The Case for Taxing Away Unsustainable Profits

*Allison Christians & Tarcísio Diniz Magalhães**

Abstract

When businesses offload environmental and social costs on the public, the resulting profits are windfalls extracted from current and future taxpayers. Prevailing regulatory and tax remedies have not only failed to eliminate such profiteering, but they have in fact incentivized it. To prevent some from receiving windfalls while everyone else bears the costs, profits can be distinguished between sustainable profits, when costs are internalized, and unsustainable profits, when costs are externalized. While the former would remain subject to the traditional corporate income tax, the latter should be completely taxed away with a surtax. A viable way to achieve this is to combine advanced mechanisms for measuring environmental and social damage across supply chains with classic and emerging legal techniques for differentiating categories of income for tax purposes. Mobilized through the income tax system, these tools can be used to design a cutting-edge windfall tax on unsustainable profits. This Article makes the normative and practical case for doing so.

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INTRODUCTION

Profound and potentially irreversible environmental destruction owing to climate change is imminent.[1] Meanwhile, the social compact between workers and employers is fraying irreparably, with working

[1] Christoph Heinze, Thorsten Blenckner, Helena Martins, Dagmara Rusiecka, Ralf Döscher, Marion Gehlen, Nicolas Gruber, Elisabeth Holland, ØYSTEIN HOV, FORTUNAT JOOS, JOHN BRIAN ROBIN MATTHEWS, ROLF RØDVEN & SIMON WILSON, *The Quiet Crossing of Ocean Tipping Points*, 118 PROC. NAT'L ACAD. SCIS. U.S., no. 9, Mar. 2, 2021, at 1 (showing profound and potentially irreversible destruction of oceanic environmental conditions due to anthropogenic climate change); Thomas Slater, Isobel R. Lawrence, Inès N. Otosaka, Andrew Shepherd, Noel Gourmelen, Livia Jakob, Paul Tepes, Lin Gilbert & Peter Nienow, *Earth's Ice Imbalance*, 15 CRYOSPHERE 233, 233–46 (2021) (showing that the Earth lost 28 trillion metric tons of ice between 1994 and 2017, driven by oceanic melting); *see also* Johan Rockström et al., *A Safe Operating Space for Humanity*, 461 NATURE 472, 472–75 (2009) (establishing nine areas of planetary resource boundaries that, if transgressed, would "significantly erod[e] the resilience of major components of Earth-system functioning"); Will Steffen, Ása Persson, Lisa Deutsch, Jan Zalasiewicz, Mark Williams, Katherine Richardson, Carole Crumley, Mark Williams, Katherine Richardson, Carole Crumley, Veerabhadran Ramanathan, Johan Rockström, Marten Scheffer, Hans Joachim Schellnhuber & Uno Svedin, *The Anthropocene: From Global Change to Planetary Stewardship*, 40 AMBIO 739, 739–41 (2011) (discussing the advent of a time interval where human activity, if not changed, will create irreversible hostility due to environmental degradation); Anthony D. Barnosky, Elizabeth A. Hadly, Jordi Bascompte, Eric L. Berlow, James H. Brown, Mikael Fortelius, Wayne M. Getz, John Harte, Alan Hastings, Pablo A. Marquet, Neo D. Martinez, Arne Mooers, Peter Roopnarine, Geerat Vermeij, John W. Williams, Rosemary Gillespie, Justin Kitzes, Charles Marshall, Nicholas Matzke, David P. Mindell, Eloy Revilla & Adam B. Smith, *Approaching a State Shift in Earth's Biosphere*, 486 NATURE 52, 52 (2012) (showing that the global ecosystem is approaching a critical and possibly irreversible "tipping point"). For a recount of the abundant evidence, see generally JASON HICKEL, LESS IS MORE: HOW DEGROWTH WILL SAVE THE WORLD (2020); INTERGOVERNMENTAL PANEL ON CLIMATE

conditions deteriorating and social safety net protections once underwritten by employers now externalized to those least able to afford them.[2] This scenario has been compounded by an unprecedented global energy crisis stemming from the recent war initiated by Russia to occupy Ukraine,[3] one consequence of which is that several governments and international institutions are now considering windfall profit taxes[4] on oil and gas companies that have enjoyed outsize profits at consumers' expense. [5] Yet even outside the context of warfare,

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CHANGE, CLIMATE CHANGE 2021 (Valérie Masson-Delmotte et al. eds., 2021) (showing environmental destruction to be outpacing past predictions).

2 *See, e.g.*, ADAM TOOZE, SHUTDOWN: HOW COVID SHOOK THE WORLD'S ECONOMY 103–04 (2021) ("As huge workforces were idled and quarantined, around the world Covid became a crash test of labor market institutions. . . . If Europe's welfare states adapted to contain the worst impact of the crisis, large developing economies struggled with far more basic problems."); COLIN KAHL & THOMAS WRIGHT, AFTERSHOCKS: PANDEMIC POLITICS AND THE END OF THE OLD INTERNATIONAL ORDER (2021).

3 The Foreign Affairs Interview, *The World's First Energy Crisis*, FOREIGN AFFS., at 03:31 (June 23, 2022), https://www.foreignaffairs.com/podcasts/worlds-first-energy-crisis [https://perma.cc/R37P-628Y].

4 A windfall is defined as "an unexpected or sudden acquisition or advantage, often in the form of unforeseen financial gain." *Dropping Some Truth on 'Windfall,'* MERRIAM-WEBSTER, https://www.merriam-webster.com/words-at-play/windfall-word-history-use [https://perma.cc/5BPK-URH8]. The term is traced to the fifteenth century and originally referred to the literal happenstance of wood or fruit being blown to the ground by wind, and thus freely available to the first person who happened to come across the bounty. *Id.*; *see also* Comment, *Taxation of Found Property and Other Windfalls*, 20 U. CHI. L. REV. 748, 748, 756 (1953) ("The term 'windfall' denotes value which is received by a person unexpectedly as a result of good fortune rather than as a result of effort, intelligence, or the venturing of capital. . . . It may be possible to impose the tax either when the property is found, when the finder claims it as of right, or when the statute of limitations has run against the loser.").

5 Isabel Gottlieb, *EU Weighs Windfall Profits Tax for Energy Companies*, BLOOMBERG TAX (July 6, 2022, 3:12 PM), https://news.bloombergtax.com/daily-tax-report-international/eu-weighs-windfall-profits-tax-for-energy-companies [https://perma.cc/TV4B-UBLA]; Shruti Srivastava, Siddhartha Singh & Debjit Chakraborty, *India Slaps Windfall Tax on Oil Firms, Hitting Reliance Shares*, BLOOMBERG (July 1, 2022, 12:40 AM), https://www.bloomberg.com/news/articles/2022-07-01/india-imposes-windfall-tax-on-local-oil-output-export-of-fuels [https://perma.cc/Z25W-Y6ZK]; Bloomberg News, *IMF Calls for Permanent Tax on Excess Energy Profits*, FIN. REV. (June 8, 2022, 7:54 AM), https://www.afr.com/policy/economy/imf-backs-call-to-tax-excess-profits-of-energy-companies-20220608-p5arxl [https://perma.cc/9W3D-TYFK]; Zoltan Simon, *Hungary Unveils Windfall Taxes, $6.1 Billion in Spending Cuts*, BLOOMBERG (June 5, 2022, 3:54 AM), https://www.bloomberg.com/news/articles/2022-06-05/hungary-unveils-windfall-taxes-6-1-billion-in-spending-cuts#xj4y7vzkg [https://perma.cc/BNF8-3K3T]; Trevor Hunnicutt, *White House Weighs Oil Profits Tax to Fund Consumer Rebate*, REUTERS (June 2, 2022, 5:59 PM), https://www.reuters.com/business/energy/white-house-considering-proposal-tax-oil-gas-windfall-profits-official-says-2022-06-02/ [https://perma.cc/7LZ9-668C]; Eshe Nelson, *Britain Will Tax Oil and Gas Profits as Cost-of-Living Crisis Swells*, N.Y. TIMES (May 26, 2022), https://www.nytimes.com/2022/05/26/business/uk-oil-company-profits-tax.html [https://perma.cc/QAD4-JA8B]; Naomi O'Leary, *Italy Imposes 25% Windfall Tax on Energy Companies*, IRISH TIMES (May 3, 2022, 7:49 PM), https://www.irishtimes.com/business/economy/italy-imposes-25-windfall-

business practices that contribute to environmental and social destruction create windfalls because the costs are offloaded to workers, communities, and ultimately the general public.[6]

Why should private actors be allowed to profit from unsustainable practices, when the true costs of their activities are passed on to others? The simple answer is that they should not. [7] Since the "profit" to be made from unsustainable practices does not reflect the full present and future costs of undertaking them, it is not really profit at all but a windfall, extracted at the expense of current and future taxpayers. At the extreme, ignoring the windfall nature of these profits amounts to subsidizing unsustainable activities relative to more sustainable alternatives.[8] To prevent some from receiving such windfalls while everyone else bears the cost, we should tax them away. Tradi-

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tax-on-energy-companies-1.4868646 [https://perma.cc/KTZ7-6C2T]; Alonso Soto, *Spain Set to Extend Reach of Energy Windfall Tax on Utilities*, BLOOMBERG TAX (Mar. 29, 2022, 5:51 AM), https://news.bloombergtax.com/daily-tax-report/spain-set-to-extend-reach-of-energy-windfall-tax-on-utilities [https://perma.cc/SFN9-2LT4].

6 *See* Jos Sijm, Karsten Neuhoff & Yihsu Chen, *CO_2 Cost Pass-Through and Windfall Profits in the Power Sector*, 6 CLIMATE POL'Y 49, 49–50, 63 (2006) (showing how firms realize windfall profits by receiving free allowances to emit carbon dioxide and then passing the social costs of their emissions onto prices); Max Råange & Mikael Sandberg, *Windfall Gains or Eco-Innovation? 'Green' Evolution in the Swedish Innovation System*, 18 ENV'T ECON. & POL'Y STUD. 229, 230–31, 244 (2016) (arguing that, because shifts to nonfossil energy in Sweden were driven by business motives rather than green technological innovations, companies obtained windfall gains, while greenhouse gas emissions remained unchanged); CARBON MKT. WATCH, THE PHANTOM LEAKAGE: INDUSTRY WINDFALL PROFITS FROM EUROPE'S CARBON MARKET 2008–2019, at 3 (2021) (discussing windfall profits among companies that obtain free pollution permits by claiming to be at risk of "carbon leakage"); CE DELFT, ADDITIONAL PROFITS OF SECTORS AND FIRMS FROM THE EU ETS 10–11 (2021) (identifying energy-intensive firms that collect windfalls by being allowed to pollute under the EU Emissions Trading System); DAGMAR NELISSEN & JASPER FABER, CE DEFLT, HOW AIRLINES PROFIT FROM CHANGES IN THE EU ETS 5 (2012) (finding windfall profits in the aviation industry due to pollution permits conferred to airplane companies).

7 *See, e.g.*, C. Lowell Harriss, *Monopoly and the Excess Profits Tax*, 16 TAX MAG. 717, 717 (1938) (reasoning that, since "no one—widow, orphan, university, or ruthless plutocrat, individually or in groups—should benefit from extorting monopoly gains from the community" and that "[i]ndividuals have no right to gains that society has declared illegal[,]" these injustices may be alleviated "by using one of the most powerful instruments for active government intervention in business—taxation").

8 Jeffrey Hollender, *Companies Must Account for the True Cost of Their Products*, HARV. BUS. REV. (Apr. 22, 2010), https://hbr.org/2010/04/full-cost-accounting-is-the-so [https://perma.cc/K2VK-XY74] ("If companies paid the full costs of their externalities, the now de facto taxpayer-subsidized things they produce—from energy and consumer goods to food and everything else—along with the ways they manufacture them would quickly become cleaner, safer, healthier, and more efficient and sustainable. . . . We would no longer have a world where the 'good stuff' is more expensive than the 'bad stuff.' . . . [T]he rest of us involuntarily end up paying in the form of higher taxes, additional health care needs, costly ecological clean-ups, and other expenses. . . . [A]ny money that corporations 'earn' as additional profit by failing to ac-

tional efforts to do so have been relatively modest in scope, mainly aimed at consumers, and hampered by entrenched politics.[9]

To change the trajectory, innovative solutions are needed to directly target the profits of those who continue to collect windfalls through cost externalization, thus favoring the realization of the "polluter pays" principle ("PPP") over the "consumer pays," "user pays," or "victim pays" principles.[10] The prospects for a novel approach are emerging with the development of advanced tools for measuring the

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count for the full true costs of their products and services isn't theirs in the first place. It's stolen from the rest of us . . . .").

9 *See generally* FINIS DUNAWAY, SEEING GREEN: THE USE AND ABUSE OF AMERICAN ENVIRONMENTAL IMAGES (2015) (showing how mainstream media imagery has been mobilized to personally blame individual consumers for environmental degradation as a way to deflect attention from corporations' and governments' responsibilities); *see also* Rebecca Solnit, *Big Oil Coined 'Carbon Footprints' to Blame Us for Their Greed. Keep Them on the Hook*, GUARDIAN (Aug. 23, 2021, 6:20 AM), https://www.theguardian.com/commentisfree/2021/aug/23/big-oil-coined-carbon-footprints-to-blame-us-for-their-greed-keep-them-on-the-hook [https://perma.cc/3ADZ-BSA5]; Auden Schendler, *Worrying About Your Carbon Footprint Is Exactly What Big Oil Wants You to Do*, N.Y. TIMES (Aug. 31, 2021), https://www.nytimes.com/2021/08/31/opinion/climate-change-carbon-neutral.html [https://perma.cc/F64U-X3SN]; Elliott Hyman, *Who's Really Responsible for Climate Change?*, HARV. POL. REV. (Jan. 2, 2020), https://harvardpolitics.com/climate-change-responsibility/ [https://perma.cc/4YXY-H7UV] ("[O]ne issue with a carbon tax relates to the reason why it works to begin with—it affects both producers and consumers of fossil fuels. Given the fossil fuel industry's historical role in blocking legislative efforts to combat climate change and sowing public doubt about the crisis, it might seem unfair to tax individuals as well as industry.").

10 Because the costs of pollution abatement can, in principle, be passed forward, some argue that the PPP is effectively indifferent as to who bears the final burden, as between firms, consumers, users, and victims. *See, e.g.*, Charles S. Pearson, *Testing the System: GATT + PPP = ?*, 27 CORNELL INT'L L.J. 553, 573 (1994) (arguing that the PPP "is sufficiently flexible to accommodate a range of interpretations, a variety of environmental protection approaches, and reasonable derogations and exceptions"). *But see* Robert E. Lutz II, *The Laws of Environmental Management: A Comparative Study*, 24 AM. J. COMPAR. L. 447, 476 (1976) ("The 'polluter pays principle' should not merely amount to the 'consumer pays principle.' . . . Where external costs result from those instances in which industry could have or should have selected less-polluting approaches, the resulting external costs arguably should not be borne by the consumer. In those cases, therefore, the laws implementing the PPP should provide that the costs are not passed on to him, but are internalized to the industry as a sort of penalty, with the revenue going to replenish the polluted resource."). In this sense, our argument is that consumption-based environmental taxes, by definition, overemphasize consumers and users, which may explain why these taxes are often accompanied by tax rebates for some individuals and families in order to reduce their regressive effect. *See* Julie Anne Cronin, Don Fullerton & Steven Sexton, *Vertical and Horizontal Redistributions from a Carbon Tax and Rebate*, 6 J. ASS'N ENV'T & RES. ECONOMISTS S169, S173–74 (2019). Profits-based taxation, on the other hand, puts the emphasis directly on firms and, by focusing specifically on windfalls as a form of economic rent resulting from cost externalization as this Article suggests, it is possible, according to standard economic theory, to prevent the burden being fully shifted to consumers. At the same time, as part of the legal structure of income taxes, a windfall tax on unsustainable profits could allocate revenues to the governments of the victims. *See infra* Sections III.C-.D.

full cost of unsustainable business activities, popularly referred to as life cycle assessments ("LCA").[11] Already in use in a range of self-regulatory contexts, this Article proposes that life cycle assessments may be used to design a cutting-edge windfall tax on unsustainable profits.

A windfall tax on unsustainable profits could be effectively mobilized through the income tax system as an addition to the tax on the portion of business profits that is attributable to unsustainable practices.[12] It is relatively easy to style a marginal surtax rate by following precedents in the Internal Revenue Code—both in its present form as well as in its past iterations.[13] The challenge at hand is to demonstrate the normative and practical feasibility of applying life cycle assessments to traditionally conceived income tax norms and assumptions.

To do so, this Article examines the conventional ways that tax regimes have been used to address environmental damage and why they have not yet fulfilled this task. It further explains why we should turn to the income tax for solutions that complement and enhance these conventional approaches. To work within the income tax, it then proposes a windfall tax rate on unsustainable profits, using life cycle assessment methodologies to identify the type and amount of profit to be taxed away.

Accordingly, Part I establishes that, owing to its innate regulatory nature, taxation law is an appropriate tool to use in response to environmental and social cost externalization. This Part explains the economic incentive and deterrent effects that are inherent in tax law and how these features have driven both conventional and more emergent tax policy approaches to the regulation of environmental damage. Most commonly, these approaches take the form of indirect, con-

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11 *See infra* Section III.B.

12 *See, e.g.*, U.N. DEP'T OF ECON. & SOC. AFFAIRS, UNITED NATIONS HANDBOOK ON SELECTED ISSUES FOR TAXATION OF THE EXTRACTIVE INDUSTRIES BY DEVELOPING COUNTRIES, at 367, U.N. Doc. ST/DESA(035)/T23, U.N. Sales No. 19.XVI.1 (2018) [hereinafter U.N. EXTRACTIVES HANDBOOK] ("Windfall profits tax, also referred to as excess profits tax or a cash flow tax, can be profit related. A windfall profits tax imposes a higher tax rate on profits or gains realized from a sudden windfall of a particular company or industry. Often the windfall or the increase in rate to deal with the windfall is not directly profit related but is linked to commodity price hikes, which are generally viewed as triggering disproportionate increases in profits . . . .").

13 *See, e.g.*, I.R.C. § 1(g) (applying parent's tax rate to unearned income of children); § 1(h) (applying various rates of tax on specified types of income); § 55 (recalculating income to achieve a minimum tax in defined circumstances); § 250 (applying a fixed rate of tax on specified foreign income); § 951(a) (applying a minimum tax on specified intangible income); § 1411 (imposing an addition to tax on specified unearned income); § 4043 (applying a surtax on fuel used in aircraft that is part of a fractional ownership program).

sumption-based excise taxes including carbon taxes and carbon pricing schemes. The analysis demonstrates that these approaches have not yet eliminated the availability of windfalls from externalizing environmental and social costs, so innovative reforms are needed.

Part II then makes the case that a windfall tax is an ideal tool for filling this kind of policy gap. By targeting unsustainable profits, the tax would enable regulatory focus to expand beyond the traditional consumption-targeted approach and toward the profits earned by externalizing environmental and social costs.[14] The analysis begins with a brief overview of the historical rationales for windfall taxes and their analogues to the contemporary phenomena of environmental and social cost externalization. The discussion then turns to how a direct surtax on unsustainable profits would complement existing and emerging indirect tax measures while simultaneously removing implicit income tax subsidies. Finally, it posits that current political conditions are uncharacteristically favorable to windfall taxes at present, given the urgent need for innovative and impactful reform in the face of unchecked environmental and social distress across the globe.

Finally, Part III lays out the core elements of the proposed windfall tax to be imposed on unsustainable profits and demonstrates how it would work by incorporating life cycle assessment methodologies within existing income tax principles, rules, and standards. Beginning with an analysis of these methodologies and connecting them to existing income measurement standards within the income tax, the analysis explores practical design and implementation challenges, taking into account the political realities of effectuating legal reform as well as the administrative compliance and enforcement aspects of the proposal.[15]

The Article concludes that although political factors are always key to the realization of principles in practice, the proposed windfall tax on unsustainable profit is an innovative yet normatively appropriate and practically feasible way to recapture the profits arising from

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14 The issue of choice between a direct income and an indirect consumption tax has constantly elicited intense debate in tax policy circles. Recently, such discussions have resurged in the international context due to many countries adopting turnover taxes levied on gross digital services revenues. *See* Young Ran (Christine) Kim, *Digital Services Tax: A Cross-Border Variation of the Consumption Tax Debate*, 72 ALA. L. REV. 131, 132, 135 (2020) (making the claim that digital services taxes are a consumption-based alternative to the income tax).

15 This reflects a concern with both administrability and compatibility with existing tax norms and concepts. *See* KEVIN HOLMES, INTERNATIONAL TAX POLICY AND DOUBLE TAX TREATIES 1–7 (2d ed. 2014) (outlining five objectives of tax rules: national wealth maximization, tax equity, economic efficiency, administrative efficiency, and international compatibility).

environmentally and socially damaging activities. Even if not legislatively adopted, the proposal demonstrates a fatal flaw in conventional conceptions surrounding the profitability of unsustainable businesses. It therefore provides a way to shift the discourse going forward.

I. The Regulatory Function of Taxation

When governments consider how to regulate activities that result in negative environmental or social impacts, taxes are an oft-used and effective policy tool.[16] Even though the primary aim of taxation is not to regulate but to raise revenue for government functions, all taxes have unavoidable economic consequences.[17] Taxes always perform, at

16 This has been recently acknowledged by the Organisation for Economic Co-operation and Development ("OECD") and the International Monetary Fund ("IMF") in a joint report to countries' minsters of finance and central bank governors. *See* IMF & OECD, *Tax Policy and Climate Change*, IMF/OECD Report for the G20 Finance Ministers and Central Bank Governors, at 4 (Apr. 2021); *see also* OECD, Taxing Energy Use 2019: Using Taxes for Climate Action 10 (2019). The role of tax in promoting green targets was also reaffirmed by the European Commission under the "European Green Deal." The European Union's strategy is to promote policies, including tax policies targeting energy and gas emissions, with the aim to build a climate-neutral Europe by 2050. *European Green Deal: How Does DG TAXUD Contribute?*, Eur. Comm'n: Tax'n & Customs Union, https://ec.europa.eu/taxation_customs/commission-priorities-2019-24-and-taxation/european-green-deal-what-role-can-taxation-play_en [https://perma.cc/XS7K-3WJ2]. Similarly, the United Nations has established a Subcommittee on Environmental Taxation to study how green taxes can contribute to the achievement of commitments set out in the 2030 Agenda on Sustainable Development Goals, the Addis Ababa Action Agenda, and the 2015 Paris Agreement. *Environmental Taxation*, U.N., https://www.un.org/development/desa/financing/what-we-do/ECOSOC/tax-committee/thematic-areas/environmental-taxation [https://perma.cc/KP6Q-LM6K].

17 The same is true for legal rules generally considered. *See, e.g.*, Louis Kaplow & Steven Shavell, *Why the Legal System Is Less Efficient than the Income Tax in Redistributing Income*, 23 J. Legal Stud. 667, 667–68 (1994) (showing that nontax forms of regulation also produce economic inefficiencies and arguing that tax rules are the least distortionary option for redistribution); *see also* Chris William Sanchirico, *Taxes Versus Legal Rules as Instruments for Equity: A More Equitable View*, 29 J. Legal Stud. 797, 800 (2000) (challenging the law and economics view of Kaplow and Shavell, according to which "efficiency is the only operative criterion for evaluating legal rules"); Louis Kaplow & Steven Shavell, *Should Legal Rules Favor the Poor? Clarifying the Role of Legal Rules and the Income Tax in Redistributing Income*, 29 J. Legal Stud. 821 (2000) (qualifying their 1994 article); David A. Weisbach, *Should Legal Rules Be Used to Redistribute Income?*, 70 U. Chi. L. Rev. 439 (2003) (arguing that the tax system is better than legal rules at redistributing income); Kyle Logue & Ronen Avraham, *Redistributing Optimally: Of Tax Rules, Legal Rules, and Insurance*, 56 Tax L. Rev. 157, 161 (2003) (providing a general framework for choosing an optimal redistribution policy instrument, "whatever one's vision of distributive justice might be"); Ronen Avraham, David Fortus & Kyle Logue, *Revisiting the Roles of Legal Rules and Tax Rules in Income Redistribution: A Response to Kaplow and Shavell*, 89 Iowa L. Rev. 1125, 1126–29 (2004) (proposing ways to relax the assumptions in Kaplow and Shavell's 1994 article); Tomer Blumkin & Yoram Margalioth, *On the Limits of Redistributive Taxation: Establishing a Case for Equity-Informed Legal Rules*, 25 Va. Tax Rev. 1, 2 (2005) (defending redistributive legal rules against Kaplow and Shavell's argument); Tsilly Dagan, *The*

minimum, a dual function: raising revenue for public spending as well as regulating behavior, whether intentionally or not.[18] Because of its unavoidable economic impacts, taxation should be a key plank in any regulatory endeavor.[19]

To overlook the possible impact of tax rules when regulating is therefore to potentially overlook subsidies embedded within the tax system that act in opposition to a given regulatory aim. Some subsidies are explicit, but a recent International Monetary Fund ("IMF") analysis of energy prices by economists Ian Parry, Simon Black, and Nate Vernon suggests that far more are implicit.[20] The authors define explicit subsidies to include undercharging for supply costs and direct payments to energy producers.[21] In contrast, they define implicit subsidies as a combination of the cost of the externalized environmental damage plus the consumption taxes that are foregone if these externalized costs are not included in the relevant consumption tax base.[22]

Global Market for Tax and Legal Rules, 21 FLA. TAX REV. 148, 148–49 (2017) (challenging Kaplow and Shavell's assumptions in light of global tax competition). *See generally* KATHARINA PISTOR, THE CODE OF CAPITAL: HOW THE LAW CREATES WEALTH AND INEQUALITY (2019).

18 Some scholars include redistribution as a third function, alongside revenue generation and regulation, while others overlook the regulatory function of taxation, focusing on redistribution and public provision. *Compare* Reuven S. Avi-Yonah, *The Three Goals of Taxation*, 60 TAX L. REV. 1, 3 (2006) (arguing that taxation has a redistributive and regulatory function on top of a revenue-raising function), *with* Liam Murphy & Thomas Nagel, *Taxes, Redistribution, and Public Provision*, 30 PHIL. & PUB. AFFS. 53, 54 (2001) (arguing that taxation has two primary functions: "public-private division" and "distribution").

19 On different uses of taxes to regulate, see Reuven S. Avi-Yonah, *Carbon Tax, Health Care Tax, Bank Tax, and Other Regulatory Taxes*, *in* BEYOND ECONOMIC EFFICIENCY IN UNITED STATES TAX LAW 183–84 (David A. Brennen et al. eds., 2013); Ana Paula Dourado & Alice Pirlot, *Taxes and Regulation*, 48 INTERTAX 356, 358–59 (2020); Carlo Garbarino & Giulio Allevato, *The Global Architecture of Financial Regulatory Taxes*, 36 MICH. J. INT'L L. 603, 610 (2015); Benjamin M. Leff, *Marijuana Taxation: Theory and Practice*, 101 B.U. L. REV. 915, 917 (2021); Luc Leboeuf & Alice Pirlot, *Taxation as a Means of Migration Control: The Case of Hungary*, 47 INTERTAX 291, 293 (2019); Stjepan Gadžo, *Using Tax Policy to Address Brain Drain and Depopulation: The Case of Croatia*, 67 ANNALS FAC. L. IN BELGRADE 116, 122 (2019).

20 Ian Parry, Simon Black & Nate Vernon, *Still Not Getting Energy Prices Right: A Global and Country Update of Fossil Fuel Subsidies* 2 (IMF, Working Paper No. WP/21/236, 2021).

21 *Id.* at 8.

22 *Id.* Externalized damage costs are calculated by reference to the underpricing of energy supplies due to ignoring air pollution and climate damage, whereas undercollecting consumption taxes occurs when the consumption tax base (whether a carbon tax or similar) ignores externalized environmental costs and treats market prices as complete and accurate reflections of value. *Id.* at 8–9, 12. Parry, Black, and Vernon build upon the lexicon and pricing methodologies first developed in David Coady, Valentina Flamini & Louis Sears, *The Unequal Benefits of Fuel Subsidies Revisited: Evidence for Developing Countries*, *in* INEQUALITY AND FISCAL POLICY 258–59 (Benedict Clements et al. eds., 2015); *see also* David Coady, Ian W.H. Parry & Baoping Shang, *Energy Price Reform: Lessons for Policymakers*, 12 REV. ENV'T ECON. & POL'Y 197, 198, 202 (2018).

Parry, Black, and Vernon's study shows that even as countries around the world adopt carbon taxes and pricing schemes to meet various carbon reduction targets, they also deliver over a trillion U.S. dollars annually in outright energy subsidies to fossil fuel producers, and some five times this amount in implicit energy subsidies.[23] The authors estimate that the United States provides total fossil fuel subsidies amounting to $662 billion per year, or more than $2,000 per person, of which more than 90% are implicit subsidies.[24] This represents 3.1% of annual U.S. gross domestic product ("GDP").[25] In quantifying the problem of cost externalization and its compounding through undertaxation, the study demonstrates the key role taxation plays in either supporting or undermining regulatory goals.[26]

It is therefore no surprise that tax rules have long been used to counter the problem of cost externalization in various respects, alongside other regulatory regimes.[27] Carbon taxes and carbon pricing schemes are a common way to counter environmental cost externalization. The function of these types of taxes is to raise retail prices as an alternative to, for example, prohibiting behaviors through regulation or criminalization.[28] These taxes and regulatory schemes may in-

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23 Parry et al., *supra* note 20, at 9.

24 *Id.* at 38.

25 *Id.*

26 *See id.* Ideally, tax and other regulatory tools act harmoniously, but in reality, regulatory schemes are often undermined by tax rules that act to incentivize the very behaviors that regulations seek to curb, or vice versa. *See, e.g.*, Kathleen DeLaney Thomas, *Taxing Nudges*, 107 VA. L. REV. 571, 574–75 (2021) (discussing how the tax treatment of government incentives in other areas, such as health, education, and environmental protection, can undermine "worthy policy goals"); Carrie M. Dupic, *The SUV Tax Loophole: Today's Quintessential Suburban Passenger Vehicle Becomes Small Business' Quintessential Tax Break*, 9 LEWIS & CLARK L. REV. 669, 670–71 (2005) (discussing the rise of sport utility vehicles as the result of an unintended consequence of tax laws).

27 Scholars have debated whether tax or nontax forms of regulation are better suited to achieve policy goals in various contexts, as part of the so-called "choice-of-instruments literature." *See, e.g.*, Peter N. Salib, *The Pigouvian Constitution*, 88 U. CHI. L. REV. 1081, 1082–84 (2021) (arguing that Pigouvian taxation is more effective than command-and-control rules for reducing social costs and harms associated, for example, with gun control and the spread of fake news via online speech); Jonathan S. Masur & Eric A. Posner, *Toward a Pigouvian State*, 164 U. PA. L. REV. 93, 95–96 (2015) (generally favoring Pigouvian taxation over command-and-control regulation); Vidar Christiansen & Stephen Smith, *Externality-Correcting Taxes and Regulation*, 114 SCANDINAVIAN J. ECON. 358, 360 (2012) (considering an "optimal instrument mix" between tax and regulation to control externalities); Brian Galle, *Tax, Command . . . or Nudge?: Evaluating the New Regulation*, 92 TEX. L. REV. 837, 842 (2014) (arguing that nudges and traditional command-and-control might be more efficient than Pigouvian taxation in some cases); Jim Rossi, *Carbon Taxation by Regulation*, 102 MINN. L. REV. 277, 280 (2017) (favoring energy law over a carbon tax on efficiency and social welfare grounds).

28 There are some examples of public interest litigation that seek to hold producers ac-

directly remove some of the profitability of engaging in externalizing activities, but their main strategy is to reduce demand for targeted goods relative to less harmful alternatives that might otherwise be uncompetitively priced.[29]

Carbon taxes and carbon pricing schemes are in effect around the world.[30] In the United States, California, Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Vermont, and Virginia have all put in place some form of carbon pricing program.[31] So far, these regimes have been inadequately deployed, as the Earth's carbon dioxide levels continue to trend upward and the devastating effects of climate change continue to intensify year after year.[32] Carbon taxes and prices and their corollaries aimed at consumption may be a necessary component of an overall effective environmental policy, but ultimately these measures are insufficient on their own.

Accordingly, this Part first briefly explains why taxes are often an effective way to change undesirable behaviors, including the externalization of environmental and social damage.[33] It examines two kinds of

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countable for environmental damage they cause despite lack of direct regulatory prohibition. *See* Geetanjali Ganguly, Joana Setzer & Veerle Heyvaert, *If at First You Don't Succeed: Suing Corporations for Climate Change*, 38 OXFORD J. LEGAL STUD. 841, 842–45 (2018); Brian J. Preston, *Climate Change Litigation* (pts. 1 & 2), 5 CARBON & CLIMATE L. REV. 3, 244, 247–48 (2011); JOANA SETZER & CATHERINE HIGHAM, GLOBAL TRENDS IN CLIMATE CHANGE LITIGATION: 2021 SNAPSHOT, at 5 (2021).

29 Jefferson P. VanderWolk, *Carbon Tax: The Global Perspective*, 75 BULL. FOR INT'L TAX'N 250, 250 (2021) ("The concept of using a carbon tax as a means of reducing harmful emissions is very simple—imposing a tax on the use of fossil fuels discourages their use, resulting in a lower level of emissions. At the same time, the tax produces revenue that the government can use to advance its priorities, which may include programmes to address the effects of climate change or local air pollution, as well as any unwanted effects of imposing the carbon tax itself.").

30 Countries that currently have a national carbon tax (or that have committed to implementing one) include Argentina, Canada, Chile, Colombia, Denmark, Estonia, Finland, France, Iceland, Ireland, Japan, Latvia, Liechtenstein, Luxembourg, Mexico, Netherlands, Norway, Poland, Portugal, Singapore, Slovenia, South Africa, Spain, Sweden, Switzerland, Ukraine, and the United Kingdom. *Id.* at 251.

31 *U.S. State Carbon Pricing Policies*, CTR. FOR CLIMATE & ENERGY SOLS. (May 2021), https://www.c2es.org/document/us-state-carbon-pricing-policies/ [https://perma.cc/NP8T-34XE].

32 INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *supra* note 1, at 6–7 (prepared by 234 scientists from sixty-six countries showing upward trajectory of carbon dioxide levels and globally impactful crises related thereto); *see also IPCC Report: 'Code Red' for Human Driven Global Heating, Warns UN Chief*, U.N. (Aug. 9, 2021), https://news.un.org/en/story/2021/08/1097362 [https://perma.cc/W4RN-JFJH] (reporting U.N. Secretary-General António Guterres's characterization of the Intergovernmental Panel on Climate Change report as "a code red for humanity. The alarm bells are deafening, and the evidence is irrefutable.").

33 Roberton C. Williams, *Environmental Taxation*, *in* THE ECONOMICS OF TAX POLICY 49, 50 (Alan J. Auerbach & Kent Smetters eds., 2017) ("The basic idea is simple. A negative exter-

regulatory regimes designed exclusively to address environmental externalities: carbon tax and pricing regimes, on the one hand, and environmental damage-adjusted consumption taxes, on the other. The goal of this analysis is to demonstrate that although both of these approaches seek to counter environmental cost externalization by raising retail prices, both allow private investors and businesses to continue to collect windfall profits by externalizing their environmental and social costs.

A. Why Use Taxes to Regulate Behavior

Taxation pools resources for public use that presumably would otherwise be allocated to private parties according to the regular functions of the free market.[34] As such, all taxes necessarily impact economic behavior, albeit in different ways and to different degrees.[35] As a result, one of the empirical questions that has always driven tax law and policy research is whether the behavioral effects of a given tax rule can be accurately isolated and quantified.[36] A closely related second empirical question asks whether the distribution of such quantified behavioral effects among taxpayers can be accurately estimated.[37]

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nality—a case in which production or consumption of some good harms someone other than the buyer or seller of that good—represents a market failure because the buyer's and seller's decisions fail to take into account that external cost. Consequently, an unregulated free market will generally result in an inefficiently high quantity of any good with an associated negative externality. Imposing a tax on the externality-generating good can correct the externality.").

34 *See, e.g.*, ARTHUR M. OKUN, EQUALITY AND EFFICIENCY 31 (2015) ("[T]he economic institutions of the United States rest on voluntary exchange and on private ownership of productive assets; and they involve money rewards and penalties that generate an unequal distribution of income and wealth.").

35 In economics, this has been historically referred to as the "deadweight loss" impact of taxation. For influential work on this subject, see generally Arnold C. Harberger, *The Measurement of Waste*, 54 AM. ECON. REV. 58 (1964); J.A. Kay, *The Deadweight Loss from a Tax System*, 13 J. PUB. ECON. 111 (1980); Martin Feldstein, *Tax Avoidance and the Deadweight Loss of the Income Tax*, 81 REV. ECON. & STAT. 674 (1999); Raj Chetty, *Is the Taxable Income Elasticity Sufficient to Calculate Deadweight Loss? The Implications of Evasion and Avoidance*, 1 AM. ECON. J.: ECON. POL'Y 31 (2009). For a philosophical criticism, see PETER DIETSCH, CATCHING CAPITAL: THE ETHICS OF TAX COMPETITION 132–33 (2015) ("[T]he insights we gain from the concept of deadweight loss are more complex than the standard argument suggests. . . . In practice, it is an open question whether a particular government intervention is welfare enhancing or reducing. Against this background, the key question becomes an empirical one—as Harberger realized. Can we measure the various welfare effects of a policy and aggregate them to obtain an overall assessment?").

36 *See, e.g.*, Allison Christians, *Introduction to Tax Policy Theory*, SSRN (May 29, 2018), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3186791 [https://perma.cc/F9DH-5EK9].

37 Empirical inquiries and other estimations into the outcomes of tax policies have come to form a specific field in modern economics known as optimal taxation, as a result of work developed by economist James Mirrlees in the 1970s. *See generally* ROBIN BOADWAY, FROM

These questions have produced volumes of theory and debate over the years, culminating in a long list of jargon-laden vocabulary with the notion of economic efficiency as the central unifying principle.[38] The general principle of economic efficiency is that taxes should not unduly distort economic outcomes—that is, people should not be induced to choose to undertake or not undertake a given economic activity primarily because a tax rule makes the activity more or less advantageous than would otherwise be expected. The economist's creed is therefore that taxes should not distort the outcomes that would be produced by the market in an imagined world without taxes.[39] Because it is not possible to fully eliminate all distortion without eliminating all taxation (and therefore presumably dismantling the tax-funded state), what this premise states in more practical terms is that, *ceteris paribus*, lawmakers should choose the form and level of taxes that prove the least distortionary in terms of their effect on individual behaviors.[40] The idea is that taxpayers ought to choose their

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Optimal Tax Theory to Tax Policy (Hans-Werner Sinn ed., 2012); Matti Tuomala, Optimal Redistributive Taxation (2016). For a critique, see generally Linda Sugin, *A Philosophical Objection to the Optimal Tax Model*, 64 Tax L. Rev. 229 (2011).

38 *See, e.g.*, Terrance O'Reilly, *Principles of Efficient Tax Law: Apocrypha*, 27 Va. Tax Rev. 583, 585 (2008); Boris I. Bittker, *Equity, Efficiency, and Income Tax Theory: Do Misallocations Drive Out Inequities?*, 16 San Diego L. Rev. 735, 736–37 (1979); James R. Repetti, *The Appropriate Roles for Equity and Efficiency in a Progressive Individual Income Tax*, 23 Fla. Tax Rev. 522, 525–26 (2020).

39 Generally, the rationale for this ideal policy is that economic efficiency is a net social good that should be supported, and not undermined, by taxation. In this context, economic efficiency is generally defined as the use of resources so as to maximize the production of goods and services, such that no one can be made better off without making someone else worse off (Pareto-efficiency), or alternatively, that everything that can be produced is being produced, given available resources. The definitions presume that maximizing the production of goods and services is normatively justified. *See, e.g.*, Okun, *supra* note 34, at 31 ("[T]he functioning—indeed, the very life—of the market depends on the coercive powers of political institutions."); *see also* Joseph E. Stiglitz, *Pareto Efficient and Optimal Taxation and the New Welfare Economics*, *in* 2 Handbook of Public Economics 991 (Alan Auerbach & Martin Feldstein eds., 1987) (reviewing Pareto efficient taxation through the lens of the "New New Welfare Economics"); Dagobert L. Brito, Jonathan H. Hamilton, Steven M. Slutsky & Joseph E. Stiglitz, *Pareto Efficient Tax Structures*, 42 Oxford Econ. Papers 61, 61–62 (1990) (providing a general description of Pareto efficient tax structures without imposing "single crossing"). For powerful critiques of efficiency concepts as applied to real-world policy issues, see Ronald Dworkin, A Matter of Principle 237–66 (1985); Allen Buchanan, Ethics, Efficiency, and the Market (1985); Jules Coleman, Markets, Morals, and the Law 95–132 (1998); Julian Le Grand, *Equity Versus Efficiency: The Elusive Trade-Off*, 100 Ethics 554 (1990); Neil H. Buchanan & Michael C. Dorf, *A Tale of Two Formalisms: How Law and Economics Mirrors Originalism and Textualism*, 106 Cornell L. Rev. 591, 597 (2021) (reviewing previous critiques and adding that "the very idea of efficiency is empty without a highly contestable set of value judgments").

40 The principle can be described as one of "minimum disruption" relative to other available means. Thus, where more than one regulatory approach is possible, lawmakers should gener-

behaviors as a function of their authentic free market goals rather than as a response to a set of tax rules that favor one action over another.[41]

This idealized preference against the use of taxes to regulate behavior presumes that free market outcomes are generally superior to state-controlled outcomes, but societies often reject free market outcomes when the social costs of acceptance are deemed too high. [42] When this happens—for example, when society decides that something ought to be done to curb smoking or encourage homeownership—the tax law is a popular corrective.

Taxes act as a behavior corrective in both metaphorical senses of carrot and stick. When lawmakers seek to produce a specific behavior, they introduce a tax deduction or credit and characterize it as a tax incentive.[43] When they seek to discourage behavior, they often intro-

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ally choose the least distortive approach to a given problem. When the ideal regulatory approach is taxation, there is still more analysis to do because policy reformers must seek to predict or measure the relative economic impact of various types of taxes, and favor those believed to produce the least amount of economic distortion, as economists define it. *See* Daniel Liberto, *What Does Ceteris Paribus Mean in Economics*, INVESTOPEDIA (Jan. 1, 2023), https://www.investopedia.com/terms/c/ceterisparibus.asp [https://perma.cc/UW5W-DFTK].

41 *See* STEPHEN SMITH, TAXATION 102 (2015) ("[T]he notion of 'neutrality' as a guiding principle for tax policy has much to commend it. In essence it is a maxim that tax revenues should be raised with the least possible disturbance to economic activity—and as such it is broadly consistent with the concept of economic efficiency in taxation. It is, of course, impossible to raise significant revenues without affecting economic behavior. The notion of neutrality suggests, however, a way of keeping this effect to a necessary minimum, in particular by ensuring that similar—and closely substitutable—activities are not subject to unjustified differences in tax treatment.").

42 *See* LIAM MURPHY & THOMAS NAGEL, THE MYTH OF OWNERSHIP 33 (2004) ("[E]ven if the destitute are left to fend for themselves, it still cannot be said that pretax outcomes are simply market outcomes. They are, instead, the returns generated by a market regulated in accordance with a certain set of government policies."); THOMAS PIKETTY, CAPITAL IN THE TWENTY-FIRST CENTURY 505 (Arthur Goldhammer trans., 2014) ("The progressive tax is thus a relatively liberal method for reducing inequality, in the sense that free competition and private property are respected while private incentives are modified in potentially radical ways, but always according to rules thrashed out in democratic debate."); Colin Farrelly, *Taxation and Distributive Justice*, 2 POL. STUD. REV. 185, 185–86 (2004); Samuel Freeman, *Equality of Resources, Market Luck, and the Justification of Adjusted Market Distributions*, 90 B.U. L. REV. 921, 921–92 (2010); David G. Duff, *Tax Policy and the Virtuous Sovereign: Dworkinian Equality and Redistributive Taxation*, *in* PHILOSOPHICAL FOUNDATIONS OF TAX LAW 167, 167–71 (Monica Bhandari ed., 2017). *See generally* CASS R. SUNSTEIN, FREE MARKETS AND SOCIAL JUSTICE (1999); STEPHEN HOLMES & CASS R. SUNSTEIN, THE COST OF RIGHTS: WHY LIBERTY DEPENDS ON TAXES (1999).

43 This is also referred to as a "tax expenditure." *See generally* STANLEY S. SURREY, PATHWAYS TO TAX REFORM: THE CONCEPT OF TAX EXPENDITURES (1973); Stanley S. Surrey & Paul R. McDaniel, *The Tax Expenditure Concept and the Budget Reform Act of 1974*, 17 B.C. INDUS. & COM. L. REV. 679 (1976); Neil Brooks, *The Tax Expenditure Concept*, 1 CANADIAN TAX'N 31

duce a new, targeted ad valorem or excise tax—that is, a tax that uses the sale price of the targeted good at the point of purchase or consumption as the base, rather than profits earned by sellers.[44] The idea of using taxes as a regulatory measure—for the purpose of changing behaviors rather than raising revenue per se—is well-established in literature,[45] dating back to the work of economist Arthur C. Pigou in the beginning of the last century.[46]

Having developed the idea of using tax to produce or prevent specified behaviors, any pricing mechanism or tax designed specifically to correct externalities might be characterized as "Pigouvian."[47] Economists suggest that the foundational principle of Pigouvian taxes is to guard against underpricing goods, leading to overconsumption relative to what a perfect market, in which products bear all of their costs, would dictate.[48] In spite of the principle that taxation should not distort market prices, economists accept that, under some circumstances, taxes can be purposefully used to directly influence consumption choices, shape behavior, and (dis)incentivize economic activities

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(1979); Stanley S. Surrey & Paul R. McDaniel, *The Tax Expenditure Concept: Current Developments and Emerging Issues*, 20 B.C. L. Rev. 225 (1979); Mark Burton & Kerrie Sadio, Tax Expenditure Management (2013); Steven A. Dean, *The Tax Expenditure Budget Is a Zombie Accountant*, 46 U.C. Davis L. Rev. 265 (2012); Ruth Mason, *Tax Expenditures and Global Labor Mobility*, 84 N.Y.U. L. Rev. 1540 (2009); Linda Sugin, *Tax Expenditures, Reform, and Distributive Justice*, 3 Colum. J. Tax L. 1 (2011).

44 *See* OECD, Consumption Tax Trends 2020, at 135 (2020), https://www.oecd-ilibrary.org/taxation/consumption-tax-trends-2020_152def2d-en [https://perma.cc/L2X9-J7BB] (outlining three general features of excise taxes: "[First, e]xcise duties are generally calculated by reference to the weight, volume, strength, or quantity of the product, combined in some cases with the value, but sometimes on a value basis only. [Second, e]xcise duties normally become payable when the goods enter free circulation. Transfers of ownership of excisable goods can take place within a controlled warehousing environment or between registered operators without creating an excise charge. [Third, t]he excise system is characterised by small numbers of taxpayers that are active in the manufacturing, wholesale stage or importation of the three main product groups.").

45 *See generally* Theory and Practice of Excise Taxation (Sijbren Cnossen ed., 2005).

46 *See generally* A.C. Pigou, The Economics of Welfare (4th ed. 1932). Arthur Okun succinctly summarized the concept four decades later: "Nearly all members of my profession would favor some reliance on 'effluent fees'—prices imposed on pollutants—rather than total commitments to complex, detailed regulations, as a means of allocating the safe and tolerable amount of discharge into air and water." Okun, *supra* note 34, at 16.

47 Salib, *supra* note 27, at 1084. Pigouvian taxes, named after the aforementioned Arthur C. Pigou, are sometimes intended to raise money to compensate the victims of behaviors that produce dispersed social effects. *Id.* at 1084–85. Difficulties include properly identifying the perpetrators and the victims, and assessing the relative contributions to harms—and harms suffered—respectively. *See id.* at 1086–87.

48 For a classic discussion, see William J. Baumol, *On Taxation and the Control of Externalities*, 62 A?. E???. R. 307, 307–11 (1972).

in order to correct for market failures.[49] Such failures would include ecological damage caused, for example, by excess levels of pollution.[50] Because market failures allow some to externalize part of their costs to others without compensation, Pigouvian taxes are often evoked as a cost-effective mechanism to force those responsible for the negative externalities to internalize the costs.[51]

Accordingly, when considering the regulation of negative environmental externalities, Pigouvian taxes have been a main focus of experts, policymakers, and scholars around the world.[52] Perhaps the most politically popular approach has been the carbon tax and pricing schemes.[53] Relatively less developed to date, emerging scholarship examines how the Pigouvian logic of carbon taxation could be extended to general consumption taxes, and in particular to value added taxes ("VAT").[54] Although a VAT has never been adopted in the United States,[55] the same principles apply to sales taxes because both value

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49 *See* R.H. Coase, *The Problem of Social Cost*, 3 J.L. & Econ. 1, 13 (1960); Donald H. Regan, *The Problem of Social Cost Revisited*, 15 J.L. & Econ. 427, 436 (1972); Larry C. Ledebur, *The Problem of Social Cost*, Am. J. Econ. & Socio. 399, 409 (1967).

50 *See, e.g.*, James E. Meade, The Theory of Economic Externalities: The Control of Environmental Pollution and Similar Social Costs 57–59 (1973); Richard Cornes & Todd Sandler, The Theory of Externalities, Public Goods and Club Goods 6–8 (2d ed. 1996).

51 *See* Christians, *supra* note 36, at 21–23.

52 *See* David P. Vincent, *Internalizing Externalities: An Economic and Legal Analysis of an International Carbon Tax Regime*, 92 Or. L. Rev. 163, 164–67 (2013); James J. Nedumpara & Shiny Pradeep, *Paying a Price for Carbon: Using Pigouvian Taxes in International Trade and Environmental Regulations*, 4 Env't L. & Soc'y J. 1, 1–2 (2018).

53 These are sometimes connected to excise taxes imposed at sale, such as specially targeted ad valorem taxes on fuels, the base of which in some cases includes carbon price adjustments. *See generally* U.N., United Nations Handbook on Carbon Taxation for Developing Countries, U.N. Sales No. E.21.XVI.4 (2021) (providing guidelines for the design and implementation of carbon taxes in lower income states); Shi-Ling Hsu, The Case for a Carbon Tax (2011) (comparing ten arguments in favor and four against the carbon tax); Gilbert E. Metcalf, Paying for Pollution: Why a Carbon Tax Is Good for America (2019) (considering objections to the carbon tax but making the economic case that the tax is still the best way to curb emissions).

54 *See* Edoardo Traversa & Benoît Timmermans, *Value-Added Tax (VAT) and Sustainability in the European Union: A Radical Proposal Design Issues, Legal Aspects, and Policy Alternatives*, 49 Intertax 871, 875–76 (2021).

55 For arguments in favor of U.S. adoption of such taxes, see, for example, Dhammika Dharmapala, *International Spillovers from Proposed US Tax Reforms*, 33 Australian Tax F. 79, 94 (2018) ("[T]here seems to be no compelling normative reason why the US should not adopt a VAT."); Michael J. Graetz, 100 Million Unnecessary Returns: A Simple, Fair, and Competitive Tax Plan for the United States 64 (2008) (demonstrating that other countries rely more heavily on consumption taxes than the United States currently does); Reuven S. Avi-Yonah, *Risks, Rents, and Regressivity: Why the United States Needs Both an Income Tax and a VAT*, 105 Tax Notes 1651, 1651–52 (2004) (disagreeing with Graetz's proposal

added taxes and sales taxes are aimed at consumption.[56] As such, this emerging scholarship demonstrates the general efficacy of adjusting sales prices to account for externalized costs in transfers of unsustainably produced goods.

Each approach to cost internalization through taxation is therefore useful in understanding the prospects and the challenges involved in using tax rules to disincentivize unsustainable practices in the United States, as elsewhere. Each is explained in turn below.

B. Carbon Taxes and Pricing Schemes

Carbon taxes and pricing schemes use market prices to incentivize consumers to change their behavior, moving away from fossil fuels and toward relatively more environmentally responsible alternatives. The general idea is straightforward: a government sets a price for carbon that is either added to the sales price somewhere along the supply chain or imposed by way of a standalone excise tax.

The Pigouvian nature of carbon taxes and pricing schemes is visible in their design. By increasing supply costs, carbon taxes induce producers and retailers to raise market prices in order to preserve their profit margins, which in turn incentivizes reduced consumption.[57] At a sufficiently high rate, carbon taxes will reduce demand for carbon dioxide-intensive activities and eventually the profitability of fossil fuels will drop to untenable levels.[58] In many cases, this eventuality

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to substitute the personal income that falls on the middle class for the VAT, and arguing instead that the United States needs both taxes); Reuven S. Avi-Yonah, *Risks, Rents, and Regressivity Revisited*, AUSTL. TAX F. 24, 41–57 (2009) (reiterating the need for both a consumption and an income tax in the United States).

56 *See, e.g.*, KATHRYN JAMES, THE RISE OF THE VALUE-ADDED TAX 45–46 (2015) ("There are many ways to indirectly tax consumption, such as through pre-retail single-stage sales taxes or through turnover taxes. The deficiencies of these taxes are well documented . . . . [Of] note [is] that the VAT's main competitor as a preferred indirect broad-based consumption tax is the retail sales tax (RST). In theory, the economic incidence of the good VAT and the good RST are exactly the same . . . .") (footnotes omitted). James posits that the reluctance of the United States to adopt a VAT has to do with the distribution of tax revenue collection as between the federal government and that of the several states. *Id.* at 377 ("Given the extensive use of sales taxes at the state and local level, the VAT debate in the US might be seen to be less about procuring support for consumption taxation than about garnering support for a significant shift in consumption taxation to the federal level."). For a comprehensive comparison of U.S. state-level retail sales taxes and standard value added taxes, see generally Cenap Ilter & Michael Manahan, *The Application of Sales Tax in the U.S. and How It Differs from Value Added Tax*, 38 J. TAX'N INVS. 61 (2021).

57 *See generally* Yi Yuyin & Li Jinxi, *The Effect of Governmental Policies of Carbon Taxes and Energy-Saving Subsidies on Enterprise Decisions in a Two-Echelon Supply Chain,* 181 J. CLEANER PROD. 675 (2018).

58 *See* Nafeez Ahmed, *Fossil Fuels Are Wildly More Expensive Than Previously Thought,*

will be accompanied by abandoned and stranded assets and massive cleanup costs that have never been reflected in consumer or investor markets.[59]

Carbon taxes and pricing schemes have been in use by some countries since at least the 1990s, and carbon pricing schemes in some U.S. states since 2012. These measures, however, have only recently become a topic of global discussions surrounding coordinative action.[60] Among current adopters are Argentina, Australia, Chile, Colombia, Denmark, Finland, Japan, Mexico, Norway, South Africa, Sweden, the United Kingdom, Canadian provinces including British Columbia and Quebec, and U.S. cities including Boulder, Colorado; San Francisco, California; and Montgomery County, Maryland.[61]

Study Says, VICE (Mar. 11, 2021, 9:23 AM), https://www.vice.com/en/article/qjpqyw/fossil-fuels-are-wildly-more-expensive-than-previously-thought-study-says [https://perma.cc/533R-UVBM]. So long as costs continue to be externalizable, however, producers will continue to collect all the available windfalls as private profits.

59 *See* Kyra Bos & Joyeeta Gupta, *Stranded Assets and Stranded Resources: Implications for Climate Change Mitigation and Global Sustainable Development*, ENERGY RSCH. & SOC. SCI., OCT. 2019, at 1–2 (defining stranded assets as "as assets that lose economic value well ahead of their anticipated useful life, whether that is a result of changes in legislation, market forces, disruptive innovation, societal norms, or environmental shocks" and stranded resources as "resources which are considered uneconomic or cannot be developed or extracted as a result of technological, spatial, regulatory, political or market limitations, or changes in social and environmental norms"); Dawud Ansari & Franziska Holz, *Between Stranded Assets and Green Transformation: Fossil-Fuel-Producing Developing Countries Towards 2055*, WORLD DEV., June 2022, at 1 (defining climate-related asset stranding as "the depreciation of assets—such as resource reserves, infrastructure, or industries—resulting from the unanticipated changes, such the tightening of climate policies").

60 *See* Janet E. Milne, *Carbon Taxes in the United States: The Context for the Future*, 10 VT. J. ENV'T. L. 1, 3 (2008); Andrew L. Kinde, *Let's Make a Green New Deal: An Analysis of State Carbon Taxes as a Foundational Piece of Climate Legislation in the United States*, 11 NE. U. L.R. 474, 476–87 (2019); Darien Shanske, *State-Level Carbon Taxes and the Dormant Commerce Clause: Can Formulary Apportionment Save the World?*, 18 CHAP. L. REV. 191, 191–92 (2014). *See generally* IMPLEMENTING A US CARBON TAX (Ian Parry et al. eds., 2015). Even though no U.S. states have carbon taxes in place, a number have carbon pricing regimes in place, with California adopting the first regime in 2012, in the form of a cap-and-trade system. *See* Robert N. Stavins, *The Future of US Carbon-Pricing Policy*, 1 ENV'T & ENERGY POL'Y & ECON. 8, 10, 12 (2020) ("To date, some 51 carbon-pricing policies have been implemented or are scheduled for implementation worldwide, including 26 carbon taxes and 25 emissions trading systems . . . .").

61 *See* TATIANA FALCÃO, A PROPOSITION FOR A MULTILATERAL CARBON TAX TREATY 141–74 (2019); David G. Duff, *Carbon Taxation in British Columbia*, 10 VT. J. ENV'T L. 87, 87–88 (2008); Allison Christians, Stephanie Hewson & Olivier Jarda, *The Constitutional Framework of Environmental Taxation in Canada*, *in* ASPECTOS CONSTITUCIONALES CONTROVERTIDOS DE LA TRIBUTACIÓN AMBIENTAL 217, 221–22 (Rodolfo Salassa Boix ed., 2018); Allison Christians & Olivier Jarda, *Taxation as Environmental Policy in Canada: A Look at the Contemporary Landscape*, *in* LA PROTECCIÓN AMBIENTAL A TRAVÉS DEL DERECHO FISCAL 283, 290–91 (Rodolfo Salassa Boix ed., 2015).

As a modern form of Pigouvian tax, carbon taxation is a measure ultimately aimed at fulfilling a broad interpretation of the polluter pays principle that burdens consumers and victims rather than producers and shareholders.[62] Scholars tend to favor carbon taxes over other regulatory tools aimed at reduction of greenhouse gas emissions, such as direct subsidies for environmentally friendly business practices, voluntary agreements, behavioral regulation, and grandfathered cap and trade such as cap and trade with auctioned permits.[63] Compared to these other regulatory approaches, carbon taxes are viewed as relatively easier to implement, more broadly applicable, and relatively more transparent to the businesses that must implement them as well as to the public.[64]

Some policy experts favor carbon taxes because the revenues they generate can be used to reduce other taxes such as those on income, which some view as comparatively less efficient.[65] As Professor Kathryn Harrison puts it, in this way, carbon taxes pay a double dividend, although the more one dividend is realized the less benefit is generated by the other.[66] The first dividend—sometimes called a "green dividend"—arises within the tax's primary goal of reducing greenhouse gas emissions, which is accomplished via a tax-based price imposed on activities that lead to carbon output. The second dividend, which is reduced by the first, is the generation of revenue. Because the

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62 *See* Edwin Woerdman, Alessandra Arcuri & Stefano Clò, *Emissions Trading and the Polluter-Pays Principle: Do Polluters Pay Under Grandfathering?*, 4 REV. L. & ECON. 565, 572–75 (2008) (presenting different interpretations of the principle in the context of free allowances for carbon dioxide emission).

63 Kathryn Harrison, *A Tale of Two Taxes: The Fate of Environmental Tax Reform in Canada*, 29 REV. POL'Y RSCH. 383, 383 (2012) (arguing that British Columbia's and Canadian national politicians' preference for carbon taxation "despite the political advantages of cap and trade . . . reflected a triumph of politicians' 'good policy' motives over 'good politics.'"); *see also* Reuven S. Avi-Yonah & David M. Uhlmann, *Combating Global Climate Change: Why a Carbon Tax Is a Better Response to Global Warming than Cap and Trade*, 28 STAN. ENV'T L.J. 3 (2009).

64 *See* Andrea Baranzini, José Goldemberg & Stefan Speck, *A Future for Carbon Taxes*, 32 ECOLOGICAL ECON. 395, 396, 408–10 (2000); AMY TAYLOR, ENVIRONMENTAL TAX SHIFTING IN CANADA 7, 10–11 (2003).

65 Katri Kosonen & Gaëtan Nicodème, *The Role of Fiscal Instruments in Environmental Policy* 5–6 (CESifo, Working Paper No. 2719, 2009), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1437501 [https://perma.cc/W7WN-B2DM] (detailing how revenues from environmental taxation could be used in other ways to benefit the environment or economy); NAT'L ENV'T RSCH. INST., UNIV. OF AARHUS ET AL., COMPETITIVE EFFECTS OF ENVIRONMENTAL TAX REFORMS 70 (Mikael Skou Andersen et al. eds., 2007) (finding that overall, the net costs of environmental tax regulation are exceeded by the value of the gains in energy efficiency).

66 Kathryn Harrison, *The Comparative Politics of Taxation*, 6 ANN. REV. L. & SOC. SCI. 507, 508 (2010).

additional revenue can be used to counter environmental destruction or reduce other taxes, the second dividend can be reinvested or spent, as it were. Other regulatory approaches to greenhouse gas emissions often enjoy more popular or political support but each lacks some or all of these features.[67]

C. Damage-Adjusted Sales Taxes

In light of recent advancements in costing negative externalities developed in the field of environmental engineering, scholars have begun to argue convincingly in favor of going beyond a carbon tax to account for all forms of impact in the environmental impact of goods and services. Inspired by initiatives on sustainable development and green growth at the level of the European Union, researchers Camillo de Camillis and Malgorzata Goralczyk proposed applying to the tax system the quantitative methodology known as life cycle assessment.[68] This is meant to adapt VAT rates in accordance with the measured ecological footprints of products.

Life-cycle assessment methodologies seek to measure the full cost of production, including resourcing, manufacturing or alteration, distribution, consumption, and disposal.[69] The field of study is not new, but it is in an active state of advancement as externality measurement techniques are continuously devised, analyzed, tested, debated, and improved with application in various practical contexts.[70] The majority of life cycle assessments to date have focused on ecological conse-

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67 BARRY C. FIELD & NANCY D. OLEWILER, ENVIRONMENTAL ECONOMICS 181–88 (Scott D. Stratford & Ira C. Roberts, eds., 1st ed. 1994).

68 Camillo De Camillis & Malgorzata Goralczyk, *Towards Stronger Measures for Sustainable Consumption and Production Policies: Proposal of a New Fiscal Framework Based on a Life Cycle Approach*, 18 INT'L J. LIFE CYCLE ASSESSMENT 263, 264 (2013). LCA is further explained below. *See infra* Section III.B.

69 *See* INT'L ORG. FOR STANDARDIZATION, INTERNATIONAL STANDARD 14040, at iii (1997) ("[Life Cycle Assessment] studies the environmental aspects and potential impacts throughout a product's life (i.e., cradle-to-grave) from raw material acquisition through production, use and disposal. The general categories . . . include resource use, human health, and ecological consequences."); WALTER KLÖPFFER & BIRGIT GRAHL, LIFE CYCLE ASSESSMENT (LCA): A GUIDE TO BEST PRACTICE 1–2 (2014), https://ebookcentral.proquest.com/lib/gwu/reader.action?docID=1658826 [https://perma.cc/EB7V-EDUK] (citing International Standard 14040 and other standards and explaining that standard life cycle assessment focuses on ecological impacts and not economic or social impacts); SOCIAL LIFE CYCLE ASSESSMENT, at v (Subramanian Senthilkannan Muthu ed., 2015) (explaining that although environmental life cycle assessment is well developed and widely used, social assessment is a complementary approach).

70 For a summary overview of the field to date, see generally PROGRESS IN LIFE CYCLE ASSESSMENT 2019 (Stefan Albrecht et al. eds., 2021) (updated annually).

quences, but more recent research has expanded the study to include social and economic consequences as well.[71]

Undertaking life cycle assessments of given processes or activities is a resource-intensive task.[72] It is often highly specific and not always generalizable to nations, industries, or even localities.[73] Further, many life cycle assessments use a scale-based approach to characterize various "performance reference points" that are used to rate a product cycle.[74] Although significant and useful to firms and consumers, these types of analyses do not provide data that is expressible in monetary terms, so they do not correspond easily to tax policy analysis.[75]

As such, the applicability of the LCA field to tax policy design is nascent. However, the literature is constantly developing and increasingly providing quantitative analysis of the costs externalized in unsustainable production, distribution, consumption, and disposal

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71 Social life cycle assessment was developed to measure impacts that concern workers, local communities, and societies as a whole, including, inter alia, accidents, below-subsistence remuneration, unsafe working conditions, toxic pollutants, human rights abuses, corruption, and tax evasion. *See, e.g.*, EDUARDO JACOB-LOPES, LEILA QUEIROZ ZEPKA & MARIANY COSTA DEPRÁ, SUSTAINABILITY METRICS AND INDICATORS OF ENVIRONMENTAL IMPACT: INDUSTRIAL AND AGRICULTURAL LIFE CYCLE ASSESSMENT 79–83 (2021); Shilpi Shrivastava & Seema Unnikrishnan, *Evolution of Life Cycle Sustainability Assessment*, *in* LIFE CYCLE SUSTAINABILITY ASSESSMENT (LCSA) 1, 10–11 (Subramanian Senthilkannan Muthu ed., 2021). For an examination of the increasing demand for reliable social life cycle assessment methodologies, see Alessandra Zamagni, Laura Zanchi, Silvia Di Cesare, Federica Silveri & Luigia Petti, *Theory and Practice on Social Life Cycle Assessment*, *in* LIFE CYCLE ENGINEERING AND MANAGEMENT OF PRODUCTS 143, 144 (José Augusto de Oliveira et al. eds., 2021) (describing social life cycle assessment as "a relatively new discipline and expanding field of research that completes environmental LCA (ISO 14040; 14044) and life cycle costing— . . . the latter for the determination of the most cost-effective option along the whole life cycle") (citation omitted).

72 *See* Michael Z. Hauschild, *Introduction to LCA Methodology*, *in* LIFE CYCLE ASSESSMENT: THEORY 59, 64 (Michael Z. Hauschild et al. eds., 2018) (laying out the framework for LCA methodologies and stating that "rather than a linearly proceeding process, LCA involves many feedback loops between the different phases of the LCA. Insights from the impact assessment are used in refining the inventory analysis and insights from both of these phases may feed back to the scope definition, e.g. in the setting of the boundaries of the product system, what to include and what to exclude.").

73 *See, e.g.*, U.N. ENV'T PROGRAMME, GUIDELINES FOR SOCIAL LIFE CYCLE ASSESSMENT OF PRODUCTS 57 (2009) (affirming that social life cycle assessments are costly and time-consuming); PRICEWATERHOUSECOOPERS, LIFE CYCLE ASSESSMENT AND FOREST PRODUCTS 11 (2010), https://www.pwc.com/gx/en/forest-paper-packaging/pdf/fpac-lca-white-paper.pdf [https://perma.cc/Y6L4-97N9] ("LCA is an assessment tool that requires a large amount of data and data analysis.").

74 *See, e.g.*, ANDREAS CIROTH & JULIANE FRANZE, LCA OF AN ECOLABELED NOTEBOOK 41, 78 (2017) (developing a scoring system using six performance levels: very good, good, satisfactory, inadequate, poor, and very poor; and six impact levels: positive, lightly positive, indifferent, lightly negative, negative, and very negative effect).

75 This does not mean that such data is irrelevant but only that it is difficult to factor.

processes.[76] These developments make it increasingly possible to price the difference between a production line that internalizes its environmental—and in some cases social—costs versus one that externalizes such costs.[77] The growing capacity for quantitative research provides governments with an emerging fiscal policy resource, as De Camillis and Goralczyk have shown.

The decision to apply life cycle assessment tools to sales taxes, starting with value added taxes, may be justified by the capacity of such taxes to "positively affect prices of products by guiding consumers to choose environmentally-friendly products."[78] Drawing from the proposal of De Camillis and Goralczyk, philosopher Benoît Timmermans and bioscience engineer Wouter M.J. Achten have developed the idea of a unitary global damage and value added tax which they have called a "DaVAT."[79] Timmermans and Achten's proposal would also use LCA methods but its implementation would completely replace existing consumption taxes.[80]

Timmermans and Achten's DaVAT is the product of three components: a uniform value added tax, a global damage tax, and a specific damage tax.[81] The proposal would start by adapting current value added taxes to a single, low-rated tax applied to all goods and services ("uniform VAT").[82] Then, a per-unit amount would be added to reflect generic and specific life cycle assessment studies ("global damage tax"), pricing sustainable products down and unsustainable products up.[83] Finally, an extra charge beyond the LCA would be introduced to account for particular environmental, social or ethical concerns of individual countries ("specific damage tax").[84]

Like carbon taxes, using a value added tax or other retail sales tax as the method for delivering a Pigouvian counter to externalized costs is an appropriate and justifiable way to approach the problem. That

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76 *See generally* ROYAL SOC'Y OF CHEMISTRY, LIFE CYCLE ASSESSMENT: A METRIC FOR THE CIRCULAR ECONOMY (Aiduan Borrion et al. eds., 2021).

77 *See generally* SOCIAL LIFE CYCLE ASSESSMENT, *supra* note 69 (discussing Type II assessments).

78 De Camillis & Goralczyk, *supra* note 68, at 265.

79 *See* Benoît Timmermans & Wouter M.J. Achten, *From Value-Added Tax to a Damage and Value-Added Tax Partially Based on Life Cycle Assessment: Principles and Feasibility*, 23 INT'L J. LIFE CYCLE ASSESSMENT 2217, 2219 (2018); *see also* Traversa & Timmermans, *supra* note 54, at 878–81.

80 Timmermans & Achten, *supra* note 79, at 2222–24.

81 *Id.*

82 *Id.* at 2222–23.

83 *Id.* at 2223–27.

84 *Id.* at 2224–27.

said, both carbon and value added taxes focus on consumption, which may or may not indirectly impact the availability and rate of business profits for producers of targeted goods.[85] Leaving aside the potentially difficult problem of trade-compliant border adjustments associated with carbon taxes,[86] and the need for cross-border enforcement of value added tax withholding—already problematic in a world of highly digitalized firms—there are good theoretical and political reasons to expand the scope of carbon taxes beyond consumption, to the relatively more direct approach of income taxation.

II. Taxing Windfalls to Correct Market Failures: Past, Present, and Future

Neither traditional carbon taxes nor emergent carbon-adjusted sales taxes fully remove the windfalls to be had from the externalization of environmental and social damage.[87] The question left unanswered by both forms of taxation is what course of action should be

85 The amount and rate of profitability depends on a number of factors including relative elasticity of demand as well as the counterproductive force of implicit subsidies. *See infra* Section III.

86 The literature on this topic is voluminous. For recent analyses by an authority in the field, see generally Alice Pirlot, Environmental Border Tax Adjustments and International Trade Law (2017); Alice Pirlot, *Carbon Border Adjustment Measures: A Straightforward Multi-Purpose Climate Change Instrument?*, 34 J. Env't L. 25 (2022). This Article's proposal, however, seeks to avoid this issue by using the income tax, which already accounts for cross-border allocation mechanisms as a natural feature of its legal structure, instead of a consumption-based tax.

87 Furthermore, both the carbon tax and other sales taxes are sometimes accused of being regressive and not properly measuring ability to pay because rates fall on consumption, thus burdening more low-income households that need to spend most of their income consuming. The literature, however, is sometimes mixed on how this issue should be considered and addressed. *See, e.g.*, James M. Poterba, *Lifetime Incidence and the Distributional Burden of Excise Taxes*, 79 Am. Econ. Rev. 325, 325–26 (1989); Tram T.H. Nguyen & Wonho Song, *Carbon Pricing and Income Inequality: An Empirical Investigation*, 46 J. Econ. Dev. 155, 156–57 (2021); Lawrence H. Goulder, Marc A.C. Hafstead, GyuRim Kim & Xianling Long, *Impacts of a Carbon Tax Across US Household Income Groups: What Are the Equity-Efficiency Trade-Offs?*, 175 J. Pub. Econ. 44, 44–45 (2019); Roberton C. Williams III, Hal Gordon, Dallas Burtraw, Jared C. Carbone & Richard D. Morgenstern, *The Initial Incidence of a Carbon Tax Across Income Groups*, 68 Nat'l Tax J. 195, 195–97 (2015); Jordi J. Teixidó & Stefano F. Verde, *Is the Gasoline Tax Regressive in the Twenty-First Century? Taking Wealth into Account*, 138 Ecological Econ. 109, 109–10 (2017); Thiago de Mattos Marques, *VAT's Regressivity: New Data for an Old Debate*, 32 Int'l VAT Monitor 50, 50 (2020); Alastair Thomas, *Reassessing the Regressivity of the VAT* 5–7 (OECD Tax'n, Working Paper No. 49, 2020), https://www.oecd-ilibrary.org/docserver/b76ced82-en.pdf?expires=1678473935&id=ID&accname=Guest&checksum=E8246DE9926258A723D0D8D940E97FF5 [https://perma.cc/75FK-QN6C]; Jeremy Cape, *Progressive Regressive–Why Politicians Are Wrong to Argue that VAT Exemptions Help the Poorest in Society*, 2018 Tax Notes Int'l 495, 495–98; Robert F. van Brederode, *VAT's Regressivity: Empirical Truth or Political Correctness*, 18 Int'l VAT Monitor 86, 86 (2007).

taken if no profit would be obtainable but for the ability to externalize such costs to the public. The IMF study discussed above estimates that climate damages alone represent 100–300% of supply costs, where supply costs are defined to include markups, or margins, throughout the supply chain.[88] This suggests that efficient fuel pricing—that is, adjusting fuel prices and associated sales taxes to account for externalized environmental costs—would result in price increases at a minimum of twice the current retail price. The implication of this analysis is that no profit margins are presently available in current fossil fuel production *except* through cost externalization. If this is the case, it would be appropriate to treat the profits from such production as a windfall and tax it away in its entirety.

To the extent that carbon taxes and sales taxes alter but have not yet eliminated the windfalls attributable to cost externalization, a complementary approach is therefore warranted. With LCA methodologies already contemplated in the context of sales taxes, this creates precedent, albeit in theoretical terms at present, for exploring the expansion of such methodologies beyond consumption and into the realm of income measurement. In particular, since these emerging measurement tools quantify the true cost of unsustainable activities, there is good reason to explore the lessons that these assessments hold for the way in which we have traditionally defined "profits" for income taxation purposes.

Accordingly, we need to take the lessons emerging from LCA in the consumption tax context and apply them to business profits derived from unsustainable practices.[89] To that end, the following discussion posits that the portion of business profits that is attributable to unsustainable practices is of a piece with the kind of windfall profits that arise from other market failures. These failures include those that occur during times of crisis, such as wars and pandemics, as well as those that regularly arise in targeted industries and are particularly susceptible to inefficiencies. The analogous status of unsustainable profits to these other windfalls demonstrates that a return of such amounts to the public through taxation is warranted.[90]

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88 Parry et al., *supra* note 20, at 10, 19.

89 In theory, incorporating the approach taken by Parry, Black, Vernon, de Camillis, Goralczyk, Achten, Timmermans, Traversa, and others to the income tax system would follow the same logic, but apply to taxpayers earning income from production through retail sales. Doing so consistently depends on the evolving availability of data across industries and sectors.

90 The intent of taxing the windfall is similar to carbon taxes in the sense that both taxes aim to correct market failures while funding measures to mitigate or compensate for past harms as well as to prevent future harms. This embodies the so-called "double dividend hypothesis."

As analyzed above, carbon taxes and other cost-internalizing sales taxes are intended to counter unsustainable behaviors by imposing standalone ad valorem taxes. The primary aim of such taxes is regulatory in nature: by increasing the retail price of goods or services produced with environmentally or socially damaging impacts, these taxes are meant to change consumer demand. It is equally appropriate to consider whether complementary regulatory goals ought to be pursued in the realm of taxes that directly impact profits. The goal of changing behavior would be achieved by taxing away profits that are derived from unsustainable business practices stemming from the externalization of risks, be they environmental or social in nature.

Turning to the income tax to achieve this goal is appropriate not only for reasons of regulatory impact, however. More fundamentally, as introduced above, the "profit" that is extracted by externalizing costs is not normal profit in the conventional sense, but rather constitutes a windfall that results from the ability to offload costs onto others. This has implications for the essential design and functioning of an income tax, whose core distinguishing feature is the mandate to identify, measure, and appropriately tax "income" as an economic phenomenon.

A. Historic Rationales for Windfall Taxes

Windfall taxes are not new, but they are popularly associated with social crises, such as armed conflict, as measures designed to assure the public that a few well-positioned people will not be permitted to benefit unduly from the misery suffered by the masses. They have also been featured regularly in national efforts to counter market failures in the mining sector in some countries, though perhaps less visibly so in wealthier countries.[91] More recently, windfall taxes have

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See Jaume Freire-González & Mun S. Ho, *Carbon Taxes and the Double Dividend Hypothesis in a Recursive-Dynamic CGE Model for Spain*, 31 ECON. SYS. RSCH. 267, 268 (2019); Lawrence H. Goulder, *Environmental Taxation and the Double Dividend: A Reader's Guide*, 2 INT'L TAX & PUB. FIN. 157, 158 (1995); Danusše Nerudová & Marian Dobranschi, *Double Dividend Hypothesis: Can It Occur When Tackling Carbon Emissions?*, 12 PROCEDIA ECON. & FIN. 472, 473 (2014); Ian W.H. Parry & Antonio M. Bento, *Tax Deductions, Environmental Policy, and the "Double Dividend" Hypothesis*, 39 J. ENV'T. ECON. & MGMT. 67, 67–68 (2000). The difference is that a windfall tax on unsustainable profits would raise revenue from corporate profitability associated with cost externalization where such cost externalization takes place. *See infra* Sections III.C–.D.

91 *See, e.g.*, Amrita Batchuluun & Joung Yol Lin, *An Analysis of Mining Sector Economics in Mongolia*, 4 GLOB. J. BUS. RSCH. 81, 87 (2010) (referencing Mongolia's 2007 windfall tax of 68%); NAAZNEEN H. BARMA, KAI KAISER, TUAN MINH LE & LORENA VIÑUELA, RENTS TO RICHES? 34, 83–84 (2012) (discussing windfall taxation with reference to countries such as

come back into vogue after a long period of being a relatively dormant tax policy option in the United States and around the world, due to the uneven economic consequences of the COVID-19 pandemic, now compounded by global energy and food crises.[92] Each of these precedents is helpful in understanding why windfall taxes can be an appropriate policy choice.

A century ago, a number of countries adopted parallel windfall taxes to respond to the economic and social consequences of world war.[93] These taxes were usually referred to as "excess profits" taxes as an implicit signal of their nature: each imposed an additional rate of income tax on top of that already in place on the taxpayer's "normal" profits. Denmark, Sweden, and the United Kingdom led the way in 1915, the United States followed suit in 1917, and by the end of World War I, eighteen other countries did the same.[94]

The U.S. excess profits tax remained in place through the end of World War II.[95] Set at relatively high rates in the United States

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Mongolia and Zambia); Thomas Baunsgaard & Nate Vernon, *Taxing Windfall Profits in the Energy Sector* (IMF Notes, Note/2022/002, 2022), at 8 (cataloguing countries with petroleum fiscal instruments to catch windfalls profits or economic rents, such as Algeria, Angola, Australia, Azerbaijan, Brazil, Canada, Croatia, Kazakhstan, Malaysia, Mauritania, Mozambique, Nigeria, Norway, Papua New Guinea, Russia, Saudi Arabia, Trinidad and Tobago, and the United Kingdom). *See generally* U.N. EXTRACTIVES HANDBOOK, *supra* note 12 (providing developing resource-rich countries with guidance on windfall taxation, among other tax and nontax instruments).

92 Andrew Goodall, *Survey Shows British Support for COVID-19 Windfall Tax*, 97 TAX NOTES TODAY INT'L (May 18, 2020), https://www.taxnotes.com/featured-news/survey-shows-british-support-covid-19-windfall-tax/2020/05/18/2cjq8 [https://perma.cc/N4SQ-NSKP] (reporting more than fifty percent of voter support for a U.K. windfall tax); Nana Ama Sarfo, *Wealth and Windfall Taxes: Still Not Ready for Prime Time*, 104 TAX NOTES INT'L 736, 736–38 (2021) (mentioning windfall tax proposals by Malaysia, Canada, and the United Kingdom as a COVID-19 response); DAVID AMAGLOBELI, EMINE HANEDAR, GEE HEE HONG & CÉLINE THÉVENOT, FISCAL POLICY FOR MITIGATING THE SOCIAL IMPACT OF HIGH ENERGY AND FOOD PRICES 9 (2022) ("[A] tax on excess profits—economic rents in excess of the return required by investors—is preferred . . . . Excess profit taxes would support social cohesion by enabling contributions from businesses that prosper during the crisis rather than those companies (and their workers) that are hit hard and earning normal profits or even incurring losses. Such taxes could become a source of significant revenue while causing little distortion."); *see also supra* note 6 and accompanying text.

93 *See, e.g.*, J.R. HICKS, U.K. HICKS & L. ROSTAS, THE TAXATION OF WAR WEALTH 9–10 (1941); Carl Shoup, *The Taxation of Excess Profits* (pts. 1–3), 55 POL. SCI. Q. 535, 535–36 (1940), 56 POL. SCI. Q. 84, 90, 232, 243–45 (1941).

94 *See* Mark Billings & Lynne Oats, *Innovation and Pragmatism in Tax Design: Excess Profits Duty in the UK During the First World War*, 24 ACCT. HIST. REV. 83, 86 (2014); J. Ross Tolmie & Campbell W. Leach, *Excess Profits Taxation*, 7 CANADIAN J. ECON. & POL. SCI. 350, 361 (1941); Colin Campbell, *J.L. Ilsley and the Transformation of the Canadian Tax System: 1939–1943*, 61 CANADIAN TAX J. 633, 667–68 (2013).

95 For the history of how President Franklin D. Roosevelt managed to garner approval for

(ninety-five percent) and around the world, wartime excess profits taxation was broadly viewed as an efficiency-enhancing tax measure because it taxed away unearned profit.[96] The broader policy idea, however, was also grounded in equity: when the majority of U.S. citizens were undergoing major financial and personal sacrifices to the war effort, there was a political cost to leaders for permitting a handful of businesses in certain serendipitously lucrative sectors of the economy to produce enormous profits for their managers and owners. In the public eye, these profits were owed to the happenstance of macroeconomic conditions rather than any special acumen or investment expertise.[97] The perception that windfall taxes could equalize a situation that had become wholly inequitable due to unevenly distributed luck arguably sustained these taxes despite being administratively difficult to collect and imperfectly applied.[98] Many wartime excess profit taxes were repealed only after economic conditions normalized following the end of the war.[99]

There exist various other, more recent, kinds of windfall taxes. Despite using different names, they function in effectively the same way, namely as a surtax on defined incomes associated with specified market failures. Perhaps the main example is the resource rent tax and its variants, such as the "Brown tax" (or "r-based cash flow tax"),

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the 1940 excess profits tax despite political opposition, see Joseph J. Thorndike, *How to Write Tax Laws and Irritate People: The 1940 Excess Profits Tax*, TAX NOTES FED. (June 13, 2022), https://www.taxnotes.com/tax-history-project/how-write-tax-laws-and-irritate-people-1940-excess-profits-tax/2022/06/10/7djzw [https://perma.cc/4SBA-MKQ2].

96 *See, e.g.*, Alfred G. Buehler, *The Taxation of Corporate Excess Profits in Peace and War Times*, 7 L. & CONTEMP. PROBS. 291, 298 (1940) ("As a war measure the excess profits tax has generally been accepted by business enterprise and by economists because of its great productivity and in spite of its unequal burdens and administrative complications.").

97 *See* Benjamin Higgins, *Post-War Tax Policy* (pt. 1), 9 CANADIAN J. ECON. & POL. SCI. 408, 408 (1943) (considering the excess profits tax in the context of tax policies against the "enforced idleness of resources and maldistribution of resources due to monopolization of all kinds . . . [, which] account for a good deal of the inequity of income distribution as well"); EMMANUEL SAEZ & GABRIEL ZUCMAN, THE TRIUMPH OF INJUSTICE: HOW THE RICH DODGE TAXES AND HOW TO MAKE THEM PAY 33 (2019) ("To prevent a 'shoddy aristocracy' from emerging again, an excess profits tax was imposed during the [First World War]. At first it covered the munitions industry only; then after America entered the war in April 1917, the tax was extended to all firms. All profits made by corporations above and beyond an 8% rate of return on their tangible capital—buildings, plants, machines, etc.—were deemed abnormal. Abnormal profits were taxed at progressive rates of up to 80% in 1918.").

98 *See, e.g.*, Clifford J. Hynning, *The Excess-Profits Tax of 1940: A Critique*, 8 U. CHI. L. REV. 441, 446–47 (1941).

99 In Brazil, for example, the wartime excess profits tax was integrated into the traditional income tax in the form of a surtax in 1946. *See* B.W. Patch, *Excess Profits Tax, in* 2 EDITORIAL RESEARCH REPORTS (1950).

the "Garnaut and Clunies Ross resource rent tax," and the "allowance for corporate equity or capital."[100]

Resource rent taxation recently enjoyed a resurgence of popularity in 2018 after the United Nations decided to tackle the issues surrounding the taxation of the extractive industry by developing countries.[101] As a tax imposed on economic rent—generally equivalent to a windfall in lay terms—resource rent taxes represent a form of excess profits taxation similar to those adopted during wartime.[102] These taxes, however, are specifically used to compensate resource-rich countries for the removal of nonrenewable sources of wealth such as oil, gas, or hard minerals from their territory.[103]

Windfall profits taxes targeted at specified sectors and even discrete market events have also been adopted to counter identified market distortions or failures in the United States and elsewhere in more recent decades. These taxes have not always been successful in the sense of raising revenues with acceptable levels of administrative effort.[104] A vivid example may be seen in the events that unfolded in the United States following the energy crisis of the 1970s, involving the adoption and relatively swift repeal of what lawmakers characterized as a windfall tax, but did not quite match historical understandings of that term. In 1980, President Jimmy Carter signed into law the Crude Oil Windfall Profit Tax Act of 1980,[105] explicitly in response to the dramatic oil price increases that had occurred during the 1970s.[106] The

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100 IMF, FISCAL REGIMES FOR EXTRACTIVE INDUSTRIES: DESIGN AND IMPLEMENTATION 20 (2012); 1 AUSTRALIA'S FUTURE TAX SYSTEM: REPORT TO THE TREASURER (pt. 2) 228–33, 240–45 (2009); Reuven S. Avi-Yonah, *A New Corporate Tax*, 168 TAX NOTES FED. 653, 655–58 (2020).

101 *See* U.N. EXTRACTIVES HANDBOOK, *supra* note 12, at 1, 24.

102 *See* Costas Michail, *Europe's High Energy Costs: The Case for a Resource Rent Tax*, 108 TAX NOTES INT'L 63, 64, 66 (2022) (explaining that a Resource Rent Tax "targets the windfall profits after subtracting relevant costs and a reasonable rate of return (economic rent)," economic rent being "the excess profits after subtracting the cost and a reasonable rate of return").

103 *See* Richard Dowell, *Resources Rent Taxation*, 3 AUSTRALIAN J. MGMT. 127, 128 (1978); Ross Garnaut, *Principles and Practice of Resource Rent Taxation*, 43 AUSTRALIAN ECON. REV. 347, 347–48 (2010); John A. Cordes, *An Introduction to the Taxation of Mineral Rents*, *in* THE TAXATION OF MINERAL ENTERPRISES 25, 26 (James Otto ed., 1995); Robin Boadway & Michael Keen, *Theoretical Perspectives on Resource Tax Design*, *in* THE TAXATION OF PETROLEUM AND MINERALS 13, 13 (Philip Daniel et al. eds., 2010); Bryan C. Land, *Resource Rent Taxes: A Re-Appraisal*, *in* THE TAXATION OF PETROLEUM AND MINERALS, *supra*, at 241, 241.

104 *See* Alvaro R. Villegas Aldazosa, *Windfall Profit Tax on Oil and Gas: US and Latin American Approach*, 37 INTERTAX 74, 74–75 (2009).

105 Pub. L. No. 96-223, §§ 101–404, 94 Stat. 229 (1980) (repealed 1988).

106 *Id.*; *see also* Joseph J. Thorndike, *Historical Perspective: The Windfall Profit Tax—Career of a Concept*, TAX NOTES (Nov. 10, 2005), https://www.taxnotes.com/tax-history-project/historical-perspective-windfall-profit-tax-career-concept/2005/11/15/y8g5 [https://perma.cc/DGQ8-

Act amended the then-applicable Internal Revenue Code of 1954 to impose an excise tax on all domestic crude oil production.[107] The tax was in character an excise tax, calculated as a percentage of windfall profit on each barrel of oil produced and paid by producers. As such, the windfall tax was not an addition to tax applicable only to specified high rates of profit like its predecessors. Instead, it was imposed on gross revenues, which meant that even crude oil producers that made little or no profit would be within its scope.[108]

That even low- or no-profit crude oil producers could theoretically be impacted did not seem to trouble Congress or the President, however. The windfall tax was imposed in anticipation of a pending decision by the government to lift certain price controls, a move that by all accounts was expected to "allow[] the oil industry to reap excessive profits."[109] The express aim of the reform was therefore to "recapture[] a large portion of these future excessive profits and use[] these revenues for public purposes, taxing the difference between the former ceiling price of domestic crude oil and the higher market price obtainable upon decontrol."[110] The stated goals were not realized, however. The design of the tax made it administratively burdensome for taxpayers as well as the Internal Revenue Service ("IRS"). In practical effect it delivered disappointing results in revenue terms.[111]

VW3F] (exploring the rationale for the tax, noting that "[a]dvocates . . . contended that oil companies were shirking their fiscal responsibilities. The industry was blessed with low effective tax rates, largely as a result of two key preferences: the percentage depletion allowance and the expensing of intangible drilling costs. The [windfall profit tax] would help offset such unjustified—and controversial—subsidies."). *See generally* Barry R. Miller & Dan G. Easley, *The Windfall Profit Tax: An Overview*, 12 ST. MARY'S L.J. 415 (1980); Douglas M. Robison, *The Misnamed Tax: The Crude Oil Windfall Profits Tax of 1980*, 84 DICK. L. REV. 589 (1980); David E. Kinnan, *An Introduction to the Crude Oil Windfall Profit Tax Act of 1980*, 3 W. NEW ENG. L. REV. 645 (1981); Dennis B. Drapkin & Philip K. Verleger Jr., *The Windfall Profit Tax: Origins, Development, Implications*, 22 B.C. L. REV. 631 (1981); Paul Mangum, *Evolution of the Crude Oil Windfall Profit Tax: An Examination of Recent Changes*, 13 ST. MARY'S L.J. 767 (1981); J. Matthew Dow, *The Windfall Profit Tax Exposed*, 14 ST. MARY'S L.J. 739 (1983).

107 § 1(b), 94 Stat. at 229.

108 I.R.C. § 4986(b) (repealed 1988) ("Tax Paid by Producers"). Congress presumably understood the distinction, as evidenced by a Joint Committee on Internal Revenue Taxation Report prepared six years earlier. *See* STAFF OF THE J. COMM. ON INTERNAL REVENUE TAXATION, 93D CONG., REP. ON ENERGY TAXATION: ALTERNATIVES FOR THE TAXATION OF INCREASED DOMESTIC OIL AND GAS PROFITS 2–12 (Comm. Print 1974) (explaining that a windfall profits tax is imposed on a tranche of profits that exceed some statutorily determined level).

109 Robison, *supra* note 106, at 592.

110 *Id.*

111 *See* Thorndike, *supra* note 106.

Unsurprisingly, the tax was accordingly relatively short-lived, facing repeal in 1988 after steady opposition throughout its brief existence.[112]

In a related and similarly motivated series of events, the United Kingdom also adopted a one-time windfall profits tax in various sectors including electricity, telecommunications, gas, and water.[113] Among the parallels of this tax to its U.S. predecessor was its apparent misnaming. The U.K. tax was enacted in 1997 following public outcry in response to what appeared to be excessive profits enjoyed by a number of companies in sectors that had significantly benefited from the privatization of certain national utility companies between 1984 and 1996.[114]

Like the U.S. crude oil windfall profit tax, the U.K. legislation did not neatly fit the definition of a windfall profits tax. The U.K. tax appeared to be more like a clawback of an apparently unwarranted price discount that had been enjoyed by the companies that originally bought national utilities enterprises when the U.K. government privatized them in the preceding decades. The U.K. legislation provided: "Every company which, on 2nd July 1997, was benefitting from a windfall from the flotation of an undertaking whose privatisation involved the imposition of economic regulation shall be charged with a tax (to be known as the 'windfall tax') on the amount of that windfall."[115] The windfall tax was charged at the relatively modest (by wartime profits tax standards, at least) rate of twenty-three percent but it was not imposed on a segment of current profit at all.[116] Instead, the "windfall" was defined as the difference between a company's profit-making value and its flotation value.[117] Profit-making value was defined as average annual profit per day over a specified period, multiplied by an imputed price-to-earnings ratio of nine.[118] Flotation value was defined as the price at which the company was privatized.[119]

More than a decade later, the United Kingdom's windfall tax became the subject of a prominent U.S. Supreme Court case. U.S. shareholders of certain U.K. companies that had paid the U.K. tax sought a

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112 *See id.*

113 Finance (No. 2) Act 1997, c. 58 (UK), https://www.legislation.gov.uk/ukpga/1997/58/part/I?view=plain [https://perma.cc/E3CT-FSAV].

114 Lucy Chennells, *The Windfall Tax*, 18 FISCAL STUD. 279, 280–82 (1997).

115 Finance (No. 2) Act 1997, c. 58 (UK).

116 *Id.*

117 *Id.*

118 *Id.*

119 *Id.*

U.S. foreign tax credit in respect thereof.[120] To be eligible for the credit, the taxpayer had to convince the Supreme Court that the U.K. tax ought to be seen as a windfall tax on *profits*, even though it appeared not to be structured as such in statutory terms.[121] The taxpayer accomplished this by demonstrating to the Supreme Court that the windfall tax could be laid out algebraically in a formula involving the company's profit, namely:

Windfall Tax = 23% x (((365 x P/D) x 9) – FV)
where
P = total profits for the company's initial period
D = number of days in the initial period
FV = company's flotation value
9 = proxy for an industry-averaged price-to-earnings ratio.[122]

The taxpayer argued that by rearranging the formula algebraically, it could be seen that the tax targeted income even though it appeared in statutory terms to be imposed on value.[123]

The taxpayer's success in this case may be a testament to the policy flexibility displayed in the design of more contemporary windfall profits taxes. A more recent twist on excess profit taxation was arguably introduced with the 2017 U.S. Tax Cuts and Jobs Act,[124] which imposed a specified rate of tax of (effectively) 10.5% on a specified "excess" amount of profit attributable to foreign assets—namely, 10%.[125] This excess profit tax was not explicitly identified as such but

120 PPL Corp. v. Comm'r, 569 U.S. 329, 331–32 (2013). For a discussion of the Supreme Court's review and decision in this case, see Allison Christians, *Argument Preview: Giving Credit Where Credit Is Due*, SCOTUSBLOG (Feb. 19, 2013, 8:00 PM), https://www.scotusblog.com/2013/02/argument-preview-giving-credit-where-credit-is-due-2/ [https://perma.cc/4EY2-7AK8]; Allison Christians, *Opinion Analysis: U.S. Underwrites U.K. Tax on Privatized Energy Industry*, SCOTUSBLOG (May 21, 2013, 12:00 PM), https://www.scotusblog.com/2013/05/opinion-analysis-u-s-underwrites-u-k-tax-on-privatized-energy-industry/ [https://perma.cc/HZ8U-9JJK].

121 Tax credits are typically denied when the foreign tax is on something other than "income" in the U.S. sense of the word; a foreign tax on cash flows rather than profits might not be creditable unless it is structured in such a way that it resembles other common gross-basis income taxes, namely withholding taxes similar to those laid out in I.R.C. §§ 871–898. *See. e.g.*, Timothy Nuccio, *Substance over Form: Creditability of the 1997 U.K. Windfall Tax as an Excess Profits Tax Under I.R.C. § 901*, 22 TRANSNAT'L L. & CONTEMP. PROBS. 267, 282–83 (2013); Kirsten S. Linder, *Hybrid Taxation: The Dual Function and Creditability of the U.K. Windfall Tax*, 65 TAX LAW. 429, 436–37 (2012).

122 *PPL Corp*., 569 U.S. at 338–39.

123 *Id.* at 340.

124 Pub. L. No. 115-97, 131 Stat. 2054 (2017) (codified as amended in scattered sections of I.R.C.).

125 I.R.C. § 1(j). The statutory tax rate is 21% but a one-half inclusion rule currently reduces the effective tax rate to 10.5%; this rate is applied to profits exceeding a 10% return on certain foreign assets as defined by statute and accompanying regulations. *Id.* § 250; Treas. Reg.

was instead introduced under the moniker of a tax on Global Intangible Low Taxed Income ("GILTI"). This artful abbreviation insinuates its underlying rationale—namely, to address excessive tax avoidance by multinationals.[126]

Windfall taxes are occasionally characterized as punitive, but no moral imperative is necessary. Their core function is to disgorge gains that are associated with market failures rather than productive initiatives of the taxpayer.[127] The normative justification for taxing windfalls more heavily than normal income is that there is no economically justified reason why an extraordinary exogenous event should benefit fortuitous individuals while creating misery for a large majority of the population.[128] Since the few gains of such events were not produced by any specific actions but by happenstance, taxing them away has no effect on future behavior.[129] It is easy to understand widespread public acceptance of these principles when envisioning the war economy, in which people were generally willing to sacrifice personal comforts to support a common cause. Politics surrounding environmental destruction may differ, but the same normative and economic logic applies to the widespread ecological and energy crises and global conflict alike.

Economists define windfall profits as the part of total profits that a taxpayer retains after all factors of production and other costs—including the cost of capital, risks involved in the activity and the investors' expected returns—have been compensated. The economics literature uses a range of expressions, including "economic rent" or "economic surplus," to convey the idea of "returns from an economic

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§ 1.250-0 ("Deduction for foreign-derived intangible income (FDII) and global intangible low-taxed income (GILTI).").

126 *See* G. Charles Beller, *GILTI: "Made in America" for European Tax Unilateral Measures & Cooperative Surplus in the International Tax Competition Game*, 38 VA. TAX REV. 271, 274–75 (2019).

127 *See* Buehler, *supra* note 96, at 292–99 ("It is advocated as a measure which would recognize the so-called ability to pay of corporations more adequately than other profits taxes, as a device to strike at monopolies and regain for society their abnormal profits, as a supplement to price-fixing legislation, and as a stabilizer of business conditions which would tend to check runaway booms and prevent depressions.").

128 *See, e.g.*, Carl C. Plehn, *War Profits and Excess Profits Taxes*, 10 AM. ECON. REV. 283, 283 (1920) ("The tax is levied on something conceived of as abnormal, and, in addition to the fiscal justification ever present in all taxes, there is a more or less distinct intent to give the public a share in the gains of 'profiteering' as something transitory and abnormal as well as undesirable.").

129 *See, e.g.*, Eric Kades, *Windfalls*, 108 YALE L.J. 1489, 1491 (1999) (defining windfalls as "economic gains independent of work, planning, or other productive activities that society wishes to reward"); IMF, *Fiscal Policy from Pandemic to War*, Fiscal Monitor 29 (Apr. 2022) ("Taxing economic rent is efficient because it does not distort investment decisions.").

activity over and above the opportunity cost of undertaking the activity."[130] Anyone that accesses resources for less than their value, or is overcompensated for engaging in productive undertakings, can be said to have realized a windfall.

For example, a worker can be described as deriving an economic windfall by the mere fact that she receives a salary that is higher than what she would have accepted for her job.[131] More to the point of the present discussion, capital is known for its rent-seeking behavior, such as moving around the globe in the search of above-normal profit opportunities that include, among other things, labor exploitation in countries where people have little choice but to accept below-subsistence wages.[132] Perhaps less discussed—at least in the tax literature—is the fact that causing or benefiting from environmental degradation or social costs, such as the underpayment of workers or the persistence of unsafe working conditions, is also a relevant source of windfall that translates into extra business profits. Given the global scale of most supply chains, this results in massive incentives and rewards for rent-seeking by taxpayers around the world.[133]

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130 Robin Boadway, *Tax Policy for a Rent-Rich Economy*, 41 CANADIAN PUB. POL'Y 253, 253 (2015).

131 Joseph Bankman, Mitchell A. Kane & Alan O. Sykes, *Collecting the Rent: The Global Battle to Capture MNE Profits*, 72 TAX L. REV. 197, 200 (2019) ("In economics, a 'rent' is a payment to a factor of production (labor, capital, land) in excess of the amount required to induce that factor into the production process. Workers might be willing to work for $10 an hour, for example, yet their wages might be $12 an hour, the excess being a form of 'rent.'") (footnote omitted).

132 Allison Christians & Laurens van Apeldoorn, *Taxing Income Where Value Is Created*, 22 FLA. TAX REV. 1, 19–24 (2018) (exploring the literature on location-specific rents in the context of labor exploitation in global supply chains); MICHAEL P. DEVEREUX, ALAN J. AUERBACH, MICHAEL KEEN, PAUL OOSTERHUIS, WOLFGANG SCHÖN & JOHN VELLA, TAXING PROFIT IN A GLOBAL ECONOMY 72–73 (2021) ("One interesting case is where a business can exploit the fact that the local labour force may be willing to work for a low wage—this is the basis of much offshoring, where a business moves production from a high wage country to a low wage country. It is certainly the case that the business may raise its profit by moving production in this way (subject to other costs incurred), and this suggests the presence of a location-specific rent in that country."); *see also* Laurens van Apeldoorn, *Exploitation, International Taxation, and Global Justice*, 77 REV. SOC. ECON. 163, 163–64 (2019) (critiquing the normative theory supporting the principle of taxing where value is created by reference to exploitative global patterns).

133 Clair Quentin, *Global Production and the Crisis of the Tax State*, ENV'T & PLAN. A: ECON. & SPACE 1–3 (May 31, 2022), https://journals.sagepub.com/doi/epub/10.1177/0308518X221105083 [https://perma.cc/5JYZ-2AHZ] (using the global value chain and global wealth chain analytical frameworks to discuss how multinationals capture value by suppressing wages and taxes worldwide); *see also* Jason Hickel, Christian Dorninger, Hanspeter Wieland & Intan Suwandi, *Imperialist Appropriation in the World Economy: Drain from the Global South Through Unequal Exchange, 1990-2015*, 73 GLOB. ENV'T CHANGE, at 10 (2022) ("The high levels

Since externalized environmental costs are a source of windfall profits, it is not a stretch to view certain avoided costs as the direct source of windfall profits. If a perfect market would ensure that the taxpayer incur the costs necessary to prevent or mitigate environmental and social impacts, a market that does not fulfill this task creates a windfall for the fortuitously situated taxpayer. A market correction is needed to prevent rent seeking from such cost avoidance. Regardless of any possible moral imperative, a windfall profits tax is an appropriate tool for this kind of market correction.

B. Contemporary Appetite for Reform

The brief history above reveals that windfall taxes on profits are typically cast as corrective efforts to address major social disruption brought about by macroeconomic shock. In the past, the main source of such shock was war, but more modern excess profits and windfall taxes—albeit sometimes misnamed—have been raised in response to other forms of social disruption as well, most frequently in connection with fossil fuels. Given the converging contemporary crises of the COVID-19 pandemic, climate change, and war, it is perhaps not surprising that windfall taxation is currently enjoying a resurgence in popular interest.

An immediate source of this resurgence is the ongoing social disruption produced by the pandemic as well as the recent Russian military invasion of Ukraine, which prompted a sudden surge in food and energy prices worldwide.[134] The pandemic resulted in broadening inequality, as millions suffered wage and wealth insecurity while a few fortunate individuals and firms reaped unprecedented bounty.[135] This

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of resource consumption that characterize Northern economies are driven disproportionately by rich individuals and affluent areas, as well as by corporations that control supply chains, and enabled by internal patterns of exploitation and unequal exchange in addition to drain through trade.").

134 *See* Rifat Mohi Uddin, *Inflation Plunged 71 Million into Poverty Since Ukraine War*, AL JAZEERA (July 7, 2022), https://www.aljazeera.com/news/2022/7/7/inflation-pushed-71m-people-into-poverty-since-ukraine-war-undp [https://perma.cc/G7KV-4VFG]; Stephen Stapczynski, *Russian Gas Supply Uncertainty Sends Asia LNG Prices Surging*, BLOOMBERG (July 25, 2022, 5:33 AM), https://www.bloomberg.com/news/articles/2022-07-25/russian-gas-supply-uncertainty-sends-asian-fuel-prices-surging#xj4y7vzkg [https://perma.cc/GX96-4HN7]; Richard Partington, *Inflation in Eurozone Hits Record 8.6% as Ukraine War Continues*, GUARDIAN (July 1, 2022, 8:19 AM), https://www.theguardian.com/business/2022/jul/01/inflation-in-eurozone-hits-record-86-as-ukraine-war-continues [https://perma.cc/LT4K-EMHP].

135 *See* Molly Kinder, Laura Stateler & Julia Du, *Windfall Profits and Deadly Risks: How the Biggest Retail Companies Are Compensating Essential Workers During the Covid-19 Pandemic*, BROOKINGS (Nov. 2020), https://www.brookings.edu/essay/windfall-profits-and-deadly-risks/ [https://perma.cc/SQJ6-EY6T] ("[W]hile top retail companies' profits have soared during

gap only widened with the energy crisis, and taxation is now a focal point of debate in U.S. legislative efforts.[136] Yet U.S. lawmakers have also withheld key votes to pass bills that would address both climate change and economic shock.[137]

A growing number of scholars, international organizations, and civil society members have called for the reintroduction of windfall profits taxes in response to these events. Professors Melanie Cammett and Evan Lieberman were among the first to advocate for the adoption of an excess profits tax to prevent businesses in the United States from gaining "disproportionately from increased government and consumer spending during the pandemic."[138] Economists Emmanuel Saez and Gabriel Zucman similarly opined in the New York Times that "windfall profits have a fair, comprehensive and transparent solution: The government should impose excess profits taxes, as it has done several times in the past during periods of crisis."[139] Others have proposed parallel measures in other countries.[140] In previous scholarship,

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the pandemic, pay for their frontline workers—in most cases—has not. In total, the top retail companies in our analysis earned on average an extra $16.7 billion in profit this year compared to last—a stunning 40% increase—while stock prices are up an average of 33%. And with few exceptions, frontline retail workers have seen little of this windfall."); *see also* OECD Tax, *OECD Tax Talks #—Centre for Tax Policy and Administration*, YouTube (May 4, 2020), https://www.youtube.com/watch?v=neg-Nj-3dJk [https://perma.cc/WD6K-P7HS] (predicting rise in inequality during the pandemic and suggesting solidarity levies, super profits taxes and stronger progressivity as possible government responses); Uwe Gneiting, Nicholas Lusiani & Irit Tamir, Power, Profits and the Pandemic 2 (2020) (stating that COVID-19 triggered an inequality crisis and allowed "some of the world's largest corporations to funnel billions of dollars in profits to shareholders, giving yet another windfall to the world's top billionaires").

136 Alexander Rifaat, *Biden Seeks to Shift Gas Tax Burden from Consumers to Producers*, 176 Tax Notes Fed. 105, 105 (2022) (reporting on proposals for a windfall tax on the energy industry).

137 *See, e.g.*, Andrew Duehren & Richard Rubin, *Manchin Pushes Democrats to Revisit Tax-Rate Hikes, Sinema Could Present a Roadblock*, Wall St. J. (Feb. 14, 2022, 5:30 AM), https://www.wsj.com/articles/manchin-pushes-democrats-to-revisit-tax-rate-increases-11644834602 [https://perma.cc/2CGE-Z48H].

138 Melani Cammet & Evan Lieberman, Building Solidarity: Challenges, Options, and Implications for COVID-19 Responses 28 (2020). For a similar proposal, see Reuven Avi-Yonah, *It's Time to Revive the Excess Profits Tax*, Am. Prospect (Mar. 27, 2020), https://prospect.org/coronavirus/its-time-to-revive-the-excess-profits-tax/ [https://perma.cc/74ZK-VUYA] (arguing that the United States should revive its wartime excess profits tax to address the "unconscionable" prospect that "some corporations would profit while everyone else suffers").

139 Emmanuel Saez & Gabriel Zucman, *Jobs Aren't Being Destroyed This Fast Elsewhere. Why Is That?*, N.Y. Times (Mar. 30, 2020), https://www.nytimes.com/2020/03/30/opinion/coronavirus-economy-saez-zucman.html [https://perma.cc/6H6K-258L].

140 Nick Shaxson, *Tax Justice and the Coronavirus*, Tax Just. Network (Mar. 24, 2020), https://taxjustice.net/2020/03/24/tax-justice-and-the-coronavirus/ [https://perma.cc/XUQ5-BBZ8] (advocating at least a fifty percent tax on excess profits); Alex Hemingway, *Excess Profits Tax*

we examined the impetus for reform and noted the need for globally coordinated solutions owing to the inherently globalized nature of the targeted profits.[141]

It is notable that the economic and social shock of the pandemic coupled with Russia's full-scale invasion of Ukraine unfolds against the backdrop of the increasingly serious consequences of decades of unchecked climate change.[142] Scholars had already connected the pan-

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Needed to Prevent Profiteering Amid COVID-19, TORONTO STAR (Apr. 23, 2020), https://www.thestar.com/opinion/contributors/2020/04/23/excess-profits-tax-needed-to-prevent-profiteering-amid-covid-19.html [https://perma.cc/U25E-QLH4] (explaining that an excess profits tax would "prevent profiteering amid COVID-19, discourage abuse of government support programs for business, tamp down on price gouging and raise public revenues from large, profitable corporations that are booming during the crisis"); Sébastien Laffitte, Julien Martin, Mathieu Parenti, Baptiste Souillard & Farid Toubai, *International Corporate Taxation After COVID-19: Minimum Taxation as the New Normal*, VOXEU: CTR. FOR ECON. POL'Y RSCH. (Apr. 14, 2020), https://voxeu.org/article/minimum-effective-tax-rate-global-multinational-profits [https://perma.cc/D2PU-YCGM] (discussing Reuven Avi-Yonah's proposal as a complement to the OECD's global minimum tax); Michael Bow, *Hedge Funds Profiting from Covid-19 'Must Give More Back'*, EVENING STANDARD (Apr. 15, 2020), https://www.standard.co.uk/business/hedge-funds-profiting-from-covid19-must-give-more-back-a4415121.html [https://perma.cc/E6CX-Q6FD] (reporting on calls for a windfall tax on hedge funds such as Citadel, AQR Capital, Odey Asset Management, Marshall Wace, Capeview Capital, and Gladstone Capital); Alex Dunnagan, *Wars, Taxes, and Excess Profits*, TAX WATCH (May 1, 2020), https://www.taxwatchuk.org/excess_profits/ [https://perma.cc/5UVH-KXPZ] (claiming that an excess profits tax "would face little opposition from the public").

141 *See* Allison Christians & Tarcísio Diniz Magalhães, *It's Time for Pillar 3: A Global Excess Profits Tax for COVID-19 and Beyond*, TAX NOTES INT'L (May 1, 2020), https://www.taxnotes.com/featured-analysis/its-time-pillar-3-global-excess-profits-tax-covid-19-and-beyond/2020/05/01/2cg34 [https://perma.cc/VQU9-VMKL]; Tarcísio Diniz Magalhães & Allison Christians, *Rethinking Tax for the Digital Economy After COVID-19*, 11 HARV. BUS. L. REV. 1, 4 (2021) (arguing that the need to fragment the windfall profits associated with COVID-19 into corresponding nation-based units would necessitate some international cooperation in order to avoid duplication of taxes).

142 *See* Katrin Benhold & Jim Tankersley, *Ukraine War's Latest Victim? The Fight Against Climate Change*, N.Y. TIMES (June 26, 2022), https://www.nytimes.com/2022/06/26/world/europe/g7-summit-ukraine-war-climate-change.html? [https://perma.cc/445D-EJEE]; Jonah Fisher, *Climate Change: Ukraine War Prompts Fossil Fuel 'Gold Rush' – Report*, BBC (June 8, 2022), https://www.bbc.com/news/science-environment-61723252 [https://perma.cc/2VYW-SB3S]; Jeff Tollefson, *What the War in Ukraine Means for Energy, Climate and Food*, 604 NATURE 232 (Apr. 14, 2022); *see also* William Nordhaus, *Why Climate Policy Has Failed and How Governments Can Do Better*, FOREIGN AFFS. (Oct. 12, 2021), https://www.foreignaffairs.com/articles/world/2021-10-12/why-climate-policy-has-failed [https://perma.cc/F7B3-3D2V] (partially blaming the lack of progress in climate policies on the failure to price carbon); Stewart M. Patrick, *The International Order Isn't Ready for the Climate Crisis: The Case for a New Planetary Politics*, FOREIGN AFFS. (Oct. 19, 2021), https://www.foreignaffairs.com/articles/world/2021-10-19/climate-crisis-international-order-isnt-ready [https://perma.cc/7ZRN-6NQV] (calling for a new planetary politics and approach to the global economy as the only alternative to contain the climate crisis); Kelly Sims Gallagher, *The Coming Carbon Tsunami: Developing Countries Need a New Growth Model—Before It's Too Late*, FOREIGN AFFS. (Dec. 14, 2021), https://www.foreignaffairs.com/

demic and the climate crisis as parallel and linked to social and public health crises.[143] Together with the war in Ukraine, these dreadful events have resulted in macroeconomic distortions and disruptions that have caused economic distress for millions while unduly enriching a few through luck and circumstance. Evolving in multiple ways with immediate visibility to the public, these phenomena have prompted calls for regulation including tax measures to neutralize the disparity.[144] The appetite for a windfall profits tax on the profits reaped from environmental and social cost externalization therefore has the potential of being uncharacteristically high. What remains is to demonstrate that a windfall tax, though innovative, is not without precedent—and while not simple, is feasible to implement.

C. Unsustainable Profits as a Matter of Economic Inefficiency

From a normative perspective, windfalls that are reaped by externalizing environmental and social costs ought to be viewed as originating from, and therefore belonging to, the public.[145] The fact that such profits are currently privatized through standard market mechanisms demonstrates the existence of a market failure that can and should be addressed with a windfall profits tax. In conventional economic analysis, these windfalls are distinguished from "normal" profits as uncom-

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articles/world/2021-12-14/coming-carbon-tsunami [https://perma.cc/CE8D-2NV8] (warning that if richer countries do not help finance low-carbon development policy models in poorer countries, any global project to mitigate climate change will be doomed to fail); Alice Hill & Leonardo Martinez-Diaz, *Adapt or Perish: Preparing for the Inescapable Effects of Climate Change*, Foreign Affs. 107, 107 (Dec. 10, 2019), https://www.foreignaffairs.com/articles/united-states/2019-12-10/adapt-or-perish [https://perma.cc/9GYB-JLTE] (arguing that some deleterious consequences of climate change cannot be stopped due to delayed reaction).

143 *See, e.g.*, Renee N. Salas, James M. Shultz & Caren G. Solomon, *The Climate Crisis and Covid-19—a Major Threat to the Pandemic Response*, 383 New Eng. J. Med. 70 (2020) ("[T]he United States will increasingly face complex, challenging scenarios, given the confluence of our two most pressing global health threats—the rapid emergence of the Covid-19 pandemic and the insidiously evolving climate crisis. . . . Understanding the challenges posed by this conjunction is essential if we are to devise effective and equitable strategies to protect and improve health."); David Heath Cooper & Joane Nagel, *Lessons from the Pandemic: Climate Change and COVID-19*, 42 Int'l J. Soc. & Social Pol. 332 (2021), (comparing and exploring the public and policy implications of the pandemic and climate change as interrelated global threats to human health and well-being).

144 *See, e.g.*, Big Oil Windfall Profits Tax Act, S. 3802, 117th Cong. (2022) (excise tax on windfall profits, introduced on March 10, 2022, sponsored by Sen. Sheldon Whitehouse); Gas Price Gouging Prevention Act, S. 3920, 117th Cong. (2022) (price controls for gasoline, introduced on March 24, 2022, sponsored by Sen. Tammy Duckworth).

145 This observation echoes the sentiments that led to the U.S. adoption of the 1980 windfall profit tax. *See* Thorndike, *supra* note 106.

petitive, unearned returns, which can be taxed efficiently even at high rates.[146]

Like more traditional excess profits taxes, an addition to tax on the profits derived from unsustainable practices would serve as an efficiency-enhancing measure because it would remove certain implicit subsidies from the present income tax system. Further, taxing such profits at a higher rate than normal profits is appropriate, as demonstrated by historical precedent.

Distinct from the generally failed experiments of excess profits and windfall taxes of the past, however, the development of increasingly sophisticated tools to measure environmental and social externalities makes isolating windfall profits from unsustainable profits feasible today in ways that were not possible even two decades ago. A cost-internalizing function embedded in the income tax is a plausible way to ensure that businesses do not continue to reap profit from unsustainable practices. Any current profit from such practices would be returned to the public,[147] ideally for use in mitigating and preventing future harm. Because the world is not one unified public but a fragmented society of states, this further implies that the cost-internalizing function must somehow take into account not only the level but also the geographic location to which the profit created by unsustainable practices is attributable. The next section examines how these goals could be achieved without overriding established tax norms.

III. Elements of a Windfall Tax on Unsustainable Profits

Having established that taxes are appropriately used to achieve regulatory goals and further that windfall taxes are warranted under present circumstances, what remains is to explore the practical dimensions of a modern windfall tax that can overcome the limitations of its historical precedents. It would be appropriate to implement life cycle assessment in the income tax because a core task of the income tax is to measure profit accurately. A useful starting point is therefore to consider the design of conventional excess profits taxes in light of the

146 Boadway, *supra* note 130, at 253 ("Rents are of particular interest from a taxation perspective because, in principle, taxing rents can obtain revenue without any 'deadweight loss' reduction of the social value of existing economic activity. Indeed taxing rents could potentially curtail unproductive 'rent-seeking' activity . . . .").

147 The same logic justifies resource rent taxes. *See generally* U.N. Extractives Handbook, *supra* note 12; International Taxation and the Extractive Industries (Philip Daniel et al. eds., 2017); Lee Burns, *Taxation of Non-Renewable Natural Resources*, 66 Bull. Int'l Tax'n 504, 505 (2012); Lee Burns, *Resource Rent Taxation*, 18 Asia-Pac. Tax Bull. 312 (2012).

innovations in measurement methodologies that vastly improve the prospects for measuring the relevant externalities in monetary terms.

Traditional excess profits tax rules usually define the "excess"—that is, the windfall portion of a taxpayer's profit—using either an "average earning" or an "invested capital" approach.[148] An average return approach uses a credit system to reduce current year profits by the average profit of the firm over a few prior years, thus characterizing as a windfall all profit above the firm's own average over the period. In contrast, an invested capital approach establishes a specified return rate as "normal" such that everything earned above that amount is treated as excess.[149]

A windfall tax on unsustainable profits would need to deviate from this strategy to isolate the income that the firm earned by externalizing environmental and social costs to the public. As seen in Part II, in the context of the proposal for adjusting consumption taxes to account for environmental damage, the IRS can isolate this income using life cycle assessments and similar measurements of the environmental and social impacts of supply chains.[150]

As such, constructing a windfall tax requires a mechanism to impose an additional rate of tax, but this is relatively easy to accomplish.[151] The more challenging task is to determine how to effectively integrate life cycle assessment methodologies within the income tax in order to identify the portion of business profit that is attributable to environmental and social cost externalization. Further, the functionality of a windfall tax differs if the taxpayer's activities are primarily concentrated in the United States, or any other one single country, versus across a global supply chain. A windfall tax may therefore require distinct yet interrelated national and international rules. Each of these core design elements is discussed in turn.

A. Additional Rate of Tax

A windfall tax is typically a high rate of tax, and it is often much higher than that applicable to "normal" income; the idea is to effec-

148 Reuven S. Avi-Yonah, *COVID-19 and US Tax Policy: What Needs to Change?*, 48 INTERTAX 790, 791 (2020) (explaining the two approaches to furthering a proposal to adopt an excess profits tax in the United States in response to the economic disparities created by the pandemic).

149 *Id.*

150 *See supra* Section I.C.

151 See *supra* note 13 and accompanying text for a discussion of precedent in the Internal Revenue Code.

tively disgorge the windfall.[152] According to economic theory, because a windfall is unearned, it is economic rent that can be taxed away in order to enhance efficiency in the market as a whole.[153] Because being permitted to externalize environmental and social costs constitutes a windfall to the extent that this creates unearned profit, the associated income can be similarly characterized. That said, the precise rate is a policy choice,[154] with comparatively modest implications for the complexity of the rule.[155]

What matters is constructing the provision for the additional rate of tax in a familiar way, and then constructing a feasible way to identify the income that is to be subject to the additional rate.[156]

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152 Thus, for example, wartime windfall profits tax rates often approached 100%. *See, e.g.*, Avi-Yonah, *supra* note 138; GNEITING ET AL., *supra* note 135, at 38.

153 For a review of how economists define economic rent and the implications for taxation, see Gregor Schwerhoff, Ottmar Edenhofer & Marc Fleurbaey, *Taxation of Economic Rents*, 34 J. ECON. SURVS. 398, 400–06 (2020).

154 *See* Edward Fox & Zachary Liscow, *A Case for Higher Corporate Tax Rates*, 167 TAX NOTES FED. 2021, 2036 (2020) ("Ultimately, policymakers must decide what the corporate tax rate will be. We cannot tell them exactly what that rate should be. But we can offer both guidance and the caution that, just as we do not know, neither do those who suggest low rates largely on grounds of international competition."); *see also* Sebastian Gechert & Philipp Heimberger, *Do Corporate Tax Cuts Boost Economic Growth?*, 147 EUR. ECON. REV., at 13 (Aug. 2022), https://www.sciencedirect.com/science/article/pii/S0014292122000885 [https://perma.cc/W84L-3GZB] ("The literature on corporate taxes and growth has been biased towards over-reporting results according to which corporate tax cuts boost growth rates.").

155 For an examination of the levels of rule complexity in different aspects of tax systems, see Binh Tran-Nam & Chris Evans, *Towards the Development of a Tax System Complexity Index*, 35 FISCAL STUD. 341, 345–50 (2014) (exploring four main types of tax system complexity—namely, predictability, enforceability, difficulty, and manipulability—and how they combine to create multidimensional complexity in the tax system).

156 It is assumed that governments would use the revenue raised from a windfall tax on unsustainable profits to mitigate or prevent the damage that was externalized or compensate those harmed by the activity. The specific spending decisions, however, are not core to the functioning of the tax itself. As with any Pigouvian tax, the revenue gains could be reinvested or spent away without disturbing the essential design of the tax. That said, there could be some benefit to earmarking the tax to a specific spending goal, such as the United States Environmental Protection Agency ("EPA") Superfund. *Superfund*, U.S. ENV'T PROT. AGENCY, https://www.epa.gov/superfund/what-superfund [https://perma.cc/5X56-Q2Y2] ("EPA's Superfund program is responsible for cleaning up some of the nation's most contaminated land and responding to environmental emergencies, oil spills and natural disasters."). Earmarking is famously associated with the longstanding success of the U.S. social security system. *See, e.g.*, Allison Christians, *Taxing the Global Worker: Three Spheres of International Social Security Coordination*, 26 VA. TAX REV. 81, 83–84 (2006). It is also a key tool often used by developing countries to bring more transparency and accountability to the tax system. *See, e.g.*, Ashrita Prasad Kotha & Pradnya Talekar, *Earmarked Taxes: An Indian Case Study*, 19 EJOURNAL TAX RSCH. 97, 98–99 (2021) (arguing for a rights-based approach to earmarking). For an exploration of the classic rationales for such earmarking, see generally Ewan Clague & Joel Gordon, *Earmarking Tax Funds for Welfare Purposes*, 3 SOC. SEC. BULL. 10 (1940).

Constructing the additional rate of tax is reasonably straightforward, following the range of options currently available in the Internal Revenue Code. Perhaps the easiest method would be to add an additional rate of tax to the list of rates and schedules laid out in I.R.C. § 1—namely one that is structurally similar to the category-specific rates laid out in § 1(h). Alternatively, a provision could be tailored by reference to any of the alternative minimum taxes and surtaxes scattered throughout the Code, including the alternative minimum tax found in § 55, the tax on intangible income laid out in § 250, the minimum tax on specified intangible income found in § 951A, and the addition to tax on specified unearned income found in § 1411.

Regardless of the chosen approach to designating the applicable rate, the more difficult task is to develop a workable mode of defining the relevant base of income to be taxed. The most sophisticated measurement tool to accomplish this goal to date can be found in life cycle assessment methodologies, which are already being used to quantify the externalized environmental and social costs of highly specific industrial and commercial practices.[157] The issue at hand is to devise a feasible method to incorporate these methodologies into the existing structure of the income tax.

B. Measurement Methodology

As introduced above, life cycle assessments constitute methods for quantifying the full costs incurred in producing, distributing, and disposing of a product.[158] The scope of analysis typically includes pre- and post-production processing from the extraction of raw materials, through the various consumption stages, and on through the end of life, which includes the cost of destroying or abandoning products as well as production facilities.[159] Numerous LCAs are readily available in scientific journals, with detailed explanations of their methodological components, and scientists are constantly developing and perfecting their approaches.[160]

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157 This could be aided by sustainability reporting requirements derived from corporate social responsibility and sustainable investing frameworks. *See, e.g.*, Alfio Valsecchi, *What Corporate Tax Policy Has to Do with Sustainability and How Companies Should Deal with It*, 14 World Tax J. 113, 113–17 (2022).

158 *See* discussion *supra* Section I.C.

159 For an exhaustive analysis, see generally Life Cycle Assessment (Michael Z. Hauschild et al. eds., 2018).

160 The International Journal of Life Cycle Assessment, established in 1996, was the first to be devoted entirely to these assessments and related impact measurement methods, and has published twenty-seven volumes to date. *See The International Journal of Life Cycle Assessment,* Springer, https://www.springer.com/journal/11367 [https://perma.cc/ZA3B-4A95].

Recent studies cover a broad range of topics, including, inter alia, studies measuring the environmental and social costs associated with milk and beef production;[161] pharmaceutical packaging;[162] bakeries;[163] U.S. hospital intensive care;[164] sugarcane, sugar, and ethanol production;[165] electric vehicle production;[166] oilseed crop rotation;[167] coffee consumption;[168] pork production;[169] hydropower plants and cement manufacturing;[170] windfarms;[171] and spinach;[172] to name but a fraction of covered topics.

Each of these studies quantifies in some way the externalized costs associated with their studied product and its life cycle from re-

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161 Venla Kyttä, Marja Roitto, Aleksi Astaptsev, Merja Saarinen & Hanna L. Tuomisto, *Review and Expert Survey of Allocation Methods Used in Life Cycle Assessment of Milk and Beef*, 27 INT'L J. LIFE CYCLE ASSESSMENT 191, 191–92 (2022).

162 Fabiana Bassani, Carla Rodrigues, Pedro Marques & Fausto Freire, *Life Cycle Assessment of Pharmaceutical Packaging*, 27 INT'L J. LIFE CYCLE ASSESSMENT 978, 978–79 (2022).

163 Nathalie B.R. Monteiro, José Machado Moita Neto & Elaine Aparecida da Silva, *Life Cycle Management in Bakeries: A Proposed Roadmap Towards Sustainability*, 27 INT'L J. LIFE CYCLE ASSESSMENT 82, 82–83 (2022).

164 Purnima Aishwarya Prasad, Dhruvi Joshi, Jennifer Lighter, Jenna Agins, Robin Allen, Michael Collins, Foohel Pena, Joan Velletri & Cassandra Thiel, *Environmental Footprint of Regular and Intensive Inpatient Care in a Large US Hospital*, 27 INT'L J. LIFE CYCLE ASSESSMENT 38, 38–39 (2022).

165 *See* Wanchat Sawaengsak, Stig I. Olsen, Michael Z. Hauschild & Shabbir H. Gheewala, *Development of a Social Impact Assessment Method and Application to a Case Study of Sugarcane, Sugar, and Ethanol in Thailand*, 24 INT'L J. LIFE CYCLE ASSESSMENT 2054, 2054–55 (2019).

166 *See* Jorge Enrique Velandia Vargas, Daniela Godoy Falco, Arnaldo César da Silva Walter, Carla Kazue Nakao Cavaliero & Joaquim Eugênio Abel Seabra, *Life Cycle Assessment of Electric Vehicles and Buses in Brazil: Effects of Local Manufacturing, Mass Reduction, and Energy Consumption Evolution,* 24 INT'L J. LIFE CYCLE ASSESSMENT 1878, 1878–79 (2019).

167 *See* Sharath Kumar Ankathi, Dan S. Long, Hero T. Gollany, Prajesh Das & David Shonnard, *Life Cycle Assessment of Oilseed Crops Produced in Rotation with Dryland Cereals in the Inland Pacific Northwest*, 24 INT'L J. LIFE CYCLE ASSESSMENT 627, 627–28 (2019).

168 *See* Kirsi Usva, Taija Sinkko, Frans Silvenius, Inkeri Riipi & Hannele Heusala, *Carbon and Water Footprint of Coffee Consumed in Finland—Life Cycle Assessment*, 25 INT'L J. LIFE CYCLE ASSESSMENT 1976, 1976–77 (2020).

169 *See* S. Zira, E. Röös, E. Ivarsson, R. Hoffmann & L. Rydhmer, *Social Life Cycle Assessment of Swedish Organic and Conventional Pork Production*, 25 INT'L J. LIFE CYCLE ASSESSMENT 1957, 1957–58 (2020).

170 *See* Thiri Shwesin Aung, Thomas B. Fischer & Azlin Suhaida Azmi, *Are Large-Scale Dams Environmentally Detrimental? Life-Cycle Environmental Consequences of Mega-Hydropower Plants in Myanmar*, 25 INT'L J. LIFE CYCLE ASSESSMENT 1749, 1749–50 (2020); Thant Zin Tun, Sebastien Bonnet & Shabbir H. Gheewala, *Life Cycle Assessment of Portland Cement Production in Myanmar*, 25 INT'L J. LIFE CYCLE ASSESSMENT 2106, 2106–07 (2020).

171 *See* Belay Teffera, Berhanu Assefa, Anna Björklund & Getachew Assefa*, Life Cycle Assessment of Wind Farms in Ethiopia*, 26 INT'L J. LIFE CYCLE ASSESSMENT 76, 76–77 (2021).

172 *See* Naoki Yoshikawa, Tomoya Matsuda & Koji Amano, *Life Cycle Environmental and Economic Impact of a Food Waste Recycling-Farming System: A Case Study of Organic Vegetable Farming in Japan*, 26 INT'L J. LIFE CYCLE ASSESSMENT 963, 963–64 (2021).

source extraction through production and disposal. The question is how these costs should be understood in terms of income tax principles. The main difficulty posed is that these studies are highly technical, detailed, and potentially difficult to absorb by lawmakers, taxpayers, and tax administrators alike. Some sort of simplifying or streamlining of methods is needed.

A nascent solution is emerging in the social enterprise and nonprofit sector, as a number of individuals and organizations work to simplify and popularize streamlined methods. For example, the social enterprise True Price was formed to assist firms, governments, and nongovernmental organizations to "quantify, value and improve their economic, environmental and social impacts" by working directly with firms and developing open source methods for impact measurement.[173] Working with other organizations such as the Sustainable Trade Initiative ("IDH")[174] and the Impact Institute,[175] and commissioned by various firms and governments, True Price developed a simplified methodology to demonstrate the price gap between sustainable and unsustainable practices in various sectors.[176]

Studies by True Price and others provide lawmakers, taxpayers, and tax authorities with relevant quantitative data on the externalized costs associated with unsustainable practices. These data can be incorporated into the established rules for self-assessment and reporting of income for tax purposes.[177] The general idea, explored in more detail

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173 SUSTAINABLE TRADE INITIATIVE & TRUE PRICE, THE TRUE PRICE OF COTTON FROM INDIA 1 (2016); IMPACT INST., THE TRUE PRICE OF JEANS (2019).

174 *About* IDH, SUSTAINABLE TRADE INITIATIVE, https://www.idhsustainabletrade.com/about-idh/ [https://perma.cc/2APZ-42K5] (describing itself as an organization that "empowers people within businesses, the global financial sector, and governments" to help effectuate "inclusive and sustainable market-driven solutions that create value for people and planet"). For an example of a joint initiative, see SUSTAINABLE TRADE INITIATIVE & TRUE PRICE, THE TRUE PRICE OF TEA FROM KENYA 2 (2016), https://www.idhsustainabletrade.com/publication/httpsissuu-comidhsustainabletradeinitiativedocsthe_true_price_of_tea_from_kenya/ [https://perma.cc/S5XJ-NQH3] (June 24, 2016) ("We feel the True Price methodology does just that, quantifying the externalities we strive to address and providing a tool for comparison across sectors. It provides the analytical tools to understand the key externalities in a sector and evaluate the severity of those externalities in simple, monetized terms.").

175 *About Us*, IMPACT INST., https://www.impactinstitute.com/about/ [https://perma.cc/MXB3-XHZS] (stating that "[t]he Impact Institute is a social enterprise and a spin-off of True Price" and that its mission is to "empower organizations and individuals to realize the impact economy by creating a common language for impact and providing the tools to use it. [It] develop[s] open-source standards for impact measurement and valuation and provide[s] organizations with the tools, training, and services to implement them.") (emphasis omitted).

176 *See* Sustainable Trade Initiative & True Price, *supra* note 174, at 2.

177 For a discussion of the principles involved, see Allison Christians, *Designing a More Sustainable Global Tax System*, 44 DALHOUSIE L.J. 19 (2021).

below, is that each expense that is saved by externalizing environmental and social costs can be quantified as a corresponding portion of a taxpayer's business income, namely as a deemed or imputed income amount. Although adopting such a rule may appear unusual at first glance, identifying potential cost savings is a common corporate strategy where resources are invested in supply chain analyses dedicated to finding new opportunities for cost reduction. Then it is only a matter of transplanting the principle into the relevant income tax measurement rules.

That said, incorporating saved costs would entail distinct approaches depending on the geographic scope of the particular taxpayer's income. Simply creating deemed income inclusions may be possible, in theoretical terms, at least, for strictly domestic income situations.[178] However, globally dispersed income streams pose a unique challenge in that multiple countries might calculate a deemed income amount, resulting in multiple layers of taxation that go well beyond taxing away the unsustainable profit. Each situation is discussed in turn using an example to illustrate the essence of the proposal.

C. Domestic Approach

The task of a windfall tax on unsustainable profits is simple: to impose a surtax only on those profits that are attributable to unsustainable practices, keeping what is derived from cost-internalizing sustainable activities subject exclusively to the traditional income tax. To do so, life cycle assessments would be used to determine the price gap between a sustainable and an unsustainable supply. For example, True Price conducted a study demonstrating that the sustainable production of a pair of blue jeans costs about $34 more than the unsustainable production thereof. [179] Since a pair of jeans sold at any price below $34 would be completely unprofitable if sustainably produced, all of the profits reaped from producing such jeans must be considered wholly attributable to the negative externalities they create or exploit.

The implication of this observation is that all of the profits of a business that produces jeans at a production cost below $34 must necessarily be excess profits—in other words, a windfall from offloading

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178 The proxy approach of I.R.C. § 250, under which all returns in excess of a statutory margin are deemed income subject to the stated tax rate, serves as an example.

179 Impact Inst., *supra* note 173, at 4 (finding that market prices for jeans in the studied country—the Netherlands—ranged between 14 and 200 euros). True Price calculations are typically made in euros; amounts have been converted to U.S. currency using the Board of Governors of the Federal Reserve System rates as of February 10, 2022.

costs to the public. Above the $34 price point, the taxpayer's production costs would have to be examined in detail. Some portion of the market price above $34 may be attributable to normal profits above production costs undertaken in a sustainable way, but it is always possible that some or all of the profit is attributed to unsustainable practices. In this case, the profit structure would have to be examined in light of the taxpayer's specific practices.

This examination could be undertaken using the True Price study, which breaks down the sustainability price gap according to the different types of negative externalities created by producing blue jeans.[180] For example, the True Price study finds that increasing water use efficiency in cotton cultivation in India would cost about $0.80 per pair of jeans; addressing bonded labor in textile production in India would cost about $11.75 per pair; achieving living income and wages across the value chain would cost about $3.36 per pair, and so on.[181]

These findings identify the specific costs potentially avoided by the taxpayer whose profit is being examined for signs of windfall—or excess or abnormal profit, whichever term is politically expedient.[182] To the extent that the various cost-saving factors identified in True Price's life cycle assessment of blue jeans are employed by the taxpayer, a portion of its profit is a windfall, and therefore eligible for the application of the windfall tax on unsustainable profits. The approach is not unlike that associated with the pricing of transfers and licensing of intangibles, which can include factoring the counterfactual value of items even in the absence of a comparable market price.[183]

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180 *Id.*

181 *Id.* The full sustainability gap pricing list is as follows:

> 1. Increasing water use efficiency in cotton cultivation in India: €0.70 per jeans with potential impact of €330 million.
> 2. Addressing bonded labour in textile production in India: €10.30 per jeans and potential impact of €5 billion.
> 3. Towards living income and wages across the value chain: €2.95 per jeans and potential impact of €1.4 billion.
> 4. Re-using denim textile from jeans: €1.25 per jeans with potential impact of €550 million.
> 5. More responsible consumer purchasing: €16.45 per jeans with potential impact of €8 billion[.]
> 6. Washing the jeans less often: €0.90 per jeans with potential impact of €430 million[.]

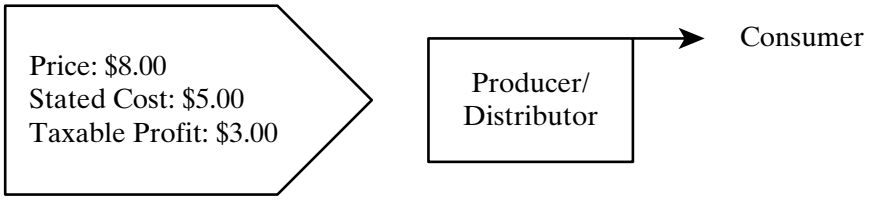
Id.

182 For a summary of economic theories on abnormality in profits, see William Griffiths, Paul H. Jensen & Elizabeth Webster, *What Creates Abnormal Profits?*, 58 Scottish J. Pol. Econ. 323, 326–29 (2011).

183 *See, e.g.*, Altera Corp. v. Comm'r, 926 F.3d 1061, 1078 (9th Cir. 2019) (including the

Figure 1 illustrates a situation in which a wholly domestic company incurs an aggregated cost of $5.00 per good produced (paying, for example, employees, utilities, and inventory). Each unit is then sold to final consumers for $8.00, generating a $3.00 profit that, under the status quo, should be subject to the standard corporate income tax rate.

FIGURE 1. STATUS QUO ANALYSIS OF SALES TO CONSUMERS



Using life cycle assessment, it is possible to calculate what would have been the true cost of producing this imagined good, which includes not only what the producer encountered in market terms but also what was externalized and saved—for example, by dumping toxic waste into a local waterway. If, for every product sold for $8.00, there is a saved cost of $1.00 that the producer would have incurred had it disposed of its waste properly, this amount represents unsustainable profit. As shown in Figure 2, any portion of business profit up to this foregone cost amount—the "windfall unsustainable profit"—could be subject to a windfall tax, in addition to the regular income tax that would be normally imposed on the cost-internalizing portion of the profit ("normal profits").[184]

The proposed windfall tax on unsustainable profits does not directly affect the price of the product to the consumer, but even if it did, the result could be defended as a way to level the playing field between uncompetitive sustainable products—usually more expensive—and unsustainable ones—usually cheaper. Although a higher rate is applied to the windfall portion of

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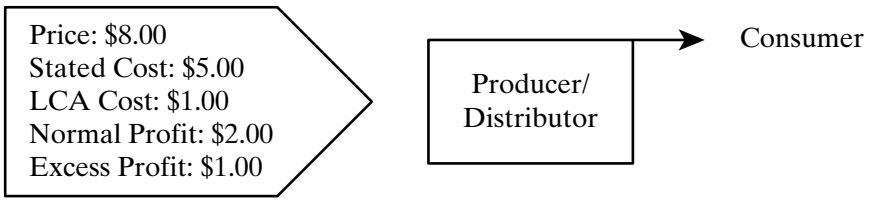
value of stock-based compensation costs in a cost-sharing agreement even though such costs would not generally be shared among unrelated parties, because "[t]hese internal allocation methods are reasonable methods for reaching the arm's length results required by statute. While interpreting the statute to do away with reliance on comparables may not have been 'the only possible interpretation' of Congress's intent, it proves a reasonable one.") (quoting Entergy Corp. v. Riverkeeper, Inc., 556 U.S. 208, 218 (2009)).

184 Depending on the rate structure and overall tax burden, the excess part could be subject to both the windfall tax and the regular corporate income tax (in which case the windfall tax would work as a complementary surtax), or only to the windfall tax, if set at a high enough level to discourage the unsustainable practice.

FIGURE 2. LIFE CYCLE COST-BASED ANALYSIS OF SALES TO CONSUMERS



a company's profits that dominates the market with cheap and unsustainable products, it is possible that the tax will not be passed along to consumers in the form of increased prices if the object of the windfall tax is in fact economic rent.[185] This is because it is still open to debate whether, in a monopoly or quasi-monopoly situation, a firm might be able to pass on the additional tax by raising prices, because prices are already presumably maximized in such situations.

The recent spread of digital services taxes offers a contemporary analogy for the proposed windfall tax. Digital services taxes are broadly defined as new taxes, imposed mostly on foreign firms, that target income of the firm that would have traditionally been considered foreign source because the firm in question does not maintain the requisite level of operations in the country to warrant domestic taxation.[186] Many countries adopted or began to consider adopting such taxes starting with India's so-called "Google Tax" in 2016, which appears to have inspired the adoption of similar taxes across Europe beginning with Hungary in 2017.[187]

Digital services taxes mainly target highly digitalized firms like Google (Alphabet), and in particular many target specific types of income earned by such firms—including advertising revenues, platform revenues, and in some cases the fees generated by selling user data to third parties. The global surge in online platform usage resulting from

185 For traditional corporate taxation, recent tax incidence assessments seem to confirm that the tax is more often than not borne by capital, instead of being mostly shifted to consumers or labor, or even falls directly on economic rent. *See* Fox & Liscow, *supra* note 154, at 2024–25; Edward Fox, *Does Capital Bear the U.S. Corporate Tax After All? New Evidence from Corporate Tax Returns*, 17 J. EMPIRICAL LEGAL STUD. 71, 73 (2020); Kimberly A. Clausing, *Who Pays the Corporate Tax in a Global Economy?*,66 NAT'L TAX J. 151, 155, 169–70 (2013); Kimberly A. Clausing, *In Search of Corporate Tax Incidence*, 65 TAX L. REV. 433, 466 (2012).

186 For an overview and timeline of digital services tax adoptions around the world, see Mahwish Tazeem & Allison Christians, *A Snapshot of Digital Service Taxes Around the World*, CTF DIGIT. TAX LOG (July 10, 2020), http://www.ctf.ca/CTFWEB/EN/Newsletters/Blogs_and_Reports/Digital_Services_Updates/Entries/Entry02.aspx [https://perma.cc/QC54-DDL9].

187 *Id.*

COVID-19 has even been characterized as a windfall in mainstream financial news reports.[188] As such, these new taxes take aim at a unique form of excess profits or economic rent, namely, those deriving from innovative business models that simply do not fit traditional business or financial models and therefore also seem to confound traditional regulatory regimes, including tax regimes.[189] That said, the ultimate economic impact of digital services taxes is still unclear, with some firms immediately announcing they would pass the taxes on to their customers or clients while others announced the opposite.[190] With the benefit of this experience, a government could choose to adjust the windfall tax base to more accurately target excess profits and thereby minimize shifting to consumers.

D. International Approach

When the taxpayers that might be subject to a windfall profits tax are multinational, the scope of complexity and administrative challenge increases exponentially, but there are also certain cross-border tax cooperation rules that might ease the way to effective implementation.[191] International cooperation would probably be necessary to fa-

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188 *See, e.g.*, Grady McGregor, *How COVID Gave China an Edge in A.I. Battle Against the U.S.*, FORTUNE (Oct. 27, 2020, 4:28 AM) https://fortune.com/2020/10/27/covid-china-ai-battle-us [https://perma.cc/LN3Z-FWYL] (paraphrasing Sinovation Ventures CEO Kai-Fu Lee, who expressed that "[t]he world's rapid shift to online platforms during the pandemic is a windfall for artificial intelligence").

189 *See* Wei Cui & Nigar Hashimzade, *The Digital Services Tax as a Tax on Location-Specific Rent*, SSRN (Nov. 17, 2019), https://ssrn.com/abstract=3488812 [https://perma.cc/8NWA-WCMD] (arguing that digital services taxes target economic rents); Wei Cui, *The Digital Services Tax on the Verge of Implementation*, 67 CANADIAN TAX J. 1135, 1136–37 (2019) (same); Wei Cui, *The Digital Services Tax: A Conceptual Defense*, 73 TAX L. REV. 69, 100–01 (2019); Wei Cui, *The Superiority of the Digital Services Tax over Significant Digital Presence Proposals*, 72 NAT'L TAX J. 839, 853 (2019) (same); Daniel Shaviro, *Mobile Intellectual Property and the Shift in International Tax Policy from Determining the Source of Income to Taxing Location-Specific Rents* (pts. 1 & 2), 2020 SING. J. LEGAL STUD. 681, 684–89 (2020), 2021 SING. J. LEGAL STUD. 128, 154 (2021) (arguing that digital tax proposals target economic rent); Bankman et al., *supra* note 131, at 231 (same as previous); Lilian V. Faulhaber, *Lost in Translation: Excess Returns and the Search for Substantial Activities*, 25 FLA. TAX REV. 545 (2022) (discussing minimum taxes on excess returns in the context of the OECD's digital tax project).

190 Silvia Amaro, *Big Tech Finds a Way to Pass on the Cost of Digital Taxes in Europe*, CNBC (Sept. 3, 2020, 3:44 AM), https://www.cnbc.com/2020/09/03/big-tech-finds-a-way-to-pass-on-the-cost-of-digital-taxes-in-europe.html [https://perma.cc/P3RK-KD7P] (reporting that Google and Apple announced their intention to pass the taxes on to their customers); Io Dodds, *Facebook Breaks with Google, Apple and Amazon over UK Tech Tax*, TELEGRAPH (Sept. 3, 2020, 6:00 AM), https://www.telegraph.co.uk/technology/2020/09/03/facebook-breaks-google-apple-amazon-refusing-pass-uk-tech-tax/ [https://perma.cc/Z2N6-64YR] (reporting Facebook's announcement that it would not do the same).

191 One such example of coordinating structures recently developed is the International

cilitate a well-functioning windfall tax. The experience of the U.S. Supreme Court in considering the 1997 U.K. windfall profit tax discussed above previews some of the challenges and opportunities involved in constructing a windfall tax that potentially has international reach.

For governments, relevant concerns include both the problematic issue of cross-border enforcement as well as coordination with existing commitments in tax treaties. For taxpayers, the potential for mitigation of a windfall profits tax by obtaining credits against a normal tax in another country, as the taxpayer achieved in the U.S. case involving the U.K. windfall profit tax, raises the specter of careful tax planning to reverse the effect of the new tax. Where such reversal would impede the policy goal of the tax, as it would where the windfall tax is meant to have Pigouvian behavior-altering effects, designing an effective windfall profit tax in the context of a global economy requires reckoning with a number of incompatible incentives and potentially conflicting norms and standards.

In the case of a windfall tax on unsustainable profit, the scope for coherent coordination with existing rule sets is heightened by the proliferation of cooperative norms and standards surrounding the allocation of profit earned by multinationals. These norms and standards include a number of technically dense coordination rules that offer a useful starting point for analysis. In particular, the norms surrounding the allocation of profits among the related members of multinational groups—pursuant to transfer pricing rules—become key to the analysis.[192]

These rules come into focus because when the supply chain is international, as is often the case with significant polluters, there is always the risk that companies will shift profits—including windfall profits—to jurisdictions that offer a lower overall tax rate.[193] This is a

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Compliance Assurance Programme ("ICAP"), which brings together a multinational group and the governments where its entities operate to amicably prevent double taxation issues before they arise. For an assessment, see Allison Christians & Tarcísio Diniz Magalhães, *Canada's Experience with the ICAP*, *in* Co-operative Compliance and the OECD's International Compliance Assurance Programme (Ronald Hein & Ronald Russo eds., 2020).

192 It is worth noting that an emerging literature has been focusing on the impact of sustainability-based frameworks such as economic, social, and governance ("ESG") for transfer pricing. *See, e.g.*, Iris Burgstaller, *ESG Transformation and Transfer Pricing Implications*, 29 Int'l Transfer Pricing J. 3, 3 (2022); David Ledure, Daria Tregubova, Rui Yuan, Boxiong Yang, Gurpal Gill & Mitesh Sagar, *Sustainable Financing and Transfer Pricing—How Environmental, Social and Governance Considerations Seep Through into the Arm's Length Principle*, 29 Int'l Transfer Pricing J. 13, 13 (2022).

193 *See* OECD, Addressing Base Erosion and Profit Shifting 8 (2013).

topic currently addressed by adjusting prices between related parties on the basis of the arm's length standard, which is broadly defined as the prices that unrelated parties would bargain for to maximize their own benefit in any transaction.[194] When parties are not at arm's length, the general principle is that each will not seek to maximize its own profit but be more willing to reallocate profits in order to achieve minimal tax results for the group as a whole, even if this means that one of the parties is perpetually at an economic disadvantage while the others enjoy outsize gains.[195]

In incorporating the idea that environmental and social cost externalization reduces costs and allows for windfall profits to arise, transfer pricing rules could be employed to ensure that this windfall profit is allocated to the jurisdiction where most of the impact takes place.[196] The claim is consistent with standard source principles, where the source of an externalized cost is the location where the cost was avoided,[197] and would probably require that other affected jurisdictions agree with corresponding adjustments where appropriate.

Figure 3 below illustrates how this would work with a simplified transfer pricing scenario, where two associated enterprises, a distributor, and a manufacturer, are located in different jurisdictions: State A and State B, respectively.

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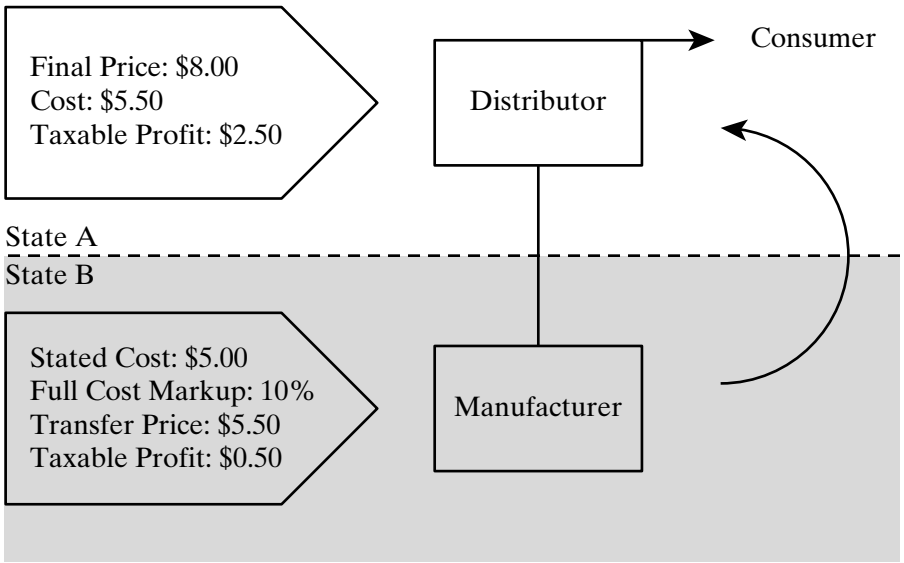
194 *See* OECD, TRANSFER PRICING GUIDELINES FOR MULTINATIONAL ENTERPRISES AND TAX ADMINISTRATIONS 19 (2022); U.N., UNITED NATIONS PRACTICAL MANUAL ON TRANSFER PRICING FOR DEVELOPING COUNTRIES 214 (3d ed., 2021).

195 Stephen E. Shay, *An Overview of Transfer Pricing in Extractive Industries*, *in* INTERNATIONAL TAXATION AND THE EXTRACTIVE INDUSTRIES, *supra* note 147, at 42 ("In most business contexts involving unrelated persons, the pricing of a transaction is a zero-sum game on a pre-tax basis; what one side wins the other side loses. If the seller receives a higher price, the buyer loses by paying more and *vice versa*.").

196 For an initial discussion on the possibilities of factoring environmental aspects in transfer pricing approaches, see Alice Pirlot, *Toward Green Transfer Pricing: Including Environmental Parameters in Transfer Pricing Rules, in* 14 ENVIRONMENTAL TAXATION AND GREEN FISCAL REFORM 98, 98–99, 101, 105 (Larry Kreiser et al. eds., 2014).

197 *See, e.g.*, Brett A. Norwood, *Location Savings and Other Location-Specific Advantages*, 19 ASIA-PAC. TAX BULL. 332, 334–35 (2013).

FIGURE 3. STATUS QUO ANALYSIS OF SALES INVOLVING AN MNE



Assuming a normal "full cost" markup of 10% in State B, if the costs related to producing a certain good amount to $5.00, then in a standard arm's length price analysis we would expect the manufacturer in State B to charge the distributor in State A the price of $5.50 per unit of the good.[198] The manufacturer would thus earn a profit of $0.50, which would be subject to tax by State B.

If the manufacturer were to charge the distributor in State A anything less than $5.50, State B might step in and apply its transfer pricing rules in order to adjust the price.[199] If, for example, the manufacturer were to charge the distributor only $5.30, leaving $0.30 of profit per unit in State B, State B might use its transfer pricing rules to deem the manufacturer to have charged $5.50, in accordance with global standards. This arm's length price adjustment does not change what the manufacturer actually charged the distributor, but it allows State B to tax the manufacturer as if it had earned $5.50 instead of $5.30 on its sale to the distributor.

198 The chosen pricing method is by way of example. For alternatives, see Treas. Reg. § 1.482-1 (2022) ("Allocation of income and deductions among taxpayers"). Note that the distributor will apply its own markup before selling to the consumer. This markup is expected to relate to the cost of goods sold but the exact correspondence of markup rate to cost incurred will vary according to factors such as industry, time, inflation, and the ability to add value in the form of branding, marketing, etc.

199 This assumes that the source state has and exercises its power to adjust asserted prices in the case of nonarm's length parties.

Meanwhile, State A would assess the situation from the perspective of the distributor. When the manufacturer initially charged the distributor $5.30, any price the distributor charged the consumer above that amount would be taxable as the distributor's profit by State A. When State B recomputes the manufacturer's price as $5.50, the distributor will have to be treated as if it paid the manufacturer $5.50 in order to prevent double taxation of the difference. Double taxation will be avoided provided that State A grants an adjustment to the distributor's cost in an amount that corresponds to State B's adjustment to the manufacturer's price. If State A does so, it may be that the final price of the product to consumers will remain unaltered (in this example, $8.00).[200] Accordingly, coordinated transfer pricing does not necessarily increase the profit realized from a chain of production; instead, it alters the allocation of the profit among the jurisdictions involved in that chain.[201]

Under existing comparability standards for valuation, a taxpayer's stated cost of production would typically ignore externalized costs that give rise to windfall profits. But this is not universally so, even under the existing transfer pricing rules and standards, because the guiding principle of arm's length transfer pricing is to clearly reflect the income of the various members of an affiliated group of companies.[202]

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200 This is most likely the case if the tax rates charged by State A on the distributor and State B on the manufacturer are relatively similar, because in that case the pricing adjustment merely changes the recipient of the tax without changing the final amount of tax paid by the group. In reality, there are likely differences in tax rates among jurisdictions that cause price adjustments to impact a group's overall cost and profitability.

201 Such adjustments are available under domestic law in many countries, as for example laid out at Treas. Reg. § 1.482-1(g) ("Collateral adjustments"). They are also usually included in bilateral tax treaties, when such a treaty exists between the countries involved. *See* OECD, *supra* note 194, at 181–95 (Corresponding adjustments §§ 4.29–4.67) (describing secondary adjustments in general and treaty-based adjustments supported by the mutual agreement procedure administered by competent authority). Given a specified rate, taxpayers are expected to be indifferent as to which government tax they pay as long as the tax is not duplicative. *See, e.g.*, Michael Keen & Peter Mullins, *International Corporate Taxation and the Extractive Industries: Principles, Practice, Problems*, *in* INTERNATIONAL TAXATION AND THE EXTRACTIVE INDUSTRIES, *supra* note 147, at 11, 36 n.5 ("While the rhetoric commonly abhors 'double taxation,' what investors presumably care about (compliance costs aside) is not how many times they are taxed but how much."); DANIEL N. SHAVIRO, FIXING U.S. INTERNATIONAL TAXATION 6 (James R. Hines Jr. ed., 2014) (disputing the antidouble tax idea). *See generally* INTERNATIONAL TAXATION AND MULTINATIONAL ACTIVITY (James R. Hines Jr. ed., 2000).

202 *See, e.g.*, I.R.C. § 482 ("In any case of two or more organizations, trades, or businesses . . . the Secretary may distribute, apportion, or allocate gross income, deductions, credits, or allowances between or among such organizations, trades, or businesses, if he determines that

U.S. transfer pricing regulations, together with their international counterparts—the Organisation for Economic Co-operation and Development ("OECD") transfer pricing guidelines—make room for location-specific factors to be accounted for in devising the appropriate transfer price.[203] Both the U.S. regulations and the OECD guidelines allow price adjustments to take into account overall market conditions.[204] As a tool for identifying and measuring those conditions with respect to negative externalities that are created through unsustainable practices, life cycle assessments could be a perfectly appropriate way to assess transfer prices under the laws as they are currently written in the United States and the standards as they are currently practiced around the world.

Integrating life cycle assessment into transfer pricing methodologies in the United States and elsewhere would make it possible to measure what portion of a taxpayer's overall profit is attributable to negative externalities they exploit, and thereby allocate this portion to the place of impact of such externalities. The geographic location that is the source of this portion of the profit can choose to apply a windfall tax on unsustainable profits on the theory that these profits are not normal income but are derived from the act of externalizing costs.

For example, imagine that the manufacturer in our example above was only able to sell to the distributor at $5.50 by externalizing costs amounting to $2.00 per unit because the manufacturer caused damage to the local environment that the community suffered without compensation. Figure 4 illustrates how a transfer pricing adjustment would change the allocation of profit between the members of this group if this externalized cost were taken into account.

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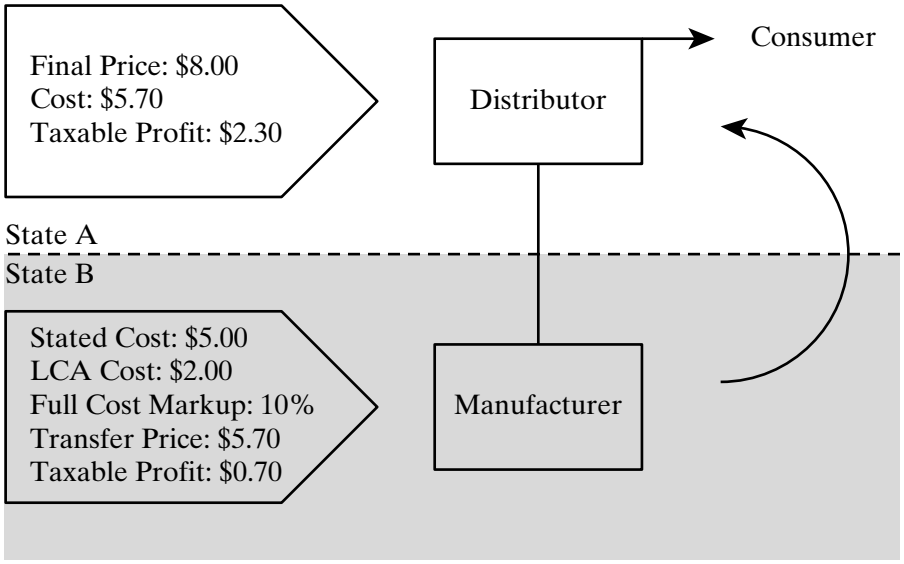
such distribution, apportionment, or allocation is necessary in order to prevent evasion of taxes or clearly to reflect the income of any of such organizations, trades, or businesses.").

203 *See, e.g.*, Steven N. Allen, Joy Dasgupta, Jessica H. Rosenbloom, Crystal Thibeault, Rahul Tomar, Alden J. Woodrow & Deloris R. Wright, *Location Savings—A US Perspective*, 11 INT'L TRANSFER PRICING J. 158, 158, 164 (2004); Pankaj Jain & Vikram Chand, *Location Savings: International and Indian Perspective*, 43 INTERTAX 192, 192 (2015); Jonathon McCarthy & Adrian Hanif, *Location Savings in Indonesia*, 20 ASIA-PAC. TAX BULL. 357, 357 (2014); Seppo Penttilä & Martti Nieminen, *Location Savings Allowable in Transfer Pricing Cases, Court Says*, 70 TAX NOTES INT'L 24, 24–25 (2013); Merja Raunio, *Supreme Administrative Court Ruling on Location Savings*, 20 INT'L TRANSFER PRICING J. 1, 2–3 (2013); Bipin Pawar & Shilpa Udeshi, *Location Savings*, 19 ASIA-PAC. TAX BULL. 336, 336 (2013); Ednaldo Silva, *Location Savings Adjustment to Profits*, 19 J. INT'L BUS. ECON. 29, 29 (2019); OECD, ALIGNING TRANSFER PRICING OUTCOMES WITH VALUE CREATION 43 (2015) ("Location savings and other local market features").

204 Treas. Reg. § 1.482-1(d) (explaining that adjustments may be made to account for different levels and forms of risk and economic conditions that differently affect controlled versus uncontrolled taxpayers); OECD, *supra* note 194, at 39–41, §§ 1.33–1.40 (same).

FIGURE 4. LIFE CYCLE COST-BASED ANALYSIS OF SALES INVOLVING AN MNE



Once it is determined via life cycle assessment that the manufacturer created an externalized cost of $2.00 per unit sold, State B would apply its regular full cost markup (10% in this example) to the combined cost ($7.00), instead of only to the $5.00 as originally assessed. At a 10% markup, this means that State B would assess an arm's length profit of $0.70 instead of $0.50 per unit.

Again, providing that State A agrees to a corresponding adjustment, State B's price adjustment does not directly alter the final price charged to the consumer. State B's price adjustment merely shifts the tax base from State A to itself. That is, with the life cycle assessment-based adjustment, State B is entitled to tax $0.70 per unit sold to State A instead of $0.50, while State A would reduce the distributor's tax base from $2.50 ($8.00 – $5.50) to $2.30 ($8.00 – $5.70).

As a further step, since the new tax base at source in State B comprises both normal profits and windfall profits, State B could choose to impose different tax rates on each portion: the regular income tax rate to $0.50 on each unit sold, and the windfall tax to the additional $0.20 on each unit sold.[205]

205 In addition to all arguments presented hitherto, a windfall tax built from within the income tax system is more appropriate than consumption-based environmental taxes because the latter tend to be allocated on a destination basis—that is, they benefit the public coffers of countries with a large consumer market (largely located in the North), which are not necessarily the ones that suffer the most from unsustainable practices of production and extraction (largely located in the South). *See* Ivan Ozai, *Designing an Equitable Border Carbon Adjustment Mecha-*

Note that, in an international setting, State B cannot simply include in its tax base the externalized cost as a windfall and then apply the windfall tax, as would theoretically be possible in the case of wholly domestic taxpayers. The reason is that current transfer pricing rules adopt a separate entity approach that tries to respect the multinational's allocation of income among group members located in different jurisdictions on the basis of functions performed, assets used, and risks assumed.[206] A solution to this problem would be to coordi-

nism, 70 CANADIAN TAX J. 1, 3 (2022) (discussing the international distributive effects of carbon taxes between developed and developing states); Laima Eicke, Silva Weko, Maria Apergi & Adela Marian, *Pulling Up the Carbon Ladder? Decarbonization, Dependence, and Third-Country Risks from the European Carbon Border Adjustment Mechanism*, 80 ENERGY RES. & SOC. SCI. 1 (2021) (measuring the negative impact of the carbon-tax-like proposal of the EU ("CBAM") on Global South countries); Yanan Ren, Guangxin Liu & Lei Shi, *The EU Carbon Border Adjustment Mechanism Will Exacerbate the Economic-Carbon Inequality in the Plastic Trade*, 332 J. ENVR. MGMT 1 (finding similar negative effects of the EU's CBAM for China, other Asia and Pacific countries, and Russia); Jiarui Zhong & Jiansuo Pei, *Beggar Thy Neighbor? On the Competitiveness and Welfare Impacts of the EU's Proposed Carbon Border Adjustment Mechanism*, 162 ENERGY POL'Y 1 (2022) (similar to previous, but in relation to China, Russia, and India). As shown in the example above, a windfall tax allows for revenues to be directly raised by countries where impacts take place as the source of cost savings for unsustainable firms that externalize negativities. Such an approach is further justified by the existing "climate debt" between the Global North and the Global South. *See* Jason Hickel & Aljoša Slameršak, *Existing Climate Mitigation Scenarios Perpetuate Colonial Inequalities*, 6 LACET PLANET HEALTH e628, e628 (2022); Mohamed Adow, *The Climate Debt Keeps Growing: Rich Countries Still Refuse to Pay Their Share*, FOREIGN AFFS. (Oct. 28, 2021), https://www.foreignaffairs.com/articles/world/2021-10-28/climate-debt-keeps-growing?check_logged_in=1&utm_medium=promo_email&utm_source=LO_flows&ut [https://perma.cc/3RYR-HVWP]; Mohamed Adow, *The Climate Debt: What the West Owes the Rest*, FOREIGN AFFS. (May/June 2020), https://www.foreignaffairs.com/articles/world/2020-04-13/climate-debt?check_logged_in=1&utm_medium=promo_email&utm_source=LO_flows&utm_campaign=R [https://perma.cc/V8RN-ETXT].

206 The priority given to functions, assets, and risks extends beyond associated enterprises that belong to the same multinational group, as the methodology also applies, by analogy, to permanent establishments in their undertakings with the respective foreign company. This expanded application of transfer pricing analysis is known as the "authorized OECD approach." *See, e.g.*, Robert Couzin, *The OECD Project: Transfer Pricing Meets Permanent Establishment*, 53 CANADIAN TAX J. 401, 401–03 (2005); Hans Pijl, *The Zero-Sum Game, the Emperor's Beard and the Authorized OECD Approach*, 46 EUR. TAX'N 29, 30–31 (2006); Steef Huibregtse, Louan Verdoner, Igne Valutyte & René Offermanns, *Status of Implementation of the Authorized OECD Approach into Domestic Tax Law and Tax Treaties* (pts. 1 & 2), 55 EUR. TAX'N 363, 402 (2015); Christos A. Theophilou, *Attribution of Profits to Permanent Establishments: Should the AOA Be Maintained as the OECD Standard?*, 27 INT'L TRANSFER PRICING J. 36, 36–37 (2020); Georg Kofler & Servaas van Thiel, *The "Authorized OECD Approach" and EU Tax Law*, 51 EUR. TAX'N 327, 327 (2011); Richard Collier & John Vella, *Five Core Problems in the Attribution of Profits to Permanent Establishments*, 11 WORLD TAX J. 159, 161 (2019). For a developing country criticism, see PROPOSAL FOR AMENDMENT OF RULES FOR PROFIT ATTRIBUTION TO PERMANENT ESTABLISHMENT 25, 32 (2019) (arguing that because the authorized OECD approach only considers supply-side factors, it privileges capital-exporting developed countries, by attrib-

nate the proposed windfall tax at the global level, integrating it into proposals for the reform of the international tax system to cope with the digital economy.[207] In the same manner that countries are now considering taxing digitalized businesses on a global basis by way of applying factors such as volume of sales or number of users,[208] it is possible to envisage the use of life cycle analysis to build sustainable formulas for apportioning more of the windfall profits derived from environmental destruction to the countries most impacted by the economic activity.

Conclusion

The ultimate consequences of our current trajectory of environmental and social cost externalization are incalculable. Human-initiated environmental damage is approaching or has already passed the tipping point of irreparable levels with destruction imminent for multiple ecosystems that are necessary to human survival, while the pandemic has both illuminated and increased the pressure on an increasingly threadbare social compact. Our collective capacity to absorb the costs of unsustainable practices is accordingly disappearing, even as industries search continuously for ways to realize the last available dollar of profit.[209]

In effect, when the full costs of environmental and social damage are not borne by the producer that creates or contributes to these externalities but are dispersed to some other taxpayers to bear (includ-

uting most profits to firms' head offices while neglecting the profit-generating aspect of consumer demand for goods and services in India and similarly situated developing source countries). *See also* Smarak Swain & Sunny Bilaney, *Transfer Pricing and Sustainability: Need for a "FARME" Approach*, 29 Int'l Transfer Pricing J. 328 (2022) (arguing for a transfer pricing approach based on companies' functions, assets, risks, market base, and negative externalities).

207 For a technical explanation of how this can be accomplished, see Christians & Diniz Magalhães, *supra* note 141, at 4.

208 *See* Allison Christians & Tarcísio Diniz Magalhães, *A New Global Tax Deal for the Digital Age*, 67 Canadian Tax J. 1153, 1163, 1168–69 (2019).

209 *See, e.g.*, Sandra Laville, *Top Oil Firms Spending Millions Lobbying to Block Climate Change Policies, Says Report*, Guardian (Mar. 21, 2019, 8:01 PM), https://www.theguardian.com/business/2019/mar/22/top-oil-firms-spending-millions-lobbying-to-block-climate-change-policies-says-report [https://perma.cc/EZP3-QMED]; Georgina Gustin, *Deforestation Is Getting Worse, 5 Years After Countries and Companies Vowed to Stop It*, Inside Climate News (Sept. 13, 2019), https://insideclimatenews.org/news/13092019/forest-loss-rate-global-deforestation-amazon-fires-corporate-agribusiness-international-declaration/ [https://perma.cc/26E9-U3G4]; Niall McCarthy, *Oil and Gas Giants Spend Millions Lobbying to Block Climate Change Policies*, Forbes (Mar. 25, 2019, 8:06 AM), https://www.forbes.com/sites/niallmccarthy/2019/03/25/oil-and-gas-giants-spend-millions-lobbying-to-block-climate-change-policies-infographic/?sh=3739df517c4f [https://perma.cc/8EMW-WKM4].

ing many in the future), the profits created through unsustainable activity do not really constitute profits at all. To stay true to the idea of profit in economic and tax terms, those gains ought to be characterized as windfalls that do not exceed their full present and future costs. As such, the main motivation of this Article was to demonstrate that it would be economically, legally, and normatively appropriate to tax those windfalls away.

This Article demonstrated that with the increasing effects of climate change making permanent ecological damage to the planet an inescapable reality, exacerbated by the pandemic and current global price crisis, ongoing rifts in the social contract are clearer than ever. As such, there is an urgent need to use every regulatory tool available to alter our behavior. The volume of business profits that are made possible by little more than the opportunity to exploit people and the planet highlights severe economic inefficiencies in the market. It is imprudent to ignore the existence of these structural market failures, which allow some private actors to offload their costs onto the public now and in the future. When the income tax ignores such reality, it effectively subsidizes the exploitative behavior, the consequences of which will have to be addressed collectively with taxes amassed from everyone else, if at all. By allowing some to engage in continuous practices of cost externalization while cashing in on the associated profits, the tax system thus creates a strong economic incentive for entire economies and industries to remain unsustainable.

Using profits-based taxation is accordingly not only an appropriate way to promote more sustainable business activity but it is also necessary in order to eliminate implicit subsidies and make the market more efficient. Given the existing structure of income taxes and the precedent in analogous circumstances, a theoretically sound policy choice for a corrective instrument is to levy a windfall tax on unsustainable profits. It is true that traditional windfall taxes were often criticized for their inaccurate measurement and administrative complexity. In bringing advanced methodologies to measure income accurately, this Article offers an innovative yet workable twist on the past.

Even so, enacting any tax policy reform will require political action in the face of resistance by those currently benefiting from the externalization of environmental and social costs without penalty or prohibition. For this reason, a windfall tax on unsustainable profits would have the highest chance of success if it was incorporated within existing rule sets, ideally as part of the fabric of existing income tax rules and coming reforms. The prospects for such incremental imple-

mentation would benefit from its alignment with ongoing efforts to address tax avoidance, especially in highly digitalized and globally dispersed businesses.