The Tax Law Center NYU LAW

**Written Testimony for Hearing, "American Ingenuity: Promoting Innovation Through the Tax Code"**

Michael Kaercher
Senior Attorney Advisor and Director of the Climate Tax Project, Tax Law Center at NYU Law

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Chairman Meuser, Ranking Member Landsman, and distinguished members of the Committee, thank you for the opportunity to testify today.

The U.S. federal tax system funds investments in public research and innovation. It also directly invests in private sector innovation and future innovators through various tax deductions, exemptions, credits and other mechanisms. My testimony focuses on three key points.

1. **Reaching small businesses with direct tax subsidies requires careful policy design.** Most federal tax subsidies take the form of non-refundable tax credits, deductions, accelerated cost-recovery, or income exclusions. Each of these types of subsidy requires the taxpayer to have income tax liability. Often, startup and small businesses do not have substantial (or any) income tax liability. Furthermore, even profitable small and startup firms may find that complexity can erode the value of tax subsidies.
2. **The tax system supports critical investments in innovation outside of direct business subsidies.** Investments like the Child Tax Credit can help future U.S. workers, researchers, innovators, and entrepreneurs realize their full potential. And the core function of the tax system is to raise revenue, which can be used to fund the public research and investment that supports a dynamic economy.
3. **Tradeoffs matter.** Choosing among different methods of supporting innovation often involves tradeoffs, as the options must be weighed against each other and prioritized within fiscal and political constraints.

## Part 1: Reaching small businesses

Many small businesses do not owe much federal income tax, especially in early years when they have significant startup expenses. This can limit their ability to access many of the federal tax subsidies available to large businesses, and can be a downside of delivering subsidies through the tax system as opposed to spending programs.[1] Prior to the Inflation Reduction Act ("IRA"),

[1] Tax breaks (in the form of deductions, credits, and other preferences targeted towards specific types of activities or filers) can have the same dollar impact on the federal budget as grant programs. This is why economists refer to them as "tax expenditures." For more on federal tax expenditures, and considerations involved in delivering subsidies as tax breaks rather than spending programs, *see* Congressional Research Service, R44530, *Spending and*

Congress and the private market developed several tools to address this problem. Three approaches are (i) the ability to offset payroll tax liability with income tax credits, (ii) the ability to effectively transfer credits, and (iii) refundability (including "direct pay").[2]

*(i) Ability to offset payroll tax liability with income tax credits.*

The research credit in section 41 of the tax code adopts this first approach – at least for certain small businesses.[3] Section 41 is a complex credit regime, with four distinct credits:

1. The general credit is a 20% credit on qualified research expenses for the taxable period.[4] It is an incremental credit, and so only applies to qualified research expenses above a base amount.[5]
2. There is an alternative simplified credit of 14%. Like the general credit, it is incremental, though based on a different historic baseline.[6]
3. The third incremental research and development credit is a 20% credit related to collaboration with universities and other tax-exempt entities.[7]
4. Finally, there is a 20% credit related to amounts paid to tax-exempt energy consortiums for energy research.[8] This credit is flat, rather than incremental.

The research credit is not refundable. In other words, it can only be used to offset income tax liability. If the taxpayer claiming the credit does not have enough income tax liability to offset the credit, then the excess can be carried forward up to 20 years, or carried back one year.[9] "Critics contend that the credit's lack of complete refundability could be especially problematic for small, young firms that spend substantial sums on R&D during their early years while recording a string of net operating losses. For them, the [research] credit provides no immediate benefit."[10] In place of refundability, companies with less than $5 million in gross receipts in the current year may offset payroll tax liability related to their employees.[11] In this way, they can

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*Tax Expenditures: Distinctions and Major Programs* (2019); Frank Sammartino & Eric Toder, Tax Policy Center, *Are Tax Expenditures Worth the Money?* (2020). For a more comprehensive discussion of tax expenditures targeted at small businesses, *see* William G. Gale & Samuel Brown, *Small Business, Innovation, and Tax Policy: A Review*, Nat'l Tax J. 871, 878-881 (2013). There is no uniform definition of small business, for tax purposes or other purposes. *Id.*, at 872-81 (describing various definitions of "small business" used for different purposes).

[2] A refundable tax credit is currently the most efficient form of delivering subsidies through the tax system. *See* Lily L. Batchelder et. al, *Efficiency and Tax Incentives: The Case for Refundable Tax Credits*, 59 Stan. L. Rev. 23, 42-44 (2006) (arguing that, at least for externality-correction elements within individual tax provisions, "a uniform refundable credit minimizes the deadweight loss associated with errors in an incentive's application, assuming evidence is nonexistent or inconclusive regarding how different income groups vary in the marginal externalities generated by their engaging in the subsidized activity and in their responsiveness to the incentive. This is the case irrespective of whether a delivery of tax subsidy is delivered through the tax or transfer system and irrespective of whether the subsidized behavior actually generates positive externalities.").

[3] 26 U.S.C. § 41.

[4] 26 U.S.C. § 41(a)(1).

[5] 26 U.S.C. § 41(c).

[6] 26 U.S.C. § 41(c)(4).

[7] 26 U.S.C. § 41(a)(2).

[8] 26 U.S.C. § 41(a)(3).

[9] 26 U.S.C. § 39(a)(1).

[10] Gary Guenther, Congressional Research Service, RL31181, *Federal Research Tax Credit: Current Law and Policy Issues* 22 (2022).

[11] 26 U.S.C. § 3111(f). This provision is generally limited to companies that are not more than five years old.

access at least some of the credit even if they have losses for tax purposes. Prior to the IRA, this option was available for up to $250,000 of the credit, but the IRA doubled that limitation to $500,000.[12]

*(ii) Ability to effectively transfer credits through either "tax equity investments" or direct transfers*

Businesses without sufficient tax liability to use credits have historically turned to private "tax equity" transactions to access the value of certain credits by, in effect, transferring them to other taxpayers. "Tax equity investments" describe transactions in which one taxpayer "assign[s] the rights to claim the tax credits to another party in exchange for a [cash investment]."[13]

For example, a developer that plans to build a solar farm and receive a tax credit for the electricity generated might partner with an investor in a tax equity arrangement if the developer had no income tax liability to offset. In one type of tax equity transaction, the developer and the investor would form a partnership. The tax equity investor would make an upfront cash investment to help finance the solar farm and, in exchange, would receive most of the tax credit and depreciation associated with the project until it received the pre-determined rate of return on its investment.

Tax equity transactions have several drawbacks. Tax equity investments involve significant complexity and fixed costs, as the parties must conduct extensive due diligence and pay for legal counsel. These fixed costs, along with the return the investor receives, effectively reduce the credit's subsidy of the desired activity.[14] In addition, tax equity investment appetite fluctuates with macroeconomic conditions: when there is a recession, tax equity investor demand dries up.[15] Finally, "investors typically prefer larger projects and established technologies; as a result, it is usually more difficult for smaller projects and newer technologies to find financing."[16]

Congress has allowed certain taxpayers to instead *directly* transfer certain tax credits. Two examples from the energy space are the advanced nuclear power production credit and the energy efficient commercial buildings deduction. The advanced nuclear power production credit gives taxpayers a credit based on how much electricity their nuclear power facility produces. Government entities, electric co-ops, and public utilities can transfer this credit to certain project partners, such as the person who constructed the nuclear facility.[17] The energy efficient commercial buildings subsidy is a deduction, meaning it reduces a taxpayer's taxable income. The deduction is based on the size of the building and the reduction in energy and power costs by certain energy efficient upgrades.[18] Prior to the IRA, federal, state, and local governments could

[12] 26. U.S.C. § 41(h)(4)(B)(i)(II).
[13] Mark P. Keightley et al., Congressional Research Service, R45693, *Tax Equity Financing: An Introduction and Policy Considerations* 1 (2019).
[14] *Id.*, at 4.
[15] *See, e.g., id.*, at 12 ( "During the Great Recession, falling corporate tax liabilities reduced investor demand for credits . . . .").
[16] Peter Richman, *Direct Pay, Transferability, and the Corporate AMT*, 179 Tax Notes Federal 601, 602 (2023) (citing Brian R. Murphy & Dorian Hunt, *Tax Equity in a Direct-Pay World*, 174 Tax Notes Federal 631, 631 (2022)).
[17] 26 U.S.C. § 45J(e).
[18] 26 U.S.C. § 179D(b).

transfer the deduction to the person responsible for designing the property.[19] As explained further below, the IRA expanded the group that could transfer the deduction to include other tax-exempt entities, and adopted a broader regime to allow taxpayers to transfer credits (often called "transferability").[20]

*(iii) Refundability (including "direct pay")*

Most business tax credits are nonrefundable. However, Congress has recognized that this can make credits inaccessible for small and startup businesses.[21] The 117th Congress took a different approach to tax incentives for innovation. For example, the Chips and Science Act created a new 25% tax credit for investments in facilities that manufacture semiconductors or semiconductor equipment.[22] These facilities can cost billions of dollars, meaning even large corporations may lack tax capacity to absorb these credits in a single year. Partially for this reason, Congress first enacted a novel "direct pay" provision for this new credit.[23] Direct pay allows a taxpayer to treat a tax credit as a payment of tax. Economically, this makes the credit similar to a refundable credit, in that the taxpayer can get a check from the government even if the credit exceeds the taxpayer's income tax liability.

A key policy tradeoff is that refundability of business tax credits expands access to those credits, but also raises administrative issues. On the one hand, policymakers want to encourage certain behavior, and whether the taxpayer has tax liability is largely irrelevant to that policy. On the other hand, refundable business tax credits raise fraud concerns that are not fully present for nonrefundable credits or individual tax credits. For example, a fraudulent actor could make up a fake business, claim credits, and then abscond with the refund as soon as it is received. Because the IRS generally audits returns long after any credits or refunds are processed, it is important that the IRS have confidence that a business credit is properly calculated before it is paid as a refund. Therefore, these new direct pay regimes include guardrails, such as authority for Treasury to establish a registration system and request information from the taxpayer regarding the project on the front end.[24] These guardrails require investment in systems at the IRS, and so appropriate IRS funding is critical to a well-functioning direct pay system.[25]

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[19] 26 U.S.C. § 179D(d)(4) (2021).
[20] 26 U.S.C. § 179D(d)(3).
[21] The 116th Congress passed several laws creating fully-refundable business tax credits for certain behaviors. For example, with broad bipartisan support, Congress enacted a fully-refundable paid leave tax credit for businesses with fewer than 500 employees. *See, e.g.,* Families First Coronavirus Response Act, Pub. L. No. 116-127, §§ 7001-7003, 136 Stat. 177, 210-219 (2020).
[22] Chips and Science Act, Pub. L. No. 117-167, § 107, 136 Stat. 1366, 1393-99 (2022) (establishing new 26 U.S.C. § 48D).
[23] Direct pay was initially introduced in 2019 for certain energy credits, and was included in the House-passed Build Back Better Act. *See* Growing Renewable Energy and Efficiency Now (GREEN) Act of 2020, H.R. 7330, 116th Cong. § 104 (2020); Build Back Better Act, H.R. 5376, 117th Cong. § 136104 (as passed by House, November 19, 2021).
[24] 26 U.S.C. § 48D(d)(2)(E).
[25] The IRA included significant, long-term investments to modernize the tax system. *See* Inflation Reduction Act of 2022, Pub. L. No. 117-169, § 10301, 136 Stat. 1818, 1831-33 (2022). However, the Fiscal Responsibility Act, passed by the Senate on June 1, 2023, included a significant clawback of that investment, including a $1.4 billion recission, and a side deal to remove an additional $20 billion in funding over the next two years. *See* Fiscal

**The IRA**

The IRA modifies existing tax credits for clean energy and investment, creates new tax credits, and adopts and expands the innovations of transferability and direct pay from prior tax code provisions.

The IRA offers a broad range of tax credits and deductions, with the goals of "accelerating the deployment of clean energy to lower energy costs for American families, strengthening the U.S. industrial base, securing our clean energy supply chains in collaboration with our allies and partners, and creating jobs and economic opportunity."[26] It makes historic investments in proven technologies, while creating flexibility for the development of new technologies over time. The law spreads across the clean economy, from domestic electricity generation, to clean vehicles and alternative fuels, to nuclear and manufacturing.

One provision to note is section 48C. It includes a competitive tax credit for advanced energy projects. The Treasury Department, in consultation with the Department of Energy, is to establish a qualifying advanced energy project program to consider and award $10 billion of tax credits to projects with a reasonable expectation of commercial viability, considering the following criteria:

(i) will provide the greatest domestic job creation (both direct and indirect) during the credit period,
(ii) will provide the greatest net impact in avoiding or reducing air pollutants or anthropogenic emissions of greenhouse gases,
(iii) have the greatest potential for technological innovation and commercial deployment,
(iv) have the lowest levelized cost of generated or stored energy, or of measured reduction in energy consumption or greenhouse gas emission (based on costs of the full supply chain), and
(v) have the shortest project time from certification to completion.[27]

At least $4 billion must be awarded to projects in coal closure communities.[28] This provision is intended to spur innovation and job creation within coal closure communities.

This March, the Department of Energy issued a set of reports titled "Pathways to Commercial Liftoff."[29] The first three reports relate to clean hydrogen, long duration energy storage, and advanced nuclear. According to the Department of Energy, by 2030, "cumulative investments must increase to approximately $300 billion across the hydrogen, nuclear, and long duration energy storage sectors, with continued acceleration until 2050 required to stay on track to realize

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Responsibility Act of 2023, H.R. 3746, 118th Cong. § 251 (as passed by House, May 31, 2023); Kate Dore, *Proposed debt ceiling deal would cut part of $80 billion IRS funding*, CNBC (May 30, 2023).

[26] Lily Batchelder, Assistant Secretary for Tax Policy, U.S. Department of Treasury, Remarks by Assistant Secretary for Tax Policy Lily Batchelder on Implementation of the Inflation Reduction Act's Clean Energy Provisions (March 22, 2023).

[27] 26 U.S.C. § 48C(d)(3).

[28] 26 U.S.C. § 45(b)(11)(B)(iii). A mapping tool to help identify energy communities is in development. *See* U.S. Department of Energy, Energy Community Tax Credit Bonus (last visited June 2, 2023).

[29] U.S. Department of Energy, DOE Releases new Reports on Pathways to Commercial Liftoff to Accelerate Clean Energy Technologies (March 21, 2023).

long-term decarbonization targets."[30] The Infrastructure Investment and Jobs Act invested $7 billion to create regional clean hydrogen hubs across America, to "create networks of hydrogen producers, consumers, and local connective infrastructure to accelerate the use of hydrogen as a clean energy carrier that can deliver or store tremendous amounts of energy."[31]

Together, these three industries have the potential to increase zero-emissions generation, store renewable energy cheaply so that it is available even when the sun is not shining and the wind is not blowing, and make energy easier to transfer, addressing transmission bottlenecks and difficult to decarbonize industries. These industries are relatively young and will require significant investment and innovation to have their potential fully realized. The tax credits in the IRA support each of these three industries, and many more.

Starting in 2025, the IRA calls for a major transition in credit structure, with the goal of automatically adapting to new and innovative methods to create zero-emissions electricity and clean fuels. Under this new "tech neutral" regime, any facility that can produce electricity with a greenhouse gas emissions rate of 0 or less can qualify for tax credits. Similarly, any fuel with lifecycle emissions below 50 kilograms of CO2e per million British thermal units can be eligible for credits. In other words, the law transitions to adapt to innovative ways to create new sources of clean energy and fuels.

The IRA includes direct pay and transferability provisions to allow taxpayers without tax liabilities to monetize their credits. Certain taxpayers, such as governments (including tribal governments) and tax-exempt entities are eligible for direct pay. For certain credits related to emerging technologies and manufacturing activities, for-profit entities are also eligible for direct pay, at least for the first five years of the project. For other IRA credits available to businesses, a new transferability regime is available that is significantly broader than the limited transfer provisions that existed prior to the IRA. Under transferability, taxpayers (including those who do not have sufficient tax capacity) can sell their credits to other taxpayers. This has the potential to be significant for small businesses who invest in clean technologies but have been locked out of traditional monetization options such as the tax equity market.[32]

**A host of design considerations**

Allowing small, and particularly start-up, businesses to access the economic benefit of tax subsidies may be important to achieving policymakers' goals of spurring publicly beneficial innovation in a cost-efficient way. Research suggests that small business, rather than large public corporations, are most likely to respond to certain investment incentives.[33] Research also suggests that young, fast-growing businesses have especially high innovation intensity and job growth.[34] If small, and especially start-up, firms are unable to access tax benefits intended to

[30] *Id.*
[31] Office of Clean Energy Demonstrations, U.S. Department of Energy, Regional Clean Hydrogen Hubs (last visited June 2, 2023).
[32] *See generally* Murphy & Hunt, *supra* note 16, at 631 (noting that "it has proven difficult to widely structure tax equity partnerships for smaller onshore wind and solar projects, which is likely a consequence of the high fixed transaction costs typically incurred in the establishment of partnership flips and inverted leases.").
[33] Lily L. Batchelder, *Accounting for Behavioral Considerations in Business Tax Reform: The Case of Expensing* 36-37 (2017) (available at SSRN).
[34] Ryan Decker et al., *The Role of Entrepreneurship in US Job Creation and Economic Dynamism*, 28 J. Econ. Persp. 3, 13 (2014).

spur innovation, that could lock out businesses most likely to respond to the intended tax incentive and mean that a larger share of the tax benefit flows as a windfall to large corporations for activity they would have undertaken anyway. Furthermore, if large established businesses can access tax benefits intended for innovation that small and startup businesses cannot, this could create a competitive advantage for innovation done by already large, entrenched firms. And, if not well-designed, large profitable businesses may be able to leverage tax benefits intended for innovation to simply avoid taxes without undertaking *any* new economic activity, through complex and sometimes cross-border structures.[35] This may create incentives for large companies to invest not in real new innovative economic activity, but instead in using tax avoidance as a competitive strategy, to the disadvantage of small and startup businesses.

There are a host of other design decisions that are important for ensuring that any tax (or indeed spending) subsidies meet their intended goals of spurring innovation with public benefits. These include ensuring that subsidies target only the types of investment or activities most likely to deliver public benefits,[36] and creating guardrails and compliance measures to ensure that these tax benefits are not improperly used for tax avoidance or evasion.[37]

It is also important to consider the suite of tax (and grant) benefits available for any particular business or activity. Complex layers of tax benefits might be more accessible for large corporations with access to sophisticated tax planners than smaller and startup businesses.[38] And it is the *total* tax subsidy delivered by the tax system – which rests on combinations of tax benefits – that ultimately matters for tax filers and their behavior, rather than any single subsidy in isolation. When taking into account many different tax benefits available to them, many small businesses face negative marginal tax rates on new investment (i.e. the tax system makes investments that are unprofitable before tax profitable after tax).[39]

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[35] For example, it is commonplace for a large controlled foreign corporation to achieve a lower rate of taxation by transferring IP rights to a CFC in a low-taxed jurisdiction, even where the IP right is derived from research and development funded with the benefit of a domestic U.S. tax credit. *See* Stephen Shay et al., *R&D Tax Incentives: Growth Panacea or Budget Trojan Horse?*, 69 Tax L. Rev. 419, 436-439 (2016). Additionally, while a U.S. taxpayer that has deductible research and development expenses and earns foreign income from overseas operations is required to allocate and apportion the R&D expense between foreign and U.S. income, the rules are so taxpayer-friendly and flexible that a taxpayer could significantly under-allocate R&D to foreign income to receive a more favorable tax outcome. *Id.* at 439.

[36] Guenther, *supra* note 10, at 22-24 ("According to critics, another concern about the current R&E credit is that it does not target research projects with relatively large social returns. . . . An increased business focus on applied research and development after 1980 has led some to argue that the R&E credit may subsidize mostly research projects with relatively small spillover benefits. The social returns to R&E-credit-subsidized R&D are not known. To the extent that they generally are not much larger or smaller than private returns, the credit may fall short of its primary economic justification: that it spurs increased investment in R&D with social returns much greater than private returns.").

[37] *See supra* note 35 at 436-439.

[38] *See, e.g.*, *id.* at 448 ("Large multinational businesses are able to use various tax planning strategies to take advantage of cross-border income shifting to increase their after-tax return" while "[s]mall- and medium-sized businesses and entrepreneurs generally will not have the same resources.").

[39] William G. Gale, *On the President's Recommendations to the Joint Select Committee*, TaxVox blog, Urban Institute-Brookings Institution Tax Policy Center (September 19, 2011).

Whether the large federal subsidies represented by highly negative tax rates are sound policy depends on whether those subsidies do in fact spur new activity that has public benefits sizeable enough to justify their fiscal cost.

In some cases, combinations of subsidies may be most beneficial for large firms undertaking activity that has questionable public benefit. For instance, some lawmakers are proposing to reverse a series of revenue-raising provisions in the 2017 tax law. If this were to happen, certain businesses would be able to access a combination of tax breaks for various expenditures *plus* be able to fully deduct interest costs for any borrowing that financed those expenses. The result would be even more highly negative tax rates for leveraged expenses.[40] That particular combination of tax subsidies could be very valuable for large multinational corporations (because they can make large interest payments to foreign affiliates as a way to lower their taxes) as well as the private equity industry.[41]

## Part 2: Reaching beyond businesses

The tax system's impact on innovation is far broader than specific tax credits or deductions for certain types of research expenses or innovative activity. The tax system also raises revenues to fund public research and investments, and makes investments in potential future innovators, entrepreneurs, and workers who are needed for a dynamic economy, such as through the Child Tax Credit.

In 2021, the federal government spent less than 3% of total outlays on research and development.[42] Federal research and development can have large impacts on the economy, research finds.[43] Examples of key technological advancements that federal research and development spending supported range from the Google search engine to the first antiretroviral drug.[44] Some of the federal funding for innovation is specifically directed at small and startup businesses. For example, the Small Business Innovation Research and Small Business Technology Transfer programs provide competitive opportunities to fund a "diverse portfolio of startups and small businesses across technology areas and markets to stimulate technological innovation, meet Federal research and development needs, and increase commercialization to transition [research and development] into impact."[45] Last year, program awards exceeded $4.3 billion.

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[40] William G. Gale & Claire Haldeman, Brookings Institution, *The Tax Cuts and Jobs Act: Searching for supply-side effects* 20 (2021).
[41] Chuck Marr & Samantha Jacoby, Center on Budget and Policy Priorities, *Corporate Lobby's New Math Doesn't Add Up for Kids* 4 (2022).
[42] In 2021, total outlays were $6.8 trillion, and total federally funded research was estimated to be $153.3 billion. *See* Gary Anderson et al., *U.S. R&D Increased by $51 Billion in 2020 to $717 Billion; Estimate for 2021 Indicates Further Increase to $792 Billion*, National Center for Science and Engineering Statistics (January 4, 2023).
[43] *See, e.g.*, Andrew J. Fieldhouse & Karel Mertens, *The Returns to Government R&D: Evidence from U.S. Appropriations Shocks* (Federal Reserve Bank of Dallas, Working Paper No. 2305, 2023); Peter L. Singer, The Information Technology and Innovation Foundation, *Federally Supported Innovations: 22 Examples of Major Technology Advances that Stem from Federal Research Support* 4 (2014).
[44] Singer, *supra* note 43, at 10-24.
[45] Small Business Innovation Research (SBIR) (last visited June 2, 2023).

Another key way that the tax system can support innovation is by supporting a broader pool of potential innovators, entrepreneurs, and workers needed for a dynamic and inclusive economy:[46]

> Income and wealth inequality are high in the U.S. relative to other countries and heavily skewed by race due to historic and current barriers to full economic opportunity for people of color. Children in low- and moderate-income families in the U.S. have lower rates of upward economic mobility than their counterparts in nearly all other rich countries.
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> Tax policy can help address these challenges by raising revenue for sound investments that together: (1) directly raise living standards for low- and moderate-income American workers and families; and (2) promote economic growth that is sustainable, increases mobility, and helps U.S. workers, researchers, innovators, and entrepreneurs realize their full potential.[47]

Researchers have found that if "women, minorities, and children from low-income families were to invent at the same rate as white men from high-income families, there would be four times as many inventors in the United States as there are today."[48] "Studies indicate that the reason for these 'missing inventors' is that children with equal talent and potential are growing up in households too poor and/or not connected enough to make use of those talents."[49] Therefore, investments in children, such as through a strengthened Child Tax Credit available to children in the poorest families, permanently, are investments in innovation.

## Part 3: The tradeoffs

As this testimony describes, there are a number of different ways to try to promote innovation that is intended to have social benefits. Some options take the form of direct tax incentives, and others are funded by tax revenues. Choosing from these different methods often involves tradeoffs, as they have to be weighed against each other and prioritized within fiscal and political constraints.

For example, one tradeoff that the Tax Cuts and Jobs Act made was to eliminate current-year deductibility of research and experimentation expenditures and software development costs in favor of amortization. The savings from this change were used to help fund a corporate rate cut on old, less innovative economic activity. That deal also prioritized making and financing deep permanent corporate rate cuts rather than choosing to permanently invest in a more robust Child Tax Credit that represents investment in future innovators, business owners, and workers.

The recent debt ceiling deal faced similar fiscal tradeoffs. But ironically, and apparently in a political tradeoff that overlooked those fiscal realities, the deal adopts tax measures that will *increase* deficits while *cutting* investment in innovation. Deficits can be addressed by raising tax

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[46] This section draws heavily on the prior work of the Executive Director of the Tax Law Center. *See* Chye-Ching Huang, "Building Back Better: Raising Revenue to Invest in Shared Prosperity," Prepared Testimony for the United States Joint Economic Committee (October 6, 2021).
[47] *Id.*, at 2.
[48] Raj Chetty et al., *Who Becomes an Inventor in America? The Importance of Exposure to Innovation*, 134 Q. J. Econ. 647, 710 (2019). *See also* Wesley Tharpe et al., Center on Budget and Policy Priorities, *Tapping More People's Capacity to Innovate Can Help States Thrive* (2020).
[49] Huang, *supra* note 46, at n.11.

revenue. And two options for raising substantial tax revenue are to increase taxes, or to collect taxes that are due but not paid. But instead of taking either of these approaches, policymakers cut IRS funding, resulting in an **estimated net $19 billion increase in federal deficits**[50] over the next decade, with the revenue loss representing fewer filers paying what they owe. Small businesses that simply want to accurately file their taxes stand to lose from cuts to IRS funding. More large and unscrupulous businesses will be able to gain an unfair competitive advantage by being able to cheat and avoid taxes. Fewer improvements in IRS service mean less help for small businesses owners who simply want clear instructions on filing for taxes and claiming the tax benefits intended to help them innovate and grow.

Additionally, under the debt ceiling deal, nondefense discretionary spending – including for programs supporting research and development – will be reduced in 2024.[51] Spending on nondefense research and development increases long-term economic productivity, research finds, so cuts to spending on these programs will hurt the economy for years to come.[52]

These tradeoffs matter, and are an important part of considering how best to promote innovation through the tax code.

[50] Congressional Budget Office, *Letter on Scoring IRS Recissions*, (June 1, 2020) The precise cost across the budget window will depend on when and how these cuts are implemented. Regardless, this estimate (assuming cuts spread across the budget window) shows that cuts to IRS funding will on net substantially increase deficits.
[51] The largest portions of nondefense discretionary spending on research and development fund programs at the Department of Energy, the National Aeronautics and Space Administration, the National Institutes of Health, and the National Science Foundation. *See* Fieldhouse & Mertens, *supra* note 43, at 9. Other agencies, including the Department of Health and Human Services, also rely on nondefense discretionary funding to support their research and development programs. *Id.* at 2.
[52] *See id.*, at 34-38.