Dear Readers,

Enclosed are the drafts of two separate but related papers. These two papers were originally both parts of a single paper, but I decided to split the project into two papers in order to remain within the length guidelines adopted by most of the top law reviews. Both of the enclosed papers remain incomplete works-in-progress. As you will note, I have used a separate typeface to indicate sections of the papers that are still in early draft form while other sections are still in outline form.

I am looking forward to meeting you and to hearing your thoughts on this project. Please accept my apologies the incomplete state of the enclosed drafts.

Sincerely,

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Managing State Budget Crises:
Redefining the Terms “Tax Cuts” and “Tax Hikes”

By
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Forty-nine of the U.S. states have balanced budget requirements, and every state acts as though bound by such constraints. These constraints create fiscal volatility which results in periodic budget crises. During strong economic conditions, states have the option of increasing spending or cutting taxes and usually choose to do both. Yet during economic downturns, the states must inevitably reverse course and pass painful spending cuts and/or tax hikes. This constant churning of state tax and spending laws spreads uncertainty throughout state economies and makes planning difficult for both public and private sector actors. This paper discusses the nature of the state fiscal volatility problem and proposes a novel solution for managing fiscal volatility so as to minimize its harmful effects. Drawing on prior research showing that fiscal volatility is more harmful when allocated to government spending than to the rates of broad-based taxes, this paper proposes that states redefine the baselines used for determining their default tax outcomes. By switching from their current tax rates baselines to a system of revenue targets baselines (a method used by some local governments for their property tax systems), states could effectively redefine the terms “tax cuts” and “tax hikes” so as to mitigate the harmful effects of fiscal volatility. Additionally, switching to an alternative baseline should improve the political accountability and democratic monitoring of fiscal policy decisions.

“State governments have been on a fiscal rollercoaster in recent years.”¹ The mild recession of the early 1990’s – which created budget crises in many states – was followed by strong growth during the later part of the decade. States used their then overflowing coffers to pass numerous tax cuts while increasing funding for a variety of government programs. Yet the bursting of the tech bubble in 2001 brought a new round of budgetary emergencies, this time of even larger magnitude. “By January 2003, combined state budget gaps were estimated at $75 to $80 billion, or 14.5 to 18 percent of total state spending. In California, public outcry over a reported $38 billion shortfall galvanized a movement to recall the governor. . .”²

Boom and bust cycles are a fact of modern economic life. As a general rule, any given set of tax rates generates less revenue during recessions and more during periods of growth. As such, when governments face balanced budget constraints – limits on their ability to incur

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² Id.
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deficits – economic cycles produce fiscal volatility. The governments must raise taxes and/or reduce spending during downturns, while cutting taxes and/or increasing spending during upturns.

Fiscal volatility dilemmas have troubled U.S. cities and states as well as many foreign nations. There is even reason to think the U.S. federal government might face fiscal volatility problems at some point in the future. Although this paper will briefly discuss how fiscal volatility plays out at other levels of government, and although most of the paper’s prescriptions apply to other government levels, the paper’s primary concern is how U.S. state governments should respond to the fiscal volatility created by their balanced budget constraints.

The paper operates in the realm of the second-best. Ideally, we would employ first-best measures for reducing the magnitude of fiscal volatility. However, first-best measures – such as weakening balanced budget constraints or adopting rainy day funds – are unlikely to be implemented to the degree necessary to solve state fiscal-volatility problems. Indeed, the magnitude of the fiscal volatility created by economic cycles has been growing over time. While we should certainly strive to eliminate this volatility to the extent we can reasonably do so, the question of how to cope with the remaining volatility will continue to be a pressing problem.

Hence, the majority of state-level fiscal volatility must be dealt with by fluctuating some combination of tax and spending policies: state governments must raise and lower either tax rates, spending levels, or both. In analyzing the tradeoffs between these policy responses, prior research has concluded that fiscal volatility is less harmful when the primary coping mechanism is raising and lowering the rates of certain broad-based taxes, as opposed to fluctuating spending levels, the rates of narrower taxes, or what is covered by tax bases.

Unfortunately, the trend in recent years has been for states to adjust anything other than the rates of broad-based taxes. Moreover, it is doubtful whether any scholarly argument can change this result – at least within the realm of normal politics (as opposed to institutional or constitutional politics).

This paper follows a branch of research seeking to disentangle the question of how tax and spending policies should respond to fiscal volatility from the question of what the tax and spending policies should be in their steady states. Following the conclusions of the prior research, this paper aims to convince even those who seek to reduce the steady-state levels of taxes and spending that volatility around these steady states should be allocated to tax rates.

Yet normal politics never operates within a steady state. Actual policy changes are always made during some point of an economic cycle. During a downturn, it is unrealistic to ask small-government advocates to campaign for tax-rate hikes rather than for spending cuts. Similarly, during an upturn, supporters of increased government spending are unlikely to accept tax-rate cuts in place of additional spending. Even members of these groups who agree that volatility should be allocated to tax rates are unlikely to distinguish between fluctuations made due to economic cycles and changes made to real steady-state policies. If a small government

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3 See Part I.C infra for a definition and discussion of “rainy day funds.”

4 For the prior research arguing that fiscal volatility is less harmful when allocated to the rates of certain broad-based taxes, see David Gamage, Taxation Under Balanced Budget Constraints: Determining the Optimal Responses to Fiscal Volatility (unpublished manuscript on file with author); Jesse Edgerton, Andrew Haughwout, and Rae Rosen, Institutions, Tax Structures, and State-local Fiscal Distress, 58 NAT TAX J 147 (2004).

5 In reference to tax and spending policies, the term “steady states” refers to the average settings of these policies taken across both boom and bust years.
advocate accepts tax hikes during a downturn, how can she insure that those who want increased spending will return the favor by agreeing to lower the tax rates during the next upturn?

As such, this paper’s key contribution lies in proposing an institutional mechanism for separating the choice of how to respond to fiscal volatility from the choice of setting steady-state policies. The key to this proposal involves rethinking how we define terms like “tax cuts” and “tax hikes.”

Labels like “tax hikes” and “tax cuts” are among the most potent phrases in the American political lexicon. Even before the ascendancy of the modern conservative movement, politicians were extremely averse to being seen as raising taxes. Today, any Republican viewed as supporting tax hikes risks a primary challenge sponsored by groups like the Club for Growth. Similarly, many Democrats strive to deflect the charge of being called a “tax and spend liberal.”

Yet despite the political salience of these labels, we lack a precise theoretical definition for what constitutes a “tax cut” or a “tax hike.” Most crucially for our purposes, these labels only make sense in reference to a baseline. Without some concept of what the default tax and spending policies would be in the absence of legislated changes, we cannot determine whether any proposed legislative action constitutes a “tax cut” or a “tax hike.”

Unlike at the federal level, the states’ balanced budget constraints make it impossible to hold both their tax and spending policies constant as the economy cycles. States are thus unable to use the entirety of their previous year’s tax and spending policies as a baseline. As such, state income and sales tax systems use only the prior year’s tax rates as their baseline – the tax rates currently on the books. In the absence of legislative action, tax rates are held steady throughout economic cycles while revenues fluctuate. When legislatures raise tax rates, these changes are coded as “tax hikes” even when overall revenues are declining due to slowing economic conditions.

Although this institutional-level policy choice is rarely critiqued or even noted, there are alternative baselines that could be chosen in place of tax rates. For instance, the local property-tax systems of several states hold revenue targets constant as their baseline. As the property values that form the bases for these taxes fluctuate, the default response is to adjust their tax rates so as to keep the amount of revenue generated constant. The localities are only considered to propose “tax hikes” or “tax cuts” when they call for changes to the revenue targets; the annual tax-rate adjustments are not labeled as tax hikes or tax cuts unless they result from a legislated raising or lowering of the revenue targets.

Moreover, tax rates and revenue targets are not the only aspects of fiscal policy that can be used as a baseline. Consider that many federal grants to states are sized based on metrics for how much the states need the spending. Grants of this sort supporting poverty assistance programs will thus automatically grow larger during downturns and smaller during upturns as their funding metrics show the state populations needing more and less poverty assistance. We could potentially create a baseline for state tax-rates based on metrics for spending needs, causing the rates to be administratively adjusted to meet the cyclical funding requirements of programs that cost more during busts than during booms.⁶

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⁶ For example, as the number of state citizens qualifying for programs like Medicaid increases during downturns, the state’s tax rates could be adjusted to fund the benefits granted to the newly qualifying recipients. Along similar lines, Jason Furman has proposed making metrics for social-security spending needs part of the baseline for determining federal payroll tax-rates. See Jason Furman, Coping with Demographic Uncertainty (2006; available at http://taxprof.typepad.com/taxprof_blog/files/Furman.doc).
Although switching baselines cannot completely determine how governments will respond to fiscal volatility, the choice of baselines can strongly influence the eventual policy outcomes. Regardless of the baseline, legislative majorities can always vote to change the default policy so as to set the current year’s tax and spending laws at whatever level the governing regime desires. Nevertheless, the literature on voter psychology tells us that preferences for tax and spending policies exhibit a status-quo bias (that voters display an “endowment effect” in regard to fiscal policy and “loss-aversion” with respect to fiscal policy changes). Hence, to the extent governing regimes are concerned about voter approval, legislative majorities should also be subject to the status quo bias and should thus be influenced by the setting of the baseline. Perhaps even more importantly, positive political theory predicts that it is generally harder to change a default policy than to prevent such a change. Due to the prevalence of veto points within our system of checks and balances, it typically takes more than a simple majority in order to switch from a default policy outcome, and determined minorities can often defeat policy changes that are desired by the majority. As a result of these two factors, the choice of baselines can be expected to significantly influence policy outcomes such that whatever aspect of fiscal policy is chosen as a baseline should tend to fluctuate less as the economy cycles.

Consequently, the current trend of allocating the majority of fiscal volatility to government spending results at least partially from states using tax rates as their primary baselines. By replacing these baselines with revenue targets (or with spending metrics), we could make tax-rate adjustments more common and expenditure fluctuations rarer. State politicians would be less likely to cut spending during downturns if the alternative did not require voting for “tax hikes.” And if upturns no longer automatically brought massive revenue growth, politicians should be more reluctant to increase spending.

The paper proceeds in five parts:

Part I analyzes the nature of the state-level fiscal volatility problem and explains why first-best solutions are unlikely to solve the problem. The Part also briefly discusses how fiscal volatility dilemmas play out at the local and federal levels in the U.S. as well as in other nations.

Part II reviews the prior literature on how governments should respond to fiscal volatility. Agreeing with that literature, the Part concludes that the harm from fiscal volatility could be minimized were governments to adjust the rates of certain broad-based taxes as their primary coping response. In contrast, the current policy trend of primarily adjusting government spending and the rates of narrower taxes results in significantly greater harm.

Part III explains this paper’s institutional solution for improving how states cope with fiscal volatility. The Part discusses how some local governments have moved to alternative baselines for their property tax systems – and thereby redefined the meaning of the terms tax cuts and tax hikes with respect to those tax systems. The Part then outlines how a change of baselines could be implemented at the state level and for tax systems other than property taxes.

Part IV expounds the normative case for why states should switch from their current tax rates baselines to the alternative baselines of either revenue targets or of spending metrics. The Part both explains how switching baselines would reduce the harm caused by fiscal volatility and discusses how an alternative baseline might improve political accountability and the democratic monitoring of fiscal policy.

Finally, Part V concludes by speculating about how the toolkit of implementing alternative baselines might be used to address other policy dilemmas in addition to the state-level fiscal volatility problem.
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I. THE NATURE OF THE FISCAL VOLATILITY PROBLEM

Before we can determine how states should cope with fiscal volatility, we must first understand the nature of the fiscal volatility problem. This Part discusses the impact of state-level fiscal volatility, why states cannot resolve their fiscal volatility dilemmas directly (either by abandoning their balanced budget constraints or through other first-best solutions), and how fiscal volatility problems play out at other levels of government.

A) The Impact of State Level Fiscal Volatility

To appreciate the impact of the fiscal volatility problem at the state level, it is worth starting with a few anecdotes. Consider the following excerpts from a New York Times article written in 2003 – during the heart of the last downturn:

“At a time when the governor of Missouri has ordered every third light bulb unscrewed to save money, when teachers are doubling as janitors in Oklahoma and working two weeks without pay in Oregon, when Connecticut is laying off prosecutors and Kentucky is releasing prison inmates early . . . . [L]ayoff notices to elementary and high school teachers have appeared in more than a dozen states. . . .

Last year brought the storm warnings: some layoffs, the inconveniences of libraries closing early and roads without fresh asphalt. Now, as states scramble to find ways to cut nearly $100 billion this year and next from budgets that must by law be balanced, the cuts are much larger, and their effects profound.

It is not just that states are withdrawing health care for the poor and mentally ill. They are also dismissing state troopers, closing parks and schools, dropping bus routes, eliminating college scholarships and slashing a host of other services that have long been taken for granted.”

Forty-nine of the fifty U.S. states have some form of balanced budget requirement. And even the one state that does not – Vermont – has generally acted as though bound by a balanced budget constraint. These constraints have created significant fiscal volatility as the state economies have cycled through booms and busts. In California, for instance, the standard deviation of state revenues (that is, the average variation around the overall trend) was eight percent between the years 1980 and 2004.

Average volatility of this magnitude can result in dramatic short-term shifts in state fiscal positions. Looking again at California, the State’s general fund revenues grew by twenty percent

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9 See, e.g., RICHARD BRIFFAULT, BALANCING ACTS: THE REALITY OF STATE BALANCED BUDGET REQUIREMENTS 3 (1996). See also notes _I.B.2_ and accompanying text.
10 Jon David Vasche and Brad Williams, Revenue Volatility in California, 36 STATE TAX NOTES 35, 37 (2005).
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in 2000, only to fall by seventeen percent in 2002 as the tech bubble collapsed.\textsuperscript{11} California’s experience was shared to some degree by most of the other states. According to the Federation of Tax Administrators, “total state revenues fell by 24 percent between the third quarter of 2001 and the second quarter of 2002, and personal income tax collections plunged by 42.7 percent.”\textsuperscript{12} Or as Elaine Maag and David Merriman explain:

“State tax revenues for fiscal 2001, which ended June 2001 in most states, were almost $30 billion higher than they had been a year earlier. State tax revenues declined dramatically thereafter. During fiscal 2002, tax revenues were about $32 billion less than in fiscal 2001. Thus, state revenues were an unprecedented $62 billion less than they would have been if revenue growth had matched the previous year. It is not surprising that these events caught at least some state policymakers unprepared, and resulted in a major fiscal crisis.”\textsuperscript{13}

During upturns, States find themselves flush with revenues. State officials use this extra money to expand existing programs, to create new ones, and to cut taxes.\textsuperscript{14} Yet this revenue disappears once the economy enters a downturn, forcing state officials to reduce spending or to raise taxes. As the National Association of State Budget Officers puts it, “No one wants to take an action one year only to reverse it the next. Yet many state officials did exactly that during the early 1980s, and again during the early 1990s, repeating a pattern that is decades old.”\textsuperscript{15}

Unfortunately, it is extremely difficult to predict when downturns will occur.\textsuperscript{16} If policymakers had known in 2000 that a downturn was around the corner, they might have been more careful with their temporarily increased funds. But the timing of the bust came as a surprise. Certainly, there were analysts who predicted that the tech boom was unsustainable. Yet analysts had been making these predictions throughout the late 1990’s while revenues continued to surge. Only with the benefit of hindsight can we accurately know when a boom will turn into a bust.\textsuperscript{17}

The fiscal volatility problem has troubled states ever since they adopted balanced budget constraints in response to the debt crises of the nineteenth century.\textsuperscript{18} Yet the problem has become much worse over the last few decades. Due largely to the rise of the conservative anti-tax movement, states appear to have altered the ways in which they cope with fiscal volatility. Meanwhile, the overall magnitude of fiscal volatility has been increasing over time.

1. How States Cope with Fiscal Volatility

The manner in which states respond to fiscal volatility has shifted dramatically in recent years. The period between World War II and the mid-1970’s saw a rapid expansion of state

\textsuperscript{11} Id. at 35.


\textsuperscript{14} NASB at 7.

\textsuperscript{15} Id.

\textsuperscript{16} See Vasche and Williams at 40; NASB at 7-8.

\textsuperscript{17} For more on this point, see notes \_\_ in I.C\_\_ and accompanying text.

\textsuperscript{18} See note \_\_ infra \_\_ in I.B.1\_\_ and accompanying text.
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governments, with overall state tax burdens rising from 3% of GDP in 1950 to 5.5% of GDP in 1975. Consequently, during the four recessions between 1952 and 1973, the cyclical fluctuations of state finances were largely overshadowed by the overall trend of increasing revenues. Although the recessions of this period resulted in slowed growth, state tax revenues never declined on a year-to-year basis. As it is much easier to delay spending increases than to actually cut programs, fiscal volatility during this period was a relatively minor problem.

This rosy picture began to change in the mid-1970’s. The growth of state governments halted after 1975, with state tax revenues oscillating around 5% of GDP between 1975 and today. As such, the recessions in this period have created significant fiscal distress for state and local governments.

This stabilization of state tax levels coincided with the rise of the conservative anti-tax movement. The late 1970’s brought the first major anti-property tax measure in California’s Proposition 13. Soon after, Ronald Reagan successfully won the Presidency campaigning for smaller government. Today, numerous Republicans and even some Democrats have signed the No New Taxes Pledge, committing them to “oppose any and all efforts to increase the marginal income tax rates for individuals and/or businesses.” The Pledge makes no exceptions for cyclical tax hikes meant to cope with fiscal volatility.

The growing power of the anti-tax movement has considerably altered how states manage fiscal downturns. During the recession of the early 1990’s, state governments responded with a roughly equal mixture of tax hikes and spending cuts. As the economy rebounded in the mid-to-late 1990’s, the states returned to lowering taxes and increasing spending. Yet during the recent downturn, state governments have been three times more likely to rely on spending cuts than on tax and fee increases – with fee increases being more prevalent than tax hikes.

Many of the governors and legislators who supported raising taxes as a means of coping with the 1990’s recession were punished in subsequent elections. The common wisdom now holds that politicians sponsor tax hikes at their own peril, even when the only alternative is to cut spending. A number of states have gone so far as to enact tax-expenditure limits, which prohibit state legislatures from raising taxes—or impose super-majority requirements for doing so—even

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20 Id.
21 Id. Note that state governments only stopped growing as a percent of state GDPs; in both real and nominal dollar values, state governments continued growing along with the rest of the state economies.
23 See ROBERT W. SMITH AND THOMAS D. LYNCH, PUBLIC BUDGETING IN AMERICA (5TH ed., 2004). The rise of the anti-tax movement was undoubtedly at least a partial cause of the stabilization of state revenues.
25 Robert Zahradnik, Iris J. Lav and Elizabeth McNichol, Framing the Choices 1 (Center on Budget and Policy Priorities, May 9th, 2005). Note that these figures define tax hikes as increases in the statutory tax rates and spending cuts as reductions from projected spending. Nominal spending totals (as opposed to real totals or spending as a percent of GDP) were not cut.
26 Id: Irene Rubin, The State of State Budget Research, PUB BUDGETING AND FINANCE at 49 (2005) (“One conclusion from this research is that states that used to use both revenue increases and spending decreases to close gaps have in recent years ruled out tax increases, leading nearly exclusively to spending reductions.”).
27 See Maag and Merriman, supra note ___, at 371-72.
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as a response to cyclical downturns. Some state governments still find it politically feasible to raise license and user fees, to broaden tax bases, to create lotteries, and to hike “sin” taxes (especially cigarette taxes). But even in the most liberal of states, the rates of broad-based taxes are now raised only as a last resort. Consequently, spending cuts have become the primary response to fiscal downturns and this trend seems likely to continue for the foreseeable future.

The reality of state budgets necessitates that these spending cuts affect even the most popular of programs. Indeed, during 2003, thirty-two states enacted across-the-board spending cuts. Despite the strong public support for education spending, primary and secondary education constitutes too large a portion of state general account budgets – at 36% of spending – to be spared from cuts. Nevertheless, some spending areas are targeted more than others. Higher education (at 12% of spending) and Medicaid (at 17% of spending) have been hit particularly hard. As a result, average tuition fees at public universities increased by thirty-five percent between 2000 and 2004 after adjusting for inflation, while over a million residents lost their eligibility for state-assisted health insurance.

Some of the spending cuts made in the previous downturn may be structural rather than cyclical. If states combine increased spending with tax cuts as their economies improve – as they did following the 1990’s recession – state spending might not return to pre-downturn levels. It is difficult to distinguish changes in how states respond to fiscal volatility from steady-state reductions in state spending, as we are only beginning to understand the implications of the new fiscal environment. Nevertheless, as long as tax hikes remain anathema, spending programs can be expected to bear the brunt of future fiscal volatility. At least some of the spending cut during downturns will be restored as state economies improve, only to be cut once again in subsequent recessions. In fact, many states have already begun restoring spending levels as their economies have started to rebound. During the most recent fiscal year for which

30 Consider the recent budget crisis in New Jersey, a state where Democrats controlled the governor’s mansion and both legislative chambers. The governor’s proposed solution to the state’s budget crises was to be funded: fifty percent by spending cuts, twenty-five percent by license and user fees, and only twenty-five percent by raising the state’s sales tax rate from six to seven percent. Yet where the first two components of the budget proposal were relatively non-controversial, the legislature refused to enact the sales-tax hike, which led to the government being shut down in an act of brinkmanship. See Richard Jones, Corzine Shuts Down New Jersey’s Government, New York Times (Jul 1, 2006).
31 NASB, supra note ___, at 6.
32 Id. at 5. For examples of the impact of these cuts, see Dale Russakoff and Linda Perlstein, States Cutting School Funding Officials: Predict Toll on Students And Bush's Goals, WASH POST (Mar 15, 2003).
33 Id.
35 Zahradnik et al., supra note ___, at 5.
36 Elizabeth McNichol, States’ Heavy Reliance On Spending Cuts And One-Time Measures To Close Their Budget Gaps Leaves Programs At Risk 6-7 (Center on Budget and Policy Priorities, July 29th, 2004).
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information is available, states increased spending by 8.4% while their revenues grew by only 7.7%.38

2. Why Fiscal Volatility is Growing Over Time

Not only are states finding it harder to cope with fiscal volatility now that the continued growth of state governments has halted, but the overall magnitude of fiscal volatility has been increasing over time. There are two main reasons for this growth in fiscal volatility – tax revenues and spending baselines.39

Tax revenues are becoming more volatile due to changes in state tax bases. Different forms of taxation can be more or less volatile. Where property tax revenues remain relatively stable as the economy cycles, sales tax revenues are quite volatile, and income tax revenues fluctuate even more wildly.40 Yet the past fifty years has seen states gradually reducing their reliance on property taxes in favor of sales and income taxes, thereby increasing the magnitude of fiscal volatility.41 Moreover, the volatility of state income taxes has significantly expanded in recent years, presumably due to greater income stratification.42 Partially due to these changes in state tax bases, the recent downturn generated much worse revenue shortfalls than did previous recessions, even though the economic effects of the downturn were comparatively mild.43

The other major cause of increased fiscal volatility comes from spending baselines – most notably Medicaid. Medicaid’s spending baselines are countercyclical; more state residents generally qualify for Medicaid during downturns than during periods of economic growth.44 As such, countercyclical programs like Medicaid exacerbate fiscal volatility problems by placing greater demands on state budgets when revenues are scarce and lesser demands when revenues are plentiful. Driven by rising healthcare costs and changes in federal government policy, Medicaid grew from 10.8% of state spending in 1989 to 19.6% of state spending in 2001.45 Consequently, as revenues began to plummet during the last downturn, states found that even maintaining their previous levels of non-Medicaid spending would require cutting promised Medicaid benefits.

38 State Revenue Surge Peaked in FY 2006: Survey, NEW YORK TIMES (Aug 15, 2006) (The 8.4% figure for increased spending includes revenues placed in rainy day funds; the figure exceeds the 7.7% revenue growth number due to part of the spending being funded by surpluses left over from the previous year).
39 Although space constraints prevent a full discussion of a third factor, it is worth noting that federal government policies have also contributed to increased fiscal volatility at the state level. See David Super, Rethinking Fiscal Federalism, 118 HARV. L. REV. 2544, 2562-2613 (2005).
41 Giertz and Giertz, supra note __, at 114.
42 Id.; Vasche and Williams, supra note __, at 42.
43 Giertz and Giertz, supra note __, at 115. Part of the reason for the dramatic revenue shortfalls following the last downturn was the collapse of realized capital gains, a pattern which might not be repeated in future economic cycles. But the other reasons for increased fiscal volatility are likely to continue.
44 Super, supra note _above_, at 2630-32.
45 Note that these figures refer to total state spending, as opposed to just general account spending (the portion of spending relevant to balanced budget constraints). Medicaid spending is slightly smaller as a percent of general account spending than of total spending, as some Medicaid spending is financed by dedicated revenue sources. STAFF OF THE HOUSE COMM. ON WAYS & MEANS, 108TH CONG., 2004 GREEN BOOK: BACKGROUND MATERIAL AND DATA ON THE PROGRAMS WITHIN THE JURISDICTION OF THE COMMITTEE ON WAYS AND MEANS app. C at 5-6 (Comm. Print 2004).
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State-level fiscal volatility is a significant and growing problem. Constrained by balanced budget requirements, state governments must adjust either their taxes or their spending as the economy cycles. Yet this discussion of the problem begs the question as to why states follow balanced budget constraints in the first place. At least in theory, states could eliminate most of their fiscal volatility problems simply by running deficits during downturns and surpluses once their economies return to growth.

B) The Nature of State Level Balanced Budget Constraints

In the absence of political considerations, economists generally agree that governments should run surpluses during booms and deficits during busts. Yet balanced budget constraints make fiscal stimulus of this sort impossible. State governments are forced to hike taxes and/or cut spending at exactly those times when economic theory calls for reduced taxes and higher spending. Conversely, state governments lower taxes and raise spending just as their economies start to overheated, thereby magnifying the harmful effects of the business cycle.

Despite the acknowledged negative consequences of state balanced-budget constraints, there is no significant movement calling for these constraints to be abolished. Indeed, even though most state balanced-budget requirements lack effective enforcement mechanisms, states typically follow them anyway. What explains these puzzles? The answer has far less to do with economics than with the nature of the political process.

1. Why States Have Balanced Budget Constraints

If states were governed by philosopher kings, there would be little need for balanced budget constraints. In accordance with economic theory, state governments could accrue deficits during downturns and pay off the accumulated debt with surpluses generated during upturns. Unfortunately, few philosopher kings are elected to public office. As such, analysts have warned against trusting governments with the power to accrue deficits as far back as David Hume:

It is very tempting to a minister to employ such an expedient, as enables him to make a great figure during his administration, without overburdening his people with taxes, or exciting any immediate clamors against himself. The practice therefore of contracting debt will almost infallibly be abused, in every government. It would scarcely be more imprudent to give a prodigal son a credit in every banker's shop in London, than to empower a statesman to draw bills, in this manner, upon posterity.

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50 [Cited in Sterk and Goldman at note 114. Possibly from fifth paragraph of the "Essay on Public Credit," first published in 1752? Need to check.]
Politicians generally benefit both from cutting taxes and from increasing spending on popular programs. When politicians are not required to pay for current expenditures with current taxes, they face strong incentives to run up ever greater deficits.  Absent some form of balanced budget constraint, nothing prevents lawmakers from using deficits to finance structural imbalances between taxes and spending, rather than limiting deficit use to coping with downturns. Although accrued debt must eventually be paid off, politicians can leave this task to the future, when they will presumably no longer hold office.

It was precisely this problem that caused states to adopt balanced budget requirements in the nineteenth century. States accrued ever increasing levels of debt in order to finance infrastructure projects without raising taxes. After the national economy tanked in the late 1830’s, states found they had stretched themselves past their limits. Throughout the 1840’s, state after state defaulted on its debts. Voters responded to these debt crises by passing balanced budget requirements into state law.

Moreover, in the absence of balanced budget constraints, the incentives for deficit spending might be even stronger today than in the nineteenth century. The political landscape is currently divided between one party that seeks to shrink the size of government and another party that seeks to maintain (or increase) the level of government spending. During upturns, conservatives may be tempted to pass tax cuts even when they realize the current fiscal situation is unsustainable. Through this strategy known as “starving the leviathan,” a conservative government can make it harder for subsequent liberal governments to increase spending. Moreover, by campaigning for tax cuts without specifying which spending programs will eventually have to be cut in order to pay for the tax cuts, conservatives can take advantage of voter myopia with respect to the connection between taxes and spending. As liberals face the opposite incentives – to campaign for deficit financed spending increases in order to prevent future conservative governments from reducing taxes – deficits would likely grow to dangerous levels in the absence of balanced budget constraints.

In essence, each side can benefit from playing chicken. Instead of working proactively together on a sound fiscal policy, conservatives can push for tax cuts and liberals for spending

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52 See notes in Part I.C. and accompanying text for a discussion of why administratively mandated limits on debt financing are unlikely to solve the fiscal volatility problem.
53 The incentives for this sort of behavior may be even stronger due to term limits on state officials.
56 Alesina, Budget Surpluses, supra note _, at 14-15.
57 Jonathon Baron and Edward McCaffery, Starving the Beast: The Psychology of Budget Deficits (manuscript on file with author). The advantages of campaigning for tax cuts without specifying which spending programs will be cut can be explained both by the political psychology literature, as in the Baron and McCaffery article cited above, and by more traditional public choice models. When spending reductions are specified, the beneficiaries of the spending have strong incentives to campaign against tax cuts. When spending cuts are left unspecified, the beneficiaries of each spending program have only a probabilistic chance of seeing their benefits cut, and thus have reduced incentives to campaign against the tax cuts as compared to the known beneficiaries of the tax cuts.
58 This may be currently happening at the federal level. See Part I.D.
increases until all the slack in the budget has been used up. Each side hopes the other will give in first—before the state succumbs to bankruptcy—with conservatives hoping that liberals will eventually agree to cut spending, and liberals hoping that conservatives will eventually consent to tax hikes.\footnote{Even if members of either the liberal or conservative coalitions would rather limit spending hikes or tax cuts, respectively, in order to restore slack to the budget, they may refrain from doing so out of fear that the opposing coalition will simply take advantage of the slack to advance that coalition’s preferred use of revenues.} But if both sides delay compromise for too long, the end result can be tragedy.

2. How States Respond to Balanced Budget Constraints

It is often noted that state balanced budget requirements lack effective enforcement mechanisms.\footnote{See, e.g., John Petersen, Changing Red to Black: Deficit Closing Alchemy, 56 NAT. TAX. J. 567 (2003); Steven Gold, State Government Experience with Balanced Budget Requirements: Relevance to Federal Proposals, Testimony before U.S. House of Representatives, Budget Committee. Washington, D.C., May 13, 1992.} Even to the extent states are actually required to match expenditures with revenues, states can use a variety of “budgetary gimmicks” to create the appearance of balance without actually adjusting either taxes or spending. For instance, during the recent downturn, states played accounting games, raided pension funds, sold state assets, securitized future revenue streams, and engaged in concealed borrowing.\footnote{Petersen, supra note \_previous\_.} Taken to the extreme, state governments could simply fake their accounting statements so as to avoid ever making painful adjustments during downturns.

Yet states make only limited use of budgetary gimmicks.\footnote{See Levinson, supra note \_previous\_, at 717.} During the 1990’s recession, for example, budgetary gimmicks were estimated to have accounted for only 19% of state responses to fiscal volatility, with the remaining 81% split between tax hikes and spending cuts.\footnote{James Potebra, Balanced Budget Rules and Fiscal Policy: Evidence from the States, 48 NAT. TAX. J. 329, 332 (1995).} Similarly, during the most recent downturn, these gimmicks were estimated to have accounted for only 24% of state responses to fiscal volatility.\footnote{McNichol, supra note \_previous\_, at 1. The remaining 76% was split between spending cuts (42%), tax and fee increases (14%), use of rainy day funds (10%), and federal fiscal relief (10%). The use of budget gimmicks was much higher than the historical average partly because states generated significant revenues from one-time securitizations of their future income from the tobacco litigation settlements. See Maag and Merriman, supra note \_previous\_, at 372.} Typically, states rely heavily on budgetary gimmicks and rainy day funds during the first year of a downturn, but then turn to more painful coping measures during subsequent years once these easy methods have been exhausted.\footnote{See, e.g., id. at 5-6.}

Why don’t states make greater use of budgetary gimmicks or simply ignore their balanced budget constraints all together? We do not fully know. Nevertheless, the literature posits two distinct answers to this question. First, states may fear the disciplining power of capital markets. As Richard Briffault argues:

The states lack the fiscal and monetary tools and the tax base of the federal government. States can neither print money nor close their borders to prevent residents and businesses from fleeing to other jurisdictions to avoid high levels of state taxation. In order to borrow, a state must demonstrate to potential lenders its capacity to repay its debts. If it persistently ran a significant deficit, its creditworthiness would be undermined. It would have to pay a substantial penalty in...
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terms of higher interest rates or, ultimately, risk loss of access to capital markets. States are like households or businesses. They balance their budgets not necessarily because their constitutions require it – after all, households and businesses are not subject to constitutional requirements – but because the marketplace demands it.  

Second, states may be constrained by norms against running deficits. According to a survey by the National Association of State Budget Officers:

[T]he most important factor contributing to balanced budgets is not an enforcement mechanism or a provision specifying how a shortfall will be made up. Rather it is the tradition of balancing budgets, the mindset this tradition creates, and the importance placed on balanced budgets that result in states complying with their requirements.

Whether the cause is fear of capital markets, adherence to anti-deficit norms, or a combination of these two factors, the fact remains that that “most states balance their budgets most of the time whether or not they are required by their constitutions to do so.” Although states use budgetary gimmicks as a partial response to fiscal volatility, the majority of volatility is dealt with through a combination of tax and spending adjustments.

C) The Inadequacy of First-Best Solutions

The bulk of this paper analyzes second-best means for dealing with fiscal volatility. Assuming states cannot solve their fiscal volatility problems directly, they should respond to the volatility so as to minimize its harmful effects. Yet before proceeding to discuss second-best coping mechanisms, it is worth spending a little more time evaluating potential first-best solutions.

The most obvious means for resolving fiscal volatility – abolishing state balanced budget constraints – is probably undesirable due to the nature of the political process. But if balanced budget constraints prevent states from accruing deficits during downturns, might the states instead adopt the opposite policy? In theory, states could solve their fiscal volatility problems by

66 Briffault, supra note __, at 60.
67 Id. at 5. See also Yilin Hou and Daniel Smith, A Framework for Understanding State Balanced Budget requirenment Systems: Re-examining Distinctive Features and an Operational Definition; PUBLIC BUDGETING & FINANCE 5 (forthcoming; manuscript on file with author). See also notes __ in I.D__ and accompanying text for a discussion of how anti-deficit norms governed the behavior of the U.S. federal government for most of the nation’s history.

The existence of anti-deficit norms corresponds with much of the theory behind the new social norms scholarship, particularly as developed in Robert Ellickson’s, ORDER WITHOUT LAW: HOW NEIGHBORS SETTLE DISPUTES (1991). See also Robert Ellickson, Law and Economics Discovers Social Norms, 27 J OF LEG STUD 537 (1998). For the reasons discussed in Part I.B.1, these norms are functional and are likely enforced through extra-legal means – such as through voter retaliation against politicians seen as violating the norms.

68 Briffault, supra note __, at 3.
69 In addition to the first-best solutions discussed in the text of the paper, states could adjust their tax bases by replacing volatile income taxes with less volatile alternatives like property taxes. However, adjusting tax bases in this fashion would have numerous policy implications that many state legislators (and voters) would consider undesirable. As such, I do not view adjusting state tax-bases as a viable first-best solution.

70 See Part I.B.1.
saving the surplus revenues generated during upturns and using these saved revenues to finance spending during downturns.

Most states do indeed save some of their surplus revenues in “rainy-day funds.” Yet states fall far short from adequately financing these funds. For example, although states invested far more heavily in rainy-day funds during the 1990’s than during any previous boom, these funds still covered less than a sixth of the revenue shortfalls during the subsequent bust.

The reason states fail to adequately finance their rainy day funds is the same reason states let deficits grow to dangerous levels in the absence of balanced budget constraints. Like forgoing deficit spending, investing in rainy-day funds constitutes a “political gift from one period’s policymakers to some unknown successors.” Politicians can advance both their personal electoral prospects and their partisan agendas by using surplus revenues for tax cuts or spending increases rather than saving the revenues in rainy day funds.

There is some discussion in the literature of mechanisms for forcing states to save more of their surplus revenues during economic booms. At the most extreme level, we might imagine an administrative agency requiring surplus revenues to be invested in rainy day funds or else raising state borrowing limits during busts and lowering them again during periods of growth. Unfortunately, although measures of this sort might be helpful on the margin, even the proponents of these measures do not claim they can fully solve state fiscal volatility problems.

Even if politicians could be forced to adequately finance rainy day funds, they lack the information required to do so. State-level budget forecasts have done a poor job of predicting future revenues; “Too often decision makers ‘overreact’ and assume that the future will be like the immediate past.” Budget analysts tend to be overly optimistic during booms and overly pessimistic during busts. Moreover, analysts have poor information about “when business-cycle turning points will occur” and “about how much the economy will expand or contract. In practice, it is hard to distinguish cyclical upswings from long-term growth.” Although reformers should certainly press states to make greater use of rainy day funds, and there is room for more debate on how to improve the operation of these funds, first-best measures of this sort have little chance of ever resolving the fiscal volatility dilemma.

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72 NASB, supra note __, at 10-11.

73 Robert Zahradnik, Rainy Day Funds: Opportunities for Reform 1, (Center on Budget and Policy Priorities, March 9th, 2005).

74 Super, supra note __, at 2643.

75 See Part I.B.1.

76 See, e.g., Super, supra note __; Zahradnik, supra note __above__. An extended discussion of these measures and their limitations is beyond the scope of this paper. For an introduction to the topic, see Dye and Merriman, supra note __, at 245-46.

77 See, e.g., Super, supra note __; Zahradnik, supra note __above__.

78 See, e.g., Id.; Giertz and Giertz, supra note __, at 130; NASB, supra note __, at 11.

79 NASB, supra note __, at 11.

80 Id.

81 Dye and Merriman, supra note __ at 243.

82 The following quote from Dye and Merriman, id. at 242, highlights some of the difficulties inherent in relying on saving during boom years to resolve fiscal volatility problems:
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As alternative first-best solutions, states could look to the private sector or to the federal government to provide revenue insurance with the states paying higher premiums during economic booms and receiving payouts during busts. Looking first to the feasibility of private-sector insurance, similar problems arise as do for borrowing and for rainy day funds. State governments cannot purchase insurance policies during downturns because doing so would be equivalent to borrowing. As with direct borrowing, purchasing insurance that pays out immediately but with premiums not due until some later period of economic recovery both ties the hands of future governments and opens up enormous potential for abuse. During economic booms, state governments certainly could purchase insurance policies, just as they could contribute to rainy day funds. Yet the incentive for making these purchases (or contributions) is lacking during strong economic periods. Unless our forecasting technologies improve dramatically, it is unrealistic to expect state governments operating during strong economic conditions to prepare adequately for later downturns.

Looking finally to federal government policies, the federal government has real potential to mitigate state-level fiscal volatility problems by providing increased countercyclical budget support. Since the federal government can freely accrue deficits during downturns where state governments cannot, it arguably makes sense for the federal government to provide additional block grants to states during busts or to increase financing for countercyclical spending programs like Medicaid. Yet the trend in federal government policy has been to provide less countercyclical budget support over time. Unless the current political climate changes drastically, there is little prospect for reversing this trend. Moreover, as the next section will argue, there is reason to think that the federal government might eventually adopt some sort of balanced budget constraint and thereby reduce its potential to provide countercyclical support.

D) The Fiscal Volatility Problem at the Local, Federal, and Comparative Levels

This paper focuses on the fiscal volatility problem as it affects the U.S. States. But most of the paper’s prescriptions also apply to the local and comparative levels, and, potentially, to the U.S. federal level as well.

“U.S. business cycles have not been symmetric – expansions have lasted about five times as long as recessions. Observed revenue cycles are also asymmetric, with revenue above trend for about four out of every six years. . . . A government that wants to keep spending equal to the average or trend level of revenue will be obligated to accumulate surpluses long after actual revenues have begun to fall. Because the expansion lasts so much longer than the contraction, the accumulated surplus must reach a very high peak (more than $1,000 per capita or 50 percent of average annual revenues in our example). And, also because of the asymmetry, the surplus would disappear in extremely short order once revenues dip below trend. We doubt that many political actors could resist the pressure to increase spending or cut taxes with surpluses of this magnitude and could defend reserving so much revenue as insurance against future declines.”

Even if sufficiently large rainy-day fund contributions could be mandated in light of forecasting problems, politicians could easily raid these funds, either directly or indirectly through the use of budgetary gimmicks. The impulses that lead the normal political process to channel all available revenues into tax cuts and spending hikes can only be overcome through powerful countervailing pressures – such as from capital markets or from anti-deficit norms. Historically, these pressures have not operated to force saving during upturns.

83 Super, supra note __, at 2649.
84 Id. at 2562-98 and 2650-51.
Many local governments have been troubled by severe fiscal volatility. Indeed, some of the larger cities have experienced worse fiscal volatility problems than those faced by the states. Essentially all of this paper’s analysis holds for local government fiscal volatility as well as for state level volatility.

Similarly, at the comparative level, many developing nations face balanced budget constraints as binding as those confronting the U.S. states. As with U.S. state governments, the main explanations for these phenomena are limitations on the supply of credit and voter-enforced norms against accruing deficits. The International Monetary Fund has also forced the adoption of balanced budgets in some developing countries.

Developed nations generally do not experience significant problems with fiscal volatility as they can respond to downturns with deficit spending. The exceptions are countries that have accumulated large amounts of public debt. Developed nations have more slack in their budgets for fiscal management, but this slack can be exhausted through overuse of deficits. Once a government accrues too much debt, voter distrust and capital market discipline may require a stricter tying of expenditures to revenues, thereby creating more serious fiscal volatility dilemmas. Both developing countries and developed nations that have accumulated significant debt may benefit from this paper’s suggestions for coping with fiscal volatility.

Looking to the US national government, balanced budgets were the norm throughout most of the country’s history. The federal government employed debt financing during some wars and recessions. Yet these debts were gradually paid down during periods of peaceful economic growth. Although not bound by any formal balanced budget requirement, historically most “politicians would have considered it to be immoral (to be a sin) to spend more than they were willing to generate in tax revenue.” According to Brennan and Buchanan:

85 See, e.g., Steven Craig, How a City Can Survive a Boom and Bust Cycle Without Bankruptcy: The Case of Houston, Proceedings of the Eighty-Ninth Annual Conference of the National Tax Association at 90 (1997); Edgerton et al, supra note __.
86 Id.
89 Id. at 2; Roberto Perotti, Estimating the Effects of Fiscal Policy in OECD Countries, mimeo, IGIER-Bocconi (2004).
90 Alesina and Tabellini, supra note __, at 2.
91 There are additional complications influencing how national governments should respond to fiscal volatility that are not considered in this paper due to its focus on the U.S. state level. The paper’s prescriptions should be viewed as a relevant contribution to the literature on comparative and national level fiscal volatility, but not as an authoritative guide for coping with fiscal volatility on these levels.
93 Alesina, supra note __, at 5.
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It may be argued that budget balance was a part of the existing fiscal constitution of the United States prior to the Keynesian revolution in the theory of economic policy. Even if the constitution did not contain a formal, written requirement for budget balance, governmental decision makers acted as if such a constraint did limit their fiscal behavior.  

This model of budgetary balance lost most of its foundations after the great depression and appears to have fallen apart in recent years. The 1980’s witnessed a “radical departure” from historical practices “as budget deficits accumulated in a period of peace and sustained growth.” Congress subsequently experimented with limited forms of formal balanced-budget requirements – such as Gramm-Rudman-Hollings. The Senate even came close to passing a balanced budget amendment to the US Constitution, with the measure failing by only one vote. Whether as a result of these measures, or due to the temporarily revitalized anti-deficit norms underlying them, the budget briefly returned to surplus as the economy boomed during the late 1990’s.

Unfortunately, these surpluses quickly evaporated due to a combination of tax cuts and an economic downturn. Although the economy has since returned to growth, the fiscal outlook continues to deteriorate as Congress has passed new spending – such as a massive prescription drug benefit – and additional tax cuts. Instead of generating surpluses to pay off accumulated debts, the government has continued to run large deficits. Moreover, the long-term outlook is even bleaker as growth in Medicare and Social Security entitlements are expected to create a fiscal gap of unprecedented magnitude.

In short, the federal government appears to be experiencing a similar dynamic to the one that caused the states to default on their debts and adopt balanced budget requirements in the nineteenth century. The national government has more slack in its budget than the states or than any foreign nation, but this slack is not infinite. As Daniel Shaviro writes:

To call our fiscal policy over the last fifty years a giant Ponzi scheme is not hyperbole but precise analytic description. Each generation has come out ahead by passing a larger deferred tax bill to the next. However, the growth of unfunded obligations—less from explicit debt than from Social}

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98 Theodore Seto, *Drafting A Federal Balanced Budget Amendment That Does What It Is Supposed To Do (And No More)*, 106 YALE L.J. 1449, 1451 (1997). Critics of the Amendment cited its lack of enforcement mechanisms as evidence that it would not have actually prevented deficit spending. Supporters of the Amendment responded that the Amendment’s symbolic value would have been enough to reestablish the anti-deficit norm that governed US political culture for most of its history. Contrast Staudt, *supra* note ___, with Buchanan, *supra* note ___.
100 Id.
101 Id.
102 Id.
103 See Part I.B.
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Security and Medicare—relative to GDP indicates that the Ponzi scheme probably cannot be sustained in its current form much longer.  

If this fiscal “Ponzi scheme” collapses, the federal government will need to transition back to a norm of greater budgetary balance. Congress might have the political courage to enact this transition directly, overcoming the collective action problems that led to the current dilemma. But more likely, at least in the mind of this commentator, would be for Congress to first pass some form of balanced budget constraint as it played with doing in the late 1980’s and 1990’s. Alternatively, credit markets or the voters might force a stricter tying of expenditures to revenues through external pressure. In either case, the federal government may well face fiscal volatility problems of its own at some point in the future.

II. THE OPTIMAL ALLOCATION OF FISCAL VOLATILITY

Author’s Note:
The analysis in Part II has become too long and involved for the entire analysis to fit within this paper, and I am thus expanding the Part into its own paper. I have included a draft of that paper along with this document and I will be presenting on both of the papers. I will eventually reformat the paper you are currently reading so that Part II contains a brief description of the arguments and conclusions of the other paper.

III. IMPLEMENTING ALTERNATIVE BASELINES

Drawing on previous research, Part II of this paper concluded that state governments should adjust the rates of certain broad-based taxes as their primary response to fiscal volatility. By doing so, state governments could greatly reduce the harm caused by fiscal volatility as compared to the current policy trend of primarily fluctuating government spending levels and the rates of narrower taxes.

104 Shaviro, supra note __, at 308.
105 Arguably, the currently dominant deficit measurements are inadequate for this purpose and will need to be replaced by alternatives that better account for future liabilities. See id.
106 By using a balanced budget constraint as a pre-commitment device, Congress could potentially overcome the collective action problems that hinder efforts to directly address the sources of fiscal unsustainability. This was the idea motivating Gramm-Rudman-Hollings. See Stith, supra note ___ above __, at 621-69. Balanced budget constraints might also serve to reassure government bond holders or taxpayers (or anyone concerned about inflation), once painful adjustments are made, that the dynamics leading to unsustainability will not be repeated. This was the main reason states adopted balanced budget constraints after the debt crises of the 1900’s. See notes ___ in I.B.1 and accompanying text.
107 This is essentially what has happened in many developing countries and in the more developed nations that have accrued unsustainable levels of debt. See notes ___ and accompanying text.
108 It is also worth noting that the magnitude of fiscal volatility has increased dramatically at the federal level in recent years, and that this volatility may be interfering with the reestablishment of anti-deficit norms. See Edmund L. Andrews, Those Wild Budget Swings, NEW YORK TIMES (July 16, 2006). During upturns, politicians can claim credit for deficit reductions that are merely cyclical. This has caused some commentators – and possibly a significant number of voters – to conclude that deficits do not matter or that taxes can be cut without revenue loss.
Yet these conclusions raise a new set of questions. Under the current institutional framework of state budgetary processes, legislated changes to state tax rates become presumptive changes to steady-state policies. Whereas most government expenditures need to be reauthorized annually through acts of the legislature, tax rates remain in effect once passed and are automatically reauthorized until explicitly changed by some future act of legislation.\textsuperscript{109}

Most voters and political actors care more about their steady-state policy preferences than about how volatility is allocated around the steady-state. Even if they could be persuaded that fiscal volatility ought to be allocated to tax-rate adjustments, conservatives would be unlikely to accept tax hikes during downturns and liberals would be unlikely to approve of tax cuts during upturns, unless they had guarantees that these policy changes would be reversed after the end of the current economic circumstances. Moreover, since the governing coalition in control during a downturn might have lost power by the next upturn, the coalition has even further reason to care more about its impact on steady-state policies than about its role in responding to volatility. A governing coalition could not credibly call a tax hike made during a downturn a response to volatility that will be undone during the next upturn, as the subsequent governing coalition might not play along.

How then can we induce state governments to adopt a more optimal set of responses to fiscal volatility? The best hope lies in devising an institutional mechanism for separating the policy question of what should be adjusted as a response to fiscal volatility from the policy question of what should be the steady-state levels of taxes and spending. This Part will propose an institutional mechanism intended to have precisely this effect. By switching from their current tax rates baselines to revenue target or spending needs baselines, states should be able to effectively redefine the terms “tax cuts” and “tax hikes” so as to induce a more optimal set of responses to fiscal volatility.

We tend to think of the terms “tax cuts” and “tax hikes” as having set meanings. Although there are circumstances in which politicians argue about whether or not a policy change should be labeled as a “tax cut” or a “tax hike,” there is generally widespread agreement that most increases in state tax rates should be called “tax hikes” while most decreases in these rates should be called “tax cuts.”\textsuperscript{110} Yet the very notion of legislated changes – as embodied in terms like “tax cuts” and “tax hikes,” or even “spending cuts” and “spending hikes” – requires a notion of a default policy outcome that would have been enacted in the absence of the legislated change.\textsuperscript{111} We can only measure changes from the policy status-quo by referencing a baseline

\textsuperscript{109} Tax laws function like entitlement spending in that they remain in effect until explicitly altered. Discretionary general account spending must be rebudgeted annually.

\textsuperscript{110} The exceptions to this maxim only serve to support the general rule. For instance, at the federal level, Democrats and Republicans dispute whether allowing the Bush tax cuts to expire should be viewed as “raising taxes.” The frame here is contestable because the parties can argue about whether the relevant baseline includes extension of the temporary tax cuts. But were the Democrats to propose raising tax rates further – beyond the pre-Bush levels – there would be no argument about whether this would constitute a tax hike, even if revenues were declining due to economic circumstances. Whether overall revenues are increasing or declining due to economic conditions is not currently viewed as a relevant consideration for whether a policy change is called a tax cut or a tax hike.

\textsuperscript{111} The difference between state general account spending and federal discretionary spending is that the federal government can incur deficits. Hence, at the federal level, revenue volatility (the default response to economic cycles under a tax rates baseline) causes the deficit to automatically grow and shrink unless the legislature proactively adjusts tax or spending policy. In contrast, at the state level, there is no actual default fiscal policy. The tax rates baseline means that any legislated change to tax rates is coded as a tax cut or tax hike, but any legislated change to spending will similarly be coded as a spending cut or spending hike. Revenue volatility forces states to
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for what constitutes the status-quo. Moreover, since balanced budget constraints make it impossible to hold the entirety of state budgetary policies constant as the economy cycles, there can be no ontological definitions for labels like “tax cuts” and “tax hikes.”\textsuperscript{112}

One dictionary defines a tax cut as “a reduction in the amount of taxes taken by the government.”\textsuperscript{113} But the amount of revenue the government receives from taxes is constantly changing. Sometimes these changes occur due to legislative fiddling with tax-rate structures or with the rules for calculating tax bases. At other times the government increases or decreases its revenue intake due to evolving economic conditions or to changing responses to tax provisions.\textsuperscript{114} Nearly any government program that affects the economy can alter the amount of revenue collected through taxes. But if we labeled any change in government policy that might alter the amount of revenue generated though taxation as a “tax cut” or “tax hike”, these terms would become meaningless.

As such, we can only determine the appropriate baselines for terms like “tax cuts” and “tax hikes” by making meta-decisions about what aspects of our budgetary policy we would like to hold constant as a default. This institutional level choice of baselines determines which sorts of policy outcomes become presumptive responses to fiscal volatility and which become presumptive changes to steady-state policies.

This Part explains how states can adjust their tax baselines – the default tax policies that are enacted in the absence of explicit legislative change – in order to make tax rate adjustments more common and expenditure fluctuations rarer. But before proceeding, it is important to clarify the difference between adopting a new tax baseline and adopting a tax-expenditure limit.

Tax-expenditure limits have been adopted by numerous states in order to prevent legislatures from raising taxes or to limit the circumstances under which legislatures can raise either their tax or spending policies as the economy cycles, but the states must actively decide which specific policies to adjust.

One might argue that general account spending does not have baselines in the same sense as tax legislation as general account spending must be reauthorized each year. But this argument is not fully persuasive as most general account spending is reauthorized without full review and changes in the previous year’s levels of spending are usually viewed as spending cuts or spending hikes. Zero-base budgeting is seldom implemented in practice.

This paper focuses on the definition of tax cuts and tax hikes because these terms are more salient under the current political environment – as reflected by increasing rarity of tax hikes. The motivating idea is that since voters appear to increasingly be making decisions based on whether politicians are seen as voting for “tax cuts” or “tax hikes,” we should strive to make the content of these terms reflect what voters actually care about. Or, alternatively, we should strive to eliminate any negative consequences of the increased salience of these terms that do not result from the reasons voters care about the terms. Voters care about these terms based on preferences for steady state policy, not based on preferences for how fiscal volatility should be allocated. Hence, we should define these terms so that the terms convey the information voters seek about legislated changes to steady state fiscal policy (the size of government decision), without negatively affecting responses to fiscal volatility.

\textsuperscript{112} David Bradford has attempted to provide meaningful definitions for concepts like tax cuts and tax hikes in his piece, Reforming Budgetary Language… Instead of focusing just on the tax side of the equation, Bradford wants to look at taxes, spending and transfers as a whole. However, as the response to his piece points out…, his framework essentially relies on a general equilibrium model of the economy. It is hard to imagine how his definitions would be operationalized. [Add Cites]

\textsuperscript{113} www.investordictionary.com, at http://www.investordictionary.com/definition/Tax+cut.aspx. This is the only dictionary I was able to find which defined the phrase “tax cut.”

\textsuperscript{114} For instance, the California State Department of Finance and Legislative Analysts Office analyzes the effects of a number of economic variables on the amount of tax revenue collected by the State, including: trends in consumer and business spending, housing, employment, profits, and income distributions. David Vasche and Brad Williams, Revenue Volatility in California, 36 STATE TAX NOTES 35, 40 (2005).
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taxes. An example of a tax-expenditure limit is requiring a supermajority voting rule for legislatures to raise taxes. Whereas tax expenditure limitations are designed to bias the evolution of steady-state policies (against raising taxes and spending), the choice of baselines is only meant to influence which aspects of steady-policies fluctuate in response to fiscal volatility.\textsuperscript{115} Adopting a new baseline should not prevent legislatures from adjusting steady-state policies as they desire. Instead, adopting a new baseline only alters the mechanism through which legislatures change steady-state policies.

Consider the following spectrum of possible baselines for which aspects of a tax system should be held constant throughout economic cycles:

![Spectrum of Baselines](image)

On the left-hand side of the spectrum, tax rates are held constant in the absence of legislated changes. Consequently, decreased revenues becomes the default response to economic downturns, and increased revenues the default response to upturns. Any deviation from these default responses requires legislative action and will typically be labeled as a “tax hike” or a “tax cut.” The left side of the spectrum depicts the general rule governing most state- and federal-level tax systems, with the exception of the property tax systems in some states.

In the middle of the spectrum – corresponding with the property tax systems of 22 states – the amount of revenue raised is held constant as the economy cycles with tax rates automatically adjusted so as to maintain the revenue targets.

Moving to the right side of the spectrum, tax rates are adjusted in order to maintain the spending needs of government programs. For instance, some federal grants to states are based on participation levels for the grant-funded spending programs – which often tend to increase during economic downturns and decrease during upturns (particularly for programs that provide poverty assistance or that fulfill a social insurance function). A baseline tied to spending needs would automatically adjust the tax rates in order to maintain the same funding per program participant, or per other metric for spending needs.

This Part will proceed by first explaining how some states have moved from tax rates baselines to revenue targets baselines for their local property taxes. The Part will then discuss how alternative baselines might be implemented for statewide taxes such as state sales and income tax systems.

\textbf{A) “Truth-in-Taxation” Property Tax Systems}

Since no government has ever implemented a baseline other than tax rates for a sales or income tax system, the best way to explain how an alternative baseline might work for these taxes is to start by looking at the property tax systems of the twenty-two states that have

\textsuperscript{115} The choice of baselines might have a side-effect of biasing the evolution of steady-state policies, as will be discussed further in Part IV. But this is not its primary consequence. The choice of baselines can be implemented so as to counteract any biasing effect it may have on the evolution of steady-state policy while still maintaining its effectiveness at influencing how the normal political process responds to fiscal volatility.
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effectively adopted revenue-target baselines. These states vary greatly in how they have implemented their alternative baselines and local property taxes are sufficiently dissimilar from statewide taxes that we should not put too much stake in these examples. Nevertheless, these revenue-target property-tax systems are the closest real world example of the use of a baseline other than tax rates.

The use of revenue-target baselines for property taxes began in the 1960’s as part of a “Truth-in-Taxation” movement. The advocates of these alternative property-tax baselines were concerned that local governments had been “automatically” receiving extra-revenues as their local property values increased without the governments ever needing to explicitly raise taxes. The advocates of these measures were the same conservative groups that promoted tax-expenditure limits in other states. These groups viewed themselves as calling for a softer form of tax-expenditure limit. Yet the logic behind their measures and the means in which they were implemented had the effect of changing the state property tax systems from using tax-rate baselines to using revenue-target baselines.

According to Robert Bland and Phanit Laosirirat:

“Truth in taxation, also known as full disclosure, was developed by the U.S. Advisory Commission on Intergovernmental Relations (ACIR) in 1962 as a method to reduce revenue windfalls in the wake of an en masse reappraisal of property. It seeks to make local lawmakers more accountable for tax increases by focusing taxpayers’ attention on the rate setting process and not only on their property's reappraised value. This is usually achieved by first informing citizens of the constant yield rate (CYR), the tax rate that will produce the same amount of revenue as last year when applied to this year's tax base. Then citizens must be notified of a public hearing where they can question local lawmakers on why a tax rate greater than the CYR should be adopted. Unlike other tax limitation measures that impose statewide restrictions on rates or levies, truth in taxation preserves local governments’ discretion to set rates that meet local expenditure preferences while giving taxpayers an opportunity to scrutinize proposed [tax] increases.”

In other words, the purpose of the Truth-in-Taxation measures is to change the default policy response created by rising property values from holding tax rates constant while revenues go up, to holding revenues constant while tax rates go down. Tax hikes are redefined as increases to “constant yield rates” – the rates that when applied to the new (more valuable) tax base would generate the same revenue as in the previous year. Effectively, tax hikes are defined as increases in local government revenues, rather than as increases in the actual tax rates applied to property values.

For an example of how these measures are given statutory authority, consider the following language in the Texas State Constitution:

“Subject to any exceptions prescribed in general law, the total amount of property taxes imposed by a political subdivision in any year may not exceed the total amount of property taxes imposed by that subdivision in the preceding year unless the governing body of the subdivision gives notice of its intent to consider an increase in taxes and holds a public hearing on the proposed increase before it increases those total taxes.”


Again, an “increase in taxes” is defined in reference to the “total amount of property taxes” rather than in reference to the rates previously applied to the property tax base. Here the institutional mechanism for raising taxes requires the local government to give notice of its intent to “increase taxes” and to hold a public hearing. This requirement is activated when the local government seeks to increase its property-tax revenues from those received in the prior year, not when the local government seeks to change its tax rates.

The twenty-two states that have adopted these revenue-target baselines for their property taxes differ in whether and how they index the baseline. Indexing is needed because what it means for revenues to remain “constant” is not entirely straightforward. Some states hold their baselines constant in real dollar terms. Other states index their baselines for inflation, thus holding revenues constant in nominal dollars. Still other states index their baselines for GDP growth and thus hold revenues constant as a percent of GDP. Some states even index their baselines to grow at a constant annual rate. How to index a baseline is an important question of institutional design, however there are no theoretically correct answers to this question. Ultimately, the choice of indexing methods requires a meta-level decision about what the default outcome should be for how tax systems respond to inflation and long-term economic growth. Still, it is important to note that the indexing problem plagues tax systems with tax rate baselines just as it does tax systems with alternative baselines. Both the federal government and state governments have repeatedly struggled with the question of whether and how to index their various tax systems.\textsuperscript{118}

Like the indexing decision, the enforcement mechanisms for these baselines also differ amongst the states. Some states require only that any “tax increases,” as defined by the revenue targets baseline, be publicized in local newspapers. Other states allow taxpayers to sue in district courts if they believe the local government administrators have not calculated and published any “tax hikes” as defined by the new baselines in the manner the statute demands. Some states even require local governments to obtain voter approval for any increase in the revenue targets through ballot measures, or allow petitions for citizen initiatives to rollback any such increases. Regardless, all of these measures have the effect of altering the baseline for defining what constitutes a tax cut or a tax hike. All of the measures switch the default policy response to increases in property tax values (the response that occurs if the local governments do not take the required steps for passing a “tax hike”) to one where revenues remain constant while tax rates are lowered.

Unfortunately, the local property tax context is too dissimilar from the statewide sales and income tax context for these measures to provide a concrete guide for implementing a revenue target baseline at the state level. There are at least three major differences between the local property tax context and the statewide tax contexts that limit the value of these examples. First, the value of local property tax bases is determined through property appraisals conducted by government agents. Second, property values have tended to increase over time, whereas sales and income tax bases oscillate as the economy cycles. Third, local government tax lawmaking relies on different institutions and procedures than does state level tax lawmaking.

Looking first at the issue of property appraisals, whereas the tax bases of sales and income taxes fluctuate with economic cycles – as consumers purchase more and less goods and

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as incomes go up and down – property tax bases change in value partially due to the actions of
government property appraisers. As Corina and Walters explain:

In contrast to state sales and income taxes, “nothing in property tax practice and administration
inherently identifies and adjusts for changes in market value [changes in the tax base]. To appraise
or reappraise a property, assessors must act overtly and estimate the sales price of each property as
of the legal lien date. The need to proactively establish the economic value of the base makes the
property tax different from other taxes where the value of the base is established through
observable economic transactions (e.g., sales price of goods or annual income).”

Since property tax bases change in value partially due to the action of government agents, it
might be easier to reframe what is considered a tax cut or a tax hike for property taxes than it
would be for sales or income taxes. Hence, the mere fact that voters appear to accept the
operation of revenue-target baselines for local property taxes does not in and of itself imply that
voters would similarly accept these baselines for statewide sales and income taxes.

The second relevant difference between local property taxes and statewide sales and
income taxes is that property values generally increase over time while sales and income tax
bases fluctuate far more wildly. As such, adopting a revenue target baseline for property taxes
can be sold as preventing “automatic tax hikes” due to increasing property values. The
advocates of the truth-in-taxation property tax measures viewed themselves as promoting a softer
version of a tax-expenditure limit with the purpose of reigning in the growth of local
governments. This paper argues for revenue-target baselines for statewide sales and income
taxes in order to transfer the effects of fiscal volatility from the public to the private sector, not to
limit the growth of government. Consequently, the political actors supporting revenue-target
baselines for local property taxes would not necessarily support these baselines for statewide
sales and income taxes.

As a final difference, tax lawmaking at the local level relies on a very different set of
institutions and procedures than tax lawmaking at the state level. Even a cursory discussion of
these differences is beyond the scope of this paper. Still, any attempt to draw inferences from
local governments’ experiences with these truth-in-taxation systems should be caveated with an
understanding of the differences between tax lawmaking at these two levels of governance.

B) Implementing an Alternative Baseline for State Level Taxes

The local property tax context is sufficiently dissimilar from the context surrounding
statewide taxes that truth-in-taxation property tax measures cannot provide clear guidance for
implementing an alternative tax baseline at the state level. Still, the success of these local
property tax measures is at least encouraging for this paper’s project. At a minimum, these
measures indicate that analysts and policymakers appear to believe that baselines matter for at
least some forms of taxation and that it is at least sometimes possible to alter these baselines.

Just as truth-in-taxation local property tax systems have been implemented quite
differently across the various states that have adopted these measures, there are numerous
possibilities for implementing revenue target baselines for state-level taxes. Perhaps the most
straightforward method of implementation would be to have an administrative agency adjust pre-
designated tax rates as the economy cycles. This could work similar to how the federal
government (and some states) administratively adjust their income tax brackets for inflation.\footnote{See note \ref{fn:1}.}
As with these inflation adjustment systems, the legislatures could always adjust the brackets or
rates afterwards in order to generate any outcome desired. But in the absence of specific
legislative action, the administrative body would adjust tax rates so as to keep revenues constant
as the economy cycles.

Of course, the authorizing statutes would have to specify what it means to hold revenues
constant. As in the local property tax context, the revenue target baselines could be indexed for
inflation, GDP growth, or to a wide variety of other possible indexing possibilities including not
indexing at all. The authorizing statues would also have to specify which taxes the
administrative agency is to adjust as the economy cycles. The agency might adjust all statewide
taxes equally so as to keep total general account revenues constant. Or the agency could adjust a
specific subset of statewide taxes. Any subset of state taxes could be adjusted by enough to keep
total state revenues constant.\footnote{Note that if a progressive rate income tax is to be adjusted (as opposed to a flat rate income tax), the authorizing statute must specify which rates are to be adjusted as the economy cycles. As with indexing and other design variables, any answer to this question must be somewhat arbitrary – there is no theoretically “correct” means for deciding which rates to adjust. Legislatures must strike a balance between the competing policy goals of risk-spreading, allocating volatility in a progressive fashion, and minimizing distortionary effects.} For instance, as the previous Part suggested, a new statewide
property tax could be created with a steady-state rate of zero that would oscillate between
imposing an additional tax penalty during downturns or a credit against exiting taxes during
upturns. During periods of growth, this tax could be gradually reduced (or made into a gradually
larger credit) to counteract the additional revenues generated by other state taxes, with the
opposite occurring during downturns.

One obvious concern about having an administrative agency adjust tax rates in this
fashion is that this might require delegating too much authority to the administrative officials.
Yet state administrative officials (or legislative staffs in some states) already enjoy most of the
discretionary powers that a delegation of this sort would entail.

With tax rates set as the baseline for statewide taxes, states require estimates for the
revenues these taxes will generate. These estimates are crucially important due to state balanced
budget requirements as the estimates determine what levels of spending are permissible. If the
administrative or legislative staffs charged with making revenue estimates report that less
revenue is available, legislatures must cut spending or raise taxes.

If states adopted revenue targets as their baselines for state taxes in place of tax rates,
they would instead need estimates for the tax rates needed to generate the revenue targets. This
form of estimating would replace the current need to estimate revenues based on legislatively set
tax rates. Hence, the distinctive feature of this paper’s proposal is not that it relies on estimates,
or that forecasting officials have substantial control over fiscal policy, but rather that revenue
targets replace tax rates as the independent variable in the estimating equation. We currently
label this forecasting as the revenue estimating process because we use tax rates as our baseline.
With revenue targets as the baseline, the process would be labeled as tax rate estimating. Under
either system, calculations made by administrative officials significantly impact fiscal policy
outcomes.

\footnote{See note \ref{fn:1}.}

\footnote{Note that if a progressive rate income tax is to be adjusted (as opposed to a flat rate income tax), the authorizing statute must specify which rates are to be adjusted as the economy cycles. As with indexing and other design variables, any answer to this question must be somewhat arbitrary – there is no theoretically “correct” means for deciding which rates to adjust. Legislatures must strike a balance between the competing policy goals of risk-spreading, allocating volatility in a progressive fashion, and minimizing distortionary effects.}
Still, projecting revenue from the starting point of tax rates might be thought of as more straightforward than projecting tax rates from the starting point of revenue targets. State income taxes are only collected annually, and sales tax rates must be announced significantly in advance of when they take effect. At some point, the tax rates must be fixed for the year. To the extent the economy changes after setting the tax rates, or to the extent that a set of projections proves inaccurate, a state might not collect the amount of revenue requested. Revenue targets are merely targets after all. In the short term, states may not actually raise the amount of money demanded.

Yet this problem is easily resolved within the context of a multi-year time frame. If a state experiences a revenue shortfall in a year, the default tax rates for the subsequent year can be adjusted to make up for the shortfall. Instead of looking only to the current year’s revenue targets when setting tax rates, the forecasting agency could factor any shortfall or surplus from the previous year in to the amount of revenue requested. The agency would then estimate the tax rates needed to raise the combined revenue target. These tax rates would become the default policy outcome for the year. If state or local policymakers wish to raise or lower the level of taxes to be collected, they would simply adjust the revenue targets causing the forecasting agency to recalculate the tax rates based on the new amount of revenue requested. Over a longer timeframe, it remains the case that states must either project revenue from the baseline of tax rates or else project tax rates from the baseline of revenue targets. Both systems require significant delegation to administrative agencies or other forecasting staffs.

On a related note, this paper previously argued that a significant obstacle to the adequate financing of rainy day funds is the unreliability of economic forecasts. A skeptical reader might question whether unreliable forecasting can really prevent states from fully relying on rainy day funds as a first-best solution to fiscal volatility, but still not prevent states from adopting an alternative baseline as described in the preceding paragraphs. Yet whereas estimating the proper size of rainy day funds requires making forecasting predictions across entire economic cycles (forecasting at least 6-8 years out), adopting an alternative baseline only requires forecasting estimates for a year into the future. If we were to charge an administrative agency with the power to mandate full financing of rainy day funds, the agency would need to predict how long each boom and bust would last and how much of current economic activity is a result of volatility around the steady state as opposed to trends in steady state growth. In contrast, estimating what tax rates are needed to meet revenue targets only requires projections for the state of the economy a year or so in advance of the estimation. Moreover, any errors are easily remedied by adjusting the following period’s tax rates to compensate. There is every reason to think that forecasting unreliability poses a much greater problem for the adequate financing of rainy day fund than for adopting a revenue targets baseline.

The decisions involved in implementing a baseline of spending metrics are very similar to those involved in implementing a revenue targets baseline. It is useful here to distinguish between a partial spending metrics baseline and a complete spending metrics baseline. A partial spending metrics baseline works in essentially the same fashion as a revenue targets baseline, except that the revenue targets are further adjusted based on metrics for program needs. For

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122 Part I.C.
123 Additionally, the main obstacle to full financing of rainy day funds remains the ability of the dominant political coalition to raid these funds either explicitly or through the use of gimmicks. Forecasting unreliability contributes to this problem, but is not the prime cause of this problem.
instance, the administrative agency might start with a baseline of holding revenues constant (perhaps indexed for inflation or GDP growth) but then adjust the baseline to meet the funding needs of countercyclical entitlement programs like Medicaid. As additional beneficiaries qualify for Medicaid in a downturn, the agency would adjust the baseline so as to automatically allocate revenues to fund these additional beneficiaries. After adjusting the baseline as appropriate, the agency would then set tax rates so as to keep discretionary revenues constant after adjusting for any changes in the funding needs of entitlement spending programs.

In contrast to this partial spending metrics approach, a complete spending metrics system would set tax rates to fund legislative spending authorizations, instead of the revenue targets being calculated independently of spending. Under this approach, balanced budget constraints would have no independent force. Legislatures would only deliberate directly on spending, with taxes being calculated based on the revenue needed to fund the authorized spending.

Although the complete spending needs system is a plausible means of adopting an alternative baseline, it is discussed here mostly to highlight its differences from a partial spending metrics system and a revenue target system. Under both of these later systems, balanced budget constraints continue to exert independent force. Legislatures cannot simply increase spending and then rely on the rate setting agency to fund this spending. Instead, if legislatures want to increase spending under either of these systems, they must explicitly raise taxes through the means of increasing the revenue target. These systems are meant to change the mechanism through which legislatures raise and lower taxes – from adjusting tax rates to adjusting the revenue targets. But neither revenue target baselines nor partial spending metric baselines in any way relieve legislatures of the need to set the level of taxation and to conform spending to revenues generated by the chosen tax levels.

Both spending metrics baselines and revenue target baselines are intended only to change how states respond to fiscal volatility, not to alter the evolution of steady-state policies. Nevertheless, adopting either baseline would have the side effect of altering the default policy response to changes in long-term economic growth rates. With tax rates as a baseline, the default policy response to improving long-term growth trends is increased revenues, and the default response to worsening growth trends is reduced revenues. Under the alternative baselines, revenues would remain constant while tax rates would increase or decrease, respectively.

This paper’s arguments for why tax rates should absorb the majority of fiscal volatility do not apply to changing long-term growth trends. But neither is there any particular reason to think that the default response to changing long-term growth trends should be changes to future revenues as opposed to future tax rates. Which default response we prefer depends on the metric we wish to use to evaluate the future size of government. Yet both metrics are incomplete; To rationally determine preferences for the future size of government in the face of changing growth trends, we would need information about both the burden taxes impose on the economy (related to tax rates) and about the cost of funding the public spending we desire (related to revenues). By definition, an unexpected change in long-term growth trends means that we cannot have accurate information about both future tax rates and future revenues, as the changing growth trend alters the relationship between tax rates levied and revenues generated.

Since neither existing tax rates baselines nor the alternative baselines discussed by this paper offer any clear advantages for responding to changing long-term growth trends, we should choose whichever baseline best responds to short-term fiscal volatility. Not only are the alternative baselines preferable for dealing with economic fluctuations that are clearly due to short-term volatility, as Part II argued, but forecasting officials have tended to dramatically
overestimate the degree to which current trends are caused by changes in long-term growth, as opposed to being caused by short-run volatility. As such, there is additional reason to err on the side of adopting the baseline that best responds to fiscal volatility.

An alternative baseline tied to revenue targets or spending metrics could be implemented in numerous distinct ways. This Part has only attempted to sketch out some of the design decisions involved in adopting an alternative baseline. Hopefully this sketch has been sufficient to convey how an alternative baseline might be implemented. The next Part will proceed to argue why an alternative baseline should be implemented.

IV. THE NORMATIVE CASE FOR SWITCHING TO A NEW BASELINE

A) Why an Alternative Baseline Would Improve How States Respond to Fiscal Volatility

Although it is almost tautological to say that we could not use terms like “tax cuts” or “tax hikes” without a baseline for defining those terms, this alone is not enough to conclude that the choice of baselines actually matters. For instance, we might imagine legislatures determining their preferred levels of taxation and spending each year without reference to prior year policy. If legislatures determined their tax and spending policies anew each year from scratch – without being influenced by any notions of a policy status quo – then the choice of baselines would not influence policy outcomes. Instead of debating about policy changes, such as tax cuts and tax hikes, the political debate would be dominated by the discussion of desired outcomes.

However, “a core feature of humans is that we are highly attuned to changes in our circumstances, not merely the absolute levels.”¹²⁴ Any examination of campaign advertisements or political newspaper stories will quickly reveal that political actors at least operate as though labels matter. Rarely do politicians try to convince voters about the proper size of taxation or spending as a percent of GDP. Instead, politicians accuse their opponents of wanting to “raise your taxes” and the media dutifully reports the number of times a politician has voted for “tax cuts” or “tax hikes.” It is not by accident that the No New Taxes Pledge commits its signers to “oppose any and all efforts to increase . . . tax rates,” rather than committing them to attempt to bring the overall level of taxation to some target level.¹²⁵

Consider the debate at the federal level about whether the opponents of making the Bush tax cuts permanent are sponsoring tax hikes or simply opposing new tax cuts. The answer to this question depends on whether our baseline is current law with the Bush tax cuts extended or current law without the tax cuts extended. Notably, the appropriate label is controversial, with both sides viewing the choice of labels as significant. Also notable is that while many Democrats feel comfortable advocating for the Bush tax cuts to expire, far fewer Democrats are openly calling for taxes to be raised above the pre-Bush levels.

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A similar dynamic became a major point of controversy during the 2004 presidential election. Democrats and Republicans proposed different frames for understanding Kerry’s tax plan. The Kerry campaign claimed they wanted to repeal some of the tax cuts previously enacted by the Bush administration, while the Bush campaign claimed that Kerry wanted to raise taxes. Both campaigns were referring to the same substantive policy proposals, only their choice of labels differed, with both parties appearing to believe that their preferred label was politically advantageous for their side. Again, it is worth noting that Kerry called only for repealing previously enacted tax cuts. If labels and baselines were irrelevant, the Kerry campaign would not have needed to distinguish between repealing the Bush tax cuts and simply raising taxes.

This discussion of the Bush tax cuts shows that political actors care about the baselines used to measure tax policy, and that these baselines are at least sometimes contestable. As Daniel Shaviro argues, “labels can matter even if they are arbitrary and potentially misleading. Thus, politicians fight about labeling a particular provision as a tax increase or a spending cut, even if substantively the classification makes no difference.”

For another example, although Regan’s 1981 tax package slashed the marginal tax rates and introduced new tax incentives for businesses and real estate, many astute tax commentators have argued that the legislation’s “most significant enduring feature was the elimination of rate bracket creep through inflation adjustments.” According to Michael Graetz, “these inflation adjustments eliminated the sizeable automatic income tax increases that had been produced even at relatively low levels of inflation. The lasting revenue impact of this change is dramatic – far greater than is generally known.”

By indexing the tax code for inflation, the 1981 tax act changed the baseline for determining tax cuts and tax hikes. Prior to 1981, the default policy in the absence of legislative action brought additional revenues as inflation moved taxpayers to higher brackets. After 1981, these “automatic income tax increases” were abolished and Congress was no longer able to obtain the same yearly revenue increases without explicitly voting to raise taxes. Although it is not entirely clear what effect indexing had on the long-term size of government, this change of baselines certainly altered the dynamics of the federal debate over tax policy.

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126 Daniel Shaviro, Taxes, Spending, and the U.S. Government’s March Towards Bankruptcy, chapter 7 (pre-published manuscript on file with author).
127 Michael J. Graetz, Tax Policy at the Beginning of the Clinton Administration, 10 Yale J. on Reg. 561 (1993). See also, Saez, McCaffery, Wildavsky.
128 Id.
129 Id.
As these examples demonstrate, it has long been understood that baselines and labels matter in politics and that political entrepreneurs are sometimes able to change the previously dominant labels. The advocates of inflation indexing argued for decades that the pre-1981 baseline for the federal income tax was wrongheaded. By 1981, they had finally convinced enough important political actors to have their preferred baselines partially enacted into the federal legislative process.131

Looking outside of the tax context for a final example, that payouts from the federal Social Security program are indexed to growth in wages is thought to partially account for the rapid increase in the size of the program as a percent of GDP. When the Bush administration called for Social Security payouts to be indexed to inflation instead, there was uproar over this attempt at “benefit cuts.” In the words of Daniel Shaviro:

“The choice of a baseline is inevitably arbitrary, or at least subject to differing interpretations. By having the rules they do, however, Social Security and Medicare effectively end any such dispute and dictate the choice of a relatively generous baseline. The Bush Administration learned this the hard way during the 2005 Social Security debate, when it found few takers for its argument that eliminating wage indexing, and henceforth pegging benefits just to the inflation rate, was not really a benefit cut as it would merely prevent them from rising.”132

If Congress ignored baselines and re-determined the appropriate size of Social Security benefits each year from scratch, then the Bush administration’s proposal would have been meaningless. The widespread controversy that surrounded the proposal thus strongly suggests that political analysts believe that the choice of baselines can affect policy outcomes. Again from Shaviro, structural fiscal language like baselines functions as “formal rules of the game that participants can manipulate but not openly flout. It tilts and constrains real policy choices, and induces political actors to befuddle themselves even as they labor to befuddle constituencies whose support they need.”133

As the above examples indicate, there are clearly existing discussions about the choice of baselines in tax and spending contexts. This paper’s unique contribution to the literature on tax baselines is to point out another arbitrary feature of the baselines we currently use for most state- and federal- level taxes and to posit an institutional means for switching that baseline. Currently, the default legislative outcome is for tax rates to remain constant as the economy cycles, even as revenues rise during upturns and fall during downturns. There is essentially no literature discussing this choice of baseline. Yet there are many reasons for thinking that this baseline is partially responsible for states preferring spending adjustments to tax adjustments as a means of coping with fiscal volatility.

The remainder of this Section will assess how three different literatures all support the proposition that shifting from a tax rates baseline to a revenue targets (or spending metrics) baseline should make tax fluctuations more common and spending fluctuations rarer. The three literatures are: positive political theory, behavioral public finance, and econometric studies.

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131 The advocates of inflation indexing were only partially successful in that many important elements of the federal income tax remain unindexed – most notably the alternative minimum tax.
133 Id. at Chapter 1.
1. Positive Political Theory

The most straightforward justification for why the choice of baselines matters comes from positive political theory. Our democratic political system – both at the state and federal levels – is characterized by numerous veto points. New legislation cannot come into effect unless both houses of the legislature pass the legislation (in the majority of states with bicameral legislatures) and either the governor does not veto the legislation or else a supermajority of the legislature overrides the governor’s veto. Moreover, in most state legislatures, there are numerous additional actors such as committee chairpersons who can often block the adoption of new legislation they dislike.

A simple view of politics might think that the median voter’s preferences are always enacted into law. Yet each individual legislator and the state’s governor are elected by a distinct subset of the state’s voters. Predictably, political actors disagree with one another about what policies should be enacted. Legislative proposals thus often require the support of more than a mere 51% majority to become law. A proposal will not become law unless it is either supported by every political actor with the ability to block new legislation or else has sufficient support from other political actors for them to override any attempt at blocking the proposal.

Exacerbating this effect of veto points are agenda setting powers. Legislatures do not have the time or resources to fully deliberate over every possible legislative change with sufficient support to be enacted. Even a new proposal supported by the majority and by all veto-players might not become law if time runs out on the legislative calendar.

Looking specifically to tax baselines, all of these effects are exacerbated in the many states that have adopted tax-expenditure limits that make it more difficult to raise taxes. For instance, in the numerous states requiring supermajority votes to raise taxes, the difference between tax changes that need to be specifically voted on and tax changes that come as a result of economic growth are particularly pronounced.

Under a tax rates baseline, the default policy outcome is for revenues to decline during downturns and to increase during upturns. If the majority wishes to depart from this default outcome, they need to

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134 See, e.g., Alesina, Politics of Surplus, supra note __, at 11 (“The academic literature has pointed out that the fragmentation of a political system is an obstacle to the implementation of the appropriate fiscal decisions, particularly when various shocks require a swift fiscal response. In the most general sense, political fragmentation is a situation in which many political groups have a voice in fiscal decisions, and many have veto power. The point is not that fragmentation necessarily creates budget deficits, but that fragmentation creates obstacles to policy changes, because it becomes more difficult to reach agreements about corrective fiscal measures.”).
get their proposed change past all the relevant veto points. Hence, even if only a minority of a legislature is strongly opposed to tax hikes during downturns, this minority may still be able to have its way, particularly if there is a supermajority requirement for raising taxes.

In contrast, under a revenue targets baseline, the default outcome is for tax rates to rise during downturns and fall during upturns. Again, if the majority does not like this default outcome, any proposed change must pass through all the relevant veto points.

Ultimately, a sufficiently strong majority in favor of overturning a default outcome will succeed in enacting its preferences into law. Nevertheless, baselines matter because there is often a range of policy changes that would have the support of the majority of voters but is not supported by political actors wielding veto powers. When looking at tax policy specifically, the choice of baselines determines which veto players’ preferences are enacted into law. Whichever veto players’ preferences are closest to the default option created by the baseline should determine the eventual policy outcome.

Hence, baselines matter because any veto player who prefers the default policy outcome to a proposed change can defeat the proposed change. The majority must refashion their policy proposal so that all veto coalitions prefer the proposal to the default option or else the proposal will not be successful. By switching the default option from holding tax rates constant to holding revenues constant, a revenue targets baseline should thus make tax fluctuations more common and expenditure fluctuations rarer.

2. Behavioral Public Finance

Behavioral Public Finance (or Political Psychology) provides a less straightforward justification for thinking that baselines matter. Nevertheless, I ultimately think the impact of political psychology reasons on why baselines matter are far more important than the impact of positive political theory rationales.

The general behavioral economics literature has demonstrated through hundreds of experiments and field studies that individuals exhibit what is known as either “loss aversion,” the “endowment effect,” or the “status-quo bias.” These three labels refer to the same phenomenon – that individuals dislike losses more than they like gains; that individual preferences are biased toward whatever they view as the status quo.

Many theorists have argued that this phenomenon applies to fiscal policy changes, such that “tax cuts are not nearly as ‘good,’ from the standpoint of the endowment effect and status quo bias, as tax increases are ‘bad.’” So a high-tax baseline for defining changes can
increase people’s tax tolerance.”¹³⁵ Most notably, Ed McCaffery and Jon Baron have confirmed that the fiscal policy preferences of experimental subjects are biased in the direction of whatever outcome they perceive to be the status quo.¹³⁶ Hence voters are far more likely to punish a politician for raising taxes than for failing to lower taxes.

This is why the advocates of Truth-in-Taxation property tax measures believe it important that these measures eliminate the “automatic tax hikes” local governments otherwise enjoy as property values increase, and why the advocates of inflation indexing care that indexing eliminates the “automatic tax hikes” otherwise generated by bracket creep. Both of these measures are attempts to redefine what constitutes the status quo – to reframe which fiscal policy changes voters code as losses.

Of course, just because a change of baselines alters the default legislative outcome does not necessarily mean that it also alters voters’ conceptions of what constitutes the status quo. Even under a revenue targets baseline, voters might still notice when their tax rates go up.

Yet voters do not blame all policy changes they dislike on elected politicians. When the Federal Reserve hikes interest rates, even voters who dislike high interest rates seldom blame Congress for allowing it to happen, despite the fact that Congress could override the Federal Reserve’s authorizing statute at any time. Similarly, under a revenue targets baseline, even voters who notice their tax rates going up during downturns might come to view these changes as a natural response to evolving economic conditions (or blame the changes on the administrative board enacting the new rates) rather than as tax hikes sponsored by the state legislature. Once taxpayers become accustomed to seeing tax rates fluctuate annually, even in the absence of any new tax legislation, they should eventually begin to understand the new baseline. In any case, it is difficult to hold politicians accountable for changes they do not propose. Even voters who want to blame politicians for allowing tax rates to go up may not know which politicians to blame.

Under a revenue targets baseline, tax rates rise during downturns without any politician specifically needing to vote for a tax increase. There is reason to think voters will be less averse to these automatic tax rate increases than to tax rate increases that are specifically voted on by the legislature – tax rate increases that are clearly “tax hikes.” Hence, adopting a revenue targets baseline should again make tax fluctuations more common and expenditure fluctuations rarer.

¹³⁵ Daniel Shaviro, Taxes, Spending, and the U.S. Government’s March Towards Bankruptcy, chapter 2 (pre-published manuscript on file with author).
¹³⁶ McCaffery and Baron, Political Psychology of Redistribution
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3. Econometric Studies

There are several empirical literatures that bear on the question of whether the choice of baselines matters. These include:

- Studies of revenue-elasticity – for example, studies comparing states that have indexed their income tax codes for inflation against states that have not.
- Studies of the “flypaper effect” – the hypothesis that additional money “sticks where it lands,” such that, for instance, federal government grants to state governments result in more state spending increases than do equivalently sized federal payouts to the state’s citizens. A particularly relevant paper in this literature looked at the changes to state tax systems that occurred due to the 1986 federal tax reform. When the federal government broadened its income tax base, this automatically broadened the income tax bases for those states that tied their income tax base calculations to the federal rules. According to a paper by Helen Ladd, for each additional dollar states received due to the federal tax reform, the average state increased spending by forty cents while returning sixty cents to taxpayers in the form of tax cuts.137
- Studies of “incrementalism” in budgetary theory – the hypothesis that government spending typically changes only incrementally from the baseline, such that baselines for spending programs strongly influence spending outcomes.

Unfortunately, the results of these literatures are somewhat inconclusive. Still, the majority of these studies support the conclusion that the choice of baselines matters.138 Although legislatures depart from default policy outcomes, policy outcomes still tend to be biased in the direction of the defaults set by baselines, particularly in the short term. Once again, switching to a revenue targets baseline should make tax fluctuations more common and expenditure fluctuations rarer.

B) Why an Alternative Baseline Would Improve Political Accountability

--discuss the advantages for political accountability
- Spreads ability to implement new programs over time.

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• To the extent voters are using the labels tax cuts and tax hikes to hold politicians accountable for steady-state changes, an alternative baseline would enhance voters' understanding of the fiscal policy process.
  o Alternative baselines would be less likely to engender confusion such as with the notion that deficits do not matter or that tax cuts raise revenue caused by revenues going up after tax cuts passed before periods of economic recovery.
  --refute the needed to eliminate waste argument
• Also discuss the undermines funding for social programs argument

V. CONCLUSION: OTHER USES FOR THE BASELINE TOOLKIT

...
Taxation Under Balanced Budget Constraints: 
Determining the Optimal Responses to Fiscal Volatility

By 
David Gamage†

There is a wealth of literature analyzing the optimal settings for tax and spending policies. Yet unanswered questions remain in the state and local context where balanced budget constraints require general account spending to be financed with current taxes. As state and local economies cycle through booms and busts, the amount of revenue generated by any given set of tax rates will also fluctuate. Consequently, state and local budgeting is characterized by periods of surplus alternating with predictable (but unavoidable) budget crises. Hence, in addition to the question of how to optimally set tax and spending policies in their steady-states, governments operating under balanced budget constraints must also determine what aspects of their fiscal policies to fluctuate as their economies cycle. This paper analyzes the optimal response to the fiscal volatility problem – the need for governments operating under balanced budget constraints to fluctuate some combination of their tax and spending policies as their economies cycle.

... Economists typically agree that unstable tax policies – such as fluctuating tax rates – are economically harmful. This accepted wisdom can be traced back to Adam Smith, who wrote that the “certainty of what each individual ought to pay is, in taxation, a matter of so great importance, that a very considerable degree of inequality, ... is not near so great an evil as a very small degree of uncertainty.”¹ The popular press and policy advocacy organizations have picked up on this notion to some degree, and often chide politicians for changing tax laws “too frequently,” even when these changes are means of coping with economic cycles.² However, there is essentially no existing literature comparing instability in tax policies to instability in spending policies.³ This paper remedies this deficiency in the literature by discussing the relative harm caused by allocating fiscal volatility to alternative forms of taxation and spending.

Drawing on principles from risk-allocation theory, the paper concludes that – as a general rule – fiscal volatility is best allocated to the tax rates associated with broad-based taxes (such as

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³ The one notable exception is: Jesse Edgerton, Andrew Haughwout, and Rae Rosen, Institutions, Tax Structures, and State-local Fiscal Distress, 58 NAT TAX J 147 (2004). However, Edgerton et al. only discusses the macroeconomic stimulatory consequences of fluctuating spending as compared to fluctuating taxes, ignoring the micro-economic risk allocation consequences which are the focus of this paper. Their argument will be analyzed in Part II.B.2 of this paper.

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sales, income, and property taxes). Although regularly adjusting tax rates would undoubtedly create economic harm, this harm should generally be less severe than would be the harm from instead adjusting spending on government programs, the broadness/narrowness of tax bases, or more targeted forms of revenue-raising and taxation (such as fees and service charges or luxury and capital gains taxes).

There are two primary advantages to fluctuating the rates of broad-based taxes as compared to the alternatives. First, allocating volatility to tax rates spreads the effects of the volatility across a much wider range of economic activity (the entire tax base). Based on the principle of risk spreading, dispersing the consequences of volatility in this fashion should minimize the overall harm caused by the volatility. Second, allocating volatility to tax rates causes the incidence of the volatility to fall more on actors with greater wealth and weaker borrowing constraints. Again following risk-allocation precepts, these actors are generally more efficient at absorbing the harmful effects of volatility. Together, these factors form a strong case for making tax-rate adjustments the primary strategy for coping with fiscal volatility.

Fiscal volatility is a significant and growing problem. The political debate tends to focus on the steady-state settings for tax and spending policies. But however these programs are set in their steady-states, at least some components of state fiscal policy must also fluctuate as the economy cycles. Volatility must be allocated to some combination of tax and spending policies.4

This Part addresses the normal politics question: What is the optimal allocation of fiscal volatility across state tax and spending programs? Ideally – ignoring political considerations and factoring out any changes to their steady-states – which programs should states fluctuate as their economies cycle?

Since political considerations are what prevent states from implementing first-best solutions to fiscal volatility, it may seem strange to discuss second-best coping strategies while ignoring their political feasibility. The remaining Part of this paper will thus analyze procedural mechanisms for coping with fiscal volatility within the realm of institutional/constitutional politics. Yet before we can determine how budgetary processes should be shaped to influence normal political behavior, we need to know which political behaviors we ought to influence.

States have numerous policies they can adjust to cope with fiscal volatility. States can increase and decrease spending programs, either through across-the-board hikes and cuts, or by targeting specific programs. Alternatively, states can raise and lower the rates of broad-based taxes (such as income, sales, and property taxes), or of narrower taxes (such as luxury taxes and capital gains taxes). Or states can broaden and narrow their tax bases, altering the scope of what is subject to taxation. States can also raise and lower license and user fees, or expand and contract the use of other means for generating revenues.

States can respond to fiscal volatility by fluctuating any of these policies, or any combination of the policies. Yet however it is allocated, fiscal volatility creates economic harm. The two main reasons why fiscal volatility is harmful arise from risk-aversion and from planning costs.

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4 This Part assumes that states have already exhausted the potential for budgetary gimmicks, rainy-day funds, and other means for reducing the magnitude of fiscal volatility; but that volatility remains which must be dealt with.
That individuals are generally risk-averse is a central feature of the economy and underlies much of financial economics. Investors charge a substantial risk-premium before investing in volatile assets and certain returns are greatly preferred to variable returns. Fiscal volatility increases the risk and uncertainty inherent in the economy. As Louis Kaplow explains, instability of government policies – such as fluctuating tax or spending programs – is as much a source of risk and uncertainty as is changes in the economic climate. “Whether imposed by the government, by nature, or by a casino, there is risk all the same.”

Moreover, fluctuations in government policies create planning costs for anyone affected by the policies. Members of the business community have long complained that “they cannot make plans if they do not have confidence in the tax structure.” Similarly, the directors of government programs find it difficult to plan when they do not know the future size of their budgets, as do the programs’ beneficiaries.

Due to factors like risk-aversion and planning costs, fiscal volatility is harmful regardless of how it is dealt with. Yet some strategies for coping with fiscal volatility are more harmful than others. In recent years, the majority of fiscal volatility has been allocated to spending programs, with broad-based tax hikes becoming increasingly rare. The remainder of this Part argues that this allocation is far from optimal. Contrary to current policy, the majority of fiscal volatility should be dealt with by raising and lowering the rates of broad-based taxes.

The rationales for this conclusion come from risk allocation theory. Lawyers and economists have spent decades developing principles for how best to allocate forms of volatility, risk, and uncertainty. These principles play an essential role in our understandings of numerous policy areas – particularly tort law and insurance regulation. Yet this paper is the first application of these principles to the fiscal volatility problem.

Two principles of risk allocation are particularly relevant to the fiscal volatility dilemma. First is the principle of risk-spreading: volatility tends to be less harmful when dispersed than when concentrated. As a general rule, volatility should be spread as widely as possible. Second is the principle of allocating volatility to actors with greater wealth and/or weaker borrowing constraints. All else being equal, those with wealth and/or the ability to borrow can absorb volatility more efficiently than those who lack these characteristics.

The relevance of the first principle – the principle of risk-spreading – arises from the fact that state government spending currently constitutes only about five percent of GDP while the

7 Bizer and Judd, Taxation and Uncertainty, 79(2) AMER ECON REV, at 223 (1989).
8 See Part I.A.1.
9 These are related concepts. From the perspective of actors affected by tax or spending programs, fiscal volatility can be thought of as a form of either risk or uncertainty.

Although the terms risk and uncertainty have distinct meanings, the differences between them are unimportant for our purposes. I will thus use the terms volatility, risk, and uncertainty interchangeably. For more on this topic, see, e.g., Choice Under Risk and Uncertainty (at http://cepa.newschool.edu/het/essays/uncert/choicecont.htm); Arrow, supra note ___ above __; Frank Knight, RISK, UNCERTAINTY AND PROFIT (1921). When distinctions are made between the terms risk and uncertainty, risk refers to when future outcomes are unknown, but when the probability distribution of those outcomes is known. In contrast, uncertainty refers to when neither future outcomes nor the probabilities of those outcomes occurring are known. Id. at 233-34.
tax base that funds this spending constitutes over fifty-five percent of GDP. \(^{11}\) Hence, adjusting the rates of broad-based taxes spreads fiscal volatility across more than ten times as much economic activity as does adjusting government spending. Although traditional applications of the risk-spreading principle only discuss spreading volatility across multiple individuals or businesses, this Part argues that the logic behind risk-spreading also applies when allocating volatility between the public sector and private sector portions of the economy. The principle of risk-spreading thus provides strong grounds for allocating the majority of fiscal volatility to the rates of broad-based taxes as opposed to the more concentrated alternatives.

The relevance of the second principle – the principle of allocating volatility to actors with greater wealth and/or weaker borrowing constraints – likewise results from an empirical fact about existing state budgets. Taken as a whole, state tax and spending systems are progressive. At least at the margin, increasing state taxation by a dollar in order to fund an additional dollar of spending tends to benefit the poor more than the wealthy and tends to transfer resources from actors with weak borrowing constraints to actors who are highly borrowing constrained. \(^{12}\) Consequently, this second principle of risk allocation provides additional support for allocating the majority of fiscal volatility to the rates of broad-based taxes as opposed to the less progressive alternatives.

The remainder of this Part develops these conclusions in greater detail. As a starting point, it is worth noting that it would not matter how we allocate fiscal volatility if: a) public and private spending were completely fungible; b) tax and spending programs had identical incidence; and, c) collecting tax revenues imposed neither administrative nor distortionary costs. Of course, none of these conditions accurately describe the real world of fiscal policy. But the conditions provide a framework for analyzing strategies for coping with fiscal volatility. The Part thus proceeds to examine each of these conditions in turn.

Ultimately, the optimal allocation of fiscal volatility depends on the relative strength of three competing principles: The principle of risk-spreading argues for fluctuating sales taxes or flat rate income taxes. The goal of allocating volatility progressively argues for fluctuating wealth taxes or progressive income taxes. \(^{13}\) And the goal of minimizing the distortionary effects of taxation argues for fluctuating spending or taxes with minimal distortionary effects (such as certain forms of property taxation).

Which of these principles dominates is partially an empirical question, but the existing empirical literature is not sufficiently developed to satisfactorily answer that question. This Part

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\(^{11}\) For the spending figure, see notes I.A.1 and accompanying text. I derived my estimate for the tax base from The Congressional Budget Office, The Budget and Economic Outlook: An Update, at 78 (Aug 2006). For 2005, the CBO lists the wage and salaries component of the federal tax base as 46% of GDP and the corporate book profits component of the federal tax base as 10.8% of GDP. These figures can be taken as a proxy for the tax base for state corporate and individual income taxes. Since states also make use of sales taxes (which have a much broader base) and property taxes, the overall tax system of most states probably reaches a base of far more than 55% of GDP. But since I was unable to find actual numbers for the average size of state tax bases, the 55% figure works as an extremely conservative estimate. Replace with better figures. Perhaps from Tannenwald and Turner, *Interstate Fiscal Disparity in Fiscal Year 1999*, at 23 (2004). But must solve double counting problem.

\(^{12}\) The question of who “benefits” from tax and spending on the whole is difficult to answer, since it is arguably misleading to think of pre-tax endowments in the absence of government. See, e.g., Joseph Dodge, *Theories of Tax Justice, Ruminations on the Benefit, Partnership, and Ability to Pay Principles*, 58 TAX L REV 399 (2005). However, on the margin, it is generally agreed that the combination of state tax and spending programs is at least somewhat redistributive. See II.B.1.

\(^{13}\) The term “progressively” here is intended to refer to allocating volatility to wealthy actors, actors who face weaker borrowing constraints, and actors who otherwise find it easier to insure against the volatility.
will argue that the additional distortionary costs of fluctuating tax rates should be minimal, such that the benefits of risk-spreading and allocating volatility progressively should more than offset these additional costs. Nevertheless, more empirical research will be needed before we can confidently determine the optimal means for coping with fiscal volatility. In the meantime, this Part outlines a few options for fluctuating broad-based taxes so as to maximize the benefits of risk-spreading and progressivity while minimizing the extra distortionary costs.

**A) Public and Private Spending Are Not Completely Fungible**

For this section only, imagine both that tax and spending programs have identical incidence – such that fiscal policy has no redistributive consequences – and that collecting tax revenues imposes neither administrative nor distortionary costs. Under these assumptions, if public and private spending were also fungible, it would not matter how fiscal volatility was allocated. Combined tax and spending policy would have the net effect of costlessly taking money from taxpayers through taxation and then returning the same money back to the same taxpayers through public spending.

Yet public and private spending are not completely fungible. As a thought experiment, we might imagine a libertarian state where market transactions fund most of the expenditures currently paid for by state governments, or a socialist state where government programs replace most of the economic activity currently reserved for the market. But as a practical matter, even when government and private spending are substitutable in theory, they are still not fungible on the margin as a means of coping with fiscal volatility.

For instance, we might hypothetically replace highways with toll roads or public education with private schools. But we live in a world where highways and public schools have already been built and require regular maintenance. Slashing transportation or public education spending by ten percent in order to fund tax cuts would not enable taxpayers to purchase equivalents on the market. Private schools are certainly available. But education cannot be purchased in discrete units. The choice to send one’s child to a private school generally requires giving up all of the benefit from public education spending. Using the extra after-tax income generated by the tax cuts to purchase available substitutes – such as hiring private tutors – would not necessarily make up for the worsening of public school conditions caused by the reduced funding.

Moreover, it is doubtful whether many forms of public and private spending are even substitutable in theory. Public highways are not the same as toll roads, due to the congestion and administrative costs of collecting tolls. Plus, it is hard to imagine toll roads replacing neighborhood streets and traffic controls. Tax revenues pay for numerous public goods that are not available on the market due to collective action problems. One need only consider the

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14 It might be possible for a government to sell individual highways or schools to private sector firms, but a solution of this sort could be difficult to implement and is unlikely to be available in all circumstances.

15 Looking to the reverse proposition, if we define what constitutes a government program broadly, then all forms of private spending could hypothetically be replaced by government programs. After all, tax payments can fund cash grants to taxpayers, or vouchers that can be used for specified forms of spending. But under any realistic model of the political process, we should not expect governments to use an additional dollar of tax revenue in the same fashion as the taxpayers would have used the dollar had it remained in their hands.
intense political controversies surrounding decisions about the proper size of government to realize that voters do not consider public and private spending to be fungible.\textsuperscript{16} 

The impact of the non-fungibility of public and private spending affects both the economic harms caused by risk aversion and by planning costs. Following the principle of risk-spreading, both types of harms can be minimized by allocating the majority of fiscal volatility to the rates of broad-based taxes as opposed to the more concentrated alternatives.

\section{1. Risk Aversion}

As mentioned previously, “it is widely accepted that individuals are not indifferent to uncertainty and will not, in general, value assets with uncertain returns at their expected values.”\textsuperscript{17} Investors typically consider “yield to be a good thing; risk, a bad thing; gambling, to be avoided.”\textsuperscript{18} Financial markets function by trading off between the expected returns of financial products and the volatility surrounding those returns.\textsuperscript{19} When the expected returns of an investment are volatile, lenders discount the returns, which forces borrowers to pay a risk-premium in order to attract investment funds.

Taxpayers prefer certainty about their future levels of taxation, and the beneficiaries of public spending prefer certainty about their future benefit levels. Regardless of whether it is allocated to taxes or to spending, fiscal volatility creates harm due to risk aversion. Yet the harm caused by risk aversion can be mitigated through the practice of risk-spreading, the practice of spreading volatility as widely as possible.

The standard explanation for risk aversion comes from the diminishing marginal utility of money.\textsuperscript{20} Individuals generally value each additional dollar less than the previous dollar, such that having two-thousand dollars generates less than twice as much utility as having only a thousand dollars. Consequently, individuals should and do prefer a 100\% chance of winning a thousand dollars to a 50\% chance of winning two-thousand dollars. Although the two bets have the same expected dollar value, the second bet produces a lower expected utility.\textsuperscript{21}

Diminishing marginal utility is not unique to money. Individuals receive diminishing marginal utility from nearly all forms of consumption.\textsuperscript{22} Even someone who prefers apples to oranges might select an orange in place of the hundredth apple. And while food and clothing

\textsuperscript{16} Of course, much of the political controversy concerns redistributive issues. But redistributive issues do not account for all of the controversies over the size of government.

\textsuperscript{17} Kenneth Arrow and Robert Lind, \textit{Uncertainty and the Evaluation of Public Investment Decisions}, AMER ECON REV 364, 364 (on file with author).

\textsuperscript{18} Harry Markowitz, Portfolio Selection, 7 J. FIN. 77, 91 (1952).

\textsuperscript{19} STEPHEN A. ROSS, NEOCLASSICAL FINANCE 1 (2005).


\textsuperscript{21} Rabin and Thaler, \textit{id.}, argue that the standard view that risk-aversion arises from the diminishing marginal utility of money cannot explain the fact that individuals are averse to small risks as well as to large risks. Instead, Rabin and Thaler suggest that risk-aversion results from the biases of loss aversion and of mental-accounting. There are also other non-standard theories for why individuals are averse to risk and uncertainty. \textit{See, e.g.}, Yoram Halevy and Vincent Feltkamp, \textit{A Bayesian Approach to Uncertainty Aversion}, 72 REVIEW OF ECON. STUD. 449 (2005). Yet, like the standard model, the non-standard explanations for risk-aversion also conclude that individuals exhibit increasing marginal risk-aversion. Hence, the non-standard views are equally consistent with the arguments of this paper as is the standard model. (Although I rely on the standard view of risk-aversion in the text of the paper, due to the fact that it is far more widely accepted than the alternatives, I’ll note as a tangent that I am largely persuaded by Rabin and Thaler’s critique).

\textsuperscript{22} \textit{See} Robert S. Pindyck and Daniel L. Rubinfeld, MICROECONOMICS 68-91 (2001).
might be more essential than entertainment items, the fuller one’s fridge and closet the more valuable the entertainment items become as compared to additional food and clothing.

In fact, the reason money produces diminishing marginal utility is that all of the goods that can be purchased with money generate diminishing marginal utility. At any income level, individuals should purchase the mix of consumption items that maximizes their potential utility from monetary purchases. But as the adage goes, “you cannot buy happiness.” Much of what individuals desire cannot be purchased on the market. The more monetary goods one owns, the less valuable additional monetary goods become as compared to non-market goods like love, health, and the benefits of public spending.

Just as the diminishing marginal utility from monetary goods creates risk aversion with respect to volatile tax payments, the diminishing marginal utility from publicly-provided goods creates risk aversion with respect to volatile government spending. No matter how much one values goods like public transportation or education, at some point adding more roads and schools becomes less valuable than the private consumption that must be forgone in order to pay for the n-th highway or school building. Moreover, individuals exhibit increasing marginal aversion to volatility with respect to both tax payments and public spending. For both forms of risk, doubling the magnitude of volatility more than doubles the harm created by the volatility. Like risk aversion itself, increasing marginal risk-aversion follows directly from the diminishing marginal utility produced by all economic goods.

Traditional applications of the risk-spreading principle favor dispersing volatility across as many individuals or businesses as possible, since volatility is increasingly marginally harmful as allocated to any single individual or business. The same logic applies to dispersing volatility across the public and private sector portions of the economy. Since individuals exhibit increasing marginal aversion to volatility as allocated to any particular subset of their economic

\[23 \text{ Id.}\]
\[24 \text{ Even billionaires may be frustrated by crime (lack of police funding), traffic (lack of transportation spending), and the like. Purchasing a private jet or one’s own security force does not provide a perfect substitute.}\]
\[25 \text{ The proof is as follows:}\]

\[\begin{align*}
\text{Let } U(x) &= \text{Total amount of utility up to x dollars; } U'(x) = M(x) = \text{Marginal utility for dollar x; } U''(x) = M'(x) = F(x) = \text{Change in marginal utility with respect to x. Given: } F(x) \text{ is negative (Marginal utility is decreasing). To show: } (U(x+dx) + U(x-dx))/2 - U(x) < C((U(x+Cdx) + U(x-Cdx))/2 - U(x)) \text{ for any } C > 1 \text{ (Or, utility lost to a volatility of dx is less than C times utility lost by a volatility of C*dx, and therefore utility lost to volatility is greater than linear).}
\end{align*}\]

\[\begin{align*}
\text{Proof: Consider the graph of } U(x), \text{ which is concave down. The utility lost to a volatility of dx around x could be thought of as } ((U(x+dx)-U(x))+U(x-dx)-U(x))/2. \text{ The 2 in the denominator is a linear factor that will be included in the calculations of volatility lost at Cdx as well, and can therefore be disregarded. What is left is the difference between } U(x+dx) \text{ and } U(x), \text{ as well as the difference between } U(x-dx) \text{ and } U(x). \text{ Upon division by dx, this yields the average of the slope of the line from } U(x-dx) \text{ to } U(x) \text{ and the slope of the line from } U(x) \text{ to } U(x+dx). \text{ This can be done for Cdx as well, yielding the slope of those two lines over Cdx. The dx and Cdx that were divided out are the linear term, and thus if the average of the slopes of the lines from } U(x-Cdx) \text{ to } U(x) \text{ and from } U(x) \text{ to } U(x+Cdx) \text{ is less than the average of the slopes of the lines from } U(x-dx) \text{ to } U(x) \text{ and from } U(x) \text{ to } U(x+dx) \text{ when } C > 1, \text{ the claim is true. This is true because } U''(x), \text{ or } F(x), \text{ is negative, and thus the slope from } U(x) \text{ to } U(x+dx) \text{ is greater than the slope from } U(x+dx) \text{ to } U(x+Cdx), \text{ and when given the weighted average the slope from } U(x) \text{ to } U(x+Cdx) \text{ is less than the slope from } U(x) \text{ to } U(x+dx). \text{ On the other hand, the slope from } U(x-Cdx) \text{ to } U(x) \text{ is greater than the slope from } U(x-dx) \text{ to } U(x), \text{ and thus from } U(x) \text{ to those, the slope to } U(Cdx) \text{ is lesser. Because the average of the slopes times the linear factor are the loss to utility, and when } C > 1, \text{ the slopes are less for } x-Cdx, \text{ and } x+dx \text{ are less than } x-dx, \text{ x and } x+dx, \text{ loss of utility to volatility is is greater than linear with respect to volatility. QED. [Reformat and make more concise, or find appropriate cite]}
\end{align*}\]
activity, the harm from risk-aversion can be mitigated by spreading volatility across as much economic activity as possible.\textsuperscript{26}

Seeing as state government spending constitutes only about five percent of GDP, while the tax-base funding that spending constitutes over fifty-five percent of GDP, far more risk-spreading should be accomplished by allocating volatility to taxes than to government expenditures.\textsuperscript{27} Unlike with multiple private sector goods – such as apples and oranges – individuals cannot choose their own balance between public goods and private consumption. This decision must be made at the collective level. As such, individuals should prefer to have volatility spread across the more than fifty-five percent of their consumption that corresponds with private sector goods rather than concentrated in the five percent of their consumption that corresponds with state-funded public sector goods. Once again, volatility is less harmful when dispersed than when concentrated.

However, the principle of risk-spreading assumes that all else is equal, whereas public spending and private consumption are not exactly equivalent. We generally assume that individuals allocate their budgets for private spending so as to maximize their joint utility from the various forms of private consumption. In contrast, state government budgeting is a highly political process. The degree to which voters value potential expenditures undoubtedly influences the extent to which governments fund the expenditures. But due to interest group activity and other political biases, government spending decisions can deviate from voter preferences.

Yet government decision-making has advantages over the market as well as disadvantages. Collective action problems prevent the market from providing certain public goods which, at least on the margin, may be preferred to any private alternatives. For instance, everyone might desire additional expenditures on roads, jails, or public parks, even after factoring in the wastefulness of funding these goods through government spending.\textsuperscript{28} Still, regardless of their desirability, the market cannot provide these goods without a mechanism for reserving their benefits for those who pay for their costs. Due to market failures like this free-rider problem, public expenditures can sometimes better fulfill taxpayer preferences than can private consumption.

\textsuperscript{26} This justification implicitly assumes that the size of any particular subset of economic activity correlates with the number of distinct goods contained within that subset – each of which produces diminishing marginal utility – and that the rate of the diminishing marginal utility from each of these goods is similar to the rate for other economic goods not included in the subset. Clearly, it is possible to violate these assumptions. Nevertheless, the assumptions seem intuitive, and I see no particular reason for thinking that the assumptions will not hold for comparisons between the subsets of economic activity composed by public and private spending. Since private spending constitutes a much larger a portion of economic activity than does state government spending, it seems reasonable to assume that private spending will contain a much larger variety of distinct goods each of which produces diminishing marginal utility. And I see no convincing reason for thinking that the marginal utility from units of distinct private goods diminishes faster than the marginal utility from units of distinct public goods, at least within the range affected by fiscal volatility.

\textsuperscript{27} This conclusion only follows to the extent public and private spending are not completely fungible. See notes \textsuperscript{28} and accompanying text. Additional, the conclusion relies on the assumptions that the economic activity nominally subject to taxation actually bears the burden of any volatility allocated to taxation and that the nominal beneficiaries of government expenditures actually bear the burden of any volatility allocated to spending. Although it is theoretically possible to violate these assumptions, it is commonly accepted practice to make assumptions of this sort in the optimal tax literature.

\textsuperscript{28} [discuss socially desirable redistribution]
It is unclear how these factors balance out in practice. If government expenditures are entirely wasteful around their steady-state levels, then volatility should be allocated to spending. There is no harm to fluctuating expenditures that have no value. But even if state governments currently spend more than is optimal, additional private consumption would need to be dramatically superior to marginal government expenditures in order to overpower the risk-spreading implications of the more than ten-fold disparity between public spending and the tax base as a percent of GDP. And if state governments currently spend less than is optimal, this further strengthens the case for allocating volatility to taxes as opposed to spending.

Even if the steady-state level of government spending is approximately optimal, the risk-spreading principle still might not hold if government expenditures were dramatically more of a luxury good than private consumption. For instance, entertainment purchases are luxury goods as compared to food purchases. As personal income rises, a typical individual will spend more on entertainment as compared to food. If the same relationship held for public goods as compared to private consumption, we might want state governments to increase spending during upturns and cut spending during downturns.

Yet there is no particular reason to think that government expenditures are luxury goods as compared to private expenditures. In 2003, the majority of state general-account spending funded four types of expenditures: elementary and secondary education (36%), Medicaid and other public assistance (19%), higher education (12%), and corrections (7%). Although these expenditures are probably luxury goods as compared to food purchases, they are almost certainly not luxury goods as compared to entertainment purchases. When private consumption is reduced due to tax adjustments, individuals can choose the elements of private consumption on which to reduce their spending. Hence, when taxes are raised during downturns, individuals should respond by reducing spending primarily on luxury goods. In contrast, when spending is cut during downturns, the process for determining which government expenditures to cut is far more political and haphazard. Intuitively, it seems highly unlikely that the public expenditures that would fluctuate with spending adjustments are significantly more luxury goods than the private spending that would fluctuate with tax adjustments.

The risk-spreading model utilized by this section rests on a number of assumptions. Although these assumptions seem plausible, they have yet to be empirically tested. Still, it is widely recognized that risk aversion creates significant economic harm and that this harm can be mitigated through risk spreading. While we should retain some skepticism when evaluating these results, the potential for allocating fiscal volatility across more than ten times as much

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29 NATIONAL ASSOCIATION OF STATE BUDGET OFFICERS, 2003 STATE EXPENDITURE REPORT at 13.
30 Even if public expenditures are to some extent luxury goods as compared to private consumption, it seems unlikely that public expenditures are luxury goods to such a degree that over ten times as much volatility should be allocated to public expenditures as to private consumption.
31 See, e.g., notes 29–30 supra. See also Parts II.B and C.
32 Since this is the first paper to apply risk allocation theories to the fiscal volatility problem, there have not been any empirical studies analyzing the assumptions underlying my model. Hopefully, this paper will spur further research.
33 It should be noted that risk aversion creates significant economic harm and that this harm can be mitigated through risk spreading. While we should retain some skepticism when evaluating these results, the potential for allocating fiscal volatility across more than ten times as much
economic activity provides a strong initial argument for fluctuating tax rates instead of state government spending.

2. Planning Costs

Risk aversion primarily affects consumption – the degree to which individuals derive value from economic goods. Risk aversion can also significantly impact production, by discouraging risky behavior that would have been expected to create value for society. But these effects are secondary. In contrast, planning costs primarily concern production. The planning costs created by fiscal volatility interfere with long-term economic growth.

Individuals and firms often need to make investment decisions in the present in order to maximize production in the future. These decisions sometimes entail sunk costs. For instance, students typically enroll in law school so as to earn a salary from practicing law. If the legal market later changes so that a student can no longer find employment, the time and money spent on law school are not refundable. Similarly, firms make capital investments in order to generate future revenues. If demand for a firm’s product subsequently evaporates, the firm may not be able to recoup the invested resources.

Public administrators must likewise make planning decisions in the presence of sunk costs. For example, schools are built based on projected future education spending. Uncertainty about how much funding will be available for hiring teachers can lead administrators to build schools that are either too small or too large. Education suffers when too many students are crammed into a finite space, but there is little point to having more classrooms without teachers to utilize them.

Allocating fiscal volatility to expenditures can force administrators to fire staff after putting them through costly training programs, to abandon construction projects that have already been partially built, or to otherwise misallocate resources over time and across types of expenses. In addition to these primary costs, volatility in public spending creates secondary costs that fall on the beneficiaries of government programs and on any private sector individuals or contractors paid to work on the programs. If uncertain funding creates the possibility that administrators will have to fire staff or to stop paying for contractors, the administrators will have to pay more to hire the staff and contractors in order to offset their risk-premiums. Moreover, if the staff or contractors incur sunk costs in order to make themselves eligible for

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34 As Kenneth Arrow explains, supra note __, at 137-38, “at any moment society is faced with a set of possible new projects which are on the average profitable though one cannot know for sure which particular projects will succeed and which will fail. If risks cannot be shifted, then very possibly none of the projects will be undertaken.” Volatility can deter entrepreneurs and investors from taking on risks that would be expected to improve societal welfare. Moreover, firms can be risk-averse as well as individuals. Arrow and Lind, supra note __, at 376. Both the managers of firms and stockholders owning large blocks of shares can cause firms to act in a risk-averse fashion. Consequently, by adding risk to the economy, fiscal volatility can deter both firms and individuals from socially-desirable entrepreneurial activities. Although the additional risk caused by fiscal volatility is not directly connected to entrepreneurial activities, it may combine with the risk already inherent in these activities to deter risk-taking behavior that would not have been deterred based on the inherent risk alone.

35 Just as planning costs can force administrators to fire staff or abandon projects during downturns, during upturns the administrators may find they have not previously hired enough staff or started construction projects early enough, and that surplus funds can thus not be used efficiently. See Matthews, supra note __, at 306.

36 See note _above_ supra.
government work, volatile spending will impose further costs on the staff and contractors which will force the administrators to pay even more in order to hire their services.\footnote{For instance, students must apply for teacher training programs at least a year or two in advance of seeking teaching jobs. Since volatile spending makes the availability of teaching jobs fluctuate significantly over time, this volatility probably deters some students from becoming teachers who would otherwise be inclined to enter the profession.}

Looking to program beneficiaries, spending volatility can again impose costs even above the harm caused by risk-aversion. Individuals and firms often make decisions in reliance on government programs. These decisions can involve sunk costs. For instance, firms decide where to build plants based partially on the state of local roads and other infrastructure. If spending is later cut so that the infrastructure quality is no longer sufficient for the firm’s purposes, the firm may need to abandon the plant or pay for expensive alternatives to the infrastructure. Individuals face similar dilemmas to the extent they buy housing based on the quality of neighborhood schools. And if firms structure their severance policies – or individuals make saving decisions – based even partially on state-funded job retraining programs or unemployment benefits, any changes to these benefits can leave individuals worse off than if they had been able to make decisions in anticipation of the changes.

Fiscal volatility thus creates significant planning costs whether allocated to taxes or to public spending. Just as public administrators plan based on expectations of their future budgets, taxpayers make planning decisions based on expected future returns, and volatility in taxes creates uncertainty in those returns. If a tax hike makes an economic activity unprofitable after taxes, the activity may need to be abandoned even if non-refundable resources have already been expended on the activity.\footnote{By “unprofitable” I mean unprofitable in the economic sense – a project becomes unprofitable if the resources that must still be invested in order to complete the project could yield greater returns if diverted to an alternative use (the opportunity costs of continuing the project exceed the expected gains).} Plus, as with spending, volatility in taxes also imposes secondary costs on the beneficiaries of private sector projects and on anyone hired or contracted to work on those projects. If a store closes due to its being unprofitable after taxes, anyone who worked at the store or who planned on purchasing needed items from the store will also suffer.

Although fiscal volatility creates planning costs whether allocated to taxes or to spending, these costs are not necessarily of the same magnitude. Again due to the principle of risk-spreading and to the fact that a typical state’s tax base is more than ten times the size of state spending as a percent of GDP, fiscal volatility should create much larger planning costs when allocated to spending than when allocated to taxes.

In reference to planning costs, the risk-spreading principle depends on the conclusion of increasing marginal planning costs. All else being equal, a two-thousand dollar loss of public funding or increase in a tax bill should create more than twice as much harm from planning costs as a one-thousand dollar funding loss or tax increase.

Whether they operate in the public or private sectors, individuals and organizations generally maintain some level of reserves – or slack – that can be used to meet unexpected challenges.\footnote{See, e.g., Joseph L.C. Cheng and Idalene F. Kesner, Organizational Slack and Environmental Shifts: The Impact of Resource Allocation Patterns, 23 J. OF MANAGEMENT 1 (1997); Jitendra V. Singh, Performance, Slack, and Risk Taking in Organizational Decision Making, 29 ACADEMY OF MANAGEMENT J 562 (1986).} For individuals, this slack can include previously saved funds, the ability to temporarily increase work effort, favors than can be called in from friends and family, and anything else the individual can do in order to cope with a negative shock without abandoning sunk resources. Similarly, organizations can ask their employees to work harder for short...
periods, can temporarily reduce employee benefits or overhead, or can engage in a variety of similar coping mechanisms. If we make the seemingly reasonable assumptions that the amount of slack in an economic activity is correlated with the dollar value of that activity, and that neither public nor private sector activities are significantly more prone to slack or sunk costs, then the existence of slack should make planning costs generate increasing marginal harm. Whereas small amounts of volatility can often be dealt with through reserves, increasing levels of volatility will at some point exhaust available reserves and thus force the abandonment of sunk resources, thereby creating far larger marginal costs.

Furthermore, even after reserves have been expended, we might reasonably expect organizations and individuals to first abandon projects with few sunk costs and to only later abandon projects with greater sunk costs. The ability of economic actors to allocate the costs of volatility across sub-projects should further cause volatility to generate increasing marginal planning costs.40

Hence, risk-spreading can mitigate the harm from planning costs in addition to the harm from risk-aversion. By spreading volatility over as much economic activity as possible, we can lessen the planning costs created by the volatility. And since state government spending constitutes less than a tenth as much economic activity as does the tax base funding this spending, the benefit of mitigating the harm from planning costs further justifies allocating volatility to taxes instead of to spending.

Although the models in this section depend on untested assumptions, these assumptions seem plausible and conform to generally accepted premises of economic theory.41 For instance, it is often assumed in the economic analysis of tort law that spreading losses widely reduces the overall dislocation caused by the losses.42 On average, raising state tax rates by one percentage point (taking an additional percent of the tax base) should fund more than a ten percent growth of state government spending.43 Both due to risk-aversion and to planning costs, spreading volatility across the tax base should cause less harm than concentrating the volatility in government spending.

B) Tax and Spending Programs do Not have Identical Incidence

The previous section argued that state-level fiscal volatility should be allocated to taxes rather than to spending even if all individuals in the state were identical. The reason is that each individual and business should prefer to have volatility spread across the much larger portion of its utility function (for individuals) or production function (for firms) that corresponds with private sector activity instead of concentrated in the much smaller portion of these functions corresponding with publicly provided goods.

This section argues that the case for allocating fiscal volatility to taxes rather than spending becomes even stronger once we relax the assumption that tax and spending programs have identical incidence – once we realize that not all individuals and firms are affected equally

40 Again, this conclusion assumes that neither public nor private sector activities are significantly more prone to sunk costs.
41 In addition to the assumptions explicitly mentioned in the text or footnotes, the planning costs discussion also continues to follow the assumptions specified during the discussion of risk-aversion.
42 See, e.g., Calabresi, supra note __, at 517.
43 This ratio might be smaller due to the administrative and distortionary costs of taxation, see II.C infra, or the ratio might be larger due to the 55% of GDP figure for state tax bases being a conservative estimate, note __, supra.
by taxes and spending. This section will continue to assume that taxation imposes neither administrative nor distortionary costs, as this assumption will be relaxed in the next section.

Determining the incidence of any tax or spending program can be difficult. Just because fiscal legislation specifies the nominal taxpayers or program beneficiaries does not mean that the nominal taxpayers actually bear the economic burden of the taxes or that the nominal beneficiaries actually receive the benefit of the spending. Nevertheless, we can still reach a few general conclusions about the incidence of fiscal policy.

In relation to this Part’s question, allocating volatility to taxes rather than to spending should have the effects of: (a) transferring volatility to wealthier taxpayers from poorer taxpayers, (b) transferring volatility to taxpayers who find it easier to borrow from taxpayers who are more borrowing constrained, and (c) allowing social insurance programs to function more efficiently. As shorthand, these three effects can be summarized as the benefits of allocating volatility progressively.

1. Wealth Levels

Taken as a whole, state fiscal policy is redistributive on the margin. Many states’ tax systems are considered regressive in that they take a higher percentage of poor taxpayers’ incomes than they do of rich taxpayers’ incomes. For instance, sales taxes are regressive because poor taxpayers typically spend a higher percentage of their income than do rich taxpayers. Nevertheless, in every state, marginal spending is sufficiently progressive so as to more than make up for these regressive taxes.

As mentioned earlier, three-quarters of state general account spending falls into four major categories: elementary and secondary education (36%), Medicaid and other public assistance (19%), higher education (12%), and corrections (7%). Of these, Medicaid and public assistance are clearly progressive in that they primarily benefit poor taxpayers. Moving to the education categories, even though the wealthy often benefit more from education spending than the poor, tax-funded education spending is still highly progressive. The reason is that education dollars are not distributed as unequally as is income. Even if a rich taxpayer with an annual income of $200K derives twice as much value from education spending as a poor taxpayer with an annual income of $20K, as a percent of income, the poor taxpayer still receives five times as much benefit as the rich taxpayer.

The key to the above example is that progressivity in taxes is usually measured as a percent of income, while the redistributive quality of spending is usually measured in dollar amounts. Even regressive taxes take far more dollars from rich taxpayers than from poor taxpayers. Although education spending might provide more absolute benefit to the rich than to the poor, this disparity will not be so large as to overpower the greater dollar amounts the rich are paying in taxes. For almost all forms of state spending, raising taxes by a dollar in order to fund an additional dollar of spending will redistribute resources from rich taxpayers to poor taxpayers.

Of the four major categories of state general account spending, only corrections might be an exception to this rule. Spending on prisons and law enforcement arguably benefits the rich far more than the poor, enough to overwhelm the differences in tax dollars paid. Following similar logic, it is often argued that the wealthy derive far more benefit from government spending than

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44 Supra, note ___. Again, this paper only discusses state general account spending as this is the spending subject to balanced budget constraints. Spending funded by the states’ capital budgets is not usually cut during downturns.
the poor as there would be little or no wealth without government (in the state of nature). Yet while this argument might be valid for state expenditures as a whole, it is clearly wrong when considering state expenditures on the margin. When examining the types of spending that are actually cut during downturns and increased during upturns, it is very clear that marginal spending hikes benefit the poor more than the wealthy. The vast majority of spending fluctuations are in the categories of: Medicaid and other public assistance, higher education, and elementary and secondary education. Raising taxes by a couple percentage points in order to fund additional spending in these areas clearly benefits the poor more than the wealthy.

Hence, allocating volatility to taxes causes the effects of the volatility to fall more on wealthy taxpayers, and allocating volatility to spending causes these effects to fall more on poorer taxpayers. In order to make this observation into a normative argument, we need only agree that volatility causes less overall harm when allocated to wealthy taxpayers than when allocated to poorer taxpayers.

The reason for this conclusion again comes from the diminishing marginal utility of money. For a taxpayer with an annual income of $10K, the possibility of that income going up by $2K or down by $2K constitutes a very large risk. Yet if that same risk is instead allocated to another taxpayer with an annual income of $200K, the risk becomes much smaller as a percent of income. The first taxpayer would need to significantly change her consumption portfolio in response to having 20% less income. In contrast, the second taxpayer would be far less affected by the possible need to decrease her consumption by only 2%. If the two taxpayers have similar dollars-to-utility curves characterized by similarly diminishing marginal utility from money, the first taxpayer stands to lose far more expected utility from the volatility than the second taxpayer.

Both the risk-aversion and planning-costs discussions from the previous Section apply here. In terms of planning costs, wealthy taxpayers are likely to have more slack than poor taxpayers, and thus should be able to absorb more volatility without the need to abandon sunk costs. For instance, it is well known empirically that wealthy individuals tend to have far larger savings reserves than poorer individuals. Wealth concentrations dwarf income concentrations in the degree to which the better off taxpayers control the majority of wealth and income. Much of this wealth takes the form of savings which the wealthy taxpayers can use to maintain their consumption levels during economic downturns. Due to their greater savings and other coping advantages, the wealthy find it far easier than the poor to respond to temporary income shocks without reducing consumption or abandoning long-term projects with previously sunk costs.

In some ways, the advantages of allocating volatility to wealthier taxpayers are more straightforward than the risk-spreading advantages discussed in the previous Section. Certainly, this Section’s analysis is much closer to the previously existing literature. However, it is important to note that the conclusion that volatility is less harmful when allocated to wealthy taxpayers than to poor taxpayers requires an assumption that the previous section did not – the assumption that it is possible to make interpersonal utility comparisons.

Whether normative judgments can be reached from interpersonal utility comparisons is a controversial topic in the economics literature. Five decades ago, a number of economists argued that economic theory should refrain from making interpersonal utility comparisons.

45 See, e.g., Murphy and Nagel, The Myth of Ownership.
46 Richard Blundell, Luigi Pistaferri, and Ian Preston, Partial Insurance, Information, and Consumption Dynamics (manuscript on file with author).
47 See, e.g., Daniel Shaviro, Beyond the Pro-Consumption Tax Consensus at 10 (2007, manuscript on file with author).
Today, this view is far less widely held, and many important strands of public finance economics rely on making interpersonal utility comparisons.48

Opponents of making interpersonal utility comparisons often point out that a $2K loss might harm a wealthy taxpayer more than a poorer taxpayer if it prevented the wealthy taxpayer from buying her dream house while the poorer taxpayer would not be forced to abandon any important consumption. Clearly, it is possible to construct examples wherein an equivalently sized risk might harm a wealthy taxpayer more than a poorer taxpayer. Yet in the mind of this author, and others who believe in the validity of making interpersonal utility comparisons, exceptions of this sort only prove the general rule. When extrapolating across a whole society filled with wealthier and poorer individuals, it seems reasonable to conclude that a risk of any given size will be less costly if allocated to the wealthier taxpayers than to the poorer taxpayers. This notion is the primary reason welfarist thinkers cite to support progressive taxation.49

If we accept the validity of interpersonal utility comparisons, and in the absence of any strong reason for thinking that the dollars-to-utility functions of wealthier taxpayers are significantly different than those of poorer taxpayers, it follows that volatility is less harmful when allocated to richer taxpayers than to poorer taxpayers. Since fiscal policy is redistributive on the margin, we thus have another powerful argument for allocating fiscal volatility to taxes rather than to spending.

2. Borrowing Constraints

In addition to the benefits of allocating volatility to the wealthy rather than the poor, fluctuating taxes rather than spending has the further benefit of transferring volatility to actors who are less borrowing constrained from actors who are more borrowing constrained. To begin with, wealthier taxpayers typically face fewer borrowing constraints than do poorer taxpayers. Since allocating volatility to taxes causes the effects of the volatility to fall more on wealthier actors, it also causes the effects of the volatility to fall on less borrowing-constrained actors. Moreover, whereas states place significant restrictions on the ability of public sector program administrators to borrow in order to make up for gaps in general account spending, private sector actors do not face similar legal restrictions on their ability to borrow. For both of these reasons, a temporary tax hike should induce far more borrowing than a temporary spending cut.

There are two primary reasons why borrowing reduces the harm caused by fiscal volatility. The first reason relies on microeconomic analysis and the second reason on macroeconomic analysis.

Beginning with the microeconomic benefits of borrowing, the ability to borrow – like savings – functions as a form of slack. Borrowing can reduce the need to abandon projects with previously sunk costs and can enable individuals to spread their consumption over time (or firms to spread their production over time) thereby mitigating the harmful effects of economic shocks. If borrowing was costless and taxpayers had perfect information about their future economic circumstances, fiscal volatility would also be harmless.

Of course, borrowing is not costless and taxpayers do not have perfect information about their future economic circumstances. Yet we can still minimize the harm caused by fiscal volatility by allocating the volatility to those taxpayers who can borrow with the fewest costs and

48 For instance, James Mirrlees’s Nobel Prize winning work and most of the original optimal tax theory literature.
49 Non-Utilitarian social welfare functions – like maximin – also rely on interpersonal utility comparisons to some degree.
who have the best information for predicting their future economic circumstances – the taxpayers who are the least borrowing constrained. That allocating volatility to taxes rather than to spending has this effect thus provides further support for this Part’s argument.

The macro-economic benefits of inducing borrowing as a response to fiscal volatility were first documented in a paper by three economists at the Federal Reserve. Looking only at New York City where the legal regime governing the budget prevents both borrowing during downturns and saving during upturns, their paper argued that fluctuating taxes rather than spending can mitigate the harmful effects of economic cycles.

Most macroeconomists agree that governments should borrow during downturns and save (pay off accumulated debts) during upturns. Doing so properly stimulates the economy and smooths economic cycles. However, balanced budget constraints prevent governments from engaging in this form of desirable macroeconomic stimulus, and force governments to adopt undesirable pro-cyclical fiscal policies (raising taxes and/or cutting spending during downturns, while lowering taxes and/or increasing spending during upturns).

In the absence of balanced budget constraints, governments can borrow and save at less cost than can private sector individuals and firms. In the presence of balanced budget constraints, private sector individuals and firms may still be able to borrow even when governments cannot. Hence, by allocating volatility to tax rates, state governments can induce private sector actors to borrow during downturns and save or pay off accumulated debts during upturns. Hence, governments can effectively implement a second-best form of counter-cyclical macro-economic stimulatory policy, and thereby reduce the size of state business cycles.

Allocating fiscal volatility to taxes induces more borrowing than does allocating volatility to spending. This borrowing both reduces the overall amount of volatility through macroeconomic smoothing of the business cycle, and reduces the harm caused by the remaining volatility as taxpayers use borrowing as a microeconomic means of mitigating the harmful effects of volatility. These beneficial consequences of borrowing provide another strong argument for allocating fiscal volatility to taxes rather than to spending.

3. Social Insurance

Related to borrowing is the ability to insure. Just as government agencies face regulatory limitations on their ability to borrow, they face similar limitations on their ability to insure against reductions in their future revenue streams. Where government actors might abuse the power to borrow or to purchase insurance due to agency costs, or else use these powers to tie the hands of future governing coalitions, private sector actors can borrow or insure without creating these problems. Hence, as with borrowing, allocating volatility to taxes might induce private sector actors to insure against future volatility and thereby reduce the harmful effects of the volatility.

Although the potential benefits from inducing private sector actors to insure are not necessarily trivial, a more important advantage of allocating volatility to taxes rather than to spending...
spending relates to the efficient functioning of social insurance programs such as Medicaid and unemployment benefits.\textsuperscript{52}

Social insurance programs are intended to mitigate the risk of economic misfortune by assisting taxpayers during periods of particular hardship. In order to function efficiently, these programs thus need to spend more resources during economic downturns, as these are the periods in which potential program recipients are particularly likely to have suffered hardship. Unfortunately, the current practice of cutting spending during downturns and increasing spending during upturns has led state governments to reduce funding for social insurance programs during periods of economic hardship only to restore funding again during periods of strong economic growth.\textsuperscript{53} This perverse form of cyclically funding social insurance programs causes these programs to function far less efficiently.

It would be silliness to purchase an umbrella that only functions during sunny days.\textsuperscript{54} Depriving funding to social insurance programs during downturns and increasing funding during upturns is equally silly. Part of the purpose of these programs is to insure against risks, introducing uncertainty to this insurance function makes the insurance considerably less valuable. Moreover, tying funding for these programs to the strength of the economy results in a less efficient allocation of funding to program recipients over time. Many potential recipients with strong needs are denied benefits during downturns, while less needy recipients are provided benefits during upturns.

Together, these three benefits of allocating volatility progressively – allocating volatility to the wealthy rather than the poor, allocating volatility to the less borrowing constrained, and allowing social insurance programs to function efficiently – form a powerful case for fluctuating taxes rather than spending as state economies cycle. These benefits are in addition to the advantages of risk-spreading discussed in the previous Section. Where the previous Section analyzed the optimal distribution of volatility across the public and private sector portions of a representative individual’s or firm’s value function, this Section analyzed the optimal distribution of volatility across multiple individuals and firms with differing characteristics. The implications of these two forms of analysis work to some extent at cross-purposes. The previous Section primarily supports fluctuating flat taxes (such as sales taxes or flat rate income taxes), and this Section’s arguments would call more for fluctuating highly progressive taxes (such as wealth taxes or progressive income taxes). Nevertheless, both Sections’ arguments support allocating volatility to some form of broad-based taxes rather than to government spending.

\textsuperscript{52} The analysis here partially draws on the writings of David Super and others, Supra. Note that although some of these programs could theoretically be funded by the market, moral hazard problems may make governments more efficient providers of these programs.

\textsuperscript{53} Theoretically, state governments could fluctuate spending while exempting social insurance programs. However, doing so would cause the remaining portion of government spending to absorb even more volatility, this would further exacerbate the problems of risk concentration and of volatility being borne by actors with lesser wealth and/or greater borrowing constraints. Plus, to the extent the political process defeats an optimal allocation of volatility across individual spending programs, but allows for a more optimal allocation between taxation and overall spending, the arguments against having social insurance programs absorb volatility become arguments against allocating volatility to spending in general. Looking ahead to Part III, changing baselines is likely to be much more effective at influencing the allocation of fiscal volatility between taxation and spending as a whole, as opposed to the allocation of fiscal volatility amongst specific forms of spending.

\textsuperscript{54} Unless, of course, the umbrella is used to shield the holder from the sun.
C) Collecting Tax Revenues Does Impose Administrative and Distortionary Costs

Unfortunately, neither the theoretical nor empirical literatures on tax distortions are sufficiently developed to confidently assess the distortionary costs of fluctuating tax rates. Nevertheless, this Section will argue that the most plausible interpretations of these literatures suggest that it is possible to fluctuate the rates of broad-based taxes without creating significant distortionary effects. Although the problem of distortionary effects warns against allocating volatility to certain taxes—such as capital gains taxes—the advantages of allocating volatility to income taxes, sales taxes, and property taxes should exceed the costs.

- The principles of risk-spreading and of allocating volatility to actors with greater wealth and/or lesser borrowing constraints make strong arguments for allocating volatility to the private-sector tax base rather than to public-sector spending.
- However, the discussion has so far ignored the fact that collecting tax revenues to fund government spending imposes administrative and distortionary costs.
- If these costs were fixed, or were proportional to the amount of revenue being raised, the costs would not significantly affect the analysis from the previous sections.
  - The costs could then be modeled by factoring them into the comparative value of public and private spending. As long as the benefit produced by marginal government expenditures still equaled the private consumption foregone to pay for those expenditures (now the equivalent amount of private consumption plus the extra consumption lost due to the cost of collecting tax revenues), the risk-allocation models of the previous sections would still work in the same fashion.
  - As before, if state governments currently spend more than is optimal (now after factoring in the costs of collecting tax revenues), then this partially mitigates the advantages of allocating volatility to taxes instead of spending. If governments currently spend less than is optimal, then this strengthens the case for allocating volatility to taxation.
    - In any event, state governments would have to spend far more than is optimal in order to completely counteract the advantages of the previous two sections. And even if this were currently the case, this only means we should strive to reduce the size of state government spending. This paper’s prescriptions would still apply if we could lower state government spending to bring it closer to optimal levels.
- However, the costs of collecting taxation are not necessarily fixed or proportional. In all likelihood, there are increasing marginal costs to collecting tax revenues (at least for the distortionary costs).

1. Administrative Costs
FISCAL VOLATILITY

- Looking first to the administrative costs of taxation, these costs should not greatly affect the analysis of the previous sections. Indeed, these costs may be proportional to the amount of revenue raised, or even decreasing on the margin, rather than marginally increasing.
  - On the one hand, raising tax rates tends to increase evasion behavior, which might make tax collection increasing costly at the margin.
  - But on the other hand, raising tax rates also increases the revenue gained from each taxpayer (or taxpaying unit). If the administrative costs of collecting tax revenues are correlated with the number of taxpayers (or taxpaying units) that need to be investigated and audited – and that need to fill out tax returns – then raising tax rates might actually be diminishingly marginally costly.
  - Not clear how these factors balance out. If raising rates increases administrative costs, this weakens the case for fluctuating tax rates. If raising rates decreases administrative costs, this strengthens the case for fluctuating tax rates.
  - In either case, these effects are likely to be minor. There is no evidence that fluctuating rates leads to significantly greater or lesser administrative costs, at least at the level of the small rate fluctuations that would be capable of fully absorbing observed levels of fiscal volatility.
- However, instability in the tax base caused by fluctuating what is subject to taxation can greatly increase the administrative costs associated with tax complexity. This is an argument against allocating volatility to the tax base, as opposed to tax rates.

2. Distortionary Costs

- In contrast to the administrative costs of collection, the distortionary costs of taxation pose more complications for the previous sections’ arguments.
  - The distortionary costs of taxation refer to the deadweight loss caused by taxpayers adversely responding to the need to pay taxes.
  - The main distortionary costs are:
    - Distortions of the work v. leisure decision: taxpayers work less in response to taxes on labor income or to taxes on any of the goods the taxpayers might wish to purchase with their labor income.
    - Capital income taxation might also distort the savings v. consumption decision.
    - For sales taxes, services are often not taxed. Hence, sales taxation might distort taxpayers to purchase more untaxed services and fewer taxed goods.
    - Property taxation might distort taxpayers from purchasing housing. However, these distortions would probably be overwhelmed by the significant tax advantages of purchasing housing in the federal income tax.
    - All forms of taxation might distort taxpayer decisions about which state to live in, or business decisions of which state to locate in.
Narrower forms of taxation (i.e. luxury taxes) might distort taxpayers from purchasing the taxed goods or engaging in the taxed activities.

- Tax evasion: Taxpayers might engage in tax sheltering or other tax minimization strategies, purchase goods from the informal sector instead of the formal sector, or otherwise reduce their tax bills without significantly changing their real economic behaviors.

- The distortionary costs of taxation are thought to rise with the square of the marginal rates. Hence, allocating volatility to tax rates increases the distortionary costs of taxation. These costs are in addition to the harms imposed by risk aversion and planning costs when volatility is allocated to taxation.

- Nevertheless, a recent body of literature has begun exploring the implications of tax volatility for private investment decisions, and the studies have reached contradictory results. Some research has found that volatility in capital income taxation generates additional revenue at a lower cost than does higher tax rates, such that overall welfare could be enhanced by increasing tax volatility while reducing tax rates. Another paper concluded that uncertainty in the tax base may have positive welfare consequences while uncertainty in tax rates generally has negative welfare consequences. Yet other studies have supported the traditional understanding that tax volatility is generally harmful. While still another article concluded that the effects of tax uncertainty depend on how the uncertainty is modeled.

- Even if we ignore the uncertain state of the literature and make the traditional assumption that tax volatility is harmful, taxpayers often have to make decisions about whether to engage in distortionary behaviors years in advance of when these decisions have tax consequences. Consequently, they might not know what the future tax rates will be when the results of these activities are taxed, only the current tax rates. For any decisions that must be made years in advance, taxpayers should make these decisions based on expected future tax rates rather than current tax rates.

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55 Note that these studies are primarily concerned with uncertainty in capital income taxation, not with sales taxes, property taxes, or even taxes on labor income. [Possibly move this paragraph and related discussion to Part II.C].

56 See, e.g., Michael Dotsey, The Economic Effect of Production Taxes in a Stochastic Growth Model, 80 AMER ECON REV 1168 (1990); David S. Bizer and Kenneth L. Judd, Taxation and Uncertainty, 79 AMER ECON REV 331 (1989). The results of these studies typically derive from the impact of tax uncertainty on the income and substitution effects between taxable investment and consumption.

57 James Alm, Uncertain Tax Policies, Individual Behavior, and Welfare, 78 AMER ECON REV 237 (1988). The reason is that tax base uncertainty – but not tax rate uncertainty – makes it significantly harder for taxpayers to engage in undesirable tax planning. But see Julie H. Collins and Daniel P. Murphy, Experimental Evidence of the Effect of Tax Rate Uncertainty on Securities Prices, Investor Clientele, and Tax Payments, 17 J OF AMER TAX ASSOC 1 (1995) (“These findings imply that prior literature . . . (e.g., Alm 1988) may overstate the welfare loss to investors and the tax revenue loss to government as a result of uncertainty. Our results indicate investors demand ‘compensation’ for tax rate uncertainty and that this ‘risk premia’ leads to higher expected investor tax payments”).


than the actual tax rates at any one point in time, which would eliminate most of
the extra distortionary costs from fluctuating tax rates.

- Still, tax rate fluctuations would create an additional risk-premium based
  on the uncertain distortionary costs.
- Plus, due to the poor quality of economic/budgetary forecasts, taxpayer
  predictions for future tax rates might be partially biased toward current tax
  rates.
  - However, we might be able to partially counteract this biasing
    effect by designating a special tax to be adjusted as the economy
    cycles, such that the steady-state tax rates are zero.
- Thus, even for decisions that need to be made in advance – such as which
  state to locate in – fluctuating tax rates will create some additional
  distortionary costs, although these costs will be much smaller than for
decisions that do not need to be made significantly in advance of their tax
  consequences.

- The empirical literature finds that some forms of taxation are far more prone to
distortions than are others.
  - The literature has mostly found that the work v. leisure decision is barely
    affected by tax rate fluctuations of the size that would be sufficient for
    broad-based tax rates to absorb the entirety of observed levels of volatility.
    - The same holds for property purchasing decisions in relation to
      property tax rate fluctuations, and for the other decisions affected
      by broad based taxes such as labor income taxes (or wage taxes),
      sales taxes, and property taxes.
    - Hence, the advantages of allocating fiscal volatility to broad-based
      tax rates (as discussed in the previous sections’, and not including
      the rates applied to capital income taxation) are unlikely to be
      overpowered by any distortionary effects of allocating volatility in
      this fashion.
  - In contrast, taxpayers have significant control over the timing of their tax
    liabilities for capital income taxation. Within the realization-based
    systems used by all states that tax capital income, taxpayers generally
    control when their tax payments will come due.
    - As such, taxpayers might well time their liabilities to come due
      during upturns when tax rates are low, which would be harmful
      both because the taxpayers might incur costs in order to shift the
      timing of their liabilities and because these timing distortions
      would increase the magnitude of fiscal volatility.
    - In comparison, taxpayers have only minimal control over the
      timing of their property tax, general sales tax, or wage/labor
      income tax bills.
  - Similarly, fluctuating the rates of narrow forms of taxation, or fluctuating
    whether specific transactions are included in tax bases, is likely to produce
    much larger distortionary effects.
FISCAL VOLATILITY

- i.e., taxpayers might time the purchase of luxury goods so that purchases are made when the tax rates affecting these goods are lower than average
  - But only if the rates affecting these goods fluctuate significantly. Fluctuating general sales tax rates – as opposed to specific luxury tax rates – should be able to absorb fiscal volatility without creating significant distortionary reactions
- Uncertainty about what will be included in the tax base in the future, or about the comparative rates affecting substitutable transactions, might interfere with tax evasion decisions. If so, this desirable side effect might mitigate the harm from adverse taxpayer timing decisions.

D) Summary and Synthesis

Ultimately, the optimal strategy for coping with fiscal volatility depends on the comparative strength of three competing factors: (a) the advantages of risk spreading, (b) the benefits of allocating volatility progressively, and (c) the distortionary costs of fluctuating tax rates. The larger the advantages of risk-spreading, the stronger the case for fluctuating flat taxes such as sales taxes or flat-rate income taxes. In contrast, the more powerful the benefits of allocating volatility progressively, the stronger the case for fluctuating progressive income taxes or wealth taxes. However, if the distortionary costs of fluctuating tax rates are large enough to overpower these two sets of benefits, the optimal strategy might instead require allocating volatility to taxes which produce smaller distortionary effects or perhaps even to spending.

Since the existing empirical and theoretical literatures are not sufficiently developed for us to confidently determine how these factors balance out, we must to some extent rely on our intuitions. This paper does not seek to be the final authority on how states should respond to fiscal volatility.

Nevertheless, even for readers who believe that the distortionary effects of fluctuating tax rates are likely to be significant, this Section will suggest mechanisms for allocating volatility to tax rates that should minimize these distortionary effects. Although no mechanism can allocate volatility to taxes without creating the possibility of additional distortionary effects, it seems highly unlikely that these effects will be so large so as to make allocating volatility to spending preferable to mechanisms such as the one discussed below.

An example of a mechanism for allocating volatility to taxes while minimizing the possibility of distortionary effects would be to create a new statewide property tax with a steady-state rate of zero. This tax would thus fluctuate between being a credit against existing taxes during upturns...
and imposing an additional tax liability during downturns. To make the new property tax mechanism allocate volatility progressively, the tax could include an exclusion for property of up to a certain dollar value, or could even consist of a graduated rate schedule. If the tax was implemented along with a few anti-abuse rules, taxpayers would find it extremely difficult to decrease their property tax liabilities during downturns or to increase these liabilities during upturns. Through this mechanism, the distortionary effects of fluctuating these taxes would be limited to any disincentives to purchase property caused by the risk premium of the tax fluctuations. These distortions should be extremely minimal, such that it is almost implausible to think that they would overwhelm the benefits of risk-spreading and allocating volatility progressively.

This paper cannot determine whether volatility should be allocated to sales taxes, progressive income taxes, or a new statewide property tax should as the type described above. The optimal method for coping with fiscal volatility depends too much on the relative importance of the three competing factors discussed above. Yet whatever one’s intuitions about the relative strength of these factors, it seems highly unlikely that the current practice of allocating the majority of volatility to spending is optimal. Although this paper cannot fully specify the optimal solution to coping with fiscal volatility, the paper’s analysis should be sufficient to conclude that states should deal with the majority of fiscal volatility by fluctuating the rates of some form of broad-based taxes rather than by fluctuating spending.

- Regardless of how we allocate fiscal volatility, the volatility is likely to have harmful effects. There are advantages and disadvantages to any strategy for coping with fiscal volatility.
- On balance, there is reason to think that the advantages of allocating volatility to tax-rate adjustments, as opposed to spending fluctuations, outweigh the disadvantages.
  - The primary advantages come from risk-spreading, from allocating volatility to actors with greater wealth and lesser borrowing constraints, and from shielding social insurance programs from the disruptive effects of funding volatility.
  - The main disadvantage is the extra distortionary effects created by fluctuating tax rates.
  - How these factors balance out is an empirical question.
  - Existing empirical research suggests that the extra distortionary effects likely to be caused by fluctuating tax rates to the degree necessary to resolve state fiscal volatility problems should be minor.
    - Consider that raising state tax rates by an additional three percentage points should result in around a thirty percent increase in state revenues – enough to resolve the revenue drops typically experienced during downturns.
An expected three percentage point variance in the rates of broad based taxes is unlikely to generate significant additional distortionary effects, nor significant additional administrative costs.

- Hence, it seems likely that tax rate adjustments are a more efficient method of coping with fiscal volatility than are spending fluctuations.

- Having established the general case for allocating volatility to taxation instead of spending, we can move on to examine specific forms of taxation and spending.

- Allocating volatility to specific forms of spending:
  - The risk-spreading principle suggests that volatility is particularly harmful when allocated to more concentrated forms of spending.
  - The principle of allocating volatility to those with greater wealth and or weaker borrowing constraints argues against allocating volatility to spending programs that are particularly redistributive.
    - Social insurance programs, in particular, should be shielded from volatility in order to preserve the effectiveness of these programs.
  - If there are specific spending programs that are not redistributive and have dispersed consequences, these programs might be more efficient absorbers of volatility. But it is not clear whether programs of this sort exist.
  - Of course, government waste (programs that have few benefits) can absorb volatility more efficiently than desirable programs, but if we really had the capacity to target wasteful programs these programs would already have been abolished.

- Adjusting elements of the tax base (as opposed to rates)
  - Whereas fluctuating tax rates has dispersed consequences (spreads volatility across the entire tax base), adjusting what is subject to taxation can have very concentrated effects as only some taxpayers will be affected by these changes. To the extent that tax base adjustments produce concentrated effects, these adjustments are inferior to rate adjustments.
  - Tax base adjustments may interfere with tax sheltering activities – by making it harder to predict whether tax minimization strategies will be successful. But these adjustments can also increase the complexity and administrative costs of taxation. It is not clear how these effects balance out.

- Allocating volatility to narrow forms of taxation and revenue-raising:
  - In addition to adjusting the rates of broad based taxes, we might also adjust narrower forms of taxation such as luxury taxes, “sin” taxes, capital income taxes, etc.
  - Doing so would likely have much more concentrated effects than adjusting broad-based taxes, and would thus generate more harm from risk aversion and planning costs.
  - Moreover, as discussed earlier, adjusting narrower forms of taxation would likely create more distortionary effects
    - Taxpayers might be able to control the timing of their tax liabilities for these taxes, and do so in a perverse fashion.
Since these taxes are narrower, the rates would need to be fluctuated more dramatically – thus creating more distortionary effects

- The same analysis holds for fluctuating license and user fees and other targeted forms of revenue raising.

**Allocating volatility amongst the types of broad-based taxation**

- Fluctuating income tax rates (meaning wage or labor income tax rates, not capital gains rates):
  - Very dispersed effects – the majority of state economies can be captured by the income tax base
  - Somewhat progressive effects, depending on the rate structure
    - Can allocate volatility more progressively, by adjusting the higher marginal rates more, but at the cost of achieving less risk-spreading
  - Taxpayers have some control over the timing of their tax liabilities
    - Most workers cannot switch jobs in order to avoid cyclical tax rate adjustments. But highly compensated workers may be able to exert control over the timing of their bonuses and similar forms of compensation.

- Fluctuating sales tax rates:
  - The most dispersed effects – captures most private sector consumption
  - Slightly regressive effects
    - But the progressivity of spending programs more than counterbalances the regressivity of sales taxes when comparing sales tax adjustments to spending adjustments
  - Taxpayers have some control over the timing of their tax liabilities
    - Some purchases may be delayed until tax rates are lower, but most taxpayers are not able to exert significant timing control over most of their purchases

- Fluctuating property tax rates:
  - Somewhat dispersed effects – the property tax base covers a significant portion of economic activity, but not nearly as much as do sales and income tax bases.
    - Still, property tax fluctuations might act more like a head tax, to the extent they are factored into the budget of the taxpayers. If so, property tax fluctuations would impact the private consumption of all home owners.
  - Fairly progressive effects – property values are highly correlated with income/wealth
  - Taxpayers have minimal control over the timing of their tax liabilities
    - Property generally cannot be bought or sold in order to time tax payments based on cyclical rate adjustments
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- There are thus tradeoffs between the goals of risk-spreading, allocating volatility to actors with greater wealth and weaker borrowing constraints, and avoiding perverse taxpayer timing decisions with regard to their tax liabilities. Depending on the relative importance of these factors, a different mix of tax-rate adjustments will become optimal. Also note that not all states use all three forms of taxation.

- Considering all of the above factors, the single most efficient coping method might involve creating an additional state-wide property tax with graduated rates. This tax could be adjusted cyclically with the rates increased during downturns and decreased during upturns (perhaps even becoming negative rates – a refund against other property tax liabilities)
  - This method would achieve significant redistribution and risk-spreading, while creating few extra distortionary effects or perverse taxpayer timing reactions
  - By making this tax separate from existing property taxes, we might be able to alter the framing effects so that taxpayers understand that the expected rates of these taxes are zero.
  - Taxpayers might even respond with flexible mortgage payment strategies, so that combined property tax and mortgage payments remain constant throughout economic cycles.
    - This strategy would lead to desirable macroeconomic stimulatory effects, and would greatly minimize the harm from volatility, as taxpayers would not need to adjust consumption or abandon projects with fixed costs – they would just pay slightly more in borrowing costs.
    - We might use regulation of mortgage contracts to make this response the default

- Alternatively, or perhaps additionally, similar benefits could be achieved by creating an additional franchise tax – a fee charged on businesses – based on average revenues over a multi-year period, or on some other metric other than current year revenues or profits.
  - Although franchise taxes can be very distortionary to decisions like the choice of business entity and the location of interstate activities, these decisions must be made years in advance. In the short term, a franchise tax based on historical revenues or profits can operate like a head tax that applies to businesses, just as property taxes can for homeowners. As long as the state governments can credibly commit to keeping the expected future rates of these taxes at zero, the taxes should only have minimal distortionary effects – due to their risk premiums.
  - The businesses paying franchise taxes typically have very weak borrowing constraints, and these taxes can be designed so as to spread volatility across the majority of private sector economic activity. Although the incidence of these taxes is uncertain over the long run, over the short run the tax incidence is likely to fall on the owners of
capital, who will thus bear the majority of any volatility allocated to these taxes.

- Ultimately, the optimal strategy for coping with fiscal volatility probably consists of a mixture of the various coping methods
  - Portfolio theory tells us that optimal risk allocation involves making smaller investments in risky assets and larger investments in less risky assets. This mixed strategy accomplishes more risk spreading than only investing in the less risky assets.
    - This rationale also applies in our case to suggest that states should allocate some volatility to the less efficient coping mechanisms – i.e. spending fluctuations – rather than allocating all volatility to tax rate adjustments. Still, tax rates should probably absorb the majority of fiscal volatility.

- This Part has attempted to sketch a general prescriptive theory for allocating state-level fiscal volatility. The analysis has relied on numerous assumptions. There is much we do not know about the effects of volatility. However, in the absence of better information, the analysis in this Part strongly suggests that the majority of fiscal volatility should be dealt with by fluctuating the rates of broad-based taxes. The current policy trend of allocating the majority of volatility to spending programs is almost certainly sub-optimal.

- Of course, the Part’s conclusions resulted from empirical facts about existing state budgets – most notably that state spending currently constitutes only about 5% of GDP. If state spending were much larger, or had generally regressive consequences, this would considerably weaken the case for allocating fiscal volatility to tax rates.

- To summarize, this Part argued that the majority of fiscal volatility might be dealt with by adjusting the rates of broad-based taxes. Specifically, the Part suggested that we might want to create new franchise taxes or property taxes with graduated rates. The rates for these new taxes could then be fluctuated as the economy cycles so that the expected tax rates would be zero – with the rates becoming positive during downturns and thus adding to existing tax liabilities, while becoming negative during upturns and thus becoming a credit against other tax liabilities.
  - This coping strategy should probably not be the only method used to respond to volatility. We probably want to continue using a mix of all of the coping mechanisms. An optimal coping strategy would probably even involve some spending fluctuations.
  - But the current policy trend of making spending fluctuations the primary response to volatility is almost certainly undesirable. State governments should change their mix of coping strategies to increase the use of tax-rate adjustments and decrease the use of expenditure adjustments.