# TAX COMMITMENT DEVICES

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*Abstract*

Every line of the Internal Revenue Code is continually vulnerable to revision or repeal. With each new session of Congress, rates may rise or fall, transactions may become taxable or tax-free, and incentive programs may be extended or repealed. The resulting uncertainty harms taxpayers, who find it difficult to plan their future business affairs. It frustrates government by making its incentive programs less effective. For example, firms may decline to invest in research facilities because they cannot rely on a tax credit that might soon expire. And it provides fodder for political rent-seeking, as legislators can demand money or votes in exchange for supporting a soon-to-expire tax break. This was recently seen in the furor over bonus depreciation, a purportedly temporary provision that has been the subject of furious lobbying and frequent renewal.

This paper proposes commitment devices as an antidote to tax uncertainty. I analyze the economic and democratic costs of tax uncertainty, and why even a perfectly altruistic and rational legislature might benefit from credible policy commitment. I also describe the most practicable tax commitment devices within the bounds of current law, and I consider how those devices can improve current provisions for bonus depreciation and the R&D credit.


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[1] Wachtell, Lipton, Rosen & Katz; Yale Law School, J.D., 2014; Dartmouth College, B.A., 2011. Thanks to Anne Alstott, Lilai Guo, and participants in the Tax Policy Seminar at the Yale Law School.

## I. INTRODUCTION

Government makes all sorts of commitments: to honor debts, to pay employees, to follow treaties, to obey the Constitution, and more. Some of these commitments, like debts and contracts, are obligations to counterparties. Others, like the Constitution, are attempts by government to bind itself. They are, in the language of economics, "commitment devices," which encourage actors to behave in ways that they believe to be optimal but from which they otherwise might feel tempted to stray.[2]

An extensive literature addresses the use of commitment devices by individuals, from the motivational effects of shaming to savings clubs in Africa.[3] The common theme is that commitment devices voluntarily foreclose future options without any compensating economic gain.[4] Strictly speaking, these personal commitment devices are therefore irrational—at least, they require us to consciously embrace the limits of our own rationality. Their use contradicts the traditional economic assumption that more choices are better because we will always act to maximize self-interest.[5]

It is easy to see how often the assumption of rational maximization fails at the individual level, and therefore why individuals might find commitment devices useful. Government commitments are odder. Most people have felt the tug of procrastination or temptation, but it is hard to imagine an entire polity suffering from analogous weakness of will. Government may not always be altruistic—an extensive literature addresses the problem of self-interested decision-makers[6]—but it is at least assumed to be *rational*. Congress never raises taxes when it really would have liked to lower them; what use, then, can commitment devices have in the public sphere?

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[2] Gharad Bryan, Dean Karlan & Scott Nelson, *Commitment Devices*, 2 ANN. REV. ECON. 671, 672 (2010).

[3] *See* RICHARD H. THALER & CASS R. SUNSTEIN, NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH, AND HAPPINESS 267–68 (2d ed. 2009); Ilona E. de Hooge, Seger M. Breugelmans & Marcel Zeelenberg, *Not So Ugly After All: When Shame Acts as a Commitment Device*, 95 J. PERSONALITY & SOC. PSYCH. 933, 933–43 (2008); Luis M.F. Martinez, Marcel Zeelenberg & John B. Rijsman, *Behavioural Consequences of Regret and Disappointment in Social Bargaining Games*, 25 COGNITION & EMOTION 351 (2011); Lasse Brun et al., *Commitments to Save: A Field Experiment in Rural Malawi* (World Bank Pol. Research, Working Paper No. 5784, 2011); Pascaline Dupas & Jonathan Robinson, *Why Don't the Poor Save More? Evidence from Health Savings Experiments*, 103 AM. ECON. REV. 1138 (2013).

[4] Bryan et al., *supra* note 2, at 672–74.

[5] *See* THALER & SUNSTEIN, *supra* note 3, at 9–11.

[6] This school of thought is known as "public choice," now one of the dominant methods of political analysis. *See*, *e.g.*, THE ENCYCLOPEDIA OF PUBLIC CHOICE (Charles K. Rowley & Friedrich Schneider, eds., 2003); William F. Shughart II, *Public Choice*, *in* CONCISE ENCYCLOPEDIA OF ECONOMICS (2d ed. 2008).

One answer is that commitment devices fight tyranny. The Bill of Rights, for example, was primarily intended to preserve individual liberty rather than to bind indecisive policymakers.[7] But this answer explains only a limited subset of government commitments. It addresses limits that citizens have placed on federal power rather than limits that politicians have placed on themselves.[8] Moreover, the tyranny perspective narrows the conversation to normative concerns, like political freedoms and the oppression of minorities.[9] As such, it can only maladroitly explain government commitment devices, which are primarily economic in character, like current House rules obstructing future tax rate increases.[10]

I take a different approach. I consider government commitment—specifically, commitment by legislatures—through the lens of tax policy. I conduct a welfarist[11] inquiry into the benefits and costs of tax commitment devices, instead of the rights-oriented analysis typical among constitutional scholars.[12] A crucial but often overlooked benefit of commitment devices is that they reduce uncertainty in the direction of future policy and therefore make it easier for those affected by government action—here, taxpayers—to plan their affairs. Certainty is especially useful in economically oriented fields like taxation, but my conclusions may be easily generalized to other fields of law. For example, the constitutional ban on any "Law impairing the Obligation of Contracts"[13] makes contracts more certain by promising government restraint. This provision substantially encouraged commerce in the early republic by assuring merchants that their contracts would be left untouched.[14]

This article proceeds as follows. First, I focus the remainder of my analysis by describing how tax commitment devices decrease taxpayer uncertainty. This has numerous benefits, which I investigate in Part II.

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[7] U.S. CONST. amends. I–X; THE FEDERALIST No. 84 (Alexander Hamilton); THE ANTI-FEDERALIST No. 84 (Brutus). To a lesser extent, the anti-tyrannical tenor of the Bill of Rights rings through the Constitution itself, although there is some evidence that the Framers believed liberty interests to be largely implicit. *See* THE FEDERALIST No. 84, *supra*.

[8] *See* John Ferejohn & Lawrence Sager, *Commitment and Constitutionalism*, 81 TEX. L. REV. 1929, 1931 (2003) ("[I]t seems obvious that the people, acting constitutionally, have put into the Constitution restraints on the legislature that go well beyond what the legislature would impose on itself.").

[9] *See, e.g.*, JOHN ELSTER, ULYSSES UNBOUND: STUDIES IN RATIONALITY, PRECOMMITMENT, AND CONSTRAINTS (2000); JED RUBENFELD, FREEDOM AND TIME (2001).

[10] *See infra* Section IV.A.

[11] Amartya Sen defines welfarism as the claim that "[t]he judgment of the relative goodness of alternative states of affairs must be based exclusively on, and taken as an increasing function of, the respective collections of individual utilities in these states." Amartya Sen, *Utilitarianism and Welfarism*, 76 J. PHIL. 463, 468 (1979).

[12] *See* sourced cite *supra* note 9.

[13] U.S. CONST. art. I, § 10, cl. 1.

[14] For analysis of the importance of credible commitment to property rights and freedom of contract in newly formed polities, see THE POLITICAL ECONOMY OF PROPERTY RIGHTS: INSTITUTIONAL CHANGE AND CREDIBILITY IN THE REFORM OF CENTRALLY PLANNED ECONOMIES 20–49 (David L. Weimer, ed., 2011).

Why Commit?: more certainty makes the Internal Revenue Code (IRC) more accessible to unsophisticated taxpayers, reduces planning costs, and deters rent-seeking by legislators. It can also smooth economic output by encouraging intertemporal substitution of production and investment from high-output periods to low-output periods, and it can make tax subsidies more effective by raising their expected future value to their recipients. Finally, tax commitment devices can solve a crucial game-theoretic problem that I describe in Section B. Defecting Successors and Optimal Plans, whereby even optimally rational and altruistic legislators can fail to stick to an optimal plan of taxation.

Second, I suggest a menu of commitment devices that Congress could use to make tax policy more certain.[15] Congress could require minorities or supermajorities to repeal tax provisions, rather than simple majorities, as under the status quo; it could automatically sunset tax provisions; it could prepay tax benefits or grandfather them *ex ante*, to remove the threat of future repeal; and it could make the repeal or reenactment of tax policies dependent on objective economic indicators, such as GDP growth, rather than the caprices of legislators. Best of all, Congress could use a combination of these strategies to strike the ideal balance between certainty and flexibility. It could, for instance, require an economic stimulus to automatically sunset unless GDP growth falls below 1 percent, or unless two thirds of Congress votes to extend the stimulus.

Third, I provide two examples of actual provisions that would especially benefit from the use of commitment devices.[16] These are bonus depreciation and the R&D tax credit, both of which have long been criticized for creating significant and unnecessary taxpayer uncertainty.

This article makes two original contributions to the conversation on legislative commitment. It is the first to my knowledge that extends analysis of commitment devices to tax legislation,[17] and it proposes novel tax

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[15] *See infra* Parts III. Legal Background–IV. Commitment Devices.

[16] *See infra* Part V. Implications.

[17] The use of commitment devices to alter legislator incentives differs from the use of commitment devices to alter taxpayer incentives. This paper does not closely relate to consideration of, for example, sin taxes as commitment devices, which have been studied elsewhere. *See, e.g.*, Ted O'Donoghue & Matthew Rabin, *Optimal Sin Taxes*, 90 J. PUB. ECON. 1825 (2006); Markus Haavio & Kaisa Kotakorpi, *The Political Economy of Sin Taxes*, 55 EUR. ECON. REV. 575 (2011).

Another strand of analysis that resembles mine is the literature on constitutional balanced budget amendments. Although the balanced-budget literature frames its points in terms of "fiscal discipline" instead of commitment devices, one could reasonably contend that a balanced budget amendment is merely a form of commitment device to prevent fiscal excess by subsequent legislatures. However, research on balanced budget amendments does not contemplate the use of commitment devices in individual tax provisions, as I do. (A balanced budget amendment is a single overarching commitment device; I propose the use of commitment devices of varying strength and character attaching to individual provisions.) Thus the balanced-budget literature also does not contemplate the potential for tax commitment devices to reduce uncertainty, which is the primary thrust of my paper—

commitment devices with which Congress can make the IRC more effective and fair.

## II. WHY COMMIT?

As the Introduction suggests, legislatures and individuals benefit from commitment devices in different ways. Individuals use commitment primarily to reconcile conflicting intertemporal preferences; present-me does not trust future-me to abstain from eating the whole box of cookies, so present-me decides not to buy them in the first place. This justification is already problematic in the context of personal motivation—why should we privilege ascetic present-me over hedonistic future-me?—and it becomes even more so in the context of legislation. It is just as easy to imagine the present legislature abusing commitment devices by entrenching expansive benefits to favored special interests as it is to imagine the present legislature using commitment devices to improve the discipline of future legislatures. On the whole, there is little reason to believe that Congress today will be systematically more or less objective than Congress five years from now.

Instead, Part II. Why Commit? focuses on how commitment devices can improve tax policy even assuming that legislative preferences stay constant over time. Section A. Costs of Legislative Uncertainty discusses how tax commitment devices can reduce uncertainty in the direction of future policy, which benefits taxpayers and mitigates the procedural pathologies of tax legislation. Section B. Defecting Successors and Optimal Plans describes how commitment devices can provide reassurance to taxpayers that Congress will not defect from welfare-maximizing plans for taxation, even when it is altruistic and rational for Congress to do so. Finally, Sections C. Fiscal Stimulus ("Making Hay While the Sun Shines") and D. Timing Mismatches extend the analysis in Section B. Defecting Successors and Optimal Plans to suggest how commitment devices can make tax stimuli and tax incentives more effective by altering taxpayer expectations of future payouts.

### A. Costs of Legislative Uncertainty

In this article, I define tax uncertainty as uncertainty about the *direction of future tax policy*—not, as has been studied elsewhere, uncertainty about the correct interpretation of the Code in the present or

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balanced budget amendments will not tend to decrease policy volatility, and indeed could even increase it because they will require continuous rate and base adjustments in order to achieve equilibrium with spending. *See generally* James M. Buchanan, *The Balanced Budget Amendment: Clarifying the Arguments*, 90 PUB. CHOICE 117 (1997); Mark Gradstein, *Optimal Taxation and Fiscal Constitution*, 72 J. PUB. ECON. 471 (1999); Theodore P. Seto, *Drafting a Federal Balanced Budget Amendment That Does What it is Supposed to Do (And No More)*, 106 YALE L. J. 1449 (1997).

about the probability of its enforcement.[18] For clarity, I further divide tax uncertainty into "legislative uncertainty" and "market uncertainty." Legislative uncertainty is caused by taxpayers' inability to perceive the probability of future policy change in the present, due to the opacity of the legislative process. In contrast, market uncertainty results from lack of present knowledge about future conditions and a desire to retain the flexibility to adapt to those conditions.

For example, if Congress were to credibly commit to extend bonus depreciation[19] based on the flip of a coin, bonus depreciation would have exactly a 50% chance of renewal and would be subject to market uncertainty, but not legislative uncertainty. In contrast, if Congress were to secretly, but absolutely, commit to extend bonus depreciation, bonus depreciation would be subject to no market uncertainty, but considerable legislative uncertainty.

More realistically, if Congress were to commit to renew bonus depreciation if and only if GDP growth dipped below one percent,[20] the renewal would not be subject to legislative uncertainty. In this case, while the precise probability of renewal would not be known, the conditions that must be satisfied for renewal to occur *would* be known.[21] On the other hand, if Congress used the GDP rubric but simply declared its intention to renew bonus depreciation "as necessary," the vagueness of its standard would have generated considerable legislative uncertainty. The ne plus ultra of legislative uncertainty is to make no commitments at all, leaving taxpayers to simply guess—precisely as Congress currently does.

Legislative uncertainty demands a different sort of analysis from market uncertainty. This Section describes how legislative uncertainty is undesirable from the standpoints of efficiency, fairness, and political economy. It also describes how tax commitments reduce legislative uncertainty in two ways: by broadcasting the commitments of policymakers in a manner more legible to ordinary taxpayers, and by substituting alternative decision mechanisms for congressional discretion.[22]

Increased legibility has clear efficiency benefits. In theory, firms can assess a dollar cost to uncertainty based on the costs of insurance at an

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[18] The latter question has been studied somewhat more extensively than tax uncertainty with regard to future policy. *See, e.g.*, James Alm, Betty Jackson & Michael McKee, *Institutional Uncertainty and Taxpayer Compliance*, 82 AM. ECON. REV. 1018 (1992); Suzanne Scotchmer & Joel Slemrod, *Randomness in Tax Enforcement*, 38 J. PUB. ECON. 17 (1989); David A. Weisbach, *Formalism in the Tax Law*, 66 U. CHI. L. REV. 860 (1999).

[19] I.R.C. § 179 (2012).

[20] This is an example of what I call an "economic-indicator rule." *See infra* Section C. Economic-Indicator Rules.

[21] This is notwithstanding philosophically interesting but practically irrelevant issues about determinism and our ability to predict future events (like GDP growth) based on present conditions.

[22] *See infra* Section C. Economic-Indicator Rules.

actuarial rate.[23] Thus legislators may increase taxpayer welfare by providing a small but certain benefit rather than a large but uncertain one.

Importantly, however, this proposition only applies to legislative uncertainty, not market uncertainty. Commentators generally consider it inefficient for government to insure taxpayers for market risks as an alternative to private insurance,[24] but commitment devices that reduce legislative uncertainty do not merely shift risk from taxpayers to government. They *eliminate* risk by making legislative intentions more transparent. This is so because when the government masks its intentions as in the hypothetical above, it incurs costs to taxpayers without any offsetting gain.[25]

In addition to actuarial costs, legislative uncertainty incurs avoidable transaction costs by forcing firms to pay for advice about potential changes in the direction of tax policy. While this may be an effective make-work program for accountants and lawyers, business decisions are stifled by the additional cost of contingency planning that companies must incur before making investments. Some of the most expensive tax lawyers are those that forecast policy changes as well as planning transactions in the present.[26]

By reducing legislative uncertainty, tax commitment devices can avoid these efficiency costs; they can also ameliorate problems of political economy. Legislative uncertainty leaves the door open for special interests to subvert the political process. Because legislators use their discretion to resolve uncertainty, legislative uncertainty allows them to seek rents (money, votes, etc.) from their constituents and encourages political capture.[27] Commitment devices fight legislative abuse by removing decisions about renewal or repeal from the realm of ordinary politics.[28]

Uncertainty also acts as a signal that rent-seeking legislators are open for contributions—Rebecca Kysar argues that even though they intend to renew popular tax provisions, legislators attach nominal sunsets to those provisions in order to put themselves in a better negotiating position with

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[23] *See generally* Kyle D. Logue, *Tax Law Uncertainty and the Role of Tax Insurance*, 25 VA. TAX REV. 339 (2005). Logue's article specifically considers insurance for uncertainty in tax enforcement (typically due to vagueness about the correct interpretation of the law), but his point may be generalized to all forms of uncertainty.

[24] *See* Louis Kaplow, *An Economic Analysis of Legal Transitions*, 99 HARV. L. REV. 509, 533–50 (1986).

[25] The hypothetical above was highly stylized; ordinarily, government sees a tradeoff between legislative flexibility and legislative transparency. This issue is shortly covered in more depth.

[26] *See Tax*, SKADDEN, http://perma.cc/38EE-FRME (last visited Apr. 19, 2013).

[27] *See* Rebecca Kysar, *Lasting Legislation*, 159 U. PA. L. REV. 1007, 1051–57 (2011); Edward J. McCaffery & Linda R. Cohen, *Shakedown at Gucci Gulch: The New Logic of Collective Action*, 84 N.C. L. REV. 1159, 1163–64 (2006).

[28] We should be aware of the anti-democratic overtones of this argument, however. Part VI discusses further the counter-majoritarian difficulty inherent in binding commitments on future Congresses.

rich special interest groups.[29] Jill Barshay notes that the process by which sunsetting provisions are negotiated and then extended is opaque by design, creating a mystique around the renewal process that constituents pay dearly to penetrate.[30]

Finally, tax uncertainty (and policy uncertainty in general) is inequitable. It disparately favors insiders, who can more easily discern the direction of future politics, and those that can afford the services of insiders, such as large corporations and the rich. This creates a barrier to new market entrants, which in turn stifles competition and creates yet more opportunities for industry-wide lobbying, because a restricted set of market participants can more easily coordinate a collective appeal to legislators.

There are two potential counterarguments in favor of legislative uncertainty. First, by acting as a "friction" that increases the transaction costs of planning for uncertain future tax regimes, legislative uncertainty may deter distortive tax avoidance.[31] With greater uncertainty, the same degree of tax preparedness requires more billable hours, making planning more costly and less profitable.

However, it is unclear how effective uncertainty can be as a tax friction in practice. As an anecdotal example, prior to the American Taxpayer Relief Act of 2012,[32] taxpayers faced considerable uncertainty over estate tax rates and exemption levels. Some tax advisors counseled their clients to "wait to see where the exemption settles before undertaking significant planning,"[33] but others suggested that clients accelerate gifts in case the exemption were to disappear.[34] Tax advisers similarly counseled more planning, not less, in 2010, when it looked like historically low estate tax rates might sunset.[35]

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[29] Rebecca M. Kysar, *The Sun Also Rises: The Political Economy of Sunset Provisions in the Tax Code*, 40 GA. L. REV. 335, 362–67 (2006).

[30] Jill Barshay, *'Temporary' Tax Breaks Usually a Permanent Reality*, CONG. Q. WKLY., Nov. 15, 2003, at 2832, *cited by* Kysar, *The Sun Also Rises*, *supra* note 29, at 369 n.250.

[31] In tax, "frictions" are transaction costs that deter tax planning. *See* David M. Schizer, *Frictions as a Constraint on Tax Planning*, 101 COLUM. L. REV. 1312, 1315 n.5 (2001); *see also* MYRON S. SCHOLES & MARK A. WOLFSON, TAXES AND BUSINESS STRATEGY: A PLANNING APPROACH 7 (Prentice Hall, 7th ed. 1992), *cited in* Schizer, *supra*, at 1315 n.5; Joseph E. Stiglitz, *The General Theory of Tax Avoidance*, 38 NAT'L TAX J. 325, 335 (1985), *cited in* Schizer, *supra*, at 1315–16 n.5.

[32] American Taxpayer Relief Act of 2012, Pub. L. No. 112–240, 126 Stat. 2313 (2013).

[33] *Investment Planning in an Uncertain Tax Environment*, BAIRD FIN. & ESTATE PLANNING 1, 2 (2012), http://perma.cc/Q7KK-3BZC.

[34] *Estate Planning - The Season of Tax Uncertainty: Federal Estate Taxes for 2013 and Onward* (Pozzuolo Rodden, P.C., Philadelphia, Pa.), POZZUOLO RODDEN NEWSL., Nov. 2012, at 4, http://perma.cc/UR8Y-VMMK. This is exactly the sort of counsel we would expect based on our "making hay while the sun shines" analysis in Section C. Fiscal Stimulus ("Making Hay While the Sun Shines").

[35] *See, e.g.*, Laura Saunders, *Estate Taxes: How to Beat The Levy That Won't Die*, WALL ST. J. (Nov. 20, 2010), http://perma.cc/4ZGX-VZD6; Laura Saunders & Mary Pilon, *Too Rich to Live?*, WALL ST. J. (July 10, 2010), http://perma.cc/NBS3-ZC9A. Of course, it should come

Moreover, tax friction is a costly method of deterring planning. Increased planning costs are purely wasteful with respect to infra-marginal firms (those that do not change their behavior), and artificial uncertainty works best as a deterrent when taxpayers are sophisticated and likely to abuse tax provisions—exactly the cases when legislative transparency is most needed, legislators are most likely to abuse discretion, and uncertainty is therefore most costly. Thus, even assuming that frictions can discourage tax planning, the efficiency gains will rarely outweigh the efficiency losses, the problems of political economy, and the issues of fairness that attach to legislative uncertainty in general.

A second argument for legislative uncertainty is that it preserves flexibility, albeit at the cost of efficiency and transparency. A government that makes no commitments about future taxation is free to change its policies as it sees fit. In turn, a commitment-free government may be better able to adapt its policies to changed circumstances.

Flexibility would not be necessary in a first-best world. If legislatures were perfect decisionmakers with perfect information about future tastes, complete and irrevocable commitment to a future policy would always be optimal.[36] But because legislators may be imperfect or lack information about future preferences, the optimal policy will generally involve some compromise between commitment and flexibility.

If the government believes that tastes will be intertemporally constant, then it should augment unbounded legislative discretion with objective economic constraints—for example, making continued bonus depreciation contingent on low levels of GDP growth.[37] In such a case, if we desired flexibility, the GDP-growth rule could be adjusted by third parties subject to less political pressure than Congress (the Federal Reserve, for example) to suit changed market circumstances, or even to suit changed perceptions of what is optimal—if GDP growth were determined to be a poor proxy for the kind of economic growth that society cares about, it could be replaced with, say, the employment ratio. Thus, the existence of third parties with relevant expertise to determine the best substitutes for legislative discretion means that legislative uncertainty offers little compensation for its efficiency and fairness costs.[38] I explore this point more deeply in Section C. Economic-Indicator Rules.

The only situation in which legislative uncertainty provides flexibility is when there is a fundamental change in policy preferences that our preferred third party is incompetent to account for. Such a change would

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as no surprise when tax planners themselves encourage clients to pay for more of their services.

[36] Manuel Amador, Ivan Werning & George-Marios Angeletos, *Commitment vs. Flexibility*, 74 ECONOMETRICA 365, 366 (2006).

[37] The GDP-growth rule is an example of what I call an "economic-indicator rule." *See infra* Section C. Economic-Indicator Rules.

[38] *See* Amador et al., *supra* note 36, at 367–68.

have to invoke values rather than economics—say, a decision to provide veterans with a tax benefit in recognition of past service. This is a much narrower sort of flexibility than the flexibility to adapt to new market conditions, which market uncertainty provides. With respect to the majority of tax policies, which are made based on widely agreed-upon economic principles—unemployment is bad, stable GDP growth is good, etc.—legislative uncertainty provides no benefits.

To sum up, there are great opportunities to use commitment devices to assuage legislative uncertainty in the tax code. Legislative uncertainty is costly to taxpayers, both in actuarial terms and in increased transaction costs; it enables legislators to seek rents and masks legislative capture; and it disparately harms the unsophisticated. All of these problems can be alleviated by the greater certainty that tax commitment devices provide.

### B. Defecting Successors and Optimal Plans

The preceding section emphasizes the political pathologies of tax legislation, relaxing traditional assumptions of decision-maker altruism and rationality. In contrast, this section describes how the government will not be able to stick to an optimal taxation plan even assuming that all taxpayers are rational, policymakers are rational and altruistic, and all actors have time-invariant preferences.[39] Thus, even ideal legislatures need commitment devices in order to bind themselves to the course that will maximize welfare.

This point is essentially a game-theoretic one. I assume only that policymakers disregard the past and optimize solely with respect to the present and future; this is generally considered rational behavior.[40] But the "put-the-past-behind-us" attitude, while rational, also requires policymakers to disregard the commitments that made past plans optimal. Because future policymakers will in turn defect from commitments formed in the present, present policymakers will not be able to enact optimal plans.

For a concrete example, consider the hypothetical state of S. Policy in S will be dictated by legislators $L_1$ and $L_2$, occupying two successive time periods, $T_1$ and $T_2$. $L_1$ is perfectly rational and altruistic with respect to both periods, while $L_2$ is perfectly rational and altruistic only with respect to $T_2$. ($L_2$ should not be altruistic with respect to $T_1$, because $L_2$ cannot alter the past.)

Because $L_1$ is concerned about excessive greenhouse gas emissions in S, $L_1$ wishes to encourage the construction of wind farms. $L_1$ determines

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[39] That is, future policymakers will not defect from a commitment to provide an R&D tax credit merely because they value research and development less than policymakers in the present.

[40] The logic of the sunk-cost fallacy, for example, requires that past costs be disregarded because they cannot affect future results. *See, e.g.*, Barry Schwartz, *The Sunk-Cost Fallacy*, SLATE (Sept. 9, 2005, 6:24 AM), http://perma.cc/3B69-CBL7.

that the best way to do this is to provide a renewable energy tax credit in periods $T_1$ and $T_2$. Wind farms in S have high startup costs but low operating costs, and firms like to be sure of profitability before they construct them. The firms would refuse to build if the credit were uncertain. $L_1$ therefore publishes an optimal tax plan that includes tax credits in all periods.

Investors trust that $L_1$'s plan will be implemented, and by $T_2$, S has many wind farms. However, by the time that $L_2$ takes over the reins, $L_2$ perceives no further benefit from continuing the tax credit (because S already has the wind farms it needs). Consequently, $L_2$'s optimal tax plan does not include the credit, and the credit is abolished. As a result, the credit is only available in $T_1$.

The problem arises because rational investors in $T_1$ will anticipate defection by $L_2$. So the incentive benefits of $L_1$'s optimal three-year tax plan cannot be achieved without some means of binding $L_2$. $L_1$'s plan was altruistic between all periods, and inhabitants of S in all periods suffer when $L_1$ cannot implement it. So despite the fact $L_2$ is the major beneficiaries of the wind farms, $L_2$'s expected rational defection will prevent the farms from ever getting built.[41]

Tax commitment devices solve this problem by providing reassurance to investors in $T_1$ that the government will continue to provide the credits that they rely on in $T_2$, even when it is no longer rational for the government to do so. The crucial intertemporal problem here arises not despite optimal behavior by policymakers, but *because* of it.

This section therefore identifies a weakness of ordinary politics regardless of its degree of altruism: by putting the past behind them, policymakers paradoxically cannot even maximize welfare in the present.

### C. Fiscal Stimulus ("Making Hay While the Sun Shines")

At this point, my analysis turns away from abstraction and toward concrete policy. The following two sections describe how tax commitment devices can make certain kinds of tax expenditure more effective. By this, I mean that commitment allows the government to obtain a greater incentive effect per dollar spent.

Especially during the recent economic crisis, the federal government has attempted to stabilize macroeconomic output through activist fiscal policy—adjustments to taxation and public spending that stimulate demand and counteract the peaks and troughs of the business

[41] For a related formulation of this paradox by economists under the label of "time-inconsistent optimal plans," see Jess Benhabib & Aldo Rustichini, *Optimal Taxes Without Commitment*, 77 J. ECON. THEORY 231, 233–34 (1997). This result was originally and famously formulated by Finn E. Kydland & Edward C. Prescott, *Rules Rather than Discretion: The Inconsistency of Optimal Plans*, 85 J. POL. ECON. 473, 477 (1977).

cycle.[42] The central premise of activist fiscal policy is that it attempts to shift output from fat times to lean times. Tax commitment devices can encourage this sort of intertemporal substitution by making tax expenditures more credibly temporary—as a result, firms that benefit from soon-to-expire tax expenditures should invest more aggressively in the present so as to "make hay while the sun shines."[43] Thus, provisions intended to work as fiscal stimuli will have a greater effect if Congress credibly commits to repeal them after a set period.

Imagine, for example, that the real estate market has slowed, and that the government would like to stimulate demand to smooth the business cycle. One way it might do so is by providing a credit to first-time homebuyers.[44] If the credit were permanent, buyers could still take advantage of it after the market recovered, and they would have no particular incentive to buy in the present. On the other hand, if the credit were temporary, buyers would rush to make their purchases while the credit still applied. So, while a permanent credit would increase demand for housing, as all expansionary fiscal policy does, a temporary credit would have the additional benefit of encouraging taxpayers to advance investment that they might otherwise have left until after the recession.[45] Crucially, however, the credit works on the strength of taxpayer expectations—it will only encourage intertemporal substitution insofar as it is *credibly* temporary.

This argument is not new;[46] it has been anecdotally supported by commentators[47] and business owners,[48] and reflected in actual legislation.[49]

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[42] *See generally* Alan J. Auerbach, William G. Gale & Benjamin H. Harris, *Activist Fiscal Policy*, 24 J. ECON. PERSPECTIVES 141 (2010); *see also* American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115 (2009) (also known as "the Stimulus").

[43] This has also been called the "use it or lose it" effect. George K. Yin, *Temporary-Effect Legislation, Political Accountability, and Fiscal Restraint*, 84 N.Y.U. L. REV. 174, 246 (2009).

[44] I.R.C. § 36 (2012).

[45] David Kocieniewski, *Home Tax Credit Called Successful, but Costly*, N.Y. TIMES (Apr. 26, 2010), http://perma.cc/KP7W-MGN3. But note that while the homebuyer tax credit undoubtedly stimulated intertemporal substitution, it may have merely encouraged substitution from one recessionary period to another. *See* Press Release, *First-Time Homebuyer Tax Credit Was Temporary Fix at Best*, CTR. FOR ECON. & POL'Y RES. (Apr. 18, 2012), http://perma.cc/RP3V-JJNJ. So while credible sunsets are a powerful device for smoothing economic growth, they are dangerous in the hands of uninformed policymakers. *See* Jonathan A. Brogaard & Kevin T. Roshak, *The Effectiveness of the 2008-2010 Housing Tax Credit* (Univ. of Wash., Working Paper, 2011), http://perma.cc/7NXW-L863 (criticizing the homebuyer tax credit as merely raising prices and thereby effecting wealth transfers rather than increasing the quantity of housing sold).

[46] *See* Yin, *supra* note 43, at 244–48.

[47] *What Should the Federal Government Do to Avoid a Recession?: Hearing Before the J. Econ. Comm.*, 110 Cong. 8–11 (2008) (statement of Dr. Lawrence Summers, Former U.S. Treasury Secretary); Press Release, U.S. S. Comm. on Fin., What Happened to Timely, Targeted, Temporary? (July 23, 2012), http://perma.cc/P74G-8C96; Mark Thoma, *It's *Not**

It has also been substantiated by recent economic analysis. In one influential paper, Kevin Hassett and Gilbert Metcalf concluded that in a model with alternating high- and low-tax-rate states, "time to investment can fall with increasing tax policy uncertainty."[50] The intuition behind their result was that in low-tax-rate periods, rational actors would step up tax-preferred investments in anticipation of reversion to higher historical rates. The model was intended to reflect the all-or-nothing nature of many tax credits intended as stimuli, and more closely mapped the nature of the legislative process than the traditional model under which tax rates smoothly, continuously fluctuated.[51]

It should not be a surprise that when we offer more favorable tax rules in Period *A* than in Period *B*, investors will substitute toward *A* and away from *B*. At the same time, we should recognize that we cannot increase total investment over all periods merely by cycling through a menu of different short-term stimuli. The logic behind temporary subsidies is that they rob Peter to pay Paul: they trade diminished future investment for immediate growth. Thus temporary provisions are effective as short-term economic stimuli, but not as a long-term boosts to investment.

One more caveat: policymakers should be cautious of unintended investment spurts or droughts that occur when taxpayers respond to anticipated changes in tax policy.[52] Consider again the example of the first-time homebuyer tax credit. After buyers hear of the proposal, but before it is actually enacted, many will defer purchasing until they can benefit from the credit. This will have the perverse effect of *decreasing* new investment in the very short term. Similarly, firms will accelerate investment in profitable activities if they believe that those activities will soon be penalized or banned. This difficulty can be overcome in either of two ways. First, legislators may attempt to close the time gap between legislative debate and enactment, in order to shorten the length of the drought. Alternatively, legislation may be made retroactive and effective from the point in time when taxpayers could reasonably have expected the reforms to be enacted.[53]

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*Regulatory and Tax Uncertainty*, ECONOMIST'S VIEW (Sept. 3, 2011), http://perma.cc/N86J-PNNU.

[48] Kevin G. Hall, *Regulations, Taxes Aren't Killing Small Business, Owners Say*, MCCLATCHY (Sept. 1, 2011), http://perma.cc/DG4C-DC78.

[49] *E.g.*, I.R.C. § 36(h)(1) (2012).

[50] Kevin A. Hassett & Gilbert E. Metcalf, *Investment with Uncertain Tax Policy: Does Random Tax Policy Discourage Investment?*, 109 ECON. J. 372, 372 (1999).

[51] Hassett and Metcalf obtained opposite results using a model subject to continuous Geometric Brownian Motion. *Id.* at 376–83.

[52] *See generally* Luis H.R. Alvarez et al., *Tax Policy Uncertainty and Corporate Investment: A Theory of Tax-Induced Investment Spurts*, 69 J. PUB. ECON. 17 (1998).

[53] Critics might argue that retroactivity would violate principles of fairness—but as Graetz notes, there is no bright line between the effects of nominally retroactive and nominally prospective tax reforms. Michael J. Graetz, *Legal Transitions: The Case of Retroactivity in Income Tax Revision*, 126 U. PA. L. REV. 47, 49–57 (1977).

Finally, although the current economic climate has focused discussion on counter-recessionary subsidies rather than counter-expansionary tax hikes, there is no reason why the government could not use temporary tax provisions to both heat up and cool down the economy, as appropriate. Just as firms might rush to take advantage of a subsidy before it expired, they might also wait for a more profitable tax environment if the government promised to revoke tax increases in subsequent years.

### D. Timing Mismatches

Conversely, there are also some tax provisions that would benefit from being made more credibly permanent. In particular, this section considers policies that incentivize present investment with the promise of future government subsidies. These subsidies suffer from a "timing mismatch" that renders them especially sensitive to taxpayer expectations.

Consider, for example, the research and development (R&D) tax credit.[54] The R&D credit is calculated based on "qualified research expenses"—primarily wages and supply purchases[55]—within the taxable year,[56] meaning that much of its benefit must be collected over the useful life of a research project rather than up front. This mismatch between present costs and future subsidies means that investors' expectations of reenactment will significantly alter the effectiveness of the credit. Many investments will be profitable only if the credit continues to operate. Marginal investors might consequently refrain from investing in R&D if they are not confident of the credit's renewal.

To make this case more concrete, consider a hypothetical pharmaceutical company considering whether to invest in the development of a new drug. The project will cost $200 every year (including the first) for four years. In the fifth year, the research will culminate in a new drug patent worth $600 after-tax dollars. The company's implied cost of capital is 10% per year.

Now consider three possible government R&D tax credit regimes: one where no credit is given, one where a credit is guaranteed for all five years, and one where the credit is guaranteed the first year, but only has a 50% chance of applying in each subsequent year. The credit, where granted, is worth half the company's annual R&D expenses. (Assume that the company has other sources of income against which it can count the entire value of the credit.) The expected value of the company's after-tax research costs under each regime is summarized in the table below, discounted to reflect total costs in year-five dollars.

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[54] I.R.C. § 41 (2012).
[55] § 41(b)(2).
[56] § 41(a).

| Credit Regime | Y1 | Y2 | Y3 | Y4 | Y5 Total |
|---|---|---|---|---|---|
| **None** | $200·1.1^4 | $200·1.1^3 | $200·1.1^2 | $200·1.1^1 | |
| | = $292.82 | $266.20 | $242.00 | $220.00 | $1021.02 |
| **Guaranteed** | $100·1.1^4 | $100·1.1^3 | $100·1.1^2 | $100·1.1^1 | |
| | = $146.41 | $133.10 | $121.00 | $110.00 | $510.51 |
| **Uncertain** | $100·1.1^4 | ($133.10 + $266.20) / 2 | ($121.00 + $242.00) / 2 | ($110.00 + $220.00) / 2 | |
| | = $146.41 | $199.65 | $181.50 | $165.00 | $692.56 |

In this case, the firm's expected profits only exceed the discounted value of its costs when the credit is guaranteed, but not when it is uncertain or entirely unavailable. Tax commitment therefore significantly alters investment incentives at the margin. The $182.05 space between the guaranteed and uncertain credits would likely tip the scales against many potential investments.

Mathematically, it should come as no surprise that the total cost of the research without the credit is exactly double the cost of the research with the guaranteed credit. The expected cost of the program with the uncertain credit falls somewhere in between. (If the credit were uncertain in all periods, including the present, the expected cost of investment under the regime with uncertainty would be precisely three quarters that of the regime without the credit.)

Crucially, when the firm makes the decision in year one either to invest or not to invest, it will be more willing to invest when the credit is guaranteed. This is so even though its credit is also guaranteed in the present year under the regime with future uncertainty, and even though it may choose to discontinue its research at any time in the future—the operative fact is that it must make an irreversible investment in the present, essentially betting that the subsidy will persist. What drives this hypothetical is the mismatch between the initial, irreversible investment decision and the receipt of uncertain tax subsidies in the future.

An incentive subsidy with an uncertain future may therefore be made more effective in two ways. The government may either increase the size of the subsidy, or make it more certain. In the hypothetical above, the expected cost of research would be the same between an uncertain 50% tax credit and a guaranteed 36.9% credit. A risk-neutral investor would be indifferent between these two options.

However, the government would *not* be indifferent between these two options. Increasing the amount of the tax credit costs real dollars; in contrast, legislative uncertainty can be reduced at no monetary cost.[57] It is thus purely wasteful for policymakers to keep reenactment plans opaque. Likewise, it is purely wasteful for policymakers to apply sunset provisions to socially beneficial future subsidies. Credible commitments to reenact subsidies constitute free opportunities for the government to make its incentives more effective.[58]

It is important to recognize that timing mismatches do not cover all of the traditional cases in which businesses agitate for greater certainty. For instance, timing mismatches only apply to subsidies for ongoing expenses, rather than subsidies for initial investments. If the R&D credit were transformed into a credit for the establishment of R&D *facilities*, there would be no mismatch and uncertainty would not be a problem.[59] (In fact, as discussed above, firms might be more likely to accelerate investment under conditions of uncertainty, in case the credit were revoked.)

Similarly, no timing mismatch occurs when credits only sunset with respect to new investments, rather than projects initiated prior to the sunset. Consider the renewable energy production tax credit. Facilities qualify for the credit based on the year in which they begin construction.[60] So long as a firm initiates its renewable energy project in 2013, it need not worry about the stream of future tax credits. Many of the critics of the sunset of the renewable energy credit root their arguments in a misunderstanding of the distinction between initial construction and ongoing production.[61] While the sunset provision attached to the credit may collaterally hurt other market participants (e.g., wind turbine manufacturers, the demand for whose products depends on the existence of the credit[62]), it does not directly discourage firms from investing in renewable energy products. Although the credit is labeled a production credit, and although it is actually calculated based on production,[63] its extent is actually determined by the date of investment.[64] In fact, as Part C. Fiscal Stimulus ("Making Hay While the

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[57] *See infra* Part IV.

[58] The efficiency gain is even greater with respect to risk-averse investors (as most investors are), who value an increase in certainty more than an increase in the amount of the subsidy with the expected value.

[59] Assuming that facilities may be constructed within a year.

[60] I.R.C. § 45(d) (2012) (describing various types of "qualified facility," "the construction of which begins before January 1, 2014").

[61] *See, e.g.*, Erin Dewey, Note, *Sundown and You Better Take Care: Why Sunset Provisions Harm the Renewable Energy Industry and Violate Tax Principles*, 52 B.C. L. REV. 1105, 1118 (2011) ("[I]nvestors require the continued existence of the PTC in order to invest in renewable projects with confidence that the benefits will be available when the project is operational and connected to the grid.").

[62] Edward Kleinbard, *The Congress Within the Congress: How Tax Expenditures Distort Our Budget and Our Political Processes*, 36 OHIO N.U. L. REV. 1, 23–24 (2010).

[63] *See* § 45(a).

[64] *Id.* § 45(d).

Sun Shines") argues, a sunset provision may even encourage *greater* investment in the present period.

To recap: where present expenses are matched against future subsidies, uncertainty will diminish the incentive value of those subsidies. Again, tax commitment devices can remedy this uncertainty.

## III. LEGAL BACKGROUND

This part surveys the legal and normative issues surrounding basic commitment devices: constitutional amendment, legislative entrenchment, and contracts with taxpayers. It ultimately concludes that these relatively simple devices are both impractical and normatively undesirable, setting the stage for the devices that I do recommend in Part IV. Commitment Devices

As the Introduction notes, the original governmental commitment device is the Constitution itself. However, it would be onerous and inadvisable to attempt to commit to tax provisions by constitutionalizing them. The process of constitutional amendment requires significant participation from both houses of Congress, as well as the legislatures of individual states.[65] Moreover, a proposal to devote substantial page space in the Constitution to workaday tax matters would diminish the gravity of more central constitutional guarantees and would be unlikely to pass public scrutiny.

An alternative and equally straightforward commitment device is "legislative entrenchment."[66] In theory, a legislature like Congress could "entrench" legislation simply by barring future Congresses from amending or repealing that legislation. For example, Congress could assuage the fears of research firms that hope to rely on the continuation of the R&D credit by guaranteeing that the R&D credit will persist for a set period of time. A tax that cannot be changed by subsequent legislatures suffers from zero uncertainty; alternatively, it would theoretically be equally effective to promise damages (either pre-specified or determined by courts) in the event that such commitments are broken.

However, legislative entrenchment is widely considered unconstitutional. It was condemned by scholars as early as Blackstone, who declared in his *Commentaries* that "[a]cts of parliament derogatory from the

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[65] U.S. CONST. art. V.

[66] *See generally* Julian N. Eule, *Temporal Limits on the Legislative Mandate: Entrenchment and Retroactivity*, 12 AM. B. FOUND. RES. J. 379, 380–83 (1987); Eric A. Posner & Adrian Vermeule, *Legislative Entrenchment: A Reappraisal*, 111 YALE L.J. 1665 (2002); John C. Roberts & Erwin Chemerinsky, *Entrenchment of Ordinary Legislation: A Reply to Professors Posner and Vermeule*, 91 CALIF. L. REV. 1773 (2003). Critics of the usual doctrine of legislative entrenchment have pointed out that present Congresses may in fact bind their successors in a wide variety of ways. They enter into contracts, *see infra* notes 70–76 and accompanying text, incur debt, tweak procedural rules of legislation, and carefully apply sunset provisions. Posner & Vermeule, *supra*, at 1705.

power of subsequent parliaments bind not."[67] Justice Marshall applied this idea to the states in *Fletcher v. Peck*, holding that as a matter of law and logic, "one legislature cannot abridge the powers of a succeeding legislature."[68] The rule in *Fletcher* remains good law today.[69] Pure legislative entrenchment therefore cannot serve as a tax commitment device, either.

The skeptical reader might question this seemingly overbroad ban on legislative entrenchment. After all, if legislatures cannot bind their successors, how can the government hire employees, buy aircraft carriers, or conduct any of the other official business that only becomes possible when firms can rely on the government to pay up? The answer is that the rule against legislative entrenchment finds a narrow exception in the Contract Clause (*Fletcher* itself was a contracts case). Courts have held that the government's constitutional mandate to adhere to contracts is an exception to the general rule against entrenchment,[70] although Congress still may not contract away certain "reserved powers," such as the governmental right to eminent domain.[71]

The Contract Clause is particularly relevant in this context because it has been interpreted to authorize contracts waiving the government's right to levy taxes or revoke tax exemptions. Contracts limiting the power to tax must be drawn "in clear and explicit terms,"[72] but they are permitted so long as their meaning is plain.[73]

Could Congress entrench expenditures by contracting with the identifiable beneficiaries of those expenditures? At this point, it is difficult to predict how the Supreme Court would react to such a proposal. To squeeze ordinary tax expenditures into the Contract Clause would be a fairly attenuated legal fiction: tax exemptions that have qualified in the past have generally been ad hoc contracts with individual firms, rather than nationwide commitments not to alter the IRC.[74]

Just as importantly, even if this scheme passed constitutional muster, it would probably be normatively undesirable. It would be extremely costly to administer: the government would have to be cautious about the extent of its guarantees, and would be obliged to conduct extensive *ex ante* research before committing itself. In addition, tax expenditures by contract would favor those taxpayers sufficiently large to pay the transaction costs of contracting and to navigate the system of

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[67] 1 WILLIAM BLACKSTONE, COMMENTARIES *90.
[68] Fletcher v. Peck, 10 U.S. (6 Cranch) 87, 135 (1810).
[69] *See* United States v. Winstar Corp., 518 U.S. 839 (1996).
[70] *Fletcher*, 10 U.S. at 138–39.
[71] W. River Bridge Co. v. Dix, 47 U.S. (6 How.) 507, 535–36 (1848).
[72] Jefferson Branch Bank v. Skelly, 66 U.S. (1 Black) 436, 446 (1862).
[73] *See Winstar*, 518 U.S. at 876–77.
[74] *E.g.*, *Jefferson Branch Bank*, 66 U.S. at 450; State Bank of Ohio v. Knoop, 57 U.S. (16 How.) 369, 378 (1854); New Jersey v. Yard, 95 U.S. 104, 115–17 (1877), *cited in Winstar*, 518 U.S. at 913.

contracts. Finally, the system would loosen fiscal discipline and permit present taxpayers to saddle future taxpayers with unwanted obligations in much the same way that budget deficits do.[75] Congress has adopted various rules to limit the growth of the public debt[76] and would probably be reluctant to pass a provision that entrenches commitments far into the future.

As commitment devices, constitutional amendment, legislative entrenchment, and contract are all therefore either impracticable, normatively objectionable, or both. I discuss them by way of legal background rather than as viable tools in the tax commitment toolkit.

## IV. COMMITMENT DEVICES

Part IV. Commitment Devices discusses the commitment devices that I suggest that Congress adopt. Unlike the relatively rigid commitment devices in Part III. Legal Background, none of the devices that I consider in this section impose irreversible legislative commitments. In the language of the literature, they are "soft"—operating by persuasion rather than penalty, as opposed to "hard" commitment devices which impose real economic costs for defection from the preferred plan of behavior.[77] By recommending only soft commitment devices, I avoid thorny questions of abusive legislative entrenchment and leave room for subsequent legislatures to change course when actually necessary.

The reader may find curious the absence in my analysis of the most versatile commitment device of all: legislative norms. After all, if legislators truly bought my arguments, would not the best reform strategy be for Congress to enforce a system of tax promises upon itself?[78] Is there really any need for procedures that make it substantively more difficult to break commitments?

I believe that there is—while an ideal Congress would have the discipline to bind itself to the mast, the political reality is that in the absence of external constraints, such a system is unlikely to succeed. Congressional debate is sufficiently acrimonious, turnover sufficiently high, and the time horizons of legislators sufficiently short that we probably cannot expect legislators to adhere to the promises of their predecessors, no matter how optimal those promises were, without a nudge. This Part describes several such nudges.

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[75] *See generally* Jean-Pierre Laffargue, *Intergenerational Transfers and the Stability of Public Debt with Short-Lived Governments*, 1 MATH. POP. STUD. J. 16 (2009).

[76] Congressional Budget and Impoundment Control Act of 1974, Pub. L. No. 93-344, 88 Stat. 297 (codified at 2 U.S.C. §§ 601–88).

[77] Bryan et al., *supra* note 2.

[78] Congress might feel compelled to stick to the system for reputational reasons. *See* Robert J. Barro, *Recent Developments in the Theory of Rules Versus Discretion*, 96 ECON. J. 23, 29–30 (1986).

### A. Voting Rules and Default Rules

First, Congress may affect the probability that a provision will be renewed by succeeding Congresses, by carefully selecting voting rules and defaults.

Voting rules may be adjusted by requiring something other than a simple majority for amendment or repeal. Depending on the provision, Congress could require a minority (less than 50%),[79] a simple majority (50% + 1 vote),[80] a supermajority (greater than 50% + 1 vote), or unanimity (100%). Minorities, majorities, supermajorities, and unanimities might all be appropriate in different situations.[81]

Legislative defaults may be adjusted by selecting something other than continuation as the default for a piece of legislation. The classic examples are sunset provisions, which cause automatic repeal of the underlying legislation unless the legislature explicitly reenacts it.

By combining unconventional voting rules with unconventional legislative defaults, Congress could make defection from a preferred course of policy much more difficult. It could greatly decrease a given provision's probability of renewal by making it sunset, and only allowing its reenactment (or, by implication, the passage of a similar provision) by a supermajority. It could greatly *increase* probability of renewal by requiring a supermajority to override a given provision and having the provision extend indefinitely by default. Or it could opt for any number of more exotic proposals: for example, it could make renewal somewhat less certain by making a provision sunset but allowing reenactment by a minority, thereby requiring either a supermajority to abstain from voting or a simple majority to affirmatively vote the provision down.

Posner and Vermeule have argued that legislatures use voting rules and default rules to bind future legislatures in a manner analogous to explicit entrenchment.[82] One might think that because of the closeness of their resemblance to unconstitutional entrenchment, non-simple-majoritarian voting and default rules should be unconstitutional as well. But, in fact, modifications to both are tolerated under current law.

Since 1995, the House of Representatives has required a three-fifths majority to pass tax rate increases[83] and functional unanimity to pass

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[79] A minority voting requirement may seem infeasible on face since the majority could immediately contravene any bill passed by the minority. However, a tax provision allowing for a minority repeal might not be reenacted by the majority if there is disagreement over its precise terms.

[80] Technically, |50%| + 1.

[81] *See* JAMES M. BUCHANAN & GORDON TULLOCK, THE CALCULUS OF CONSENT 63–72 (1962), *cited in* Posner & Vermeule, *supra* note 66, at 1673 n.19.

[82] Posner & Vermeule, *supra* note 66, at 1676–77.

[83] HOUSE OF REPRESENTATIVES, RULES OF THE HOUSE OF REPRESENTATIVES, R. XXI(5)(b) (2013) [hereinafter HOUSE RULES], *available at* http://perma.cc/CCF7-5WTP; H.R. Res. 6, 104th Cong. § 106 (1995).

retroactive rate increases.[84] This rule is not unequivocally constitutional, and it sparked a firestorm of controversy after it was passed.[85] Among the dissenters were fifteen members of the House that sued Congress to invalidate the new rules. Crucially for our purposes, the D.C. District Court declined to consider the case, holding that "the separation-of-powers principle 'precludes [the courts] from reviewing congressional practices and procedures when they primarily and directly affect the way Congress does its legislative business.'"[86] The D.C. Circuit affirmed this decision[87] as simply the latest in a long line of judicial refusals to interfere in the operation of Congress;[88] it seems that, for now at least, supermajoritarian tax rules are here to stay.

It is worth noting that the three-fifths rule may not be as strict as it initially appears. All House Rules are themselves passed, amended, or repealed by simple majorities at the beginning of each session of Congress.[89] It therefore follows that, at least between sessions, the House may remove even very exacting supermajoritarian rules by the consensus of a simple majority. This does not mean that supermajoritarian voting requirements are meaningless—inertia in the retention of existing House Rules may require strong feelings in order to overturn the three-fifths rule (since the previous session's rules are implemented by default in each new Congress), and they can only be overturned at the start of new sessions. Nevertheless, we should acknowledge that voting rules are not legislative entrenchment in the traditional sense. They are procedural rules that embody cultural norms, meaning that they are sticky but not mandatory.

Sunset rules are markedly less controversial: they have been used in a wide variety of federal legislation, from the Sedition Act of 1798[90] to the USA PATRIOT Act.[91] They have also been extensively used in tax legislation, including the Economic Growth and Tax Relief Reconciliation Act of 2001,[92] the Jobs and Growth Tax Relief Reconciliation Act of

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[84] Retroactive tax increases are deemed out of order, meaning that any single Representative may prevent their consideration by the House. HOUSE RULES, *supra* note 83, R. XXI(5)(c); H.R. Res. 6 § 106.

[85] *See, e.g.*, Bruce Ackerman et al., Comment, *An Open Letter to Congressman Gingrich*, 104 YALE L.J. 1539 (1995); Jed Rubenfeld, *Rights of Passage: Majority Rule in Congress*, 46 DUKE L.J. 73 (1996).

[86] Skaggs v. Carle, 898 F. Supp. 1, 2 (D.D.C. 1995) (alteration in original) (quoting Gregg v. Barrett, 771 F.2d 539, 542 (D.C. Cir. 1985)), *aff'd*, 110 F.3d 831 (D.C. Cir. 1997).

[87] Skaggs v. Carle, 110 F.3d 831 (D.C. Cir. 1997).

[88] *Id.*

[89] WM. HOLMES BROWN ET AL., U.S. GOV'T PRINTING OFFICE, HOUSE PRACTICE: A GUIDE TO THE RULES, PRECEDENTS, AND PROCEDURES OF THE HOUSE, 837–39 (2011), *available at* http://www.gpo.gov/fdsys/pkg/GPO-HPRACTICE-112/pdf/GPO-HPRACTICE-112.pdf.

[90] Sedition Act of 1798 § 4.

[91] USA PATRIOT Act § 224, Pub. L. No. 107-56, 115 Stat. 272, 295 (2001).

[92] Economic Growth and Tax Relief Reconciliation Act of 2001, Pub. L. No. 107-16, 115 Stat. 38.

2003,[93] and recent fiscal stimuli.[94] Adjustments to voting rules are less intrusive than adjustments to voting rules insofar as they merely modify defaults rather than obstructing future simple majorities.

The constitutionality of the combination of voting rules and default rules might be more complicated: voting rules reside in congressional procedure, while sunset rules reside in the IRC. As noted above, non-majoritarian voting rules have only been upheld by courts because of the unique authority Congress has to dictate its own affairs. Could Congress really pair voting rules and default rules in a practical and constitutional manner?

I believe that it could. Just like the House Rules demand a supermajority to raise tax rates, they could demand a supermajority to, say, repeal any tax subsidy not subject to a sunset provision. They could be expanded further to require a supermajority to renew any tax subsidy that *is* subject to a sunset provision. Like the tax-hike rule, both supermajoritarian rules would be immune to judicial intervention.

Under the system I propose, the House would designate provisions meant to be temporary and those meant to be permanent, with a third category for "ordinary" legislation subject to traditional rules. It would have substantially reduced the uncertainty around the first two categories; those provisions meant as stimuli would be more effective for their credibly lowered probability of renewal, whereas those meant as permanent incentives would be more effective for the certainty that they provide their recipients.

If the House—or any legislature—desired more flexibility, it could even attach idiosyncratic required voting percentages to individual tax provisions. It could ask an administrative agency (like the Joint Committee on Taxation (JCT)) to calculate the appropriate percentage for every new amendment or section of the IRC. Thus Congress could have essentially infinite flexibility with regard to alterations to its voting rules.

A couple of complications present themselves at this point. First, the usefulness of voting rules and default rules as commitment devices depends on their actual capacity to alter likelihood of renewal. There would be no point in altering voting rules or default rules if Congress were sufficiently collegial and free from inertia to form supermajoritarian voting blocs every time, without regard to defaults.

Empirics and political intuition rebut this concern. Evidence from the states has suggested that a supermajoritarian requirement for tax increases decreases the aggregate tax rate by between 8% and 23%.[95] While

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[93] Jobs and Growth Tax Relief Reconciliation Act of 2003, Pub. L. No. 108-27, 117 Stat. 752.

[94] *See, e.g.*, Economic Stimulus Act of 2008 § 101, Pub. L. No. 110-185, 122 Stat. 613.

[95] Brian G. Knight, *Supermajority Voting Requirements for Tax Increases: Evidence from the States*, 78 J. PUB. ECON. 41, 61 (2000). Because different states may have different supermajority percentages, 8–23% is merely the average impact. More specifically, each

no equivalent research exists concerning sunset provisions (it is difficult to isolate the causal effect of sunsets, given that they are typically attached to legislation that is already unpopular or borderline), academic discussion on sunsets broadly assumes that they make reenactment less likely.[96]

Second, we might question whether Congress has the means to accurately analyze the many possible supermajoritarian voting percentages and their effect on tax uncertainty. In the current state of the art, the answer is certainly no. The studies cited above address the effect of supermajoritarian rules only in the most general terms—no literature has yet arisen to address voting rules' potential to finely tweak the likelihood of renewal, simply because rules as unusual as those that I propose have never been tested in practice. In fact, to my knowledge, no commentator has ever proposed the combination of voting rules and defaults to adjust the uncertainty of any kind of legislation, tax or otherwise. Much more analysis will therefore be necessary before Congress can comfortably adopt my suggestions. For now, I simply mean to present a powerful and hitherto unconsidered resource that Congress may add to its toolkit.

### B. Prepayment and *Ex Ante* Grandfathering

The second set of commitment devices that I consider is prepayment and *ex ante* grandfathering. Prepayment makes tax subsidies more secure by allocating funds for them up front; *ex ante* grandfathering involves writing IRC provisions such that the tax treatment of present taxpayers does not change (they are "grandfathered") even if the provisions are subsequently amended.

A legislature can prepay a tax subsidy most simply by awarding it in advance of the desired conduct, presumably with the option to later revoke the payment if the subsidized party reneges. For example, if the government wished to incentivize research and development spending, it could give taxpayers immediate credits based on the expected wage and

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additional percentage point required above 50% for tax increases caused between a .098 and .214 percentage point decrease in the aggregate state tax rate. *Id. See also* Jac C. Heckelman & Keith L. Dougherty, *Majority Rule Versus Supermajority Rules: Their Effects on Narrow and Broad Taxes*, 38 PUB. FIN. REV. 738, 755–56 (2010) (offering similar conclusions, but separately considering rate decreases between more and less redistributive taxes); James M. Poterba, *Do Budget Rules Work?* (Nat'l Bureau of Econ. Research, Working Paper No. 5550, 1997), *available at* http://perma.cc/R9A4-Y8P2 (arguing that procedural budget rules such as the balanced-budget amendment effectively shape policy).

[96] *See, e.g.*, Jacob E. Gersen, *Temporary Legislation*, 74 U. CHI. L. REV. 247 (2007). The observation that legislators can use a sunset provision as a compromise to pass an otherwise losing piece of legislation, *see* John E. Finn, *Sunset Clauses and Democratic Deliberation: Assessing the Significance of Sunset Provisions in Antiterrorism Legislation*, 48 COLUM. J. TRANSNAT'L L. 442, 489 (2010) (does not refute the claim that the legislation would have been counterfactually harder to repeal without the sunset).

supply costs of the research. That sum could later be adjusted up or down based on actual costs (with appropriate interest-rate adjustments).

This system, while intuitively the simplest form of prepayment, presents some practical difficulties. Individual estimation of the costs of every research project is a nontrivial transaction cost, and the need for interest-rate adjustments leaves room for taxpayers to game the time value of money. There are ways around this problem: the credit could be awarded and carried over until research costs are actually incurred, or penalties could be imposed for overestimating costs, or, most simply, the interest rate charged could be very high. And, of course, the IRC is no stranger to interest-rate opportunism or transaction costs; these downsides must simply be weighed against the costs and benefits of other prepayment strategies.

A proposal in a similar spirit would be to provide an investment credit instead of a production credit. Imagine that the R&D credit were transformed into a credit for the construction of research facilities rather than a credit for ongoing research expenses. A credit for new facilities would encourage research spending just as a production credit would, by reducing the after-tax cost of facilities. However, it would not do so in quite the same way: a facility credit lowers the fixed costs of research, whereas a production credit lowers the variable costs of research. The former would result in more projects because of lower start-up costs, incidentally benefiting construction firms; the latter would result in more research spending per project because of lower marginal costs of research, incidentally benefiting researchers. Both credits would ultimately result in more research, but in different ways, such that they are not perfect substitutes. Moreover, an investment credit could only replace a production credit in industries with sufficiently high startup costs for the credit to be meaningfully large. Thus, while this method of prepayment covers many cases of timing mismatches, it does not cover all of them.

*Ex ante* grandfathering is a more versatile alternative. The most common method of *ex ante* grandfathering is to have firms qualify for tax credits based on the year in which a project begins, rather than the year in which expenses are incurred. Thus, businesses that formerly took advantage of the credit—and perhaps made investment decisions in expectation of receiving the credit—will continue to receive it even if the credit is allowed to sunset with respect to new projects. The renewable energy tax credit[97] and bonus depreciation[98] already operate like this, allowing firms taking advantage of these provisions to make investment decisions with relatively greater certainty.

One qualm that we might have with respect to *ex ante* grandfathering is that nothing prohibits Congress from subsequently altering qualifying dates—qualifying date provisions are no less amendable than any

[97] *See supra* notes 60–64 and accompanying text.
[98] I.R.C. § 179(b)(1)–(2) (2012).

other part of the IRC. Such amendments also would not be retroactive in the traditional sense[99] and therefore would not be barred by the House's rule of order against retroactive tax increases.[100] However, there are strong legislative norms that prevent the revocation of grandfathered entitlements, whether granted *ex ante* or *ex post*. Tax practitioners justifiably regard grandfather clauses as the last word on entitlements, and there are no signs that this will change within the foreseeable future.

Another qualm is that the strategy of *ex ante* grandfathering suffers from the familiar disadvantages of grandfathering in general: it may distort spending toward old, less profitable, but tax-advantaged projects, rather than new projects.[101] Grandfathering will therefore work best in situations where projects have finite lifespans and cannot be extended indefinitely. *Ex ante* grandfathering will also only work with regard to discrete projects. It is therefore more appropriate to fields like research and development, than to fields involving ongoing production or manufacturing.

In general, prepayment and *ex ante* grandfathering have been underappreciated in the traditional literature on legal transitions. As Part II suggests, policymakers should at least weigh the efficiency gains and procedural advantages of reduced uncertainty against the potential costs of lock-in.

### C. Economic-Indicator Rules

A final proposal is to reduce legislative uncertainty by replacing legislative discretion with rules based on economic indicators. As I define them, economic-indicator rules condition automatic voting rules or default rules on economic events: for instance, a fiscal stimulus might sunset if GDP growth rose above three percent, unless a two-thirds majority of Congress voted to reenact. Such a fiscal stimulus would be especially difficult to frivolously renew in defiance of the sunset and the economic-indicator rule—a legislator voting in favor of reenactment could easily be accused of fiscal laxity in the face of concrete economic evidence that the stimulus were no longer necessary. Thus the stimulus would be credibly likely to sunset and would encourage intertemporal substitution.[102]

The basic concept of indicator-conditioned sunsets yields many permutations. Building on the hypothetical above, Congress could instead phase out the sunset between GDP growth of two and four percent—say, by reducing it proportionally between those two benchmarks, and completely eliminating it once GDP growth exceeds four percent. Contingent phase-

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[99] *See* Graetz, *supra* note 53, at 52.

[100] HOUSE RULES, *supra* note 83, R. XXI(5)(c); H.R. Res. 6, 104th Cong. § 106 (1995).

[101] This inefficiency is an *ex ante* analog to the *ex post* inefficiencies of traditional grandfathering rules. *See* Kaplow, *supra* note 24 at 584–87.

[102] *See supra* Part **Error! Reference source not found.**C. Fiscal Stimulus ("Making Hay While the Sun Shines").

outs and contingent phase-ins could be used for a more targeted macroeconomic effect than mere yes-or-no sunsets.

In fact, taking this proposal to its logical extreme, Congress could in theory develop a vast ecosystem of tax provisions, all of which lay dormant, but do not sunset, under particular macroeconomic conditions. Thus it could provide a first-time-homebuyer's credit that takes effect when and only when housing prices decrease by more than, say, ten percent. The credit would merely "hibernate" (without sunsetting) if growth in prices exceeded negative ten percent, but would remain in the Code as a stabilizer in case of an economic downturn.

However, using economic-indicator rules to cause tax provisions to hibernate rather than sunset could have a number of undesirable results—it would increase complexity and unpredictability in the tax code, since tax rates would now depend on a broad swath of economic conditions, as well as the endogenous interactions of economic-indicator provisions with each other. This could largely defeat the goal of making the tax code more predictable and accessible. Moreover, hibernating economic indicator rules could open the door to legislative rent-seeking by making new provisions appear less permanent and more objective by association with economic benchmarks. In contrast, economic-indicator provisions that mandate sunsets would automatically clean up the Code. I prefer these latter, non-hibernating rules, since one of the major benefits that I intend in proposing these rules in the first place is allowing legislators to credibly commit to the elimination of provisions initially intended to be temporary.

The major wrinkle is how to draft economic-indicator rules deciding when a threshold has been met. Ideally, the rules would continuously compare economic-indicator targets against current economic conditions throughout the year, and immediately sunset the provisions once they have outlived their usefulness. This is difficult in practice—taxes generally remain constant within each year in order to allow taxpayers to properly plan their affairs.[103] Assuming the constraint of year-by-year policy formation, administrators would then project economic conditions for the coming year and either sunset or renew each tax provision based on those projections. The administrators would likely be the agencies that already provide economic forecasts, like the JCT, the Council of Economic Advisors (CEA), the Office of Management and Budget (OMB), the Congressional Budget Office (CBO), and the Federal Reserve (Fed). But the centrality of these agencies to economic-indicator rules raises two difficulties. First, can government economists accurately predict things like unemployment or GDP a year ahead? Second, will forecasters be able to resist the political pressures that drove us to seek tax commitments in the first place?

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[103] I.R.C. § 441 (2012).

The answer to both questions is probably—but that in any case, agencies would do a better job than Congress currently does. First, despite occasional disagreement between various government advisory bodies about the impact of fiscal reforms,[104] short-term government economic forecasts are generally thought to be the most accurate estimates available.[105] While the CEA, OMB, CBO, and, to a lesser extent, the Fed, all suffer pressure from politicians attempting to assemble data points to back their preferred policies,[106] studies have shown that none of these agencies suffer from systematic bias, at least in the current-year economic forecasts that matter for my proposal.[107] Moreover, even if agency economic forecasts are not completely accurate, they are the same forecasts that legislators already use to decide fiscal policy in the upcoming year. Because tax rates will incorporate those estimates regardless (filtered through the sieve of congressional debate), the substantive change that I propose is merely to take discretion out of the hands of legislators and place it into the hands of economists. The only foreseeable downside would be if ordinary politics had some sort of gestalt value that realized more accurate forecasts than advisory agencies, despite the relatively greater severity of political economy issues in Congress.

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[104] This is particularly true of post mortems for complex economic plans, often representing fundamental "considerable disagreement within the economics profession about macroeconomic modeling." Dylan Matthews, *Did the Stimulus Work? A Review of the Nine Best Studies on the Subject*, WASH. POST (Aug. 24, 2011, 2:32 PM), http://perma.cc/B98B-RMRN.

[105] *See, e.g.*, Carlos Capistrán, *Bias in Federal Reserve Inflation Forecasts: Is the Federal Reserve Irrational or Just Cautious?*, 55 J. MONETARY ECON. 1415, 1425-26 (2008) (concluding that the Fed was just cautious); George A. Krause & James W. Douglas, *Institutional Design Versus Reputational Effects on Bureaucratic Performance: Evidence from U.S. Government Macroeconomic and Fiscal Projections*, 15 J. PUB. ADM. RES. THEORY 281, 289 (2005) [hereinafter Krause & Douglas, *Institutional Design*]; Richard A. Parsons, *A Question of Bias in the US Unemployment Numbers*, 20 APPLIED ECON. LETTERS 1003, 1007 (2013) (concluding that there was no bias). For a listing of current-year forecast errors for various economic indicators, see Krause & Douglas, *Institutional Design*, *supra*, at 291 fig.1. The accuracy and lack of systematic bias in U.S. economic forecasts is idiosyncratic; many other nations suffer from a well-documented over-optimism bias in forecasts. *See, e.g.*, Jeffrey Frankel, *Over-Optimism in Forecasts by Official Budget Agencies and Its Implications*, 27 OX. REV. ECON. POL. 536 (2011). Various explanations have been proffered for greater U.S. effectiveness at forecasting, including the belief that competition between forecasting agencies deters bias. *See* George A. Krause & James W. Douglas, *Does Agency Competition Improve the Quality of Policy Analysis? Evidence from OMB and CBO Fiscal Projections*, 25 J. POL. ANALYSIS & MGMT. 53, 53–54 (2005) (concluding, however, that "agency competition . . . does not necessarily enhance the quality of administrative performance"); *see also* George A. Krause & J. Kevin Corder, *Explaining Bureaucratic Optimism: Theory and Evidence from U.S. Executive Agency Macroeconomic Forecasts*, 101 AM. POL. SCI. REV. 129 (2007) (considering high reputational costs and agency stability as drivers for bias).

[106] Krause & Douglas, *Institutional Design*, *supra* note 105, at 283-84.

[107] *Id.* at 291 fig.1; Parsons, *supra* note 105.

Which brings us to the second possible objection: although economic agencies produce reliable forecasts now, would their objectivity degrade if they gained significant direct power over the content of the IRC? Would adoption of economic-indicator rules widen the "revolving door" between agencies and private firms with a stake in agency decisions?[108]

It is difficult to predict with certainty the effects that greater authority would have on agency incentives. Lobbyists would likely begin to focus more attention on administrators,[109] and private firms would encourage more employees to take stints in influential forecasting agencies.[110] However, agencies would likely weather political pressure better than politicians do in the status quo. Forecasting agencies would have significantly less discretion than legislators do over policy; they could only alter outcomes by producing biased forecasts. In turn, reputational factors strongly push against the possibility of bias: not only would agency administrators have their own professional pride on the line, but they would have to compete with many similarly functioning peer agencies for the right to administer economic-indicator rules.[111] Unlike legislators, who never produce strictly right or wrong answers, and unlike conventional agencies that administer discretionary policies,[112] an agency that consistently produced inaccurate or systematically biased forecasts would quickly be found out and replaced. So while problems of political economy could conceivably still occur in the administration of economic-indicator rules, we have good reason to believe that forecasting agencies would be more objective than ordinary politics, and indeed, more objective than non-forecasting regulatory agencies.

Finally, we might wonder how economic-indicator rules compare to "stabilizers" in the IRC. Stabilizers are provisions that offset booms and busts in the business cycle, including both explicitly legislated stabilizers (like the first-time-homebuyer credit) and so-called "automatic stabilizers,"

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[108] *See generally* Yeon-Koo Che, *Revolving Doors and the Optimal Tolerance for Agency Collusion*, 26 RAND J. ECON 378 (1995).

[109] *See* Jim Snyder, *Lobbyists Hitting Up Federal Agencies as Earmark Rate Drops*, THE HILL (Feb. 4, 2010, 7:00 AM), http://perma.cc/Y3M8-Z9GT.

[110] To some extent, this already happens. *See, e.g.*, Ryan Grim & Ariel Edwards-Levy, *Federal Reserve Officials Leave For Wall Street With Privileged Info*, HUFFINGTON POST (Mar. 16, 2012, 6:12 PM), http://perma.cc/LG3Q-9CEX; *Revolving Door: Search Results*, OPENSECRETS.ORG, http://perma.cc/K2KY-PPQ3 (last visited May 8, 2013) (listing the twenty-two CBO employees with industry ties, although some of the ties are tenuous).

[111] *See* Krause & Corder, *supra* note 105.

[112] Certain regulatory agencies with substantial discretion over oligopolistic industries, such as the USDA and FCC, have been criticized as especially prone to the influence of private-sector actors. *See* Dion Casey, *Agency Capture: The USDA's Struggle to Pass Food Safety Regulations*, 7 KAN. J.L. & PUB. POL'Y 142 (1998); Bruce Kushnick, *Regulatory Capture of the FCC—Time to Clean House*, HUFFINGTON POST BLOG (Mar. 25, 2013, 6:21 PM), http://perma.cc/P3E2-AQX7.

which operate "without any explicit government action"[113] (the income tax and the corporate tax are arguably examples, by virtue of their progressivity[114]). By sunsetting provisions in the IRC when they are no longer necessary, economic-indicator rules make activist fiscal policy more effective by preventing stabilizers from ossifying in the Code.

David Gamage makes a related but functionally opposite proposal to mine in a paper on state budgeting.[115] Gamage argues that states should set the baseline for a tax at a fixed level of revenue rather than a fixed percentage rate,[116] in order to prevent the need for fluctuations in government expenditures, which he considers more deleterious than fluctuations in tax rates,[117] when legislatures must balance the budget. In effect, Gamage proposes automatic *de*stabilizers, which would cause continuous adjustments to tax rates rather than the discrete sunset-or-not outcomes that I propose. Gamage's proposal makes sense "in the realm of the second-best,"[118] in states following strict balanced-budget rules,[119] but not if we allow some role for activist fiscal policy as a means to stabilize output. Commentators typically agree that output stabilization is a desirable role for the government to play,[120] and it is a role that economic-indicator rules serve well. Gamage and I therefore attack different problems and end up with related but opposite solutions.

Alternatively, Yair Listokin has recently proposed using phase-outs and caps on tax expenditures as automatic stabilizers.[121] Limits on tax expenditures would limit the extent to which taxpayers can take advantage of expenditures in good times, rendering the IRC comparatively more favorable in bad times. This proposal achieves the hands-off benefits of hibernating economic-indicator rules, as I propose above, without the concomitant uncertainty. However, like all automatic stabilizers, phase-outs and caps must be determined *ex ante* and are therefore blunt instruments for

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[113] Alan J. Auerbach & Daniel Feenberg, *The Significance of Federal Taxes as Automatic Stabilizers* 1 (Nat'l Bureau of Econ. Research, Working Paper No. 7662, 2000).
[114] *See id.*; Thiess Buettner & Clemens Fuest, *The Role of the Corporate Income Tax as an Automatic Stabilizer*, 17 INT'L. TAX & PUB. FIN. 686, 687 (2010). Any progressive tax will operate as an automatic stabilizer by "reduc[ing] the multiplier effects of demand shocks through the marginal taxation of income fluctuations." Auerbach & Feenberg, *supra* note 113, at 1.
[115] David Gamage, *Preventing State Budget Crises: Managing the Fiscal Volatility Problem*, 98 CAL. L. REV. 749 (2010).
[116] *Id.* at 792–810.
[117] *Id.* at 771–91.
[118] *Id.* at 750.
[119] *Id.* at 761–65.
[120] *See generally* Alan J. Auerbach & William G. Gale, *Activist Fiscal Policy to Stabilize Economic Activity* (Nat'l Bureau of Econ. Research, Working Paper No. 15,407, 2009).
[121] Yair Listokin, *Equity, Efficiency, and Stability: The Importance of Macroeconomics for Evaluating Income Tax Policy*, 29 YALE J. ON REG. 45, 87–88 (2012).

addressing unforeseen economic circumstances.[122] They fill a different need than activist fiscal policy does; as such, they are not really comparable to economic-indicator rules either.

To my knowledge, no author has considered the combination of economic-indicator rules and sunset provisions that I propose in this article. These rules have potential to reduce legislative uncertainty and stabilize output, and government would benefit greatly from their use.

## V. IMPLICATIONS

Building on the descriptions of commitment devices in Part IV. Commitment Devices and the discussion of the situations where commitment devices will be most useful in Part II. Why Commit?, this part considers two particular provisions in the IRC that would benefit from application of tax commitment devices—bonus depreciation and the R&D credit. It describes their history, argues why commitment device treatment is appropriate for them, and suggests how commitment devices may be used to make them more effective.

### A. Bonus Depreciation

Bonus depreciation allows companies to depreciate new capital investments on highly accelerated schedules (currently fifty percent in the year of purchase, in addition to the regular depreciation allowance).[123] It was originally introduced to the IRC in 2002 as a temporary economic stimulus, set to sunset on September 11, 2004.[124] Unlike accelerated depreciation, which is intended as an outright subsidy to certain preferred industries, bonus depreciation aims to encourage firms to advance their future investments to the present day (i.e., intertemporal substitution). Thanks to a series of extensions—most recently by the American Taxpayer Relief Act of 2012,[125] with a further extension currently moving through Congress[126]—bonus depreciation has been available to taxpayers almost continuously since 2001.[127]

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[122] For instance, it is difficult to select the appropriate level of phase-out for output stabilization ex ante.

[123] I.R.C. § 179 (2012). Note that the general § 179 deduction allows businesses to deduct the first $500,000 of capital investment in its entirety; bonus depreciation only applies to investment in excess of this amount.

[124] Job Creation and Worker Assistance Act § 101, Pub. L. No. 107-147, 116 Stat. 21, 22 (2002).

[125] American Taxpayer Relief Act of 2012 § 331, Pub. L. No. 112-240, 126 Stat. 2313.

[126] H.R. 5771, 113th Cong. § 125 (2014).

[127] Bonus depreciation was not available between 2005 and 2007. GARY GUENTHER, CONG. RESEARCH SERV., RL31852, SECTION 179 AND BONUS DEPRECIATION EXPENSING ALLOWANCES: CURRENT LAW, LEGISLATIVE PROPOSALS IN THE 113TH CONGRESS, AND ECONOMIC EFFECTS 7 (2013). Bonus depreciation was also not available in 2014, although it may soon be made retroactively available. *See* H.R. 5771 § 125.

To make matters worse, proposed extensions of bonus depreciation have sometimes been retroactive, including the extension that the House has just passed.[128] Retroactive extension is the worst of all possible worlds, because the government loses tax revenue without creating any corresponding investment incentive (the announcement of retroactive bonus depreciation in 2015 cannot alter behavior in 2014). Retroactive extension thus operates as mere redistribution to owners of depreciable property, which contradicts the purpose of bonus depreciation as an economic stimulus.[129]

All this suggests that bonus depreciation is a prime candidate for a commitment not to reenact. Its success relies heavily on the expectations of taxpayers that it will not be renewed, and that they consequently must take advantage of it before it sunsets.[130]

Because of the delay in the collection of reliable data, economists have only been able to study the first few years of bonus depreciation. We have good reason to think that these were its years of highest effectiveness, during which the provision was young and poised to sunset, rather than antique and poised to become permanent.[131] Even so, the literature is pessimistic on the early success of bonus depreciation. Several studies have concluded that it was ineffective;[132] another found that it encouraged investment in qualified capital, but may have done so at the cost of investment in non-qualified capital;[133] the most recent study produced "mixed findings" indicating that bonus depreciation may or may not have stimulated capital investment.[134]

Moreover, recent anecdotal evidence supports the notion that bonus depreciation has become even less effective over time.[135] Over the past ten years, Congress has not only consistently renewed bonus depreciation

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[128] H.R. 5771 § 125.

[129] Retroactive extension could have *some* incentive effect if it happened so regularly that firms came to rely on it. However, the fact that bonus depreciation did legitimately lapse between 2005 and 2007 would make such reliance unlikely.

[130] Christopher L. House & Matthew D. Shapiro, *Temporary Investment Tax Incentives: Theory with Evidence from Bonus Depreciation*, 98 AM. ECON. REV. 737, 760 (2008).

[131] *See generally* GUENTHER, *supra* note 127.

[132] Darrel Cohen & Jason Cummins, *A Retrospective Evaluation of the Effects of Temporary Partial Expensing, Board of Governors of the Federal Reserve System Finance and Economics Discussion Series* (Apr. 2006), http://perma.cc/4JRJ-Z6X8; GUENTHER, *supra* note 127; Matthew Knittel, *Corporate Response to Accelerated Tax Depreciation: Bonus Depreciation for Tax Years 2002–2004* (Office of Tax Analysis, Working Paper No. 98, 2007), *available at* http://perma.cc/G4XC-7L7E.

[133] House & Shapiro, *supra* note 130.

[134] David S. Hulse & Jane R. Livingstone, *Incentive Effects of Bonus Depreciation*, 29 J. ACCT. & PUB. POL'Y 578, 578 (2010).

[135] *See* Gene Steuerle, *Some Ignored Costs of Bonus Depreciation*, TAX NOTES 1029 (Mar. 3, 2008), http://perma.cc/B7XF-5ZM4.

allowances, but *increased* them year over year, thus encouraging investors to defer making hay until the sun shines even brighter.[136]

Why has bonus depreciation been so consistently renewed despite its well-studied diminishing returns? Unsurprisingly, the answer is politics. Whenever the bonus depreciation nears its sunset, Congress is flooded by an alphabet soup of industry organizations: the National Business Aviation Association (NBAA), [137] the NAFA Fleet Management Association (NAFA), the American Automotive Leasing Association (AALA),[138] and the Interstate Natural Gas Association of America (INGAA),[139] among others. All of these businesses are highly dependent on physical capital, and all have sent strikingly similar requests to Congress for a few more years of highly preferential treatment on existing capital stock. The political strength of the special interests behind bonus depreciation likely explains recent, confusing initiatives to make it permanent.[140]

Based on the evidence so far, the savvy legislator should draw two conclusions. In order to make the provisions more effective as stimuli, she should decrease their likelihood of renewal. At the same time, in order to make the provisions unavailable for lobbying and to signal Congress's focus on their role as stimuli, she should attempt to reduce their legislative uncertainty.

Reaching into the tax commitment toolkit, she can accomplish both goals via voting rules, default rules, and economic benchmarks. The default for bonus depreciation should, of course, be to sunset—this is uncontroversial, and has at least been paid lip service by the IRC section containing bonus depreciation throughout its existence.[141] Under the system that I propose in Section A. Voting Rules and Default Rules, bonus depreciation, as a benefit awarded to powerful repeat players, should also have its renewal tied to economic benchmarks in order to signal Congress's resolve to have it sunset at the end of the recession regardless of political pressures to retain it. Finally, reenactment notwithstanding the end of the recession should be made very difficult (supermajoritarian) to prevent Congress from defecting under the pressure of lobbyists.

### B. The R&D Credit

Section D. Timing Mismatches used the R&D credit as an example of a tax expenditure with a timing mismatch—that is, an

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[136] GUENTHER, *supra* note 127, at 3 tbl.1.
[137] Press Release, Nat'l Bus. Aviation Ass'n, NBAA Applauds Presidential Signing of Bonus Depreciation (Sept. 27, 2010), http://perma.cc/837S-W9Q7.
[138] Mike Antich, *The Need to Extend 50-Percent Bonus Depreciation* (Aug. 13, 2010), http://perma.cc/VA8Q-XKZ9.
[139] Letter from Donald F. Santa, Jr., President, Interstate Natural Gas Ass'n of Am., to Max Baucus, Chairman, Senate Comm. on Fin. (Feb. 2, 2010), http://perma.cc/4MYH-XP8G.
[140] GUENTHER, *supra* note 127, at 10.
[141] I.R.C. § 179 (2012).

expenditure where a taxpayer would have to make the decision to invest without knowing whether it would receive the credit for any or all of the duration of the project. Uncertainty attaching to the R&D credit thus dampens the incentive effects of the R&D credit as well as incurring actuarial costs to taxpayers. Moreover, because the R&D credit has particularly suffered from the pathologies of ordinary politics, it makes sense to reduce the legislative discretion associated with it.

Political obstacles to the R&D credit are unfortunate, since commentators generally agree that incentives to research are economically efficient and valuable in a competitive economy. Research is a public good with substantial positive externalities (even assuming a robust intellectual property protection system, research does not always result in patentable inventions, and unpatentable discoveries cannot always be kept secret). We thus have reason to believe that research will be systematically underfunded in a free market, particularly given its capital-intensive nature and the difficulty in finding initial funding.[142] As such, economists have long argued that research should receive some sort of governmental assistance.[143]

Reacting to this problem, Congress originally enacted the R&D credit in the Economic Recovery Tax Act of 1981.[144] As noted in Section D.

Timing Mismatches, the R&D credit lowers the after-tax cost of research by providing a credit for "qualified research expenses."[145] The R&D credit was greeted with approval by contemporaries and has remained reliably popular since.[146] Many other countries have adopted similar programs, mostly with success.[147]

Academic and popular support behind the R&D credit make it particularly strange that the credit has lapsed so often over the past thirty years: it was originally set to sunset in 1985 and has expired eight times since.[148] To make matters worse, Congress has often extended the R&D

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[142] *See* Bronwyn H. Hall & Josh Lerner, *The Financing of R&D and Innovation* 12–14 (Nat'l Bureau of Econ. Research, Working Paper No. 15,325, 2009).
[143] *Id.* at 1–12.
[144] Pub. L. No. 97-34, 95 Stat. 172.
[145] I.R.C. § 41 (2012).
[146] Robert D. Atkinson, *Create Jobs by Expanding the R&D Tax Credit*, INFO. TECH. & INNOVATION FOUND. (Jan. 26, 2010), http://perma.cc/LWR8-Y7PF; Dean Zerbe, *Obama Does Right by Research and Development Tax Credit*, FORBES (Sept. 8, 2010, 4:21 PM), http://perma.cc/JPB6-G7SN; Gregory Ferenstein, *Good News for Entrepreneurs on Fiscal Cliff: R&D Tax Credit Extended*, TECHCRUNCH (Jan. 2, 2013), http://perma.cc/3F7Z-K5TS.
[147] *See, e.g.*, Raffaello Bronzini & Eleonora Iachini, *Are Incentives for R&D Effective? Evidence from a Regression Discontinuity Approach* (Bank of Italy, Working Paper No. 791, 2011); Ådne Cappelen, Arvid Raknerud & Marina Rybalka, *The Effects of R&D Tax Credits on Patenting and Innovations*, 41 RES. POL'Y 334 (2012); Bronwyn Hall & John Van Reenen, *How Effective Are Fiscal Incentives for R&D? A Review of the Evidence*, 29 RES. POL'Y 449 (2000).
[148] *See* Pub. L. No. 112-240, 126 Stat. 2326; Pub. L. No. 111-312, 124 Stat. 3317; Pub. L. No. 110-343, 122 Stat. 3865; Pub. L. No. 110-172, 121 Stat. 2479, 2489; Pub. L. No. 109-432, 120 Stat. 2934, 2935; Pub. L. No. 109-135, 119 Stat. 2615; Pub. L. No. 109-58, 119

credit retroactively, as with bonus depreciation.[149] As noted above, retroactive extension is poor policy, decreasing tax revenues without producing incentives for investment.[150]

As suggested in Section D. Timing Mismatches, the uncertainty surrounding the R&D tax credit has seriously impaired its effectiveness. Commentators have recognized this and suggested that Congress make the credit permanent.[151] The three most recent presidents—Obama, Bush, and Clinton—have similarly endorsed a permanent R&D credit, without success.[152]

How could the proposed tax commitment devices from Part IV. Commitment Devices improve the effectiveness of the R&D credit? Voting rules, default rules, prepayment, and *ex ante* grandfathering stand out as useful tools; on the other hand, economic-indicator rules make little sense in the context of the R&D credit, since it is intended to provide long-term incentives rather than to stabilize output.

A better, more intentional choice of default rule is the simplest improvement, as many have already suggested—a default of continuation rather than expiration would decrease planning costs (especially important to the small research firms for whom the R&D credit matters most[153]), make the credit more effective as an incentive for research,[154] and decrease legislative uncertainty by limiting the scope for legislators to demand rents in exchange for renewal votes.[155] In addition, the R&D credit could have a supermajoritarian voting threshold for repeal; supermajoritarian voting rules would make the credit even more permanent and therefore more effective.

However, supermajoritarian voting rules are somewhat messy for the reasons discussed in Section A. Voting Rules and Default Rules—it is difficult to calculate what the ideal voting threshold should be, and the very concept of non-simple-majoritarian rules is itself somewhat controversial.[156] Better to temporally advance the credit. Research

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Stat. 1056; Pub. L. No. 108-311, 118 Stat. 1178; Pub. L. No. 106-170, 113 Stat. 1919; Pub. L. No. 105-277, 112 Stat. 2681; Pub. L. No. 105-34, 111 Stat. 861; Pub. L. No. 104-188, 110 Stat. 1773, 1774; Pub. L. No. 103-66, 107 Stat. 420, 421, 459.

[149] Kysar, *The Sun Also Rises*, *supra* note 29, at 368–69.

[150] As described above, *supra* note 129, retroactive extension might create an expectation that the credit would eventually be renewed even after it had sunset, thus marginally increasing investment incentives. However, the R&D credit is not always extended, and anecdotal evidence suggests that firms assume sunsets to be real. *See, e.g.*, Daniel Karnis, *Navigating the R&D Tax Credit*, J. ACCT. (Mar. 2010), http://perma.cc/7MXK-EGRN.

[151] *Senators Push Permanent R&D Tax Credit*, TAXWATCH (Oct. 5, 2011), http://perma.cc/J7DZ-UPVS.

[152] Mike Dorning & Julianna Goldman, *Obama May Seek Permanent R&D Credit in Economic Proposals*, BLOOMBERG (Sept. 3, 2010), https://perma.cc/7ZYW-E8U7?type=image.

[153] *See* Bronzini & Iachini, *supra* note 147.

[154] *See supra* Section D. Timing Mismatches.

[155] *See* Kysar, *The Sun Also Rises*, *supra* note 29, at 362–68.

[156] *See* Ackerman et al., *supra* note 85; Rubenfeld, *supra* note 85.

paradigmatically takes place in the form of discrete projects; thus the R&D credit is a good candidate for both prepayment and *ex ante* grandfathering. For prepayment, firms could receive the R&D credit by submitting estimates of research costs, and then later repaying the credit (with interest, preferably at a fairly steep rate) if the actual costs exceeded estimates. (The R&D credit could easily be greater than the firm's total tax bill for that year; if so, it might make administrative sense to roll over the credit rather than for the IRS to make a net payment to the firm.) Alternatively, the R&D credit could transform into a research facilities credit, like the ones already used in states like Kentucky.[157] As noted in Section B. Prepayment and *Ex Ante* Grandfathering, this would incentivize research by increasing spending on capital, rather than increasing spending on variable factors like researcher salaries, and consequently a facilities credit would have different economic effects from the present credit. This may not be a bad thing: the facilities credit may be more appropriate in the context of research than the credit for ongoing costs, given the particular difficulties that research firms have in acquiring startup capital.[158]

Finally, if Congress decides to keep the sunset provision attached to the R&D credit, it can still make the credits more effective by using *ex ante* grandfathering. The R&D credit provision could borrow language from the renewable energy credit provision,[159] awarding credits based on qualified expenses in qualified projects, where qualified projects are those that begin within a certain time frame (for example, on or before January 1, 2016). *Ex ante* grandfathering would provide the same level of certainty to potential investors as prepayment, essentially guaranteeing a certain level of subsidy regardless of whether the credit is phased out with respect to new projects.

But what about research that cannot conveniently fit into a model designed around qualifying facilities and projects? After all, the R&D credit does not simply incentivize new pharmaceuticals and faster microchips. It is available for any research that "solv[es] a customer's problem or a production issue using known scientific principles."[160] How would government prepay or *ex-ante*-grandfather research in the form of short, intra-year projects rather than inter-year ones?

Easily. Under my system, research that occurs entirely within an eligible year will also qualify for the R&D credit—the firm conducting such research would simply apply for and receive the credit in the same year. In the case of *ex ante* grandfathering, an on-the-job-site, one-off research expenditure would simply be a project that finished quickly, and would still receive the credit. Of course, short-term research projects suffer from little uncertainty in the first place and therefore are not made any more efficient

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[157] KY. REV. STAT. ANN. § 141.395 (West 2013).
[158] *See* Hall & Lemer, *supra* note 142, at 12–14.
[159] I.R.C. § 45(d) (2012).
[160] Dean Zerbe, *Eight Myths That Keep Small Businesses From Claiming The R&D Tax Credit*, FORBES (Mar. 28, 2013), http://perma.cc/72J7-4H7S.

by my proposals. Timing mismatches only occur in long, multi-year projects; the operative point is that if an identifiable item of research will take a long time to develop, it is important to make sure that the credit will be available for its entire life. Tax commitment devices can therefore both improve the incentive effects of tax subsidies and, by removing them from the realm of congressional discretion, reduce the legislative uncertainty associated with them.

## VI. THE COUNTER-MAJORITARIAN DIFFICULTY

The commitment devices described in this article pose a profound counter-majoritarian difficulty similar to the one commonly encountered in constitutional law. Commitment devices bind the current legislature based on the preferences of past legislatures—much of my analysis has been underpinned by the premise that present-focused ordinary politics is a suboptimal production process for long-term tax policy. Even if I have persuaded you above that tax commitment devices are efficient, might they nonetheless be undemocratic? Constraints on the current legislature seem to contradict the philosophical notion that each generation has the right to determine its own policies according to its own processes.

This concern arises in constitutional law as the "counter-majoritarian difficulty," a term coined by Alexander Bickel to describe the complaint that "when the Supreme Court declares unconstitutional a legislative act or the action of the executive, it thwarts the will of representatives of the actual people of the here and now."[161] The analogous counter-majoritarian difficulty raised by tax commitments is that they allow past Congresses to thwart the current Congress. Although the tension in this article is solely between periods of time and not between branches of government, the central offense to present-period majoritarianism is the same: if, as Jefferson said, "the earth belongs to the living,"[162] then why should the living be obligated to respect the tax commitments of the dead?

There are many answers to the general counter-majoritarian difficulty, most of which I do not reiterate here.[163] Instead, I will focus on two responses, one based on the nature of the commitment devices I propose, and one that fundamentally denies the premise of present-majoritarian rule.

First, only one of the tax commitment devices that I propose operates in a genuinely counter-majoritarian fashion (voting rules). Default

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[161] *See* ALEXANDER BICKEL, THE LEAST DANGEROUS BRANCH 16–17 (1962).

[162] Letter from Thomas Jefferson to James Madison (Sept. 6, 1789), http://perma.cc/Z7XN-48XF.

[163] Some of the most common answers, including the argument that counter-majoritarianism "protects against the tyranny of the majority," John E. Jones III, *Inexorably toward Trial: Reflections on the Dover Case and the "Least Dangerous Branch,"* HUMANIST (Dec. 17, 2008), http://perma.cc/G87P-7QL2.

rules, prepayment, *ex ante* grandfathering, and economic-indicator rules all merely affect outcomes in the absence of majoritarian action (in confusing but conventional terms, they alter defaults), unless combined with supermajoritarian voting requirements. And even voting rules operate through norms rather than hard-and-fast constraints. The voting rules in Section A. Voting Rules and Default Rules are in fact formally majoritarian—the House Rules that my proposed voting rules rely upon may technically be altered by the consent of a simple majority.[164] They will bind subsequent legislatures only to the extent that those legislatures can be convinced that they are a good idea. I argue in Part II. Why Commit? why commitment devices are useful, and specifically in Section B. Defecting Successors and Optimal Plans how Congress can benefit itself and future Congresses by respecting past promises. But all of the devices in Part IV. Commitment Devices ultimately rely on persuasion, rather than compulsion. Unlike the commitment devices that people use in everyday life, there is no way for my commitment devices to be enforced against Congress; the various services that individuals may use to bind themselves to the mast through external penalties[165] have no legislative analog.

Second, it is not clear why majoritarian democracy precludes commitments over time in the first place. This point has been made elsewhere, most notably by Jed Rubenfeld[166] and Jon Elster.[167] Bickel's original framing of the counter-majoritarian difficulty emphasized the offensiveness of constitutionalism to democracy in "the here and now." But what if, as Rubenfeld says, "democratic self-government is itself something that exists, if it exists at all, only over time?"[168] He suggests that "democracy consists . . . in a people's living out its own self-given political and legal commitments over time—apart from or even contrary to popular will at any given moment."[169]

Put another way, individuals regularly defer pleasures and incur pains in order to fulfill promises that they have made in the past, and this is not considered offensive to individual autonomy. If we think of government over time not as a collection of discrete, self-interested actors, but as "a generation-spanning people acting as a political subject,"[170] then a legislature constrained in the kinds of tax benefits it may provide becomes just like the son who goes shopping for groceries rather than playing

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[164] *See supra* note 89 and accompanying text.
[165] *See* STICKK.COM, http://perma.cc/93T8-WCSB (last visited May 1, 2013) (allowing users to pledge sums of money to be forfeited if they fail their commitments); *SnūzNLūz - Wifi Donation Alarm Clock*, THINKGEEK.COM, http://perma.cc/4ZRZ-ZP6T (last visited May 1, 2013) (forcing users to donate money to charity in order to "snooze" their alarm clocks).
[166] RUBENFELD, *supra* note 9.
[167] ELSTER, *supra* note 9.
[168] RUBENFELD, *supra* note 9, at 11.
[169] *Id.*
[170] *Id.* at 12

basketball with friends.[171] He may not always be doing exactly what he would most enjoy at that particular moment; but that is the nature of self-discipline, and a polity that persists over time, like the United States, requires self-discipline just as much as individuals do.

The reframing of Congress as the voice of "a generation-spanning people" might seem too grand and philosophical—certainly it deviates from the welfarist tone of the majority of my analysis. But a philosophical response may be necessary to the philosophical question posed by simple-majoritarians. Not only does the tax counter-majoritarian difficulty misunderstand the nature of the commitment devices I propose, it also demands an excessively narrow view of the role of government.

## VII. CONCLUSION

The commitment devices that I propose in this article are not only useful in the context of tax legislation. They could just as easily be applied to other kinds of legislation, particularly those with economic underpinnings—bankruptcy or financial regulation, perhaps. It also might be instructive to compare legislative commitment devices with commitment devices at the agency level—for example, Internal Revenue Service rulings and other published guidance meant to ease taxpayer compliance.[172]

For now, this article has pursued two main objectives. First, to argue that tax commitment devices can improve public welfare by reducing tax uncertainty. Second, to survey several commitment devices and suggest how Congress might actually implement them.

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[171] *See id.* at 91–102.

[172] *See* MICHAEL J. GRAETZ & DEBORAH H. SCHENK, FEDERAL INCOME TAXATION: PRINCIPLES AND POLICIES 71–74 (6th ed. 2009); *Understanding IRS Guidance—A Brief Primer*, INTERNAL REV. SERV., http://perma.cc/FR6B-Z2QC (last updated Mar. 14, 2013).