

DOES FEDERAL SPENDING “COERCE” STATES? EVIDENCE FROM STATE BUDGETS

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ABSTRACT—According to a recent plurality of the U.S. Supreme Court, the danger that federal taxes will “crowd-out” state revenues justifies aggressive judicial limits on the conditions attached to federal spending. Economic theory offers a number of reasons to believe the opposite: federal revenue increases may also buoy state finances. To test these competing claims, I examine for the first time the relationship between total federal revenues and state revenues. I find that, contra the *NFIB v. Sebelius* plurality, increases in federal revenue—controlling, of course, for economic performance and other factors—are associated with a large and statistically significant increase in state revenues. This version of the study provides extensive background explanations of underlying economic concepts for readers unfamiliar with the prior public finance literature.

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[H]eavy federal taxation diminishes the practical ability of States to collect their own taxes.[†]

INTRODUCTION

NFIB v. Sebelius—the health care case—upheld most of the Affordable Care Act, but allowed states to “opt out” of certain aspects of the law’s changes to the Medicaid program.¹ As early commentators have noted, the Medicaid portions of the decision rewrote seventy-seven years of precedent, altered one of the fundamental legal rules underlying the modern state, and, oh by the way, may also affect access to health care for millions.² What other writers have not yet observed is that all of those outcomes depend logically on a single factual claim, made explicitly by four “dissenters” and relied upon implicitly by the three Justices who joined the “majority” opinion. The Court’s entire analysis of that fact is set out in the quotation just above this paragraph. My goal here is to give a more serious examination, including both theoretical and original empirical analysis, of whether federal taxation affects states’ “practical ability . . . to collect their own taxes.”³

First, a little more background. Medicaid is an exercise of the federal power of conditional spending.⁴ Congress can “lay and collect Taxes . . . to . . . provide for the . . . general Welfare,” and can impose conditions on

[†] Nat’l Fed’n of Indep. Bus. v. Sebelius, 132 S. Ct. 2566, 2662 n.13 (2012) (Scalia, Kennedy, Thomas & Alito, JJ., dissenting).

¹ *Id.* at 2608 (Roberts, J.).

² Samuel R. Bagenstos, *The Anti-leveraging Principle and the Spending Clause After NFIB*, 101 GEO. L.J. 861, 864 (2013); Nicole Huberfeld et al., *Plunging into Endless Difficulties: Medicaid and Coercion in National Federation of Independent Business v. Sebelius*, 93 B.U. L. REV. 1, 2, 5–7 (2013).

³ *NFIB*, 132 S. Ct. at 2662, n.13 (Scalia, Kennedy, Thomas & Alito, JJ., dissenting).

⁴ *Frew ex rel. Frew v. Hawkins*, 540 U.S. 431, 433 (2004).

the receipt of those funds.⁵ Between 1935 and late June of 2012, that power faced few meaningful restrictions.⁶ Starting in the 1990s, though, the Court held that Congress was prohibited from “commandeering” state officials.⁷ Effectively, the federal government could regulate state officials *qua* state officials only if states were willing to accept money in exchange. In *NFIB*, however, Justice Roberts’s opinion declared that federal threats to revoke Medicaid funds in some settings could so “coerce” states that the states had no “real” choice but to comply, rendering Medicaid the practical equivalent of commandeering.⁸ Two Justices joined in that portion of the decision, while four other Justices, who described themselves as “dissenters,” basically agreed with that outcome, although they did not formally join Roberts’s opinion.⁹

What does health care have to do with state taxes? Consider Justice Roberts’s claim that the threat of Medicaid revocation was a “gun to the head” of states.¹⁰ Colorful, but states do not have heads. What they do have is budgets. A closer analogy might be the college student told by her parents, “No more beer or no tuition.” Many students would start to skip the keg parties. But Mark Zuckerberg could laugh and drink up. Financial pressure, in other words, depends on the need for and availability of other sources of revenue.¹¹ As the *NFIB* dissenters apparently recognized, Medicaid’s large contribution to state budgets does not itself make an intuitive case for coercion; for states to really be pinched by budget threats, it must also be the case that the lost funds could not readily be replaced.

The dissenters filled this logical gap by arguing that states cannot afford to replace Medicaid.¹² Their claim, again, is that federal taxes make it tougher for states to raise revenues. Although the dissenters offered no further analysis, there have also been several academic proponents of this “crowd-out” theory, most prominently the federalism scholar Lynn Baker.¹³

⁵ *South Dakota v. Dole*, 483 U.S. 203, 206 (1987) (citing U.S. CONST. art. I, § 8, cl. 1).

⁶ Huberfeld et al., *supra* note 2, at 2–3.

⁷ *Printz v. United States*, 521 U.S. 898, 926 (1997); *New York v. United States*, 505 U.S. 144, 161 (1992).

⁸ *NFIB*, 132 S. Ct. at 2604–05 (Roberts, J.).

⁹ *Id.* at 2575, 2608; *id.* at 2662 (Scalia, Kennedy, Thomas & Alito, JJ., dissenting).

¹⁰ *Id.* at 2604 (Roberts, J.).

¹¹ See Robert W. Adler, *Unfunded Mandates and Fiscal Federalism: A Critique*, 50 VAND. L. REV. 1137, 1208 (1997).

¹² *NFIB*, 132 S. Ct. at 2663 (Scalia, Kennedy, Thomas & Alito, JJ., dissenting).

¹³ Lynn A. Baker, *Conditional Federal Spending After Lopez*, 95 COLUM. L. REV. 1911, 1935–47 (1995) [hereinafter Baker, *Conditional Spending*]; see also RICHARD A. EPSTEIN, *BARGAINING WITH THE STATE* 150–57 (1993); Matthew D. Adler & Seth F. Kreimer, *The New Etiquette of Federalism*: New York, Printz, and Yeskey, 1998 SUP. CT. REV. 71, 107; Lynn A. Baker & Mitchell N. Berman, *Getting Off the Dole: Why the Court Should Abandon Its Spending Doctrine, and How a Too-Clever Congress Could Provoke It to Do So*, 78 IND. L.J. 459 (2003); Michael C. Dorf & Charles F. Sabel, *A Constitution of Democratic Experimentalism*, 98 COLUM. L. REV. 267, 430–31 (1998) (“Assuming . . . that the states cannot generally afford to forego federal highway funds, [conditional spending] works

While Baker's explanation is the most developed, even she offers little examination of crowd-out beyond the intuition that voters who are already taxed might not appreciate more taxes.¹⁴

The public finance economics literature, while not confronting the crowd-out question directly, offers both theory and some evidence that shed light on it. As economists recognize, though, the theoretical arguments are ambiguous.¹⁵ For example, on the one hand federal taxes can make state taxation more difficult by shrinking the tax "base" for each state; federal taxes on boats probably mean that there will be fewer boat sales for states to tax. But at the same time, by allowing state taxpayers to deduct state taxes paid from federal income, the federal tax code effectively offers states a matching grant to impose their own taxes, and this grant grows more generous as the federal income tax rate rises.¹⁶ Thus, theory predicts that federal taxes might actually lead to crowd-in, not crowd-out.¹⁷

Prior empirical work has attempted to determine how the dueling theories play out in reality, but the existing studies are too narrow to resolve the crowd-out debate. One set of papers looks at whether changes in the rates of one form of federal tax affect the rate of tax imposed on the same base by lower levels of government—for instance, whether federal gasoline excises increase or reduce state gas tax rates.¹⁸ But even if these

just as effectively to commandeer the state legislative process as did [commandeering.]); Thomas R. McCoy & Barry Friedman, *Conditional Spending: Federalism's Trojan Horse*, 1988 SUP. CT. REV. 85, 86; Richard B. Stewart, *Federalism and Rights*, 19 GA. L. REV. 917, 958 (1985). Notably, the doctrinal line that Justice Roberts ultimately adopts tracks closely Professor Baker's 1995 proposal, although there were also other, earlier suggestions similar to Baker's. *Compare NFIB*, 132 S. Ct. at 2605–06 (Roberts, J.) (appearing to test for coercion by looking at whether a federal grant withholds unrelated funds), with Baker, *Conditional Spending*, *supra*, at 1973–74 (proposing same), and Richard B. Stewart, *Pyramids of Sacrifice? Problems of Federalism in Mandating State Implementation of National Environmental Policy*, 86 YALE L.J. 1196, 1260–62 (1977) (concluding that same was the likely implication of then-recent Supreme Court decisions).

¹⁴ Baker, *Conditional Spending*, *supra* note 13, at 1936–38.

¹⁵ M.P. Devereux et al., *Horizontal and Vertical Indirect Tax Competition: Theory and Some Evidence from the USA*, 91 J. PUB. ECON. 451, 458–60 (2007); Alejandro Esteller-Moré & Leonzio Rizzo, *(Uncontrolled) Aggregate Shocks or Vertical Tax Interdependence? Evidence from Gasoline and Cigarettes*, 64 NAT'L TAX J. 353, 354 (2011).

¹⁶ Charles E. McLure, Jr. & George R. Zodrow, *Treasury I and the Tax Reform Act of 1986: The Economics and Politics of Tax Reform*, 1 ECON. PERSP. 37, 55 (1987); see I.R.C. § 164 (2012).

¹⁷ See Christian Kelders & Marko Koethenbueger, *Tax Incentives in Fiscal Federalism: An Integrated Perspective*, 43 CAN. J. ECON. 683, 684 (2010) ("Horizontal and vertical fiscal ties upwardly distort local tax rate choices.").

¹⁸ Linda Andersson et al., *Testing for Vertical Fiscal Externalities*, 11 INT'L TAX & PUB. FIN. 243, 245, 255–56 (2004); Timothy J. Besley & Harvey S. Rosen, *Vertical Externalities in Tax Setting: Evidence from Gasoline and Cigarettes*, 70 J. PUB. ECON. 383, 389–95 (1998); Marius Brühlhart & Mario Jametti, *Vertical Versus Horizontal Tax Externalities: An Empirical Test*, 90 J. PUB. ECON. 2027, 2048 (2006); Howard Chernick & Jennifer Tennant, *Federal–State Tax Interactions in the United States and Canada*, 40 PUBLIUS: J. FEDERALISM 508, 519–27 (2010); Devereux et al., *supra* note 15, at 461–79; Alejandro 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, 236, 249 (2002) [hereinafter Esteller-Moré

papers agreed that federal taxes change state tax *rates*—they do not¹⁹—they still would not tell us whether states actually lose money, or whether they are able to make up lost revenues elsewhere. Can states get back their lost gas taxes through cigarette taxes? The studies do not tell us.

Another set of papers examines the impact of the federal deduction for state and local taxes paid on state budgets.²⁰ Those findings, too, are largely inconsistent with one another.²¹ Even if they were in agreement, there are other factors that can contribute to crowd-in or mitigate crowd-out.

I therefore present here the first examination of the total effect of federal revenues on state revenue raising. Using a panel of state and federal budget data from 1998 to 2010, I estimate the effects of federal revenues on total state own-source revenues per capita²² and state own-source revenues as a share of state GDP. In most specifications, I find considerable evidence of crowd-in: federal revenues increase both state revenues and state revenue as a fraction of available state wealth. Given the limitations of these kinds of data, my findings do not prove that crowd-out is impossible or that crowd-out did not exist in other periods. But they do suggest that claims that federal spending coerces contemporary states may rest on a mistaken factual premise.

My main purposes here are threefold. Most importantly, I want to contribute the first piece of really useful evidence about an important fact underlying a key constitutional controversy. I also want to introduce the existing public finance economics theory on that controversy to the legal community. Readers already familiar with fundamentals of economic theory may therefore find my theoretical discussion longer than it needs to be, but on the assumption that such readers can skim I err on the side of explaining more rather than less.

& Solé-Ollé, *Canada*]; Álex Esteller-Moré & Albert Solé-Ollé, *Vertical Income Tax Externalities and Fiscal Interdependence: Evidence from the US*, 31 REGIONAL SCI. & URB. ECON. 247, 254–70 (2001) [hereinafter Esteller-Moré & Solé-Ollé, *US*]; Per G. Fredriksson & Khawaja A. Mamun, *Vertical Externalities in Cigarette Taxation: Do Tax Revenues Go Up in Smoke?*, 64 J. URB. ECON. 35, 35–48 (2007).

¹⁹ For a survey, see Chernick & Tennant, *supra* note 18, at 512–15.

²⁰ *Id.* at 515–18; Paul N. Courant & Edward M. Gramlich, *The Impact of the Tax Reform Act of 1986 on State and Local Fiscal Behavior*, in DO TAXES MATTER? THE IMPACT OF THE TAX REFORM ACT OF 1986, at 243, 244–63 (Joel Slemrod ed., 1990); Douglas Holtz-Eakin & Harvey Rosen, *Federal Deductibility and Local Property Tax Rates*, 27 J. URB. ECON. 269, 270 (1990); Edward M. Gramlich, *The Deductibility of State and Local Taxes*, 38 NAT’L TAX J. 447, 453–58 (1985); Gilbert E. Metcalf, *Assessing the Federal Deduction for State and Local Tax Payments*, 64 NAT’L TAX J. 565, 576–88 (2011); see also Bruce Bartlett, *The Case for Eliminating Deductibility of State and Local Taxes*, 28 TAX NOTES 1121, 1122–23 (1985) (surveying earlier studies).

²¹ Chernick & Tennant, *supra* note 18, at 515; Louis Kaplow, *Fiscal Federalism and the Deductibility of State and Local Taxes Under the Federal Income Tax*, 82 VA. L. REV. 413, 487 & n.206 (1996).

²² That is, revenues other than money received from the federal government.

Finally, I believe that my empirical results are independently interesting for the economic literature, whatever the implications for legal rules. The relationship between national revenues and subnational revenue capacity is also potentially critical for fiscal federalism theory. For example, some have argued that in a federation, new government projects create negative fiscal externalities for other tiers of government—in other words, that taxes at one level tend to crowd out taxes for others—and that this implies that federalism leads to governments that are excessively bloated.²³ But in the presence of crowding-in, where fiscal externalities are positive, the implication is that federalism actually leads to governments that are too small.

The rest of this Article proceeds as follows. Part I explains in more detail the legal reasoning that puts the crowd-out question at the center of Spending Clause analysis. Part II explores the economic and political theory of the relationship between federal and state revenues, focusing on arguments that might lead us to expect crowd-out. Part III collects some arguments that predict the opposite. Part IV summarizes the so-far-inconclusive evidence. And Part V then describes my original empirical evidence, including my findings that in recent years federal revenues have tended to increase state proceeds.

I. BACKGROUND

Conditional federal spending is a centerpiece of the modern regulatory architecture of the United States.²⁴ With the exception of Medicare, nearly every big-ticket item on the federal government's domestic spending budget goes to support a joint venture with the states. Unemployment insurance, aid to the poor, education standards and incentives, clean air and water, health care for the indigent and those with disabilities, and legal protections against state-sponsored discrimination: all are designed as a set of conditions on federal grants to states.²⁵

The legal underpinnings of these structures were stable for about seventy-five years. In 1937, the Supreme Court turned back challenges to the newly enacted Social Security and Unemployment Insurance systems.²⁶ The plaintiffs had urged the Court to throw out unemployment insurance because of its novel structure: it channeled reams of federal dollars to states, in exchange for their agreement to tax their own employers and to

²³ See Michael J. Keen & Christos Kotsogiannis, *Does Federalism Lead to Excessively High Taxes?*, 92 AM. ECON. REV. 363, 363 (2002); Russell S. Sobel, *Optimal Taxation in a Federal System of Governments*, 64 S. ECON. J. 468, 469–73 (1997).

²⁴ For an overview, see Philip J. Weiser, *Towards a Constitutional Architecture for Cooperative Federalism*, 79 N.C. L. REV. 663, 668–73 (2001).

²⁵ See Brief for David Satcher et al. as Amici Curiae in Support of Respondents at 8–11, *Florida ex rel. McCollum v. U.S. Dep't of Health & Human Servs.*, 132 S. Ct. 2566 (2012) (No. 11-400).

²⁶ *Steward Mach. Co. v. Davis*, 301 U.S. 548, 574–78, 598 (1937).

administer claims by unemployed workers.²⁷ This structure, the plaintiff employers argued, was “coerci[ve],” because it forced states into the service of the national government.²⁸ The Court, in a famous passage by Justice Cardozo, refused to countenance that claim, arguing that the concept of coercion was difficult to fathom when applied to states, and that any effort to define coercion in that context would “plunge the law in endless difficulties.”²⁹

Not much happened on the coercion front for the next sixty years. As a formal matter, Cardozo’s opinion had held out the possibility that some future statute might be found coercive, but given the rationale for his decision—that coercion as a concept was not judicially manageable—it was hard to see how any such claim could succeed.³⁰ And, indeed, from 1936 until 2012, no court found that a federal statute had coerced state grant recipients.³¹

In the background, though, some important details were developing. Twice in the 1990s, the Supreme Court ruled that the federal government could not “commandeer” nonjudicial state officials.³² That is, Congress could not enact a law directing state officials to act—could not, for instance, order state officials to conduct background checks before issuing firearm permits.³³ But the Court also was careful to distinguish commandeering from conditional spending; Congress could still offer money to the states subject to conditions.³⁴ As long as states were legally free to reject the terms of the offer, it was not commandeering.³⁵

The Court’s reasons for its distinction between commands and conditions were never clearly formulated. The only real explanation from the bench was that commandeering obscured public accountability: voters might wrongly blame state officials for following their federal orders.³⁶ As commentators observed, one could say much the same about conditional spending and other forms of cooperative federalism.³⁷ The most likely

²⁷ *Id.* at 585–87.

²⁸ *Id.* at 578.

²⁹ *Id.* at 589–90.

³⁰ See *South Dakota v. Dole*, 483 U.S. 203, 211 (1987) (suggesting theoretical possibility that federal spending could coerce states, but finding no coercion on the facts then before the Court).

³¹ Samuel R. Bagenstos, *Spending Clause Litigation in the Roberts Court*, 58 DUKE L.J. 345, 372 (2008); Huberfeld et al., *supra* note 2, at 2.

³² *Printz v. United States*, 521 U.S. 898 (1997); *New York v. United States*, 505 U.S. 144 (1992).

³³ *Printz*, 521 U.S. at 902, 923; *New York*, 505 U.S. at 175 (holding that a law requiring states to either take title to nuclear waste or regulate it in line with federal standards impermissibly commandeered state governments).

³⁴ *New York*, 505 U.S. at 166–67, 171–74.

³⁵ *Id.* at 174.

³⁶ *Printz*, 521 U.S. at 929–30; *New York*, 505 U.S. at 168–69, 182–83.

³⁷ Daniel Halberstam, *Comparative Federalism and the Issue of Commandeering*, in THE FEDERAL VISION: LEGITIMACY AND LEVELS OF GOVERNANCE IN THE UNITED STATES AND THE EUROPEAN

distinction, some argued, was that when voters blamed their local officials for the outcomes that flowed from a federal grant, those voters were not wrong: whereas commandeered officials had no part in the outcome, state officials “deserved” blame at least for agreeing to the grant.³⁸

Other commentators also suggested that the two scenarios could be distinguished by an “internalization” principle.³⁹ Under conditional spending, the federal government at least had to pay a price for its policies, while commandeering allowed Congress to pass the costs of enforcement on to the states.⁴⁰ By forcing Congress to pay, commandeering indirectly limited federal power, because Congress would have to raise taxes to pay for its policies.⁴¹

Fast-forward to 2012. As part of the Affordable Care Act (ACA), Congress had enacted an expansion of the Medicaid program.⁴² To simplify considerably, the ACA required that states receiving Medicaid money expand the pool of persons eligible for Medicaid assistance, and provided for enhanced subsidies to cover the cost of these “newly eligible individuals.”⁴³ A number of states then challenged the expansion as unconstitutionally coercive.⁴⁴

UNION 213, 231 (Kalypso Nicolaidis & Robert Howse eds., 2001); Roderick M. Hills, Jr., *The Political Economy of Cooperative Federalism: Why State Autonomy Makes Sense and “Dual Sovereignty” Doesn’t*, 96 MICH. L. REV. 813, 826–28 (1998); Vicki C. Jackson, *Federalism and the Uses and Limits of Law: Prinz and Principle?*, 111 HARV. L. REV. 2180, 2200–05 (1998).

³⁸ Even this story breaks down if one considers that state officials can also be blamed for their failure to lobby effectively in warding off “commandeering” enactments. Brian Galle, *Getting Spending: How to Replace Clear Statement Rules with Clear Thinking About Conditional Grants of Federal Funds*, 37 CONN. L. REV. 155, 201 & nn.273, 275 (2004); see Neil S. Seigel, *Commandeering and Its Alternatives: A Federalism Perspective*, 59 VAND. L. REV. 1629, 1662–63 (2006) (noting that voters would have been correct in assuming that state officials were involved in the decision to transfer title of nuclear waste in *New York*).

³⁹ D. Bruce LaPierre, *Political Accountability in the National Political Process—the Alternative to Judicial Review of Federalism Issues*, 80 NW. U. L. REV. 577, 644–45 (1985); Seigel, *supra* note 38, at 1644–45.

⁴⁰ See Seigel, *supra* note 38, at 1644–45.

⁴¹ See *id.*; see also Galle, *supra* note 38, at 167–70 (arguing that conditional spending is distinguishable from the other enumerated powers on this basis).

⁴² Patient Protection and Affordable Care Act, Pub. L. No. 111-148, § 2001, 124 Stat. 119, 153 (2010) (codified as amended at 42 U.S.C. § 1396a(a)(10)(A)(i)(VIII)). Medicaid is a cooperative enterprise in which states provide payment for medical care for low-income and disabled households, supported by federal matching grants ranging from 50% to 83%, and subject to a long set of federal rules and requirements. KAISER COMM’N ON MEDICAID & THE UNINSURED, MEDICAID: A PRIMER 3, 5 (2013), available at <http://www.kff.org/medicaid/upload/7334-04.pdf>; KAISER COMM’N ON MEDICAID & THE UNINSURED, A HISTORICAL REVIEW OF HOW STATES HAVE RESPONDED TO THE AVAILABILITY OF FEDERAL FUNDS FOR HEALTH COVERAGE 2 (2012). States may escape the conditions by forfeiting the money. *Harris v. McRae*, 448 U.S. 297, 301 (1980).

⁴³ Huberfeld et al., *supra* note 2, at 25–30.

⁴⁴ See, e.g., *Florida ex rel. Bondi v. U.S. Dep’t of Health & Human Servs.*, 780 F. Supp. 2d 1256 (N.D. Fla.), *aff’d in part, rev’d in part*, 648 F. Supp. 2d 1235 (11th Cir. 2011), *aff’d in part, rev’d in part sub nom. Nat’l Fed’n of Indep. Bus. v. Sebelius*, 132 S. Ct. 2566 (2012).

Most readers surely know what happened next. The Court, in a divided decision, ruled that conditioning funds already provided under preexisting Medicaid rules on states’ acceptance of the Medicaid expansion indeed was coercive.⁴⁵ Justice Roberts, joined by Justices Breyer and Kagan, then went on to state that the Medicaid expansion could go forward, but that the only permissible sanction for states that refused would be the loss of the “new” Medicaid spending authorized in the ACA.⁴⁶ Two other Justices, Ginsburg and Sotomayor, would have upheld the ACA in its entirety, yielding five votes for upholding at least some portion of the Medicaid expansion.⁴⁷ The other four Justices agreed with Roberts that the Medicaid expansion was coercive, but would have gone further and thrown out the entire statute.⁴⁸

Other commentators have already begun ably to attempt to unpack the tangle of arguments in Justice Roberts’s opinion,⁴⁹ so I want to focus here on the key analogy between federal grants and commandeering. Roberts argues that “[t]he Constitution simply does not give Congress the authority to require the States to regulate”⁵⁰ and that that principle “is true whether Congress directly commands a State to regulate or indirectly coerces a State to adopt a federal regulatory system as its own.”⁵¹ Given that federal Medicaid matching grants provide an average of ten percent of states’ budgets, Roberts writes, states have “no real option but to acquiesce.”⁵² Though I agree with Professor Bagenstos that Roberts’s opinion also appears to set out some additional requirements for a conditional grant to be unconstitutional,⁵³ this equivalence between grants and commandeering looks to be at least necessary to, if not sufficient for, a finding of unconstitutionality.

As I suggested at the outset, this equivalence is a puzzle. Let us set aside, for the sake of argument, the large number of conceptual questions one could raise about the claim that states, or perhaps state legislatures, can be coerced.⁵⁴ Let us pretend instead, as the *NFIB* opinions seem to, that states are like humans, who can be menaced with guns, and for whom our moral intuitions about concepts such as free will might have some meaning. Even in that context, threats to impose money penalties are not

⁴⁵ *NFIB*, 132 S. Ct. at 2608 (Roberts, J.).

⁴⁶ *Id.* at 2607.

⁴⁷ *Id.* at 2629–42 (Ginsburg, J., concurring in part, concurring in the judgment in part, and dissenting in part).

⁴⁸ *Id.* at 2656–68 (Scalia, Kennedy, Thomas & Alito, JJ., dissenting).

⁴⁹ Bagenstos, *supra* note 2, at 866–71, 873–906; Huberfeld et al., *supra* note 2, at 37–76.

⁵⁰ *NFIB*, 132 S. Ct. at 2602 (Roberts, J.) (quoting *New York v. United States*, 505 U.S. 144, 178 (1992)).

⁵¹ *Id.*

⁵² *Id.* at 2604–05.

⁵³ Bagenstos, *supra* note 2, at 873–902.

⁵⁴ See Bagenstos, *supra* note 31, at 372–80; Baker & Berman, *supra* note 13, at 521 (suggesting that the concept of coercion has too many problems to be judicially manageable).

typically seen as “coercion,” because we recognize that humans do have free will and are capable of deciding their own priorities.⁵⁵ When Verizon demands a \$200 termination fee for my switch to AT&T, I will pay it if I like AT&T’s 4G coverage better. Put another way, states that refuse a grant always have the legal authority to raise taxes or cut spending.⁵⁶ What can Roberts mean when he writes that the states have no “real” option?

One argument, if an implausible one, is politics. Maybe the claim is simply that it is politically difficult to raise taxes.⁵⁷ And, given the power of entrenched interest groups, it may also sometimes be challenging to cut spending,⁵⁸ although most states in the recent recession had no such difficulty.⁵⁹ But what does “politically difficult” mean? Only that state officials have something—reelection—that they value more than they value refusing the grant. That again sounds like a choice. Perhaps there is a constitutional argument that state officials should never have to make tough political decisions, but if so it is not clear what the content of that argument could be.⁶⁰ Further, as I have suggested elsewhere, there are good reasons to believe state officials often will have self-serving incentives to refuse grants,⁶¹ a point that is well illustrated by the fact that many Republican governors are now threatening to refuse the Medicaid expansion.⁶²

⁵⁵ See Kathleen M. Sullivan, *Unconstitutional Conditions*, 102 HARV. L. REV. 1413, 1419–21 (1989). Having said that, even some noncoercive threats, such as blackmail, are sometimes off limits legally. But the Court’s argument here is not that Medicaid was a threat, but that it was a *coercive* threat.

⁵⁶ David A. Super, *Rethinking Fiscal Federalism*, 118 HARV. L. REV. 2544, 2561 (2005); see U.S. CONST. art IV (guaranteeing states a republican form of government).

⁵⁷ E.g., Brief of State Petitioners on Medicaid at 15, *Florida v. U.S. Dep’t of Health & Human Servs.*, 132 S. Ct. 2566 (2012) (No. 11-400).

⁵⁸ This is also the core intuition behind the claim that states are “locked in” to federal grants: local constituencies grow around grant programs, like coral, reducing state officials’ political flexibility. David Freeman Engstrom, *Drawing Lines Between Chevron and Pennhurst: A Functional Analysis of the Spending Power, Federalism, and the Administrative State*, 82 TEX. L. REV. 1197, 1243–44 (2004); see Hills, *supra* note 37, at 903–04. My view is that state political influence over agencies that implement cooperative programs generally mitigates any lock-in concerns. Galle, *supra* note 38, at 191–96.

⁵⁹ See Monica Davey, *Budget Worries Push Governors to Same Mind-Set*, N.Y. TIMES, Jan. 17, 2011, at A1; Nicholas Johnson, Phil Oliff & Erica Williams, *An Update on State Budget Cuts: At Least 46 States Have Imposed Cuts that Hurt Vulnerable Residents and Cause Job Loss*, CENTER ON BUDGET & POL’Y PRIORITIES 1–2 (Feb. 9, 2011), <http://www.cbpp.org/files/3-13-08sfp.pdf>.

⁶⁰ See Bagenstos, *supra* note 2, at 880 (arguing that political consequences for state officials who turn down grants is part of the political accountability that the Court aims to protect).

⁶¹ Brian Galle, *Federal Grants, State Decisions*, 88 B.U. L. REV. 875, 900–19 (2008).

⁶² Michael Cooper, *Many Governors Are Still Unsure About Medicaid Expansion*, N.Y. TIMES, July 15, 2012, at A17; Robert Pear & Michael Cooper, *Reluctance in Some States over Medicaid Expansion*, N.Y. TIMES, June 30, 2012, at A1.

Poverty is a better argument.⁶³ Assume for the sake of discussion that state governments provide absolutely vital services (however those are defined) to their citizens, and are struggling on the brink of solvency.⁶⁴ In that situation, it at least becomes more tenable to claim that state officials have no real option but to accept assistance; by assumption, without federal dollars, states will lose something essential to their mission.⁶⁵ That is the scenario where it makes sense to suggest that conditional spending might cause voters to assign blame to the wrong official, and in which it might be possible for the federal government to foist off regulatory responsibility on states without paying the full price.⁶⁶

The four dissenters in *NFIB* appear to have made this leap. Like Roberts, they argue that coercive federal spending is equivalent to commandeering.⁶⁷ Their explanation for why the Medicaid expansion is coercive is more detailed, though. They note that states “would be very hard pressed to compensate for the loss of federal funds by cutting other spending or raising additional revenue.”⁶⁸ And, though they acknowledge that states have sovereign control over taxing and spending,⁶⁹ they argue that the reason states would be unable to replace lost Medicaid dollars is that “heavy federal taxation” has reduced the states’ ability to raise money for themselves.⁷⁰ In effect, the claim is that federal taxes have crowded out state taxes to such an extent that states have only a tenuous ability to raise additional funds.⁷¹ While small federal grants might be replaceable, a grant as large as Medicaid, in combination with the crowding effect of federal taxation, makes refusal impractical.

⁶³ Cf. Baker, *Conditional Spending*, *supra* note 13, at 1938 (comparing states receiving grants to welfare recipients who would starve without assistance); Baker & Berman, *supra* note 13, at 519–20 (comparing states to a “destitute widow”).

⁶⁴ For evidence on whether U.S. states have found themselves in this position in recent times, see Galle, *supra* note 61, at 923–30 (short answer: no).

⁶⁵ I would like to avoid getting too bogged down in philosophical debate over what “coercion” means. But note here briefly how much intellectual work the word “real” is doing in Roberts’s opinion. States always legally have choices, but some of those choices have consequences so undesirable that we would rather not see them put to that choice. The “real” option is one that avoids painful moral consequences or consequences inconsistent with the presumed constitutional structure. Which consequences those are remains a matter of moral and constitutional judgment, all of which is elided in the Roberts opinion. It is in this sense, as Professor Sullivan pointed out long ago, that all definitions of coercion are “irreducibly normative.” Sullivan, *supra* note 55, at 1428.

⁶⁶ Galle, *supra* note 61, at 919–22; Seigel, *supra* note 39, at 1656 n.110.

⁶⁷ *Nat’l Fed’n of Indep. Bus. v. Sebelius*, 132 S. Ct. 2566, 2659–60 (2012) (Scalia, Kennedy, Thomas & Alito, JJ., dissenting).

⁶⁸ *Id.* at 2663.

⁶⁹ *Id.*

⁷⁰ *Id.* at 2662 n.13.

⁷¹ See Bagenstos, *supra* note 2, at 871 (noting the dissenters’ link between crowd-out and coercion). The dissenters do not explain why spending cuts are off the table as another alternative.

Academic commentators, too, rely on the crowd-out argument to explain why states cannot turn to their own revenues.⁷² For example, Professor Baker argues that “[w]hen the federal government makes a conditional offer of funds, states [that dislike the conditions] are severely constrained in their decisionmaking by the lack of equivalent, alternative sources of revenue.”⁷³ She acknowledges that states have their own taxing authority, but claims that the federal government has a “monopoly power” over revenues that prevents states from being able to draw on their own funds.⁷⁴

In short, all of the coercion arguments appear to rely, either explicitly or implicitly, on the factual claim that federal taxation squeezes state revenue capacity.⁷⁵ To be sure, there are a number of other questionable assumptions built into the coercion argument,⁷⁶ and perhaps other ways one might justify limits on conditional spending.⁷⁷ But those questions aside, the crowd-out claim looks to be essential to any persuasive case for the doctrinal course the Justices have chosen. And while it is uncertain exactly how future courts will assemble the three *NFIB* opinions into a “holding,”⁷⁸ it seems likely that no matter how that plays out, the explicit views of four Justices, and the logically necessary claims of three others, will be central to future applications.

⁷² Baker, *Conditional Spending*, *supra* note 13, at 1936–38; Seigel, *supra* note 39, at 1656–57.

⁷³ Baker, *Conditional Spending*, *supra* note 13, at 1936.

⁷⁴ *Id.* at 1936–38.

⁷⁵ That is not to say that *NFIB* or academic commentators have clearly explained what the crowd-out concept means. Suppose that federal revenues do not absolutely prevent state taxes but merely increase the economic cost or political pain of collecting them. At what point are the cost and pain so unacceptable that they are “coercive”? See Bagenstos, *supra* note 2, at 879 (raising this question). What kinds of state services would have to be threatened by revenue shortfalls for spending cuts, too, to be coercive? Who decides the baseline of what are essential state services? And, since the entire artifice rests on claims about voter confusion, when do voters assign “too much” blame to state officials? Given that there are always plausible arguments for why state officials may have had some role in a concurrent program, *cf.* Jessica Bulman-Pozen & Heather K. Gerken, *Uncooperative Federalism*, 118 *YALE L.J.* 1256, 1265–84, 1297 (2009) (noting that codependency gives state officials power to sway outcomes, and suggesting that this should reduce judicial concerns over commandeering), the voter-confusion story necessarily implies that there must be some underlying normative theory of the “right” amount of blame.

⁷⁶ See *Nat’l Fed’n of Indep. Bus. v. Sebelius*, 132 S. Ct. 2566, 2640–42 & nn. 24–26 (2012) (Ginsburg, J., concurring in part, concurring in the judgment in part, dissenting in part); Huberfeld et al., *supra* note 2, at 42–46.

⁷⁷ *E.g.*, John O. McGinnis & Ilya Somin, *Federalism vs. States’ Rights: A Defense of Judicial Review in a Federal System*, 99 *NW. U. L. REV.* 89, 118 (2004) (arguing that because state officials do not internalize the effect of their acts on the whole nation, state decisions to accept grants can diminish national welfare); Sullivan, *supra* note 55, at 1492–96 (arguing that, while conditional grants are not “coercive” in the usual sense, they may still allow the federal government to obtain more power than the constitutional system prescribes).

⁷⁸ Bagenstos, *supra* note 2, at 866–68 & n.24.

My goal for the remainder of this Article is therefore to try to better understand what crowd-out means, and to explore whether observable facts support the Justices’ assumption that it happens in the real world.

II. ECONOMIC & POLITICAL THEORIES OF CROWD-OUT

The claim that the federal tax “monopoly” will reduce state taxes seems to depend on an unstated assumption that the state and federal governments are wrestling for control of a single resource. But barring a communist revolution, taxation inevitably leaves a large portion of social wealth in private hands.⁷⁹ In that setting, as I will show, the intuition that crowd-out rhetoric invokes misses important details. Economic theory does offer some reasons to believe crowd-out is a possibility. But it also provides lots of very good reasons for why federal revenues could actually increase state receipts, especially given existing U.S. institutions. Similarly, a political analysis of two sovereigns sharing one common pool of funding could predict either crowd-out or crowd-in, depending on institutions and quirks of human behavior. In this Part, I begin to tease out the competing narratives.

Let us start with the simple arithmetic argument. If the federal government takes all the money, states cannot raise money themselves. If national revenues were one dollar short of the gross domestic product, there would not be much room for state government. But in a more realistic setting, when federal revenues rise, state voters have a choice between surrendering some private consumption and cutting state taxes. A persuasive case for crowd-out must explain why voters would necessarily choose to keep private goods over public goods. I see two basic routes to that case, one legal and economic, the other largely political.

A. Law & Economics of Crowd-Out

Let me first explain why I say that the crowd-out argument necessarily assumes a hidden premise that the two sovereigns are tugging at one shared resource. In the U.S. context there may be more than one resource: federal and state taxes need not overlap. The Constitution requires that any federal “direct” tax be apportioned.⁸⁰ Apportionment means that the revenue raised from the tax must be divided among the states according to their population; the exact mechanism is tedious, and is set forth in the margin for readers who have trouble sleeping.⁸¹ Although the U.S. did impose

⁷⁹ And even the revolution may leave space for black markets and elites with Swiss bank accounts.

⁸⁰ U.S. CONST. art. I, § 2, cl. 3.

⁸¹ In essence, each state pays a fraction of the total national tax equal to its share of the national population. Suppose the federal government aims to collect \$100m in special land taxes. If California has ten percent of the U.S. population, it would have to pay ten percent of the total federal revenues for an apportioned tax, or \$10m. If there is only one taxpayer in California whose land meets the criteria of the tax, that person will pay \$10m.

some apportioned direct taxes in the nineteenth century, it is generally agreed now that in a modern setting apportionment produces such absurdly unequal burdens on taxpayers in different states that the federal government can no longer practically collect direct taxes.⁸² This means that there are some things that only states can tax. While the exact definition of direct taxes remains a little uncertain, they likely at least comprise taxes on land and “head,” or uniform per-person, taxes.⁸³

If each source of tax revenue were its own pot of money, then these constitutional limits on federal taxation would rather weaken the crowd-out argument. The federal government might exact a high income tax, but states could respond simply by shifting to real estate and head taxes. Similarly, at present the national government has very few sales taxes, with excises on gas and cigarettes as the major exceptions.⁸⁴ States can currently respond to higher federal income taxes simply by collecting more in sales tax.

The economic reality is a bit more complicated. The “incidence,” or real economic bite, of a tax does not always match its legal label.⁸⁵ For instance, suppose that the reason I go to work is in order to buy myself shiny things. What if there were a tax on retail purchases? Then the pile of shiny things I can get by pulling on pants and working is smaller. I might well prefer to stay in bed. For this reason, most economists believe that part of the incidence of consumption taxes, which can include the retail sales tax as well as other taxes on goods and services, falls on labor.⁸⁶ That is, it affects our decision to work, as well as what to buy. Similarly, if there is a tax on real estate, I might prefer to invest in something else. Because there is now demand for that something else, its price rises, meaning I cannot purchase as much of it. Thus, some theorists think that taxes on land in effect are taxes on all capital investments.⁸⁷

⁸² Joseph M. Dodge, *What Federal Taxes Are Subject to the Rule of Apportionment Under the Constitution?*, 11 U. PA. J. CONST. L. 839, 841 (2009).

⁸³ Nat’l Fed’n of Indep. Bus. v. Sebelius, 132 S. Ct. 2566, 2598 (2012) (Roberts, J.); Springer v. United States, 102 U.S. 586, 602 (1881) (summarizing the prior one hundred years of doctrine); Dodge, *supra* note 82, at 864–75.

⁸⁴ BRIAN FRANCIS, FEDERAL EXCISE TAXES, INCLUDING THE SLOW DEATH OF EXPIRED TAXES (1999), available at <http://www.irs.gov/pub/irs-soi/98excise.pdf>; INTERNAL REVENUE SERV., TABLE 20: FEDERAL EXCISE TAXES REPORTED TO OR COLLECTED BY THE INTERNAL REVENUE SERVICE, ALCOHOL AND TOBACCO TAX AND TRADE BUREAU, AND CUSTOMS SERVICE, BY TYPE OF EXCISE TAX, FISCAL YEARS 1999–2012 (2012), available at <http://www.irs.gov/uac/SOI-Tax-Stats-Historical-Table-20>.

⁸⁵ See JONATHAN GRUBER, PUBLIC FINANCE AND PUBLIC POLICY 557–85 (3d ed. 2011).

⁸⁶ E.g., Lawrence H. Summers, *Capital Taxation and Accumulation in a Life Cycle Growth Model*, 71 AM. ECON. REV. 533, 538 (1981).

⁸⁷ For a review of the theoretical and empirical literature, see Peter Mieszkowski & George R. Zodrow, *Taxation and the Tiebout Model: The Differential Effects of Head Taxes, Taxes on Land Rents, and Property Taxes*, 27 J. ECON. LITERATURE 1098, 1110–17, 1127–31 (1989).

Viewed in this way the crowd-out argument quickly becomes an empirical one. To what extent do taxes nominally imposed on one base spill over onto others? Would federal taxes on capital earnings interfere with state taxes on land? Theory cannot provide an answer; the outcome depends on how humans respond to changes in the price of different commodities—the elasticity of demand and supply.⁸⁸ And elasticities could change over time as the population’s preferences change.

Even if it were clear that the “indirect” taxes permitted to the federal government could effectively burden the sources of the “direct” taxes reserved for states, crowd-out theory still must explain how this overlap impacts states’ finances. When taxes at one level rise, do voters prefer to give up government services or their private consumption? Or perhaps the tradeoff is not zero-sum at all. We need a theory of how public funds are allocated to make a good prediction.

One standard prediction in the public finance literature is that overlapping taxation by two sovereigns may reduce the total funds available to either because of the deadweight loss of taxation.⁸⁹ Taxes can change our behavior, as many a wealthy Cayman Islands banker could attest.⁹⁰ Sometimes these changes create costs without any offsetting benefits. For instance, to take advantage of the low tax rates Ireland imposes on intellectual property, Microsoft, Apple, and many other firms have set up a series of shell corporations in which profits appear to be earned in Ireland rather than, say, the United States.⁹¹ Imagine what your iPad could do if Apple had spent the time and intellectual effort it devoted to these tax dodges on refining its product instead. These wasted efforts are known as deadweight loss.⁹²

The deadweight loss generated by one sovereign’s taxes can impact another sovereign dependent on the same sources of revenue.⁹³ If the economy is less vibrant because people and businesses are wasting resources avoiding federal taxation, then state personal and corporate income taxes will bring in less revenue. That can be the case even if neither government’s tax formally overlaps with the other’s. Federal corporate

⁸⁸ GRUBER, *supra* note 85, at 564–71.

⁸⁹ Besley & Rosen, *supra* note 18, at 386–87.

⁹⁰ See JAMES S. HENRY, TAX JUSTICE NETWORK, THE PRICE OF OFFSHORE REVISITED 27–36 (2012), available at http://www.taxjustice.net/cms/upload/pdf/Price_of_Offshore_Revisited_120722.pdf (estimating that over \$10 trillion in global wealth is hidden in “offshore” financial institutions); Edward D. Kleinbard, *Stateless Income*, 11 FLA. TAX REV. 699, 727–50 (2011) (describing tax-reducing possibilities of the U.S. regime for taxation of international business).

⁹¹ Kleinbard, *supra* note 90, at 706–13; Lee Sheppard, *How Does Apple Avoid Taxes?*, FORBES (May 28, 2013, 7:46 PM), <http://www.forbes.com/sites/leesheppard/2013/05/28/how-does-apple-avoid-taxes/>.

⁹² GRUBER, *supra* note 85, at 591–601.

⁹³ Besley & Rosen, *supra* note 18, at 386–87.

taxes could potentially reduce state income tax revenues just by distorting the economy, albeit fairly indirectly.

Economists believe these effects are usually compounded, though, when both sovereigns are taxing the same things.⁹⁴ The math underlying the theory of deadweight loss predicts that losses grow exponentially with the marginal tax rate.⁹⁵ That is, the losses from a tax of 10% are more than double the losses from a tax of 5%.⁹⁶ If two sovereigns tax the same base, each may find that their tax is far more economically costly than they expected because of the interaction between the two taxes. For instance, suppose the federal government taxes widgets at 10% and that the state of Widgetdome is considering adding its own 10% tax. If consumers consider these taxes together when they make their purchase decision, in effect the consumer is looking at a 20% higher price. The standard theory of deadweight losses predicts that the impact of the new Widgetdome tax on the local economy will be considerably larger than if the state imposed an identical tax with no federal excise. It may therefore no longer be economically prudent for the state to impose the tax.

It is worth noting that this point, too, rests on some uncertainties. Here again the elasticity of private responses matters.⁹⁷ If demand for a good is highly inelastic—if people do not change their desire for it much when its price changes—then the deadweight loss of overlapping taxes will be small.⁹⁸ The overlap theory also assumes that individuals will respond to two different taxes as though they were part of one price. But that is not necessarily the case. As anyone who has watched an infomercial knows, and as ample academic research now confirms, consumers do not always treat different parts of the price of a good, such as shipping and handling charges, the same as others.⁹⁹ Some lab research suggests that individuals might similarly fail to integrate the effects of separate tax systems.¹⁰⁰

⁹⁴ Chernick & Tennant, *supra* note 18, at 515–16.

⁹⁵ GRUBER, *supra* note 85, at 594–95.

⁹⁶ Without dwelling on the math, the intuition is that small changes in price only affect people who are relatively indifferent to how their decision turns out. GRUBER, *supra* note 85, at 595. But as the price effect gets larger, we start to pull in people who feel more and more strongly about the outcome.

⁹⁷ See Chernick & Tennant, *supra* note 18, at 515 (explaining that the “displacement effect” of federal tax depends on elasticity of the tax base).

⁹⁸ See Devereux et al., *supra* note 15, at 452, 458 (arguing that vertical tax effects are small when demand is inelastic); Keen & Kotsogiannis, *supra* note 23, at 366–67 (modeling the claim that the effect of federalism on state taxation depends on elasticity of investors’ responsiveness to tax).

⁹⁹ Vicki G. Morwitz et al., *Divide and Prosper: Consumers’ Reactions to Partitioned Prices*, 35 J. MARKETING RES. 453, 453–63 (1998); see Aradhna Krishna et al., *A Meta-Analysis of the Impact of Price Presentation on Perceived Savings*, 78 J. RETAILING 101, 101–18 (2002).

¹⁰⁰ Edward J. McCaffery & Jonathan Baron, *Thinking About Tax*, 12 PSYCHOL. PUB. POL’Y & L. 106, 107 (2006) [hereinafter McCaffery & Baron, *Thinking*]; Edward J. McCaffery & Jonathan Baron, *The Political Psychology of Redistribution*, 52 UCLA L. REV. 1745, 1765–68 (2005); Edward J. McCaffery & Jonathan Baron, *The Humpty Dumpty Blues: Disaggregation Bias in the Evaluation of*

Another well-known interaction between two tax systems also arises from the fact that taxes change people’s behavior. Suppose the government taxes apples but not pears. Depending on how readily people switch from one of these to another—the “cross-elasticity” of demand—this differential taxation might mean more pear eaters.¹⁰¹ A federal apple tax then could reduce state apple-tax revenues, because there would be fewer apple sales for the state to tax.¹⁰² That is, substitutions in response to federal tax not only shrink the state’s economy, but also shrink the fraction of the state’s economy subject to tax. The state might raise its rates or tax some other commodity instead, but if the state tax system had already been optimized to minimize the total economic burden of taxation, those shifts would again increase the deadweight loss of state taxation.

An important caveat to the deadweight loss arguments is that existing state systems are rarely ideal and may well have many available “margins” on which to adjust their behavior.¹⁰³ For instance, rather than raising their nominal tax rates in response to federal taxation, states could phase out some inefficient subsidy, creating an effective tax on the subsidy recipients.¹⁰⁴ By inserting many of these small phase-outs, the state could keep all of its tax rates low, avoiding the exponential effects of higher effective taxes.

Another, less familiar argument the crowd-out theorist could offer is that overlapping tax bases reduce the revenue-maximizing rate available to both sovereigns.¹⁰⁵ Tax rate increases beyond a certain point may reduce revenues by motivating taxpayers to go to greater efforts to avoid the tax.¹⁰⁶ For example, in the United States many states rely primarily on the federal

Tax Systems, 91 ORG. BEHAV. & HUM. DECISION PROCESSES 230, 231–32 (2003). For a more comprehensive overview, see Brian Galle, *Hidden Taxes*, 72 WASH. U. L. REV. 59, 73–77 (2009).

¹⁰¹ Joseph E. Stiglitz, *Pareto Efficient and Optimal Taxation and the New New Welfare Economics*, in 2 HANDBOOK OF PUBLIC ECONOMICS 991, 1023–37 (Alan J. Auerbach & Martin Feldstein eds., 1987).

¹⁰² See Besley & Rosen, *supra* note 18, at 386.

¹⁰³ *Cf. id.* at 387 (noting that states can reduce expenditures rather than raising taxes).

¹⁰⁴ In my prior work I explain why states are especially prone to giving away highly inefficient subsidy payments. Brian Galle, *The Tragedy of the Carrots: Economics and Politics in the Choice of Price Instruments*, 64 STAN. L. REV. 797, 840–44 (2012).

¹⁰⁵ See Jonathan Klick & Francesco Parisi, *Intra-jurisdictional Tax Competition*, 16 CONST. POL. ECON. 387, 388–89 (2005).

¹⁰⁶ See JAMES MIRRLEES ET AL., *TAX BY DESIGN: THE MIRRLEES REVIEW* 28–31 (2011); Emmanuel Saez et al., *The Elasticity of Taxable Income with Respect to Marginal Tax Rates: A Critical Review*, 50 J. ECON. LITERATURE 3, 6–18 (2012). For evidence, see Jon Gruber & Emmanuel Saez, *The Elasticity of Taxable Income: Evidence and Implications*, 84 J. PUB. ECON. 1, 6–26 (2002); Wojciech Kopczuk, *Tax Bases, Tax Rates and the Elasticity of Reported Income*, 89 J. PUB. ECON. 2093 (2005); and Emmanuel Saez, *The Effect of Marginal Tax Rates on Income: A Panel Study of “Bracket Creep,”* 87 J. PUB. ECON. 1231 (2003).

definition of income for purposes of their own income tax.¹⁰⁷ Suppose Ted Taxpayer has to decide how to report his business income. His reporting decision will affect both his federal and state income taxes. When Ted decides how risky or aggressive his reporting position should be, he rationally should compute the total marginal cost of each dollar of income his position will cost him.¹⁰⁸ Increases in one government's tax rate could therefore shrink the tax base for the other, even aside from pure deadweight losses.

Notice again the empirical uncertainty that lies behind the revenue-maximization argument. Rate changes by overlapping governments affect their rivals only to the extent that the total combined rate is high enough to motivate these kinds of base-affecting decisions. For that to happen, there must be some shared legal definitions of the tax base. And, again, it must be the case that taxpayers are rational in the sense that they combine the two pieces of the tax price together when they make their decisions.¹⁰⁹

In short, there is an economic case for crowd-out but it is an uncertain one. While state and federal governments do not necessarily tax the same sources, it is possible that the decisions of one can affect the other. Whether these effects are large, small, or nonexistent depends on conditions on the ground that cannot easily be predicted in the abstract. And there are still a number of countervailing possibilities I have not yet considered.

B. *The Politics of Crowd-Out*

Like the economic case for crowd-out, the political argument, as it has currently been articulated by scholars, depends on a series of assumptions. For example, Lynn Baker and others have argued that federal taxation crowds out states' revenue-raising ability because the tax-paying public has a limited tolerance for taxation.¹¹⁰ But these claims presume that voters consider state and federal taxation to be substitutes for each other, that state voters have no way of communicating their preference for lower total tax to federal officials, and that voters' "utility functions" are stable and

¹⁰⁷ Ruth Mason, *Federalism and the Taxing Power*, 99 CALIF. L. REV. 975, 1020 (2011).

¹⁰⁸ Cf. Devereux et al., *supra* note 15, at 453 (suggesting that total excise taxes may affect incentives for tax avoidance).

¹⁰⁹ As far as I am aware, there is no clear evidence on whether taxpayers respond to combined federal-state prices as though they were one price. The nearest study is Gruber and Saez, who find no statistically significant differences in the responses of taxpayers to state and federal tax rates. Gruber & Saez, *supra* note 106, at 22–23. If taxpayers do not integrate the two prices, we arguably should see less responsiveness to state taxes. But then the magnitude of the state rate changes that Gruber and Saez studied were mostly much smaller than the magnitude of the federal changes, *see id.* at 13–15 & n.7, making it hard to know if their results offered a relevant comparison.

¹¹⁰ *See supra* note 13.

additive.¹¹¹ Again, these assumptions may be defensible, but they need some unpacking.

First, it is a bit of a puzzle why federal taxes would make voters want fewer state taxes. I may speak only for myself on this point, but having a new television does not lessen my desire for hot dogs. That is, purchasing one set of goods—for instance, the bundle of government services one gets from the federal government in exchange for taxes—should not have any direct effects on a voter’s preferences for another set of distinct goods, such as the bundle of services they receive from their state or local governments.¹¹² To be sure, if voters think of all government as one indistinguishable mass of “public goods,” then it is likely one might displace the other.¹¹³ As the economist Sam Peltzman showed in 1973, public spending for one specific good is likely to reduce our desire to purchase (whether from a charity or a second government) another very similar good.¹¹⁴

We thus seem to have yet another empirical question about how public preferences work. Do voters see different tiers of government as interchangeable, such that getting more of one makes us want less of the other? Or are the two governments two very different bags of groceries?

Looking at the data in the modern United States, government services at the national and subnational levels are fairly highly differentiated. Both tiers spend a good deal on health with most state spending via the Medicaid program.¹¹⁵ But that aside, the bulk of national spending is defense, retirement, and income security, which primarily consist of various transfer

¹¹¹ A “utility function” is a model of how an individual’s decisions affect her subjective well-being. GRUBER, *supra* note 85, at 26.

¹¹² Cf. Joel Huber & Christopher Puto, *Market Boundaries and Product Choice: Illustrating Attraction and Substitution Effects*, 10 J. CONSUMER RES. 31, 34, 40 (1983) (observing that consumers sometimes change their purchase decisions based on availability of an “irrelevant” alternative, and describing this behavior as irrational); Itamar Simonson, *The Effect of Product Assortment on Buyer Preferences*, 75 J. RETAILING 347, 348–70 (1999) (same, surveying the marketing literature). The exception would be if two goods are “complements” or “substitutes” for each other. Simonson, *supra*, at 354–55. Chocolate and peanut butter are the tastiest example of the former.

¹¹³ This appears to be the standard assumption in many existing economic analyses of crowding. See, e.g., Andersson et al., *supra* note 18, at 245 (noting that the authors follow several other papers in assuming voters have preferences between only three different goods: labor supply, public goods, and private goods).

¹¹⁴ Sam Peltzman, *The Effect of Government Subsidies-in-Kind on Private Expenditures: The Case of Higher Education*, 81 J. POL. ECON. 1, 5 (1973). Similarly, one could argue that some voters could have preferences for the overall size of government or otherwise somehow specifically resent taxes in a way that they do not resent other goods. But that is a just-so story; there is no ex ante reason to expect that voters will certainly accept or reject that view.

¹¹⁵ CTRS. FOR MEDICARE & MEDICAID SERVS., NATIONAL HEALTH EXPENDITURES TABLES tbl.3 (2012), available at <http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/tables.pdf>.

payments.¹¹⁶ Education dominates nonhealth state government spending. Education and Medicaid combined currently make up two-thirds of state budgets; transportation is a distant third at less than 8%.¹¹⁷ This split is not new and probably not a coincidence; basic fiscal federalism theory predicts that national defense and redistribution should be national functions.¹¹⁸ Voters may be rationally ignorant, but such dramatic, persistent differences seem difficult to overlook. So while it is certainly not inconceivable that voters view the two governments as interchangeable, it would be surprising.

Another well-known way that federal taxes could affect voter demand for unrelated state taxes is through what is known as the income effect.¹¹⁹ Sometimes having more money changes our preferences for stuff: not many millionaires ride the bus. For most things, which economists logically enough call “normal” goods, demand increases with income.¹²⁰ There is evidence that many state services are normal goods, although some theorists differ.¹²¹ In any event, the argument would be that federal taxes, by reducing the wealth of state voters, diminish their demand for government services.

But this neglects federal spending. Some states take in more federal total dollars than their citizens pay in taxes, suggesting that demand for state taxes should actually increase in those states.¹²² At the individual level, recent estimates suggest that the median American voter receives a net benefit from federal taxing and spending.¹²³ Wealthier voters are net

¹¹⁶ OFFICE OF MGMT. & BUDGET, EXEC. OFFICE OF THE PRESIDENT, FISCAL YEAR 2013 HISTORICAL TABLES: BUDGET OF THE U.S. GOVERNMENT tbl.3.2, at 74 (2013), available at <http://www.whitehouse.gov/sites/default/files/omb/budget/fy2013/assets/hist.pdf>.

¹¹⁷ NAT'L ASS'N OF STATE BUDGET OFFICERS, STATE EXPENDITURE REPORT: EXAMINING FISCAL 2009–2011 STATE SPENDING 3 (2011), available at <http://www.nasbo.org/sites/default/files/2010%20State%20Expenditure%20Report.pdf>.

¹¹⁸ See GRUBER, *supra* note 85, at 274; Charles C. Brown & Wallace E. Oates, *Assistance to the Poor in a Federal System*, 32 J. PUB. ECON. 307, 328 (1987).

¹¹⁹ Chernick & Tennant, *supra* note 18, at 515–16.

¹²⁰ GRUBER, *supra* note 85, at G-7.

¹²¹ Daniel Hewitt, *Demand for National Public Goods: Estimates from Surveys*, 23 ECON. INQUIRY 487, 503 (1985). *But see* BURTON A. WEISBROD, *THE VOLUNTARY NONPROFIT SECTOR: AN ECONOMIC ANALYSIS* 69–70 (1977).

¹²² See *Federal Taxes Paid vs. Federal Spending Received by State, 1981–2005*, TAX FOUND. (Oct. 19, 2007), <http://taxfoundation.org/article/federal-taxes-paid-vs-federal-spending-received-state-1981-2005>; Cary M. Atlas et al., *Slicing the Federal Government Net Spending Pie: Who Wins, Who Loses, and Why*, 85 AM. ECON. REV. 624, 626–28 (1995). I assume for the purposes of argument here that income effects resulting from transfers of funds to a general population in fact alter political outcomes in the same way they alter preferences. In fact, I think that is unclear, but further explication will have to await later work.

¹²³ See *The Distribution of Household Income and Federal Taxes, 2008 and 2009, Supplemental Table 7*, CONG. BUDGET OFF. (July 10, 2012), <http://www.cbo.gov/publication/43373>; Greg Mankiw, *The Progressivity of Taxes and Transfers*, GREG MANKIW'S BLOG (July 14, 2012), <http://gregmankiw.blogspot.com/2012/07/progressivity-of-taxes-and-transfers.html> (noting that CBO's

payors by the definition of the estimators.¹²⁴ Even assuming that voters perceive the value of government benefits in the same way the study authors did,¹²⁵ the net income effect is unclear: wealthy voters are politically more potent but of course fewer in number. That is usually a prescription for the victory of the minority,¹²⁶ but on occasion policy entrepreneurs can awaken the sleeping giant and the majority prevails.¹²⁷ Once again, theory does not give us a clear prediction.

A second assumption the political story relies on is that, even if federal taxes and state taxes are substitutes, it is state taxes that are the loser in any political conflict. Rick Hills has made this point, but it is worth elaborating just a bit.¹²⁸ As Hills argues, voters could well prefer state to federal services, and so any overlap may tend to reduce the size of the national government rather than states.¹²⁹ A counterargument could be that the federal government is a kind of “Stackelberg leader,” a game-theoretic term for a player whose dominant market position gives it a first-mover advantage.¹³⁰ If Congress sees itself as a single entity in competition with states, perhaps it could, like a monopolist pushing around tiny competitors, use its economies of scale in national revenue raising to keep states from claiming too much of its tax “market.”

This counter raises a host of additional questions. Recent observers of Congress may note that shared purpose is not exactly a hallmark of the institution. Party allegiances and partisan advantage play important roles and, as advocates of the “political safeguards of federalism” have pointed

figures imply that the median voter is a net recipient of federal transfers, but cautioning that data may change with complete inclusion of state figures).

¹²⁴ Mankiw, *supra* note 123.

¹²⁵ For example, some wealthy voters may view transfer payments to others as a social good they’ve purchased with their taxes. Others may see any provision of public goods with their own money as a “common disaster” they would have preferred to avoid.

¹²⁶ See Brian Galle, *A Republic of the Mind: Cognitive Biases, Fiscal Federalism, and Section 164 of the Tax Code*, 82 IND. L.J. 673, 705–06 (2007) (arguing that standard public choice theory predicts that overlapping tax bases will increase political pressure to cut taxes).

¹²⁷ See Christopher H. Schroeder, *Rational Choice Versus Republican Moment—Explanations for Environmental Laws, 1969–73*, 9 DUKE ENVTL. L. & POL’Y F. 29, 49–56 (1998). For an empirical examination of how federal distributions to states are determined, see Gary A. Hoover & Paul Pecorino, *The Political Determinants of Federal Expenditure at the State Level*, 123 PUB. CHOICE 95, 103–10 (2005).

¹²⁸ Hills, *supra* note 37, at 865.

¹²⁹ *Id.* For additional arguments along these lines, see Galle, *supra* note 126, at 707–08. For evidence that subnational taxes affect federal tax choices, albeit in a Canadian setting, see Masayoshi Hayashi & Robin Boadway, *An Empirical Analysis of Intergovernmental Tax Interaction: The Case of Business Income Taxes in Canada*, 34 CANADIAN J. ECON. 481, 501–02 (2001).

¹³⁰ See Besley & Rosen, *supra* note 18, at 385 (modeling the U.S. government as a Stackelberg leader); Robin Boadway & Michael Keen, *Efficiency and the Optimal Direction of Federal–State Transfers*, 3 INT’L TAX & PUB. FIN. 137, 138 (1996) (same).

out, may serve as levers for states to preserve their own interests.¹³¹ Congress's collective fiscal interests are also a public good for the members of Congress, meaning that if an interest group can offer an individual member private rewards for protecting the group's desires, the member has strong incentives to favor the group over the interests of Congress as a whole.¹³² Members of Congress may therefore be more attached to state constituencies who are devoted to lowering federal taxes than they are to their own budget authority.

Put another way, the crowd-out argument appears to assume that federal political actors will not internalize the impact of federal budgets on state finances.¹³³ But in fact state-level actors have a wide variety of tools for ensuring that federal officials do just that. Whether they utilize those tools is a different question, and may depend on the political structure of the federal enactment. As Mark Seidenfeld and I have argued in a related context, federal enactments with low partisan valence and thin impacts across many states might lead to free riding, while politically charged changes, or threats to a major interest group or a small cluster of states, would be more likely to trigger intense opposition.¹³⁴ But admittedly these are broad theoretical predictions of the average outcome, not guarantees that states will win or lose any given fight.

A final source of uncertainty lies in the third assumption I mentioned, the assumption that state voters' preferences for policy outcomes really respond to simple math in the way that the political crowd-out story seems to require. As I mentioned earlier, there are good reasons to suspect that voters actually do not jointly consider the total burden of taxation imposed by separate governments: they "anchor" on the larger number, or they keep separate mental accounts of the two tax burdens, or state tax burdens are simply less salient overall.¹³⁵ A long tradition of conservative economic thought maintains that federated government, by breaking up and

¹³¹ Larry D. Kramer, *Putting the Politics Back into the Political Safeguards of Federalism*, 100 COLUM. L. REV. 215, 278–86 (2000) (internal quotation marks omitted); Franita Tolson, *Benign Partisanship*, 88 NOTRE DAME L. REV. 395, 416–27 (2012).

¹³² For empirical evidence of this phenomenon, see Brian Galle, *The Politics of Federalism: Self-interest or Safeguards? Evidence from Congressional Control of State Taxation*, in HANDBOOK ON THE ECONOMICS OF FEDERALISM (forthcoming 2014), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1759510.

¹³³ Cf. Besley & Rosen, *supra* note 18, at 387 (noting that their model assumes the federal tax setter does not account for state revenue effects); Esteller-Moré & Solé-Ollé, *Canada*, *supra* note 18, at 249–52 (noting that the federal government can use grants to undo any distortions caused by crowd-out).

¹³⁴ Brian Galle & Mark Seidenfeld, *Administrative Law's Federalism: Preemption, Delegation, and Agencies at the Edge of Federal Power*, 57 DUKE L.J. 1933, 1964–66 (2008).

¹³⁵ McCafferey & Baron, *Thinking*, *supra* note 100, at 122–23, 132; Edward J. McCaffery & Jonathan Baron, *Isolation Effects and the Neglect of Indirect Effects of Fiscal Policies*, 19 J. BEHAV. DECISION MAKING 289, 290–91 (2006). For more detailed discussion, see Brian Galle, *Federal Fairness to State Taxpayers: Irrationality, Unfunded Mandates, and the "SALT" Deduction*, 106 MICH. L. REV. 805, 815–18 (2008).

shrouding the total size of government, allows for a higher total tax than unitary government would, although evidence of that proposition remains elusive.¹³⁶

Voter preferences may also be contingent, rather than “exogenous” or determined independent of the existing political and legal rules. Suppose that federal revenues cause crowd-out under one set of legal arrangements, but would not cause crowd-out under another. In that case, should the federal government be prohibited from imposing conditions on its spending, or instead should the legal rules that cause crowd-out give way? To take one example, if the U.S. had more generous “revenue sharing” along the lines of the Canadian model, many poorer states would have greater resources.¹³⁷ In those states it would presumably be easier for taxpayers to absorb the economic strain of increased state revenue demands.¹³⁸ Alternately, crowd-out of state revenues would very likely diminish sharply if all state taxes were fully creditable against federal taxation. If we only observe crowd-out in the absence of revenue sharing, should the logic of coercion demand fewer conditions on federal grants, or instead more generous federal support for states?

Similarly, the states’ existing laws may determine voter preferences. If states could readily borrow, upward shocks in fiscal demand could be smoothed out over time, diminishing the impact at least of temporary changes in federal taxation.¹³⁹ But it is states’ own budgeting rules that impair their borrowing capacity.¹⁴⁰ Those rules are a defensible response to

¹³⁶ Brian E. Dollery & Andrew C. Worthington, *The Empirical Analysis of Fiscal Illusion*, 10 J. ECON. SURVS. 261, 264–65, 270–71, 293–94 (1996); Keen & Kotsogiannis, *supra* note 23, at 364–65, 369.

¹³⁷ See Richard M. Bird & Michael Smart, *Intergovernmental Fiscal Transfers: International Lessons for Developing Countries*, 30 WORLD DEV. 899, 900–07 (2002) (describing the basic goals and outcomes of revenue sharing); Robin Boadway, *Inter-governmental Fiscal Relations: The Facilitator of Fiscal Decentralization*, 12 CONST. POL. ECON. 93, 112–16 (2001) (explaining the role of equalization grants in a decentralized system).

¹³⁸ Kelders & Koethenbueger, *supra* note 17, at 684–85, 690 (claiming that revenue sharing reduces fiscal pressure).

¹³⁹ See Arik Levinson, *Balanced Budgets and Business Cycles: Evidence from the States*, 51 NAT’L TAX J. 715, 717–19 (1998) (describing the relationship between state borrowing and state ability to weather fiscal crises). Borrowing diminishes the impact of revenue shocks for a number of reasons. Perhaps the most straightforward is the relation between deadweight loss and tax rates. Robert J. Barro, *On the Determination of the Public Debt*, 87 J. POL. ECON. 940, 943–45 (1979). For a state that starts at a 10% tax, ten years of 11% taxes are much less distortive than one year of 20% taxes. See *id.* Additionally, there are good reasons to think that as a political matter present voters and officials will view the burden of debts as less than the burden of an equivalent present discounted value of tax increases. For an extended discussion of that point, see Brian Galle & Jonathan Klick, *Recessions and the Social Safety Net: The Alternative Minimum Tax as a Countercyclical Fiscal Stabilizer*, 63 STAN. L. REV. 187, 199–200 (2010).

¹⁴⁰ Richard Briffault, *Foreword: The Disfavored Constitution: State Fiscal Limits and State Constitutional Law*, 34 RUTGERS L.J. 907, 915–16 (2003); Brian Knight & Arik Levinson, *Fiscal*

predictable political failures at the state level.¹⁴¹ But again they pose the question: if crowd-out is contingent on the presence of these state rules, why should the legal burden of coercion fall on conditional spending, rather than the rules that contribute to crowd-out?

Lastly on this point, federal anticoercion laws may themselves cause crowd-out. States have several possible tools for preparing for unexpected fiscal demands. Borrowing, again, is one of these, and so is saving.¹⁴² But if the Supreme Court guarantees that states will not be subjected to sharp new financial demands from the federal government, the state has less reason to build those kinds of revenue-smoothing institutions. In essence, the coercion doctrine is a bailout, a promise of assistance in the event of fiscal emergencies.¹⁴³ In that scenario, crowd-out is the result of moral hazard: the state fails to take action to protect itself against fiscal shocks because it has judicially provided insurance against the shock.¹⁴⁴

Overall, the political argument for crowd-out is uncertain. While some of the uncertainties are relatively deep conceptual questions about the nature of voter preferences, others are straightforward questions about how voters and political officials behave. Those questions, at least, are testable, as I hope to show shortly.

III. THEORETICAL ARGUMENTS FOR CROWD-IN

Despite all the possible arguments I have just set out, the reported conventional wisdom among state budget analysts is that state revenues tend to rise together with federal revenues.¹⁴⁵ That is, federal revenues might actually crowd-*in* state revenues. Why might that be? One set of potential reasons involves the close relationship between state taxing systems and the federal income tax. Another relates to the way that voters may form preferences about the size and cost of government.

First, though, it may be useful to sort out a definitional issue. In one sense it should be completely unsurprising that state and federal revenues tend to have a strong positive correlation, because both are usually imposed

Institutions in U.S. States, in INSTITUTIONS, POLITICS AND FISCAL POLICY 167, 169–70 & tbl.1 (Rolf R. Strauch & Jürgen von Hagen eds., 2000); Levinson, *supra* note 139, at 717.

¹⁴¹ Galle & Klick, *supra* note 139, at 198–204.

¹⁴² Russell S. Sobel & Randall G. Holcombe, *The Impact of State Rainy Day Funds in Easing State Fiscal Crises During the 1990–1991 Recession*, 16 PUB. BUDGETING & FIN., Fall 1996, at 28, 28–29.

¹⁴³ For accessible explanations of the dynamics of “bailouts,” see Adam J. Levitin, *In Defense of Bailouts*, 99 GEO. L.J. 435, 491–508 (2011), and Jeffrey Manns, *Building Better Bailouts: The Case for a Long-Term Investment Approach*, 63 FLA. L. REV. 1349, 1358–70 (2011).

¹⁴⁴ See Pablo Sanguinetti & Mariano Tommasi, *Intergovernmental Transfers and Fiscal Behavior: Insurance Versus Aggregate Discipline*, 62 J. INT’L ECON. 149, 153–54 (2004) (noting that federal guarantees can induce fiscal recklessness by local governments).

¹⁴⁵ C. EUGENE STEUERLE, CONTEMPORARY U.S. TAX POLICY 34–36 (2d ed. 2008); Alysoun McLaughlin, National Conference of State Legislatures, *The Impact of Federal Tax Policy Decisions on States’ Budgets* (2003) (“As a rule, when federal taxes go up or down, so do state taxes.”).

on sources of funds that vary with the strength of the economy.¹⁴⁶ When the economy is booming, income and sales tax revenues often are too.¹⁴⁷ Because property values are stickier, and *assessed* property values stickier still, property taxes are less variable, but are still somewhat sensitive to economic conditions.¹⁴⁸ So perhaps this is all that analysts mean when they say that government revenues move together: most governments’ revenues are affected by economic conditions.

The crowd-in I have in mind is something different. For either crowd-out or crowd-in, it seems the key question is whether federal policies make it more or less difficult for the state to raise money, all else equal. To observe whether causation exists in this way, arguably the better measure of crowding would therefore hold economic conditions constant, as would be the case if we measured the effects of federal tax on state revenues as a percentage of the state’s wealth, or “gross domestic product.” On the other hand, I have already suggested some ways in which tax’s effects on the economy can itself contribute to crowd-out (and, as I will show in a moment, crowd-in). So maybe the most precise measure of crowding would be to hold all non-tax-related changes in the economy constant. Unfortunately, it rarely will be possible to cleanly separate out the tax-related changes in economic conditions from those that arose independently, which will complicate my econometric analysis.¹⁴⁹ For now, my only point is that when I refer to crowd-in, I am describing those effects that are most closely related to the federal tax system.

Another possibility the budget analysts may have in mind, and that would not be much relevant for my inquiry, is that what looks like crowd-in may instead be changes in voter demand for government. Voters might simultaneously agree to higher taxes for both their state and federal governments because they decide they want more of some service that both governments provide.¹⁵⁰ Health care would be the major contemporary example here.¹⁵¹ But this simultaneous change in demand does not really tell us much about crowding theory, since that would be a mere correlation, while the question crowd-out theorists seem to have in mind is whether federal taxation actually causes states’ diminished ability to tax.

¹⁴⁶ Russell S. Sobel & Randall G. Holcombe, *Measuring the Growth and Variability of Tax Bases over the Business Cycle*, 49 NAT’L TAX J. 535, 543 tbl.2 (1996).

¹⁴⁷ See Kirk J. Stark, *The Federal Role in State Tax Reform*, 30 VA. TAX REV. 407, 419–23 (2010).

¹⁴⁸ Darien Shanske, *How Less Can Be More: Using the Federal Income Tax to Stabilize State and Local Finance*, 31 VA. TAX REV. 413, 450–52 (2012).

¹⁴⁹ Further, since in some sense all economic conditions in a democracy depend on the existence of government, a separation between tax-related and other kinds of economic changes may not offer a clear conceptual boundary. See LIAM MURPHY & THOMAS NAGEL, *THE MYTH OF OWNERSHIP: TAXES AND JUSTICE* 32–37 (2002).

¹⁵⁰ Cf. Besley & Rosen, *supra* note 18, at 395 (identifying factors that might cause simultaneous changes in federal and state tax rates).

¹⁵¹ See *supra* text accompanying notes 115–18.

Turning to crowd-in itself, then, many economists have hypothesized that the interrelated structures of state and federal tax systems tie together the paths of federal and state revenues. A key component of that relationship is the federal income tax deduction for taxes paid to state and local governments.¹⁵² Federal taxpayers who itemize can reduce their federal taxable income by the amount of income and property taxes they paid to other governments.¹⁵³ Currently, itemizers also have the option of swapping their state income tax deduction for a deduction for the amount of general sales tax they pay, a handy choice for residents of states like Texas and Florida that lack an income tax.¹⁵⁴

Crucially for the crowd-in argument, the dollar value of a deduction increases when federal income tax rates rise.¹⁵⁵ Deductions reduce taxable income, not taxes due. So each dollar of deduction reduces the size of the check the taxpayer must write to the government by her marginal tax rate times the amount of the deduction.¹⁵⁶ In effect, the federal government is offering a matching grant to its taxpayers for the purchase of state and local government.¹⁵⁷ When federal rates go up, the value of the matching grant increases.¹⁵⁸ Furthermore, to the extent that households view federal taxes paid as lost income, a deduction makes them feel subjectively richer. If state government is a normal good, this income effect, too, should increase their demand for state services.¹⁵⁹ For some taxpayers, though—mostly homeowners or large families whose incomes fall between \$100,000 and \$500,000—the Alternative Minimum Tax (AMT) will claw back the value of the state and local deduction.¹⁶⁰

¹⁵² Chernick & Tennant, *supra* note 18, at 510–11.

¹⁵³ I.R.C. § 164 (2012). “Itemizing” means that the taxpayer has chosen to claim a bundle of individual tax benefits, rather than the “standard” deduction. JOSEPH BANKMAN ET AL., *FEDERAL INCOME TAXATION* 32 (16th ed. 2012). In 2014, the standard deduction for a single filer is \$6200, Rev. Proc. 2013-35, 2013-47 I.R.B. 541, meaning that taxpayers should choose to itemize if their bundle of benefits adds up to more than that.

¹⁵⁴ Sales tax deductibility was repealed in 1986, but reinstated in its current optional form in 2004. American Jobs Creation Act of 2004, Pub. L. No. 108-357, § 501, 118 Stat. 1418, 1520–21 (codified as amended at I.R.C. § 164(b)(5) (2012)).

¹⁵⁵ See Chernick & Tennant, *supra* note 18, at 511 (noting relation between value of deductibility and income).

¹⁵⁶ For instance, when Theresa Taxpayer takes a \$10,000 deduction, the amount she saves on her tax bill depends on her marginal rate. If she earns \$1 million per year, putting her in the highest bracket, she will have a 39.6% marginal rate, meaning the deduction will save her \$3960.

¹⁵⁷ McLure & Zodrow, *supra* note 16.

¹⁵⁸ Alan J. Auerbach & Daniel Feenberg, *The Significance of Federal Taxes as Automatic Stabilizers*, J. ECON. PERSP., Summer 2000, at 37.

¹⁵⁹ See Stephen J. Bailey & Stephen Connolly, *The Flypaper Effect: Identifying Areas for Further Research*, 95 PUB. CHOICE 335, 336 (1998) (explaining separate income and substitution effects of matching grants).

¹⁶⁰ See I.R.C. § 56(b)(1)(A)(ii) (2012). For more details on the relation between the AMT and § 164, see Galle & Klick, *supra* note 139, at 210–17.

A similar provision is the federal tax exemption for income earned on bonds issued by state and local governments.¹⁶¹ Because interest is tax free for holders of the bonds, states can offer a below-market rate of interest and still be competitive with taxable bond issuers.¹⁶² Again, the size of this discount increases with the federal income tax rate, since that rate represents the amount of money exempt-bond purchasers save relative to buying a taxable bond. As a result, state taxpayers face a lower overall price of government.¹⁶³ The highest income bondholders may also be net enriched by the combination of tax exemption and lower bond rates,¹⁶⁴ leading to an income effect that could drive up demand for government services.¹⁶⁵ Even if tax-exempt bonds do not lead to crowd-in, they should mitigate the impact of unexpected federal demands on state revenues by lowering borrowing costs, allowing the state to spread out the burden over time.¹⁶⁶

Crowd-in may also be a product of overlapping legal definitions and enforcement.¹⁶⁷ Most states define income as based in significant part on the federal definition.¹⁶⁸ Thus, when Congress expands its tax base, state bases expand as well.¹⁶⁹ As I and others have explained before, while sharing definitions does cede some policy primacy to the federal government, it also greatly simplifies life for state taxpayers, and allows state enforcement efforts to piggyback on the federal government and other

¹⁶¹ § 103.

¹⁶² Clayton P. Gillette, *Fiscal Federalism and the Use of Municipal Bond Proceeds*, 58 N.Y.U. L. REV. 1030, 1042 (1983). For more details on the bond program, see Shanske, *supra* note 148, at 434–45.

¹⁶³ See Gillette, *supra* note 162, at 1046–47 (noting that tax-exempt bonds are equivalent to federal grants to borrowers).

¹⁶⁴ See Robert P. Huefner, *Municipal Bonds: The Costs and Benefits of an Alternative*, 23 NAT'L TAX J. 407, 409 (1970) (explaining that exempt bond buyers receive a windfall if their tax rate is above the rate of the marginal purchaser). Top tax bracket bondholders sometimes come out ahead by buying exempt bonds because the price of the bond may be set to compete for the business of buyers in a lower bracket. For instance, let's say the market rate for bonds issued by nonexempts with credit comparable to the State of Indebtedness would be 10%. The State initially offers its bonds at 6.5%, assuming that this price will leave buyers in the 35% bracket indifferent between their product and a competitor. What if it does not manage to sell all its bonds? It may then raise its rates to 7% to capture the business of buyers in the 30% bracket. Buyers whose marginal rate is 35% then reap a 0.5% windfall.

¹⁶⁵ See Gillette, *supra* note 162, at 1052–54 (noting income effect of exemption generally).

¹⁶⁶ Cf. Barro, *supra* note 139, at 942–45 (suggesting that borrowing allows governments to overcome temporary drops in revenue or increases in demand more efficiently).

¹⁶⁷ See Esteller-Moré & Solé-Ollé, *Canada*, *supra* note 18, at 241, 253; Helen F. Ladd, *State Responses to the TRA86 Revenue Windfalls: A New Test of the Flypaper Effect*, 12 J. POL'Y ANALYSIS & MGMT. 82, 82 (1993).

¹⁶⁸ Chernick & Tennant, *supra* note 18, at 510.

¹⁶⁹ Ruth Mason, *Delegating up: State Conformity with the Federal Tax Base*, 62 DUKE L.J. 1267, 1269 (2013).

states.¹⁷⁰ For example, relative to individual state revenue agencies, the IRS has massive economies of scale, and, with its web of state- and international-data sharing, access to a more complete picture of each taxpayer's economic life.¹⁷¹ More effective enforcement not only saves states money but also likely reduces the elasticity of taxable income—that is, diminishes taxpayers' incentives to take aggressive reporting positions, increasing the amount of revenue states can collect at any given tax rate.

The benefits of shared enforcement are not necessarily static, and may well rise as the federal tax rate rises. In theory, it would be rational for the federal government to anticipate that its own tax increases would incentivize more creative tax accounting.¹⁷² Federal officials should therefore audit more intensively when rates are higher, or at a minimum devote more audit attention to taxpayers in higher brackets.¹⁷³ The latter, at least, fits with the available publicly known facts about IRS practices. Another source of crowd-in, then, might be the revenue benefits states realize when federal auditors ratchet up their efforts.

Shared enforcement resources may be especially important in the taxation of multijurisdictional taxpayers and cross-border transactions. When the tax base for each taxable unit is divided among several jurisdictions, the temptation for taxpayers to report their affairs in such a way as to allocate a larger share of the base to low-tax sovereigns is substantial. Information-sharing regimes can help to overcome this problem, but low-tax jurisdictions (sometimes called “tax havens”) have incentives to under share.¹⁷⁴ A credible central repository of data, such as that provided to states by the federal government, may mitigate the ability of taxpayers to shift income across borders, and again the information-checking effort expended by the federal authorities rationally should increase with their own tax rate.

Another set of theoretical arguments for crowd-in rests on predictions about how voters form preferences for how much to tax themselves. The

¹⁷⁰ Galle, *supra* note 126, at 702–04; Mason, *supra* note 169, at 1279–88; Mason, *supra* note 107, at 1020; Kim Rueben & Kirk J. Stark, Federal Tax Reform and the Deduction for State and Local Taxes 5 (May 2012) (unpublished manuscript), available at <http://extranet.isnie.org/uploads/isnie2012/stark.pdf>. In addition, an automatically expanding base could enlarge state revenues if officials want higher taxes and state-level voters are inattentive to the automatic expansions. Research on whether that effect in fact occurs has been inconclusive. Wallace E. Oates, *On the Nature and Measurement of Fiscal Illusion: A Survey*, in *TAXATION AND FISCAL FEDERALISM: ESSAYS IN HONOR OF RUSSELL MATTHEWS* 65, 66–71 (Geoffrey Brennan et al. eds., 1988).

¹⁷¹ Galle, *supra* note 126, at 703.

¹⁷² Saez et al., *supra* note 106.

¹⁷³ There are also other alternatives, although mostly unexplored by domestic revenue authorities. See Alex Raskolnikov, *Revealing Choices: Using Taxpayer Choice to Target Tax Enforcement*, 109 COLUM. L. REV. 689, 710–40 (2009).

¹⁷⁴ Steven A. Dean, *The Incomplete Global Market for Tax Information*, 49 B.C. L. REV. 605, 628–30, 655–57 (2008).

simplest of these I have discussed already: income effects. An expanding federal government can enrich many state residents. Some states on net receive more federal transfers than they pay in taxes.¹⁷⁵ Others, such as Maryland and Virginia, may be home to large numbers of federal contractors and employees.¹⁷⁶ And, notwithstanding the occasional \$800 toilet seat, some federal revenues may actually be used for good investments that expand the economy.¹⁷⁷

More subtly, Besley and Case have argued that voters may decide how much tax they want based on “yardstick competition”—comparisons between governments.¹⁷⁸ If my neighbors are paying 10% of their income to their state, my own governor’s proposal to hike taxes from 8% to 9% seems more reasonable. Although Besley and Case focus on horizontal competition among states, other commentators suggest that voters may also compare governments vertically.¹⁷⁹ While there is little direct evidence of vertical yardstick comparison, if it exists it could cause crowd-in: voters may be more inclined to see higher state taxes as a good deal when federal government is quite expensive.

Proponents of the so-called “Leviathan” theory of government tell a related vertical competition story that focuses instead on the incentives of government officials. In these accounts society’s total available resources are a common pool from which both federal and state officials must “fish” for taxes.¹⁸⁰ Leviathan theorists assume that officials have self-interested

¹⁷⁵ See sources cited *supra* note 122. Of course, this would imply crowd-out in net payor states.

¹⁷⁶ See *Federal Employees by State*, GOVERNING, <http://www.governing.com/gov-data/federal-employees-workforce-numbers-by-state.html> (last visited June 7, 2014) (approximately 145,000 federal jobs in Maryland and 175,000 federal jobs in Virginia).

¹⁷⁷ Cf. Bev Dahlby & Leonard S. Wilson, *Vertical Fiscal Externalities in a Federation*, 87 J. PUB. ECON. 917, 921–27 (2003) (modeling the claim that state taxation can increase federal revenues by improving productivity of labor and therefore taxable income).

¹⁷⁸ Timothy Besley & Anne Case, *Incumbent Behavior: Vote-Seeking, Tax-Setting, and Yardstick Competition*, 85 AM. ECON. REV. 25, 41 (1995); Pierre Salmon, *Horizontal Competition Among Governments*, in HANDBOOK OF FISCAL FEDERALISM 61, 73–77 (Ehtisham Ahmad & Giorgio Brosio eds., 2006). However, this evidence is not consistently supported across all data. See Timothy Besley & Anne Case, *Political Institutions and Policy Choices: Evidence from the United States*, 41 J. ECON. LITERATURE 7, 50–51 (2003) [hereinafter Besley & Case, *Policy Choices*]; see also Esteller-Moré & Solé-Ollé, *Canada*, *supra* note 18, at 253 (finding evidence consistent with horizontal yardstick competition in Canada).

¹⁷⁹ E.g., Martin Bodenstein & Heinrich W. Ursprung, *Political Yardstick Competition, Economic Integration, and Constitutional Choice in a Federation: A Numerical Analysis of a Contest Success Function Model*, 124 PUB. CHOICE 329, 331 (2005); see also Chernick & Tennant, *supra* note 18, at 518 (suggesting that federal tax increases may serve as a “first-mover signal” to states).

¹⁸⁰ Dahlby & Wilson, *supra* note 177, at 918–19; Michael Keen, *Vertical Tax Externalities in the Theory of Fiscal Federalism*, 45 IMF STAFF PAPERS 454, 459 (1998); see also Brülhart & Jametti, *supra* note 18, at 208 (suggesting that a common pool problem arises whenever officials maximize their own constituency’s welfare); Ingemar Hanson & Charles Stuart, *The Suboptimality of Local Taxation Under Two-Tier Fiscal Federalism*, 3 EUR. J. POL. ECON. 407 (1987) (modeling shared budget as a common pool).

reasons for wanting to maximize the revenues available for their own use.¹⁸¹ Given this assumption, and the further assumption that there are limited fish in the pond, basic game theory predicts that each competitor should want to catch the fish before their rivals get them all.¹⁸² If each competitor fears that her rival's efforts will ultimately crowd out her own, competition may encourage all the participants to increase their taxing efforts.

To sum up, there is a strong theoretical case for crowd-in. To my eye that case is stronger than the predictions of crowd-out. But both seem plausible. Indeed, both sets of predictions may be right, so that there could well be strong influences in each direction. We have therefore come to the end of what theory can likely tell us. At this point, we need evidence.

IV. PRIOR EVIDENCE ON CROWDING

In this Part, I will examine the existing evidence on whether federal revenues displace state funds. The evidence is thin, so my summary will be brief. In general, although there is no prior research directly on the effects of total federal revenues on total state revenues, there are two sets of narrower studies on related questions that could be relevant to my question here. Taken together, though, these narrower studies are fairly inconclusive.

The first set of studies examines whether federal taxation crowds out state taxation of the same tax base. For example, a series of papers has studied whether federal excise taxes on cigarettes and gasoline reduce state taxes on cigarettes and gasoline, respectively.¹⁸³ Some find that federal taxes increase state tax rates for the same commodity,¹⁸⁴ while others find no such effect or that the effect varies over time or commodity.¹⁸⁵ One paper finds crowd-out.¹⁸⁶ Other papers focus on the income tax. Again,

¹⁸¹ Keen, *supra* note 180, at 455.

¹⁸² Christopher Berry, *Piling On: Multilevel Government and the Fiscal Common-Pool*, 52 AM. J. POL. SCI. 802, 805–06 (2008).

¹⁸³ *E.g.*, Devereux et al., *supra* note 15, at 451–52; Esteller-Moré & Rizzo, *supra* note 15, at 359–76.

¹⁸⁴ Besley & Rosen, *supra* note 18, at 392.

¹⁸⁵ Devereux et al., *supra* note 15, at 452, 469; Esteller-Moré & Rizzo, *supra* note 15, at 355. Because the Esteller-Moré and Rizzo study is able to better account for the possible impact of non-tax-related economic events, and incorporates Devereux et al.'s insight that horizontal and vertical tax effects may interact, I find its results more convincing than others. *See* Esteller-Moré & Rizzo, *supra* note 15, at 356–57.

¹⁸⁶ Fredriksson & Mamun, *supra* note 18, at 35–36. Fredriksson and Mamun suggest that their results differ from others because they add controls for the state-level political influence of smokers and tobacco companies. *Id.* at 36. They also employ a putative measure of state corruption, which they measure by the number of federal corruption convictions. *Id.* For a variety of reasons, that outcome is probably a very poor measure of actual corruption. For example, corrupt state officials might well be *better* at warding off convictions when corruption is widespread enough to affect the federal prosecutor's future job prospects in the state. More problematically, the corruption measure could be correlated with other factors that would confound their results. To take one example, successful

some find evidence of crowd-in,¹⁸⁷ while others find the opposite, although the latter are all in the international context.¹⁸⁸ Chernick and Tennant look jointly at income and consumption taxes, finding that although states may respond to federal taxation by shifting their tax base to favor wealthier voters, these shifts are overall revenue neutral.¹⁸⁹ However, it is unclear whether Chernick and Tennant consider concurrent changes in other sources of revenue, such as corporate taxes and user fees. They also use simulated individual burdens rather than real statewide collections, and combine state and local effects, while our question here is state-level fiscal effects.¹⁹⁰

In interpreting many of these studies it is important to distinguish changes in state tax rates from changes in the amount of funds states are able to raise from their tax. Again, if federal taxation diminishes a state’s tax *base*—for example, if federal gas taxes motivate Escalade drivers to switch to an Escape or a Smart car—then state *rates* might rise to preserve total revenue levels.¹⁹¹ The reverse is also possible; good federal investments could expand the state economy and allow for lower rates.¹⁹² Then again, higher rates usually mean more money. So it is ambiguous, looking at rates alone, whether state revenues on net are moving in the same direction.¹⁹³ Since the question posed by the *NFIB* decision is whether federal taxes reduce states’ ability to bring in funds, the relevant data point is total revenues, not tax rates. Therefore the tax-rate studies, even if they were more conclusive than they are, would not actually tell us a great deal about the coercion problem.

prosecutions could correlate with greater federal resources devoted to the state, which could in turn affect state demand for public goods. It would therefore be interesting to know whether Fredriksson and Mamun would reach the same result if they dropped that variable, which they found to have significant effects. *Id.*

¹⁸⁷ Brülhart & Jametti, *supra* note 18 (Swiss cantons and municipalities); Esteller-Moré & Solé-Ollé, *Canada*, *supra* note 18, at 249 (Canada).

¹⁸⁸ Andersson et al., *supra* note 18, at 255–56 (Swedish local and municipal governments); Timothy J. Goodspeed, *Tax Competition and Tax Structure in Open Federal Economies: Evidence from OECD Countries with Implications for the European Union*, 46 EUR. ECON. REV. 357, 372 (2002); see also Chernick & Tennant, *supra* note 18, at 508 (noting that U.S. studies find crowd-in while studies of other jurisdictions sometimes find crowd-out).

¹⁸⁹ Chernick & Tennant, *supra* note 18, at 531.

¹⁹⁰ *Id.* at 521–22.

¹⁹¹ See Besley & Rosen, *supra* note 18, at 386 (“An increase in federal taxes on goods that are also taxed by the state implies that the states have to raise their rates in order to maintain their revenues.”).

¹⁹² Fredriksson and Mamun argue that their tax rate results also imply lower state revenues. Fredriksson & Mamun, *supra* note 18, at 47. But lower rates imply lower revenues only if there are no offsetting expansions in the tax base—for example, if more individuals buy tobacco because the tax is lower. Fredriksson and Mamun offer no evidence on tax base in either direction. Also, their study does not tell us anything about whether states offset any possible loss in tobacco-tax revenues with other revenues or spending cuts.

¹⁹³ Chernick & Tennant, *supra* note 18, at 516.

Studies of the impact of federal deductibility on state taxes supply another source of potential evidence. Unfortunately, the literature as a whole offers murky results.¹⁹⁴ Some authors find that deductibility increases state tax receipts,¹⁹⁵ while others find that it affects only the form but not the amount of total state taxes.¹⁹⁶ Further, because many of these deductibility studies do not account for the potentially confounding effects of other federal–state interactions, their results may not be fully reliable.¹⁹⁷

Existing studies may help to refine some of the causal mechanisms that might contribute to crowd-out or crowd-in, though. For example, by comparing Canadian provinces whose laws automatically tracked national tax rules with those that did not, Esteller-Moré and Solé-Ollé found some modest evidence that Quebec, which did not track national law, was less sensitive to national tax rates than other provinces.¹⁹⁸ That tends to support the idea that shared definitions are important to crowding. Similarly, Ladd found that the extensive federal tax reforms of 1986, in which the federal government eliminated many existing loopholes, boosted state budgets.¹⁹⁹ Chernick and Tennant’s findings about the shifting distribution of state tax bases lend some support to the hypothesis that income effects of federal taxation may vary by income level. And Agrawal finds that municipalities respond more strongly to state taxes than states do to federal taxes, which he interprets as evidence that the elasticity of the tax base is important to crowding effects.²⁰⁰

At this point it should be obvious that even taken all together, the literature does not appear to offer clear predictions about crowd-out. Changes in tax rates or revenues for one tax instrument do not tell us what is happening at the same time to other state revenues or state borrowing. The effects of one influence, such as deductibility or base overlap, do not show us the combined impact of all federal influences. More evidence is needed.

V. ORIGINAL EMPIRICAL EVIDENCE ON CROWDING

In order to test the competing crowd-out and crowd-in hypotheses, I construct a dataset of U.S. state and federal budgets and other control

¹⁹⁴ Kaplow, *supra* note 21.

¹⁹⁵ Holtz-Eakin & Rosen, *supra* note 20; Metcalf, *supra* note 20; *see also* Galle & Klick, *supra* note 139, at 217 (finding that deductibility affects state countercyclical spending); Gramlich, *supra* note 20, at 453–58 (reporting that deductibility increases demand for state and local public goods).

¹⁹⁶ Chernick & Tennant, *supra* note 18, at 515–20; Courant & Gramlich, *supra* note 20, at 244–53.

¹⁹⁷ Esteller-Moré & Solé-Ollé, *US*, *supra* note 18, at 252 n.5.

¹⁹⁸ Esteller-Moré & Solé-Ollé, *Canada*, *supra* note 18, at 241, 252.

¹⁹⁹ Ladd, *supra* note 167.

²⁰⁰ David R. Agrawal, *Inter-federation Competition: Sales Taxation with Multiple Federations* 27 (Aug. 2013) (unpublished manuscript), *available at* http://www-personal.umich.edu/~dagrawal/research_files/Agrawal_IFC.pdf.

variables, covering the years 1998 to 2010. I build a panel by collecting yearly information at the state level; that is, for each year, I have forty-eight observations, one representing each state.²⁰¹ I then use regression analysis to identify statistical correlations between state and federal budgets, holding constant other factors that might influence the two.

A. Methodology

The regression analyses I report here take the form of what are known as fixed-effects panel regressions.²⁰² In essence, what this means is that I will attempt to use the variation within each state from year to year to explain what causes state budgets to grow or shrink. Over time, the forces affecting each state budget, such as the size of federal revenues, the state’s wealth and population, and the amount of state taxes residents claim as deductions on their federal returns, will change. Other aspects of the state, such as its constitution, political tradition, and important budget institutions, are assumed to be unchanging, and so are held constant—hence the term “fixed effects” regression.²⁰³

As I discussed in Part III, the ideal measure of federal–state influence would be to observe what happens to state revenues as federal revenues change, holding constant any non-tax-related changes in the economy, but in the real world we cannot tell which economic changes are caused by taxes. Therefore I approximate the ideal measure by using two different dependent variables,²⁰⁴ state revenues as a portion of state GDP and per capita state own-source revenues. State revenues as a percentage of GDP could be underinclusive, in that it largely ignores deadweight loss or economic expansion caused by federal taxes. Per capita state revenues alone may be overinclusive: it will reflect economic conditions with only attenuated relations to federal tax. So by using both, I hope to bracket the correct answer. Reassuringly, my results are essentially identical under either approach.

I measure federal tax burdens using a combination of federal revenues collected in each state, and the revenues collected in geographically adjacent states.²⁰⁵ In the absence of any identifiable shock that affects

²⁰¹ Because some of my key variables depend on geographically adjacent states, I omit Alaska and Hawaii.

²⁰² I describe additional technical details about the construction and analysis of the data, including a wide variety of alternative “specifications,” or research designs, in a related paper. Brian Galle, *The Effect of National Revenues on Sub-national Revenues: Evidence from the U.S.*, 37 INT’L REV. L. & ECON. 147, 150–54 (2014).

²⁰³ JOSHUA D. ANGRIST & JÖRN-STEFFEN PISCHKE, *MOSTLY HARMLESS ECONOMETRICS* 222–23 (2009).

²⁰⁴ The “dependent” variable is typically the outcome whose influences we are hoping to measure.

²⁰⁵ Although in theory I would like to observe the influence of all national revenues on each state’s budget, this is impractical statistically. Since federal revenues of course do not vary across states for

federal revenues without also directly impacting state budgets, my main source of identification will come from variations in federal effective rates, base definitions, and collection efforts, which in turn may vary with the composition of state populations and over time. Federal revenues collected in theory represents a composite of local economic conditions, federal rules applicable to taxpayers in those conditions, and federal officials' effort at ensuring compliance with the rules. By controlling for economic conditions, I should be able to abstract away from the fine-grained and often-unobservable variations in federal rules and effort and measure their intermediate result, federal revenue collected.²⁰⁶

Relying on federal revenues collected in each state creates some difficulties. IRS statistics on state-by-state collections do not fit perfectly with what in theory I want to test. The IRS collects the locus of the legal incidence of each tax, while the economic incidence may fall elsewhere.²⁰⁷ Still, to the extent that taxpayers' political responses are motivated in significant part by the legal incidence of a tax,²⁰⁸ the legal incidence may be an important determinant of crowding. In addition, to capture the possible in-state economic incidence of taxes imposed in neighboring states, I include population-weighted mean per capita tax burdens in geographically adjacent states.²⁰⁹

As I also mentioned in Part III, I want to rule out the possibility that simultaneous changes in demand for public goods could be driving both

any given year, there is no practical way to fully distinguish the impact of nationwide federal revenues from other potential influences, such as national economic conditions.

Because some state taxes are federally deductible, state tax levels can affect federal revenues, a potential endogeneity problem. To the extent this is true, however, it should tend to produce a negative relationship between state taxes and federal taxes: when states collect more money, federal collections are reduced. If I observed a negative relationship between federal and state revenues, I would be unable to rule out the possibility that it is caused by this fiscal relationship. Instead, as I describe momentarily, I observe a positive relationship. That I am able to identify a positive relationship despite this negative feedback loop suggests that the true positive relationship might be even stronger than the one I measure. In a web appendix, I describe additional statistical steps I take to account for this feedback relationship. Brian Galle, Web Extension for: The Effect of National Revenues on Sub-national Revenues: Evidence from the U.S. (Apr. 25, 2014) (unpublished manuscript), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2210024. If anything, I find that crowd-in is even more pronounced than I report here. *Id.* at 4.

²⁰⁶ Controlling for a variable essentially means that we approximate the impact of other variables, holding the controls constant. WILLIAM H. GREENE, *ECONOMETRIC ANALYSIS* 12–13 (7th ed. 2012). For instance, in this case we will simulate mathematically what the impact of varying in-state federal revenues would be if every state experienced the exact same economic conditions.

²⁰⁷ IRS data on the state of origin for corporate taxes is based on the legal residence of the corporation, INTERNAL REVENUE SERV., 2011 DATABOOK 14 tbl.5 Notes (2011), which bears no real connection to its economic activities; my main results are robust to omitting federal corporate taxes from all variables.

²⁰⁸ For a discussion of the laboratory evidence to that effect, see Edward J. McCaffery & Jonathan Baron, *The Political Psychology of Redistribution*, 52 *UCLA L. REV.* 1745 (2005).

²⁰⁹ Results are robust to omitting population weights.

federal and state tax setting. Again, this story is fairly implausible in the period covered by the sample, given that health spending is the only major area of overlap. I therefore control for joint changes in demand for government by including Medicaid and non-Medicaid state health spending in the regression.

In order to explain any observed crowding in or out, I also include a set of explanatory variables relating to the theories set out earlier. To test the impact of federal deductibility, I include the value of state and local tax (SALT) deductions claimed by taxpayers at varying income levels.²¹⁰ I check for income effects using federal direct grants and federal spending (less grants) in each state–year. I set out the results of those additional tests, and analyze their implications for the usefulness of the deduction for state and local taxes, in a separate paper.²¹¹

I additionally include a group of control variables that is mostly standard in the literature. Following prior work, I control for state population; population squared; fraction of population under 26 and over 64; state median income, GDP, and unemployment rate; and state ideology. I measure economic conditions using population-weighted mean GDP per capita in adjacent states, as well as year effects. In some specifications (not reported), I also account for possible idiosyncratic state trends using unit-specific year effects.²¹² To rule out the possibility that any observed crowd-in results are the effect of an important federal matching grant for Medicaid, I control for each state’s match rate (FMAP) and the interaction between match rate and state Medicaid expenditures.

Finally, it is unclear in theory whether we should expect state reactions to outside influences to be immediate, to entail some delay, or both. Some

²¹⁰ Galle & Klick, *supra* note 139, at 226–36, find that the impact of SALT deductions varies by income level, with very-high-income taxpayers having a disproportionate impact on state spending. Because the reported SALT data are net of any AMT effects, I should not need to separately account for AMT. To be cautious, however, I include AMT in some regressions; my results are robust to inclusion or exclusion of the number of AMT payers in each income class.

Endogeneity is also a potential problem for the SALT deduction regressors. As Metcalf notes, shocks to state wealth could simultaneously affect an individual’s state and federal tax liability. Metcalf, *supra* note 20, at 578. The former would reduce (increase) state revenues, while the latter could diminish (enhance) the value of the federal deduction. I therefore adapt Metcalf’s method to construct my own instruments for SALT value and use 2SLS to double-check the OLS results. First, I divide the population into groupings, by “AGI,” a tax law measure of income before itemized deductions. Then, for each grouping, I calculate the national average likelihood of itemizing and the marginal tax rate at the midpoint of each range. Following Metcalf’s formula, I use these figures to compute an average national “tax price” for each grouping: the amount of pennies that, on average, a person in that group would save from a one-dollar tax deduction. Because these figures are computed from national averages, individual state conditions have little effect on them. But, since tax price determines the dollar value of a SALT deduction, they are strongly correlated with the value of SALT deductions for each state and income group. Because the equation is exactly identified I do not test for weak instruments.

²¹¹ Galle, *supra* note 202, at 152–54.

²¹² For the most part my results are robust to the inclusion or exclusion of unit-specific year effects.

prior literature includes “lags” of major variables—that is, they examine whether past years’ data affect a current year’s dependent variable.²¹³ I therefore included lags of the economic and tax variables in each regression, and then, if these lags had no statistically significant results, reran the regression without them. Inclusion of lags did not change the sign of the main regressors of interest and did not alter the coefficients much, so the regressions reported here omit the lags.

B. Results and Analysis

The main results of the fixed-effects regressions are summarized in Table 1, below. The reported coefficient can be read as the percentage change in state own-source revenues resulting from a 1% increase in each logged regressor, or from a one-unit change in others.²¹⁴ Column 1 summarizes a regression using state revenues per capita as the dependent variable, while column 2 reports the same regression using state revenues as a fraction of state GDP.

²¹³ See, e.g., Andersson et al., *supra* note 18, at 253, 255.

²¹⁴ Although in some cases results were estimated more precisely in levels, I report results for revenue and economic variables as log–log both for ease of interpretation and because of the skewness of most per-state measures.

TABLE 1: EFFECTS OF PER CAPITA FEDERAL TAX
COLLECTED IN STATE ON STATE REVENUES, 1998–2010

Variables	(1) State Revs. per Capita	(2) State Revs. per GDP
Log pc fed. revs. in state	0.355*** (6.089)	0.355*** (6.089)
Log fed. taxes pc in adj. states	0.00678 (0.358)	0.00678 (0.358)
Log fed. non-grant expend in state pc	0.338*** (4.363)	0.338*** (4.363)
State unemployment	-0.0231*** (-3.456)	-0.0231*** (-3.456)
State median income in 2005 dollars	3.77e-06* (1.860)	3.77e-06* (1.860)
FMAP	-0.0139*** (-2.892)	-0.0139*** (-2.892)
R-squared	0.928	0.946

Notes: Fixed-effects regressions with year effects; regression includes state health spending, logged federal grants, population under 26, and population over 64 (insignificant coefficients), and population, population square, logged values of state GDP per capita, weighted adjacent-state GDP, and per capita SALT deductions by AGI category (significant in some specifications); robust standard errors clustered by state; coefficient reported with (*t* score); all dollar figures reported in 2005 dollars; *N* = 575; *: statistically significant at a 5% level; **: statistically significant at a 1% level; ***: statistically significant at a 0.1% level.

In both of these regressions, as well as in a variety of other specifications I employ as double checks, there is highly statistically significant evidence that federal revenues crowd-in state revenues to a considerable degree. For example, as Table 1 reports, I find a measured elasticity of state revenue to federal revenues of 0.355. That is, when federal revenues rise by 1%, holding constant annual economic effects and local and regional economic factors, state revenues rise by 0.355%. Regressions using in-state federal revenues collected as a fraction of state GDP in place of per capita federal revenues collected in state similarly produce an elasticity of about 0.34.²¹⁵

²¹⁵ Lags of federal revenues were insignificant in all these regressions, although in some cases there was a modest positive coefficient for state-own source revenues, significant at the 10% level—95% confidence intervals generally ran from -0.001 to 0.03. Consequently I report results from

It is also worth noting that the control variables have impacts familiar from the literature. For example, states with a larger school-age population tend to raise more money. Likewise, state tax revenues increase with state wealth and decrease with unemployment. State revenue per GDP declines with GDP, likely because there is some delay in state adjustments to changed circumstances, and because states smooth revenues to some degree. Federal grants typically crowd-in state spending, and a more robust neighboring economy boosts each state's revenues.

As additional robustness checks, I estimate each equation using logged state *expenditures* per capita as the dependent variable, and separately using first differences of the revenue variables. Results are qualitatively similar to those reported.

An important caveat to my findings is that I am able to study only a small segment of U.S. fiscal history. The theory I have sketched suggests crowding may be sensitive to institutional design and voter behavior, both of which can change over time. Still, the slice of time I have studied is the slice closest to today, and spans an entire business cycle. If courts are interested in how their decisions impact policy, these data are the most relevant to Spending Clause decisions in the near future.

One other concern about the limited time span I study is that it happens to have been a period of unusually low federal marginal income tax rates. Nonetheless, federal revenues as a portion of GDP range from their postwar high of 20.6% in 2000 to 15.1% in 2009 and 2010, representing the lowest levels since 1950. Most years fall in the postwar average range of 17% to 18%. The sample therefore arguably captures a fairly representative set of federal taxing conditions.

CONCLUSION

I have argued that a key premise of the Supreme Court's recent Medicaid decision rests on uncertain, perhaps even incorrect, facts. I do not mean to say that my empirical findings can or should end the debate over conditional spending. The proper roles of national and state governments in our constitutional system will remain an enduring controversy.²¹⁶ At most

regressions in which lags are omitted. Including lags did not meaningfully change the coefficients reported. Because arguably adjacent-state GDP could include the effect of lagged own-state tax rates, I also include as robustness checks system Generalized Method of Moments (GMM) regressions in which I instrument for lagged own-state revenues and neighbor GDP with prior years' values of those variables. See Stephen R. Bond, *Dynamic Panel Data Models: A Guide to Micro Data Methods and Practice*, 1 PORTUGUESE ECON. J. 141, 141–59 (2002) (explaining the need for and methodology of implementing system-GMM). These regressions yield slightly greater elasticities, in the 0.6 range for most specifications.

²¹⁶ See sources cited *supra* note 63. For example, my own view is that even “coercive” regulation could be justified in the situation in which federal regulation is needed to overcome collective action problems among the states—indeed, when states have strong motives to defect from mutually beneficial shared agreements, very potent federal tools are especially needed. Galle, *supra* note 38, at 185–91. *But*

my contribution here can help to move us past the overly reductive focus on coercion and toward that larger debate, as well as providing a reminder of the occasional importance of facts in public law.²¹⁷

Canadian and Australian legal scholars can make similar use of my findings. In both countries, there is a similar dispute over judicial control of conditional federal spending.²¹⁸ Those disputes, too, are often tangled in the notion that grants coerce states.²¹⁹ While cultural and institutional details of course will differ, my work here suggests that similar empirical investigation would help advance the discussion.

Finally, whatever their use for lawyers, my findings here should be of independent interest to social scientists who study the fiscal relationship between governments. Though the effects of federal revenue measures on state finances have been a continuing topic of debate, the focus has until now fallen on narrow, individual tax measures. My evidence helps to tilt that discussion toward larger questions, such as whether a robust federal government is consistent with a vibrant set of state enterprises. My hope is that future work by myself and others will shed further light on which institutional factors are central in preventing national efforts from crowding out state rivals.

see Baker, Conditional Spending, supra note 13, at 1951–54 (acknowledging this point, but arguing that constitutional amendment is a viable alternative solution).

²¹⁷ For a more in-depth discussion of the Court’s questionable approach to fact-finding, see Brianne J. Gorod, *The Adversarial Myth: Appellate Court Extra-record Factfinding*, 61 DUKE L.J. 1, 25–67 (2011).

²¹⁸ *See* Hoi Kong, *The Spending Power, Constitutional Interpretation and Legal Pragmatism*, 34 QUEEN’S L.J. 305, 310–14 (2008); David W.S. Yudin, *The Federal Spending Power in Canada, Australia and the United States*, 13 NAT’L J. CONST. L. 437, 451–53, 456–69 (2002).

²¹⁹ *See* Jean-François Gaudreault-DesBiens, *The Irreducible Federal Necessity of Jurisdictional Autonomy, and the Irreducibility of Federalism to Jurisdictional Autonomy*, in DILEMMAS OF SOLIDARITY: RETHINKING REDISTRIBUTION IN THE CANADIAN FEDERATION 185 (Sujit Choudhry et al. eds., 2006); Yudin, *supra* note 218, at 454–55, 469–72.

