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Retheorizing Progressive Taxation

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INTRODUCTION

Progressivity assessments of tax provisions play an undeniably central role in both the detailed analytics of policymaking and the rhetorical arguments commonly used in public discourse.[1] But despite the significance of progressivity as a concept, there are surprisingly inconsistent uses of this seemingly objective term.[2] This lack of uniformity often leads to contradictions. The 2017 Act is described by the Tax Policy Center as having "made the tax code less progressive," whereas the Cato Institute characterizes the act as making "our highly progres-

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[1] See, e.g., Allen R. Sanderson, Progressive Tax System: Fair or Foul?, Chicago Tribune (Sept. 28, 2018) ("To some pols, 'fair taxes' and 'progressive taxes' are used interchangeably."), https://www.chicagotribune.com/opinion/commentary/ct-perspec-fair-progressive-taxes-rich-poor-politicians-0928-story.html; "Progressive" Taxation Is Bad for Everyone. The Tories Must Not Fall into That Trap, The Telegraph (Mar. 19, 2017) ("This is why the dogma of 'progressive' taxation must be challenged. Allowing someone to keep more of their income gives them an incentive to earn more; higher taxes do the opposite."), https://www.telegraph.co.uk/opinion/2017/03/19/progressive-taxation-bad-everyone-tories-must-not-fall-trap; Kerry Kasper, Analysis: Nearly $4 Million Has Been Spent on Progressive Tax Ads. Here's How the Money's Shaping the Debate, Center for Illinois Politics (May 5, 2019) ("Think Big Illinois—a group partially funded by Gov. J.B. Pritzker and managed by members of his political operation—is pushing a progressive tax, calling it 'fair and necessary,' and a practice common in a majority of other states."), https://www.centerforilpolitics.org/articles/analysis-nearly-4-million-has-been-spent-on-progressive-tax-ads-heres-how-the-moneys-shaping-the-debate.

[2] See, e.g., Donna M. Byrne, Progressive Taxation Revisited, 37 Ariz. L. Rev. 739, 742 (1995) ("In very general terms, progressivity means that tax rates increase as one moves up on some scale."); Joseph D. Henchman & Christopher L. Stephens, Playing Fair: Distribution, Economic Growth, and Fairness in Federal and State Tax Debates, 51 Harv. J. on Legis. 89, 91-93 (2014) (providing three definitions of progressivity: increasing tax payments, increasing tax rates, and increasing average tax rates); Deborah M. Weiss, Can Capital Tax Policy Be Fair? Stimulating Savings Through Differentiated Tax Rates, 78 Cornell L. Rev. 206, 214 (1993) ("A tax system is progressive if marginal rates rise with income."); David Kamin, What Is a Progressive Tax Change?: Unmasking Hidden Values in Distributional Debates, 83 N.Y.U. L. Rev. 241, 258 (2008) ("[A] progressive [tax] change is one in which the higher-income class is made worse off, while the lower-income class is made better off."); David Gamage, On the Future of Tax Salience Scholarship: Operative Mechanisms and Limiting Factors, 41 Fla. St. U. L. Rev. 173, 185 (2013) (defining a "progressive tax" as one where higher-income taxpayers pay a greater percentage of their incomes in taxation than do lower-income taxpayers).

sive tax code a bit more progressive."[3] Progressivity assessments of the tax cuts promulgated by George W. Bush were similarly incongruous, with the Center on Budget and Policy Priorities decrying their regressivity,[4] and the Tax Foundation suggesting that the tax cuts might indeed be progressive.[5] These divergent conclusions result from the implicit definitional and normative assumptions associated with the terms "progressive" and "regressive." When these assumptions are nonobvious, obfuscation results. This obfuscation, combined with the calculational imprecision common in progressivity assessments, leaves an alarming amount of latitude for labeling provisions as either "progressive" or "regressive," depending on the conclusion desired.

This Article adds analytic rigor to the conversations surrounding tax progressivity by highlighting common inconsistencies and calculational shortcomings associated with its assessment. Although all common uses of the term "progressive taxation" imply taxation in which taxpayers "having more" bear a greater tax burden, the discrepancies between progressivity assessments flow from failures to clarify and accurately calculate what it means to either "have more" or "bear a greater tax burden." Pinpointing how progressivity assessments diverge makes identifying the shortcomings of existing progressivity characterizations simpler, allowing for more precise tax policy discussions.

Any assessment of tax progressivity must state not only a definition of tax burden (e.g., as total tax liability or percentage of some tax burden base) but also a progressivity base (the attribute along which the distribution of the tax burden is assessed). The statutory base (the base used for determining tax liability, commonly referred to as the taxable base) need not be the same as the progressivity base—a property tax provision with a statutory base of property value might be progressive with respect to property value but regressive with respect to income—but failure to state the progressivity base used (a common omission in progressivity assessments) renders the subsequent analysis

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[3] Chris Edwards, Republican Tax Law: Across the Board Cuts, Cato Institute (Apr. 12, 2019), https://www.cato.org/blog/republican-tax-law-across-board-cuts; Eric Toder, Despite the Tax Cuts and Jobs Act, the Federal Tax System Is Becoming More Progressive Over Time, Tax Policy Center (Sept. 18, 2018), https://www.taxpolicycenter.org/taxvox/despite-tax-cuts-and-jobs-act-federal-tax-system-becoming-more-progressive-over-time.

[4] Chye-Ching Huang & Nathaniel Frentz, Bush Tax Cuts Have Provided Extremely Large Benefits to Wealthiest Americans Over Last Nine Years, Ctr. on Budget & Pol'y Priorities (Jul. 30, 2012), https://www.cbpp.org/sites/default/files/atoms/files/7-30-12tax.pdf. Whatever the chosen definition of progressivity, regressivity means the opposite.

[5] Gerald Prante, Have the Bush Tax Cuts Made the Federal Tax Code More or Less Progressive?, Tax Found. (Mar. 13, 2008) ("[T]he Bush tax cuts could actually increase lifetime progressivity."), https://taxfoundation.org/have-bush-tax-cuts-made-federal-tax-code-more-or-less-progressive.

meaningless.[6] Explicitly identifying these choices clarifies the normative assumptions inherent in progressivity assessments and helps reconcile contradictory assessments of the same tax provision.

Accurate progressivity assessments also require rethinking how tax burdens are determined. Current progressivity assessments are frequently made using only the tax dollars collected from each taxpayer. But using just the tax dollars collected to determine the tax burden imposed is inaccurate in several ways. First, focusing solely on the tax dollars remitted omits the microeconomic effects of taxation, including the economic incidence of the tax provision and the inefficiency costs associated with distortions in taxpayer behavior. Second, macroeconomic costs and benefits are seldom incorporated into progressivity assessments despite their effects on taxpayer welfare. Third, where tax dollars are spent is generally not included in progressivity analyses even though there is no functional distinction between tax provisions and spending provisions. This Article argues that failing to incorporate these additional burdens (and benefits) undermines the validity of many current progressivity assessments. Improving the analytic rigor of progressivity assessments will more accurately respond to the normative tax policy questions these assessments are intended to answer.

This Article concedes that inquiring about a tax provision's progressivity is, in many instances, to ask the wrong question. Reducing a complex normative assessment to a single term can obscure other relevant details, and the current ease with which the term can be manipulated to suit desired conclusions undermines its usefulness. But given the likelihood that pronouncements about tax progressivity will continue, improving their definitional and calculational components remains useful.

If progressivity assessments endure, their computational difficulties could justify certain modes of ex ante tax policy design such that accurately determining a tax provision's burdens and benefits is simpler. This Article makes the novel observation that increasingly exact assessments of progressivity could be made using earmarked tax assessments—taxes allocated to specific purposes rather than the general tax revenue fund. By narrowing the beneficiaries of the associated spending and the pool of tax revenue from which the spending originates, more accurate progressivity calculations can be performed.

This Article is intentionally silent on which of the many definitions of progressivity is normatively superior and on the appropriate degree of progressivity (however defined) in the tax code. That topic has

[6] To the extent that the tax burden base differs from the statutory base, the tax burden base and the progressivity base will generally be the same. See also Part II.A.

been hotly debated by many scholars, with no obvious winner.[7] Instead of suggesting which of the many definitions of progressivity is best or designing an optimal tax, this Article aims to more accurately operationalize whichever progressivity definitions others deem worthy of use.[8]

This Article proceeds in four parts. Part I provides a brief overview of the relevance of progressive taxation to tax policy debates, confirming its historic importance in enacting and debating tax policy. Part II unpacks the definitional ambiguities of the term "progressivity" and details the range of its possible meanings. Part III describes the calculational ambiguities associated with measuring a tax provision's burden on taxpayers and how those incomplete assessments often lead to misleading progressivity determinations. Part IV discusses possible improvements to how progressivity is discussed and assessed.

I. Why Progressivity Matters

Progressive taxation, the notion that those with more should bear a greater tax burden, became formalized tax policy in the eighteenth century, when the First Direct Tax of 1798 was enacted.[9] In contrast with the fixed-dollar poll taxes previously in force, this bill levied property tax rates that increased with home value, starting at rates of 0.2% and reaching a maximum of 1%.[10] The Jefferson administration abolished all federal taxation in 1802,[11] including the First Direct Tax of 1798. But the Revenue Act of 1862 levied the country's first *income* tax by exempting the first $600 of income and imposing escalating rates as income increased.[12] These rates were increased by the Reve-

[7] See, e.g., Thomas D. Griffith, Theories of Personal Deductions in the Income Tax, 40 Hastings L.J. 343, 356 (1989) ("Perhaps the best way of measuring the progressivity of a tax provision is to examine its impact on the after-tax distribution of income."); Martin J. McMahon, Jr., Individual Tax Reform for Fairness and Simplicity: Let Economic Growth Fend for Itself, 50 Wash. & Lee L. Rev. 459, 466 (1993) ("[T]axes paid as a percentage of taxable income may be the best measure of 'effective tax rates' in determining the proper level of progressivity.").

[8] This additional accuracy could, of course, result in a rethinking of which progressivity measure is normatively favored, but that is not this Article's explicit goal.

[9] Act of July 14, 1798, ch. 75, 1 Stat. 597 (repealed 1802).

[10] Id.; see also Lee Soltow, America's First Progressive Tax, 30 Nat'l Tax J. 53 (1977) (noting that First Direct Tax of 1798 created nine rate brackets).

[11] See Soltow, note 10, at 57.

[12] Daniel Milstein, 'Til Death Do Us File Joint Income Tax Returns (Unless We're Gay), 9 Cardozo Pub. L. Pol'y & Ethics J. 451, 453-54 (2011) (noting that the tax exempted the first $600 of income, imposed a 3% tax on income between $600 to $10,000, and imposed a 5% tax on all income above $10,000).

nue Act of 1864,[13] but the income tax was subsequently allowed to expire in 1871.[14] Both the income tax and graduated rates returned for good in 1913, when the permanent U.S. income tax was enacted.[15]

The tax policy justifications for progressivity's firm place in U.S. tax policy have developed over time, with three distinct (and roughly chronological) theories arising in turn: ability to pay, redistribution, and optimal tax theory.

A. Ability to Pay

Ability to pay was an important early rationale for collecting greater amounts of tax from taxpayers with greater amounts of resources.[16] If taxpayers obtain decreasing utility from each additional increment of resources, taxpayers with more resources should suffer less if paying taxes equal (in dollar terms) to those paid by taxpayers with fewer resources. Because imposing an equal sacrifice on all taxpayers was a normative goal of early tax policy, ability to pay concerns animated much discussion of early tax policy's need for progressivity.[17]

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[13] Revenue Act of 1864, ch. 173, 13 Stat. 223; Sheldon D. Pollack, The First National Income Tax, 1861-1872, 67 Tax Law. 311, 330 (2014) (noting that a tax of 5% was imposed on income above $600, 7.5% on income over $5,000, and 10% on income over $10,000).

[14] Pollack, note 13, at 330.

[15] Revenue Act of 1913, ch. 16, § II.A.1-2, 38 Stat. 114, at 166 (providing graduated income tax rates). Since then, both average and marginal income tax rates have always increased with taxable income.

[16] See Marjorie E. Kornhauser, The Rhetoric of the Anti-Progressive Income Tax Movement: A Typical Male Reaction, 86 Mich. L. Rev. 465, 465 n.3 (1987) ("Although some advocates [of the original income tax] favored progressivity on the basis of its redistributive powers, most favored it on the equitable grounds that it based taxation on a citizen's ability to pay.").

[17] See Jeffrey A. Schoenblum, Tax Fairness or Unfairness? A Consideration of the Philosophical Bases for Unequal Taxation of Individuals, 12 Am. J. Tax Pol'y 221, 237 (1995) (describing how early philosophers considered progressive taxation vis-à-vis declining utility of income and equal sacrifice); Edwin R.A. Seligman, Progressive Taxation in Theory and Practice, 9 Am. Econ. Ass'n Q. 1, 216–18 (1908) (discussing tax implications of equal sacrifice and declining marginal utility of income); Nancy C. Staudt, The Hidden Costs of the Progressivity Debate, 50 Vand. L. Rev. 919, 941 (1997) ("[P]rominent tax and economic theorists at the turn of the twentieth century persuasively argued that to ensure equality of sacrifice, Congress must adopt progressive marginal tax rates."). If all taxpayers benefit equally from the tax revenue collected, imposing higher taxes on taxpayers with greater abilities to pay higher amounts is consistent with imparting an equal sacrifice on all contributing taxpayers. This rationale is even more persuasive if the tax revenue is spent on expenditures tending to benefit taxpayers with greater ability to pay (say, to fund schools predominately attended by the wealthy). Kate Strickland, The School Finance Reform Movement, A History and Prognosis: Will Massachusetts Join the Third Wave of Reform?, 32 B.C. L. Rev. 1105, 1120 (1991) ("[B]ecause of municipal overburden in cities, unequal state aid, and the use of local property taxes to fund schools, property-rich suburbs could buy significantly better schools than could city school districts.").

But even if taxpayers with greater abilities to pay should indeed pay more in taxes to achieve equality of sacrifice, the ability-to-pay criterion provides little assistance in determining how *much* more these better-resourced taxpayers should pay. A flat tax (i.e., a tax of a fixed percentage) would collect greater amounts from taxpayers having more, as would even a tax that levied lower marginal rates as the taxable base increased.[18] But progressivity, as the term is often used, implies more than simply collecting more dollars from better-resourced taxpayers—progressivity often implies collecting proportionately more. The traditional conception of progressive income taxes, for instance, implies that taxpayers with greater incomes not only pay more in absolute dollars of income tax, but that they pay increasingly higher rates on their increasing incomes.[19] If equality of sacrifice is the goal, levying increasing rates (as opposed to increasing absolute amounts) implies that a taxpayer's ability to pay increases more than proportionately as taxpayer resources increase, and that taxpayers' marginal utility of income declines as income increases.[20] The ability-to-pay defense of progressive taxation (with "progressive taxation" implying escalating rates) thus justifies progressive rates since they, in conjunction with declining marginal utility of income, can approximate equal sacrifice among taxpayers. Ability to pay, however, does not directly consider the extent to which tax laws should effectuate redistribution.

B. Redistribution

The sufficiency of ability to pay to justify progressive taxation was questioned in a seminal article by Walter Blum and Harry Kalven in 1952.[21] The ability to pay criterion, by assuming taxpayers are indistinguishable by all metrics other than income, allows no room for divergence among individual taxpayers. A nominally richer taxpayer might use her funds for a critical expenditure, e.g., whereas a nominally

[18] If, say, all income below $1 million was taxed at 10%, and the portion of income above $1 million was taxed at only 5%, taxpayers with greater than $1 million of income would still be paying more in taxes (measured by total dollars, not tax rate) relative to taxpayers with less than $1 million of income.

[19] Progressive tax rates can be implemented without a formal progressive rate structure. An income tax with flat rates, for example, results in progressive rates if some amount of income earned is exempt from tax. See, e.g., Henry Ordower, The Culture of Tax Avoidance, 55 St. Louis U. L.J. 47, 128 n.443 (2010) ("The flat rate income tax proposals recommend broadening the base and lowering the rate, but all include a zero rate for some taxpayers.").

[20] Although "resources" often refers to income, the label of progressivity is applied to many bases other than income. See Part II.

[21] Walter J. Blum & Harry Kalven, Jr., The Uneasy Case for Progressive Taxation, 19 U. Chi. L. Rev. 417 (1952).

poorer taxpayer might not need even her limited income.[22] Additionally, ability to pay provides no limit to the confiscatory nature of progressive taxation. In other words, using ability to pay as a justification for progressive rates provides no theoretical limit on how progressive a tax could be.[23]

Rather than relying solely on ability to pay, Blum and Kalven convincingly argued that progressivity's justifications could only be grounded by a need to combat inequality via redistribution.[24] As described by Henry Simons, "progression in taxation must be rested on the case against inequality—on the ethical or aesthetic judgment that the prevailing distribution of wealth and income reveals a degree (and/or kind) of inequality which is distinctly evil or unlovely."[25] This says nothing, however, on the degree to which inequality should be redressed.[26] Optimal tax theory, discussed below, attempted to harmonize taxation's effects on behavior with its redistributive aims.

C. Optimal Tax Theory

Rather than focusing solely on ability to pay or redistribution, optimal tax theory attempts to find the ideal combination of tax and transfer that maximizes public welfare.[27] Since tax rates affect behavior, including economic productivity, the task is then to provide for an equitable allocation of resources in the most efficient, welfare-maximizing manner.[28] In other words, the goal of optimal tax theory is to create the largest pie (of public welfare) while still fairly allocating its slices through normative constraints.

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[22] See, e.g. Theodore P. Seto & Sande L. Buhai, Tax and Disability: Ability to Pay and the Taxation of Difference, 154 U. Pa. L. Rev. 1053, 1073 (2006) ("[A] quadriplegic taxpayer who earns $50,000 but must spend $20,000 for a full-time assistant to help her go to the bathroom, wash, dress, and eat is treated as having equal ability to pay taxes as a 'normal' taxpayer who earns the same amount but can choose to spend that same $20,000 on sky-diving, cello lessons, or long-term investments.").

[23] A marginal tax rate of 100%, for example, could be justified by those richer taxpayers having greater ability to pay.

[24] Blum & Kalven, note 21, at 520. ("The case [for progressive taxation] has stronger appeal when progressive taxation is viewed as a means of reducing economic inequalities.").

[25] Henry C. Simons, Personal Income Taxation: The Definition of Income as a Problem of Fiscal Policy 18-19 (1938).

[26] The extent to which progressive taxation has mitigated inequality is subject to debate. See, e.g., Edward J. McCaffery, Taxing Wealth Seriously, 70 Tax L. Rev. 305, 355 (2017) (stating that Obama administration progressive income tax policies did little to combat inequality).

[27] Reuven S. Avi-Yonah, Why Tax the Rich? Efficiency, Equity, and Progressive Taxation, 111 Yale L.J. 1391, 1400 (2002).

[28] Linda Sugin, A Philosophical Objection to the Optimal Tax Model, 64 Tax L. Rev. 229, 229 (2011).

This maximization of welfare can be subject to any number of these normative constraints, such as mandated spending for public schools, public defense of the indigent, emergency medical care, and so on. The constraints selected, along with empirical data on behavioral responses to these constraints, can dramatically affect the determination of what tax structure is best. Thus, scholarly theories on what is "optimal" have taken many forms. The original optimal tax theory assessment favored declining marginal rates combined with an individual demogrant.[29] Subsequent models called for marginal tax rates as high as 76%.[30] Others concluded that progressive rates on bases other than income are ideal.[31] Thus, despite there being no ex ante requirement (other than normative priors) for optimal tax theory to feature progressivity, optimal tax theorists have still concluded that progressivity could indeed feature prominently in an optimal tax system.

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Although this Article provides a generalized definition of "progressive taxation" that encompasses all common uses of the term, the specific applications of that definition vary.[32] Indeed, an argument of this Article is that the failure to adequately operationalize the specific definition chosen often undermines the desire to impose greater tax burdens on taxpayers having more.[33] This Article does not retread the well-worn path taken by countless other scholars in arguing for or against a specific role progressivity (however defined) could play in formulating sound tax policy. Rather, it demonstrates that despite the ubiquity of the term in political debates and the academic literature, myriad definitions and applications of the term are used, often arriving at contradictory conclusions. The next Part describes the variations in how the term is currently used.

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[29] J.A. Mirrlees, An Exploration in the Theory of Optimum Income Taxation, 38 Rev. Econ. Stud. 175, 175-76 (1971) (calling for a demogrant, a per-person cash allotment, in addition to declining marginal tax rates).

[30] Peter Diamond & Emmanuel Saez, The Case for a Progressive Tax: From Basic Research to Policy Recommendations, 25 J. Econ. Persp. 165, 173 (2011).

[31] Edward J. McCaffery & James R. Hines, Jr., The Last Best Hope for Progressivity in Tax, 83 S. Cal. L. Rev. 1031, 1058 (2010).

[32] Limiting the inquiry to income taxes still results in variations in how progressivity is defined. See James J. Freeland et al., Fundamentals of Federal Income Taxation 929 (19th ed. 2018) (defining progressive income taxation as increasing marginal tax rates as income increases); Michael J. Graetz et al., Federal Income Taxation 24 (8th ed. 2018) (defining progressive income taxation as increasing average rates as income increases); note 2 and accompanying text.

[33] See Part III.

II. Definitional Ambiguities of Progressivity

All commonly accepted uses of the term "progressive taxation" are specific applications of the general desire for taxpayers "having more" to bear a greater tax burden. Although requiring taxpayers who are better off to shoulder a greater tax burden seems straightforward, there is not consistency on what "having more" or "bearing a greater tax burden" actually means.[34] Some of this inconsistency results from differences of opinion in how to define when taxpayers "have more."[35] Additional discrepancies arise from divergent views on how to best define tax burden.[36] The definitional variation of these terms contributes to the lack of harmonization of how the term "progressivity" is used.

Every assessment of tax progressivity requires both calculating the tax burden imposed and determining the distribution of that burden over some stated taxpayer attribute (what I refer to as the "progressivity base").[37] If the tax burden (however defined) increases as the progressivity base increases, the tax could be characterized as progressive. The relevant taxpayer attribute is often, though not exclusively, taxpayer income; that is, taxpayers are often rank ordered by income to determine who "has more" for purposes of many progressivity analyses.[38] But taxes calculated without any explicit reference to taxpayer income are often still labeled as progressive when the progressivity base is, instead of income, some other quantity such as amount consumed, size of estate, or property value.

A. Ambiguities with Tax Burden Definitions

The tax burden imposed on a taxpayer can be measured in many different ways. Consider two taxpayers, *X* and *Y*, with $100 and $500

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[34] Joel B. Slemrod, The Economics of Taxing the Rich, in Does Atlas Shrug? The Economic Consequences of Taxing the Rich 3, 5 (Joel B. Slemrod ed., 2000) ("Some candidates for a measure of affluence are annual income, annual consumption, wealth, lifetime income and lifetime consumption; depending on the issue at hand, different measures may be more or less appropriate.").

[35] See note 46 and accompanying text.

[36] Other inaccuracies of progressivity analyses arise from not taking into account all costs that taxation imposes on taxpayers. See Part III.

[37] This "progressivity base" is a generalized form of what Ari Glogower calls the "comparing" function of a tax base, which rank orders taxpayers by ability to pay. See Ari Glogower, Taxing Inequality, 93 N.Y.U. L. Rev. 1421, 1461-62 (2018) (discussing "comparing" and "calculating" functions of tax bases).

[38] Even progressivity analyses based on taxpayer income are imprecise, given how variously "income" is defined. The Internal Revenue Code contains at least twelve different income definitions, with normative justifications for each definition. See John R. Brooks, The Definitions of Income, 71 Tax L. Rev. 253 (2018) (describing twelve different definitions of "income" used for federal income tax purposes). See also Part II.B.

of income and paying $20 and $60 in income taxes, respectively. Table 1 shows four measures of the tax burden paid by *X* and *Y*.

TABLE 1
TAX BURDEN MEASUREMENTS

	Taxpayer X	*Taxpayer Y*
Pretax income	$100	$500
After-tax income	$80	$440
Taxes paid	$20	$60
Taxes paid as percentage of total tax revenue	25%	75%
Taxes paid as percentage of pretax income	20%	12%
Taxes paid as percentage of after-tax income	25%	13.6%

Measured by both percentage of pretax income paid in taxes and percentage of after-tax income paid in taxes, *Taxpayer X* bears a greater tax burden. Because *X* has less pretax (and less after-tax) income, by these tax burden measures this tax system is regressive with respect to a progressivity base of pretax income (and likewise for a progressivity base of after-tax income). This accords with the most common definition of progressive taxation, which measures tax burden as a *percentage* of some stated base (the tax burden base), generally, but not necessarily, pretax income.[39]

Even though tax burdens can be defined with respect to any given base (or in terms of absolute tax dollars paid) progressivity analyses defining tax burden as a percentage of a tax burden base often use that same base as the progressivity base. If, for instance, tax burden is defined as property taxes paid as a percentage of pretax income, pretax income would also typically be used as the progressivity base.

Although the most common definitions of progressive taxation express tax burden as a percentage of some stated base, this definition is not universal.[40] Differences in how tax burden is defined can result in

[39] See David Gamage & Darien Shanske, Three Essays on Tax Salience: Market Salience and Political Salience, 65 Tax L. Rev. 19, 84 (2011) (describing the standard definition of a progressive tax as "when higher-income taxpayers pay a greater percentage of their incomes in taxation than do lower-income taxpayers"); see also note 6 and accompanying text.

[40] See, e.g., Joseph D. Henchman & Christopher L. Stephens, Playing Fair: Distribution, Economic Growth, and Fairness in Federal and State Tax Debates, 51 Harv. J. on Legis. 89, 91-92 (2014) (providing three definitions of progressivity: increasing tax payments, increasing tax rates, and increasing average tax rates); Toder, note 3 (defining progressivity as "how much the tax system increases the share of after-tax income received by lower-income households and reduces the share received by upper-income households."); Sourushe

different conclusions in assessing a tax provision's progressivity. In terms of absolute tax dollars paid and percentage of total tax revenue paid, for instance, *Taxpayer Y* bears the greater tax burden. By these two measures of tax burden imposed, this income tax system is progressive with respect to pretax income because the taxpayer with the greater pretax income is bearing more of the tax burden, as so defined.

But even definitions measuring tax burden as a percentage of pretax income can vary.[41] If progressivity is defined as levying increasing average tax rates (rather than levying increasing marginal rates) as income increases, marginal rates could *decrease* and still be deemed "progressive." Consider a tax system in which the first $100 of pretax income is taxed at 5%, the next $100 is taxed at 15%, and all additional income is taxed at 12%. Average tax rates increase as pretax income increases, even though a lower marginal tax rate is imposed on incomes greater than $200.[42]

Implicit in the preceding example is that the base upon which the tax is assessed is the same base along which progressivity is measured. The tax burdens in the preceding examples were calculated using pretax income as the taxable base, and pretax income was also the metric used to rank order taxpayers in terms of who "has more." The result of the analysis was a determination of the extent to which the income tax burden for the taxpayers (however measured) relates to pretax incomes. Although the tax burden base and the progressivity base in these examples are identical, they need not be. The next Section discusses how the progressivity base often diverges from the tax burden base, and the resulting effect on progressivity assessments.

B. Ambiguities with Progressivity Base Definitions

A tax provision described as progressive is often, although not always, defined with reference to a taxpayer's income, even if a taxpayer's income has no direct relationship to the amount of tax owed. According to this definition, a progressive tax provision is one where

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Zandvakili, Income Redistribution Through Taxation in Canada and the United States: Implications for NAFTA, 1 NAFTA: L. & Bus. Rev. Am. 94, 94 (1995) ("Income tax progressivity is measured as the difference between pretax and post-tax income inequality.").

[41] See note 32.

[42] A taxpayer with $100 of pretax income pays $5 of tax and has an average tax rate of 5%. A taxpayer with $200 of pretax income pays $20 of tax ($5 + $15) and has an average tax rate of 10%. A taxpayer with $1000 of pretax income pays $116 of tax ($5 + $15 + $96) and has an average tax rate of 11.6%. For a pretax income P greater than $200, the average tax rate equals tax liability divided by pretax income, or ($20 + 12%*($P$ - $200)) / P. As P increases, average tax rate increases and approaches, but never reaches, 12%.

the tax burden[43] increases as the taxpayer's income increases.[44] Consider a tax system consisting of only two taxpayers, in which the first $100 of income is taxed at 10% with any greater income taxed at 50%. *Taxpayer A* has $100 of income and will pay $10 (10% of their pretax income) in tax. *Taxpayer B* has $500 of income and will pay $210 (42% of their pretax income) in tax.[45] If tax burden is defined in terms of average tax rate applied to pretax income, this tax system is progressive since the average tax rate increases for the taxpayer with greater pretax income. If instead all income was taxed at the same flat rate of 25%, the tax would not meet this common definition of a progressive tax. Even though higher-earning taxpayers in this system will pay more in taxes, they will not pay a higher *percentage* of their income in taxes.[46]

Yet taxes are levied across many bases other than income. In addition to income taxes, taxpayers in the United States are subjected to taxes on wages,[47] consumption,[48] gifts,[49] property,[50] and estates,[51] among others. The taxes owed for these various bases are calculated by determining the size of the relevant base and then applying the relevant rates.[52] Although there is potential overlap between the various tax bases (wages are a subset of income, for instance) the tax rates applied to these bases are generally independent of one another.[53]

The progressivity (or regressivity) of the taxes levied on these other, nonincome bases is frequently determined with reference to taxpayer income rather than the base on which the tax is assessed. These progressivity assessments commonly recharacterize nominally flat taxes as regressive once their relationship to taxpayer income is taken

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[43] This assumes tax burden is defined in some normatively favored manner. See Part I.A.

[44] See Gamage & Shanske, note 39; Kamin, note 2, at 243 (2008) ("A progressive tax system is defined as one in which the average tax rate—the proportion of income paid in taxes—increases with income."); R.A. Musgrave & Tun Thin, Income Tax Progression, 1929-48, 56 J. Pol. Econ. 498, 499 (1948) ("[A] tax structure is defined to be progressive when the average rate increases with rising income.").

[45] This taxpayer's first $100 of income is taxed at 10%, or $10. The next $400 is taxed at 50%, or $200, for a total tax burden of $210.

[46] *Taxpayer A*, with $100 of income, would pay $25 with a flat 25% income tax; *Taxpayer B* would pay $125.

[47] IRC §§ 3101, 3111.

[48] See, e.g., Cal. Rev. & Tax. Code § 6051 (imposing sales tax on tangible personal property sold at retail).

[49] IRC §§ 2501-2505.

[50] See, e.g., Cal. Const. art. XIIIA, §§ 1-6.

[51] IRC §§ 2101-2108.

[52] See, e.g., IRC § 1.

[53] The design of a tax base can, of course, implicate other bases. For instance, the federal income tax does make an allowance for other taxes paid. See IRC § 164 (providing a $10,000 maximum deduction for state and local taxes paid).

into account. For example, sales taxes are often described as regressive though nominally levied at a constant rate.[54] Soda taxes, typically leveled on a volumetric basis, have been criticized as regressive because of their effect on lower-income taxpayers.[55] Property taxes, also typically assessed at constant rates, are also described as regressive since lower-income taxpayers spend a higher percentage of their income on housing costs.[56] Characterizations of these taxes as regressive results from defining tax burden as a percentage of income, rather than as a percentage of the taxable base, and noting that these tax burdens decline as income increases. For these progressivity assessments "having more" is defined with reference to income, and not the statutory tax base on which tax is calculated.

But taxes applied to bases other than income are often, contrary to the standard definition given above, described as progressive (or regressive) even when taxpayer income is not taken directly into account. The term "progressive," as used to describe these taxes imposed on bases other than income, instead implies escalating average or marginal tax rates as the size of the taxable base increases. Estate tax regimes subjecting estates to increasing rates as estate size increases are described as progressive estate taxes.[57] Taxing a taxpayer's last dollar of consumption at a higher rate than their first is referred to as imposing a progressive consumption tax.[58] Subjecting higher-valued properties to higher property tax rates is described as implementing a progressive property tax.[59] For these progressive

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[54] Tax Policy Center, Who Bears the Burden of a National Retail Sales Tax? (2020) ("[T]he burden of a retail sales tax is regressive when measured as a share of current income."); Hayden O. Bigby, A Budgetary Life Raft: An Analysis of Louisiana's State and Local Sales Tax, 79 La. L. Rev. 1147, 1157 (2019) ("The most common criticism of a sales tax is that a sales tax in any form is regressive.").

[55] Katherine Pratt, A Constructive Critique of Public Health Arguments for Antiobesity Soda Taxes and Food Taxes, 87 Tul. L. Rev. 73, 122 (2012) ("Soda tax and food tax proposals raise distributional concerns because such taxes would be regressive.").

[56] Education Law—School Funding—Michigan Moves Toward Statewide Collection and Distribution of Education Funds, 108 Harv. L. Rev. 1411, 1414 (1995) ("Moreover, some empirical data support the contention that poorer individuals spend a greater proportion of their income on housing than richer individuals, suggesting that the property tax on housing structures is also regressive.").

[57] David J. Herzig, The Income Equality Case for Eliminating the Estate Tax, 90 S. Cal. L. Rev. 1143, 1153 (2017) ("At the time, [estate tax] rates were steeply progressive."); see Donna M. Byrne, Progressive Taxation Revisited, 37 Ariz. L. Rev. 739, 742 (1995) ("The federal estate and gift taxes . . . are imposed at higher and higher rates as the amount of wealth transferred increases").

[58] Michael J. Graetz, Implementing a Progressive Consumption Tax, 92 Harv. L. Rev. 1575 (1979).

[59] David Grosso, DC Council At-Large, Councilmember Grosso introduces progressive property tax to fund equitable public investments (May 13, 2019), http://www.davidgrosso.org/grosso-analysis/2019/5/13/councilmember-grosso-introduces-progressive-property-tax-to-fund-equitable-public-investments.

taxes, there is no direct connection between the taxes paid and the taxpayer's income.[60] These progressive taxes still impose greater tax burdens on taxpayers with more; however, "having more" here refers to having greater amounts of the progressivity base on which the tax burden is calculated.[61]

Thus, rigorously describing a tax provision as "progressive" requires more than simply defining how the tax burden is calculated. An accurate progressivity analysis also requires defining the base for which progressivity is assessed (the progressivity base). If the tax burden imposed (however described) increases as the taxpayer's progressivity base increases, then the tax is progressive with respect to that progressivity base.[62] The tax burden base and the progressivity base can be the same but need not be. For example, if *Taxpayers A* and *B* from the previous example in this Section own homes with assessed values of $500 and $1000, respectively, a property tax subjecting all properties to a 1% tax would result in *Taxpayer A* owing $5 in property tax and *Taxpayer B* owing $10. Assuming tax burden is expressed as a percentage of the statutory base (property values, in this case), this property tax system is neither regressive nor progressive with respect to property values since the tax burden is a constant 1%. However, if tax burden is measured as a percentage of income and the progressivity base is likewise income, then this property tax is regressive, since the property tax owed as a percentage of income decreases as income increases—*Taxpayer A* owes 5% of her $100 of income in property tax and *Taxpayer B* owes 2% of her $500.[63] Note that the incomes of *A* and *B* are taken as givens and could easily be different; if instead their incomes were reversed, the property tax would be progressive with respect to income.

The range of progressivity assessments possible from the various tax burden measures and progressivity bases are illustrated in Table 2, which assumes *Taxpayers A* and *B* from the previous example have $100 and $125 of wages, respectively.[64]

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[60] Depending on the base, income may be correlated with the tax burden base (e.g., income and property values) but is not definitionally congruent. See Part II.D.

[61] In the examples in this paragraph, the statutory base, tax burden base, and progressivity base are the same (nonincome) quantity.

[62] If this measure of tax burden instead decreases, the tax is regressive. If this measure of tax burden stays constant, the tax provision is flat.

[63] *Taxpayers A* and *B* have incomes of $100 and $500, respectively. For *Taxpayer A*, $10 in property tax divided by $100 in income equals 10%; for *Taxpayer B*, $100 in property tax divided by $500 in income equals 20%.

[64] Wages are a subset of income but constitute their own taxable base. See IRC § 3101.

TABLE 2
VARIOUS PROPERTY TAX BURDENS AND PROGRESSIVITY BASES

	Taxpayer A	*Taxpayer B*
Wages	$100	$125
Income	$100	$500
Property value	$500	$1000
Property tax paid[65]	$5	$10
Property taxes paid as a percentage of property value	1%	1%
Property taxes paid as a percentage of income[66]	5%	2%
Property taxes paid as a percentage of wages[67]	5%	8%

If the property tax burden is defined as percentage of property value paid in property taxes (simply the property tax rate), the property tax provision can be described as flat—neither progressive nor regressive—across the three progressivity bases of wages, income, and property value since the property tax burden as defined is invariant to changes in any of the progressivity bases.[68] If the property tax burden is defined as percentage of income paid in property taxes, the property tax provision is regressive with respect to income (and wages and property value) since *Taxpayer B* has more income than *Taxpayer A* but a lower property tax burden, 2% versus 5%. If, however, property tax burden is defined as percentage of wages paid in property taxes, the provision is progressive with respect to wages (and property value and income) since *Taxpayer B* has higher wages and a greater property tax burden.

When a progressivity assessment assesses a (nonflat) tax burden using a progressivity base that is different from either the statutory tax base or the tax burden base, empirical data is required to determine the distribution of the tax burden. For example, soda taxes, which are generally levied at a flat rate on a statutory tax base of volume of soda, are often described as regressive since the soda tax paid as per-

65 1% of $500 = $5; 1% of $1000 = $10.

66 For *Taxpayer A*, $5 of property taxes paid divided by $100 of income equals 5%. For *Taxpayer B*, $10 of property taxes paid divided by $1,000 of income equals 2%.

67 For *Taxpayer A*, $5 of property taxes paid divided by $100 of wages equals 5%. For *Taxpayer B*, $10 of property taxes paid divided by $125 of wages equals 8%.

68 Any tax burden defined as a constant percentage of some tax burden base will be flat with respect to *any* progressivity base since the tax burden is fixed.

centage of income generally decreases as income increases.[69] If progressivity is defined with reference to either a statutory tax base or a tax burden base that is different from the progressivity base, a tax provision could be progressive for one cohort of taxpayers but regressive for another. Similarly, the provision could be progressive at one point in time but different later if taxpayer behavior changes. Thus, for progressivity assessments where the progressivity base differs from either the statutory tax base or the tax burden base, progressivity cannot be assured from the structure of the tax provision.

The lack of structural guarantees for or against progressivity determinations when the statutory tax base or the tax burden base differ from the progressivity base means that progressivity as assessed for individual taxpayers is not definitively known. That is, although empirical data can provide general support for or against a provision's progressivity (property values generally increase with income, for example), there is no assurance that this relationship holds true for specific individual taxpayers. Thus, the provision in question might be progressive in the aggregate but could easily be regressive when applied to a specific set of taxpayers.

In contrast, when the statutory, tax burden, and progressivity bases are identical, the progressivity (or regressivity) of the tax provision in question is structurally assured if the tax burden, defined however normatively desired, increases as the taxable base increases.[70] This could be done with increasing marginal rates, a flat rate with some exemption amount, or some combination of the two.[71] An income tax regime with steadily increasing rates, for instance, guarantees that taxpayers with more income will pay an increasing percentage of their income in income tax.[72] Unlike the rare high-income taxpayer who drinks copious amounts of soda for whom the soda tax imposes a cor-

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[69] See, e.g., Hunt Allcott, Benjamin Lockwood & Dmitry Taubinsky, Regressive Sin Taxes, with an Application to the Optimal Soda Tax, 134 Q.J. Econ. 1557, 1597 (2019). This characterization uses income as both the tax burden base and the progressivity base.

[70] This assumes that the tax paid approximates the true tax burden borne by the taxpayer. Ambiguities in calculating this actual tax burden can affect the structural assurance of progressivity. See Part III.

[71] Bruce Jacobs, A Proposed Flexible Personal Exemption for the Federal Income Tax, 18 Stan. L. Rev. 1162, 1164 (1966) ("An exemption increases the rate of progression of the tax rate scale by creating a new first bracket with a zero tax rate. This is so for a proportional system, which becomes progressive through the addition of an exemption; it is also true for a system progressive to begin with."). A flat rate with some exemption amount is technically a rate structure with an exemption amount, since the income exempt from tax is taxed at a 0% rate.

[72] A progressivity assessment using identical tax and progressivity bases on a tax regime with tax rates that do not increase steadily depends on empirical data. For example, if incomes greater than $1 trillion were taxed at 0%, this could result in a regressive income tax, but only if taxpayers with such incomes actually existed.

respondingly high burden, it is, by definition, impossible for any taxpayer to pay less in income taxes relative to a lower-income taxpayer if income tax rates increase as taxable income increases.[73]

C. Ambiguities Between Taxable Base and Progressivity Base

At its simplest, a tax system is a liability-determining function using some base as the taxable input variable.[74] A taxpayer's amount of taxable base thus determines the tax liability. For example, *Taxpayers X* and *Y*, discussed previously, are subjected to an income tax, and have taxable bases of $100 and $500 of income, respectively.[75] The specific rate schedules giving rise to the $20 and $60 of income tax liabilities are unknown, but the liability-determining function (that is, the rate schedule) should increase as the taxable base increases and return exactly one liability for each taxable base input.[76]

The choice of taxable base is typically selected because some normative justification exists to tax this attribute.[77] The taxable base chosen could reflect ability to pay, ease of collection, or any one of the many rationales for choosing to tax certain attributes. But the input value of the taxable base must yield to both political and practical realities. For instance, income, at a theoretical level, is a broad concept that equals consumption plus any net accretion of wealth.[78] But taxable income as statutorily defined for federal income tax purposes excludes many items that clearly fit within this theoretical definition of income. Some of these omissions reflect administrative complexities while others result from the political sausage-making associated with enacting legislation.

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[73] Since long-term capital income is taxed at lower rates than ordinary income, certain higher-income earners in the United States can pay less in income taxes than certain other taxpayers with less income. Long-term capital income can be viewed as a taxable base distinct from other forms of income.

[74] Real-world determinations of tax liability are affected by variables other than amount of taxable base. These other variables include filing status and other factors affecting ultimate liability, such as credits.

[75] Although the following discussion is generalizable for any taxable base, the discussion uses income as the taxable base for illustrative purposes.

[76] Rate schedules contravening these principles violate principles of tax equity. See Edwin R.A. Seligman, The Theory of Progressive Taxation, 8 Pol. Sci. Q. 220 (1893) (horizontal equity requires that similar burdens must be imposed on taxpayers in similar positions.); see also James Repetti & Diane Ring, Horizontal Equity Revisited, 13 Fla. Tax Rev. 135, 136-38 (2012) (describing critiques of horizontal equity as a norm).

[77] The desire to tax a specific base could be driven by ability to pay, administrative ease, political salability, or a variety of other factors.

[78] See, e.g., Kirk J. Stark, Fiscal Federalism and Tax Progressivity: Should the Federal Income Tax Encourage State and Local Redistribution?, 51 UCLA L. Rev. 1389, 1397-98 (2004) ("[S]cholars interested in pursuing a 'normative' or 'ideal' income tax typically begin with . . . the market value of the taxpayer's rights exercised in consumption plus (or minus) any change in the taxpayer's net wealth during the relevant accounting period.").

An accurate progressivity assessment for a given progressivity base should, in theory, include these items omitted from the taxable base. Although, for instance, interest from municipal bonds is excluded from the taxable base of income, receipt of tax-exempt interest clearly represents an accretion of wealth and is thus income at a theoretical level. As such, when progressivity assessments are made with respect to the theoretical definition of income, as opposed to how income is defined for practical or political purposes, tax-exempt interest should be included in the definition of income for progressivity base purposes.

This approach is common in the progressivity analyses performed by both government agencies and other independent analysts.[79] Even though the economically accurate amount of the taxpayer's taxable base may not be the input variable for determining liability, it remains a more accurate quantity for assessing the distributional consequences of the tax in question. Using a progressivity base of income as statutorily defined, for instance, would, for distributional purposes, equate a taxpayer earning income solely from tax-exempt interest with a taxpayer earning zero income.

Not all tax preference items are properly characterized as increases to the taxpayer's progressivity base. Some tax provisions exist to properly *measure* the taxable base. In contrast with the exclusion for tax-exempt interest, the deduction for ordinary and necessary business expenses provided in § 162 exists largely to properly measure a taxpayer's taxable income.[80] For progressivity assessment purposes the tax benefits arising from § 162 deductions are more properly viewed as reductions to tax liability (via reductions in taxable base) rather than increases to the progressivity base of economic income since these deductions are intended to more accurately measure the input variable of the liability-determining function. In contrast, a provision wholly unrelated to measuring a taxpayer's income, such as a credit for purchasing an electric car, e.g., can be viewed as a net accretion of

[79] The Joint Committee on Taxation uses "expanded income" for distributional assessments. See note 114; see also Justin Bryan, IRS, High-Income Tax Returns for 2010 (2013) (using its own version of "expanded income," defined as AGI plus various tax preferences, to rank taxpayers as high-income), https://www.irs.gov/pub/irs-soi/13insprbulhignincome.pdf; Urban-Brookings Tax Pol'y Cent., Income Measure Used in Distributional Analyses by the Tax Policy Center (using "expanded cash income" for distributional analyses, defined as cash income plus certain employer health insurance and retirement contributions and other fringe benefits, income earned within retirement accounts, and food stamps), https://www.taxpolicycenter.org/resources/income-measure-used-distributional-analyses-tax-policy-center.

[80] See, e.g., Daniel Shaviro, The Optimal Relationship Between Taxable Income and Financial Accounting Income: Analysis and a Proposal, 97 Geo. L.J. 423, 457 (2009) (describing overstatement of depreciation deductions relative to true economic cost in order to encourage investment).

wealth increasing the taxpayer's progressivity base of economic income.

It is not always clear whether tax preference items exist to properly measure some taxable base or if they exist solely as a matter of unrelated tax policy. As a result, it can be difficult to know whether government transfers to taxpayers via tax preference items should be included, for progressivity assessment purposes, when calculating the taxpayer's tax burden or when assessing the progressivity base.[81] Consider a tax system where the taxes remitted by each taxpayer represent, for simplicity, the true economic burden imposed on each taxpayer.[82] If *Taxpayers A* and *B* have $100 and $300 of income (both statutorily defined taxable income and theoretical income) and pay $5 and $30 in income taxes, calculating progressivity with respect to income is straightforward—their tax rates are 5% and 10%, respectively.[83] Assessed using income for the progressivity base (and the tax burden base), the tax is progressive. But if *A* also receives $400 of tax-exempt income under a provision designed to further some policy independent of income measurement, her progressivity base (and tax burden base) should increase by $400. *A*'s tax burden (now 1%, $5/$500) is still lower than *B*'s but *A* now "has more" ($500) in terms of the progressivity base. Such a tax system is regressive. In contrast, if a new provision instead allowed *Taxpayer B* to deduct unreimbursed business expenses of $100 incurred in her capacity as an employee, with a tax savings of $10, then the proper analysis is that she now has tax liability of $20 and her tax burden is still 10% with respect to income (i.e., $20/$200) because both her taxable base and tax burden base have decreased by $100.[84] The progressivity base for *Taxpayer B* also decreases by $100 (to $200), but the tax system remains progressive.

Although the preceding discussion has focused on income as a taxable base, this ambiguity regarding preference items exists for bases other than income. Consider a tax system with a flat 10% consumption tax. A taxpayer paying $10 in consumption tax has $100 of taxable consumption as defined by this hypothetical consumption tax. This $100 of taxable consumption may not be what the taxpayer has actually purchased, since certain purchases with little consumptive value

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[81] This same ambiguity exists for spending programs. See Part III.C.

[82] See Part III.

[83] If progressivity is defined in terms of tax rate, *Taxpayer A*'s tax rate is 5% and *Taxpayer B*'s tax rate is 10%.

[84] If the deduction is theoretically correct in measuring income, then the prior tax burden before the deduction was permitted was in fact 15% (i.e., $30/$200), assuming a tax burden base and progressivity base of theoretical income. In this example the statutory (taxable) base differs from the tax burden base and the progressivity base.

(e.g., medicine) might be exempted from the consumption tax. This exemption serves to properly measure the taxable base. But an exemption existing to advance an unrelated policy goal should not decrease the taxpayer's progressivity base of consumption for progressivity assessment purposes, even if the exemption decreases the statutorily defined taxable base. For instance, if our taxpayer spent $50 on gourmet groceries, which was excluded from the consumption tax base via statute, a progressivity assessment of the taxpayer's consumption should likewise include this $50 in the progressivity base of consumption.[85]

Because tax preference items often serve a dual purpose of measuring the taxable base as well as promoting certain policy goals, the ambiguity described above can be difficult to resolve. The choices of where to include (or not include) these tax preference items can dramatically affect the conclusions drawn about a tax system's progressivity.[86]

D. Normative Implications of the Tax Burden and Progressivity Bases

The choice of tax burden definition and progressivity base have clear normative implications. Deciding how to measure the tax burden imposed and the attribute by which to distributionally assess it implies something about both what and who should be taxed.[87] For instance, favoring a progressivity measure where tax burden is defined in terms of absolute tax dollars paid implies all dollars are equally valuable to all taxpayers. If instead a progressivity measure uses percentage of

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[85] This assumes that the $50 spent on gourmet groceries provided consumptive value to the taxpayer.

[86] See, e.g., Aparna Mathur & Kyle Pomerlau, The Failure of "The Triumph of Injustice"—Understating Taxes at the Top and Incomes at the Bottom, Daily Tax Rep. (BNA), Oct. 31, 2019, at 19 (criticizing economists Emmanuel Saez and Gabriel Zucman for omitting effects of government transfers and refundable credits), https://www.bloomberglaw.com/product/tax/bloombergtaxnews/daily-tax-report/X9BAN4FS000000?bna_news_filter=daily-tax-report#jcite.

[87] The relative merits of different tax burden definitions have been discussed frequently. See, e.g., Chris William Sanchirico, Progressivity and Potential Income: Measuring the Effect of Changing Work Patterns on Income Tax Progressivity, 108 Colum. L. Rev. 1551, 1557 (2008) (calculating progressivity by reference to potential income and not actual income); Omri Y. Marian, The Discursive Failure in Comparative Tax Law, 58 Am. J. Compar. L. 415, 465 (2010) ("How should we deconstruct 'progressivity' into comparable functional notions? Is it intended to accomplish distributive justice? If so, how should we define it?"); Weiss, note 2, at 211 (stating that to properly assess progressivity, "tax policy must address the question of what the proper tax base should be"); Reed Hansen, Book Review, 43 Tex. L. Rev. 822, 823 (1965) (reviewing Daniel C. Morgan, Jr., Retail Sales Tax: An Appraisal of New Issues (1964)) (discussing using a permanent-income tax burden base to define progressivity).

pretax income paid in taxes as the tax burden metric, the normative assumption could be that those with greater incomes should pay greater proportions of this income in tax. The propriety of these choices can of course be criticized, but assuming the definitions used are accurate,[88] the progressivity assessment will be informative along some dimension.

The progressivity base chosen makes a normative statement about how taxpayers should be *assessed*, rather than how they should be *taxed*. Inherent in the choice of progressivity base is some view on the distributional relevance of the progressivity base. For instance, implicit in a progressive wealth tax, where tax rates increase as wealth increases, might be an assumption that taxpayers with greater wealth have greater abilities to pay and should therefore pay more in taxes. Or perhaps the progressive wealth tax rates are motivated by a desire to redistribute among taxpayers of varying wealth or are instead motivated by any one of the many other normative justifications for progressive rates.[89]

In regard to progressive taxes that have redistribution as a normative goal, the extent to which redistribution is promoted by progressive rates depends on how the tax revenue is spent.[90] Even if the tax revenue generated from some progressive tax is allocated per capita, the result will be redistributive. If the property tax paid by *Taxpayers A* and *B* in the preceding example, which is progressive with respect to income, is simply distributed equally, each taxpayer will receive $7.50.[91] *Taxpayer A* is up $2.50, *Taxpayer B* is down $2.50, and the property tax has effectuated redistribution along the specific base of income since there is now less economic separation between taxpayers.[92] Redistribution, albeit to a lesser degree, would occur even if *Taxpayer B* received less than a per capita allocation of the tax revenue.[93] Even though a flat or even regressive tax could still redistribute, a progressive tax does so more effectively.[94]

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[88] Tax burden measurements, in addition to definition, must also be complete. See Part III (describing omissions to tax burden measurement).

[89] See Kamin, note 2, at 258 (assessing progressive tax changes through theories of equality of resources, the difference principle, equality of sacrifice, and utilitarianism).

[90] See Part III.C.

[91] Total property tax revenue is $10 from *Taxpayer A* plus $100 from *Taxpayer B* = $110.

[92] After-tax income is $145 ($100 + $45) for *Taxpayer A*, and $455 ($500 - $45) for *Taxpayer B*, reducing income inequality between the taxpayers from $400 to $310.

[93] If the $15 of property tax revenue was allocated, say, 40% to *Taxpayer A* and 60% to *Taxpayer B*, they would receive $6 and $9, respectively, leaving them up $1 and down $1, respectively.

[94] Along the progressivity base of property value, the property tax is flat, but equal allocation of the property tax revenue still results in redistribution. *Taxpayer A* would have $1045 ($1000 + $45) and *Taxpayer B* would have $9955 ($10,000 - $45).

If the goal of the tax provision is redistribution with respect to income rather than redistribution with respect to the taxable base, increased marginal rates on these various bases other than income often align with imposing higher rates of tax on taxpayers with higher incomes. This is because taxpayers with greater amounts of the taxable base (property value, wealth, etcetera) will often also have greater amounts of income. A property tax with graduated rates, for instance, will likely subject many higher-income earners to the increased property tax rates if higher-income earners tend to own more expensive homes. This correlation between income and other bases results in an obfuscation of exactly how taxes described as "progressive" have obtained this classification.

But correlation between income and the various other possible taxable bases does not imply congruence. Meaning, it is not guaranteed that taxpayers subjected to increased rates for one particular base will necessarily be higher income. For example, a progressive property tax system could require a taxpayer to pay higher rates of tax as their property appreciates in value.[95] However, there is no assurance that this increasing property value is associated with an increased income for the property owner. Although a property tax system might be progressive with respect to property values, a property tax system could, as discussed previously, be regressive with respect to income for some subset of taxpayers. Thus, if the normative goal of progressive rates is to effectuate redistribution along a base other than the taxable base, the relationship between the taxable base and the desired base for redistribution (the progressivity base) should be known.

This Article's goal is not to advocate for any one of the many tax burden definitions or progressivity bases or state a preference about their associated normative underpinnings. This topic is well explored in the literature.[96] That is not to say the normative implications are unimportant. On the contrary, the claim is that these normative consequences are significant enough to require additional disclosure when statements about progressivity are made. Stating the chosen tax burden definition and progressivity base should be an explicit part of every progressivity assessment rather than a hidden detail that is often glossed over. Clarity with respect to these definitions is a necessary

[95] This assumes that increased property valuation is associated with increased assessment values.

[96] See, e.g., Edward J. McCaffery, The Uneasy Case for Wealth Transfer Taxation, 104 Yale L.J. 283, 325 (1994) (arguing in favor of progressive consumption taxes); Kamin, note 2, at 254 ("[T]he academic literature remains divided as to which measure of progressivity is preferable.").

(but not sufficient[97]) step in making accurate, and therefore informative, progressivity assessments, yet these definitions are often ambiguous.

As discussed above, progressivity is often assessed using income as the progressivity base.[98] But even this seemingly straightforward definition belies the ambiguity with which the term "income" can be used.[99] "Income" in its most theoretical formulation is essentially a metaphysical construct, with appropriate valuations of imputed income and other intangibles essentially impossible.[100]

The practical shortcomings of these theoretical definitions mean that income-based progressivity determinations must be made with respect to other more calculable definitions of income. There are many possibilities to choose among, but all fail in one way or another to fully capture taxpayer well-being. For instance, IRS Form 1040 references total income, adjusted gross income, and taxable income, with each quantity accounting for different things. An IRA contribution, for instance, reduces adjusted gross income and taxable income, but not total income.[101] Moreover, none of these income definitions takes into account the statutory exclusions that do not increase taxpayers' income (of any type) despite clearly conferring benefits.[102] For example, a progressivity analysis using a progressivity base of total income (as defined in Form 1040) treats a taxpayer with a salary of $119,000 making a $19,000 401(k) contribution identically to a taxpayer with a salary of $100,000.[103]

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[97] Tax burden measurements, in addition to definition, must also be complete. See Part III (describing omissions to tax burden measurement).

[98] See note 44 and accompanying text. Although income is a common base for evaluating progressivity, this does not mean that income is the per se correct base for determining which taxes are or are not progressive. See Glogower, note 37, at 1425-26 (arguing for progressive rates on a taxable base combining income and wealth).

[99] Brooks, note 38, at 294-304 (2018) (describing twelve different definitions of "income" used for federal income tax purposes).

[100] See Michael J. McIntyre & Oliver Oldman, Taxation of the Family in a Comprehensive and Simplified Income Tax, 90 Harv. L. Rev. 1573, 1613 (1977) ("[P]roblems of identifying the tax base and attaching values to particular services would make direct taxation of imputed income from self-performed services administratively impossible."); Edward J. McCaffery, Taxation and the Family: A Fresh Look at Behavioral Gender Biases in the Code, 40 UCLA L. Rev. 983, 1004 (1993) ("[O]ne could realize that imputed income is one of the factors that makes the classical ability-to-pay income taxation model impossible of attainment."); Edward A. Zelinsky, The Tax Treatment of Qualified Plans: A Class Defense of the Status Quo, 66 N.C. L. Rev. 315, 328 (1988) ("Although Haig-Simons theoretically requires the annual valuation and taxation of unrealized appreciation, the consensus among commentators is that such a scheme is unworkable.").

[101] IRC §§ 62(a)(7), 219.

[102] See IRC §§ 101-140 (Titled "Part III—Items Specifically Excluded From Gross Income.").

[103] Contributions to a 401(k) account are deemed to be made by the employer and excluded from income. See § 401(k); Reg. § 1.401(k)-1(a)(4)(ii).

As such, there is a lack of consistency in the specific definition of income chosen even for income-based progressivity analyses.[104] But these definitional issues are not unique to the progressivity base of income. Nonincome progressivity bases can also have imprecise definitions that obscure distributional consequences. Using a progressivity base of property value, for instance, indicates a desire to measure progressivity with respect to property values, but provides no clarity on how these property values are determined. A property tax regime where values are readjusted only upon certain transfers, as in California,[105] is starkly different from a regime in which values are assessed annually, as in New York City,[106] or a regime where assessed values differ dramatically from fair market value.[107]

This does not mean that choice of progressivity base is meaningless. Rather, it suggests that any progressivity analysis cannot simply stop at stating a progressivity base—the analysis must also clarify exactly how that progressivity base is determined. If statements concerning a tax provision's progressivity are intended to convey distributional information about that provision, precise information about the taxpayer attribute over which the burden is borne must be known. This additional information on the progressivity base selected has normative implications regarding which taxpayers should bear greater tax burdens.[108]

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[104] See Editorial, State and Local Taxes Are Worsening Inequality, N.Y. Times (July 20, 2019) [hereinafter State and Local] (using Institute on Taxation & Economic Policy's definition of income), https://www.nytimes.com/2019/07/20/opinion/sunday/inequality-taxes.html; Meg Wiehe et al., Inst. on Tax'n & Econ. Pol'y, Who Pays? A Distributional Analysis of the Tax Systems in All 50 States at 137 (2018) (conducting progressivity analysis using both taxable and tax-exempt income); Dan Froomkin, Tax Policy: Ripe for Reform? Wash. Post, (Apr. 28, 1998) (assessing progressivity using adjusted gross income), https://www.washingtonpost.com/wp-srv/politics/special/tax/tax.htm; Note, Inflation and the Federal Income Tax, 82 Yale L.J. 716, 731 (1973) (assessing progressivity with taxable income); City & County S.F. Off. Controller & Off. Treasurer & Tax Collector, San Francisco Business Tax Reform: Annual Report for 2017, at 5 ("Despite the Broader Base, 2016 Data Continues to Suggest that the New System is More Progressive Than the Old Payroll Expense Tax."), https://sfcontroller.org/sites/default/files/Documents/Economic%20Analysis/San%20Francisco%20Business%20Tax%20Reform%20Annual%20Report%202017.final_.pdf.

[105] See Cal. Const. art. XIII A, § 2(a).

[106] Assessments, N.Y.C. Dep't Fin. ("The Department of Finance values your property every year as one step in calculating your property tax bill."), https://www1.nyc.gov/site/finance/taxes/property-assessments.page.

[107] Alan Finder, The Missing Link Between a Home and Its Property Tax, N.Y. Times, Mar. 26, 1995, at F10 ("But many communities do not use fair market value as the assessed value."), https://www.nytimes.com/1995/03/26/ business/spending-it-the-missing-link-between-a-home-and-its-property-tax.html.

[108] See Part II.C.

E. Operational Ambiguities

The stylized, two-taxpayer tax systems described above mask the complications associated with operationalizing real-world progressivity analyses. With two taxpayers, progressivity exists if there is a net flow from rich taxpayers to poor taxpayers. Real-world tax systems involve many taxpayers and are far more complex. Consider a three-taxpayer wealth tax for which a progressivity assessment with respect to income is desired.

TABLE 3
THREE-TAXPAYER WEALTH TAX WITH AMBIGUOUS PROGRESSIVITY

	Taxpayer A	*Taxpayer B*	*Taxpayer C*
Income pre-wealth tax	$200	$500	$1000
Wealth tax burden	$100	$110	$300
Income post-wealth tax	$100	$390	$700
Wealth tax burden as a percentage of income pre-wealth tax	50%	22%	30%

If the wealth tax burden is defined in absolute dollars of wealth tax paid, the wealth tax is progressive with respect to income since the three taxpayers pay increasing amounts of tax as their incomes increase. If the wealth tax burden is defined in terms of percentage of income pre-wealth tax, however, the progressivity of the provision as a whole is ambiguous. Between *Taxpayers A* and *B*, the wealth tax is regressive with respect to income because the tax burden (as defined) decreases (from 50% to 22%) as income increases. But between *Taxpayers B* and *C* the tax burden increases (from 22% to 30%) and over this range the tax is progressive.

If the tax provision is not progressive over the entire range of taxpayers, describing the provision as progressive or regressive requires making additional assumptions.[109] Perhaps the redistribution away

[109] Progressivity analogues to the Gini coefficient, which measures how far a given income distribution is from a perfectly equal distribution by using a Lorenz curve, have been proposed. See Donald Kiefer, The Progressivity Effects of the Individual Income Tax Revisions in the Tax Reform Act of 1986, 32 Tax Notes 1189, 1190 (Sept. 22, 1986) (using a coefficient that measures the degree to which the after-tax distribution of income is more equal than the pretax distribution); Daniel B. Suits, Measurement of Tax Progressivity, 67 Am. Econ. Rev. 747, 748 (1977) (calculating a progressivity coefficient using a Lorenz curve of tax burden versus percentage of total income). But these single number measures have been criticized on both normative and ethical grounds. Michael J. Graetz, Paint-by-Numbers Tax Lawmaking, 95 Colum. L. Rev. 609, 623 (1995).

from *Taxpayer C*, the taxpayer with the greatest income, is "worth" imposing a $100 tax on *Taxpayer A*, the taxpayer with the least income. Thus, even if the tax burden imposed on each taxpayer is a known function of the progressivity base, describing the tax provision as entirely progressive or regressive may not be possible because the progressivity determination varies along the distribution of taxpayers. Concluding that regressivity somewhere in the distribution is offset by progressivity somewhere else (or vice versa) requires making normative judgments about the value of redistribution at various points. Since this is inherently subjective, characterization of the entire provision as progressive (or regressive) is more rhetorical than substantive.

Real-world progressivity assessments, which require looking at entire populations, are affected by this concern. For these progressivity assessments, the relevant populations are typically sorted by progressivity base intervals with the tax burden calculated in the aggregate for all taxpayers within the interval.[110] In addition, real-world progressivity assessments are generally concerned with tax *changes* rather than tax *systems*. Like progressivity assessments on tax systems, the correct metric by which to properly assess tax changes is ultimately a normative question.[111] For example, as shown in Table 4, the Joint Committee on Taxation published the distributional effects of the 2017 Act by dividing taxpayers into ranges by income and calculating (1) the act's effect on total tax burden and (2) the average tax rate for each of these ranges.[112]

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[110] This interval can be expressed in absolute dollars, or in percentiles. See, e.g., Lawrence Zelenak & Kemper Moreland, Can the Graduated Income Tax Survive Optimal Tax Analysis?, 53 Tax L. Rev. 51, 72-73 (1999) (assessing progressivity dividing taxpayers by income percentile rather than absolute income levels).

[111] See Kamin, note 2, at 243 (comparing tax systems to tax changes).

[112] This progressivity analysis focuses on a tax change rather than a tax system in the aggregate. Because there is widespread agreement that the federal tax system generally effectuates redistribution from the rich to the poor, determining the progressivity of *changes* to the federal tax system is of greater relevance. See Leonard E. Burman, Taxes and Inequality, 66 Tax L. Rev. 563, 569 (2013) ("The federal tax system reduces economic inequality because, overall, it is progressive."). But given an accepted method of quantifying the progressivity of a tax system, the progressivity assessment of a tax change could simply be $P(f) - P(i)$, where P is a progressivity-calculating function with an input tax burden distribution and a scalar output quantifying progressivity, f is the final tax burden distribution after the tax change, and i is the initial tax burden distribution before the tax change.

TABLE 4
JOINT COMMITTEE ON TAXATION'S DISTRIBUTIONAL ANALYSIS OF THE 2017 ACT[113]

		Change in federal taxes		Average tax rate		
Income[114]	**Taxpayers (thousands)**	**$ (millions)**	**%**	**pre-2017 Act**	**post-2017 Act**	**Difference**
< $10k	19,260	-396	-5.6%	9.1%	8.6%	-0.5%
$10-20k	20,566	-1,792	-174%[115]	-0.7%	-1.2%	-0.5%
$20-30k	21,510	-2,982	-13.5%	3.9%	3.4%	-0.5%
$30-40k	16,011	-5,416	-11.5%	7.9%	7.0%	-0.9%
$40-50k	12,841	-6,728	-10.0%	10.9%	9.9%	-1.0%
$50-75k	27,393	-23,046	-8.7%	14.8%	13.5%	-1.3%
$75-100k	17,835	-22,437	-8.0%	17.0%	15.6%	-1.4%
$100-200k	30,667	-70,372	-7.5%	20.9%	19.4%	-1.5%
$200-500k	9,152	-65,485	-9.0%	26.4%	23.9%	-2.5%
$500k-1m	1,147	-23,947	-9.4%	30.9%	27.8%	-3.1%
> $1m	572	-36,853	-5.9%	32.5%	30.2%	-2.3%
All TPs:	**176,954**	**-259,454**	**-8.0%**	**20.7%**	**19.0%**	**-1.7%**

Using this information, the Cato Institute, as described in this Article's Introduction, characterizes the 2017 Act as having "made our highly progressive tax code a bit more progressive."[116] This claim is supported by stating that "the largest percentage benefits went to households with incomes between $20,000 and $50,000."[117] Even if percentage change of federal taxes paid is the appropriate metric by which to measure progressivity, this claim about the act's overall progressivity could be challenged since taxpayers with incomes between $200,000 and $1,000,000 enjoy a greater percentage decrease

[113] Joint Comm. on Tax'n, 116th Cong., Distributional Effects of Public Law 115-97 at 5 (2019), https://www.jct.gov/publications/2019/jcx-10-19/. JCT estimates of taxpayer burden incorporate, for some taxes, economic incidence. Id. at 5 (allocating, for example, employment taxes to employees and excise taxes to consumers).

[114] The Joint Committee defines income here as "expanded income," which is defined as adjusted gross income plus tax-exempt interest, workers' compensation, nontaxable Social Security benefits, excluded income of U.S. citizens living abroad, the value of Medicare benefits in excess of premiums paid, minimum tax preferences, employer contributions for health plans and life insurance, and the employer's share of payroll taxes. Joint Comm. on Tax'n, 112th Cong., Overview of the Definition of Income Used by the Staff of the Joint Committee on Taxation in Distributional Analyses 2 (2012), https://www.jct.gov/publications/2012/jcx-15-12.

[115] Tax liability for this cohort of taxpayers went from -$2.41 billion to -$4.2 billion, or a change of -174%.

[116] See Edwards, note 3.

[117] See id.

than incomes between $50,000 and $200,000. But percentage change in federal taxes paid is only one of many tax burden definitions that could be used. If taxpayers were instead assessed by change in average tax rate, the act could be described as regressive for incomes between $30,000 and $1,000,000 since the change in average tax rate decreases unfailingly over this range.

As a mathematical matter, describing a tax provision as unequivocally progressive (or regressive) requires that the tax burden increases (or decreases) monotonically as the progressivity base increases (or decreases). Absent this characteristic, additional information on the assumptions made must be provided. In terms of change in average tax rate, the 2017 Act is regressive over most income ranges, but progressive for taxpayers in the upper two income bands. This slice of progressivity still could permit describing the act as regressive overall, but additional clarification regarding these income bands must be provided for the regressivity assessment to be complete.

In contrast with the Cato Institute, the Tax Policy Center characterizes the 2017 Act as reducing progressivity using the data in Table 5.

TABLE 5
TAX POLICY CENTER, DIFFERENCE BETWEEN SHARES OF AFTER-TAX INCOME AND PRETAX INCOME FOR DIFFERENT INCOME GROUPS[118]

Income group (percentile)	2017 (pre-2017 Act)	2018 (post-2017 Act)	Change, 2018 to 2017
Bottom 20%	0.81	0.72	-0.09
20 - 40%	1.17	1.07	-0.10
40 - 60%	1.05	0.97	-0.08
60 - 80%	0.62	0.58	-0.04
80 - 90%	-0.07	-0.10	-0.03
90 - 95%	-0.29	-0.25	0.04
95 - 99%	-0.88	-0.67	0.21
Top 1%	-2.37	-2.27	0.10

In 2017, the bottom 20% of income earners had approximately 4.0% of pretax income but, due to redistributive provisions in the tax code, 4.8% of after-tax income, for a difference of +0.81%.[119] In contrast, the share of after-tax income for the top 1% of income earners is 2.37

[118] Toder, note 3.
[119] Id.

percentage points less than their share of pretax income.[120] Because the Tax Policy Center has chosen change in difference between after- and pretax income as the appropriate tax burden for its progressivity analysis, it concludes that the 2017 Act "made the federal tax system less progressive."[121]

The preceding examples demonstrate the discretion available to characterize tax provisions as progressive or regressive. By focusing on specific measures of tax burden, narrowing the inquiry to selected income (or other taxable base) ranges, and selectively choosing how to divide percentiles, to name a few, analysts can often plausibly claim progressivity or regressivity as they desire. But in all of these examples, the data is presumed to be correct—meaning, the tax burdens and benefits as stated are assumed to be calculationally sound. The following Part demonstrates why this assumption might be incorrect.

III. Calculational Ambiguities of Tax Burdens and Benefits

Assessing the progressivity of a tax provision necessarily requires quantifying the tax burden imposed on taxpayers. This tax burden is traditionally determined by reference to the tax collected from the relevant taxpayer. As discussed earlier, this amount of collected tax can be represented in many different ways, including absolute tax dollars, average tax rate, or percentage of total tax revenue collected. Regardless, the starting point for the calculation is the tax paid by the taxpayer.[122] Despite its ubiquity, this starting point is potentially inaccurate in three ways. First, focusing on the taxes remitted omits microeconomic effects of taxation, including the incidence of the tax provision and inefficiency costs associated with distortions in taxpayer behavior. Second, although macroeconomic effects of tax provisions affect the winners and losers of tax law changes, these macroeconomic costs and benefits are not incorporated into progressivity assessments. Third, the purposes to which tax dollars are put are often not taken into account by progressivity analyses. Although there is no functional distinction between tax provisions and spending provisions, the spending side of the budget is generally omitted from any progressivity analysis.

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120 Id.

121 Id.

122 See, e.g., State and Local, note 104 (using a tax burden of state and local taxes paid); see also Part II.A.

A. Microeconomic Effects

Microeconomic effects can significantly alter which taxpayers benefit from tax laws and which taxpayers are burdened. Two significant microeconomic effects generally omitted from progressivity analyses are incidence, in which the legally responsible payor of a tax might differ from the taxpayer actually burdened by the tax, and inefficiency costs, which impose costs to taxpayers in excess of the taxes paid.

1. Incidence

The taxpayer bearing the legal incidence of a tax payment—that is, having responsibility for remitting the tax to the government—is not necessarily the taxpayer bearing the economic burden of the tax.[123] Returning to our previous two-taxpayer example, let us assume that the entirety of *Taxpayer A*'s $100 income is from the sale of 10 widgets (at a price of $10 per widget) to *Taxpayer B*.[124] If a newly enacted widget tax requires *Taxpayer A* to pay a tax of $1 per widget, *Taxpayer A* might increase her price per widget to $11. If even after the price increase *Taxpayer B* still purchases 10 widgets, *Taxpayer B* has borne the entire burden of the widget tax levied on *Taxpayer A*, even though *Taxpayer A* is still the nominal payor of the tax. If instead *Taxpayer A* simply absorbs the cost of the new tax and keeps widget prices constant at $10 (and still sells just 10 widgets to *Taxpayer B*), the burden of the new tax remains entirely with *Taxpayer A*.

In reality, the burden of the tax described above will likely fall in part on *Taxpayer A* and in part on *Taxpayer B*. The preceding, stylized example ignores a more likely range of behavioral responses. These responses are illustrated by considering adjustments to the standard supply and demand curve depicted below.

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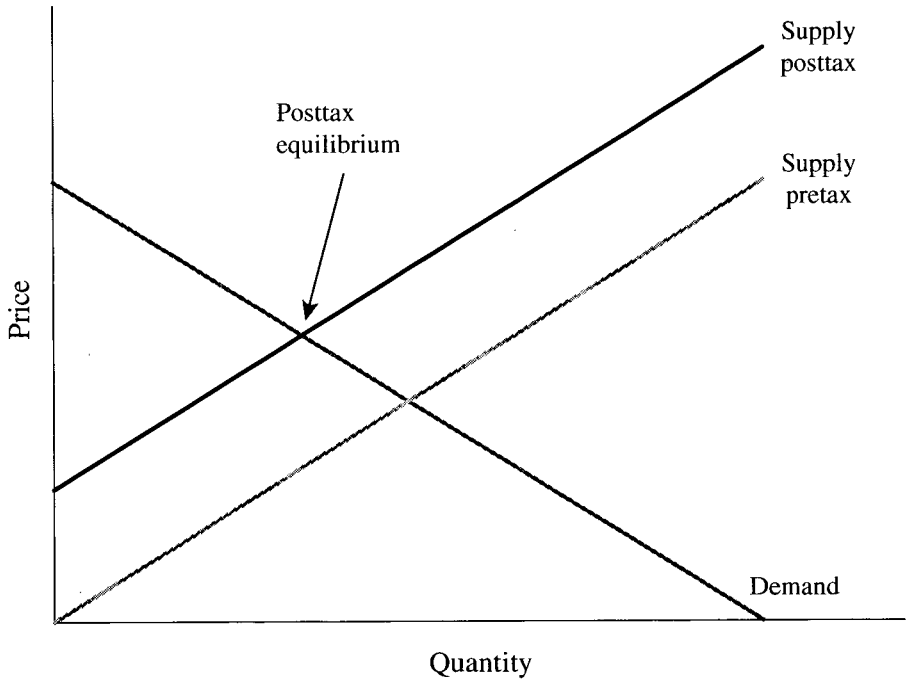
[123] See Don Fullerton & Gilbert E. Metcalf, Tax Incidence, in 4 Handbook of Public Economics 1787, 1789 (Alan J. Auerbach & Martin Feldstein eds., 2002).

[124] This assumes that *Taxpayer A*'s gross revenue is also equal to her net profit.

FIGURE 1
EFFECT OF TAX ON SUPPLIER



A tax levied on the supplier shifts the supply curve upward (because the supplier now needs a higher price to provide the same quantity of goods), resulting in an equilibrium with a smaller quantity of goods sold at some higher price.[125]

Thus, *Taxpayer A*'s increase in widget price is likely to result in fewer widgets purchased by *Taxpayer B*. The extent to which this occurs depends on the responsiveness of the supply and demand curves to the changes in price—that is, the relative elasticities. Depending on the elasticity of the supply and demand curves of *Taxpayers A* and *B*, respectively, a more likely equilibrium is that *Taxpayer B* will purchase fewer widgets at some price greater than $10, but likely less than $11.[126] To the extent that the inelasticity of supply exceeds the

[125] If the tax were levied on the consumer rather than the supplier, the demand curve would shift to the left, resulting in fewer widgets bought/sold at a lower price.

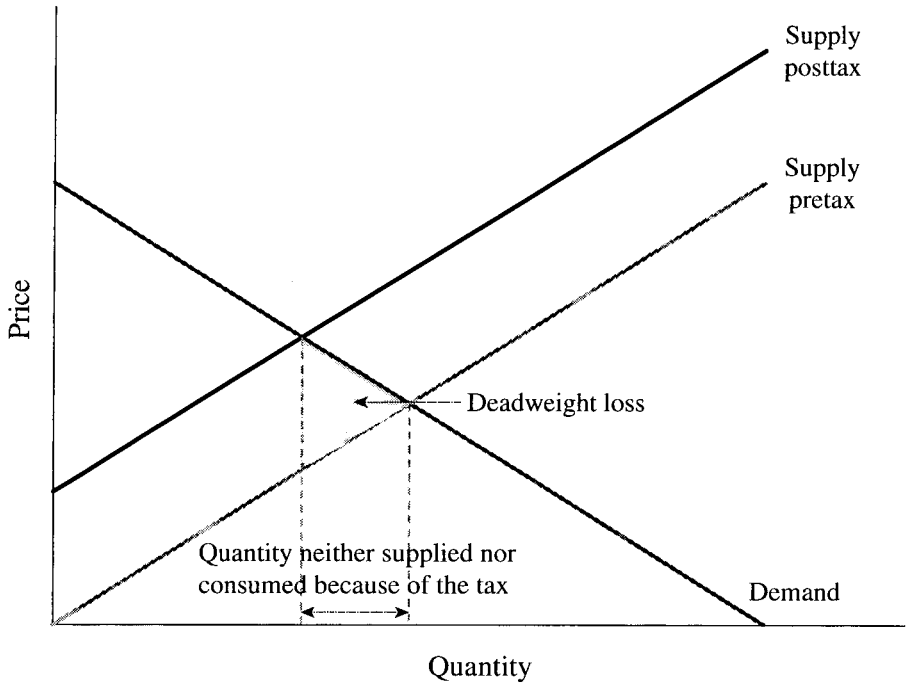
[126] Brian Galle, Is Local Consumer Protection Law a Better Redistributive Mechanism than the Tax System?, 65 N.Y.U. Ann. Surv. Am. L. 525, 540-41 (2010) ("[I]f demand is highly inelastic, consumers pay virtually any price for the firm's products. The incidence of a tax on such a firm is likely to be borne by its customers because it can easily pass along the costs to them without losing sales."); see also Jonathan Gruber, Public Finance and Public Policy 49-50 (4th ed. 2013) (describing effect of elasticity on producer and consumer surplus).

inelasticity of demand, the more likely it is that *Taxpayer A* will bear the economic burden of the tax.[127]

2. *Efficiency Costs*

Assessments of incidence determine which taxpayers are bearing the economic burden of the tax dollars collected, but the burdens imposed by taxation are greater than just the tax revenue collected. The behavioral changes induced by a tax provision can prevent welfare-generating transactions that would have occurred in the absence of the tax provision.[128] These "deadweight losses," illustrated in Figure 2, impose costs by causing taxpayers to not participate in the market at all.

FIGURE 2
DEADWEIGHT LOSS OF TAXATION



[127] Correspondingly, to the extent that *Taxpayer B*'s demand is more inelastic than *Taxpayer A*'s supply, the burden will be borne by *Taxpayer B*.

[128] Manoj Viswanathan, The Hidden Costs of Cliff Effects in the Internal Revenue Code, 164 U. Pa. L. Rev. 931, 958 (2016) ("For tax provisions that are not intended to change behavior, the classic measure of efficiency (or lack thereof) is the 'deadweight loss,' or 'excess burden' of the provision." (quoting David A. Weisbach, Line Drawing, Doctrine, and Efficiency in the Tax Law, 84 Cornell L. Rev. 1627, 1650 (1999))).

Returning to our previous example, there might exist some purchaser who is willing to purchase widgets for $10, but not for $11. Because of the tax, the welfare created by an effectuated transaction between this willing buyer and *Taxpayer A* is lost. This "deadweight loss" imposes an efficiency cost by eliminating the consumer and producer surplus obtained from consummated transactions.[129] In the preceding example, the costs imposed on taxpayers by the business property tax will thus be greater than simply the $10 in tax revenue collected. To the extent that the tax chills widget transactions, the tax burden imposed also includes certain efficiency costs.

The potential cost of deadweight losses is best illustrated in the extreme. A newly enacted widget tax could result in such a high effective price for widgets that there are zero willing purchasers. Previous widget purchasers might buy substitute products that are not taxed, or simply forgo purchases altogether.[130] If the widget tax eliminates the market for widgets, resulting in zero widgets purchased, there will be no widget tax collected. A progressivity analysis focused solely on taxes paid would conclude that no party is bearing any tax burden, since no taxes are collected.[131] But despite the lack of tax collected, the widget tax is clearly still imposing a burden on some subset of producers and consumers. These efficiency costs are a tax burden that is omitted from standard progressivity assessments, which focus solely on tax payments actually remitted.[132]

Because efficiency costs require knowing about taxpayer behavior, quantifying efficiency costs can be challenging, and incorporating them into progressivity analyses could make tax provisions more or less progressive than originally determined.[133] For instance, a high marginal gross receipts tax on highly profitable businesses might not affect hiring practices at Google (promoting progressivity) but could, for a more cost-sensitive business, result in a low-wage earner not getting a promotion (reducing progressivity). The ultimate effect of efficiency costs on progressivity depends on how the changed behavior

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129 Weisbach, note 128, at 1650.

130 Lawrence Zelenak, Taxing Endowment, 55 Duke L.J. 1145, 1149 (2006) ("Substitution effects result when taxpayers change their behavior to avoid a tax, substituting untaxed (or less heavily taxed) behavior for the taxed behavior.").

131 See Tax Pol'y Ctr., Briefing Book (2020) ("Soda taxes tend to be regressive because lower-income consumers spend a larger share of their income on the tax than higher-income consumers."), https://www.taxpolicycenter.org/sites/default/files/briefing-book/tpc_briefing_book_2021.pdf.

132 See note 2 and accompanying text.

133 Joseph Bankman, What Can We Say About a Wealth Tax?, 53 Tax L. Rev. 477, 486 (2000) ("Determining efficiency costs requires near-heroic assumptions as to taxpayer behavior[.]").

affects not only that taxpayer, but the taxpayers benefiting (or harmed) by the forgone behavior.

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When we inquire about a tax provision's progressivity, we are asking about who bears the burden of the tax provision in question. Determining this burden is more complicated than simply totaling the tax remitted by each taxpayer since incidence effects and efficiency costs are key elements in determining who truly bears the burdens in question. Of course, accurately calculating incidence and efficiency costs can be challenging.[134] If incorporating incidence assessments and calculating efficiency costs cannot accurately be done, acknowledgment of these notable exclusions should be explicit and recognized as shortcomings of the progressivity analysis in question.

B. Macroeconomic Effects

Tax policy can significantly affect macroeconomic conditions that, in turn, confer benefits or burdens on taxpayers.[135] For instance, the 2017 Act, by reducing the corporate tax rate, was lauded by the Trump administration's Council of Economic Advisers as catalyzing investment that would raise wages for American workers.[136] Employees of

[134] But see David Gamage, The Case for Taxing (All of) Labor Income, Consumption, Capital Income, and Wealth, 68 Tax L. Rev. 355, 369 (2015) (discussing how, under certain strong assumptions, distortionary costs of taxation can be estimated); Robert K. Triest, The Efficiency Cost of Increased Progressivity, in Tax Progressivity and Income Inequality 137 (Joel Slemrod ed., 1994) (calculating efficiency cost of the income tax). Efficiency costs are known to rise with the square of the tax rate levied, allowing, at a minimum, for ballpark estimates. David Gamage, How Should Governments Promote Distributive Justice?: A Framework for Analyzing the Optimal Choice of Tax Instruments, 68 Tax L. Rev. 1, 11 (2014) ("A basic principle of economic theory suggests that the marginal efficiency costs generated by a tax instrument generally rise approximately with the square of the relevant tax rates."); see also Daniel S. Goldberg, E-Tax: Fundamental Tax Reform and the Transition to a Currency-Free Economy, 20 Va. Tax Rev. 1, 14 (2000) (discussing how to determine economic incidence of taxes); Kevin A. Hassett, Aparna Mathur & Gilbert E. Metcalf, The Incidence of a U.S. Carbon Tax: A Lifetime and Regional Analysis, 30 Energy J. 155, 157-60 (2009) (assessing economic incidence of carbon taxes).

[135] See Yair Listokin, Equity, Efficiency, and Stability: The Importance of Macroeconomics for Evaluating Income Tax Policy, 29 Yale J. on Reg. 45 (2012). Macroeconomics is the study of aggregate indicia such as gross domestic product (GDP), the growth of output, rates of inflation and unemployment, the balance of payments, and exchange rates on country-level economies. Rudiger Dornbusch et al., Macroeconomics 3 (7th ed. 1998).

[136] Kevin Hassett, Opinion, The Wages of Tax Reform Are Going to America's Workers, Wall St. J. (Apr. 17, 2018) (stating predictions made by the Chairman of the Council of Economic Advisers), https://www.wsj.com/articles/the-wages-of-tax-reform-are-going-to-americas-workers-1524005516. But see Nicholas H. Cohen & Manoj Viswanathan, Corporate Behavior and the Tax Cuts and Jobs Act, U. Chi. L. Rev. Online (Apr. 2, 2020) (find-

noncorporate entities were also deemed to potentially benefit since these workers, in a competitive marketplace, would have wages buoyed by the overall decrease in unemployment caused by the corporate rate cut.[137] Similarly, the presence of unemployment in an economy, a macroeconomic factor, has been shown to vary the extent to which various groups bear the incidence of the corporate income tax.[138] Meaning, even if the corporate income tax is fixed, the extent that various groups bear its economic burden can vary due to economic factors.

Although a detailed discussion of macroeconomics is beyond the scope of this Article, tax policy has clear potential to affect large-scale economic conditions and not just transactions made by taxpayers at the individual, microeconomic level.[139] To the extent that tax provisions have macroeconomic consequences such as increased wages, a greater GDP, or a weaker U.S. dollar, for example, they confer benefits (or burdens) onto taxpayers. Although significant practical challenges to incorporating these effects likely exist, these macroeconomic consequences to taxpayer well-being should, as a theoretical matter, be part of progressivity assessments.[140]

C. Spending

To the extent that our concern about progressivity relates to the redistributive function of the tax system, progressivity analyses should not ignore how tax revenue is spent. Tax revenue is collected to fund government spending, which has beneficiaries. In other words, any meaningful progressivity analysis must also take into account the spending side of the budget.

There is no economic distinction between transfers effectuated via the tax code and transfers dispensed via budgetary allocation.[141] The

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ing no evidence of purported 2017 Act benefits with respect to corporate behavior), https://lawreviewblog.uchicago.edu/2020/04/02/corporate-behavior-and-tcja-cohen-viswanathan.

137 Cohen & Viswanathan, note 136. These predictions have yet to be borne out by any conclusive data.

138 Adam H. Rosenzweig, A Corporate Tax for the Next One Hundred Years: A Proposal for a Dynamic, Self-Adjusting Corporate Tax Rate, 108 Nw. U. L. Rev. 1029, 1038 (2014) (stating that current models demonstrate that labor bears more of the incidence of the corporate income tax in the presence of unemployment than under previous models).

139 See, e.g., Listokin, note 135 (exploring connection between macroeconomics and tax policy); see also Mark Kelman, Could Lawyers Stop Recessions? Speculations on Law and Macroeconomics, 45 Stan. L. Rev. 1215, 1223 (1993).

140 See Part IV; see also James W. Wetzler, Dynamic Scoring—Some Unanswered Questions, 147 Tax Notes 171 (April 13, 2015) (discussing macroeconomic considerations in budgetary scoring).

141 Ruth Mason, Federalism and the Taxing Power, 99 Calif. L. Rev. 975, 987 (2011) ("Viewed from the perspective of the recipient, tax expenditures are economically equivalent to direct government spending."); Julie Roin, Truth in Government: Beyond the

income tax paid by our old friends, *Taxpayers A* and *B*, who have pretax incomes of $100 and $500 and owe $10 and $210 in income tax, respectively,[142] is progressive by any traditional progressivity measure. Total income tax paid, percentage of pretax income paid as tax, average tax rate, and marginal tax rate are all higher for *Taxpayer B* relative to *Taxpayer A*.[143] But if this $220 in total tax revenue is used to provide some nontax benefit enjoyed solely by *Taxpayer B*, the combined tax/spending regime promotes inequality.[144] After both tax *and* spending are taken into account, *Taxpayer A* is left with $90, and *Taxpayer B* is left with $510.[145] This is equivalent to an income tax with no spending where *Taxpayer A*'s tax rate is 10% and *Taxpayer B*'s rate is negative 2%.[146]

Spending policy can also convert a flat, or even regressive, tax provision into a measure that reduces inequality. Consider if *Taxpayer A* pays 90%, or $90, of her $100 in pretax income in income taxes, and *Taxpayer B* only pays 10%, or $50 of her $500 in pretax income.[147] If all $140 of tax revenue collected is spent on programs solely benefiting *Taxpayer A*, this highly regressive income tax is converted, once spending is taken into account, into a progressive provision.[148]

Because spending programs are often measured by total dollars provided and not by percentage of recipients' pretax income, a seemingly regressive tax provision combined with seemingly regressive spending can still, counterintuitively, result in a system that is redistributive. If *Taxpayer A* pays $90 of her $100 of income in tax, and *Taxpayer B* pays $100 of her $500 of income in tax, the tax can be described as regressive since *Taxpayer A*'s tax rate is 90% and *Tax-*

Tax Expenditure Budget, 54 Hastings L.J. 603, 622–23 (2003) ("From a recipient's point of view, it makes no difference whether a government bestows a $1000 check or excuses the recipient from paying $1000 in taxes by promulgating a favorable tax rule."). But see Edward A. Zelinsky, Are Tax "Benefits" Constitutionally Equivalent to Direct Expenditures?, 112 Harv. L. Rev. 379, 380 (1998) (noting constitutional differences between direct spending and tax expenditures).

142 See notes 45-46 and accompanying text.

143 See note 2 and accompanying text.

144 This subsidy could be, for instance, a $220 federal school voucher certificate given to *Taxpayer B*.

145 If the subsidy inures entirely to *Taxpayer B*, all of *Taxpayer A*'s $10 tax payment inures to *Taxpayer B*.

146 This assumes that the spending program is deemed to reduce tax liabilities. However, the tax burden base/progressivity base issues associated with tax preference items also apply to direct spending programs. See Part II.C.

147 In addition to being regressive (as traditionally defined), this hypothetical income tax structure also violates vertical norms. See Karl S. Coplan, Protecting the Public Fisc: Fighting Accrual Abuse with Section 446 Discretion, 83 Colum. L. Rev. 378, 379 (1983) ("Vertical equity requires that those with greater ability to pay tax pay a higher tax.").

148 After taxes and spending are taken into account, *Taxpayer A* would have $150 (up from $100), and *Taxpayer B* would have $450 (down from $500).

payer B's 20%. Relatedly, a spending provision allocating more funds to *Taxpayer B* than *Taxpayer A* could be criticized as regressive, since spending programs are often assessed by absolute dollars allocated.[149] For instance, if *Taxpayers A* and *B* receive, respectively, $92 and $98 of this tax revenue via some spending program, the result is a tax/spending regime where less inequality exists between the two taxpayers because *Taxpayer A* is left with $102 and *Taxpayer B* is left with $498. The seeming contradiction results from the mismatch between assessing the spending program by absolute dollars received and the tax paid as a percentage of income.

Not knowing the exact distributional effects of spending programs does not preclude taking spending effects into account for progressivity purposes if an estimation can plausibly be made. The effects can be significant. If, for instance, allocating spending per capita is reasonable, it can result in recharacterizing regressive tax provisions into progressive ones. If *Taxpayers A* and *B*, again with $100 and $500 of income, pay $20 and $30 of income tax, this tax would by most traditional measures be described as regressive.[150] This revenue could be used entirely to fund a program that, assuming equal per capita spending, benefits *Taxpayers A* and *B* equally.[151] If so, the post-spending effect would leave *Taxpayer A* with $105 and *Taxpayer B* with $495, converting a seemingly regressive tax provision into one that is ostensibly progressive.[152]

Even though the redistributive consequences of spending can be significant, direct spending effects, in contrast with tax provisions, are usually not subjected to distributional analyses.[153] But tax expenditures, defined by Congress as "laws which allow a special exclusion, exemption, or deduction from gross income or which provide a special credit, a preferential rate of tax, or a deferral of tax liability," are subjected to distributional analyses.[154] There are few analogous reports

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[149] See Gene Steuerle, Can the Progressivity of Tax Changes Be Measured in Isolation?, 100 Tax Notes 1187, 1187 (Sept. 1, 2003) ("Progressivity in taxes is usually measured as a percentage or share of something else (taxes, after-tax income), while on the spending side many people tend to measure it in absolute terms—that is, who gets more dollars.").

[150] Only by defining progressivity with respect to total tax dollars paid would this tax regime be characterized as traditionally progressive.

[151] *Taxpayers A* and *B* could, for instance, receive equal-value school vouchers.

[152] *Taxpayer A* would pay $20 and receive $25 (half of $20 plus $30). *Taxpayer B* would pay $30 and receive $25 (half of $20 plus $30).

[153] Linda Sugin, Sustaining Progressivity in the Budget Process: A Commentary on Gale & Orszag's An Economic Assessment of Tax Policy in the Bush Administration, 2001-2004, 45 B.C. L. Rev. 1259, 1262 (2004) ("Unfortunately, we rarely see an analysis that considers both the taxing and spending sides of the budget equation together.").

[154] Congressional Budget and Impoundment Control Act of 1974 § 3(a)(3), 2 U.S.C. § 622(3). The Earned Income Tax Credit, providing a tax credit to the working poor, is one such tax expenditure. See Sara Sternberg Greene, The Broken Safety Net: A Study of

documenting the distributional effects of spending programs, even if performing similar functions.[155] This is because distributional information of direct spending can be hard to obtain since the relevant attributes of direct spending beneficiaries are often indeterminate or unknown. It is not obvious, for instance, how the $600 billion federal defense budget should be allocated for distributional purposes.[156] Tax expenditures, in contrast, are frequently stated on taxpayer returns and therefore easier to assess relative to taxpayers' income.[157]

Additionally, there is generally not an obvious connection between most taxes and spending programs. In the previous stylized examples, the direct spending programs benefiting *Taxpayers A* and *B* were assumed to be solely funded by the income tax. In reality, spending programs often do not arise from specific tax provisions. The majority of federal taxes go into the "general fund" of the United States, the source of most U.S. spending appropriations.[158] To the extent that a spending allocation comes from the general fund, it does not come from any one tax provision, in spite of the claimed provenance of a given spending program. Because money is fungible, any spending allocation from the general fund could be considered as funded pro rata from all taxes supporting the general fund.

Earned Income Tax Credit Recipients and a Proposal for Repair, 88 N.Y.U. L. Rev. 515, 519-20 (2013) (equating anti-poverty effects of the EITC to two direct spending programs); see also Daniel Berger & Eric Toder, Tax Pol'y Ctr., Distributional Effects of Individual Income Tax Expenditures After the 2017 Tax Cuts and Jobs Act (2019), https://www.taxpolicycenter.org/sites/default/files/publication/157267/distributional_effects_of_individual_income_tax_expenditures_after_the_2017_tax_cuts_and_jobs_act_1.pdf.

[155] David A. Weisbach & Jacob Nussim, The Integration of Tax and Spending Programs, 113 Yale L.J. 955, 1002 n.146 (2004) ("None of the congressional or Treasury Department staffs (the Joint Committee on Taxation, the Congressional Budget Office, or the Treasury's Office of Tax Analysis) includes in its distributional schedules nontax assistance programs."). But see Cong. Budget Off., Projected Changes in the Distribution of Household Income, 2016 to 2021 (2019) (estimating effect of certain means-tested programs on household income).

[156] Cong. Budget Off., The Federal Budget in 2018 (2018) (showing defense budget of $623 billion in 2018).

[157] See, e.g., I.R.S. Schedule D (Form 1040) (2018) (requiring listing of capital gains). For 2018, the revenue cost estimate for the capital gains rate preference was $128.7 billion. Joint Comm. on Tax'n, 115th Cong., Estimates of Federal Tax Expenditures for Fiscal Years 2018-2022 (2018), https://www.jct.gov/CMSPages/GetFile.aspx?guid=841853b0-38e1-46ac-a047-a9603eca6198.

[158] Theodore P. Seto, Drafting a Federal Balanced Budget Amendment that Does What It Is Supposed to Do (and No More), 106 Yale L.J. 1449, 1494 (1997) ("[General fund] receipts include most income and excise taxes . . . ."). See generally Treasury Dep't, Financial Report of the United States Government (2018) (describing U.S. appropriations by source of funding), https://fiscal.treasury.gov/files/reports-statements/financial-report/2018/03282019-FR(Final).pdf.

IV. Improving Progressivity Assessments

A. The End of Progressivity?

This Article claims that, as a theoretical matter, accurately characterizing tax provisions as progressive (or regressive) requires an accurate assessment of the burdens and benefits imposed by the tax provisions in question. By neglecting to take into account the burdens beyond who is remitting the tax dollars, traditional progressivity analyses are incomplete. Relatedly, since the spending side of the budget process is functionally indistinguishable from the taxation side, progressivity assessments should also take into account the beneficiaries of any spending programs associated with the tax revenues. Once these burdens and benefits are determined as a function of some selected progressivity base, the progressivity of the tax provision with respect to the selected progressivity base can be determined.

The theoretical validity of this approach is confronted by obvious practical challenges. Properly accounting for microeconomic effects requires knowing taxpayer preferences and behavior,[159] assuming economically rational taxpayers,[160] and identifying who bears the burden for taxation's deadweight losses.[161] Macroeconomic burdens are potentially even more complicated: The distributive burden caused by a tax provision's effect on, say, the valuation of the dollar is not a straightforward analysis.[162] As such, a total accounting of the various burdens and benefits inuring from a tax provision is unlikely to be known with certainty. Similarly, the stylized, two-taxpayer examples illustrating the relationship between tax provisions and spending programs do not reflect the real disconnect between taxes paid and benefits received. Identifying the beneficiaries and value of all government spending is difficult to do with complete accuracy. Furthermore, fiscal policy incorporates practices such as deficit spending, complicating the

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159 See David J. Teece, Information Sharing, Innovation, and Antitrust, 62 Antitrust L.J. 465, 467 (1994) ("[I]f the 'invisible' hand is going to properly guide resource allocation, then economic agents must know not only today's supply and demand but supply and demand for all future periods.").

160 Russell B. Korobkin & Thomas S. Ulen, Law and Behavioral Science: Removing the Rationality Assumption from Law and Economics, 88 Calif. L. Rev. 1051, 1055 (2000) (stating that rational choice theory, though often contravened by actual behavior, is the dominant form of law and economic analysis).

161 See Gregg D. Polsky, Controlling Executive Compensation Through the Tax Code, 64 Wash. & Lee L. Rev. 877, 904 (2007) ("Though the nominal burden of § 162(m)'s deadweight loss might be placed on one party, part or all of the economic incidence may in fact be borne by the other.").

162 See Eric Kades, The Natural Property Rights Straitjacket: The Takings Clause, Taxation, and Excessive Rigidity, 51 U.C. Davis L. Rev. 1351, 1379 (2018) ("Macroeconomics is far more social than science—it enjoys little of the precision found in physics or chemistry.").

analysis even further since taxpayers may not bear the burden of certain government spending for years to come.

These complications of progressivity assessments do not necessarily stymie assessing tax provisions along other important dimensions. Progressivity and, by implication, inequality are important policy considerations, but other concerns also inform tax policy.[163] The Earned Income Tax Credit (EITC), for instance, provides a refundable credit to lower-income taxpayers who earn income by working.[164] The credit was enacted as both an anti-poverty measure and to incentivize working.[165] Assuming the validity of these normative justifications for the credit, what is of central concern is not whether the EITC meets some poorly evaluated standard of progressivity, but whether the goals of the provision are actually getting accomplished. Instead of a progressivity assessment, then, the proper inquiries would be whether the EITC actually combats poverty and truly incentivizes working.[166]

The putative rationales for a tax provision's enactment need not be the same as the criteria of importance to tax policy analysts. Even though the EITC might have been enacted to incentivize working, the EITC's other effects might be of greater interest.[167] Rather than assessing the EITC's progressivity, an analysis could focus on, say, how the EITC affects seasonal patterns in consumer spending.[168] Rather than using the label of progressivity to identify provisions that pass some ambiguous normative test, it might be preferable to assess provisions by their specific desired effects.

In many instances, this selective interrogation of a tax provision's effects is already being performed under the guise of a progressivity assessment. Progressivity is essentially equated to "fair," with each assessment of progressivity providing its own definition of what is fair.[169] In its progressivity assessment of the 2017 Act, the Tax Policy Center prioritizes change in pretax income received as after-tax income.[170] The Cato Institute focuses instead on percent change of fed-

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163 See, e.g., David Kamin, Reducing Poverty, Not Inequality: What Changes in the Tax System Can Achieve, 66 Tax L. Rev. 593 (2013) (emphasizing importance of tax law to address poverty, if not inequality).

164 IRC § 32.

165 Cong. Res. Serv., R44057, The Earned Income Tax Credit (EITC): An Economic Analysis 14 ("The EITC is one of the federal government's largest antipoverty programs[.]").

166 These alternative assessments might, of course, present their own complications.

167 Anne L. Alstott, Work vs. Freedom: A Liberal Challenge to Employment Subsidies, 108 Yale L.J. 967, 971 (1999) ("The case for employment subsidies rests on mistaken or morally dubious claims about the intrinsic or instrumental value of paid work.").

168 See Lisa Barrow & Leslie McGranahan, The Effects of the Earned Income Credit on the Seasonality of Household Expenditures, 53 Nat'l Tax J. 1211 (2000).

169 See Sanderson, note 1.

170 See notes 118-121 and accompanying text.

eral taxes paid.[171] If, as a normative matter, these metrics are truly the indicia of relevance, there is no need to then go further and conclude that this result implies progressivity. Simply providing the relevant metrics could be sufficient.

These definitions of "progressive" are not, of course, generally provided ex ante. Labeling a tax provision as progressive, regardless of political affiliation, typically indicates that the provision in question passes a moral litmus test. As such, analysts making progressivity assessments on provisions they support (for reasons unrelated to the provision's ostensible progressivity) have an incentive to define progressivity such that the provision in question qualifies. Conversely, opponents of a tax provision are motivated to define progressivity such that the provision fails the test. Given the breadth with which progressivity can be defined, both results are often possible.

This Article recognizes that despite their shortcomings, the terms "progressive" and "regressive" will almost certainly continue to be used with rhetorical effect when describing tax provisions. This Article accepts this reality but provides a framework through which these less-than-rigorous progressivity assessments can be critiqued. By so doing, the hope is to promote increased consistency in how progressivity is both determined and presented.

To the extent that a true progressivity assessment (rather than rhetorical fodder) is desired, the associated computational challenges only amplify the merits of this Article's prescriptive mandates. The perfect need not be the enemy of the good. Although it is possible to abstract these concepts of burden and benefit to the point of uselessness, in some circumstances these additional factors *can* be taken into account.[172] Insofar as these additional burdens and benefits are difficult to quantify, this difficulty can be acknowledged and addressed. The current common practice of simply omitting these effects is less defensible than attempting to quantify them, or at least stating the extent to which the omission of these effects might be significant.

Computational difficulties could, rather than complicate progressivity assessments, justify certain tax policy designs. Meaning, to the extent that we care about knowing the distributional burdens imposed by tax provisions, we could design taxes (and their associated spending programs) such that accurate progressivity analyses can be more easily performed. A proposed tax provision could be required to not just meet a certain progressivity requirement but could be required to meet this desired progressivity with some specified confidence. The

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[171] See notes 116-117 and accompanying text.

[172] See Part II.E.

following Section describes how using earmarked taxes could result in more accurate assessments of tax provisions' progressivity.

B. Earmarked Taxes

Incorporating spending effects into progressivity analyses is more feasible for spending programs funded by "earmarked" taxes. When taxes are earmarked, they are collected with a specific spending purpose in mind.[173] Rather than going into the federal general fund, this tax revenue enters a trust fund used to support identified spending programs.[174] Because we know the sourcing of these spending programs, a more nuanced progressivity assessment for these tax revenues and associated spending programs is theoretically possible. Although earmarked taxes would still suffer from the other tax burden issues described previously,[175] issues associated with spending would be mitigated.

Consider, for instance, the federal Old-Age and Survivors Insurance and Federal Disability Insurance (OASDI) program. Commonly known as Social Security, OASDI provides retirement benefits for Americans aged sixty-five and older and is funded from a trust fund composed of certain payroll taxes.[176] The payroll taxes funding OASDI are limited to, in 2019, a worker's first $132,900 of wages, and constitute the large majority of OASDI's assets.[177] Wages below the cap are taxed at 6.2%; wages above the cap are not subject to OASDI taxes. Although the precise mechanics of OASDI funding are complicated, OASDI payments generally come from the OASDI trust fund.[178]

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[173] Susannah Camic, Earmarking: The Potential Benefits, 4 Pitt. Tax Rev. 55, 56 (2006); see also Susannah Camic Tahk, Public Choice Theory and Earmarked Taxes, 68 Tax L. Rev. 755, 766 (2015) ("When a governmental unit earmarks a tax, it sets aside the revenue for a specific purpose or recipient.").

[174] Seto, note 158, at 1494 ("[T]rust funds (such as the Social Security trust funds) account for programs financed by collections from specific sources.").

[175] See Parts III.A and III.B.

[176] Soc. Sec. Admin., Social Insurance Programs (1997), https://www.ssa.gov/policy/docs/progdesc/sspus/oasdi.pdf.

[177] Soc. Sec. Admin., OASDI and SSI Program Rates & Limits (2019), https://www.ssa.gov/policy/docs/quickfacts/prog_highlights/RatesLimits2019.pdf; Bd. of Trs., Fed. Old-Age & Survivors Ins. & Fed. Disability Ins. Tr. Funds, The 2019 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds (2019), at 6 ("In 2018, net payroll tax contributions accounted for 88.2 percent of total trust fund income."), https://www.ssa.gov/OACT/TR/2019/tr2019.pdf.

[178] The federal government is obligated to make Social Security payments. Although these payments first come from the Social Security trust fund, to the extent that there is a shortfall, the balance would come from the general fund. June E. O'Neill, Why Social Security Needs Fundamental Reform, 65 Ohio St. L.J. 79, 83–84 (2004) ("Because the trust fund does not hold assets that can be sold to pay current benefits, the federal government

The payroll taxes funding OASDI are often referred to as regressive since taxpayers earning beyond the $132,900 wage cap are not subject to additional taxes.[179] But because these payments can be sourced to the OASDI trust fund, which is funded by payroll taxes, a more refined assessment of progressivity can be made. Although payments into OASDI are regressive, in that lower-income taxpayers pay a larger percentage of their income as payroll taxes, these lower-income taxpayers also receive higher proportionate benefits.[180] Thus, when the spending side of OASDI is considered in conjunction with the payroll taxes funding it, the payroll taxes are generally characterized as progressive.[181]

Whether or not a tax provision is "earmarked" is not a binary classification. Deviations from pure earmarking (understood as the case where tax revenues from a specific tax provision fund a specific spending program) are common. Social Security, for instance, is a mandatory spending program under the federal budget.[182] Even though payments are generally funded from the OASDI trust fund, Social Security payments are obligated even if the trust fund is empty. Additionally, the general fund has occasionally infused the OASDI trust fund with cash to support certain changes in law.[183] Similarly, the Highway Trust Fund, which is funded from earmarked federal fuel taxes and finances most federal spending for highways and mass transit, has also required general fund transfers to remain solvent.[184] Insofar as a spending program is "semi-earmarked," the funds cannot

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must acquire additional resources to make good on the commitment when Social Security taxes fall short of promised Social Security benefit payments.").

179 See, e.g., Michael A. Johnson, A Gap in the Analysis: Income Tax and Gender-Based Wage Differentials, 85 Geo. L.J. 2287, 2302 (1997) ("Thus, a worker faces a regressive social security tax scheme[.]").

180 Kathryn L. Moore, Redistribution Under the Current Social Security System, 61 U. Pitt. L. Rev. 955, 967 (2000) ("Thus, all other things being equal, Social Security's disability benefits treat individuals with lower earnings more favorably than those with higher earnings because they replace a higher percentage of lower wages.").

181 See, e.g., Neil H. Buchanan, Social Security and Government Deficits: When Should We Worry?, 92 Cornell L. Rev. 257, 286 (2007) ("The Social Security system is overall a progressive program that paradoxically relies on a non-progressive (and, above a relatively low limit, regressive) tax structure."); William H. Simon, Rights and Redistribution in the Welfare System, 38 Stan. L. Rev. 1431, 1450 (1986) (noting that OASDI taxes are regressive, but the payout is progressive, though it takes many years for payments to be received).

182 Tim Westmoreland, Standard Errors: How Budget Rules Distort Lawmaking, 95 Geo. L.J. 1555, 1566 (2007).

183 See Kathryn L. Moore, Social Security Reform: Fundamental Restructuring or Incremental Change?, 11 Lewis & Clark L. Rev. 341, 360 n.112 (2007) (describing transfers from the general fund to the OASDI trust fund).

184 Tax Pol'y Ctr., What Is the Highway Trust Fund, and How Is It Financed? (2020), https://www.taxpolicycenter.org/briefing-book/what-highway-trust-fund-and-how-it-financed.

be sourced to a specific tax provision with as much certainty, thereby complicating the spending side of any progressivity analysis.

But if accurately identifying progressive (or regressive) tax policy is desired, earmarked tax provisions, if rigorously defined, could help accomplish that goal. If a spending program was exclusively funded by a specific tax provision, with no infusions of cash from any other sources, the true redistributive effect of the tax provision could be more easily identified. Because a new earmarked tax provision would operate at the margin of the existing tax code, it would allow for targeted redistribution at a level of specificity impossible with general tax funds.

For instance, a tax provision could create a fund financed by, say, a 1% tax on the top 10% of income earners. The fund could then disburse this tax revenue to the bottom 10% of income earners. Assuming minimal microeconomic and macroeconomic effects, this tax provision would be unassailably progressive.[185] This is in contrast with a spending program that simply provided the same amount of funds to the same lower-income group without an associated earmarked tax provision. To the extent that the benefit to low-income taxpayers was provided out of the general fund there would be no guarantee of the provision's degree of progressivity.[186]

This is true even if the proceeds from some special tax provision was the putative funding source for the spending program. By not explicitly connecting the special tax to the spending program, the special tax revenue is commingled with the general fund, with the progressivity effects of the spending provision then connected to all the tax provisions funding the general fund rather than just the special tax. If the spending program is not contingent on the special tax, or pays out more, the redistributive function of the special tax and spending program would be difficult to identify.

More generally, earmarked tax provisions combined with targeted spending programs could explicitly address redistribution, which is an often stated (but generally unaccomplished) goal of progressive taxation.[187] An earmarked tax provision could allow tailored redistribution along any desired progressivity base, or even across progressivity bases. A tax levied on the top 1% of property owners could be redistributed to the bottom 10% of property owners, or to the bottom 5% of wage earners, or any other distributionally favored category of taxpayers.

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[185] Assuming a progressivity base of pretax income. See Part II.B.

[186] If, for example, the general tax revenue came from starkly regressive taxes.

[187] See note 26 and accompanying text.

V. Conclusion

Asking about a tax provision's progressivity is often to ask the wrong question. To the extent that tax policy is concerned about effects such as, for example, unemployment, poverty, and other specific outcomes, whether or not a tax provision satisfies an arbitrary definition of "progressive" is irrelevant. But since progressivity as a rhetorical concept will invariably persist in tax policy debates, it is crucial to reconcile the inconsistent and inaccurate uses of the term. By theorizing progressivity's constitutive elements, providing an improved framework for its assessment, and proposing tax policy designs to more easily measure it, this Article improves the public's ability to understand how tax policies impact them. Claims regarding a provision's progressivity must state not only whether the provision *is* progressive, but convey exactly *how* it is progressive, and to a more accurate degree. Without this framework, our tax policy conversations about progressivity will remain flawed, overly simplistic, and difficult to refute.

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