The Illinois Budget Policy
TOOLBOX

Overall Analyses

Interactions among multiple partial budget solutions

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The Illinois Budget Policy Toolbox contains separate analyses of many different partial ways to address the state's structural deficit, either by raising a particular tax or by reducing a particular spending program. It is both natural and necessary to study these possible reforms one at a time. A major problem with such analyses, however, is that the wisdom of any single change of this sort cannot be determined independently of other changes simultaneously implemented.

Each Illinois state tax system interacts with other taxes and spending programs in the state, so the effect of one depends inherently on each other budget reform in Illinois. Good budget policy analysis requires a holistic approach.[1]

This short paper will discuss two major areas in which these interactions are most obvious. In each area, the point will be clarified initially by an over-simplified conceptual example and then by actual examples. The first area involves the distributional effects of tax and budget policy, including not just who writes the check for each tax, but who actually bears the burden. The second area involves the economic inefficiency of tax and budget policy (measured by "excess burden"). The key point here is that the overall excess burden of all taxes together can be quite different from the sum of these measures associated with each tax separately.

The overall distribution of burdens from tax and budget policy

Suppose the state were to introduce a new business income tax deduction for the expense of keeping a yacht for business meetings. Since people who own a yacht for business also probably use it for personal enjoyment, a distributional analysis of this tax break might show that it helps the rich at the expense of lower and middle class families. But suppose the deduction were enacted at the same time as a separate change to the state property tax system imposing an

[1]The definition is both appropriate and instructive: Google defines holistic as "characterized by comprehension of the parts of something as intimately interconnected and explicable only by reference to the whole."

extra 10 percent annual tax on the market or assessed value of all yachts. One study showing that the first change helps the rich would be just as inadequate as a different study showing that the second change hurts the rich. A proper analysis of distributional effects would need to study the two changes together to determine whether the net effect of both changes is regressive or progressive.[2]

For another example, suppose that the state sales tax were changed to apply a uniform 5 percent sales tax to all purchases of food—a regressive change because food constitutes a higher fraction of spending for low-income families than for high-income families. But suppose the income tax were simultaneously changed to allow a full deduction for all food purchases against the 5 percent income tax. That change alone would be progressive, but the combination could have no effect at all. The only relevant question for analysis is not the effect of one change, but the net effect of all changes simultaneously. Moreover, state spending also differentially affects people in different income brackets, so we really need to know the net effects of all taxes and spending simultaneously.

While the previous examples were simplified in order to demonstrate the overall point, the state tax code already incorporates many combinations of tax provisions that offset or reinforce each other, and often the advisability of one reform depends heavily on the other reforms that might accompany it. Consider the pros and cons of a change to state taxes on cigarettes[3] or alcohol.[4] The advisability of such a reform might well depend not just on other state tax changes, but also on the level of federal taxes on cigarettes or alcohol. And because of tax avoidance possibilities, it might further depend on whether neighboring states just raised or lowered their taxes on cigarettes or alcohol. Similarly, the pros and cons of an increase in the state gasoline tax would depend on whether or not the state also decided to enact a carbon tax or cap-and-trade provision that raises the price of gasoline.[5]

Tax provisions also interact with spending provisions. For instance, the state has a lower sales tax rate on medicine than on most goods and services.[6] However, the state budget also includes Medicaid spending to provide medicines to some residents.[7] The distributional effect of one is not independent of the other. For another example, state transportation spending undoubtedly impacts property values, raising the value of any property near a newly chosen subway stop, and reducing the value of any house near a newly chosen super highway. The net distributional effect of that state spending depends intricately on whether property tax assessments adjust rapidly, or at all, to reflect such changes in property market values.

As a consequence, the most relevant distributional analyses are the ones undertaken with an extensive set of data on a large sample of Illinois residents, including their demographic characteristics, all their sources of income, homeownership status, and all of their separate expenditures. Using such data, the analyst can calculate the best estimate of each household's income tax, property tax, sales tax, gasoline tax, alcohol tax, and cigarette tax burdens. Then she could calculate the total of those taxes as a fraction of income for each household, and see whether that fraction rises across the array of all households ranked from poorest to richest.

That analysis would be data-intensive, time-intensive, and expensive. University researchers do not generally have access to all such data, and we usually do not have sufficient resources to undertake such study. No single piece of research is definitive, and the papers in this Toolbox are no exception. Yet, while no study is perfect, perhaps more thorough and holistic analyses can be undertaken by agencies of state government that have access to income tax data and dedicated civil

[2]See Fullerton, Don. (2014). *Competing goals of budget reform.* The Illinois Budget Policy Toolbox. University of Illinois Institute of Government and Public Affairs. Available at http://igpa.uillinois.edu/budget-toolbox/content/competing-goals-budget-reform. As defined there, a proportional tax (or tax change) is one that imposes the same burden-to-income ratio at all levels of income. Thus, even if those with more income pay a higher amount, it is the same fraction of income. A progressive tax is one where that ratio rises with income, and a regressive tax has that ratio falling for those with more income.

[3]See Reif, Julian. (2014). *Increasing the cigarette tax.* The Illinois Budget Policy Toolbox. University of Illinois Institute of Government and Public Affairs. Available at http://igpa.uillinois.edu/budget-toolbox/content/cigarette-tax.

[4]See Reif, Julian and Schneider, John. (2014). *Increasing alcohol and casino taxes.* The Illinois Budget Policy Toolbox. University of Illinois Institute of Government and Public Affairs. Available at http://igpa.uillinois.edu/budget-toolbox/content/alcohol-and-casino-taxes.

[5]See Fullerton, Don and Karney, Daniel. (2014). A *permit trading program for carbon dioxide.* The Illinois Budget Policy Toolbox. University of Illinois Institute of Government and Public Affairs. Available at http://igpa.uillinois.edu/budget-toolbox/content/cap-and-trade.

[6]Prescription medicines in Illinois are taxed at 1.00 percent while general merchandise is taxed at 6.25 percent (see: http://tax.illinois.gov/individuals/faqs-use-tax.htm).

[7]The Illinois Medicaid program covers all prescription drugs and some over-the-counter products (see: http://www.hfs.illinois.gov/pharmacy/).

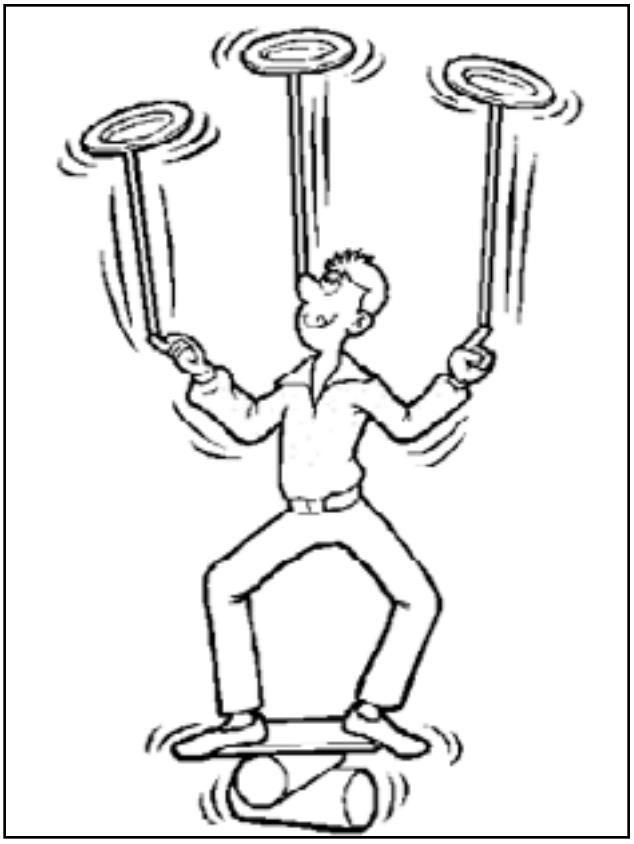
servants to study the problem.[8]

The overall efficiency of tax and budget policy

This Toolbox also explains how taxes impose "excess burden." That is, total taxpayer burdens are larger than the state's revenue.[9] A simple example is an excise tax on any particular commodity (e.g. gasoline). In response to such a tax, some individuals buy less of the good. They pay the tax on the amounts still purchased, but they also bear the cost of the inconvenience of changing their behavior to avoid buying the amount on which the state is not collecting revenue.

Analogously, the income tax also has excess burden. Some individuals react to the income tax by earning less income. They pay tax on the income still earned, but they also bear a burden from rearranging their affairs, living on less income, and generally from changing behavior. In fact, the key to excess burden is the presumption that people without any interference from government can best decide their own preferred mix of work and leisure, so any tax that makes them change decisions must lead to behavior that does not reflect their own preferred use of time.

Each separate paper in this Toolbox is intended to analyze one tax at a time, but again the interactions of different tax systems makes the combination different from the sum of the parts. What is the excess burden of the income tax? In general, it depends on the responsiveness of work effort to the tax rate (or what economists call the elasticity of labor supply with respect to the net-of-tax wage). That elasticity has been measured many times in the economics literature using different data covering different groups. The general finding is that the household's primary worker has inelastic labor supply responses, while a stay-at-home spouse might have more options about whether to work or not, and therefore has more elastic responses. Semi-retired individuals may also have more flexibility about how much to work. In



any case, a thorough study could use those estimated elasticities and apply the Illinois income tax rate to a large sample of Illinois taxpayers, calculate the ways in which each household changes behavior, and add up the excess burden across all Illinois households.

That procedure seems very thorough, but it would get the wrong answer if it looked only at the income tax, because other taxes like state sales and excise taxes must be paid out of the income that remains after income tax. Consider a family that spends all of their net income and saves nothing. If it faced only a 5 percent income tax, then each $10,000 of earnings can be used to buy $9,500 of stuff. If it faced no income tax but only a 5 percent sales tax, then again each dollar is worth only 95 cents.[10] If it faced both, then the "effective" tax rate is 10 percent, because earning a dollar can buy only 90 cents of commodities. It is the total tax that matters when deciding whether to work another hour or just use your own time at home to relax, paint the house, grow your own vegetables, or save on daycare by keeping the kids at home. Those activities are subject to neither income nor sales tax.

[8]The Illinois Department of Revenue publishes summary statistic about all major tax programs including the income tax, sales tax, and local property taxes (see http://tax.illinois.gov/AboutIdor/TaxStats/). They report individual income tax statistics by family adjusted gross income and net income ranges. The Governor's Office of Management and Budget publishes budget reports that break out spending by general categories such as education and healthcare (see https://www2.illinois.gov/gov/budget/Pages/PolicyReports.aspx). No study shows overall effects on each income group for all state tax and spending programs.

[9]See Fullerton, Don. (2014). *Competing goals of budget reform.* The Illinois Budget Policy Toolbox. University of Illinois Institute of Government and Public Affairs. Available at http://igpa.uillinois.edu/budget-toolbox/content/competing-goals-budget-reform.

[10]Strictly speaking, the sales tax is 5 percent of the net purchase price. Thus, on $10,000 of income, the household could buy $9,524 of commodities, which costs $9,524 × 1.05 = $10,000.

The overall analysis of tax and budget policy

Policymakers face tradeoffs, not just between the distributional effects of one tax reform compared to another, or between the excess burden associated with one tax reform compared to another, but also among all such effects simultaneously. The best approach to this balancing act is holistic. On the one hand, a cigarette tax does add to the overall wedge between the market wage and the net amount of stuff that can be purchased, so it does add to the total excess burden of the income tax and all sales taxes. But on the other hand, cigarette smoke has negative externalities, so raising the cost to smokers might improve overall economic efficiency. At the same time, expenditures on cigarettes constitute a relatively high fraction of spending for those with low income, so a cigarette tax is regressive. Should a cigarette tax be favored for its positive effect on health and productivity, or avoided for its negative effect on tax burdens of families with low income?

The holistic approach to tax and spending policy makes clear that those are not the only two choices. The best combination "package" of reforms might be one that includes (1) a tax on cigarettes, (2) an increase in the personal exemption under the income tax to help protect those with low incomes, and (3) state health spending to help victims of second-hand smoke.[11]

While that example involves a particular commodity, the point is much more general and over-arching. Policy makers currently discuss whether to retain the "temporary" income tax rate increase to 5 percent or to let the rate fall back down to 3.75 percent. Again, those are not the only two choices. A "middle" rate over 4 percent could be combined with some particular spending cuts, in order to raise enough revenue to protect low-income families from harm by an increase in the personal exemption.[12] The best way to solve the structural budget deficit problem in Illinois is through some artful combination of reforms that raise revenue with the least added excess burden while protecting low-income families and increasing worker health and productivity.•

Further Reading

Cordes, Joseph J., Ebel, Robert D. and Gravelle, Jane G. (Eds.) (2005). *The encyclopedia of taxation & tax policy* (2nd ed.). Washington, DC: The Urban Institute Press.

Includes 518 pages with 200 different 3-page entries by 150 authors. Chapters include: "Budget Policy, State and Local," "Excess Burden," "Fairness in Taxation," "Horizontal Equity," "Tax Evasion," "Tax Transparency," and "Vertical Equity". http://www.urban.org/books/TTP/index.cfm

U.S. Congressional Budget Office. (1997). *The economic effects of comprehensive tax reform.* Washington DC: United States Government Printing Office.

U.S. Office of Management and Budget. *Cutting waste, reducing the deficit, and asking all to pay their fair share.* In The Budget for Fiscal Year 2013, pages 23-46. Available at http://www.whitehouse.gov/sites/default/files/omb/budget/fy2013/assets/cutting.pdf

Additional valuable references are included in the Illinois Budget Policy Toolbox, available at: http://igpa.uillinois.edu/budget-toolbox

[11]Cigarette taxes are discussed in Reif, Julian. (2014). *Increasing the cigarette tax.* The Illinois Budget Policy Toolbox. University of Illinois Institute of Government and Public Affairs. Available at http://igpa.uillinois.edu/budget-toolbox/content/cigarette-tax. The personal exemption is discussed in McGuire, Therese. (2014). *Personal income tax options.* The Illinois Budget Policy Toolbox. University of Illinois Institute of Government and Public Affairs. Available at http://igpa.uillinois.edu/budget-toolbox/content/personal-income-tax. State health spending is discussed in LoSasso, Anthony. (2014). *Health care spending.* The Illinois Budget Policy Toolbox. University of Illinois Institute of Government and Public Affairs. Available at http://igpa.uillinois.edu/budget-toolbox/content/options-health-care-policy.

[12]See McGuire, Therese. (2014). *Personal income tax options.* The Illinois Budget Policy Toolbox. University of Illinois Institute of Government and Public Affairs. Available at http://igpa.uillinois.edu/budget-toolbox/content/personal-income-tax.

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