year balance and authorize the executive to make unilateral mid-year cuts if revenue falls short of projections (a considerably stronger constraint).

Poterba (1994) provides some of the earliest systematic evidence that the stringency of these rules matters empirically: U.S. states with more restrictive balanced-budget requirements respond to unanticipated revenue shortfalls with significantly faster and larger spending cuts than states with weaker rules, indicating that the formal stringency of a rule, not merely its nominal existence, drives fiscal behavior (Poterba, 1994, pp. 806–812). Kiewiet and Szakaly (1996) extend this analysis to state debt, finding that constitutional restrictions on the issuance of general obligation debt are associated with substantially lower state debt levels, while rules that can be circumvented through non-guaranteed or revenue-backed bonds are considerably less effective (Kiewiet & Szakaly, 1996, pp. 66–70).

Debt limits, whether expressed as a percentage of revenue, a fixed dollar ceiling, or a debt-service-to-revenue ratio, constrain the accumulation of long-term obligations. Germany's constitutional debt brake is the most stringent among major federations, limiting structural (cyclically adjusted) deficits to a small fraction of GDP at both the federal and Länder levels. Rainy-day funds function as a complementary rather than a substitute mechanism. Because balanced-budget rules constrain deficit spending during downturns, reserve funds accumulated during expansions provide the primary buffer against pro-cyclical expenditure cuts.

A cross-national inventory of subnational and national fiscal rules compiled by the International Monetary Fund documents a substantial expansion in the number of jurisdictions adopting formal fiscal rules since the 1990s, alongside considerable heterogeneity in the escape clauses, enforcement mechanisms, and independent monitoring bodies that accompany them (Schaechter et al., 2012, pp. 9–14). The IMF's analysis suggests that rules paired with independent fiscal councils empowered to monitor compliance and trigger corrective mechanisms outperform purely self-enforced numerical targets, a finding with direct relevance to ongoing debates over whether U.S. states' balanced-budget requirements—which are typically self-enforced by the same legislatures they constrain—could be strengthened through independent oversight bodies analogous to fiscal councils used elsewhere (Schaechter et al., 2012, pp. 22–26).

Empirical research on the effect of fiscal rules is mixed. Stringent rules are associated with lower borrowing costs and reduced deficit bias (Poterba, 1994, pp. 810–812), but critics argue that rigid rules can force damaging pro-cyclical austerity during recessions and may encourage governments to shift spending off-budget (through public authorities, special-purpose entities, or public-private partnerships) to circumvent formal constraints (Rodden, 2002, pp. 675–678).

8. COVID-19 and Subnational Fiscal Stress

The COVID-19 pandemic provided a natural stress test of the structural vulnerabilities described in Section 6, offering a valuable case study of how revenue pro-cyclicality, transfer dependency, and balanced-budget constraints interact during an acute shock. In the United States, early projections in mid-2020 anticipated state and local revenue shortfalls of USD 200–300 billion or more over the subsequent two fiscal years, driven by collapsing sales tax revenue (from reduced consumer spending), income tax withholding declines, and sharply increased Medicaid enrollment as unemployment rose (Clemens & Veuger, 2020, pp. 3–7).

In practice, the realized revenue decline proved smaller and shorter-lived than initial projections suggested, for two main reasons. First, federal relief legislation, including the CARES Act (2020) and the American Rescue Plan Act (2021), provided direct, largely unconditional aid to state and local governments on a scale without precedent in prior U.S. recessions, substituting for some of the automatic stabilization that is unavailable to balanced-budget-constrained subnational governments (Chernick, Copeland, & Reschovsky, 2020, pp. 771–775). Second, federal individual stimulus payments and expanded unemployment insurance sustained consumer spending and therefore sales and income tax collections better than in prior downturns, so that many states' actual revenue losses were considerably milder than the sharp GDP contraction of 2020 would otherwise have implied (Chernick et al., 2020, pp. 778–781).

The pandemic experience nonetheless illustrated the asymmetry inherent in a system that relies on discretionary, non-guaranteed federal aid to offset subnational revenue shocks: because the scale and timing of federal relief depended on the outcome of national legislative bargaining rather than an automatic, formula-driven stabilization mechanism, state governments faced substantial planning uncertainty during the early months of the pandemic, and several states enacted precautionary budget cuts that were only partially reversed once federal aid arrived (Clemens & Veuger, 2020, pp. 11–14). This experience has renewed academic and policy interest in proposals for automatic, countercyclical federal transfers to states, triggered by objective indicators such as the unemployment rate, rather than by discretionary legislation as a structural complement to state-level rainy-day funds (Chernick et al., 2020, pp. 783–785).

9. Recent Trends and Reform Proposals

9.1 Revenue Diversification

A recurring reform proposal is diversifying the subnational revenue base to reduce dependence on any single, cyclically sensitive source. This includes expanding taxation of services (as the U.S. economy has shifted from goods to services, sales tax bases anchored in tangible goods have narrowed relative to overall economic activity), broadening user fees for specific services, and, in some jurisdictions, introducing or expanding severance and carbon-related levies on resource extraction and emissions (Bahl & Bird, 2008, pp. 287–291).

9.2 Strengthening Reserve Funds

Following the 2008–09 recession and the 2020 pandemic-driven revenue shock, many U.S. states substantially increased statutory rainy-day fund targets and, in some cases, adopted formal deposit rules tied to revenue volatility (rather than discretionary annual appropriations) to ensure reserves are replenished consistently during expansions (National Association of State Budget Officers, 2023, pp. 31–34).

9.3 Restructuring Intergovernmental Transfers

Proposals to restructure intergovernmental transfers generally seek to balance two competing goals: providing subnational governments predictable, stable transfer revenue while preserving central government accountability for how funds tied to national policy priorities (such as healthcare eligibility standards) are used. Boadway and Shah (2009) argue that well-designed transfer systems should separate the equalization objective (closing fiscal capacity gaps) from the merit-good objective (ensuring minimum national standards in specific services), since combining both objectives in a single transfer instrument tends to produce formulas that serve neither objective well (Boadway & Shah, 2009, pp. 302–308). Options discussed in the literature include converting selected categorical grants to block grants (increasing subnational flexibility at the cost of reduced federal programmatic control) and indexing transfer formulas to smooth year-to-year volatility.

9.4 Digitalization and Tax Administration

Improvements in tax administration technology, including real-time transaction reporting under systems such as India's GST Network, have improved compliance and reduced collection costs, offering a template that other federations with fragmented subnational tax administration may adapt to improve both revenue yield and taxpayer compliance costs (Bahl & Bird, 2008, pp. 293–296).

10. Conclusion

Subnational governments occupy a structurally difficult position in federal systems: they are assigned significant, often growing, expenditure responsibilities while typically lacking revenue authority commensurate with those responsibilities, a mismatch that intergovernmental transfers only partially resolve. The comparative evidence from the United States, India, Germany, Canada, Australia, and Brazil demonstrates that federations have adopted markedly different institutional solutions to this common problem—ranging from Germany's constitutionally entrenched debt brake and formal equalization system to Brazil's federally imposed debt renegotiation framework and Australia's near-total reliance on Commonwealth-administered horizontal equalization. No single model eliminates the underlying tensions of vertical and horizontal fiscal imbalance, revenue pro-cyclicality, and interjurisdictional tax competition; each represents a distinct set of trade-offs between subnational autonomy, fiscal discipline, and equity.

The COVID-19 pandemic reinforced a theme that runs throughout the second-generation fiscal federalism literature: subnational fiscal stability depends not only on the formal design of taxing and borrowing authority but on the credibility and predictability of the central government's role as a lender or grantor of last resort. Where that role is exercised through discretionary, crisis-driven legislation as in the U.S. federal response to COVID-19, subnational governments face planning uncertainty that can itself generate pro-cyclical budget cuts, independent of the underlying revenue shock (Clemens & Veuger, 2020, pp. 13–14).

Future research on subnational finance would benefit from more systematic cross-national data on the actual (as opposed to statutory) stringency of balanced-budget and debt rules, longitudinal analysis of rainy-day fund adequacy relative to revenue volatility, closer study of how the increasing digitalization of tax administration is reshaping subnational revenue capacity in developing federations, and further empirical work on whether automatic countercyclical transfer mechanisms could reduce the planning uncertainty and pro-cyclicality documented in the U.S. pandemic experience.

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