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Federal Tax Law:
The Costs of Cliff Effects in the Internal Revenue Code

Manoj Viswanathan¹

Cliff effects in the Internal Revenue Code trigger a sudden increase of tax liability when some attribute of a taxpayer—typically income—exceeds a particular threshold value. As a result, two taxpayers in nearly identical economic situations can face considerably different tax liabilities depending on which side of the triggering criterion they fall. The magnitude of the equity and efficiency costs associated with cliff effects is significant: Cliff effects are attached to tax provisions amounting to hundreds of billions of dollars, the majority of which targets low- and moderate-income taxpayers. These income-based cliff effects are problematic on both equity and efficiency grounds because they improperly penalize taxpayers and disincentivize the economic empowerment these tax provisions are often intended to promote. These problematic tax provisions should be replaced by statutes that ensure that no taxpayer is made worse off post-tax simply by virtue of earning more income pre-tax.

Why Do Cliff Effects Exist?

Cliff effects in the Internal Revenue Code represent a subset of the line drawing that occurs with respect to all governmental regulation. In order to measure, assess, proscribe, or tax behavior, that behavior must first be identified. This line drawing in the Internal Revenue Code causes taxpayers close to but on opposite sides of some triggering criterion to incur varying amounts of tax liability. When the difference in tax liability is significant, the result is known as a cliff effect.

These cliff effects exist for a variety of reasons. Some tax provisions are intended to benefit certain favored groups, such as the poor, that must be defined. Cliff effects can also be simple mechanisms by which cost-saving measures can be implemented.

1. Summarized and excerpted from Manoj Viswanathan, *The Hidden Costs of Cliff Effects in the Internal Revenue Code*, 164 U. PA. L. REV. 931 (2016).

Computationally, the cost of a benefit ending immediately at a specific income is easier to calculate than a benefit that varies as a function of income level. Lastly, cliff effects also have political appeal, in that the benefitting (or punished) group of taxpayers is more easily identified if the triggering criterion is some specific number. For instance, Senator Chuck Grassley's description of the deduction for qualified tuition and related expenses as "a beneficial tax incentive for the middle class" was bolstered by fact that the deduction was eliminated entirely for taxpayers earning more, even by one dollar, than \$80,000.

Identifying Income-Based Cliff Effects

An income-based cliff effect imposes, at some point, a marginal tax rate of greater than 100%. For example, in 2017 the Earned Income Tax Credit ("EITC") is eliminated completely for taxpayers earning more than \$3,450 in investment income. If a taxpayer with two children would otherwise qualify for an EITC of \$5,000, earning \$3,451 in investment income would subject this taxpayer to a marginal tax rate of 500,000%.

Although a cliff effect has implications for income earned beyond the effect's threshold, a marginal tax rate greater than 100% exists only at the cliff effect threshold. Assuming the taxpayer in the above example is in the 15% marginal tax bracket, her next dollar of investment income after passing the cliff effect would increase her tax liability by only fifteen cents.

Yet the force of the cliff effect lingers over a much larger range of income. Assuming the income of the taxpayer in the above example remains in the 15% bracket, she would need to earn approximately \$5,880 more before she returned to the economic position she was in prior to the cliff effect. The magnitude of the impact a cliff effect has on an individual taxpayer, then, must be analyzed not just by using the marginal tax rate for the first dollar earned beyond the cliff effect but also by examining how much additional income the taxpayer would need to earn to offset the additional tax liability imposed on the taxpayer as a result of the cliff effect.

Assessing the Burden of Income-Based Cliff Effects

Cliff effects in the Internal Revenue Code based on a taxpayer's income violate principles of equity and efficiency. These tax provisions implicitly define taxpayers as members either of a lower-income and benefit-receiving group or of a higher-income and nonbenefit-receiving group. In theory, this demarcation exists to accurately advance the goals of the tax provision by limiting the benefitting recipients to a defined group based on income.

But this categorization of taxpayers by pre-tax income directly conflicts with the rationale behind the tax provision, resulting in a flawed implementation of the provision. Separating taxpayers into these groups pre-tax should result in the low-income and benefit-receiving group being better off. But if a member of the group receiving benefits is in a better economic position than a member of the group not receiving benefits, the tax provision will undermine the objectives of properly classifying taxpayers. As a result of the cliff effect's operation and the imposition of a marginal tax rate greater than 100%, taxpayers barely exceeding the income limit of the cliff effect will be in a worse economic situation than taxpayers falling just short of the cliff-effect threshold. The use of cliff effects to classify taxpayers as eligible or ineligible by reason of income, therefore, is unfair and inefficient for some number of taxpayers just beyond the cliff effect.

For every violation of equity, a theoretical minimum dollar amount exists that can be transferred to the suffering taxpayer to cure the equity violation. This "equity cost" represents the cost of modifying a tax provision that is structurally unsound on equity grounds to a provision that is not. (The term "equity cost," previously unrecognized in the literature, is an aggregate microeconomic metric that represents the net economic loss suffered by all taxpayers who are in a worse economic situation post-tax than they would have been had they not exceeded the cliff-effect threshold.) If the cliff effect creating the equity cost is an income-based cliff effect attached to a means-tested tax provision, the equity cost represents a flaw in the implementation of the tax provision. If the tax provision is intended to benefit a group of taxpayers who are means-tested on a pre-tax basis by increasing their economic position, the tax provision should not make these beneficiaries better off than a group of taxpayers ineligible for the benefit by virtue of earning more. Either the subsidy

provided by the tax provision is being awarded to taxpayers who do not need it, or the subsidy is not being provided to those taxpayers who do. Estimating this “equity cost” is necessary to assess whether any advantages from the cliff effect with respect to definitional clarity and simplicity outweigh any costs imposed on the taxpaying public from the behavioral changes induced and equity violations created.

The aggregate equity cost of the cliff effects present in the health-premium-credit provisions of the Affordable Care Act is approximately \$8.5 billion between 2014 and 2024. Although low- to moderate-income taxpayers are in a better economic position overall because of the premium credit, the significant equity cost represents a flaw in the credit’s implementation. The premium credit is intended to enable low- to moderate-income taxpayers to affordably procure health insurance for themselves and their families. But the premium credit, at two levels of income eligibility, makes certain taxpayers worse off post-tax than these taxpayers would have been had they earned less income pre-tax. Such a result undermines the normative justifications for the premium credit’s existence.

Proposals for Change

To assess the validity of a cliff effect, the goals of the tax provision to which the cliff effect is attached must be determined. The benefits provided by the cliff effect should be compared to alternative scenarios in which the cliff effect is replaced by a benefit-limiting substitute that does not impose a marginal tax rate greater than 100%. Of critical importance is determining the extent to which the cliff effect advances the stated goal of the tax provision and at what cost.

Any cliff effect based on income imposing costs greater than any social utility it creates can be eliminated by phasing out the benefit over a span of income starting either before or at the cliff-effect threshold rather than eliminating the benefit entirely. However, using a phase-out results in either a greater total cost of the benefit or a reduction in benefits to some recipients. Although taxpayers will not be subjected to a cliff effect, some taxpayers will be worse off than they were with the cliff effect in place. Cliff effects based on income imposing costs greater than the social utility they create can be replaced with phase-outs imposing marginal tax rates of less than

100%. Where the phase-out should begin and end depends on the social utility of the tax provision in question at the cliff-effect threshold, and on whether or not the modification should be revenue neutral.

Any solution to mitigate the harsh consequences of cliff effects must not harm taxpayers any more than the cliff effect it is replacing. Taxpayers can be protected from suffering the equity cost of the cliff effect by awarding each affected taxpayer a credit to bring her post-tax economic position to the maximum level it would have been had she earned less income. Consider, for example, a taxpayer who loses a \$1,000 tax benefit once her income reaches \$20,000. If this taxpayer's income is \$20,400 and the income beyond \$20,000 is taxed at 25%, she is economically worse off by \$700 by earning the extra \$400 beyond the \$20,000 cliff effect. A \$700 credit would compensate the taxpayer for the burden of the cliff effect.

Another way to ensure taxpayers are not economically worse off post-tax from earning additional income is to ensure that taxpayers will not endure marginal tax rates greater than some fixed percentage. Even if every cliff effect were converted into a phase-out, taxpayers may still experience high marginal tax rates for income earned beyond the eliminated cliff effect. The phase-out range for one tax expenditure could overlap with the phase-out range of another. This can result in a marginal tax rate greater than 100% even though the phase-out percentages of each individual tax provision are less than 100%. A solution to this issue is to limit the maximum marginal tax rate that a taxpayer must face. The phase-out rates for various provisions would, in effect, not be constant but would vary according to an individual's particular marginal tax rate profile. If, for example, this maximum marginal tax rate were 40%, a taxpayer would be assured that any additional income earned would increase her net economic position by at least 60% of the additional income earned.

Conclusion

When triggered by a taxpayer's income, cliff effects necessarily leave some taxpayers in a worse economic position than if they had earned less. When the costs associated with cliff effects outweigh the gains obtained from the simplicity of bright-line rules, tax provisions should be rewritten to eliminate the cliff effect. Of special note is a

guarantee that no taxpayer is made worse off post-tax simply by virtue of earning more pre-tax income.

This analysis focuses on cliff effects in the Internal Revenue Code but has implications on cliff effects found in state and local direct-transfer programs as well. Similar to cliff effects in the Internal Revenue Code, the simplicity gains obtained from cliff effects associated with state and local tax regimes and direct-transfer programs should be compared to the burdens imposed on taxpayers whose benefits are suddenly terminated.

Cliff effects, even if designed to precisely define terms requiring clarity and promoting some desired behavior, should be used cautiously. Their use often undermines the intent of the statutes to which they are attached. The proposals set forth herein to assess, measure, and remedy existing and proposed cliff effects are a step towards improving the equity and efficiency of benefits provided in the Internal Revenue Code, state and local tax regimes, and direct-transfer programs.