SEPARATION OF BASES AND THE FISCAL CONSTITUTION

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ABSTRACT. A central concern of constitutional law and theory is the question of tax assignment: In a multilevel system of government, who gets to tax what? One conventional answer invokes the "separation of bases," according to which constitutions should assign each tax base exclusively to one level of government. Proponents justify separation on two grounds: It prevents excessive taxation (the efficiency rationale), and it protects states from federal encroachment (the federalism rationale). These arguments have a centuries-long lineage in Anglo-American political economy and continue to feature prominently in constitutional litigation today.

This Article proposes a new account of tax assignment, one that reveals the conventional wisdom to be not only incomplete but, in key respects, backward. With regard to efficiency, we show that separating bases often forgoes significant synergies that arise when enforcement by one level of government facilitates tax collection by the other. With respect to federalism, we demonstrate through a game-theoretic model that constraints on Congress's tax powers can confer a strategic advantage on the federal government in bargaining with the states—the opposite of the standard view, which posits that limits on federal tax authority redound to the states' benefit.

These insights yield a new normative prescription for allocating tax authority in federal systems, which we call the "relative externalities principle." According to that standard, separation of bases is optimal only when the negative externality from two governments overgrazing the same base exceeds the positive externality from both governments bolstering each other's enforcement efforts. Our analysis also casts fresh light on the Direct Tax Clauses of the U.S. Constitution, which potentially curb Congress's ability to tax property but—counterintuitively—strengthen the federal government's hand in intergovernmental bargaining. Beyond the federal Constitution, our framework offers insight into the design of state constitutions, the ongoing debate over the state and local tax deduction, and the architecture of international tax cooperation.

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INTRODUCTION

One of the central challenges in the design of any federal constitution is the problem of tax assignment: In a multilevel system of governance, who gets to tax what? Disagreement over this question catalyzed the American Revolution[1] and strained the Constitutional Convention of 1787.[2] It helped to sink Australia's first attempt at federation in 1898[3] and contributed to the dissolution of the short-lived West Indies Federation in the early 1960s.[4] The issue continues to fuel separatist movements from the Bougainville region of Papua New Guinea[5] to Catalonia in northeast Spain.[6] And it remains the subject of high-stakes constitutional litigation in courts across the globe—from Washington, D.C.,[7] and Ottawa[8] to Nairobi[9] and New Delhi.[10]

A common approach to the tax assignment problem invokes a so-called "separation of bases" principle,[11] according to which particular tax bases are assigned exclusively to one level of government. For example, the United States

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[1] See Thomas P. Slaughter, The Tax Man Cometh: Ideological Opposition to Internal Taxes, 1760-1790, 41 William & Mary Q. 566, 572–80 (1984).

[2] 1 The Records of the Federal Convention of 1787, at 589–92 (Max Farrand ed., 1911).

[3] See Rohan Alexander & Timothy J. Hatton, The Making of a Nation: Who Voted for Australian Federation?, 65 Asia-Pac. Econ. Hist. Rev. 192, 198–99 (2025).

[4] See Spencer Mawby, Ordering Independence: The End of Empire in the Anglophone Caribbean, 1947–69, at 167–69 (2012).

[5] See Damien Cave, Bougainville Votes for Independence From Papua New Guinea, N.Y. Times (Dec. 11, 2019), https://www.nytimes.com/2019/12/11/world/asia/bougainville-independence-papua-new-guinea.html (noting that the lopsided vote for Bougainville independence was attributable to Papua New Guinea's extraction of revenue from gold and copper mining in the region plus the perception that "little tax revenue seemed to make it back to Bougainville).

[6] See Paula Ajumobi, Catalonia: Potential Sovereignty in the Era of Controversial Self-Determination, 53 N.Y.U. J. Int'l L. & Pol. Online 63, 69 & n.47 (2021).

[7] See Moore v. United States, 602 U.S. 572 (2024) (rejecting a constitutional challenge to a federal tax on the undistributed income of U.S.-controlled foreign corporations).

[8] See References re Greenhouse Gas Pollution Pricing Act, [2021] 1 S.C.R. 175 (Can.). (rejecting a constitutional challenge by three Canadian provinces to a federal carbon pricing mandate).

[9] See Wanjiru Gikonyo v. Nat'l Assembly, Pet. No. E129 of 2021 (High Ct. Sept. 20, 2024) (Kenya) (holding that the National Government Constituency Development Fund of 2015 violated the "division of revenue" between national and county governments).

[10] See Mineral Area Dev. Auth. v. Steel Auth. of India, 2024 INSC 554 (India) (affirming the power of states to impose levies on mineral rights).

[11] See, e.g., Roy Bahl, Eunice Heredia-Ortiz, Jorge Martinez-Vazquez & Mark Rider, India: Fiscal Condition of the States, International Experience, and Options for Reform, at xii (Georgia State Univ. Andrew Young Sch. of Policy Studies, Working Paper 05-14, June 2005) ("In India, tax assignments among the tiers of government are based on the constitutional principle of separation of bases."); Marilyn R. Flowers, Shared Tax Sources in a Leviathan Model of Federalism, 16 Pub. Fin. Rev. 67, 67 (1988) ("Separation of tax sources is often advanced as a norm for the fiscal organization of a federal system of government.").

Constitution imposes tight constraints on the federal government's power to enact "direct taxes," effectively assigning the direct tax base to the states.[12] Symmetrically, the U.S. Constitution severely limits the ability of states to tax imports, functionally assigning the tariff base to Congress.[13] Many other countries' constitutions incorporate even more explicit separation-of-bases provisions. For example, under the Indian Constitution, the central government holds the exclusive power to tax corporate and non-agricultural income and to levy customs duties and excises on tobacco and gasoline; the states have the exclusive power to tax agricultural income, alcohol, and real property.[14] In Brazil, the federal government has the exclusive power to impose income taxes; the states have sole authority to tax gifts and inheritances.[15]

Proponents of the separation-of-bases principle have presented two main justifications for it. The first appeals to efficiency: Separation of bases reduces the risk of "tax cannibalization," whereby each level of government—by overtaxing the shared base—reduces the revenue-raising capacity of the other.[16] A second justification invokes federalism: By ensuring the separation of bases—and, in particular, by prohibiting the federal government from encroaching on bases reserved exclusively for the states—constitutions can ensure that states retain the ability to serve their citizens and check federal power. These arguments have influenced not only scholars but also courts. For example, Justice Thomas's dissent from the Supreme Court's 2024 decision in *Moore v. United States* vigorously defends the separation-of-bases principle on grounds of federalism, arguing that tax base separation is a "critical aspect" of the Constitution's balance of power between the federal government and the states.[17]

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[12] See U.S. Const. art. I, § 2, cl. 3 ("Representatives and direct Taxes shall be apportioned among the several States which may be included within this Union, according to their respective Numbers . . . ."); art. I, § 9, cl. 4 ("No Capitation, or other direct, Tax shall be laid, unless in Proportion to the Census or enumeration herein before directed to be taken").

[13] See U.S. Const. art. I, § 10, cl. 2 ("No State shall, without the Consent of the Congress, lay any Imposts or Duties on Imports or Exports, except what may be absolutely necessary for executing it's inspection Laws . . . ."). This provision—known as the Import-Export Clause—also limits the ability of states to tax exports. However, the Constitution does not assign the export tax base to the federal government, because a different clause—the Export Clause—prohibits Congress from taxing exports. See U.S. Const. art. I, § 9, cl. 5 ("No Tax or Duty shall be laid on Articles exported from any State.").

[14] See India Const. sched. VII, list I, entries 82–85, list II, entries 46, 49, 51.

[15] See Constituição Federal [C.F.] arts. 153–156 (Braz.).

[16] See David Gamage & Darien Shanske, Tax Cannibalization and Fiscal Federalism in the United States, 111 Nw. U. L. Rev. 295, 299–300 (2017).

[17] Moore v. United States, 144 S.Ct. 1680, 1712 (2024) (Thomas, J., dissenting).

A substantial scholarly literature analyzes the separation-of-bases principle from an efficiency perspective.[18] However, almost all of the efficiency-focused evaluations of base separation ignore issues of tax enforcement.[19] Since enforcement is a first-order concern in tax system design,[20] inattention to this issue represents a significant gap in the literature on tax assignment. Meanwhile, advocates for the separation-of-bases principle on federalism grounds have long assumed that states benefit when Congress is restricted from taxing the states' preferred base.[21] To our knowledge, none of the many contributions to the tax assignment literature have considered the alternate possibility that federal authorities might gain a strategic advantage in federal-state bargaining from a constitutional limitation on Congress's taxing power.[22]

[18] See, e.g., Richard A. Musgrave, Who Should Tax, Where, and What?, in Tax Assignment in Federal Countries 2 (Charles E. McLure Jr. ed., 1983); Robin Boadway & Michael Keen, Efficiency and the Optimal Direction of Federal-State Transfers, 3 Int'l Tax & Pub. Fin. 137 (1996); Robin Boadway, Maurice Marchand & Marianne Vigneault, The Consequences of Overlapping Tax Bases for Redistribution and Public Spending in a Federation, 68 J. Pub. Econ. 453 (1998); Timothy J. Besley & Harvey S. Rosen, Vertical Externalities in Tax Setting: Evidence from Gasoline and Cigarettes, 70 J. Pub. Econ. 383 (1998); Wallace E. Oates, An Essay on Fiscal Federalism, 37 J. Econ. Lit. 1120, 1125–30 (1999); Wallace E. Oates, Taxation in a Federal System: The Tax Assignment Problem, in Environmental Policy and Fiscal Federalism 351 (2004); John D. Wilson & David E. Wildasin, Capital Tax Competition: Bane or Boon?, 88 J. Pub. Econ. 1065 (2004); Wallace E. Oates, Toward a Second-Generation Theory of Fiscal Federalism, 12 Int'l Tax & Pub. Fin. 349 (2005); Christos Kotsogiannis, Federal Tax Competition and the Efficiency Consequences for Local Taxation of Revenue Equalization, 17 Int'l Tax & Pub. Fin. 1 (2010); Yaniv Reingewertz, Corporate Taxes and Vertical Tax Externalities: Evidence from Narrative Federal Tax Shocks, 68 Reg'l Sci. & Urb. Econ. 84 (2018); David R. Agrawal, Jan K. Brueckner & Marius Brülhart, Fiscal Federalism in the Twenty-First Century, 16 Ann. Rev. Econ. 429, 437–39 (2024).

[19] Richard Musgrave's canonical chapter on tax assignment mentions that "multiple use" of the same base—the opposite of base separation—may "simplify administration." See Musgrave, supra note 18, at 14. However, Musgrave does not develop the point further, and nor do the many authors who have written in Musgrave's wake. Ruth Mason notes that when states tax the same base as the federal government, they gain the ability to "free-ride on federal tax enforcement." See Ruth Mason, Federalism and the Taxing Power, 99 Cal. L. Rev. 975, 994 (2011). But—given that the focus of her analysis is on federalism rather than efficiency—Mason does not explore how the free-rider phenomenon affects the efficiency of base separation.

[20] See, e.g., Joel Slemrod & Christian Gillitzer, Tax Systems 186 (2014) (emphasizing the importance of enforcement along with rate and base in tax system design).

[21] See Alex Zhang, The Wealth Tax: Apportionment, Federalism, and Constitutionality, 23 U. Pa. J. L. & Soc. Change 269, 272–273 (2020) (observing that for most of U.S. history, the Supreme Court has interpreted the Direct Tax Clauses' restrictions on federal taxation of property "as a federalism provision whose purpose is to preserve the ability of state and local governments to tax").

[22] Within legal scholarship, the general issue of "vertical fiscal externalities"—the costs and benefits that governments at one level impose on other levels through their fiscal policies—has received surprisingly little attention. See David Gamage & Darien Shanske, Tax Cannibalization and Fiscal Federalism in the United States, 111 Nw. U. L. Rev. 295, 298 n.8 (2017) (noting that "recent law review articles on fiscal federalism topics by leading tax legal scholars make almost no mention of vertical externalities").

This Article seeks to change the fundamental terms of the tax assignment debate and—along the way—to cast new light on centuries-old elements of the American "fiscal constitution."[23] First, we reassess the separation-of-bases principle from an efficiency perspective, incorporating enforcement considerations that the literature has long neglected. We propose an alternative—which we call the "relative externalities" principle—that more precisely identifies the circumstances in which base separation is (or is not) optimal. According to that principle, given certain assumptions about the motivations of federal and state policymakers, the case for base separation or co-occupation can be resolved by comparing the size of two externalities. The first is a negative *rate externality*: when the federal government ratchets up its rate on a shared base, it leaves less revenue for states to collect (and vice versa). The second is a positive *enforcement externality*: when the federal government enforces a tax on the shared base, its enforcement efforts discourage taxpayers from evading the tax—or reveal that they have—and thus allow states to collect more revenue from their taxes on the common base (and vice versa). If the rate externality is larger than the enforcement externality, then our relative externalities principle recommends the separation of bases. But if the enforcement externality is larger, our principle calls for overlapping taxation of the same base.

We go on to reevaluate the separation-of-bases principle from a federalism perspective. We show that—contrary to long-prevailing assumptions—restricting the federal government's authority to tax the states' preferred base may not actually favor the states. Instead, it can tip the intergovernmental balance of power in the federal government's favor. The reason for this potentially counterintuitive result is that when the enforcement externality exceeds the rate externality—and thus both the federal and state governments benefit from taxing the same base—authorities

[23] The term "fiscal constitution" dates at least as far back as the late 1960s and early 1970s to the work of the economist and future Nobel laureate James Buchanan. See James M. Buchanan, The Demand and Supply of Public Goods 158 (1968). The term entered the legal-academic lexicon with the University of Chicago law professor Kenneth Dam's pathbreaking 1977 article examining fiscal arrangements in the United States and West Germany. Kenneth W. Dam, The American Fiscal Constitution, 44 U. Chi. L. Rev. 271 (1977). There, Dam defined the "fiscal constitution" as "the sum of constitutional provisions bearing on taxation and expenditure, including both rules defining the fiscal competence of the branches of the federal government and rules allocating taxing and spending powers between the federal government and the states." Id. at 272. Dam's definition of the "fiscal constitution" also included subconstitutional rules and procedures "that are so far-reaching in their implications for year-by-year fiscal decisions that they deserve to be thought of as quasi-constitutional," such as the statutory framework for the modern congressional budget process, the federal deduction for state and local taxes, and the federal exemption of interest on state and local bonds. See id. at 272, 91, 300.

at the two levels of government face a potential coordination problem in choosing which base to tax. Suppose that federal officials prefer to tax income; states prefer to tax property; and both prefer to tax the same base as the other. By restricting its own ability to tax property, the federal government ensures that the only way for the states to benefit from positive enforcement externalities is to tax income. From this perspective, a federal constitutional restriction preventing Congress from taxing property operates much like the age-old tactic of generals burning bridges behind their own army to persuade an adversary that they will not retreat.[24] Put another way, the level of government that can tie its own hands potentially gains the upper hand.

The payoffs from our analysis are far-reaching, with implications for constitutional theory, tax policy, and international tax diplomacy. For example, our analysis challenges the centuries-old understanding of the U.S. Constitution's Direct Tax Clauses as federalism-preserving provisions. We show that the federalism implications of these limits on Congress's tax powers are far more ambiguous than previous scholars and jurists have assumed. We also show how subconstitutional tax rules—such as the federal deduction for state and local taxes—can serve as flexible substitutes for rigid constitutional constraints on federal and state tax power. Finally, we connect the tax assignment problem—classically conceived as a matter of domestic constitutional law—to the question of how the power to tax multinational enterprises should be allocated between residence and source jurisdictions internationally.

Revisiting the assignment problem is particularly urgent now in light of recent domestic and international developments. In its 2024 decision in *Moore v. United States*, the Supreme Court teed up future litigation over whether the Constitution authorizes Congress to tax "unrealized" sums without going through the cumbersome process of apportionment among the states.[25] The ultimate answer to that question will help to determine whether the separation of bases continues to be a guiding principle of U.S. fiscal federalism.[26] Beyond the United States, the world's most populous democracy—India—enacted a constitutional amendment in

[24] Thomas C. Schelling, The Strategy of Conflict 18–19 (1960).
[25] Pet'n for Cert., Moore, No. 22-800, 144 S.Ct. 1680 (filed Feb. 21, 2023).
[26] Even more recently, the Ninth Circuit—on New Year's Eve in December 2025—suspended the State of Hawaii's tax on cruise ship fares in response to concerns that the tax violated another one of the Constitution's base separation provisions: the Tonnage Clause. Cruise Lines Int'l Ass'n Inc. v. Suganuma, No. 25-8057 (9th Cir. 2025). Provisions of the fiscal constitution that operated in the shadows through most of U.S. history are suddenly seeing the spotlight.

2016 that allowed both the central government and the states to impose taxes on goods and services, marking the largest change to the country's tax assignment scheme in its history.[27] And Brazil—the world's fourth-largest democracy—amended its constitution in 2023 to implement the most significant structural tax-assignment reform in that country in nearly six decades.[28] These domestic-level developments have occurred as diplomats at the Organisation for Economic Co-operation and Development (OECD) hammered out a new "global minimum tax" that reallocates authority to tax multinational enterprises. By early 2026, more than sixty countries had implemented the new OECD regime, marking the most dramatic change to tax assignment at the international level in modern times.[29]

Trillions of dollars turn on the resolution of the tax assignment problem in the United States and other federal systems. And here—as elsewhere—money is also power. Answers to the tax assignment problem will affect the capacity of governments to provide services to their citizens as well as their ability to serve as checks and balances against each other. Whether or not one agrees with Justice Thomas's support for a separation of bases in the United States, he is surely right that tax assignment is a critical aspect of the federal-state balance.

The rest of this Article proceeds in three parts. Part I traces the separation-of-bases principle through centuries of constitutional design and economic thought. Part II presents our analysis of strategic bargaining over tax assignment. Our methodology in Part II is primarily game-theoretic, which allows us to make general claims with cross-national relevance that do not depend upon the institutional details of particular federal systems. But of course, those institutional details also matter, and in Part III, we apply insights from our game-theoretic analysis to specific institutional settings—including federal-state bargaining in the shadow of the U.S. Constitution, tax assignment in other federal democracies, and international tax law.

[27] See India Const. art. 246A, inserted by The Constitution (One Hundred and First Amendment) Act, 2016 (India).

[28] See Emenda Constitucional No. 132, de 20 de dezembro de 2023, Diário Oficial da União [D.O.U.] de 21.12.2023 (Braz.).

[29] See Kelly Phillips Erb, OECD Tax Deal Keeps Global Minimum Intact But Shields U.S. Companies, Forbes (Jan. 23, 2026), https://www.forbes.com/sites/kellyphillipserb/2026/01/23/oecd-tax-deal-keeps-global-minimum-intact-but-shields-us-companies.

I. THE SEPARATION OF BASES IN CONSTITUTIONAL LAW AND ECONOMICS

A. The Separation of Bases and the American Constitution

The separation-of-bases principle has a pedigree in American constitutional thought that stretches almost as far back as the separation of powers. In 1765, the British Parliament imposed a tax on printed materials in the North American colonies—the Stamp Act—to offset the cost of stationing British troops in North America following the French and Indian War. The tax sparked protests up and down the Atlantic seaboard, prompting a surprised House of Commons to invite Benjamin Franklin to explain the roots of the colonial reaction.[30] In his three-hour testimony in January 1766, Franklin told British lawmakers that the colonists objected to the Stamp Act because it was an "internal" tax.[31] As Franklin explained:

> An external tax is a duty laid on commodities imported; that duty is added to . . . the price. If the people do not like it at that price, they refuse it; they are not obliged to pay it. But an internal tax is forced from the people without their consent, if not laid by their own representatives.[32]

In effect, Franklin was articulating a primordial separation-of-bases principle, according to which colonial legislatures held exclusive authority to enact internal taxes while the Parliament in London could legitimately impose external taxes.[33] As historian Thomas Slaughter observes, what Franklin and his fellow colonists had done, "to the utter confusion of most members of Parliament, was take a

[30] See Bernard Bailyn, Ideological Origins of the American Revolution: Fiftieth Anniversary Edition 211–14 (2017).

[31] The Examination of Doctor Benjamin Franklin, Before an August Assembly, Relating to the Repeal of the Stamp-Act, &c 5 (Edes & Gill, 1766), available at https://www.masshist.org/database/viewer.php?item_id=251.

[32] Id. at 8.

[33] Two years earlier, Franklin wrote to Richard Jackson, a member of the House of Commons who was sympathetic to the colonists' cause: "Two distinct Jurisdictions or Powers of Taxing cannot well subsist together in the same Country. They will confound and obstruct each other." Benjamin Franklin to Richard Jackson, 1 May 1764, Founders Online, National Archives, https://founders.archives.gov/documents/Franklin/01-11-02-0046. At that time, Franklin's rationale for base separation emphasized the challenge of coordinating taxes when Parliament and the colonial assemblies were an ocean apart:

> When any Tax for America is propos'd in your Parliament, how are you to know that we are not already tax'd as much as we can bear? If a Tax is propos'd with us, how dare we venture to lay it, as the next Ship perhaps may bring us an Account of some heavy Tax impos'd by you.

Id.

commonplace operational distinction between internal and external taxes"—whereby internal taxes were levied by the colonial assemblies while external taxes emanated from London—"and turn it into a constitutional argument."[34]

The initial reception from some members of the House of Commons was skeptical. When pressed to defend the logic of the internal/external distinction, Franklin strained the limits of the Commoners' credulity. "[S]upposing the external tax or duty to be laid on the necessaries of life imported into your Colony," one member asked, "will not that be the same thing in its effects as an internal tax?" Franklin replied, "I know not a single article imported into the northern Colonies, but what they can either do without, or make themselves"[35]—a questionable claim at a time when "the bulk of the colonists' textile needs were met by imports."[36] Charles Townshend, soon to become the British Chancellor of the Exchequer, quipped that the distinction between internal and external taxes was "ridiculous in everybody's opinion except the Americans."[37]

Some twentieth-century historians of the revolutionary period would later conclude that even the colonists did not put much stock in the distinction between internal and external taxes. According to Edmund Morgan, colonial assemblies "unequivocally rejected the authority of Parliament to tax the colonies at all."[38] When Parliament in 1767 enacted the Townshend duties—a new set of taxes on imported glass, lead, paint, paper, and, most famously, tea—the colonists protested again even though these taxes were, by Franklin's definition, "external." As Bernard Bailyn observed, "in the light of the approaching Townshend Duties . . . the inadequacy of the much overstrained distinction between 'internal' and 'external' taxation for marking the limits of Parliament's power over the colonies became obvious."[39] Added Gordon Wood: "With the Stamp Act some had awkwardly and hesitantly drawn a distinction between external and internal taxes," but "with the Townshend duties . . . , the distinction, never surely grasped, at once dissolved."[40]

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[34] Thomas P. Slaughter, The Whiskey Rebellion: Frontier Epilogue to the American Revolution 18 (1986).

[35] See The Examination of Doctor Benjamin Franklin, supra note 31, at 8–9.

[36] See S. D. Smith, The Market for Manufactures in the Thirteen Continental Colonies, 1698-1776, 51 Econ. Hist. Rev. 676, 697 (1998).

[37] Edmund S. Morgan, Colonial Ideas of Parliamentary Power, 1764-1766, 48 William & Mary Q. 311, 311 (1948).

[38] Id. at 325.

[39] Bailyn, supra note 30, at 215.

[40] Gordon S. Wood, The Creation of the American Republic, 1776-1787, at 349 (1969).

Yet as fellow historian Thomas Slaughter has emphasized, the distinction between internal and external taxes did not disappear entirely from American political thought. Instead, it lay dormant for two decades, only to reemerge during the debate over the 1787 Constitution.[41] When delegates convened in Philadelphia that year to draft what would become the federal Constitution, they chose to encode a separation of tax bases into the new national charter. Import taxes, they unanimously agreed, would be Congress's to impose in the first instance.[42] So would tonnage duties, or taxes on vessels based on their internal capacity.[43] Although the Framers did not assign any tax base exclusively to the states, they required that "direct taxes" levied by Congress must be apportioned among the states based on population.[44] Due to the cumbersome nature of apportionment, the new Constitution helped to ensure that direct taxes would remain primarily the domain of states and localities.

In one sense, then, the Constitution can be seen as setting forth a detailed system of tax base separation. Yet at the center of that system was an ambiguity that would bedevil jurists for more than two centuries: the Framers famously failed to define the term "direct taxes."[45] Delegates to the state ratifying conventions appear to have assumed that direct taxation included, at a minimum, taxes on land.[46]

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[41] Slaughter, supra note 1, at 568.

[42] 2 The Records of the Federal Convention of 1787, at 308–309 (Max Farrand ed., 1911). The Import-Export Clause allows states to recover the administrative costs of their inspection regimes with Congress's consent, and even then, any net revenue from the state taxation must be remitted to the federal Treasury. U.S. Const. art. I, § 10, cl. 2.

[43] The vote to give Congress exclusive jurisdiction over tonnage duties was closer than the unanimous verdict on the Import-Export Clause, with six state delegations in favor, four against, and New Jersey split down the middle. 2 The Records of the Federal Convention of 1787, at 393 (Max Farrand ed., 1911).

[44] See U.S. Const. art. I, § 2, cl. 3; U.S. Const. art. I, § 9, cl. 4. Thus, taxpayers in California, home to approximately 12% of the U.S. population, must pay 12% of any direct tax, while taxpayers in Wyoming, with approximately 0.2% of the U.S. population, must pay 0.2% of the total.

[45] In one oft-quoted exchange recorded in James Madison's notes from the Philadelphia Convention, Rufus King of Massachusetts asked his fellow delegates "what was the precise meaning of direct taxation," but "[n]o one answ[ere]d." 2 The Records of the Federal Convention of 1787, supra note 42, at 350–51.

[46] For example, John Jay—who would go on to serve as the nation's first Chief Justice—told fellow delegates to the New York ratifying convention that "direct taxes were of two kinds": "general taxes upon all property" and "specific" taxes on items such as luxuries. 20 The Documentary History of the Ratification of the Constitution 2045 (Merrill Jensen, John P. Kaminski & Gaspare J. Saladino eds., 1976). Another future Chief Justice, John Marshall, told fellow delegates to the Virginia convention: "The objects of direct taxes are well understood: they are but few: what are they? Land, slaves, stock of all kinds, and a few other articles of domestic property." 9 The Documentary History of the Ratification of the Constitution 1122 (Merrill Jensen, John P. Kaminski & Gaspare J. Saladino eds., 1976).

Whether any other levies might be "direct taxes" subject to the apportionment requirement remains a source of controversy today.

Some critics of the new Constitution would have taken the separation-of-bases principle further. For example, in a speech to the Pennsylvania ratifying convention in December 1787, antifederalist William Findley argued that "[t]he powers given to the Federal body for imposing internal taxation will necessarily destroy the state sovereignties, for there cannot exist two independent sovereign taxing powers in the same community, and the strongest will of course annihilate the weaker."[47] And when Congress enacted an excise tax on whiskey during President Washington's first term, opponents of the new tax echoed the same separation-of-bases arguments that Stamp Act resisters had advanced more than two decades earlier. As Slaughter observes, the localist opponents of the Whiskey Tax "divided the world of taxes into internal and external spheres"—"in the same way as Stamp Act rebels and Antifederalists had done"—and assailed the whiskey excise as an attempt by Congress to intrude into the internal taxation sphere.[48] The Washington administration successfully suppressed the so-called "Whiskey Rebellion," a brief but bloody insurrection against the tax in western Pennsylvania, in 1794.[49] Still, the localists who opposed the whiskey tax on separation-of-bases grounds effectively lost the battle and won the war: when the Jeffersonian Republicans prevailed in the Election of 1800, they promptly repealed the whiskey excise.[50]

As a practical matter, the separation of bases would remain a defining feature of American fiscal federalism for most of the antebellum period. To be sure, the Supreme Court would go on to rule—just two years after the end of the Whiskey Rebellion—that a federal tax on carriages was not a "direct tax," thus opening the door to unapportioned federal taxes on personal property.[51] And Congress, on five occasions, enacted direct taxes on real property that it apportioned among the states—first in 1798 when war with France appeared to be imminent;[52] again in 1813, 1815, and 1816, during and immediately after war with Britain;[53] and finally in

[47] 1 The Debate on the Constitution: Federalist and Antifederalist Speeches, Articles and Letters During the Struggle Over Ratification 818 (Bernard Bailyn ed., 1993).
[48] See Slaughter, supra note 1, at 591.
[49] For the definitive account of the Whiskey Rebellion, see generally Slaughter, supra note 34.
[50] See Slaughter, supra note 1, at 591.
[51] See Hylton v. United States, 3 U.S. (3 Dall.) 171 (1796).
[52] See Act of July 14, 1798, ch. 75, 1 Stat. 597.
[53] See Act of August 2, 1813, ch. 37, 3 Stat. 53; Act of January 9, 1815, ch. 21, 3 Stat. 164; Act of March 5, 1816, ch. 24, 3 Stat. 255.

1861, several months into the Civil War.[54] But all of these taxes were short-lived. Until the Civil War, as one scholar observes, "[g]enerally, Congress attempted to avoid the types of taxes in use by the states as a type of 'double tax' unfair to taxpayers."[55] According to one count, 85.2% of all federal revenues from 1820 through 1862 came from external taxes (i.e., customs duties),[56] which avoided clashes with state tax power because states are constitutionally prohibited from collecting customs duties themselves without congressional consent.

The need for federal revenue to finance the Civil War placed the separation-of-bases principle under stress. Starting with the Revenue Act of 1862,[57] Congress imposed a series of "internal" taxes—including the first federal income tax, an array of excise taxes, and a tax on inheritances—that, taken together, overshadowed tariffs as the primary source of federal revenue by the end of the conflict.[58] Both the income and inheritance taxes were repealed in the early 1870s,[59] but federal excise taxes on tobacco and—most significantly—alcohol endured. In the fifty-year period from 1863 to 1913, federal excise taxes constituted nearly 40% of all federal revenue.[60] Since many states, too, taxed alcohol, the rise of excise taxes led to a period of prolonged base co-occupation between the federal government and the states.[61]

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[54] See Act of Aug. 5, 1861, ch. 45, 12 Stat. 292 (1861). On the operation of these five taxes—and the substantial deviations between actual collections and apportioned amounts—see Conor Clarke & Ari Glogower, Apportioned Direct Taxes, 79 Tax L. Rev. (forthcoming 2026), https://ssrn.com/abstract=5314120 (manuscript at 63). The first four taxes—but not the fifth—included enslaved people within the base, reflecting America's ignominious history of equating enslaved people with real property. See Act of July 14, 1798, ch. 75, § 2, 1 Stat. 597, 598 (laying a direct tax upon "all dwelling-houses, lands, and slaves" within the United States); Act of Aug. 2, 1813, ch. 37, § 4, 3 Stat. 53, 54 (laying a direct tax upon "the value of all lands, lots of ground with their improvements, dwelling-houses, and slaves"); Act of Jan. 9, 1815, ch. 21, § 5, 3 Stat. 164, 166 (same); Act of Mar. 5, 1816, ch. 24, § 2, 3 Stat. 255, 255 (continuing the direct tax laid in 1815 and reducing the amount, effectively maintaining the same tax base).

[55] Gary Giroux, Financing the Civil War: Developing New Tax Sources, 17 Accounting Hist. 83, 87 (2012).

[56] See Thomas L. Hungerford, Cong. Research Serv., U.S. Federal Government Revenues: 1790 to the Present 2 tbl.1 (Sept. 25, 2006).

[57] See Revenue Act of 1862, ch. 119, 12 Stat. 432 (July 1, 1862).

[58] See Giroux, supra note 55, at 103 app. 3 tbl. B.

[59] See Act of July 14, 1870, ch. 255, § 27, 16 Stat. 256, 269 (1870) (repealing inheritance imposed during the Civil War); Act of July 14, 1870, ch. 255, § 6, 16 Stat. 256, 257 (sunsetting the federal income tax in 1872).

[60] See Hungerford, supra note 56, at 2 tbl.1, 5.

[61] In some states, taxation of liquor took the form of a fixed uniform charge on every establishment licensed to sell liquor. Others, like Missouri, taxed liquor sales on an ad valorem basis. I Joseph Rowntree & Arthur Sherwell, The Taxation of the Liquor Trade 240–48 (2d ed. 1908).

Congress's entry into the field of alcohol taxation sparked frequent federal-state conflicts. However, these conflicts did not follow the traditional model of competition over revenue. Rather, tensions were highest not in "wet" states that taxed the sale of alcohol but in "dry" states that banned it altogether. As a matter of economic theory, one might expect that temperance advocates would welcome the federal taxation of alcohol, because taxation tends to reduce consumption. Indeed, Chief Justice Salmon Chase made exactly this point in an 1866 decision that held that the federal government could impose its alcohol tax on sales in "dry" Massachusetts: the "two lines of legislation"—federal taxation and state prohibition—"proceed in the same direction and tend to the same result," Chase reasoned.[62] On the ground, though, federal collection of alcohol taxes in "dry" states angered prohibitionists because the federal government—thirsty for revenue—refused to share any information on alcohol tax collection with state prosecutors.[63] In effect, the federal government's policy prevented states from leveraging the positive enforcement externalities that base co-occupation potentially provides. The Bureau of Internal Revenue's noncooperation policy persisted until 1906, when Congress enacted the Certified List Law requiring each federal tax collector to furnish state prosecutors with an alphabetical list of the names of all persons within his district who had paid the federal alcohol tax.[64]

Yet even as the separation of bases began to crumble on the ground, it reached the peak of its prominence in American constitutional jurisprudence. In 1894, Congress enacted a second federal income tax—a 2% flat tax on individual and corporate income exceeding $4000[65]—that posed little risk of base overlap because no state had a comprehensive income tax at the time.[66] Nonetheless, the

[62] See License Tax Cases, 72 U.S. 462, 473 (1866); see also Richard F. Hamm, Shaping the Eighteenth Amendment: Temperance Reform, Legal Culture, and the Polity, 1880-1920, at 104 (1995) (discussing the License Tax Cases).

[63] See W. J. Rorabaugh, Reexamining the Prohibition Amendment, 8 Yale J. Law & Hum. 285, 290 (1996) (reviewing Richard F. Hamm, Shaping the Eighteenth Amendment: Temperance Reform, Legal Culture, and the Polity, 1880-1920 (1995)).

[64] See Act of June 21, 1906, ch. 3509, 34 Stat. 387; Richard F. Hamm, The Convoluted State: The Federal System, the Prohibition Movement, and the Liquor Tax, 1862-1920, 25 Soc. Hist. of Alcohol Rev. 10, 19–20 (1992).

[65] Wilson-Gorman Tariff Act of 1894, ch. 349, §§ 27–37, 28 Stat. 509, 553–560.

[66] It would be seventeen more years before Wisconsin enacted the first comprehensive state income tax in 1911. See Edward T. Howe & Donald J. Reeb, The Historical Evolution of State and Local Tax Systems, 78 Soc. Sci. Q. 109, 114 (1997). Four other states—Louisiana, Massachusetts, North Carolina, and Virginia—taxed some forms of income, but those taxes were poorly enforced and yielded very little revenue. See Alzada Comstock, State Taxation of Personal Incomes, 101 Stud. in Hist. Econ. & Pub. Law 1, 15 (1922) (noting that "[t]he lowest ebb in the history of state income taxes was reached in the period 1884 to 1897").

Supreme Court held the following year in *Pollock v. Farmers' Loan & Trust Co.* that the tax was unconstitutional because any tax on income from real and personal property was a "direct tax" that must be apportioned among the states.[67] Chief Justice Fuller—writing for the majority—observed that the apportionment requirement was "manifestly designed" to restrain Congress from encroaching upon the states' direct tax base.[68] As he elaborated: "The founders anticipated that the expenditures of the States, their counties, cities, and towns, would chiefly be met by direct taxation on accumulated property."[69] By classifying a federal tax on income from property as indirect, "the rule of protection could be frittered away," and "one of the great landmarks defining the boundary between the Nation and the States" would have "disappeared."[70]

The central holding of *Pollock*—that the Constitution prohibits Congress from imposing an unapportioned tax on income from property—survived for less than two decades. By 1913, three-quarters of the states had ratified the Sixteenth Amendment, which granted Congress "power to lay and collect taxes on incomes, from whatever source derived, without apportionment."[71] At the time, Congress's entry into the field of income taxation posed little threat to the separation of bases because income taxation constituted less than 1% of aggregate state revenue.[72] (To the contrary, the federal income tax was expected to reduce federal reliance on the alcohol excise tax, thus allaying tensions between federal tax collectors and state authorities.[73]) But by the end of World War II, nearly two dozen states—seeing the extraordinary revenue potential of income taxation—had adopted income taxes of their own.[74] And today, "at both the state and federal level, personal income taxes

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[67] See Pollock v. Farmers' Loan & Trust Co., 157 U.S. 429, 583 (1895) (Pollock I) (holding that the 1894 income tax is unconstitutional "so far as it levies a tax on the rents or income of real estate"); Pollock v. Farmers' Loan & Trust Co., 158 U.S. 601, 637 (1895) (on reh'g) (Pollock II) (holding that an unapportioned tax on income from personal property is also unconstitutional).

[68] Pollock II, 158 U.S. at 618.

[69] Id. at 621.

[70] Pollock I, 157 U.S. at 583.

[71] U.S. Const. art. XVI.

[72] See Robert Stanley, Dimensions of Law in the Service of Order: Origins of the Federal Income Tax, 1861-1913, at 204 tbl.5-3 (1993) (reporting that income taxes amounted to 0.9% of aggregate state ordinary revenues in 1913).

[73] See Daniel Okrent, Last Call: The Rise and Fall of Prohibition 76 (2010) ("[T]o those in the dry movement who understood political and governmental reality, imposition of an income tax was . . . an absolutely necessary step if they were going to break the federal addiction to the alcohol excise tax.").

[74] See Scott Drenkard, When Did Your State Adopt Its Income Tax?, Tax Found. (June 10, 2014), https://taxfoundation.org/data/all/state/when-did-your-state-adopt-its-income-tax.

account for the largest share of revenue"[75]—approximately half of all tax revenue at the federal level[76] and roughly 40% of state general revenue.[77]

Still, the separation-of-bases principle lives on in American constitutional thought, though base overlap as much as base separation has become the norm in federal and state tax practice. Legal scholars continue to invoke separation-of-bases reasoning in their analyses of the Constitution's Direct Tax Clauses.[78] And the separation-of-bases principle took—if not centerstage—at least a prominent position on stage right in *Moore v. United States*, which reached the Supreme Court in 2023. The immediate issue in that case was whether the mandatory repatriation tax—a one-time tax on the undistributed income of U.S.-controlled foreign corporations enacted by a Republican-controlled Congress in 2017—exceeded Congress's constitutional authority.[79] That dispute implicated both the meaning of the word "incomes" in the Sixteenth Amendment and the definition of "direct taxes" in Article I. If the mandatory repatriation tax was not an income tax but was a direct tax, then it would lie beyond Congress's power unless it were apportioned among the states based on population, which—in the case of the mandatory repatriation tax—would almost certainly be an impossibility.

The petitioners in *Moore*—a couple from Washington state who owned a minority stake in an Indian farm equipment supplier[80]—did not make the separation of bases a focus of either their opening or reply briefs. (The thrust of their attack was that the Constitution denies the federal government the power to tax unrealized gains without apportionment—not that the Constitution reserves the property tax base for the states—though the latter proposition is arguably implicit in the

[75] See Sarah Robinson & Alisa Tazhitdinova, One Hundred Years of U.S. State Taxation, 241 J. Pub. Econ. 105273, at 3 (2025).

[76] See Fredrick Hernandez, What Kinds of Revenue Does the Government Collect?, Bipartisan Policy Ctr. (May 2, 2025), https://bipartisanpolicy.org/explainer/what-kinds-of-revenue-does-the-government-collect (reporting that 49% of federal tax revenue came from individual income taxes in fiscal year 2024).

[77] What Are the Sources of Revenue for State and Local Governments?, Tax Policy Ctr. (Jan. 2024), https://taxpolicycenter.org/briefing-book/what-are-sources-revenue-state-and-local-governments.

[78] See, e.g., Alex Zhang, The Wealth Tax: Apportionment, Federalism, and Constitutionality, 23 U. Pa. J. L. & Soc. Change 269, 272–273 (2020) (observing that, from Hylton through Pollock, the Supreme Court has "interpreted the Direct Tax Clause as a federalism provision whose purpose is to preserve the ability of state and local governments to tax"); James W. Ely Jr., "One of the Safeguards of the Constitution": The Direct Tax Clauses Revisited, 12 Brigham-Kanner Prop. Rts. Conf. J. 63, 116 (2023) ("Madison's description of the direct tax provisions as constituting 'one of the safeguards of the Constitution' is compelling.").

[79] See Moore v. United States, 144 S.Ct. 1680, 1687 (2024).

[80] Pet. for Cert. at 3–4, Moore v. United States, No. 22–800 (U.S. filed Feb. 21, 2023).

former.[81]) However, West Virginia and sixteen other states submitted an amicus brief in support of the petitioners that emphasized the separation-of-bases principle. According to those states:

> Taxes on unrealized values and gains—property taxes, other ad valorem taxes, and similar taxes—are traditionally the States' domain. They make up an important part of the States' fiscal operations. If . . . the Court effectively empowers the federal government to extend its reach into those areas too, then state fiscal operations will suffer. State and local taxes—and the critical operations that result from them—will be crowded out.[82]

West Virginia and its fellow amici argued that the separation-of-bases principle remained relevant even after the Sixteenth Amendment authorized a broad-based federal income tax. In the late 1800s and early 1900s, "property tax was king" at the state and local level,[83] according to the amici, "[s]o when a constitutional amendment endorsing federal income tax came on the radar, States did not initially fret that their existing revenue streams were in danger."[84] Even today, the amici emphasized, property taxes remain "critical to state governments" and form the "backbone" of local government finance,[85] accounting for nearly three-quarters of local revenue.[86] If the federal government gained the ability to impose property taxes without the constraint of apportionment, the amici argued, "federal taxes might 'crowd out' the states"[87]—or put another way, might "diminish[] the practical ability of States to collect their own taxes."[88] To use our terminology, West Virginia and its fellow amici were warning the Court that federal taxation of the states' preferred base would generate *negative rate externalities* that could threaten their and their localities' fiscal health.

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[81] Indeed, the word "federalism" appears nowhere in either of their filings. See Br. for Petr's, Moore v. United States, No. 22–800 (U.S. filed Aug. 30, 2023); Reply Br., Moore v. United States, No. 22–800 (U.S. filed Nov. 15, 2023).

[82] Br. of Amici Curiae State of West Va. et al. at 3–4, Moore v. United States, No. 22–800 (U.S. filed Sept. 6, 2023).

[83] Id. at 12.

[84] Id. at 13.

[85] Id. at 18 (quoting Linna Zhu & Sheryl Pardo, Understanding the Impact of Property Taxes Is Critical for Effective Local Policymaking, Urban Inst. (Nov. 5, 2020), https://www.urban.org/urban-wire/understanding-impact-property-taxes-critical-effective-local-policymaking).

[86] What Are the Sources of Revenue for State and Local Governments?, supra note 77.

[87] Br. of Amici Curiae State of West Va. et al. at 19, Moore v. United States, No. 22–800 (U.S. filed Sept. 6, 2023) (quoting Ruth Mason, Federalism and the Taxing Power, 99 Cal. L. Rev. 975, 994 (2011)).

[88] Id. at 19–20 (internal quotation marks omitted).

The Moores and their amici ultimately failed to persuade the Court to strike down the mandatory repatriation tax. Ruling against the Moores, Justice Kavanaugh—writing for himself and four colleagues—concluded that the Sixteenth Amendment authorizes Congress to attribute an entity's undistributed income to its shareholders, as Congress had in the mandatory repatriation tax.[89] That self-consciously "narrow"[90] holding allowed the majority to sidestep difficult questions about the definitions of "direct taxes" in Article I and "incomes" in the Sixteenth Amendment.

The Moores did, however, win the votes of two Justices—Thomas and Gorsuch—who would have held that the mandatory repatriation tax was unconstitutional. Justice Thomas's dissent—joined by Justice Gorsuch—doubled down on the separation-of-bases principle. In particular, Justice Thomas drew from the writings of the pseudonymous Antifederalist Brutus, who warned that the federal taxing power threatened to "annihilate[]" the states.[91] Paraphrasing Brutus, Thomas wrote that "[t]he destructive force of the federal taxing power . . . arose from the fact that it forced the States to compete with the Federal Government for a tax base."[92] The Direct Tax Clauses mitigated this concern—at least to some extent—by ensuring that Congress could not encroach upon the states' preferred tax base except by going through the cumbersome process of apportionment.[93] And while the Sixteenth Amendment carved out taxes on "incomes" from the definition of "direct taxes," the amendment—according to Thomas—still "left everything else in place, including the federalism principles bound up in the division between direct and indirect taxes."[94]

Moore did not resolve all questions regarding the scope of Congress's authority to tax without apportionment. Indeed, the *Moore* majority explicitly reserved the question of whether "a hypothetical unapportioned tax on an individual's holdings or property (for example, on one's wealth or net worth) might be considered a tax on property, not income," that lies beyond Congress's power.[95] That question will become critical if wealth tax supporters such as Senators Elizabeth Warren of Massachusetts and Bernie Sanders of Vermont can muster a majority for their

[89] Moore v. United States, 144 S.Ct. 1680, 1697 (2024).
[90] See id. at 1696.
[91] See id. at 1714 (Thomas, J., dissenting).
[92] See id. at 1714.
[93] See id. at 1715.
[94] See id. at 1720.
[95] See id. at 1697 (majority opinion).

federal wealth tax bills.[96] Such an outcome does not seem imminent circa 2026, with a generally anti-wealth-tax Republican Party controlling both houses of Congress.[97] But if the long history of federal taxation teaches us anything, it is that taxes that appear to lie beyond the political pale at one moment may become the law of the land in short order.

B. The Separation of Bases Abroad

Every federal system must confront the tax assignment problem in one way or another. And while the United States' solution—involving constitutional limitations on federal imposition of vaguely defined "direct taxes"—is unique, many other countries have constitutionalized their answers to the tax assignment problem, including Argentina, Brazil, Germany, and India. Still others—such as Australia and Mexico—place few constitutional limitations on federal taxation but have developed detailed separation-of-bases arrangements through decades of practice.

The Swiss Constitution—widely considered to be the second oldest federal constitution after the United States[98]—provides one of the most detailed tax assignment schemes. The Swiss Constitution allows the Confederation, or federal government, to levy an income tax of up to 11.5% on private individuals and 8.5% on the net profit of legal entities.[99] The constitution further specifies that the income tax will be assessed and collected by the cantons (states), and that each canton will retain 15% to 17% of the revenue that it reels in, thus giving the cantons a financial incentive to enforce Confederation-level taxes against their own citizens.[100] The Constitution also authorizes the Confederation to impose a value added tax (up to

[96] See, e.g., Ultra-Millionaire Tax Act of 2021, S. 510, 117th Cong. (2021); Ultra-Millionaire Tax Act of 2024, S. 4017, 118th Cong. (2024); see also Daniel Hemel & Rebecca Kysar, Op-Ed, The Big Problem with Wealth Taxes, N.Y. Times (Nov. 7, 2019), https://www.nytimes.com/2019/11/07/opinion/wealth-tax-constitution.html (suggesting that an unapportioned wealth tax that includes real property in the base would run afoul of the centuries-old principle that land taxes are direct taxes).

[97] Note, though, that in 1999, Donald Trump—then mulling a run for President on the Reform Party line—floated the idea of a one-time, 14.25% tax on the net worth of the wealthiest percentile of households to erase the national debt. See Phil Hirschkorn, Trump Proposes Massive One-Time Tax on the Rich, CNN (Nov. 9, 1999), https://www.cnn.com/ALLPOLITICS/stories/1999/11/09/trump.rich/index.html.

[98] See, e.g., Paolo Dardanelli, Switzerland: Europe's First Federation, in Routledge Handbook of Regionalism & Federalism 248, 248 (John Loughlin, John Kincaid & Wilfried Swenden eds., 2013).

[99] Federal Constitution of the Swiss Confederation of 18 April 1999, art. 128.

[100] See id.

a maximum rate of 6.5%),[101] certain consumption taxes (for example, on tobacco, beer, and spirits, but not wine),[102] stamp duties on certain financial instruments,[103] withholding taxes on income from movable capital assets,[104] and customs duties.[105] The Constitution codifies a separation-of-bases principle in Article 134 by specifying that "[a]nything that is declared by federal legislation to be subject to, or exempt from value added tax, special consumption taxes, stamp duty or withholding tax may not be made liable to similar taxes by the Cantons or communes" (i.e., municipalities).[106]

The Swiss Constitution does not specifically address which taxes will be imposed by subnational governments. However, under the "residual power" principle, all taxes not explicitly delegated to the Confederation are reserved for the cantons.[107] The cantons raise most of their revenue from individual and entity-level income taxes, which are not included in Article 134's list of exclusively federal taxes.[108] They also impose their own wealth taxes, taxes on the equity of legal entities, inheritance taxes, real estate capital gains taxes, and—in some cantons—taxes on the assessed value of real property, along with a range of other cantonal and communal taxes and fees.[109]

Canada—often considered to be the third oldest federation[110]—followed a very different path than the United States and Switzerland. Its 1867 Constitution Act grants unlimited taxing power to the federal Parliament[111] while allowing provinces to impose their own "direct taxes."[112] Canadian case law has adopted a very broad definition of "direct taxes" that includes not only income taxes and

[101] See id. art. 130.
[102] See id. art. 131.
[103] See id. art. 132(1).
[104] See id. art. 132(2).
[105] See id. art. 133.
[106] Id. art. 134.
[107] See id. art. 3 ("The Cantons are sovereign except to the extent that their sovereignty is limited by the Federal Constitution."); Eva Maria Belser & Mikel Erkoreka, The Swiss System of Fiscal Equalisation – Balancing Cantonal Tax Autonomy and Federal Solidarity, in Fiscal Federalism and Equalisation Transfers: Balancing Regional Autonomy and Solidarity 246, 248 (Mikel Erkoreka ed., 2025).
[108] See Petro Patsurkivskyy & Ruslana Havrylyuk, Legal Regulation of Taxation in the Swiss Confederation, 5 Eur. J. L. & Pub. Admin. 81, 87 (2018).
[109] See Madeleine Simonek & Martina Becker, Tax Law, in Introduction to Swiss Law 207, 218–221 (Marc Thommen ed., 2022).
[110] See, e.g., John D. Richard, Federalism in Canada, 44 Duq. L. Rev. 5, 5 (2005).
[111] Constitution Act, 1867 § 91(3) (U.K.).
[112] Id. § 92(2).

property taxes but also retail sales taxes and value added taxes.[113] The upshot is that the Canadian tax system exhibits "significant tax base overlap," but it is also "characterized by a comparatively high degree of tax harmonization."[114]

More recent constitutions address the tax assignment problem in a wide range of ways. Some, including Brazil[115] and India,[116] incorporate detailed schemes of base separation into their constitutions. Others, like Australia[117] and Mexico,[118] place no or minimal restrictions on the federal power to tax but have achieved a near-total separation of bases in practice. Appendix A provides a high-level overview of tax assignment arrangements in eight federal democracies. Our goal in presenting this information is to illustrate the diversity of tax assignment arrangements across federal democracies and to show that the separation-of-bases debate—while salient in the United States today—is in no way a U.S.-only concern.

C. The Separation of Bases in Economic Thought

The constitutional arrangements surveyed above reflect judgments about when base separation is desirable—judgments that have been shaped, over the past century and a quarter, by a parallel debate in public economics. The separation-of-bases principle made an early appearance in economic thought at the turn of the twentieth century. Writing in *The Science of Finance* (1898), the American economist Henry Carter Adams articulated what he called "the general principle of segregated sources of revenue, a principle which may be profitably applied, with

[113] See Bank of Toronto v. Lambe (1887), 12 App. Cas. 575 (PC) at 582 (appeal taken from Can.); Atl. Smoke Shops Ltd. v. Conlon, [1943] AC 550 (PC) at 563-64 (appeal taken from Can.). The final decisions in the Bank of Toronto and Atlantic Smoke Shops cases come from the London-based Privy Council, which was the court of last resort for civil appeals from Canada until 1949.

[114] See Tracy R. Snoddon, Fiscal Institutions, Regional Adjustment and Convergence in Canada's Currency Union: Lessons for EMU, in Fiscal Federalism and European Economic Integration 170, 178 (Mark Baimbridge & Philip Whyman eds., 2004).

[115] See Constituição Federal [C.F.] arts. 153–156 (Braz.).

[116] See India Const. art. 246, sched. VII (listing exclusive legislative powers for the Union in List I and for the States in List II, including detailed categories of taxes).

[117] See Australian Constitution § 51(ii) (granting the Parliament broad power to tax, limited only by a prohibition on discrimination among states); Vassiliki Koutsogeorgopulou & Annamaria Tuske, Federal-State Relations in Australia 9 (Org. for Econ. Co-operation & Dev., OECD Econ. Dep't Working Paper No. 1198, Mar. 27, 2015) (noting that "there is no co-occupancy of tax bases by the Commonwealth and the state governments, unlike in other more decentralised federations, such as Canada and Switzerland").

[118] See Constitución Política de los Estados Unidos Mexicanos [C.P.] art. 73(vii), (xxix) (Mex.) (granting broad tax powers to the federal government). State and local governments in Mexico rely almost entirely on transfers from the federal government for funding. See Aida Caldera Sánchez, Improving Fiscal Federal Relations for a Stronger Mexico 17 (Org. for Econ. Co-operation & Dev., OECD Econ. Dep't Working Paper No. 1078, Aug. 5, 2013) ("Only 3% of total states and municipalities' tax revenues stem from own taxes.").

more or less strictness, as between all the grades of government that together make up the American State."[119] Adams's argument grew out of his critique of the general property tax. When local assessments serve as the basis for county and state taxes as well as township taxes, assessors face strong incentives to undervalue property—not to reduce absolute tax burdens, but to shift their township's relative share of county and state levies onto neighboring jurisdictions.[120] Centralizing assessment authority might solve this problem, but only at the cost of local self-government.[121] Separation offers a way out: if each level of government drew revenue from its own exclusive base, local valuation decisions would no longer affect higher-level tax burdens, and the strategic incentive to undervalue would disappear.[122] "The only means of setting aside the difficulty," Adams wrote, is "that the several grades of government be separated for the purpose of taxation, and that each grade be assigned a source of revenue peculiarly, if not exclusively, its own."[123]

Adams believed that the separation-of-bases principle applied beyond the property tax to reach all tax bases and all levels of government.[124] With separation as a background principle, Adams undertook to match particular revenue sources with governmental functions.[125] The federal government, charged with national defense and foreign affairs, requires revenue that is both certain and elastic—certain enough to support ordinary operations, elastic enough to expand rapidly in times of war or crisis.[126] Taxes on imports, interstate commerce, and manufactures fit this description and fall naturally within federal jurisdiction.[127] States, by contrast, face no such emergencies; their duties are primarily legislative and supervisory, chartering corporations and overseeing industrial organization.[128] Corporation taxes and levies on natural monopolies are thus appropriate state revenue sources.[129] Each base is to be assigned to one level exclusively.

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[119] Henry C. Adams, The Science of Finance 491 (1898).
[120] Id. at 445.
[121] Id. at 448.
[122] Id. at 449.
[123] Id. at 448-49.
[124] Id. at 491.
[125] Id. at 493.
[126] Id.
[127] Id. at 499-500.
[128] Id. at 500.
[129] Id. at 502.

By the 1920s, the separation-of-bases principle had become, in the words of Edwin Seligman, "an article of faith among some of us."[130] As a practical matter, this creed translated into a simple maxim: "direct taxes to the states, indirect taxes to the nation."[131]

In the middle of the 20th century, however, the separation-of-bases principle fell out of favor. In two landmark books, Richard Musgrave and Wallace Oates developed an approach to the assignment problem that focused not on separating bases but rather on matching bases with the proper functions of each level of government.[132] For example, Musgrave and Oates argued that local public goods—parks, roads, police protection—should be provided by state and local governments because tastes for those goods differ across communities. Redistribution, meanwhile, should be carried out by the central government because wealthy taxpayers could simply flee from any sub-national jurisdiction that tries to tax them too much (while poor taxpayers might flock to those that provide generous benefits).[133]

This functional approach yields a set of conclusions about the assignment of tax bases. Subnational governments, Musgrave and Oates argued, should rely primarily on taxes that either function as prices for local services or fall on immobile factors that cannot flee to lower-tax jurisdictions. Property taxes fit this description: land cannot relocate, and its value reflects the quality of local services like schools, fire protection, and infrastructure. Meanwhile, redistributive taxes, such as progressive income taxes, should be left to the federal government, because moving abroad is typically costlier than moving to a neighboring state.[134]

Notably, however, the Musgrave-Oates approach does not require separation of bases.[135] Within this approach, nothing prevents multiple levels of government

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[130] Edwin R. A. Seligman, Possible Methods of Removing Inheritance Tax Difficulties through Federal Action, 3 Nat'l Income Tax Mag 143, 143 (1925).

[131] Id.

[132] Richard A. Musgrave, The Theory of Public Finance 179-83 (1959); Wallace E. Oates, Fiscal Federalism (1972) [hereinafter Fiscal Federalism]; Wallace E Oates, Taxation in a Federal State: The Tax-Assignment Problem, 1 Pub. Econ. Rev. 55 (1996) [hereinafter Taxation in a Federal State].

[133] Musgrave, supra note 132, at 180-81; Oates, Fiscal Federalism, supra note 132, at 6–8, 11–12, 31–33, 190–95.

[134] Musgrave, supra note 132, at 180-81; Oates, Fiscal Federalism, supra note 132, at 135–37, 163–79.

[135] Musgrave, supra note 18, at 14 ("A sense of orderliness might suggest that multiple use [of a single base] is undesirable . . . . At closer consideration, however, it is evident that this concept of belonging has little merit."); Oates, Fiscal Federalism, supra note 132, at 148 ("There is little in the way of economic logic, it seems to me, to support a firm adherence to the separability of sources.").

from taxing the same base, so long as each uses the revenue for functions appropriate to its level. Consider consumption. The federal government might tax consumption to fund national defense or facilitate redistribution; state and local governments might tax consumption because it operates as a rough proxy for benefits received from a state or local government. Same base, different purposes—so why should it not, as Musgrave asked, "be subject to multiple use?"[136] The question is not which government "owns" a base, but whether each government uses appropriate instruments for its assigned functions. Far from mandating separation, Musgrave concluded that separation was "second best" to coordinated sharing.[137]

Beginning in the 1980s, the separation-of-bases principle experienced a revival, one animated by a concern about fiscal externalities. A fiscal externality arises when one government does not fully take into account the effect of its decisions on the tax revenues of another government.[138] One important fiscal externality is what we will refer to as a "vertical rate externality." A vertical rate externality, in Bev Dahlby's words, occurs "when a tax rate change by one level of government affects the tax revenues of the other government."[139]

Often, vertical rate externalities are negative.[140] To see why, suppose that residents of a country report total income of $100 that is taxed by the federal government at a flat 30% rate, generating federal revenue of $30. Suppose that the state government then imposes a flat 10% tax on the same income base. When the combined income tax rate rises from 30% to 40%, total reported income will decline (e.g., because some individuals will substitute away from income-generating activities toward leisure or because individuals will go to greater lengths to shelter their income). As a result, federal revenue—instead of being 30% of $100—will be 30% of some lower number (say, $99 or $98 or $97), reflecting the shrinkage of the

[136] Musgrave, supra note 18, at 14 ("If consumption is held to be a good tax base for more than one level, why should it not be subject to multiple use?").

[137] Id.

[138] Cf. Bev Dahlby, Fiscal Externalities and the Design of Intergovernmental Grants, 3 Int'l Tax & Pub. Fin. 397, 398 (1996). More generally, a fiscal externality arises whenever one actor's behavior affects the net revenue collected by a(nother) government. See Amy Finkelstein & Nathaniel Hendren, Welfare Analysis Meets Causal Inference, 34 J. Econ. Persp. 146, 148 (2020). Accordingly, a fiscal externality need not be imposed by a government; when someone chooses to work fewer hours, and therefore earns less income, they impose a fiscal externality.

[139] Id.

[140] Bev Dahlby, The Marginal Cost of Public Funds: Theory and Applications 258 (2008).

income tax base. In sum, the state government's sharing of the income tax base reduces federal income tax revenue.[141]

In an influential 1988 paper, Marilyn Flowers showed that these externalities can lead to a tragedy of the fiscal commons.[142] Flowers assumed that governments maximize their own tax revenue. Under this assumption, each government has an incentive to raise rates on a shared base beyond the jointly optimal level. Consider the state's decision. The state captures the full benefit of raising its tax rate, because the additional revenue flows entirely to the state treasury. But raising the state's tax rate also imposes a cost—the shrinkage of the shared base—and that cost is split between both governments. Because the state reaps all the benefit of a rate increase while bearing only a fraction of the cost, it finds rate increases more attractive than if it were taxing the base alone. The federal government reasons identically. The result is mutual "overgrazing": in equilibrium, combined rates exceed the revenue-maximizing level, landing on the backward-bending portion of the Laffer curve—where the base has shrunk so much that both governments would collect more revenue if they cut rates. Flowers's proposed solution was separation of bases.[143] If each government is assigned its own exclusive tax base, each one bears the full cost of raising its tax rate, and the tragedy of the commons does not arise.[144]

Subsequent work has echoed Flowers's claim that shared tax bases create a tragedy of the commons.[145] Over the following decades, other economists extended Flowers's result to settings in which governments are not pure revenue maximizers.[146] Even fully benevolent governments—governments that seek to maximize the welfare of their own subjects—will set tax rates that are too high from a collective standpoint when they tax the same base, because each one ignores the

[141] See Bev Dahlby, Taxing Choices: Issues in the Assignment of Taxes in Federations, 53 Int'l Soc. Sci. J. 93, 97 (2001) ("When two levels of government co-occupy the same tax field, an increase in the tax rate by one level of government will reduce the tax revenues received by the other level of government if the tax base shrinks because of tax avoidance, tax evasion, or disincentive effects.").

[142] Flowers, supra note 11. Cf. Garrett Hardin, The Tragedy of the Commons, 162 Sci. 1243 (1968).

[143] Flowers, supra note 11, at 74.

[144] As Flowers noted, separation averts this problem only if the bases are economically—not just legally—independent. Id.

[145] Michael J. Keen & Christos Kotsogiannis, Does Federalism Lead to Excessively High Taxes?, 92 Am. Econ. Rev. 363 (2002); Boadway, Marchand, and Vigneault, supra note 18; Michael Keen, Vertical Tax Externalities in the Theory of Fiscal Federalism, 45 IMF Staff Papers 454 (1998); Michael Smart, Taxation and Deadweight Loss in a System of Intergovernmental Transfers, 31 Canadian J. Econ. 189 (1998); Dahlby, supra note 138.

[146] Keen & Kotsogiannis, supra note 145; Dahlby, supra note 138.

effect of its rate increases on the other's revenue.[147] Empirical work only reinforced the point. Studies of co-occupied excise, income, and corporate tax bases in the United States, Canada, and Switzerland found significant evidence of vertical fiscal externalities, with tax rate changes at one level of government producing measurable effects on rates at the other.[148]

Recent work has also refined Flowers's proposed solution to the tragedy of the fiscal commons—separation of bases—rather than reject it outright.[149] Economists have recognized that legally distinct tax bases often overlap in economic substance. An income tax and a consumption tax, for example, both reduce labor supply. When bases overlap in this way, assigning each to a different level of government cannot fully eliminate the vertical externality, and some economists have proposed alternatives. One proposal calls for the federal government to impose a corrective tax on state revenues, calibrated to offset the externality that state taxation imposes on the federal base.[150] Another calls for the federal government to subsidize the common tax base (e.g., labor), potentially combined with a system of state-to-federal transfers.[151] While these alternative instruments have expanded the theoretical toolkit, they have not displaced separation as the literature's leading recommendation. By 2017, William Hoyt could report that separation of bases remained "conventional wisdom."[152]

This pro-separation consensus rests on models in which different levels of government affect one another's fiscal positions through one channel—namely, their tax *rates*. But this is not the only way in which federal and state tax systems

[147] Keen & Kotsogiannis, supra note 145; Dahlby, supra note 138.

[148] See, e.g., Marius Brülhart & Mario Jametti, Vertical versus Horizontal Tax Externalities: An Empirical Test, 90 J. Pub. Econ. 2027 (2006); Álex Esteller-Moré & Albert Solé-Ollé, Tax Setting in a Federal System: The Case of Personal Income Taxation in Canada, 9 Int'l Tax & Pub. Fin. 235 (2002); Álex Esteller-Moré & Albert Solé-Ollé, Vertical Income Tax Externalities and Fiscal Interdependence: Evidence from the US, 31 Reg'l Sci. & Urb. Econ. 247 (2001); Timothy J. Besley & Harvey S. Rosen, Vertical Externalities in Tax Setting: Evidence from Gasoline and Cigarettes, 70 J. Pub. Econ. 383 (1998).

[149] See, e.g., Keen & Kotsogiannis, supra note 145; Keen, supra note 149, at 477. See also Matthias Wrede, Tragedy of the Fiscal Common? Fiscal Stock Externalities in a Leviathan Model of Federalism, 101 Pub. Choice 177 (1999) (noting that prior work "stress[es] the necessity of separating the taxbase between the federal and the state level").

[150] Dahlby, supra note 138.

[151] Robin Boadway & Michael Keen, Efficiency and the Optimal Direction of Federal-State Transfers, 3 Int'l Tax & Pub. Fin. 137, 146–47 (1996); see also Bev Dahlby, Jack Mintz & Leonard S. Wilson, The Deductibility of Provincial Business Taxes in a Federation with Vertical Fiscal Externalities, 33 Canadian J. Econ. 677 (2000).

[152] William H. Hoyt, The Assignment and Division of the Tax Base in a System of Hierarchical Governments, 24 Int'l Tax & Pub. Fin. 678, 702 (2017).

may interact. As Brian Galle observes, tax enforcement by one level of government may have a *positive* effect on revenue-raising by another level.[153] Yoojin Lee and coauthors describe this phenomenon as a "vertical tax enforcement externality"[154]—a term that we borrow below.

Vertical enforcement externalities may arise for several reasons. First, when an audit by authorities at one level of government reveals that taxpayers have underreported items of income, those taxpayers may be required to report additional income to authorities at another level of government. For example, New York—like many other states—requires taxpayers to file an amended state income tax return within ninety days of a change or correction to their federal taxable income.[155] Moreover, when the IRS assesses additional income tax based on information reports filed by third parties, the agency typically alerts authorities in the state where the taxpayer resides, and the state—if it taxes that item of income—"customarily issues an automated assessment of additional state tax."[156] Second, enforcement efforts by authorities at one level of government may deter taxpayers from pursuing evasion or avoidance activities that affect the amounts that those taxpayers pay to other levels of government. To use another New York example, Yoojin Lee and coauthors find that New York's 2010 amendments to its False Claims Act, which extended whistleblower incentives to state income tax matters, had a positive effect on the federal effective tax rate of firms with significant presences in New York.[157] Third, as Ruth Mason notes, joint taxation of the same base may allow officials at one level of government to "free ride" on the regulatory efforts of officials at another level of government.[158] For example, states that tax income—and that conform their definitions of income to the federal definition—"avoid duplicating certain tasks handled by the Treasury Department, such as writing tax regulations," and thus can "reduce their investment in developing expertise in income taxation."[159] And beyond the savings for the public sector, joint taxation of the same base can reduce private-sector compliance costs insofar as it

[153] Brian Galle, The Effect of National Revenues on Sub-National Revenues Evidence from the U.S., 37 Int'l Rev. L. & Econ. 147, 149 (2014).

[154] See Yoojin Lee, Shaphan Ng, Terry Shevlin & Aruhn Venka, The Deterrence Effects of Tax Whistleblower Laws: Evidence from New York's False Claims Acts, 71 Mgmt. Sci. 3688, 3689 (2024).

[155] N.Y. Tax Law § 659.

[156] Harley Duncan & LeAnn Luna, Lending a Helping Hand: Two Governments Can Work Together, 60 Nat'l Tax J. 663, 669 (2007).

[157] See Lee et al., supra note 154, at 3693, 3699.

[158] See Ruth Mason, Delegating Up: State Conformity with the Federal Tax Base, 62 Duke L.J. 1267, 1280 (2013).

[159] See id. at 1281.

"avoids the need for taxpayers to calculate their [liability] twice or to keep two sets of records."[160]

Enforcement externalities complicate the case for separation in a way that the literature has not fully addressed. The models that produced the pro-separation consensus focus on a world in which sharing a tax base generates only costs. Enforcement externalities suggest that shared taxation may also generate benefits. The economic literature has not yet fully worked out when separation or co-occupation is desirable in light of these competing effects. What is needed is a framework that accounts for both channels simultaneously, one that can identify when separation is desirable, when co-occupation is preferable, and which institutional arrangements can steer governments towards good outcomes.

II. CONFLICT AND COOPERATION IN FEDERAL SYSTEMS

As Part I illustrated, the problem of tax assignment is a recurrent challenge across federal democracies. Many countries—including, arguably, the United States—have responded by separating tax bases across levels of government. Separation of bases has been defended on efficiency grounds—as a way of averting negative fiscal externalities—as well as federalism grounds—as a way of providing states with a tax base that is exclusively theirs.

Both of these rationales focus on the costs of sharing a tax base across multiple levels of government. As we noted in Part I, however, co-occupation of the same base can generate benefits. When the federal government enforces a tax on a base that states also tax, its enforcement efforts can increase the revenue that states collect—and vice versa.

This Part develops an analytic framework that re-evaluates tax assignment by accounting for the costs *and* benefits of shared taxation. We reach two main results. First, separation of bases is not always efficient. While separation is efficient when the rate externality exceeds the enforcement externality, it is inefficient when the relative size of those externalities is reversed. Second, constitutional constraints on the federal government's tax powers are not inherently pro-federalism. When the enforcement externality exceeds the rate externality, a constitutional constraint can ensure that the governments tax in unison, leveraging each other's enforcement

[160] See id. at 1280.

efforts. Most strikingly, when governments are uncertain about which externality will dominate—the realistic case—we show that the federal government may strategically constrain its *own* taxing powers, using a self-imposed constitutional limit to channel the state government towards taxing the base that the federal government prefers.

Our analysis proceeds in four steps. We begin by outlining a model of fiscal conflict and cooperation within a federal system (Section II.A). Next, we analyze the strategic interactions of federal and state governments in the absence of constitutional constraints (Section II.B). We then consider how federal and state governments bargain over fiscal constitutions in the shadow of these uncoordinated outcomes (Section II.C). Finally, we examine whether—and, if so, how—our results change if some of our initial assumptions are relaxed (Section II.D).

Our methodology in this Part is primarily game-theoretic. As Douglas Baird, Robert Gertner, and Randy Picker observe, "modern game theory is sufficiently powerful to offer insights into how legal rules affect the way people behave."[161] In particular, game theory can reveal surprising power dynamics that other methods may not bring to the surface. At the same time, we stress that real-world federal-state interactions are shaped by institutional details that no game-theoretic model—however sophisticated—can capture. Accordingly, rather than relying on game theory alone to analyze federal-state relations, we expand our field of vision in Part III to consider how history, politics, and law all mediate the strategic interactions that Part II models.

A. Model Setup

We begin by describing the basic features of our model. Here, we aim for parsimony: our goal is to reduce the rich world of federal-state interactions to a few moving pieces. The simplicity of our model serves several purposes. First, it shows clearly how particular assumptions drive key results. Second, it allows us to generate insights that travel across different political systems and time periods. Finally, it makes our reasoning legible to readers from a wide range of disciplinary backgrounds.

[161] See Douglas C. Baird, Robert H. Gertner & Randal C. Picker, Game Theory and the Law 1 (1994).

1. Players and Objectives

The model features two governments: one federal government and one state government. While the United States has fifty states with diverse fiscal systems, we simplify by considering a single representative state government.[162] This simplification allows us to focus on "vertical" interactions between the federal and state levels without the further complication of "horizontal" interactions among state governments.[163]

Each government must satisfy an exogenously given budget constraint.[164] To do so, each government must raise a certain amount of revenue net of the costs of administering its tax system. This assumption is, we recognize, stylized. Real governments adjust their spending levels, borrow to meet shortfalls, and—in some cases—run budget surpluses. Nonetheless, the assumption that governments seek to meet a revenue target provides a useful baseline, capturing the reality that governments face revenue pressures but do not seem to behave like revenue-maximizing Leviathans.[165] We revisit this assumption in Section II.D.

We also assume that governments seek to minimize tax rates conditional upon meeting their revenue targets. In other words, faced with two choices—one of which would result in a higher rate, one of which would result in a lower rate, and both of which would raise the same amount in revenue—a government always will favor the lower rate option.[166] This, too, is a simplification: tax policymakers

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[162] This modeling approach is common in the economic literature on fiscal federalism. See, e.g., Bev Dahlby & Leonard S. Wilson, Vertical Fiscal Externalities in a Federation, 87 J. Pub. Econ. 917, 920 (2003); Keen, supra note 145, at 462-64.

[163] See Michael Keen & Kai A. Konrad, The Theory of International Tax Competition and Coordination, 5 Handbook of Public Economics 257, 284-87 (2013) (distinguishing "vertical" from "horizontal" tax competition).

[164] This assumption simplifies a modeling approach adopted in, for example, Hoyt, supra note 152, at 681; Michael Keen & Christos Kotsogiannis, Tax Competition in Federations and the Welfare Consequences of Decentralization, J. Urb. Econ. 397, 400 (2004); Keen & Kotsogiannis, supra note 145. Those works assume that governments set tax and spending policies so as to maximize the welfare of their constituents. That motivational assumption reduces to seeking to satisfy a budget constraint if the budget constraint reflects the optimal level of spending.

[165] For the classic argument that federal and state governments do not behave like pure revenue maximizers, see Wallace E. Oates, Searching for Leviathan: An Empirical Study, 75 Am. Econ. Rev. 748 (1985). While some studies have argued that U.S. federal income tax rates are near the revenue-maximizing level for high-income taxpayers, even these studies generally find that tax rates are well below the revenue-maximizing level at lower income rungs. See, e.g., John Creedy & Norman Gemmell, Measuring Revenue-maximizing Elasticities of Taxable Income: Evidence for the US Income Tax, 45 Pub. Fin. Rev. 174, 195 tbl.5 (2017).

[166] See generally Deborah H. Schenk, Exploiting the Salience Bias in Designing Taxes, 28 Yale J. on Reg. 253, 300–10 (2011) (cataloging reasons why elected officials prefer lower rates).

frequently make tradeoffs between rate reductions and base-narrowing tax preferences. For ease of exposition, we will focus here on rates and on the binary choice between income and property tax bases.

2. Tax Bases and Externalities

The governments can tax two initially equal-sized bases: income and property. We focus on these bases for two reasons. First, one of the key aspects of the U.S. fiscal constitution—the Direct Tax Clauses—imposes a constraint on the federal government's power to tax property. Second, since income and property have different enforcement characteristics, it is plausible that the federal and state governments have different preferences over these bases. Aside from the fact that each government prefers to tax a different base—which we discuss in more detail below—no aspect of our analysis turns on the features of income and property specifically. Our model could just as well represent strategic interactions over other pairs of tax bases, such as consumption and wealth.

Taxes on each base generate two types of fiscal externalities that work in opposite directions. First, a rate externality arises when one government's tax distorts taxpayers' economic behavior.[167] In our model, this externality is negative: When both governments tax income, for instance, the combined tax burden reduces the base available to each government.[168] As a result, each government needs to raise the rate of its income tax in order to meet its budget constraint. Each government's tax, in other words, imposes a cost on the other.

Second, an enforcement externality arises when one government's enforcement of its tax on a given base causes taxpayers to report that base more accurately to the other government.[169] For example, when the federal government invests in enforcing its income tax—by, say, auditing taxpayers—taxpayers are more likely to report their income accurately to state governments as well. The increase in reported income means that if the state also taxes income, it can reduce its income

[167] See supra Section I.C (discussing the concept of a rate externality).

[168] Rate externalities may be positive if one level of government imposes a tax on a good or service that is a substitute for a good or service taxed by another level of government. For example, in Germany, revenue from the beer tax is allocated to the Länder (states), while revenues from the sparkling wine and spirits taxes are allocated to the federal government. See Grundgesetz [GG] [Basic Law], art. 106(2), (1), translation at International Constitutional Law Project (Univ. of Bern), https://www.servat.unibe.ch/icl/gm00000_.html. Thus, an increase in the tax rate on sparkling wine and spirits confers a positive rate externality on the states insofar as it induces substitution from sparkling wine and spirits to beer.

[169] See supra Section I.C (discussing the concept of an enforcement externality).

tax rate while still meeting its budget constraint. One government's enforcement apparatus is a benefit to the other.

For analytical clarity, we assume that the magnitude of each externality is identical across both tax bases. In other words, the rate externality from joint income taxation equals the rate externality from joint property taxation; similarly, the enforcement benefits from coordinated taxation are the same whether governments coordinate on income or property. This symmetry allows us to focus on the relative strength of the two externalities rather than base-specific characteristics.

3. Preferences for a Specific Base

While both bases exhibit identical externalities in our model, governments do not have the same preferences for taxing either base. We will assume that all else equal, the federal government prefers to tax income while the state government prefers to tax property. These preferences reflect administrative advantages that plausibly enable each government to extract an especially large amount of revenue from a specific base. For example, property tax assessment "requires the knowledge of local details"—as Alexander Hamilton observed in *Federalist No. 36*—which may give the lower level of government an advantage in property taxation.[170] Meanwhile, many income-generating activities cross state lines, which poses little problem for the federal government but creates challenges for state income tax administrators, who must determine how much income to attribute to each state and—in some cases—collect income taxes from out-of-state taxpayers.[171]

The intensity of these preferences is assumed to be small relative to the externalities. Specifically, the benefit that each government receives from taxing its preferred base is smaller than either the rate externality or the enforcement externality. This assumption ensures that externalities predominate in the analysis.[172]

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[170] The Federalist No. 36, at 235-36 (Alexander Hamilton) (Clinton Rossiter ed., 1961).

[171] For a rough indication of the share of income derived from interstate commerce, one might consider the share of the value of freight shipments that travels 250 miles or more. In 2023, this share was 43.8%, suggesting that roughly half of the value of goods shipped within the United States was derived from interstate commerce. United States Bureau of Transportation Statistics, Moving Goods in the United States (accessed July 27, 2025), https://data.bts.gov/stories/s/Moving-Goods-in-the-United-States/bcyt-rqmu/.

[172] If the governments' preferences were stronger than both externalities, each government's optimal strategy would be simple: tax its preferred base.

4. Administrative Costs

Establishing a tax system requires upfront investment. Governments must create collection agencies, design forms, train personnel, and build enforcement capacity. We capture these administrative burdens through a fixed cost that each government incurs when taxing a base. For now, we assume that these fixed costs are sufficiently high that a government would always prefer to tax one base rather than two. This assumption serves an analytical purpose because it ensures that each government's choice concerns *which* base to tax, not *how many* bases to tax. We complicate this single-base assumption in Section II.D.

5. Stages of Play

The game unfolds in two stages that capture the distinction between constitutional and ordinary politics. In the first stage—the constitutional stage—the governments negotiate binding constraints on their future tax powers.[173] They might agree that the federal government cannot tax property, that the state government cannot tax income, some other arrangement, or none at all. We assume for present purposes that these constitutional rules, once adopted, cannot be changed in the second stage.[174] The constitutional stage thus represents a moment of institutional choice where governments can commit to fiscal restraint.

In the second stage—the legislative stage—the governments simultaneously choose which bases to tax, subject to any constitutional constraints adopted in the first stage. Neither government can observe the other's choice before making its own decision. The governments' payoffs depend on their tax choices.

Although the legislative stage comes after the constitutional stage, it will be helpful to analyze these two stages in reverse chronological order.[175] That is, we first ask how federal and state governments would behave if they were constitutionally unconstrained. Only then can we clearly see how a fiscal constitution might alter baseline outcomes.

[173] See Geoffrey Brennan & James M. Buchanan, The Power to Tax: Analytical Foundations of a Fiscal Constitution 3 (1980) (making a similar assumption).

[174] See id. (making a similar assumption).

[175] Drew Fudenberg & Jean Tirole, Game Theory 92-95 (1991).

B. The Legislative Stage Without a Constitution

Our analysis begins by considering how the federal and state governments would interact without constitutional constraints on tax bases. This analysis reveals that taxing separate bases is not always efficient. When the rate externality exceeds the enforcement externality, both governments would indeed prefer to tax separate bases. But when the enforcement externality exceeds the rate externality, the opposite is true: separation of bases would leave both governments worse off.

1. Rate Externality Exceeds Enforcement Externality

We start with the case where the rate externality exceeds the enforcement externality. Because the rate externality exceeds the enforcement externality, the federal government loses revenue when the state government taxes the federal base, and vice versa.

Table 1: Rate Externality Exceeds Enforcement Externality (Assurance Game)

<table>
<tr><td colspan="2" rowspan="2"></td><td colspan="2">State</td></tr>
<tr><td>Tax Income</td><td>Tax Property</td></tr>
<tr><td rowspan="2">Federal</td><td>Tax Income</td><td>2, 1</td><td>4, 4</td></tr>
<tr><td>Tax Property</td><td>3, 3</td><td>1, 2</td></tr>
</table>

Table 1 displays each government's payoffs from different strategies within this game. The federal government is the row player and the state government is the column player. Suppose that each government initially taxes income (the top left cell). If the federal government decides to tax property (shifting to the bottom left cell), both governments benefit from the move: the federal government's payoff increases from 2 to 3, and the state government's payoff increases from 1 to 3. At that point, neither government can increase its payoff by changing its action. In the language of game theory, the scenario in which the federal government taxes property and the state government taxes income is a "pure strategy Nash equilibrium." A pure strategy equilibrium exists when every player follows a fixed strategy (for example, *always tax income*) and cannot benefit from unilaterally deviating from that strategy.[176]

Now suppose instead that the federal government taxes income and the state government taxes property (the top right cell). This—again—is a pure strategy Nash equilibrium: neither player can increase its payoff by unilaterally changing its action. Moreover, the players' payoffs—4 for each—are higher than their payoffs in the first pure strategy Nash equilibrium. The top right cell—described in game theory notation as (Tax Income, Tax Property)—represents the "Pareto-dominant" or "payoff-dominant" equilibrium because both players are better off in that scenario than in the alternative Nash equilibrium where the federal government taxes property and the state taxes income.[177]

In addition to the two pure strategy equilibria, there is a third equilibrium—known as a "mixed strategy equilibrium"—in which both parties randomize over pure strategies with fixed probabilities.[178] Here, in the mixed strategy Nash equilibrium, each government taxes its preferred base (income for the federal government, property for the state government) one-quarter of the time.[179] A

[176] Id. at 12.
[177] Id. at 21.
[178] Id. at 19.
[179] In a mixed strategy equilibrium, each player must be indifferent between the pure strategies that it is randomizing over. Thus, the federal government's best response can be determined by considering the state government's payoffs, and vice versa. Let p be the probability that the federal government taxes income, and let q be the probability that the state government taxes income. The state's payoffs from taxing income (I_S) and taxing property (P_S) are given by:

$$I_S: p + 3(1-p) = 3 - 2p$$
$$P_S: 4p + 2(1-p) = 2 + 2p$$

For the state to be indifferent from taxing income and property:

$$I_S = P_S$$
$$3 - 2p = 2 + 2p$$
$$1 = 4p$$
$$p = 1/4$$

The federal government's payoffs from taxing income (I_F) and taxing property (P_F) are given by:

$$I_F: 2q + 4(1-q) = 4 - 2q$$
$$P_F: 3q + (1-q) = 1 + 2q$$

For the federal government to be indifferent from taxing income and property:

$$I_F = P_F$$
$$4 - 2q = 1 + 2q$$
$$3 = 4q$$
$$q = 3/4$$

This establishes that the federal government taxes its preferred base (income) one out of every four times and the state government taxes its dispreferred base (income) one out of every four times.

noteworthy feature of this mixed strategy equilibrium is that it is worse for both governments than either pure strategy equilibrium. When both players randomize over taxing each base, they sometimes converge on the same base (the worst-case outcome when the rate externality exceeds the enforcement externality). Thus, each government's expected payoff in the mixed strategy equilibrium is only 2.5.[180] This implies that both governments could benefit from a device that facilitates coordination. Still, neither government profits if it unilaterally deviates from the mixed strategy.

In game theory nomenclature, Table 1 is called an "assurance game" because each party seeks to assure its counterparty that it will adopt the cooperative strategy (taxing income for the federal government; taxing property for the state).[181] One way to provide such an assurance is for a party to restrict its own ability to adopt the noncooperative strategy—here, for the federal government to prevent itself from taxing property or for the state to prevent itself from taxing income.

When the rate externality exceeds the enforcement externality, then, separation of bases is indeed efficient. Both governments are better off when they tax distinct bases than when they share one. This scenario corresponds to the conventional wisdom about separating tax bases. But it is only half of the story.

2. Enforcement Externality Exceeds Rate Externality

Now consider the case where the enforcement externality exceeds the rate externality. In this case, separation of bases is *not* efficient. The federal government *gains* revenue when the state government taxes the federal base, and vice versa. Each government wants both governments to tax the same base, not to separate.

Coordination would be relatively straightforward if each government preferred the same base (e.g., if the state government—like the federal government—preferred to tax income). If that were the case, each government could simply tax its preferred base, and the two spontaneously would align. But when each

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[180] Each government's expected payoff in the mixed strategy equilibrium can be calculated as follows:

$$2pq + 4p(1-q) + 3(1-p)q + 1(1-p)(1-q)$$

$$(2)\left(\frac{3}{16}\right) + (4)\left(\frac{1}{16}\right) + (3)\left(\frac{9}{16}\right) + \left(\frac{3}{16}\right) = 2.5$$

The state's payoff is symmetrical.

[181] See Baird, Gertner and Picker, supra note 161, at 277 n.14.

government prefers to tax a different base, coordination is tinged with conflict. Each government prefers taxing in unison to taxing in disharmony, but the two governments disagree about how to unify.

Table 2 displays the payoffs to each government from different strategies within this game, with the federal government again the row player and the state government the column player.[182] Coordination on a single base (yielding a payoff of 3 or 4) is superior to taxing separate bases (yielding a payoff of 1 or 2) for each government. But the two governments disagree about whether to coordinate upon taxing income (which the federal government prefers) or taxing property (which the state government prefers). Without some device that helps them to coordinate with each other—such as a credible commitment to taxing one or the other base—the two governments might fail to achieve either one of their preferred outcomes.[183]

Table 2: Enforcement Externality Exceeds Rate Externality (Bach-Stravinsky Game)

		State	
		Tax Income	Tax Property
Federal	Tax Income	4,3	2, 2
	Tax Property	1, 1	3, 4

To see how lack of coordination can lead to suboptimal outcomes even when both governments prefer to tax in unison, consider the Nash equilibria of the game in Table 2. Two of these equilibria are pure strategy equilibria. In this game, the pure strategy equilibria occur when both governments coordinate on the same tax base—either both tax income (yielding payoffs of 4,3) or both tax property (yielding payoffs of 3,4). Though each pure strategy equilibrium favors one government over the other, neither government can profitably deviate from either one. Deviating

182 For clarity, Table 2 does not display the payoffs from a third strategy available to each government—namely, tax both bases. Because taxing an additional base incurs a fixed cost, taxing both bases is a less efficient way of hitting a revenue target than taxing a single base.

183 See Russell Cooper, Douglas V. DeJong, Robert Forsythe, and Thomas W. Ross, Communication in the Battle of the Sexes Game: Some Experimental Results, 20 RAND J. Econ. 568, 575 (1989) (finding that players failed to coordinate approximately 50 percent of the time in an experimental simulation of the battle of the sexes game).

gives up the benefits of coordination, which exceed the gains of taxing one's preferred base.

While these pure strategy equilibria are stable once reached, the governments face a coordination problem in selecting between them. If, for example, each government simply taxes its own preferred base, the two will not coordinate, slipping past each other like ships in the night. So too if each government taxes its *dis*preferred base.

As in Table 1, there is—along with the two pure strategy equilibria—a mixed strategy equilibrium in the game in Table 2. Here, in the mixed strategy Nash equilibrium, each government picks its preferred base three out of every four times and its dispreferred base one out of every four times.[184] Each government selects its preferred base more often than its dispreferred base because there is some reward to taxing one's preferred base, regardless of whether one does so in a coordinated fashion. Nonetheless, each government selects its dispreferred base some of the time because it would like to have some chance of attaining coordination on its less favored base.

A noteworthy feature of this mixed strategy equilibrium is that it is worse for both governments than either pure strategy equilibrium. When both players randomize over taxing each base, they often fail to achieve coordination. Thus, each government's expected payoff in the mixed strategy equilibrium is only 2.5, which

[184] Again, let p be the probability that the federal government taxes income, and let q be the probability that the state government taxes income. The state's payoffs from taxing income (I_S) and taxing property (P_S) are given by:

$$I_S: 3p + 1(1-p) = 2p + 1$$
$$P_S: 2p + 4(1-p) = 4 - 2p$$

For the state to be indifferent from taxing income and property:

$$I_S = P_S$$
$$2p + 1 = 4 - 2p$$
$$4p = 3$$
$$p = 3/4$$

For the federal government to be indifferent between taxing income and property:

$$I_F = P_F$$
$$I_F: 4q + 2(1-q) = 2q + 2$$
$$P_F: q + 3(1-q) = 3 - 2q$$

$$2q + 2 = 3 - 2q$$
$$4q = 1$$
$$q = 1/4$$

This establishes that the federal government taxes its preferred base (income) three out of every four times and the state government taxes its preferred base (property) three out of every four times.

is worse than coordination even on one's dispreferred tax base (payoff of 3).[185] This implies that both governments could benefit from a device that facilitates coordination.

The game in Table 2 is sometimes described as a "battle of the sexes"[186] or—in less gendered terms—a "Bach-Stravinsky game."[187] In the Bach-Stravinsky formulation, one friend prefers to attend a Bach concert; a second friend prefers to attend a Stravinsky concert; but both friends would prefer to attend the same concert together rather than going solo to their desired event. In a Bach-Stravinsky game, as in an assurance game, weakness equals strength in the sense that a party can improve its payoff by delimiting its freedom of action. A key difference, though, is that in the Bach-Stravinsky game, each party has an incentive to be the one that self-binds so that it can achieve coordination on its preferred terms.[188]

C. *The Constitutional Stage*

We now consider whether either government will agree to be bound by a constitutional constraint that prevents taxing either base. A common assumption—reflected in the federalism rationale for the separation of bases—is that constitutional constraints on the federal government's taxing power protect state autonomy. We show that this assumption is mistaken. A constitutional constraint on the federal government's power to tax property can be advantageous to the *federal* government—and worse for the state government than other constitutional schemes. The federal government opts to constrain itself to pursue its own ends.

The constitution is modeled as a contract between the federal government and the state government.[189] At the constitutional convention, the two governments

[185] Each government's expected payoff in the mixed strategy equilibrium can be calculated as follows:

$$(4)\left(\frac{3}{16}\right) + (3)\left(\frac{3}{16}\right) + (2)\left(\frac{9}{16}\right) + (1)\left(\frac{1}{16}\right) = 2.5$$

[186] See R.D. Luce & H. Raiffa, Games and Decisions: Introduction and Critical Survey 91 (1957); Baird et al., supra note 181, at 41–42 & fig.1.12.

[187] See Florian K. Diekert, The Tragedy of the Commons from a Game-Theoretic Perspective, 4 Sustainability 1776, 1777 (2012); Daniel J. Hemel & Matthew Hamilton, Coordination, Conflict, and the Laws of Time, in Research Handbook on Law and Time 9, 12 (Frank Fagan & Saul Levmore eds., 2025).

[188] See Peter Vanderschraaf & Diana Richards, Joint Beliefs in Conflictual Coordination Games, 42 Theory & Decision 287, 288 (1997).

[189] An important strand of positive political theory views the constitution as a contract. See, e.g., Brennan & Buchanan, supra note 173, at 37 (asking whether constraints on fiscal powers "would emerge from constitutional contract"); James Buchanan, The Limits of Liberty 54, 69-95 (1975)

bargain over terms: The federal government proposes a package of constitutional constraints in a "take it or leave it" offer, which the state government either accepts or rejects.[190] If the state government accepts the proposed constraints, they become binding. If the state government rejects the federal government's proposal, both governments remain entirely unconstrained.

Our decision to model the constitutional convention as an ultimatum game—in which the federal government issues the ultimatum—deserves comment. Many analysts have construed the constitution as a contract, and game theorists often analyze contractual bargaining as an ultimatum game.[191] One attractive feature of the ultimatum game is that it models the essence of a bargain—that it must benefit both parties—in a relatively simple way.[192] A potential limitation of this modeling approach is that it grants the proposer (here, the federal government) greater bargaining power than alternative models that feature simultaneous or alternating proposals.[193] Here, however, this is a feature, not a bug. It is all the more striking that the federal government would constrain its own fiscal powers even when it can issue ultimata during constitutional bargaining.

Our analysis proceeds through three scenarios that reveal when and why governments will agree to constitutional constraints on their fiscal powers. First, we examine the case where governments know with certainty that the rate

(construing "constitutional contract" as "the initial leap from Hobbesian anarchy"); Douglas D. Heckathorn and Steven M. Maser, Bargaining and Constitutional Contracts, 31 Am. J. Pol. Sci. 142, 143 (1987) ("As a decision to cooperate, a constitution is a contract.").

[190] For classic analysis of the ultimatum game, see John C. Harsanyi, On the Rationality Postulates Underlying the Theory of Cooperative Games, 5 J. Conflict Resol. 179, 189 (1961). For a textbook presentation, see Steven Tadelis, Game Theory 221-23 (2013).

[191] For examples of scholars that construe the constitution as a contract, see supra note 189. For analysis of contractual bargaining as an ultimatum game, see, e.g., Albert H. Choi & George Triantis, Contract Design with Relationship-Specific Investment and Asymmetric Information, 50 J. Leg. Stud. 219, 232 (2021) ("We assume that throughout the game the seller can make a take-it-or-leave-it offer to the buyer, who either accepts or rejects it."); Albert Choi & George Triantis, Strategic Vagueness in Contract Design: The Case of Corporate Acquisitions, 119 Yale L. J. 848, 896-920 (analyzing the properties of strategic vagueness in a model where "wherever bargaining is involved . . . the seller makes a take-it-or-leave-it offer to the buyer and the buyer can either accept or reject the offer."); Lucien A. Bebchuk & Richard A. Posner, One-Sided Contracts in Competitive Consumer Markets, 104 Mich. L. Rev. 827, 832 (2006) ("Sellers in our model offer to buyers identical take-it-or-leave-it contracts . . . .").

[192] See Oren Bar-Gill & Omri Ben-Shahar, Threatening an Irrational Breach of Contract, 11 Sup. Ct. Econ. Rev. 143, 155 (2003) (describing the ultimatum game as "the simplest form of bargaining").

[193] In the ultimatum game, the proposer's dominant strategy is to make an offer that makes the responder infinitesimally better-off and assigns all the remaining surplus to themselves. Tadelis, supra note 190, at 223. For example, if the game involves the division of $100, the proposer's dominant strategy is to give $0.01 to the responder and $99.99 to themselves. Because the responder cannot negotiate or make offers of their own, the responder will accept even one penny.

externality will dominate the enforcement externality. Here, the threat of fiscal competition creates an assurance game that both governments can escape through a constitutional constraint—one government agrees to forgo taxing the other's preferred base. Second, we consider the opposite scenario where the enforcement externality certainly dominates the rate externality. In this coordination game, constitutional constraints serve a different purpose: they help governments coordinate on a common tax base, with the federal government potentially constraining itself to steer both parties toward its preferred outcome. Finally, we examine the more realistic case where governments are uncertain about which externality will prove stronger. This uncertainty produces our central result: The federal government will propose constraining only its own fiscal powers while leaving the state government unconstrained. This asymmetric constitutional arrangement—exemplified by constraints like the Direct Tax Clauses—emerges not from federal weakness but from strategic federal behavior designed to manage uncertainty.

1. Rate Externality Dominates Enforcement Externality

We begin with the case in which the parties know with complete certainty that the rate externality will dominate the enforcement externality. In this case, without constitutional constraints, the federal and state governments would face an assurance game during the legislative stage. The governments will seek constitutional constraints that confine them to separate tax bases.

During the constitutional stage, the federal government proposes constitutional constraints, and the state government either accepts or rejects them. The federal government must craft a proposal that makes the state government better off than it would be in the unconstrained legislative game; otherwise, the proposal will be rejected. Subject to this constraint, the federal government will choose the set of constraints that most advantages itself.

The federal government can guarantee its optimal outcome by proposing one of two constitutional constraints.[194] First, it could propose to prohibit the state

[194] The federal government could also propose the union of the two constraints that we discuss: It could propose that the federal government is prohibited from taxing property and the state government is prohibited from taxing income. So long as one constraint is in place, however, the other is otiose. Moreover, as we discuss in Subsection II.C.3 below, constraints that are redundant when the governments are certain about the relative sizes of the rate and enforcement externalities become harmful when the governments are uncertain.

government from taxing income. Effectively, this forces the state government to tax property, allowing the federal government to tax income unimpeded. The state government will accept this proposal because it guarantees the state government's ideal outcome as well.

Second, the federal government could propose to constrain itself, prohibiting federal taxation of property. This assures the state government that the federal government will tax income. The state government will then tax property—both because property is the state's tax base and because property can be taxed without cannibalization by the federal government. Since the state government will tax property, the federal government can tax income without suffering the encroachment of the state.

In sum, constitutional bargaining between self-interested governments solves the assurance game. By submitting to a constraint that confines one government to its preferred tax base, both parties escape the inefficient outcome where conflict leaves them worse off than coordinated restraint.

2. Enforcement Externality Dominates Rate Externality

Now consider the case in which the federal and state governments know with certainty that the enforcement externality dominates the rate externality. In that case, the governments would like to tax the same base but disagree about which base to tax. A constitutional constraint could facilitate coordination. Remarkably, the federal government may find it advantageous to constrain its own fiscal powers rather than those of the state government—using self-imposed constitutional limits as a strategic tool to achieve its preferred coordination outcome.

The federal government wants to channel the state government into taxing the federal preferred base, income. When the enforcement externality dominates, the legislative phase becomes a coordination game with two pure strategy equilibria: both governments tax income, or both governments tax property. The federal government can use a constitutional constraint to eliminate one of these equilibria and guarantee coordination on its preferred outcome.

The federal government could achieve this through one of two constitutional strategies. First, it could directly constrain the state by proposing that the state government cannot tax property. If the state government cannot tax property, it has no choice but to tax income, and the federal government will coordinate by also taxing income.

Second, and more intriguingly, the federal government could constrain itself by proposing that it cannot tax property. If the federal government cannot tax property, it must tax income in the legislative phase. Knowing this, the state government has an incentive to match, taxing income as well. Thus, by opportunistically constraining itself, the federal government can steer the state towards its preferred base.

The state government will accept either proposal because each one guarantees coordination. Under either constraint, both governments will tax income. While income is not the state's preferred base, guaranteed coordination is better for the state than the unconstrained legislative game. Without constraints, there is a chance that each government coordinates on the state's preferred base, but also a substantial risk of miscoordination, where one government taxes income while the other taxes property. The certainty of moderate gains (a payoff of 3 for the state) trumps the gamble between the ideal outcome and dismal coordination failures (expected payoff of 2.5).

3. Uncertainty

So far, we have analyzed two scenarios in which both governments know which externality dominates the other. If the rate externality dominates the enforcement externality, the federal government will agree to prevent itself from taxing property and the state government will do likewise for income. Meanwhile, if the enforcement externality dominates the rate externality, either the federal government or the state government will be prevented from taxing property.

Now we extend our analysis to encompass a more realistic—but complex—setting in which the two governments are uncertain about which externality will dominate. This setting is more realistic because it is difficult to measure the sizes of fiscal externalities even at a single point in time, let alone over the entire future of a fiscal union that might last for centuries. Analyzing the case of uncertainty requires combining several ideas that were initially developed in the preceding subsections.

A template for the Direct Tax Clauses—a constitutional constraint that prevents the federal government from taxing property—emerges naturally from our model when the governments are uncertain and risk averse. Let p be the probability that the enforcement externality dominates the rate externality. Assume that the federal and state governments—like individuals behind the veil of ignorance in John Rawls's famous thought experiment—apply a "maximin" principle: in deciding what constitutional rule to offer and what to accept, they seek to maximize the payoff associated with the worst-case outcome.[195] Then whenever p is neither 0 nor 1—whenever there is *some* chance that each externality will dominate—the federal government offers to prevent itself from taxing property, and the state government accepts this proposal.

To see why this is so, consider which constitutional constraints guarantee the federal government's ideal outcome under each state of the world. These constraints are summarized in Table 3. When the rate externality dominates the enforcement externality, two alternative constraints could ensure the federal government's ideal outcome: the federal government could be prohibited from taxing property, or the state government could be prohibited from taxing income. Meanwhile, when the enforcement externality dominates the rate externality, two alternative constraints could ensure the federal government's ideal outcome: the federal government could be prohibited from taxing property, or the state government could be prohibited from taxing property. Importantly, either constraint in each pair is just as good as the other, given the right state of the world. For example, when the rate externality exceeds the enforcement externality, there is no reason for the federal government to prefer that it cannot tax property or that the state government cannot tax income; each one ensures taxation of separate bases.

Table 3: Federal Government's Ideal Constraints

Rate Externality > Enforcement Externality	**Enforcement Externality > Rate Externality**
Federal government can't tax property	Federal government can't tax property
State government can't tax income	State government can't tax property

But only one constraint ensures the federal government's ideal outcome across all states of the world: a prohibition on the federal taxation of property. If the state

[195] See John Rawls, A Theory of Justice 132–37, 152–61 (1971).

government cannot tax income, the governments cannot coordinate on the federal government's preferred base when the enforcement externality dominates the rate externality. Similarly, if the state government cannot tax property, the governments cannot tax separate bases when the rate externality exceeds the enforcement externality. Only a constraint that rules out the federal taxation of property is ideal however the world might be.

Thus, if the federal government is uncertain about which externality will dominate, its choice is clear. It should propose that it cannot tax property. All other strategies have some chance of misfiring.

Will the state government accept this proposal? When the rate externality dominates, a prohibition on the federal taxation of property is ideal for the state: It ensures that the state government can tax its preferred base without encroachment from the federal government. When the enforcement externality dominates, a prohibition on the federal taxation of property ensures that the two governments coordinate on the same income base, leveraging one another's enforcement efforts. To be sure, in those cases where the enforcement externality dominates, it is possible that the federal and state governments would converge on property taxation in the absence of a constitutional constraint, yielding a payoff to the state of 4. But it is also possible that the federal and state governments will settle into a mixed strategy Nash equilibrium, yielding a payoff to the state of only 2.5. A state that applies the maximin principle (or even a somewhat less extreme risk-averse decision rule) will accept the federal government's offer, which assures the state a payoff of 3 when the enforcement externality predominates, rather than gambling for convergence on the property base (payoff to the state of 4) while running the risk of a mixed strategy Nash equilibrium (payoff to the state of 2.5).

Combining these points, when the governments are uncertain about the relative sizes of the rate and enforcement externalities, they will agree to a single constitutional constraint: one that prevents the federal government from taxing property. This constraint is the only constitutional restriction that guarantees the federal government's ideal outcome under both possible states of the world: It ensures taxation of separate bases when the rate externality dominates and coordinated taxation of the federal government's preferred base when the enforcement externality dominates. The state government accepts this proposal because it produces favorable outcomes regardless of which externality looms largest, eliminating the harmful competition and failed coordination that characterizes the unconstrained world.

4. Summary

There are many conditions in which a federal government and a state government will strike a bargain over a fiscal constitution. If the rate externality will dominate the enforcement externality, the federal government can achieve its ideal outcome through either of two constitutional strategies: preventing the state government from taxing income or preventing itself from taxing property. Both constraints ensure that governments tax separate bases, forestalling each one from cannibalizing the revenue that might be collected by the other. By contrast, if the enforcement externality will dominate the rate externality, the governments will agree to a constraint that ensures that they will tax in unison, leveraging each other's enforcement capacities. To that end, the federal government might propose that the state government cannot tax property—or, alternatively, it might opportunistically constrain itself. By eliminating its own ability to tax property, the federal government credibly commits to taxing income and thereby compels the state government to tax income as well.

When there is uncertainty about the relative sizes of the two externalities, the governments will agree that the federal government should be prevented from taxing property. The possibility that the enforcement externality dominates the rate externality prevents the federal government from proposing that the state government should be confined to taxing property; the federal government will want to preserve the possibility of taxing income when the gains of coordination are relatively large. Meanwhile, the possibility that the rate externality dominates the enforcement externality prevents the federal government from proposing that the state government should be confined to taxing income, since the federal government will want to preserve the option of keeping the income tax base all to itself. Only a constitutional constraint on the federal government's power to tax property—as exhibited in the Direct Tax Clauses—achieves the federal government's ideal outcome regardless of which externality prevails. The state accepts the federal self-constraint as insurance against competitive losses and coordination failures.

Two lessons emerge from this analysis. First, separation of bases is not always efficient. When the enforcement externality exceeds the rate externality, both governments prefer to tax a shared base. A constitutional norm mandating separation would harm both parties.

Second, constitutional constraints on the federal government's taxing power are not inherently pro-federalism. When governments are uncertain about which externality will dominate, the federal government will propose constraining only itself—not because this protects the states, but because it guarantees the federal government's ideal outcome regardless of which externality prevails. The state accepts the constraint as insurance against even worse outcomes, but it accepts on terms that favor the federal government.

D. Cross-Base Rate Externalities

Until now, we have assumed that rate externalities arise only when both governments tax the same base. This assumption was friendly to the separation-of-bases principle, since it implies that separation allows governments to avoid cannibalizing each other's revenue. But it is also unrealistic. In many real-world settings, taxing one base will also shrink a legally distinct tax base.[196] When these "cross-base rate externalities" are large, governments have even stronger reason to coordinate on a common base. If negative rate externalities are inevitable, but positive enforcement externalities arise only when governments tax the same base, federal and state governments might as well tax a common base.

1. How Cross-Base Rate Externalities Arise

Taxes that fall on different bases often affect the same underlying economic decisions.[197] For example, consider the relationship between taxing labor income and taxing real property. When someone buys a piece of real property—say, a house—they typically spend money that is derived from labor. Perhaps they make mortgage payments drawn from their wages; perhaps they pay with cash that they once earned and saved for this purpose. If one government taxes labor income, it

[196] See Boadway & Keen, supra note 151, at 151 (noting that "federal systems are likely to be characterized by considerable effective co-occupancy" even when, "in a formal sense," federal and state governments tax legally distinct bases).

[197] See, e.g., Matthew J. Notowidigdo, The Incidence of Local Demand Shocks, 38 J. Labor Econ. 687 (2020) (finding that declines in wages are associated with falling housing prices); Clemens Fuest, Andreas Peichl, and Sebastian Siegloch, Do Higher Corporate Taxes Reduce Wages? Micro Evidence from Germany, 108 Am. Econ. Rev. 393 (2018) (finding that corporate taxes reduce wages); David Albouy, The Unequal Geographic Burden of Federal Taxation, 117 J. Pol. Econ. 635 (2009) (finding that federal income taxes reduce land and housing prices).

will shrink the pool of money available to pay for homes, depressing real property values.

Now consider how property taxes might affect the labor income tax base.[198] Many people are motivated to work so that they can afford a home. Property taxes increase the effective price of this good. They therefore reduce the after-tax return to working, which, in turn, discourages labor effort. For example, someone who is willing to work extra hard to afford a home that costs $750,000 might instead prefer to spend time relaxing with their family if the same home (in effect) costs $1,000,000 after tax. The property tax reduces labor effort, which in turn shrinks the income tax base.

2. Cross-Base Rate Externalities Undermine the Separation-of-Bases Principle

Cross-base rate externalities make it more likely that the federal and state governments will want to coordinate on taxing a shared tax base—and less likely that they will want to tax separate bases. From our baseline model, we observed that choosing to tax separate bases raises a trade-off. On the one hand, taxing separate bases avoids a negative rate externality; on the other hand, it also foregoes a positive enforcement externality. So, in the baseline model, governments will want to tax separate bases when the rate externality exceeds the enforcement externality.

Cross-base rate externalities, however, reduce the benefit of separation. When cross-base rate externalities exist—for example, when taxing income shrinks the property tax base, and vice versa—separation no longer fully avoids the rate externality. Governments suffer some portion of the rate externality regardless of whether they tax the same or different bases. Accordingly, the benefit of separation is not the full rate externality, but only the fraction of it that separation actually avoids. As cross-base rate externalities grow, this benefit shrinks.

Meanwhile, the cost of separation remains roughly the same. To a first approximation, enforcement externalities arise only when governments tax the

[198] See Anthony B. Atkinson & Joseph E. Stiglitz, The Design of Tax Structure: Direct Versus Indirect Taxation, 6 J. Pub. Econ. 55 (1976); Louis Kaplow, On the Undesirability of Commodity Taxation Even When Income Taxation Is Not Optimal, 90 J. Pub. Econ. 1235 (2006); Joseph Bankman & David A. Weisbach, The Superiority of an Ideal Consumption Tax over an Ideal Income Tax, 58 Stan. L. Rev. 1413 (2006).

same base; for example, accurate reporting of the value of someone's home tells another government little about that person's income, and vice versa. This remains true regardless of the size of cross-base rate externalities.

Thus, cross-base rate externalities reduce the value of separation. When cross-base rate externalities are sufficiently large, the cost of separation (foregoing enforcement externalities) exceeds its benefit (averting rate externalities)—even when same-base rate externalities are larger in absolute terms.[199] This makes it more likely that governments will want to coordinate on taxing a shared base.[200]

3. Cross-Base Rate Externalities and Revenue-Maximizing Governments

Our analysis so far has assumed that governments seek to satisfy a budget constraint. Some studies in the economic literature on fiscal federalism make the alternative assumption that governments are "Leviathans" that seek to maximize their tax revenue.[201] Under this assumption, the case for separation of bases might

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[199] This point can be expressed more clearly with a bit of notation. Let E be the size of the enforcement externality, let R be the size of the same-base rate externality, and let $\alpha \in [0,1]$ be the size of the cross-base rate externality expressed as a share of the same-base rate externality. (The baseline model assumed that $\alpha = 0$.) In the baseline model, both governments prefer separation when $R > E$. But when cross-base rate externalities exist, governments prefer separation only when $R(1-\alpha) > E$.

[200] An additional channel through which taxation by one level of government may affect revenue collected by the other level of government is through the "income effect": when—for example—states raise taxes (whether on income, property, or any other base), individuals have less money to spend, which may induce them to work *more* in order to sustain their desired consumption levels (thus increasing federal income tax collections). See generally Jerry A. Hausman, Labor Supply, in How Taxes Affect Economic Behavior 27, 27–31 (Henry J. Aaron & Joseph A. Pechman eds., 1981) (explaining the income effect). The income effect—insofar as it expands the mutually available tax base—may reduce negative vertical rate externalities. Importantly, though, the income effect arises whether the federal and state governments tax the same or different bases. For example, a state property tax—by leaving property owners with less money—may induce them to work more, increasing federal income tax collections. Thus, the income effect does not militate strongly in favor of base separation or base co-occupation.

Furthermore, taxation does not necessarily make taxpayers poorer once one factors in the positive income effects of the public goods financed through the additional tax revenue. When one level of government imposes a tax and uses the revenue to finance public goods, individuals can afford fewer private goods (producing a "private-income effect," which increases labor supply) but have access to more public goods (generating a "public-income effect," which potentially reduces labor supply). See Cristian F. Sepulveda, Public Goods, Labor Supply and Benefit Taxation, 32 Int' Tax & Pub. Fin. 872, 876, 881 n.8 (2025) (emphasis omitted). The net effect on labor supply is theoretically and empirically ambiguous. See id.

[201] See, e.g., Geoffrey Brennan & James M. Buchanan, Towards a Tax Constitution for Leviathan, 8 J. Pub. Econ. 255, 258 (1977); Flowers, supra note 11; Michael Keen & Christos Kotsogiannis, Leviathan and Capital Tax Competition in Federations, 5 J. Pub. Econ. Theory 177, 178 (2003).

initially seem to be stronger. As Marilyn Flowers has argued, revenue-maximizing governments that share a tax base can face a tragedy of the fiscal commons.[202] This problem arises because each government captures the full benefit of its own rate increase but bears only a fraction of the costs that result from eroding the base. Separating bases seems to solve this problem by forcing each government to bear the full costs of its actions.

But cross-base rate externalities undermine separating bases across revenue-maximizing governments as well.[203] To see this, return to our model, and assume that the governments are revenue-maximizing Leviathans. Suppose initially that the state is already taxing property at the revenue-maximizing rate, and it is considering whether to enact a small tax on income as well. The income tax would generate new revenue from the income tax base. But because cross-base rate externalities exist, the state's new income tax will also function as an increase in the tax rate on property. Since the state was already taxing property at the revenue-maximizing rate, this increase in the effective property tax rate will reduce the state's tax revenue from the property base. If the cross-base rate externality is sufficiently large, the net revenue gained from taxing the income tax base will not exceed the administrative costs of doing so. Constitutional constraints that prevent the state government from expanding to the income tax base—and constrain the federal government from expanding in the opposite direction—are unnecessary, because neither government would benefit from unilaterally expanding in the first instance.

To be sure, when the cross-base rate externality is smaller than the same-base rate externality, the incentive to expand might not disappear entirely. In that case, revenue-maximizing governments may still find it worthwhile to tax both bases, resulting in combined tax rates that are too high relative to what a single revenue-maximizing government would choose. Enforcement effort will be too low as well. When two governments tax the same base, each one's enforcement efforts increase compliance on the shared base–benefiting both governments. But each government captures only its own share of that revenue gain while bearing the full cost of its enforcement investment. A single Leviathan would internalize all of the revenue from increased compliance; two Leviathans sharing a base will each free-ride off one another's enforcement effort.

[202] See supra Section I.C.
[203] Flowers herself noted this. See Flowers, supra note 11, at 74.

Whether these distortions justify separation, however, depends on the same comparison that budget-constrained governments would make. Co-occupying the same base results in two sub-optimal policies: rates that are too high and enforcement effort that is too low. But separation is not a perfect solution to these problems. It eliminates the positive enforcement externality altogether while only partially addressing the rate externality (since the cross-base rate externality persists). Accepting this trade-off is sometimes worthwhile, but not always. Relative externalities, in other words, govern Leviathans too.

E. Horizontal Rate Externalities

Finally, our analysis so far has assumed only one federal and one state government, but real-world federal systems contain multiple subnational units. In a multistate system, changes in state tax rates affect not only the federal government's revenue-raising capacity but also the revenue-raising capacity of other states. As a general matter, these "horizontal" rate externalities run in the opposite direction of vertical rate externalities.[204] For example, when New York raises its state income tax, it shrinks the size of the national income tax base (negatively affecting federal revenue) but potentially induces taxpayers to relocate themselves or their investments to neighboring New Jersey and Connecticut (positively affecting those states' revenue). Whereas vertical rate externalities potentially result in state tax rates that are too high from an overall welfare perspective, horizontal rate externalities may lead to state tax rates that are too low, as states cut their own tax rates to lure mobile taxpayers and investments from other states—a classic "race to the bottom."[205]

Horizontal rate externalities potentially provide an additional argument in favor of base co-occupation: when the federal government taxes the same base as the states, it potentially counterbalances the incentive for states to cut their tax rates in

[204] See Keen & Kotsogiannis, supra note 145, at 363–64 (contrasting vertical and horizontal fiscal externalities).

[205] Empirical evidence on the magnitude of interstate mobility in response to state tax rates is mixed. Compare Cristobal Young, Charles Varner, Ithai Z. Lurie & Richard Prisinzano, Millionaire Migration and Taxation of the Elite: Evidence from Administrative Data, 81 Am. Soc. Rev. 421, 423 (2016) (finding that "millionaire migration is indeed responsive to top income tax rates," but "the magnitude of the migration response is small and has little effect on the millionaire tax base"), with Joshua Rauh & Ryan Shyu, Behavioral Responses to Income Taxation of High Earners: Evidence from California, 16 Am. Econ. J.: Econ. Pol'y 34, 49 (2024) (finding a "larger out-migration effect" than previous work). Brian Galle, David Gamage, and Darien Shanske seek to synthesize contrasting empirical results, concluding that "although people themselves don't seem to move much for tax reasons, money is substantially more mobile." Brian Galle, David Gamage & Darien Shanske, Money Moves: Taxing the Wealthy at the State Level, 113 Cal. L. Rev. 635, 639 (2025).

competition with one another.[206] According to this logic, horizontal rate externalities provide an additional reason to question the separation-of-bases principle. Still, two caveats are in order. First, it is not obvious—theoretically or empirically—that tax competition among multiple states in a federal union will set off a race to the bottom. Nearly four decades ago, David Wildasin showed that a tax cut in one jurisdiction may lead neighboring jurisdictions to *raise* taxes, and several other scholars have subsequently reached similar conclusions.[207] Second, federal policy can mitigate horizontal competition even in the absence of base co-occupation. As we discuss below, a federal income tax deduction for state and local property taxes can encourage states and localities to raise property tax rates—and thus stave off a "race to the bottom" in that realm—even though the federal government does not tax the property base.[208] In this respect, vertical tax coordination question—whether the federal government and the states should tax the same or different bases—is orthogonal to the problem of horizontal tax competition.

[206] See Kevin Milligan & Michael Smart, An Estimable Model of Income Redistribution in a Federation: Musgrave Meets Oates, 11 Am. Econ. J.: Econ. Pol'y 406, 414–15 (2019) (developing a model in which the federal government and the states "share the same base" and observing that "the federal tax rate serves to mitigate the horizontal externality of tax competition by introducing an offsetting vertical externality"); see also Kenneth J. McKenzie, A Race to the Botton in Provincial Business Taxation in Canada?, in Racing to the Bottom?: Provincial Interdependence in the Canadian Federation 25, 47–48 (Kathryn Harrison ed., 2006) (noting that vertical fiscal externalities may mitigate horizontal tax competition).

[207] See David E. Wildasin, Nash Equilibria in Models of Fiscal Competition, 35 J. Pub. Econ. 229, 236–37 (1988). For example, suppose that one jurisdiction raises its capital tax rate, "driving capital . . . into other localities" and "enabling them to achieve any specified levels of public expenditure at lower tax rates." Id. at 237. In that case, we would expect to see the opposite of a "race to the bottom": instead, states would be "riding on a seesaw." See Robert S. Chirinko & Daniel J. Wilson, Tax Competition Among U.S. States: Racing to the Bottom or Riding on a Seesaw?, 115 J. Pub. Econ. 147, 149 (2017). Consistent with that theory, Chirinko and Wilson find a negative relationship between corporate tax rates respond negatively to tax changes in geographically proximate and economically similar states (i.e., a decrease in one state's corporate tax rates causes surrounding and similar states to raise their rates). See id. at 162. Similarly, Raphaël Parchet finds that small personal income tax cuts by Swiss localities lead nearby jurisdictions to raise their personal income tax rates—the opposite of a race to the bottom. See Raphaël Parchet, Are Local Tax Rates Strategic Complements or Strategic Substitutes?, 11 Am. Econ. J.: Econ. Pol'y 189, 216–17 (2019).

[208] See infra Section III.D. For the idea that the SALT deduction can stave off a "race to the bottom," see Howard Chernick, Fundamental Tax Reform: Would There Be a Race to the Botton in State and Local Tax Incidence?, 91 Proc. Ann. Conf. on Tax'n & Minutes Ann. Meeting Nat'l Tax Ass'n 421, 429 (1998); and William B. Barker, The Tax Cuts and Jobs Act of 2017: The SALT Deduction, Tax Competition, and Double Taxation, 56 San Diego L. Rev. 73, 104 (2019).

III. IMPLICATIONS

In Part II, we showed how game theory could shed light on strategic interactions between federal and state governments as both seek to meet their revenue needs. Here, we apply insights from our stylized game-theoretic analysis to real-world law and policy problems. We begin in Section III.A by summarizing the main takeaway from Part II: that the relative externalities principle, not the separation of bases principle, describes how federal systems should seek to assign tax powers if efficiency is their primary objective. We then apply this insight across a range of doctrinal and institutional contexts, including U.S. constitutional law (Section III.B), federal policy with respect to state and local taxes (Section III.C), comparative fiscal constitutionalism (Section III.D), and international tax law (Section III.E).

A. Relative Externalities, Not Separation of Bases

The analysis above suggests that the separation of bases, notwithstanding its "conventional wisdom" status,[209] has the potential to misfire as a policy prescription for federal systems when tax enforcement at one level of government yields positive revenue effects at another. In place of the separation of bases, we identify an alternative maxim for tax assignment that applies when federal and state governments seek to meet a budget constraint. Crisply stated, the relative externalities principle prescribes separation of bases when the negative rate externality exceeds the positive enforcement externality and co-occupation of bases when the positive enforcement externality exceeds the negative rate externality.

The relative externalities principle—on its face—may seem straightforward. But of course, little about fiscal federalism is straightforward in practice, and the relative externalities principle is no exception. Before delving into doctrinal and institutional details, we note three important qualifications.

First, in calculating the negative rate externality for purposes of applying the relative externalities principle, policymakers should focus on the negative rate externality from co-occupation *over and above* the negative rate externality that arises when the two governments tax separate bases. As we emphasized in Section II.D, negative rate externalities can arise even when the federal government and state governments tax separate bases; for example, an income tax can cause

[209] See Hoyt, supra note 152, at 702.

individuals to accumulate less property, while a property tax may discourage individuals from earning income. If negative rate externalities will arise regardless of separation or co-occupation, it is only the additional negative rate externality from separation that should enter the relative externalities calculus.

Second, while we have assumed so far that rate externalities are negative, rate externalities can be positive too. For example, in Germany, revenue from the beer tax is allocated to the Länder (states), while revenues from the sparkling wine and spirits taxes are allocated to the federal government.[210] If beer and sparkling wine or spirits are substitutes,[211] then an increase in the beer tax allocated to the Länder may have a positive effect on federal revenue because the higher cost of beer induces some consumers to shift toward federally taxed alcohols.[212] In theory, an increase in the state-level property or wealth tax rate could also expand the income tax base if, for example, individuals respond to the rate increase by working more in order to sustain their pre-reform level of wealth.[213] When faced with a positive cross-base rate externality and a positive same-base enforcement externality, the relative externalities principle counsels in favor of base separation only if the former is larger than the latter.

Third and finally, we stress that the relative externalities principle does not resolve all questions about tax assignment in a federal system.[214] For example, it does not, on its own, resolve the question of how policymakers should design a federal fiscal constitution to maximize the probability that federal and state governments will converge on the socially optimal Nash equilibrium given ex-ante uncertainty as to which externality—rate or enforcement—will predominate. Nor does it tell us how to resolve federal-state conflicts in cases where both parties prefer to tax the same base but disagree about which base to choose, as in the Bach-Stravinsky game depicted in Table 2. To gain purchase on those questions—and to

[210] See Grundgesetz [GG] [Basic Law], art. 106(2), (1), translation at International Constitutional Law Project (Univ. of Bern), https://www.servat.unibe.ch/icl/gm00000_.html.

[211]

[212] Cf. Tereza Čiderová & Milan Ščasný, Estimation of Alcohol Demand Elasticity: Consumption of Wine, Beer, and Spirits at Home and Away from Home, 17 J. Wine Econ. 329, 336 (2022) (reporting evidence of "wine-beer substitutability" in the Czech consumer market).

[213] See, e.g., Marius A. K. Ring, Wealth Taxation and Household Saving: Evidence from Assessment Discontinuities in Norway, 92 Rev. Econ. Stud. 3375 (2025) (finding evidence of a positive labor earnings response to wealth taxation in Norway).

[214] Another difficult issue that the relative externalities principle does not address—and that we have bracketed throughout this Article—is the specific identity of the bases that federal and state governments should tax, whether separately or jointly. For seminal analyses of this issue, see Musgrave, supra note 132; Oates, Fiscal Federalism, supra note 132; Oates, Taxation in a Federal State, supra note 132.

understand how responses to the tax assignment problem shape the distribution of political power across federal systems—we need to look more closely at the various real-world contexts in which tax base conflicts arise.

B. Federal Constitution

1. Direct Tax Clauses

The most contested—and contemporarily relevant—application of the separation of bases principle in the U.S. Constitution lies in the two Direct Tax Clauses. Those provisions—as noted in Section I.A—require that any "direct" tax must be apportioned among states according to their Census-counted populations.[215] The Sixteenth Amendment exempted income taxes from apportionment but left the requirement in place for all other direct taxes. The upshot is that Congress can freely tax income, but apportionment functions as a formidable barrier to any federal direct tax that is not an income tax.

Leading scholars of tax and constitutional law have dismissed the Direct Tax Clauses as "antiquated."[216] Calvin Johnson writes that the apportionment of direct taxes is a "silly requirement"—"a glitch, or foul-up, in the core of the Constitution," and "the kind of mistake that lawyers or analytic philosophers should have fixed, but did not."[217] Bruce Ackerman concurs, writing that "[w]e should allow the 'direct tax' clauses to rest in peace."[218] Meanwhile, the Direct Tax Clauses' defenders—in the academy and in the judiciary—typically appeal to federalism values.[219] As Justice Thomas put it in his *Moore* dissent, "[t]he limitations on the Federal Government's ability to exercise [the direct tax] power were . . . an essential component of the constitutional compromise," alleviating pressure on "the States to compete with the Federal Government for a tax base." [220]

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[215] See supra note 44.

[216] See Neil S. Siegel & Steven J. Willis, Direct Tax Clauses: Common Interpretation, Nat'l Constitution Ctr. (2022), https://constitutioncenter.org/the-constitution/articles/article-i/clauses/757 (noting, without endorsing, this view).

[217] Calvin H. Johnson, Apportionment of Direct Taxes: The Foul-Up in the Core of the Constitution, 7 Wm. & Mary Bill of Rts. J. 1, 3 (1998).

[218] Bruce Ackerman, Taxation and the Constitution, 99 Colum. L. Rev. 1, 3 (1999).

[219] See, e.g., Erik M. Jensen, The Apportionment of "Direct Taxes": Are Consumption Taxes Constitutional?, 97 Colum. L. Rev. 2334, 2397, 2402 (1997) (noting that the Direct Tax Clauses respond to "[t]he danger that the national taxing power could destroy the states by destroying the states' abilities to maintain their own revenue system," and adding that there is at least "some logic" to this view).

[220] Moore v. United States, 144 S.Ct. 1680, 1714–15 (2024) (Thomas, J., dissenting).

Our game-theoretic analysis complicates both the scholarly critique and the federalism defense of the Direct Tax Clauses. Under either state of the world identified by our relative externalities principle—whether the rate externality dominates or the enforcement externality dominates—the Direct Tax Clauses perform an intelligible function. But this function is not necessarily to protect the states. We take each point in turn.

Consider first the possibility that the rate externality exceeds the enforcement externality, so that the relative externalities principle recommends separation of bases. In that case, the Direct Tax Clauses are far from "silly": they accomplish exactly the separation that promotes efficiency. Indeed, rather than being "antiquated," constitutional limitations on Congress's power to tax property are perhaps more relevant today than they were circa 1789. Recall that until the Civil War, the federal government could meet its revenue needs mostly through customs duties—a base that states, by virtue of the Import/Export Clause, could not tax.[221] Potential conflict and coordination over an income tax base would have seemed like a remote possibility: while some European countries experimented with income taxation during the Napoleonic Wars, the income tax did not enter the "arsenal of revenue raising instruments" commonly used at the national level until the nineteenth century.[222] Indeed, no country would raise more than 5% of revenue from income taxation until the United Kingdom in the 1840s.[223] Since then, however, the income tax—as Toke Aidt and Peter Jensen observe—has "moved from the margins to the center of the fiscal state" across the developed world.[224] The question of who in the United States would tax the income base—the federal government, the states, or both—is relevant today to an extent that, in the early years of the Republic, it was not.

Now consider the other possibility: that the enforcement externality exceeds the rate externality, so that the relative externalities principle recommends co-occupation of bases. In this case, the Direct Tax Clauses help the governments to coordinate on co-occupying a particular base—namely, income. The Sixteenth Amendment freed the federal government from the Court-imposed fetters on

[221] See Hungerford, supra note 56, at 2 tbl.1.
[222] See Toke S. Aidt & Peter S. Jensen, The Taxman Tools Up: An Event History Study of the Introduction of the Personal Income Tax, 93 J. Pub. Econ. 160, 161–62 (2009).
[223] See id. at 162 tbl.1.
[224] Id. at 161. For an exploration of the factors leading to the rise of income taxation, see Conor Clarke, Edward Fox & Wojciech Kopczuk, What Made Income Taxes Possible? (2026) (unpublished manuscript) (on file with author).

income taxation, but it did not ensure co-occupation. By way of comparison, England periodically imposed national-level land taxes from 1693 to 1963,[225] while local authorities have long imposed their own real property taxes.[226] It is at least conceivable that—absent the Direct Tax Clauses—property rather than income could have emerged as the co-occupied base. The Direct Tax Clauses, by making it difficult (albeit not impossible) for Congress to tax property, significantly increased the probability that federal and state governments would converge on an income tax. And indeed, forty-two states plus the District of Columbia now tax income,[227] with the income tax now accounting for the largest single source of state-level tax revenue.[228] At least arguably, the Direct Tax Clauses helped to ensure that the Bach-Stravinsky game between the federal government and the states resulted in a pure strategy Nash equilibrium in which income—not property—is the co-occupied base.

Seen in this light, the Direct Tax Clauses—contra the contemporary critique—are not obviously a "glitch" or "foul-up."[229] But contrary to the federalism-based defense, our analysis suggests that the Direct Tax Clauses also do not obviously redound to the benefit of the states. Absent the Direct Tax Clauses, one can imagine a scenario in which the federal government might tax property and thereby enhance the ability of states to collect their own property taxes—a scenario in which, in our terms, the positive enforcement externality from federal property taxation exceeds the negative rate externality. As Yilin Hou and coauthors observe, the main challenge facing property tax systems is valuation, which "demands up-to-date information about multiple aspects of properties and requires trained professional staff, thereby posing high costs in terms of technology and

[225] See Donald E. Ginter, A Measure of Wealth: The English Land Tax in Historical Analysis 3–4 (1992).

[226] See Alan R. Prest, United Kingdom Land Taxation in Perspective, in Land Value Taxation: The "Progress and Poverty" Centenary 139–40 (Richard W. Lindholm & Arthur D. Lynn, Jr., eds., 1982).

[227] See Andrey Yushkov & Katherine Loughead, State Individual Income Tax Rates and Brackets, 2025, Tax Found. (Feb. 18, 2025), https://taxfoundation.org/data/all/state/state-income-tax-rates. The forty-two states include Washington, which taxes income only if it comes from capital gains. These state income taxes are—to be clear—in addition to, not in lieu of, state and/or local property taxes.

[228] What Are the Sources of Revenue for State and Local Governments?, Tax Policy Ctr. (Jan. 2024), https://taxpolicycenter.org/briefing-book/what-are-sources-revenue-state-and-local-governments.

[229] See Johnson, supra note 217, at 3.

personnel."[230] And "[o]n top of these difficulties," the authors add, "property valuation is also susceptible to idiosyncratic errors in assessment."[231] If federal officials were to assess the value of properties for purposes of a hypothetical federal property tax, state and local officials could potentially free-ride on those federal assessment efforts, thus reducing their own enforcement burden. Alternatively, independent federal assessments might serve to validate state and local assessments or—in cases where estimates diverge—might aid state and local efforts at error correction. For these reasons, it is far from clear that state and local governments actually benefit from restrictions on the federal government's ability to tax their preferred base.

To repeat, our claim is not that the Framers drafted the Direct Tax Clauses with the goal of pushing states to tax income.[232] (Such a claim would be wildly anachronistic given that the first federal income tax did not take effect until 1862.[233]) Rather, our argument is that both the efficiency and federalism implications of the Direct Tax Clauses are more nuanced than on first glance they might seem. If the Direct Tax Clauses are construed so that they effectively prohibit federal taxation of property, they help to ensure potentially productive co-occupation of the income

[230] See Yilin Hou, Lei Ding, David J. Schwegman & Alaina G. Barca, Assessment Frequency and Equity of the Property Tax: Latest Evidence from Philadelphia 1 (Fed. Reserve Bank of Philadelphia, WP 21–43, Jan. 2025), https://doi.org/10.21799/frbp.wp.2021.43.

[231] Id.

[232] Conor Clarke and Peter Wiedenback suggest that the practice of apportionment initially emerged in fourteenth century England "to mitigate agency problems that can arise when a central authority must rely on local agents to measure and collect a tax." Conor Clarke & Peter Wiedenback, The Original Function of Tax Apportionment, 188 Tax Notes Fed. 1215, 1220 (2025). As the authors explain:

> Local officials have relevant expertise . . . and have more legitimacy with local residents, who do not enjoy the scrutiny of the king's agents. Therefore, there are many good reasons for the king to enlist local participation, rather than attempt to send his own agents to the dispersed villages episodically. From the perspective of each village, however, this situation resembles a familiar collective action problem. . . . Local officials naturally may want their friends and neighbors to benefit from the available discretion. Assigning an ex ante apportioned quota to each village . . . mitigates these problems.

Id. While Clarke and Wiedenback note that apportionment might have served other purposes by the time of the 1787 Constitutional Convention, their theory of apportionment's origins suggests deep connections between the "original function" of apportionment and the role of the Direct Tax Clauses in our account: then—as now—apportionment requirements potentially made it easier for the central government to leverage the enforcement capabilities of local authorities.

[233] See Sheldon D. Pollack, The First National Income Tax, 1861–1872, 67 Tax Law. 311, 321–22 (2014).

tax base. But state governments do not obviously emerge as fiscal winners. They may even turn out to be relative losers in a Bach-Stravinsky game with Congress.

Whether these insights should have any impact on the interpretation of the Direct Tax Clauses depends, of course, on one's theory of constitutional interpretation. For "functionalists" who interpret constitutional provisions to advance what they understand to be the provisions' underlying purposes,[234] the answer is perhaps yes: if an underlying purpose of the Direct Tax Clauses is federalism, and an expansive definition of "direct taxes" would potentially hobble the states' revenue-raising efforts or disadvantage the states in bargaining vis-à-vis Congress, then a functionalist approach might counsel in favor of a narrower construction. But even if one is a formalist (e.g., an originalist or a textualist) who believes that consequences are minimally relevant to the jurisprudential inquiry, our analysis offers a deeper understanding of the ways in which the American fiscal constitution mediates between federal and state power, whether or not it tips the balance one way or the other in litigated cases.

2. Import-Export Clause and Prohibition on Tonnage Duties

While the Direct Tax Clauses restrict Congress's power to tax what traditionally was the states' primary base, the Import-Export and Tonnage Clauses present near-mirror images: they restrict the states' power to tax what historically was the federal government's primary base: international commerce. The Import-Export Clause in Article I, section 10 provides that "[n]o State shall, without the Consent of the Congress, lay any Imposts or Duties on Imports or Exports, except what may be absolutely necessary for executing it's inspection Laws . . . ."[235] The Tonnage Clause, which comes right afterwards, prohibits any state, "without the Consent of Congress," from laying "any Duty of Tonnage"[236]—in other words, a tax based on the internal capacity of a vessel.[237] Although largely excluded from constitutional law course curricula today, both provisions generated significant debate at the

[234] See Daniel Hemel, Formalism, Functionalism, and Nonfunctionalism in the Constitutional Law of Tax, 2024 Sup. Ct. Rev. 327, 348–349.

[235] U.S. Const. art. I, § 10, cl. 2.

[236] U.S. Const. art. I, § 10, cl. 3.

[237] Erik M. Jensen, Quirky Constitutional Provisions Matter: The Tonnage Clause, Polar Tankers, and State Taxation of Commerce, 18 Geo. Mas. L. Rev. 669, 682 (2011).

Philadelphia Convention,[238] and both continue to be the subjects of high-stakes litigation.[239]

The relative externalities principle sheds light on both of these clauses. As the Supreme Court would later recognize, one of the "main concerns" that motivated the Import-Export Clause was that "import revenues were to be the major source of revenue of the Federal Government and should not be diverted to the States."[240] Put another way, the Import-Export Clause ensured that states would not encroach upon Congress's import tax base. The Tonnage Clause similarly cleared the field for federal tonnage taxation, and one of the first statutes enacted by the first U.S. Congress was a tonnage tax with rates ranging from 6 cents to 50 cents per ton.[241] To be sure, both the Import-Export and Tonnage Clauses were also motivated by horizontal-federalism concerns: specifically, a worry that seaboard states would use tonnage taxes to penalize consumers in landlocked states.[242] Still, we can see in both the Import-Export and Tonnage Clauses an early antecedent to rate-externality reasoning: the Framers did not want states to tax imports and tonnage because they worried about the negative ramifications for federal revenue-raising.

What about the flip side of the relative externalities principle: the idea that state taxation of a shared base could confer positive enforcement externalities on the federal government? At a time when the United States was separated by ocean from its primary trading partners, the Framers showed little concern about customs tax evasion. As Alexander Hamilton wrote in *The Federalist No. 12*:

> If . . . there be but one government pervading all the States, there will be, as to the principal part of our commerce, but ONE SIDE to guard - the ATLANTIC COAST. Vessels arriving directly from foreign countries, laden with valuable cargoes, would rarely choose to hazard themselves to the

[238] See Boris I. Bittker & Brandon P. Denning, The Import-Export Clause, 67 Miss. L.J. 521, 523 (1998) (noting that discussion of the Commerce Clause "was tame when compared with the fire and brimstone that erupted during the debate over the Import-Export Clause"); 2 The Records of the Federal Convention of 1787, at 625–26 (Max Farrand ed., 1911) (recording debate over the Tonnage Clause and noting that the final vote was six delegations in favor, four delegations against, and one delegation divided).

[239] See, e.g., Polar Tankers, Inc. v. City of Valdez, 557 U.S. 1 (2009) (Tonnage Clause); Cruise Lines Int'l Ass'n v. Suganuma, No. 25-8057 (9th Cir. appeal filed Dec. 24, 2025) (Tonnage Clause); Dulles Duty Free, LLC v. County of Loudoun, 803 S.E.2d 54 (Va. 2017) (Import-Export Clause).

[240] See Michelin Tire Corp. v. Wages, 423 U.S. 276, 285 (1976).

[241] An Act Imposing Duties on Tonnage, ch. 3, 1 Stat. 27 (1789).

[242] See Jensen, supra note 237, at 690–91.

> complicated and critical perils which would attend attempts to unlade prior to their coming into port. . . . An ordinary degree of vigilance would be competent to the prevention of any material infractions upon the rights of the revenue. A few armed vessels, judiciously stationed at the entrances of our ports, might at a small expense be made useful sentinels of the laws.[243]

Hamilton might have overestimated—at least to some extent—the efficacy of federal customs tax enforcement.[244] Prescient or not, though, *The Federalist No. 12* offers a lens into the Framers' state of mind. If the Framers perceived rate-externality concerns to be significant and enforcement to be easy, then a separation-of-bases approach to import and tonnage taxes would have accorded with the relative externalities principle's prescriptions. Though they almost certainly were not thinking in terms of this principle, the tradeoff between rate externalities and enforcement externalities appears to capture at least one facet of Founding-era thinking about tariffs and tonnage taxes.

C. State Constitutions

Along with its implications for the federal Constitution, our game-theoretic analysis in Part II sheds light on state constitutional design, an area often "neglected" by legal scholarship.[245] In Section II.C, we assumed that the first mover at the constitutional stage was the federal government, which could make a take-it-or-leave-it offer to the state. But the oldest state constitutions precede their federal counterpart—the 1780 Constitution of the Commonwealth of Massachusetts has a claim to being the "oldest functioning written constitution" in the world.[246] It is at least conceivable that the states could have moved first—constraining themselves from taxing their dispreferred base—and thus ensured coordination with the federal government on state-favorable terms. Our model in Part II, by illustrating the

[243] The Federalist No. 12, at 95 (Alexander Hamilton) (Clinton Rossiter ed., 1961).

[244] On the challenges of enforcing customs duties, see generally Gautham Rao, National Duties: Custom Houses and the Making of the American State (2016).

[245] On the neglect of state constitutions in U.S. legal scholarship, see G. Alan Tarr, Understanding State Constitutions 2 (2018).

[246] See John Adams & the Massachusetts Constitution, Commonwealth of Massachusetts, https://www.mass.gov/guides/john-adams-the-massachusetts-constitution (last visited Feb. 15, 2026). New Hampshire adopted the first colonial constitution in 1776 but replaced that document in 1784 with its current constitution, which "has lasted essentially unchanged for more than two centuries." See Lawrence Friedman, The Endurance of State Constitutions: Preliminary Thoughts and Notes on the New Hampshire Constitution, 60 Wayne L. Rev. 203, 203, 208 (2014).

strategic benefits of self-constraint, raises the question: why didn't states seize the opportunity to bind themselves?

Indeed, U.S. states enjoy one important structural advantage vis-à-vis the federal government at the constitutional stage of play: whereas the framers believed that they needed state ratification to legitimize the original federal Constitution,[247] and Article V explicitly provides that subsequent amendments require the approval of three-quarters of the states,[248] state constitutional amendments do not need federal approval. On a blank slate, one might have expected states to exploit this advantage by unilaterally prohibiting themselves from taxing income. When the rate externality exceeds the enforcement externality, as in the assurance game in Table 1, a state constitutional ban on state-level income taxation would result in the same welfare-maximizing equilibrium as a federal constitutional limit on federal-level property taxation (with both governments taxing their preferred base). However, when the enforcement externality exceeds the rate externality, as in the Bach-Stravinsky game in Table 2, a state constitutional ban on state income taxation would ensure convergence on the state's preferred equilibrium (joint taxation of property) rather than the federal government's preferred equilibrium (joint taxation of income). If the states were uncertain as to which externality would predominate—but certain that they preferred to tax property over income—then they could have improved their expected payoff by taking their own income taxation option off the table.

The best explanation for why the federal government gained the upper hand in bargaining over base allocation—notwithstanding the states' ability to move unilaterally—is a historically contingent one. Before there was any federal bureaucracy, the idea that federal tax enforcement might one day facilitate state tax collection would have seemed quite foreign to the framers of federal and state constitutions. Illustratively, Alexander Hamilton—who envisioned a much more expansive federal government than many of his contemporaries—assumed in *Federalist No. 36* that the federal government would free-ride on the more robust state tax systems to collect internal taxes, rather than the reverse.[249] Thus, when the framers adopted—and the states ratified—the Direct Tax Clauses, the states likely

[247] See Akhil Reed Amar, America's Constitution: A Biography 5–10, 429–33 (2005).
[248] See U.S. Const. art. V.
[249] The Federalist No. 36, supra note 170, at 235-36.

could not have anticipated that those provisions might one day redound to their detriment.

In theory, the states could have sought to renegotiate the terms of the base allocation bargain at a later juncture—for example, when Congress presented the Sixteenth Amendment to the states for ratification.[250] But at that point, the states were divided. Some were already interested in imposing their own income taxes. (Wisconsin and Mississippi adopted the first state-level comprehensive income taxes during the period when the Sixteenth Amendment was out for ratification.[251]) Leaders of other states—such as Virginia—had little interest in income taxation at either the federal or state level.[252] Perhaps if the states were more homogeneous in ideology or interest, they could have developed a strategy to ensure that they—not the federal government—would get to set the constitutional terms of the base allocation game. But the states failed to act in unison. Ultimately, five states enacted constitutional amendments that prohibited state-level income taxes.[253] But with the federal Direct Tax Clauses still in place, the opportunity for states to induce co-occupation of the property tax base had passed by.

Aside from historical happenstance and the challenge of coordinating dozens of states with diverse objectives, there is an additional reason why the federal government—not the states—might have proven better able to bind itself at the constitutional stage of play: the federal Constitution is unusually difficult to amend.[254] State constitutions, by contrast, tend to be much more plastic. According

[250] During the debate over the Sixteenth Amendment in the U.S. Senate, Democrat Anselm McLaurin of Mississippi suggested that "the phrases 'direct taxes' and 'other direct' be stricken from the Constitution, thus leaving only capitation taxes to be apportioned according to population." See John D. Buenker, The Income Tax and the Progressive Era 126 (1985). McLaurin's language would have opened a wide door to federal taxation of property, thus facilitating co-occupation of that base. Republican Senator Norris Brown of Nebraska, the sponsor of the resolution calling for an income tax amendment, rejected McLaurin's proposal for reasons that remain obscure. See id. Historian John Buenker's comprehensive account of the Sixteenth Amendment's adoption does not mention McLaurin's idea ever resurfacing during the ratification debates. See id. at 138–330.

[251] See Howe & Reeb, supra note 66, at 114.

[252] See Buenker, supra note 250, at 230–31 (noting that the Martin-Flood-Byrd organization, which dominated Virginia politics from the 1890s until the mid-twentieth century, showed a "longstanding antipathy" toward income taxation).

[253] Florida was the first to do so in 1924. See Fla. Const. art. VII, § 5; accord Nev. Const. art. 10, § 1, cl. 9; Tenn. Const. art. II, § 28; Tex. Const. art. VIII, § 24-a; Wyo. Const. art. 15, § 18.

[254] See Donald S. Lutz, Principles of Constitutional Design 170 (2006) (ranking the U.S. Constitution as the world's most difficult to amend); Richard Albert, The World's Most Difficult Constitution to Amend?, 110 Cal. L. Rev. 2005, 2007–09 (2022) (collecting estimates of amendment difficulty and concluding that "[t]hese studies have all converged on a similar finding: the U.S. Constitution is difficult to amend"); see also Donald S. Lutz, Toward a Theory of Constitutional

to Mila Versteeg and Emily Zackin, the average U.S. state revises its constitution approximately once every three years—five times as frequently as the federal government amends its.[255] State constitutions are, to be sure, still more difficult to amend than most state statutes, typically requiring a supermajority vote of the state legislature and a simple majority in a citizen referendum.[256] But as Alan Tarr observes, state constitutions—unlike their federal counterpart—are generally treated as "a species of ordinary law," "no different in character from statutes or other legal enactments," and "to be changed whenever necessary."[257]

Some scholars consider the difficulty of amending the federal Constitution to be a flaw in the framers' design—the "most truly egregious feature" of the federal organic document, according to Sandy Levinson.[258] But the game-theoretic analysis in Part II highlights two benefits of rigidity. First, an effectively unamendable constitution can help the federal government guarantee convergence on the welfare-maximizing equilibrium in the assurance game in Table 1. That is, by removing property taxation from the federal government's strategy menu, the rigid Direct Tax Clauses assure states that they can tax their preferred base (property) without any risk of co-occupation. Second, in the Bach-Stravinsky game in Table 2, where co-occupation is optimal, the rigidity of the federal Constitution signals to the states that their only chance at co-occupation is to tax income. If both the federal and state constitutions were as flexible as "ordinary law," then the legislative stage in Section II.B would be the only stage of play, potentially resulting in inferior outcomes for actors at both levels.

To be clear, our claim is not that the federal Constitution's rigidity is a virtue in every respect or that states should seek to emulate the federal Constitution's stickiness. Indeed, even in the domain of tax assignment, constitutional rigidity can be a vulnerability when—for example—economic and technological conditions change, such that a base that the constitution previously placed off limits for the government at one level subsequently becomes optimal for that government to tax.

Amendment, 88 Am. Pol. Sci. Rev. 355, 362 (1994) (estimating that "the U.S. Constitution has the second-most-difficult amendment process" out of all country constitutions).

[255] See Mila Versteeg & Emily Zackin, American Constitutional Exceptionalism Revisited, 81 U. Chi. L. Rev. 1641, 1674–75 (2014).

[256] See id. at 1670–71 & nn.134–37.

[257] See Alan Tarr, American State Constitutions as Ordinary Law, 50 Shades of Federalism (2023), https://50shadesoffederalism.com/case-studies/american-state-constitutions-as-ordinary-law.

[258] See Sanford Levinson, Meliorism v. "Bomb-Throwing" as Techniques of Reform, 48 Tulsa L. Rev. 477, 491 (2013); see also Albert, supra note 254, at 2007 ("Far from being a badge of honor, the distinction of topping the global charts on constitutional rigidity is cause for alarm.").

Our point is simply that some coordination challenges between governments at different levels may be easier to resolve when at least one of the governments has a rigid constitution, and state constitutional flexibility—sometimes cited as an advantage of state constitutions[259]—may sometimes be a liability in intergovernmental bargaining.

D. The State and Local Tax Deduction

Constitutional constraints are not the only instruments through which the federal government can shape state tax policy. Subconstitutional rules can perform a similar coordinating function–and can be adjusted as conditions change. The most prominent example is the deduction for state and local taxes, colloquially known as the SALT deduction. Current law allows taxpayers who itemize on their federal income tax returns to deduct state and local property taxes—as well as their choice of either state and local income taxes or state and local sales taxes—up to a cap of roughly $40,000.[260]

Through the SALT deduction, the federal government reimburses taxpayers for paying taxes to state and local governments. The reimbursement amount depends on the taxpayer's federal tax rate.[261] For example, someone whose federal marginal rate is 35% receives $0.35 back for every $1 paid to their state (up to the cap). This reimbursement takes some of the sting out of paying taxes to a state or local government.

The SALT deduction is a longstanding feature of federal income tax law, dating back to the first federal income tax in 1862 (more than six decades before the Sixteenth Amendment).[262] Notwithstanding its timeworn status, the deduction has emerged as a political lightning rod in recent years. In 2017, Congress imposed a $10,000 cap on the deduction as part of a Republican-backed tax package,[263] precipitating a backlash from suburban voters in high-tax states in the next year's

[259] See, e.g., Jeffrey S. Sutton, 51 Imperfect Solutions: States and the Making of American Constitutional Law 213 (2018).

[260] See I.R.C. § 164(b)(7)(A). The cap is set at $40,000 for tax year 2025 and rises at a rate of 1% per year from tax years 2026 through 2029, after which it is set to fall to $10,000. See id.

[261] See Daniel Hemel, The Death and Life of the State and Local Tax Deduction, 72 Tax L. Rev. 151, 159 (2019).

[262] See Act of July 1, 1862, ch. 119, § 91, 12 Stat. 473, 473–74. Indeed, the SALT deduction is arguably even older than that. The Revenue Act of 1861 also included a federal SALT deduction, see Act of Aug. 5, 1861, ch. 45, § 49, 12 Stat. 292, 309, though that law never took effect. See Hemel, supra note 261, at 152 n.5.

[263] Pub. L. No. 115-97, § 11042, 131 Stat. 2054, 2085-86 (2017).

midterm elections.[264] And in 2025, House Republicans from high-tax states withheld their votes for President Trump's signature tax legislation until congressional leaders agreed to raise the cap to $40,000.[265]

Our analysis does not, of course, resolve the policy debate or political controversy over the SALT deduction. It does, however, reveal three ways in which the SALT deduction shapes intergovernmental bargaining over base allocation. First, and most straightforwardly, the SALT deduction increases the negative externality that states foist upon the federal government when they raise their tax rates. Even without the SALT deduction, a state income tax hike will discourage taxpayers from earning income, thus shrinking the federal government's income tax base. The SALT deduction exacerbates that negative rate externality because even if taxpayers do not change their behavior—even if they earn and report the same amount of income as before—their additional state tax payments may qualify them for a larger federal SALT deduction that, in turn, reduces their federal tax bill.[266] Moreover, the negative rate externality arises even when states tax property—a base that the federal government leaves untaxed—so long as state property tax payments are eligible for the SALT deduction. Thus, the SALT deduction is an additional channel through which negative cross-base rate externalities arise.

Second, and more subtly, the SALT deduction causes the federal government to internalize a smaller share of the benefits of its enforcement efforts while causing state governments to internalize a larger share of the benefits of their enforcement activities. When the federal government enforces its income tax, the federal government increases state income tax collections, which—in turn—enables state taxpayers to claim larger federal SALT deductions. Thus, the SALT deduction potentially reduces the incentive for the federal government to enforce its own income tax. By contrast, the SALT deduction increases the incentive for state

[264] See Noah Zwiefel, Did SALT-y Voters Punish Republicans in 2018?, Tax Pol'y Ctr.: TaxVox (Oct. 8, 2019), https://taxpolicycenter.org/taxvox/did-salt-y-voters-punish-republicans-2018.

[265] See Erik Wasson & Nacha Cattan, Johnson Says Deal Reached on Raising SALT Cap to $40,000, Bloomberg News (May 21, 2025), https://www.bloomberg.com/news/articles/2025-05-21/johnson-says-agreement-reached-on-40-000-salt-cap-increase.

[266] Some studies find that the SALT deduction encourages states to structure their tax systems so that more of their residents' state tax payments are deductible from federal taxable income and so that taxpayers in higher brackets—who gain a larger benefit from the SALT deduction—pay a larger share of state taxes. See, e.g., Howard Chernick, A Model of the Distributional Incidence of State and Local Taxes, 20 Pub. Fin. Q. 572 (1992); Charles E. Scott & Robert K. Triest, The Relationship Between Federal and State Individual Income Tax Progressivity, 46 Nat'l Tax J. 95 (1993); Howard Chernick, On the Determinants of Subnational Tax Progressivity in the U.S., 58 Nat'l Tax J. 93 (2005).

governments to enforce their taxes—provided that those taxes are eligible for the federal SALT deduction—because the states' enforcement efforts not only yield additional state tax revenues but also enable state taxpayers to claim larger federal SALT deductions. Those larger federal SALT deductions mean that state taxpayers—who are generally state residents—pay less in federal income tax, potentially putting more money back into the state economy.

Finally, the SALT deduction may act as a substitute for the federal Constitution in achieving Congress's preferred allocation of bases. Suppose, for example, that the rate externality exceeds the enforcement externality, in which case Congress will prefer that the federal government and the states tax different bases. As we explained above, one way for Congress to achieve this goal is through the federal Constitution: for example, a constraint on the federal government's power to tax property can act as a credible commitment that Congress will tax income, thus resolving the assurance game depicted in Table 1. Another way for Congress to achieve the same goal is to provide a federal deduction for state property taxes but not state income taxes—a possibility that Congress briefly considered in the fall of 2017.[267] By making state property taxes less painful for state taxpayers to pay, Congress can potentially convert property taxation into the state's dominant strategy, in which case the federal government can tax its preferred base (income) without running a risk of base overlap.

Now suppose instead that the enforcement externality exceeds the rate externality, in which case Congress will prefer for the federal and state governments to tax the same base (presumably, income). Again, Congress can achieve its preferred assignment of bases through a constitutional constraint on its own power to tax property. Alternatively, Congress can design the SALT deduction so that only state income taxes—but not state property taxes—are deductible (the opposite of the reform contemplated in 2017). By making income taxation more attractive to the states, Congress can increase the probability of convergence on its preferred base.

For a time, Congress actually did structure the SALT deduction in a manner that arguably encouraged state income taxation. In the Tax Reform Act of 1986, Congress eliminated the SALT deduction for state sales taxes but retained the

[267] See Frank Sammartino & Kim S. Rueben, Who Would Benefit If Congress Keeps the Property Tax Deduction, Tax Pol'y Ctr.: TaxVox (Nov. 6, 2017), https://taxpolicycenter.org/taxvox/who-would-benefit-if-congress-keeps-property-tax-deduction.

deduction for state income and property taxes.[268] While the limited SALT deduction did not affect states' choice between income and property taxes, it did generate an incentive for states to avoid sales taxes, potentially nudging them toward a shared income base. Nearly two decades later, in 2004, Congress partially reversed course, giving taxpayers the option of deducting sales taxes in lieu of income taxes.[269] Thus the SALT deduction no longer affects the states' income-versus-sales-tax choice in the same way that it once did.[270]

Our framework not only highlights the substitutability between constitutional constraints and the SALT deduction but also offers guidance as to which of these tools Congress should choose. Again, the relative externalities principle proves instructive. Recall that from Congress's perspective, the SALT deduction increases the negative rate externality that states impose upon the federal government but also encourages states to exert more enforcement effort, which—when bases are shared—confers a positive externality on the federal fisc. Thus the benefit to Congress of using the SALT deduction rather than a constitutional constraint depends, in part, on whether the resulting increase in the negative rate externality exceeds the gain from aligning the states' enforcement incentives more closely with federal objectives.[271]

The SALT deduction carries one additional advantage over the federal Constitution as a tool to achieve coordination on federal-favorable terms: the SALT deduction, because it is ordinary law, can be amended without ratification by the

[268] See Pub. L. No. 99-514, § 134, 100 Stat. 2085, 2116 (amending § 164 to eliminate deduction for sales taxes).

[269] American Jobs Creation Act of 2004, Pub. L. No. 108-357, § 501, 118 Stat. 1418, 1520–21 (partially restoring sales tax deduction); see also Hemel, supra note 261, at 154 (recounting history). Brian Galle finds that after Congress partially restored the SALT deduction for state sales taxes in 2004, state revenues in sales tax-reliant states rose—consistent with the theory that federal deductibility affects the states' tax mix. See Galle, supra note 153, at 153–55.

[270] An even more dramatic example of Congress using federal tax policy to influence states' choice of tax base is the federal credit for state estate taxes, first introduced in 1924. See Revenue Act of 1924, Pub. L. No. 68-176, § 301, 43 Stat. 253, 304. Before it was phased out, the credit ensured that estate taxes paid to a state would reduce federal estate tax liability dollar for dollar up to a maximum 16% state tax rate. See I.R.C. § 2011, repealed by Economic Growth and Tax Relief Reconciliation Act of 2001, Pub. L. No. 107-16, § 532(a), 115 Stat. 38, 73. The credit was phased out from 2002 to 2004 and replaced with a deduction starting in 2005. See Economic Growth and Tax Relief Reconciliation Act of 2001, Pub. L. No. 107-16, § 532(a), 115 Stat. 38, 73–74 (phaseout of credit); id. § 532(b), 115 Stat. at 74–75 (codified at I.R.C. § 2058). With the credit, Congress effectively enlisted states as co-enforcers of the estate tax.

[271] Note that the negative rate externality arises whenever Congress allows a SALT deduction for state taxes, regardless of whether those state taxes are imposed on a base that the federal government also taxes. By contrast, the federal government benefits from the increase in state enforcement effort only when the state enforces taxes on a co-occupied base.

states. Recall from the previous section that the federal government—unlike the states—cannot bind itself unilaterally. Federal constitutional revisions require state sign-off, and amendments that strengthen the federal government's hand in intergovernmental bargaining are likely to be possible only under very specific historical conditions. Weighing in the opposite direction is the fact that Congress, when it allows a SALT deduction, forgoes revenue that it would have collected if state and local tax payments were nondeductible. Thus, for Congress, the choice between the SALT deduction and constitutional constraints reflects a tradeoff between ease of enactment and budgetary expense.

E. Comparative Law

Our analysis of the tradeoff between constitutional and subconstitutional coordination mechanisms serves the further purpose of placing the U.S. tax assignment system in comparative context. Some countries—such as India and Switzerland—rely even more heavily than the United States on constitutional tools to divide tax bases between national and subnational governments.[272] Others primarily use subconstitutional tools. For example, in Australia—whose Constitution allows both the federal government and the states to tax income—the central government induced states to drop their preexisting income taxes in the early 1940s through a subconstitutional "two-step offer": first, the central government dramatically raised its own income tax, laying claim to much of the available base; second, it offered to reimburse the states at a rate that roughly compensated them for their lost revenues if they suspended or repealed their own income tax laws.[273] While a comparative approach does not tell us which approach is better (and the answer may depend upon country-specific factors), a comparative perspective does suggest that both the constitutional and subconstitutional paths are potentially viable options.

A comparative perspective also allows us to see that the U.S. approach to the taxation of shared bases—with federal and state governments each collecting their own taxes—is not the only possible method of shared-base enforcement. For example, in Canada, the federal government enforces not only its own income tax but also the provincial personal income tax in every province except Quebec, which

[272] See Appendix A.

[273] See Rory Gillis, Federalism and Vertical Tax Competition, 73 Am. J. Comp. L. 76, 102–03 (2025). The Canadian federal government induced all of the provinces to suspend their income taxes for five years in the 1940s through a similar two-step offer. See id. at 95–97.

has opted not to enter into a federal-provincial tax collection agreement.[274] Outside Quebec, the Canadian approach avoids the efficiency loss that would otherwise arise from the federal and provincial governments duplicating each other's enforcement efforts. At the same time, the Canadian approach sacrifices the potential benefits of redundancy—the advantage of having a set of state eyes double-check the federal tax collector's work (and vice versa).[275]

Neither the U.S. approach nor the Canadian approach resolves the problem of enforcement incentives—the problem of governments underinvesting in tax enforcement when some benefits of their enforcement efforts accrue to a different level. For example, in Canada, the federal government bears all the costs of income tax enforcement but captures only some of the resulting revenues, since a portion of all income tax collections are remitted to the provinces.[276] Likewise, in the United States, the federal and state governments each bear the cost of their own enforcement efforts but do not internalize all the benefits, because even though the federal and state governments do not explicitly share tax collections, an increase in taxable income reported to or detected by one level of government will generally raise tax revenues for the other.

One can imagine an arrangement whereby each level of government reimburses the other for a fraction of enforcement expenses, which might come closer to resolving the enforcement incentives problem. Suppose, for example, that 30% of the yield from federal enforcement efforts accrues to states. A self-interested federal government will be incentivized to spend on enforcement only up to the point that an additional \$0.70 in expenditures yields \$1 in total income tax revenue (since only \$0.70 of that \$1 accrues to the federal government). However, if states reimburse the federal government for \$0.30 out of every \$1 that the federal government spends on enforcement, then a self-interested federal government will be willing to spend on enforcement up to the point that an additional \$1 of

[274] See Tracy Snoddon & Debora VanNijnatten, Carbon Pricing and Intergovernmental Relations in Canada 15 (Inst. for Research on Pub. Policy, IRPP Insight no. 12, Nov. 2016); Michael Smart, The Logic and Limits of Fiscal Decentralization in Canada, in Fiscal Federalism: Law, Politics, and Economics (Y. Xu & R. Krever eds., forthcoming 2026) (manuscript at 4). The Canada Revenue Agency also collects provincial corporate income taxes for every province except Quebec and Alberta. See Snoddon & VanNijnatten, supra, at 15; Smart, supra (manuscript at 4).

[275] See generally Martin Landau, Federalism, Redundancy and System Reliability, 3 Publius 173, 182–87 (1973) (highlighting the relationship between redundancy and reliability in a federal system).

[276] See Snoddon & VanNijnatten, supra note 274, at 15 (noting that the Canada Revenue Agency provides enforcement services to the provinces "free of charge").

expenditure ($0.30 of which is recouped from the states) yields another $1 in total income tax revenue ($0.30 of which flows to the states).

Some countries have adopted the rudiments of a cost reimbursement scheme. For example, in Australia, the federal government enforces the goods and services (GST) tax but shares all of the revenues with the states net of collection costs.[277] In effect, the states reimburse the federal government for all of its GST enforcement expenditures. In Canada, the federal government and several provinces have negotiated tax coordination agreements whereby the federal government collects certain exclusively provincial taxes and the provinces reimburse the federal government dollar for dollar.[278] Curiously, however, no country appears to have adopted a system in which different levels of government share the costs of enforcing taxes on a co-occupied base.[279] Our focus on positive enforcement externalities serves to underscore the potential benefits of cost sharing but also leaves us with the puzzle of why cost sharing is not more common across federal systems.

F. *International Tax Law*

Finally, our analytical framework extends beyond constitutional law to illuminate the political economy of international tax law.[280] International tax is the body of law that both imposes tax on cross-border transactions and delineates each country's tax jurisdiction.[281] Our framework helps to explain important phenomena

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[277] See Greg Smith, GST as a Secure Source of Revenue for the States and Territories, 18 eJournal of Tax Research 27, 28 (2020).

[278] See, e.g., Memorandum of Agreement Concerning a Canada-Ontario Comprehensive Integrated Tax Co-ordination Agreement (Mar. 9, 2009), https://www.ontario.ca/page/tax-collection-coordination-agreements.

[279] The United States has adopted a very limited cost reimbursement scheme, but only with respect to illegal drug activities. See I.R.C. § 7624(a) ("Whenever a State or local law enforcement agency provides information to the Internal Revenue Service that substantially contributes to the recovery of Federal taxes imposed with respect to illegal drug-related activities . . . , such agency may be reimbursed by the Internal Revenue Service for costs incurred in the investigation . . . not to exceed 10 percent of the sum recovered.").

[280] Cf. Daryl J. Levinson, Law for Leviathan (2023) (analogizing between constitutional law and international law); Jack L. Goldsmith and Daryl J. Levinson, Law for States: International Law, Constitutional Law, Public Law, 122 Harv. L. Rev. 1791 (2009) (same).

[281] See Ruth Mason, The Transformation of International Tax, 114 Am. J. Int'l L. 353, 353 (2020) (noting that the course in international tax covers "how the United States taxes the foreign income of Americans," "how the United States taxes foreigners when they earn income in the United States," and international agreements that constrain each country's tax laws); Mitchell Kane & Adam Kern, The Use and Abuse of Location-Specific Rent, 76 Tax L. Rev. 277, 283 (2023) ("One of the central issues in the field of international tax law is the allocation of taxing rights across countries.").

in international tax—namely, the scope of the U.S. foreign tax credit and the recent agreement to enact a global minimum tax on corporate profits.

1. The Foreign Tax Credit

The United States allows domestic taxpayers to credit many foreign taxes against their U.S. tax liability.[282] This credit is limited to "income, war profits, and excess profits taxes."[283] For example, if Chevron pays $1 million in income taxes to Ecuador, the U.S. will, presumptively, reduce Chevron's U.S. tax liability by $1 million.[284] By contrast, Chevron will remain on the hook for any sales taxes that it pays to Ecuador.[285] This limitation has proved controversial, with taxpayers regularly lobbying to expand the credit's scope to cover additional foreign taxes beyond income taxes.[286]

Many tax scholars have puzzled over why the foreign tax credit is limited to income taxes.[287] The lawmakers who enacted the credit apparently believed that the main benefit would be to relieve "double taxation."[288] Without the credit, a U.S.

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[282] See I.R.C. §§ 27(a); 901.

[283] I.R.C. § 901(b)(1).

[284] "Presumptively" because the foreign tax credit is limited in several ways besides the set of qualifying foreign taxes. See I.R.C. § 904.

[285] A foreign tax qualifies as an "income tax"—and therefore is eligible for reimbursement via the foreign tax credit—only if it allows a deduction for "significant costs and expenses." Treas. Reg. § 1.901-2(b)(4)(i). A gross sales tax does not allow a deduction for costs.

[286] For example, in the late 2010s, many foreign countries enacted "digital services taxes"—typically, excise taxes that extract a flat, low percentage of tech companies' revenues. See Amie Ahanchian, Donald Hok, Philippe Stephanny, and Elizabeth S. Shingler, Digital Services Tax: Why the World Is Watching, Bloomberg Tax: Daily Tax Rpt. (Jan. 6, 2021) (describing the proliferation of digital services taxes), https://news.bloombergtax.com/daily-taxreport/digital-services-tax-why-the-world-is-watching; Wei Cui, The Digital Services Tax: A Conceptual Defense, 73 Tax L. Rev. 69, 75–82 (2019) (describing the typical form of a digital services tax). In response, many American tech firms pressed the Treasury Department to deem digital services taxes creditable. See, e.g., Leslie J. Schneider & Patrick J. Smith, Comment Letter on REG-101657-20: Proposed Regulations Under I.R.C. §§ 901 & 903, at 27 (Feb. 8, 2021) (arguing that "digital-services taxes . . . should continue to qualify as creditable income taxes"). In 2022, Treasury issued regulations that provided that digital services taxes are not creditable, but delayed their effect after an outcry from taxpayers. See T.D. 9959, 87 Fed. Reg. 276 (Jan. 3, 2022); I.R.S. Notice 2023-55, 2023-32 I.R.B. 1.

[287] See, e.g., Jordan M. Barry & Ariel Jurow Kleiman, Rationalizing the Arbitrary Foreign Tax Credit, 75 Tax L. Rev. 1, 30-49 (2022); Joseph Isenbergh, The Foreign Tax Credit: Royalties, Subsidies, and Creditable Taxes, 39 Tax L. Rev. 227, 229 (1984) ("There is no reason for the credit to turn on whether a foreign levy is an income tax or some other kind of tax.").

[288] See Michael J. Graetz & Michael M. O'Hear, The "Original Intent" of U.S. International Taxation, 46 Duke L. J. 1021, 1047-49 (1997) (explaining that Congress enacted the foreign tax credit "to avoid the manifest injustice of double taxation," which arises when a U.S. investor's foreign-source income "would bear both the U.S. and the foreign tax, whereas domestic income would face only the U.S. levy–discouraging investment abroad and distorting capital allocation."). Modern scholarship interprets this concern through the lens of capital export neutrality. See Daniel

person would pay tax at the U.S. rate and then again at the foreign rate on any investments abroad, but would only pay the U.S. rate on domestic investments. This would create powerful incentives to invest at home rather than abroad. By removing this incentive, the foreign tax credit potentially increases the productivity of U.S. firms. The main cost is foregone U.S. tax revenue. Since neither this benefit nor this cost is unique to income taxes, the limitation seems puzzling: Why hasn't the United States extended the credit to other foreign taxes that U.S. persons pay abroad?

Our framework suggests a solution to this puzzle.[289] Like the federal government in our model, the United States might use the foreign tax credit to steer other governments towards taxing Congress's preferred base: income. This strategy makes sense when the enforcement externality (gained by leveraging other countries' enforcement efforts) exceeds the rate externality (suffered when other countries' taxes reduce economic activity). In the international context, it is plausible that other countries' taxes reduce economic activity even when they tax non-income bases, but enforcement benefits accrue to the United States only when other countries tax income.[290] Thus, it could be in the interest of the United States to "buy" other countries' help with the enforcement of its income tax by allowing a foreign tax credit for income taxes but not, say, for sales or property taxes, as the United States does not tax the sales or property of U.S. firms abroad.

Historical evidence suggests that foreign countries have responded to this incentive. For example, in 1994, Bolivia considered adopting a "cash-flow tax"—one that exempts the normal return to capital—in order to stimulate saving. When the United States confirmed that Bolivia's proposed cash-flow tax would not be creditable, Bolivia abandoned its plan and instead enacted a conventional income tax.[291]

In sum, the foreign tax credit's limitation to income taxes can be viewed as a strategic tool through which the United States recruits foreign governments to assist

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Shaviro, The Case Against Foreign Tax Credits, J. Legal Analysis 65, 69 (2011) ("Worldwide taxation with unlimited foreign tax credits . . . has traditionally been defended as serving the worldwide efficiency norm of capital export neutrality."). This work originates with Peggy (Richman) Musgrave's classic study. See Peggy Brewer Richman, Taxation of Foreign Investment Income: An Economic Analysis (1963).

[289] Cf. Barry & Kleiman, supra note 287, at 38-43 (noting the possibility that the foreign tax credit encourages "income tax unity," but expressing doubts about the significance of such unity).

[290] See supra Section II.D.

[291] See Charles E. McClure & George E. Zodrow, The Economic Case for Foreign Tax Credits for Cash Flow Taxes, 51 Nat'l Tax J. 1, 2 (1995).

with the enforcement of U.S. income taxes—or put another way, a mechanism that Congress uses to secure positive enforcement externalities. To be clear, our analysis of the foreign tax credit is not meant to suggest that the United States is normatively justified in cajoling other countries into enacting income taxes.[292] Moreover, our analysis does not explain why the United States offers a dollar-for-dollar foreign tax credit rather than, for example, a credit of 50 cents for every $1 paid in foreign income taxes (which might be sufficient to induce foreign jurisdictions to tax the income base while imposing a smaller fiscal cost on the United States).[293] Rather, we offer our analysis as a plausible rationale for one aspect of the credit—the limit to foreign income taxes.

2. The Global Minimum Tax

Our framework also throws light on the recent agreement to impose a global minimum tax, arguably the most significant development in international tax law ever. In 2021, over 130 countries agreed to ensure that the world's largest and most profitable firms pay at least 15 percent of tax on much of their profits.[294] The agreement responded to a problem that had long plagued international tax policy: Without coordination, countries compete for mobile profit and investment by lowering their tax rates, eroding their tax bases in the international equivalent of the state tax race-to-the-bottom phenomenon.[295]

A minimum tax addresses this problem by placing a floor on effective tax rates.[296] If a firm's tax rate falls below the minimum, an additional "top-up tax" is imposed to bring the rate up to the floor.[297] For example, if the minimum rate is 15

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[292] Indeed, one of us has suggested that the foreign tax credit should be expanded so that it covers a range of taxes that tend to be enacted by poor countries. See Adam Kern, Progressive Taxation for the World, 78 Tax L. Rev. ___ (forthcoming, 2025).

[293] See Daniel N. Shaviro, Rethinking Foreign Tax Creditability, 63 Nat'l Tax J. 709, 710 (2020) (questioning the rationale for a dollar-for-dollar credit).

[294] See Org. for Econ. Coop. and Dev., Two-Pillar Solution to Address the Tax Challenges Arising from the Digitalization of the Economy 6, 6–10 (2021), https://www.oecd.org/tax/beps/statement-on-a-two-pillar-solution-to-address-the-tax-challenges-arising-from-the-digitalisation-of-the-economy-october-2021.pdf (outlining the global minimum tax and stating that 136 nations had agreed to it).

[295] For a discussion of the race-to-the-bottom phenomenon in the state tax context, see supra Section II.E.

[296] See Keen & Konrad, supra note 163, at 288-93; see also Harry Grubert & Rosanne Altshuler, Fixing the System: An Analysis of Alternative Proposals for the Reform of International Tax, 66 Nat'l Tax J. 671 (2013); Daniel Shaviro, The New Non-Territorial U.S. Tax System, Part 2, 160 Tax Notes 171 (2018).

[297] David Gamage and Ari Glogower, The Policy and Politics of Alternative Minimum Taxes, 77 Nat'l Tax J. (2024); Daniel Shaviro, What Are Minimum Taxes, and Why Might One Favor or Disfavor Them?, 40 Va. Tax Rev. 395, 402-07 (2021); James R. Hines, Jr., & Kyle D. Logue,

percent and a firm pays tax at only 5 percent, the firm owes an additional 10 percent in top-up tax. By guaranteeing that firms will pay at least the minimum rate somewhere, a minimum tax reduces the payoff from tax competition. If a firm moves to a jurisdiction with a tax rate below the minimum, the top-up tax will recapture the difference—so the firm gains nothing relative to staying in a jurisdiction that taxes at the minimum rate.[298] In turn, countries have no reason to cut their rates below the floor; doing so would sacrifice revenue without attracting additional profit or investment.[299]

The global minimum tax applies this logic to a specially constructed tax base—"excess profit"—that resembles but differs from corporate income.[300] The agreement assigns the right to collect tax on excess profit through a strict hierarchy.[301] "Source" countries—roughly, those where a firm operates—get the first opportunity to tax the firm's excess profit.[302] If a source country taxes at a rate below 15 percent, the "residence" country—where the firm's ultimate parent is headquartered—may impose a top-up tax to reach the 15 percent floor.[303] The residence country's top-up tax, however, is reduced dollar for dollar by whatever the source country collects. If the source country taxes at a 15 percent rate, the residence country collects nothing.

This architecture creates a puzzle: Why did residence countries agree to it?[304] The answer is not obvious, because the global minimum tax creates strong

Understanding the AMT, and Its Unadopted Sibling, the AMxT, 6 J. Leg. Analysis 367, 374 (2014). The charter that establishes the global minimum tax, the GloBE Model Rules, describes the additional tax as "top up tax." Org. for Econ. Coop. and Dev., Tax Challenges Arising from Digitalisation of the Economy – Global Anti-Base Erosion Model Rules (Pillar Two) art. 5.2 (2021) [hereinafter GloBE Model Rules].

[298] See Keen & Konrad, supra note 163, at 288–292.

[299] Id.

[300] The tax base is called "excess profit" because it excludes a deemed return on physical assets and payroll—the "substance-based income exclusion." See OECD, GLOBE Model Rules, supra note 297, arts. 5.2–5.3.

[301] See GloBE Model Rules, supra note 297, arts. 2.1–2.6, 5.2.

[302] A "qualified domestic minimum top-up tax" (QDMTT) is a source-country tax that conforms to the GloBE Model Rules and therefore takes priority over the residence country's "income inclusion rule" (IIR). See Org. for Econ. Coop. and Dev., Tax Challenges Arising from Digitalisation of the Economy – Administrative Guidance on the Global Anti-Base Erosion Model Rules (Pillar Two), ch. 4 (July 2023).

[303] See GloBE Model Rules, supra note 297, art. 2.1.

[304] See Wei Cui, Strategic Incentives for Adopting the Global Minimum Tax, 16 J. Leg. Analysis 211 (2024).

incentives for source countries to "soak up" all available revenue.[305] Before the global minimum tax, low-tax jurisdictions competed for corporate profit by offering rates near zero. After the minimum tax's adoption, these same countries can raise their rates to 15 percent without losing any competitive advantage, since firms must pay tax at a rate of at least 15 percent no matter what.[306] By raising rates to the 15 percent floor, however, source countries capture revenue that would otherwise have flowed to residence countries. Residence countries, in turn, collect nothing. Observing this dynamic, Wei Cui has argued that the global minimum tax is unstable, since residence countries will see no reason to sustain it.[307]

One possible answer to this puzzle is that the global minimum tax allows residence countries to set their own minimum tax rates *above* 15 percent.[308] Consider the United States. Since 2018, the United States has imposed a minimum tax, named GILTI (later renamed NCTI).[309] During the negotiations over the global minimum tax, the Biden Administration proposed raising the GILTI rate to 21 percent.[310] Had Congress enacted this proposal, the United States would have collected 6 percent of tax (21 percent − 15 percent = 6 percent) on the excess profit earned by U.S. firms abroad—even in jurisdictions that had themselves adopted the 15 percent minimum. If residence countries set rates above 15 percent, the global minimum tax could benefit them by establishing a floor from which they can build: Even if source countries soak up the first 15 percent of tax, residence countries can capture revenue above that level.

[305]See id.; Niels Johannesen, The Global Minimum Tax, 212 J. Pub. Econ. 104709, 4–5 (2022) (showing that, with a global minimum tax in place, "all havens optimally set tax rates at the level of the global minimum rate").

[306]See id. at 5 ("[R]aising the rate above [the minimum] implies that multinational firms no longer shift any profits to the haven, as other havens offer effective taxation at [the minimum].").

[307]See Cui, supra note 304.

[308]See Shafik Hebous & Michael Keen, Pareto-Improving Minimum Corporate Taxation, 225 J. Pub. Econ. 1 (2023); Johannesen, supra note 305, at 6.

[309] I.R.C. § 951A. The One Big Beautiful Bill Act of 2025 renamed GILTI as NCTI and eliminated its exemption for a deemed return on physical investment. See One Big Beautiful Bill Act, H.R. 1, 119th Cong. §§ 70323(a)(2), (3)(ii) (2025).

[310]See Dep't of Treasury, General Explanations of the Administration's Fiscal Year 2022 Revenue Proposals 11–12 (2021). The Build Back Better Act, as passed by the House, would have partially implemented the Biden Administration's proposal by, in effect, raising the GILTI rate to approximately 15 percent. See Build Back Better Act, H.R. 5376, 117th Cong. (as passed by House, Nov. 19, 2021) (amending I.R.C. § 250(a) to reduce the deduction for GILTI from 50% to 28.5%, yielding an effective GILTI rate of approximately 15% at a 21% corporate tax rate). Neither reform to GILTI was enacted in the final reconciliation legislation. Inflation Reduction Act of 2022, Pub. L. No. 117-169, 136 Stat. 1818.

Both the puzzle and this answer can be interpreted through the concepts of rate and enforcement externalities. Soaking up revenue can be understood as a rate externality: When source countries raise their tax rates on excess profit, they reduce the revenue that residence countries can collect on the same base. This externality is large and asymmetrical. Each percentage point increase in the source country's rate corresponds to a percentage point decrease in the residence country's top-up tax. And the externality runs in only one direction. Source countries soak up residence countries' revenues, but residence countries—who can collect only what source countries leave behind—impose no reciprocal burden on source countries.

At the same time, the global minimum tax also generates positive enforcement externalities. Because source and residence countries now tax the same base (excess profit), each country's enforcement efforts benefit one another. Provided that residence countries can collect some revenue—for example, by setting their minimum tax rates above 15 percent—they stand to benefit from the positive enforcement externalities flowing from source countries' efforts.

Our framework thus informs debates about the global minimum tax's stability. Skeptics are correct that source countries might impose substantial rate externalities on residence countries by soaking up revenue. But there is also a countervailing force. By committing source and residence countries to a shared tax base, the global minimum tax enables both types of countries to leverage one another's enforcement capacities. If the rate externality exceeds the enforcement externality, the agreement will likely prove unstable. If, however, the enforcement externality exceeds the rate externality, the global minimum tax might prove to be more enduring.

CONCLUSION

For decades, debates about the assignment of tax authority across levels of government have been shaped by a simple maxim: each tax base should be assigned to one government. Indeed, we have traced the roots of this belief all the way back to pre-Revolutionary American political thought. Notwithstanding the maxim's hoary origins, we have shown that the realities of fiscal federalism require a more nuanced and dynamic view. While it is sometimes best to separate bases across governments, it is sometimes better for governments to *share* tax bases so as to leverage one another's enforcement efforts. Moreover, constitutional constraints on one government's taxing power do not inherently favor another. A government that prevents itself from taxing one base (say, property) can credibly commit to taxing a different base (say, income)—and can thereby induce other governments to coordinate on its preferred base. This last observation inverts the federalism rationale for the Direct Tax Clauses and reveals that the centuries-old debate over the Direct Tax Clauses' scope—possibly the most important current controversy in the U.S. constitutional law of tax—may hold stakes that are very different from what many participants presume.

Our analysis raises as many questions as it answers. Some of these questions are empirical. For example, how large are rate and enforcement externalities in practice, and when does one dominate the other? Others are normative. For example, how should the construction of the Direct Tax Clauses change—if at all—once one recognizes that these ostensibly state-protective provisions may actually redound to the federal government's advantage? Our analytical framework cannot resolve all of these questions on its own. It can, however, uncover throughlines across the history of fiscal federalism, clarify bargaining dynamics in modern federal systems, and guide policymakers in and beyond the United States as they design and redesign the constitutional and subconstitutional rules that distribute tax authority and political power.

APPENDIX A: ASSIGNMENT OF TAX BASES BETWEEN NATIONAL AND SUBNATIONAL GOVERNMENTS IN FEDERAL SYSTEMS

Federation	National Taxes	Subnational/Local Taxes	Overlapping Taxes	Constitutional Limits on National Government's Base	Constitutional Limits on Subnational Governments' Base
Argentina	customs duties; gasoline tax; income tax; value added tax; wage tax	gross receipts tax; motor vehicle tax; stamp duties; property tax	None (though federal VAT and state gross receipts taxes fall on similar bases)	Yes. Prohibition on internal customs duties. Direct taxes, including income tax, must be "temporary" (though income tax is permanent in practice)	Yes. Prohibition on customs duties
Australia	customs duties; income tax	gambling tax; insurance tax; land tax; payroll tax; real estate transfer tax	None.	Generally no (except for prohibition on taxation of state property)	Yes. States prohibited from imposing customs duties and excises
Brazil	customs duties; income tax; tax on manufactured products	inheritance tax; services tax; urban property tax; value added tax; vehicle tax	None.	Yes. Federal government limited to enumerated taxes only	Yes. States limited to enumerated taxes only
Canada	customs duties; goods and services tax	property tax; resource taxes	consumption taxes; income tax	No. Parliament has unlimited tax power	Yes. Provinces limited to "direct" taxes
Germany	customs duties; excise taxes (including wine and spirits, but not beer); financial transaction tax; insurance tax; motor vehicle tax; solidarity surcharge (5.5% surcharge on individual and corporate income)	beer tax; gambling tax; inheritance tax; property tax; real estate transfer tax; trade tax	income tax; value added tax (collected by states; revenues shared)	Yes. Federal government limited to enumerated taxes only; income tax and VAT revenues must be shared with states	Yes. States limited to enumerated taxes only
India	customs duties; corporation tax; excise taxes (except alcohol); income tax (except agriculture)	agricultural income tax; alcohol excise tax; electricity tax; gambling tax; property tax	goods and services tax (except alcohol, electricity, and certain petroleum products)	Yes. Union (national) government prohibited from taxing bases on "State List"	Yes. States prohibited from taxing bases on "Union List"
Mexico	customs duties; excise taxes (alcohol, tobacco, fuel, sugary drinks); income tax; new vehicle tax; payroll tax	payroll tax; property tax; real estate transfer tax; vehicle ownership tax	minimal	No.	Yes. States are prohibited from taxing imports/exports, goods from other states, tobacco
Switzerland	customs duties; special consumption tax (beer and spirits but not wine, motor fuels, tobacco); stamp duty; value added tax; withholding tax on capital income	inheritance tax; property tax; wealth tax	income tax	Yes. Federal income tax is time-limited; must be renewed periodically by popular vote to extend. Rates capped to protect cantons' tax base	Yes. States prohibited from taxing items subject to federal consumption taxes

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