UCLA Institute for Technology, Law & Policy

SHEARING THE SHEEP WITHOUT SKINNING IT

Policy Options for Extracting Revenue from Online Platforms

Developed by the UCLA Institute for Technology, Law & Policy

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Foreword: A Shifting Market for Information; a Disappearing Market for Journalism

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Thomas Jefferson once famously quipped that he would prefer newspapers without government to a government without newspapers. Today, as news media providers struggle to remain solvent, governments are increasingly being called upon to intervene in a way that supports news media sustainability.

All over America, and across much of the world, journalism has reached a crisis point after decades of shrinking revenues and growing expectations among consumers that news should be free and universally available. Democracy is premised on an informed citizenry, and our networked information society has expanded access to information in unprecedented ways. But quality news is expensive to produce, and journalism's financial underpinnings have steadily eroded over the last few decades, undermining critical institutions of knowledge and fueling the spread of misinformation.

A significant factor in journalism's decline is the shift in information markets. Online platforms now dominate the media ecosystem, controlling the distribution, visibility, and monetization of news content. They capture a significant portion of the revenue generated by news, dictating the terms of distribution in ways that disadvantage local outlets. The technical demands and instability introduced by platform-specific algorithms and policies further complicate the operational landscape for news organizations.

Countries around the world have begun experimenting with a variety of interventions aimed at addressing these issues. The EU's Digital Copyright Directive, the Australian News Media Bargaining Code, and Canada's Online News Act are examples of new laws and regulations aimed at supporting the long-term viability of news media, underscoring the global recognition of journalism's essential role in democracy. In the United States, there have been a number of abortive efforts to address this market imbalance, including the Journalism Competition and Preservation Act, and the California Journalism Preservation Act. There are a broad menu of policy options for channeling revenues from online platforms in order to support journalism. Key differences between the legislative models include the structure of how revenue is harvested (through a tax, a mandate to negotiate, or some form of use fee), the scope of who pays and who is paid, and the distribution formula.

Government intervention raises a host of reasonable concerns, especially with regards to capture and conflicts of interest. There are fears that making journalists dependent on government provided handouts, or payments negotiated with big tech companies, will undermine their key function to hold both groups accountable. While that is a real concern, the status quo is no less problematic. News media providers are already beholden to tech companies to distribute and sell their products, and many are informally already on the payroll of these companies through massive subsidy programs they oversee. A proper legal framework will bring this system out of the shadows and standardize platform payments to news media providers, rather than forcing them to approach the companies hat in hand. At the end of the day, while concerns about a conflict of interest are real, the need to bolster the news media industry against the ongoing crisis of funding is of paramount importance.

The purpose of this publication is to provide a comparative assessment of the different frameworks available for channeling revenue from online platforms in support of key public interest goals. The

report considers a number of different countervailing factors impacting the wisdom of the different options, including their efficiency, efficacy, simplicity, and legal resilience. While the paper uses journalism as its main case study, its conclusions are also applicable to other potential interventions connected to negative impacts related to online platforms, such as supporting initiatives for youth mental health. This is not meant to imply that the platforms are a bottomless source of revenue, and the pros and cons of each specific intervention should be considered in its appropriate local context. However, our hope is that this assessment will be useful for policy-makers considering legislation in this vein.

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Executive Summary

The digital economy has revolutionized how we live and work, but it has also created negative effects, including an increase in technology-facilitated crimes and the decline of local news. Many approaches to meaningfully address these effects require funding. Effective regulatory responses are complicated by a number of factors, including the issues' novelty.

This white paper aims to inform policymakers by providing a comprehensive overview of different approaches to revenue extraction from digital platforms and comparing them on key dimensions such as revenue potential, legal feasibility, and economic trade-offs. While our analysis could apply to various impacts, we use the crisis in journalism as a primary case study. By examining how revenue extraction mechanisms could support journalism, we illustrate how these approaches might work in practice. For each option we consider its potential effectiveness, legal challenges, and economic implications.

The options examined represent a spectrum of potential solutions, from taxes to user fees and collective bargaining. Each approach offers unique benefits:

- **General advertising taxes** and **data barter taxes** provide a **broad-based approach** to capturing revenue from digital advertising, with the potential for **moderate revenue generation.** We evaluate these approaches as best at tackling underlying economic issues and are therefore best for economic efficiency
- **Digital services taxes** are gross-basis taxes imposed on the provision of digital services which could be more resilient to domestic legal challenges through non-discriminatory framings, such as by targeting data-driven or personalized advertising instead of digital advertising as a whole.
- **Expanding sales taxes to include digital goods and services** that would otherwise be taxed (e.g., eBooks) presents no significant legal challenges and has already been successful in numerous states. They also have the highest potential for revenue generation based on our estimates, however we judge they involve some loss in economic efficiency.
- **User fees** and data mining taxes offer a novel approach aimed at **addressing the value of user data.**
- **Mandated collective bargaining** aim to offer a **structural solution** to power imbalances between platforms and, in our case study, journalists and news media organizations. However, their success could be impaired by legal and implementation challenges.

Each option also invites legal and implementation challenges grounded in the Internet Tax Freedom Act, the Commerce Clause, and the First Amendment. Several key considerations emerge from these challenges. First, any chosen approach must be designed to account for the need to withstand legal challenges at the state and federal levels. Second, the practical challenges of implementing and enforcing new taxation or regulatory schemes must be anticipated to avoid overloading the administration system and delaying the impact of the tax. Third, the distributional impacts of any revenue extraction method should be explicitly defined. For example, earmarked taxes, where revenue is specifically allocated to address an issue (e.g., journalism crisis or youth mental health) could help ensure the burden of taxation is balanced by tangible societal benefits.

A. Overview of the Project

The digital economy has revolutionized how we live and work, but it has also created negative effects, including an increase in technology-facilitated crimes and the decline of local news. Many approaches to meaningfully address these effects require funding, for example, to provide stronger enforcement against cybercrime, or tax incentives that benefit local news. At present, resource constraints have slowed the regulatory response to the adverse effects of online platforms. Moreover, there is a broader challenge of adapting taxation systems to keep pace with rapid changes in the economy, an issue that extends beyond just addressing the negative outcomes caused by online platforms.

As tech giants continue to amass profits, there is growing interest among policymakers in extracting additional revenue from these companies to fund solutions to problems connected to their operations. This white paper aims to inform policymakers by providing a comprehensive overview of different approaches to revenue extraction from digital platforms and comparing them on key dimensions such as revenue potential, legal feasibility, and economic trade-offs.

While our analysis could apply to a number of different negative impacts, we use the crisis in journalism as a primary case study. As digital platforms have captured the lion's share of advertising revenue, traditional news organizations have seen their business models collapse. This has led to the closure of many local news outlets and, in turn, a general decline in the quality and quantity of investigative journalism. By examining how revenue extraction mechanisms could support journalism, we illustrate how the various approaches might work in practice. However, the principles we discuss could equally apply to addressing other negative effects of online platforms. For instance, the UK has proposed raising taxes on platforms to fund youth mental health initiatives.[1]

[1] Kate McGough, *Tax Online Giants to Help Kids' Mental Health, Say Lib Dems,* BBC (May 30, 2024), https://www.bbc.com/news/articles/crggq5jpx5do.

B. Framing the Issue

The rapid growth of tech platforms has created a complex ecosystem generating both significant value and societal challenges. These platforms benefit from network effects and data accumulation, which are then leveraged to provide innovative services to users. However, the same mechanisms that drive platforms' value creation also contribute to outsized market power and profits. The complex interplay of benefits and costs requires an analysis focused on maximizing the positive impacts of tech platforms while mitigating their negative effects.

Traditional regulatory approaches have struggled to keep pace with the rapid evolution of the digital economy. This paper argues that regulatory intervention aimed at extracting revenue from platforms to address these impacts is an underexplored yet potentially powerful approach.

We examine three main alternatives for revenue extraction:

- **Taxation:** Including digital sales taxes, data barter taxes, digital services taxes, and general advertising taxes
- **User Fees:** Focusing on data mining and collection practices
- **Mandated Collective Bargaining:** Exploring frameworks for platforms to negotiate with journalists and other stakeholders

It is important to note that these options are not mutually exclusive. Policymakers may find that a combination of approaches most effectively addresses the complex challenges posed by digital platforms. Our case study on journalism illustrates the urgency of this issue.

As we delve into each option, we will consider its potential effectiveness, legal challenges, and economic implications. Our goal is to provide policymakers with a comprehensive toolkit for addressing the negative impact of the digital economy while harnessing its potential for public good.

Summary Table

Below we provide a summary of assessment criteria for each option:

	Legal Analysis			Economic Considerations	
	First Amendment Challenge	ITFA Challenge	Commerce Clause Challenge	Efficiency	Revenue Potential
Advert tax	Unlikely	Unlikely	Unlikely	✓✓	✓
Barter tax (if advertising used)	Likely	Likely	Unlikely	✓✓	✓
Digital Services tax	Unlikely	Likely	Likely	✖	✓✓
Digital Sales tax	Unlikely	Unlikely	Unlikely	✖	✓✓
Digital Mining Tax/User Fees	Likely	Likely	Unlikely	✓✓	✓
Collective bargaining	Likely	Unlikely	Likely	✓	?

**Efficiency here is defined as economic efficiency – proximity of the option's solution to the socially optimal outcome where all market failures such as externalities, public goods provision, etc. are corrected. Revenue potential describes the estimated size of funds that could be generated to tackle associated market failures.*

Conceptual Economic Framework

We identify four applicable economic models that separate tech platforms from traditional industries, which helps to understand unintended consequences related to possible interventions.[2] Different models imply different preferred taxation and regulation choices. Tech firms must be understood as businesses like any other that wish to maximize profit and will make strategic, rational choices in line with this objective. Similarly, it is important to consider the immense consumer benefits that are provided by the innovative products offered by tech platforms. Our goal is not to disincentivize the provision of these valuable products, but instead to correct the associated market failures.

1. **Model 1: Substitutes with Externalities**

   In this model, consumers treat products like journalism and social media as substitutes. However, these products have different externalities. Journalism often has positive externalities (improved societal knowledge and political outcomes), while social media, which might have some of the same positive effects, may also have negative ones including misinformation and mental health concerns.

2. **Model 2: Public Goods**

   Journalism can be seen as a non-excludable good — it's difficult to prevent people from consuming it indirectly (e.g., through discussions on social media). Traditionally, such public goods are publicly funded. However, American journalism has historically relied on advertising, which is a non-public source of funding. Other countries do, in part, fund journalism publicly.

3. **Model 3: Behavioral**

   In this model, consumers struggle to evaluate information quality accurately, potentially mistaking social media content for high-quality news. This can lead to the undervaluation of professional journalism.

4. **Model 4: Competition**

   Different tech firms operate under varying competitive models. For instance, Google functions more as a vertically-integrated monopoly controlling information access, while social media firms compete more directly with news outlets for user attention and ad revenue.

These models highlight that taxing all tech firms equally may be inappropriate, as each faces different market forces and generates different types of costs.

In our journalism case study, we observe both supply-side issues (loss of advertising revenue to fund journalism) and demand-side problems (reduced consumer willingness to pay for news). While subsidies from tech taxes might address the former, they may not solve the latter. Novel approaches, such as taxes on news content that are based on computational measurement of news in user posts or

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[2] These are models in the sense that they imply different assumptions on the underlying markets, agents, and harms. These could be viewed more simply as just different problems. But classifying the correct model allows us to think more broadly about which agents' behavior drives the underlying issue. For example, under the behavioral model, this is likely best tackled at the consumer level as it is a consumer level problem, by improving the quality of information. In contrast, externalities are best addressed through taxation.

search results, could potentially address demand-side issues but face the implementation challenges of developing adequate algorithms.

In addressing the taxation of tech platforms, it's crucial to clarify misconceptions about corporate tax burdens. Arguments citing high corporate income tax rates can be misleading. A comprehensive assessment must look beyond headline rates to consider provisions and deductions. Recent research revealed that the true U.S. tax burden is remarkably low compared to 45 other OECD countries.[3] This finding suggests there's room for targeted taxation of tech platforms without overburdening the sector.

Moreover, economic theory suggests windfall or monopoly profit taxes can be effective. These can be efficient as they do not distort economic activity when applied to genuine windfall profits. This principle, and prior experience with windfall taxes in the energy sector, could guide the design of taxes on large tech platforms, especially those benefiting from monopolistic market positions or unprecedented data-driven windfalls.[4]

Legal Issues Common to All Proposals

While each revenue extraction method has its unique legal considerations, there are several overarching legal issues that apply to all proposals. Understanding these common challenges is crucial for policymakers seeking to extract revenue from digital platforms.

1. Internet Tax Freedom Act (ITFA)

The Internet Tax Freedom Act (ITFA)[5] presents a significant hurdle for many proposed mechanisms to extract revenue from digital platforms. It prohibits states from imposing discriminatory taxes on internet transactions and bans multiple jurisdictions from taxing the same electronic commerce.[6] As a result, any proposal must be drafted to mitigate the risk of characterization as discriminatory against electronic commerce, which often requires the tax or fee to be extended to non-digital equivalents, which could complicate implementation.

2. Commerce Clause

The Dormant Commerce Clause of the U.S. Constitution[7] poses challenges for state-level initiatives.[8] When considering the legality of state taxes or regulations, courts evaluate the following key factors[9]:

- Substantial nexus: There must be a clear connection between the state and the activity it seeks to tax.

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[3] *See* Clemens Fuest & Florian Neumeier, *Corporate Taxation,* 15 Ann. Rev. Econ. 425, 431 (2023).

[4] *See* Nirupama L. Rao, *Taxes and US Oil Production: Evidence From California and the Windfall Profit Tax,* 10 Am. Econ. J. Econ. Pol'y 268 (2018).

[5] Internet Tax Freedom Act, Pub. L. No. 105-277, §§ 1100 et seq., 112 Stat. 2681, 2681-719 (1998) (codified at 47. U.S.C. § 151 note)

[6] *Id.* § 1101.

[7] U.S. Const. art. 1, § 8.

[8] *See* Ayesha Rasheed, *Dormant Commerce Clause Constraints on Social Media Regulation,* 25 Yale J.L. & Tech. Special Issue 101 (2023).

[9] *See* Complete Auto Transit, Inc. v. Brady, 430 U.S. 274, 278 (1977).

- Fair apportionment: The tax must be fairly apportioned to activities within the state.
- Non-discrimination: The tax cannot discriminate against interstate commerce.

While the global nature of online platforms can create jurisdictional complexities, these issues are generally manageable within the Dormant Commerce Clause framework. The user bases and activities of large platforms across multiple states easily establish the required substantial nexus. Determining a user location for tax purposes could be challenging, but online platforms typically have advanced systems in place to track user data and activity across jurisdictions that could help satisfy the fair apportionment requirement.

3. First Amendment Considerations

First Amendment[10] issues may arise in relation to advertising taxes and mandated collective bargaining, as further discussed below. Courts view advertising as protected commercial speech,[11] so measures affecting news organizations may face scrutiny for infringing on the freedom of the press. Additionally, courts may view mandated negotiations or content restrictions as compelled speech, which is within the ambit of First Amendment protections.[12] These implications suggest that, to survive a constitutional challenge, any such proposal must be drafted to satisfy the following parameters:

- It must serve a compelling government interest.
- It must be narrowly tailored to achieve that interest.
- It must use the least restrictive means possible.[13]

The government will have to prove that a specific proposal addresses a specific societal need and is designed to do so without overreaching and without restricting rights more than absolutely necessary. These parameters do not make it impossible for taxation to pass constitutional muster, however, as demonstrated earlier this year in a challenge against Maryland's Digital Advertising Tax Act.[14]

In the following sections, we will examine how each proposed revenue extraction method interacts with these overarching legal issues, as well as any specific legal challenges they may face.

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[10] U.S. Const. amend. I.

[11] *See, e.g.,* Bigelow v. Virginia, 421 U.S. 809 (1975) (holding that the First Amendment's protections apply to paid commercial advertisements).

[12] W. Va. Bd. of Educ.v. Barnette, 319 U.S. 624 (1943) (landmark case holding that the First Amendment protects students from being compelled to salute the American flag or the Pledge of Allegiance); Wooley v. Maynard, 430 U.S. 705 (1977) (holding that New Hampshire violated the First Amendment by requiring citizens to display the state motto, "Live Free or Die," on their license plates).

[13] *See, e.g.,* Nat'l Inst.of Family and Life Advocates v. Becerra, 585 U.S. 755, 766 (2018) (restating that compelled speech is a content-based restriction). Content-based restrictions on speech generally are subject to "strict scrutiny." *See, e.g.,* Reed v. Town of Gilbert, 576 U.S. 155 (2015).

[14] Chamber of Com. of U.S. v. Lierman, No. 21-CV-00410-LKG, 2024 WL 3302724 (D. Md. July 3, 2024).
(rejecting a First Amendment Challenge to the Pass-Through Prohibition in Maryland's Digital Advertising Tax Act).

C. Option 1: Taxation

This section examines four primary approaches to taxing online platforms: general advertising taxes, data barter taxes, digital services taxes, and digital sales taxes. For each method, we will explore its theoretical justification, key legal challenges, relevant implementation examples, and economic considerations, including revenue potential and trade-offs. Taxation approaches may be particularly appealing to legislators as they provide a mechanism for platforms to fund programs and resources that address the negative impact generated by their products. Tax revenue could be directly earmarked for supporting quality journalism.[15] By analyzing these approaches, we aim to provide policymakers with a comprehensive understanding of the available methods to extract revenue from digital platforms through taxation.

General Advertising Tax

A general advertising tax is imposed on revenue generated from advertisements, encompassing both online and offline formats. This approach aims to create a level playing field between digital and traditional advertising while capturing a share of the substantial revenues generated from selling ad space or services.

Key Features

- Tax Base: The tax is applied to revenue generated from selling ad space or services.
- Tax Rate: It can vary and potentially include progressive rates based on revenue volume or a flat rate applied to all advertising revenue.
- Scope: The tax may differentiate between different types of advertising but should not discriminate between digital and non-digital formats to mitigate Internet Tax Freedom Act (ITFA) challenges.

Targeting Online Platforms

To focus on some of the problematic aspects of certain advertising approaches, legislators might consider:

- **Personalized vs. Contextual Advertising:** One option is to distinguish between "personalized advertising" (using individualized data about the ad's target) and "contextual advertising" (based on characteristics of the target population). Taxing solely personalized advertising could mitigate ITFA discrimination issues while effectively targeting the most problematic digital advertising.[16]
- **Disallowing Tax Deductions:** An alternative approach to addressing targeted advertising proposes the following strategy: eliminating currently available tax deductions for advertising that utilizes personally identifiable information. Federal tax deductions may be barred through congressional amendment to the Internal Revenue Code. States may likewise modify their

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[15] *See also* Anya Schiffrin et al., *The Case For Digital Taxes To Support Local Journalism,* July 2024, (unpublished).

[16] *See* Young Ran (Christine) Kim & Darien Shanske, *State Digital Services Taxes: A Good and Permissible Idea (Despite What You Might Have Heard),* 98 Notre Dame. L. Rev. 741, 778–87 (2022).

tax codes to deny deductions for targeted advertising. Effective tax code amendments would require precise legal definitions for key terms like "targeted advertising" and "personally identifiable information." The strategy offers several advantages, including relatively low administrative overhead due to its focus on adjusting existing tax write-off policies rather than creating entirely new systems. However, policymakers should also anticipate the ability of large companies to evade unfavorable tax rules without violating them. By addressing the issue through existing tax structures, this approach aims to discourage the use of personal data in advertising while minimizing disruption to the broader advertising ecosystem.[17]

Legal and implementation challenges:

Implementing taxes on advertising presents minimal legal challenges. While courts may scrutinize taxes on advertising as potential burdens on commercial speech, the legal risk is likely low and is outweighed by the positive economic impact of adopting such an approach. Contrary to other options discussed in this white paper, a tax that applies equally to digital and non-digital advertising can mitigate ITFA challenges. New Mexico set a precedent in 2021 by becoming one of the first U.S. states to implement a broad-based tax on advertising services, and in 2023 for expanding it to include digital advertising.[18] This approach is notable for its inclusivity, which has helped it to avoid ITFA challenges by declining to single out digital advertising.

International examples provide additional context. France, for instance, has long maintained a tax on television and radio advertisements, which has been adapted to include some forms of digital advertising. Many other European states do as well,[19] demonstrating a global trend towards incorporating digital advertising into existing tax frameworks.

Economic considerations:

Revenue Potential

The revenue potential of a general advertising tax is substantial, given the size and growth of the advertising industry. The U.S. advertising market is valued at $310–360bn per year, with digital advertising accounting for an increasingly large share (65–75%, or $270.2bn, per year as of 2023).[20] By encompassing both traditional and digital advertising, the tax would capture a wide range of economic activity, creating a broad and potentially growing tax base.

The actual revenue generated will depend critically on the tax rate applied. While a higher rate may generate more immediate revenue, it could also lead to more significant market distortions and potentially reduce the overall tax base if advertising spending declines in response. As an illustration, we estimate that these taxes could generate $135mn with a 1% tax for just California (see Appendix 2

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[17] *See* Alida Babcock, *Laws and Taxes and Big Tech, Oh My! The Case for a Federal Excise Tax on Targeted Digital Advertisements Created by Use of Personally Identifiable Data,* 99 Wash. U. L. Rev. 271, 307–08 (2021).

[18] Press Release, New Mexico Taxation and Revenue Department, Department Finalizes New Gross Receipts Tax Regulations (Dec. 20, 2023), https://www.tax.newmexico.gov/wp-content/uploads/2023/12/Regulations-finalized-release.pdf.

[19] Cristina Enache, *Digital Services Taxes in Europe, 2024,* Tax Found. (May 7, 2024), https://taxfoundation.org/data/all/eu/digital-tax-europe-2024/.

[20] Numbers based on analysis of eMarketer data. All numbers are for 2023. Other analyst estimates are around 10-20% lower in the aggregate, though relative totals and trends are the same.

for more details). Romer provides other illustrative estimates using slightly different assumptions.[21]

Realizing the full revenue potential of this tax will require effective mechanisms for tracking advertising spending and ensuring compliance across various platforms and media types. This may present technical and administrative challenges.

Efficiency[22]

The implementation of an advertising tax presents an interesting paradox in terms of economic efficiency and social desirability. On one hand, such a tax reduces the "efficient allocation" of advertising by decreasing its provision in the market. Traditional economic theory views this as a negative outcome, potentially leading to reduced information flow and market inefficiencies. However, as argued by Romer, this reduction in advertising could actually be socially desirable.[23] Romer contends that excessive advertising can create negative externalities, such as privacy violations or the promotion of consumerism, which may have detrimental effects on society.[24] Acemoglu and Johnson promote a similar viewpoint.[25]

The impact of an advertising tax largely depends on how heavily firms rely on advertising to reach their target audiences (its "elasticity," in economic terminology). More inelastic goods create fewer distortions since demand for them does not change as the price increases. Recent research by Gentzkow et al. shows a range of advertising prices and demonstrates that harder-to-reach audiences command the highest prices.[26] This finding implies that advertising may be somewhat elastic, particularly for some audiences, therefore an advertising tax can be expected to have some distortive effects. It also suggests that the tax could have varying impacts across different sectors and target markets as market elasticity varies.

General Advertising Tax Policy Concerns

A general advertising tax aligns differently with each of the economic models previously discussed, highlighting the complexity of addressing platform-generated negative impacts through taxation. Under model 1 (substitutes with externalities), the tax can be seen as an efficient intervention. If we consider that advertising, particularly in excess, generates negative externalities, then taxing it serves to reduce its overprovision. Taxing activities that produce negative impacts is a useful way to bring them closer to socially optimal levels, a strategy known as the Pigouvian principle.[27]

In the context of model 2 (public goods), the advertising tax can play a crucial role in addressing market failures, provided it does not overly distort the efficient allocation as above. By generating revenue that can be directed towards the provision of public goods like quality journalism, the tax helps solve the funding problem inherent in public goods. This is particularly relevant if the proceeds from the tax

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[21] Paul Romer, *Taxing Digital Advertising* (May 17, 2021), https://adtax.paulromer.net/.

[22] Efficiency in Economics refers to closeness to the undistorted (i.e. no tax) market equilibrium after accounting for market failures such as externalities.

[23] Romer, *supra* note 20.

[24] *Id.*

[25] *See* Daron Acemoglu & Simon Johnson, *The Urgent Need to Tax Digital Advertising,* Network L. Rev. (2024), https://www.networklawreview.org/acemoglu-johnson/.

[26] Matthew Gentzkow et al., *Pricing Power in Advertising Markets: Theory and Evidence,* 114 Am. Econ. Rev. 500 (2024).

[27] *Pigouvian Tax,* Tax Found., https://taxfoundation.org/taxedu/glossary/pigouvian-tax/ (last visited Oct. 14, 2024).

are earmarked for supporting journalistic endeavors, thereby ensuring the continued production of socially valuable information that might otherwise be underprovided in a purely market-driven system.

However, it's important to note that the general advertising tax does not directly address the issues raised in models 3 (behavioral) and 4 (competition). The behavioral biases that lead consumers to undervalue quality information or the competitive dynamics between tech platforms and traditional media are not directly impacted by this tax. This limitation underscores the need for a multifaceted approach to addressing the complex challenges posed by digital platforms, such as combining taxation with other regulatory and educational initiatives.

Additional economic considerations include:

Cost pass-through: In general, any tax involves some pass-through from higher prices to customers (and indeed to workers through lower wages). However, the degree of pass-through depends on characteristics of the market and good in question. We provide an analysis of this question in the Appendix, concluding that pass-through in this setting is likely far from 100% and thus consistent with other taxes.[28] In particular, economic theory suggests that markets characterized by monopoly and oligopoly competition often experience less pass-through because they have the freedom to avoid price increases that reduce demand (see Appendix for a full description of this). An empirical study of numerous retail companies closely examined pass-through for corporate taxation and found around 40% pass-through to customers on average, though the actual figure varied considerably across businesses.[29]

Implementability: As a general rule, taxes should be as simple and easily implementable as possible while providing the required revenue. Implementing and enforcing the tax will require administrative resources, which should be weighed against the expected revenue. There's also a delicate balance to strike in terms of media sustainability. While the tax aims to support traditional media, it may also impact their advertising revenues, necessitating careful consideration of rate structure and revenue allocation.

Consumer experience effects: Reduced advertising might improve user experience in some contexts. It may also be beneficial if it restricts advertising that encourages the unmitigated collection of people's personal data. At the same time, reduced advertising may also lead to more paywalls or subscription models for previously free content, potentially altering how people access information and entertainment online. However, consumers expecting free news may be a bad equilibrium in any case. Moving to a model where consumers value and pay for the news they consume could be more socially optimal.

Business input is not taxed: Advertising has generally been considered a business input that is not taxed. Money spent on ads is deductible from federal corporate income tax as an "ordinary and necessary" business expense.[30] Therefore advertising taxes would rectify what could be an under-taxation of advertising in general.

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[28] *See* Appendix 1.

[29] Scott. R. Baker et al., *Corporate Taxes and Retail Prices,* (Dec. 2023), https://www.econ.cuhk.edu.hk/econ/images/content/news_event/seminars/2023-24_2ndTerm/SunTeng.pdf. But note this study is currently unpublished in a peer-reviewed journal, so results are subject to change.

[30] Press Release, I.R.S. Media Rel. Off., Deducting "Other" Media Expenses (Mar. 2007), https://www.irs.gov/pub/irs-news/fs-07-17.pdf.

Data Barter Taxes (Where Advertising Revenue is a Proxy)

Data barter taxes are based on the concept that users "pay" for apparently free digital services with their personal data.[31] This approach seeks to tax the value exchange inherent in this barter transaction, often using advertising revenue as a proxy for the value of user data.[32] The justification for such taxes lies in the recognition that these data exchanges constitute a form of economic activity that has traditionally fallen outside the purview of taxation systems.

The concept of data barter taxes can be understood through two main theoretical approaches:

1. Tax on untaxed consumption:[33] Data barter transactions represent a new form of untaxed consumption unique to the digital world. These transactions generate significant revenue for a small number of companies, escaping traditional taxation mechanisms. For instance, sales and use taxes often don't apply because they typically cover only tangible property and are measured based on purchase price, which doesn't exist in barter exchanges.
2. Surrogate tax model:[34] This model proposes that one taxpayer bears the tax as a proxy for another taxpayer's receipt of income. In the context of data barter, the digital platform could be taxed as a surrogate for the user's "income" received in the form of free services. This approach is appropriate when three key criteria are met, as arguably in this case: (a) The user generates income when using the "free product," (b) Taxing the user directly isn't feasible, and (c) The failure to tax could lead to distortion in the tax system.

In order to determine the tax base, various methods have been proposed. One method suggests using advertising revenue as a proxy for the value of bartered consumer data, recognizing that platforms monetize user data primarily through targeted advertising.[35] Another approach proposes that the tax be based on the cost of providing free digital services, which would require companies to detail their cost of revenues.[36] Alternatively, the tax base could be derived from the price of premium (paid) versions of

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[31] For sources supporting that consumers are involved in a new type of barter include, see Erin Bernstein & Theresa J. Lee, *Where the Consumer Is the Commodity: The Difficulty with the Current Definition of Commercial Speech,* 2013 Mich. St. L. Rev. 39, 82 (2013); Paul M. Schwartz, *Property, Privacy, and Personal Data,* 117 Harv. L. Rev. 2055, 2056 (2004); Omer Tene & Jules Polonetsky, *Big Data for All: Privacy and User Control in the Age of Analytics,* 11 J. Tech. Intell. Prop. 239, 255 (2013). This recognition goes well beyond the academe. *See* Brad Meehan, *Responsible Personalization: How Brands Can Build Trust with Consumers,* AdAge (Aug. 7, 2015), https://adage.com/article/digitalnext/responsible-personalization-brands-build-trust/299843 (labeling the exchange of information for access to web services as "the bartering of information" and noting that personal data are used "as a currency to 'pay for' information"); Canadian Council of Pub. Relations Firms, *Personal Data and Brand Trust: A Modern-Day Barter Systeress Release,* PR Newswire (July 15, 2015, 16:08), https://www.prnewswire.com/news-releases/personal-data-and-brand-trust-a-modern-day-barter-system-518065111.html (discussing consumers' willingness to barter with their data); Doug Laney, *The (Possible) Tax Advantages of Bartering with Information,* Ctr. for Econ., https://centerforinfonomics.wordpress.com/2014/08/29/the-possible-tax-advantages-of-bartering-with-information/ (last accessed Oct. 13, 2024); Adam B. Thimmesch, ***Transacting in Data: Tax, Privacy, and the New Economy***, 94 Denv. L. Rev 145, 163 (2016); Anya Schiffrin et al. *supra* note 15.

[32] It is also worth mentioning that, even in a situation where the user is not trading data, the barter theory still applies considering that, by belonging to the network, the user makes the network more valuable.

[33] Kim & Shanske, *supra* note 15, at 757.

[34] Mark J. Cowan, Joshua Cutler & Ryan J. Baxter, *Strategic Surrogates or Sad Sinners: U.S. Taxation of Bartering in Digital Services,* 58 Am. Bus. L. J. 849, 875–77 (2021).

[35] Kim & Shanske, *supra* note 15, at 764; David R. Agrawal & William F. Fox, *Taxing Goods and Services in a Digital Era,* 74 Nat'l Tax J. 257 (2021).

[36] Cowan et al., *supra* note 30.

the service, using this as a benchmark for the value users receive.[37] A fourth method involves estimating the value of user time spent on content consumption or data generation, attempting to quantify the user's contribution to the platform's value.[38]

There are also income and sales tax implications when considering a data barter tax.[39] Formally treating barters as income would require attention to other details, such as whether the user realizes wealth. On the sales tax front, while barter is generally taxable in states with sales taxes, the classification of data and digital services as taxable items remains ambiguous.

Two main approaches have been proposed for implementing data barter taxes:

1. **Income Tax Approach:** This would involve disallowing an income tax deduction for the cost of providing free services to users by companies using the advertising-pricing model. States could piggyback on this federal disallowance or create their own.
2. **Sales Tax Approach:** States could implement a surrogate sales tax based on the state's sales tax rate multiplied by the deduction disallowance apportioned to the state. States could also implement a special complementary excise tax using ad revenue as a proxy for the value of the data bartered.

Legal and implementation challenges:

Legal challenges present significant obstacles for implementing data barter taxes.

The Internet Tax Freedom Act (ITFA) raises concerns about the perception of such a tax as discriminatory if it only applies to digital platforms or online advertising while exempting similar offline transactions. For instance, if a state taxes data collection by online platforms but not by brick-and-mortar stores, this could be seen as a violation of the ITFA. Nevertheless, there are options to avoid ITFA issues:

- **Broad application:** Design the tax to apply equally to both online and offline data collection and barter transactions, potentially avoiding discrimination concerns.[40] This may also prevent businesses with both online and brick-and-mortar presences from evading the tax.
- **Focus on untaxed consumption:** Frame the tax as addressing a new form of consumption that happens to occur primarily online, rather than targeting electronic commerce specifically.
- **Emphasize uniqueness of digital advertising:** Highlight the distinct nature of digital advertising and data collection compared to traditional forms of commerce. Argue that these digital transactions generate economic rents and externalities that justify separate tax treatment.[41]

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[37] *Id.*

[38] *Id.*

[39] Thimmesch, *supra* note 28, at 163.

[40] To comply with the ITFA mandate, the Arizona Court of Appeals ruled that specific taxation on such entities must be not solely based on the fact that such business is engaged in the internet use, and is instead because of other reasons. *See* ADP, LLC v. Arizona Dep't of Revenue, 524 P.3d 278, 287 (Ariz. Ct. App. 2023), *reh'g denied* No. CV-23-0036-PR (Ariz. Sup. Ct. 2023) (upholding the lower court's broad application of Arizona's transaction privilege tax to digital services).

[41] Cowan et al., *supra* note 30, at 875. See also *City of Chicago, Ill. v. StubHub!, Inc.,* where the court held that a city's authority to tax the resale of tickets by an Internet auction house was not superseded by the ITFA, finding that the challenged tax was neither a multiple nor a discriminatory state tax on electronic commerce. 624 F.3d 363 (7th Cir. 2010).

The Commerce Clause also poses challenges to barter taxes by requiring that they do not unduly burden interstate commerce.[42] To pass constitutional muster, there must be a "substantial nexus" between a state and the entity or activity it wishes to tax. To establish this nexus, taxes should incorporate state-level revenue thresholds, ensuring the tax applies only to entities with a sufficient economic presence in the state. Fair apportionment is also crucial, so a reasonable mechanism for determining user location is necessary. The tax structure should pass both internal and external consistency tests to avoid double taxation if adopted by multiple states.[43]

First Amendment challenges may be less likely if the tax doesn't prohibit taxed entities from passing costs to users. However, the First Amendment remains a potential area of concern, especially if the tax could be seen as potentially chilling free speech or press freedoms.[44]

While no jurisdiction has implemented a pure data barter tax as such, elements of this concept are present in some digital services taxes and proposed data dividend schemes. Two examples illustrate the current state of implementation efforts. Most recently, California's SB 1327, which passed the state senate in 2024, represents an attempt to directly tax the value of the services provided by certain large platforms.[45]

Additionally, Maryland's Digital Advertising Gross Revenues Tax,[46] while not explicitly framed as a data barter tax, could be interpreted as an attempt to tax the value exchange inherent in digital advertising, which relies heavily on user data and participation. Supporters of the Maryland Digital Advertising Gross Revenues Tax have argued that it should be viewed as an attempt to tax currently untaxed consumption.[47] They contend that digital advertising revenue serves as a proxy for the value of user data and attention exchanged in digital transactions. This interpretation aligns the Maryland Digital Advertising Gross Revenues Tax with the concept of data barter taxes. As of August 2024, the Maryland Digital Advertising Gross Revenues Tax is still navigating legal challenges.[48] The outcomes of these cases will likely have significant implications for the future of data barter taxes and similar digital taxation schemes across the United States.

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[42] *See supra* note 9.

[43] Internal consistency looks at whether its identical application by every State would place interstate commerce at a disadvantage as compared with intrastate commerce. *See* Comptroller of Treasury of Md. v. Wynne, 575 U.S. 542 (2015). State taxing schemes that impose multiple layers of taxes on out-of-staters are found to fail this test. *See* Miss. Dep't of Revenue v. AT & T Corp., 202 So. 3d 1207, 1221 (Miss. 2016). External consistency looks at the economic justification of the state tax to discover whether it reaches beyond that portion of value that is fairly attributable to economic activity within the taxing State. *Id.; see also* Oklahoma Tax Com'n v. Jefferson Lines, Inc., 514 U.S. 175, 185 (1995). It seems that a tax threshold based on state-level revenues would likely pass the fair apportionment test since it would be hard to argue that there is either internal or external inconsistency in this situation.

[44] The seminal Supreme Court case addressing this issue is *Minneapolis Star v. Minn. Comm'r,* which held that the First Amendment does not allow differential application of taxes to different entities within the press unless there is a compelling interest that cannot be achieved with any less restrictive means. 460 U.S. 575 (1983). However, the First Amendment challenge concerning the pass-through prohibition included in the Maryland digital services tax was dismissed. Chamber of Commerce of United States v. Lierman, No. 21-cv-00410-LKG, 2024 U.S. Dist. LEXIS 117223 (D. Md. 2024).

[45] S.B. 1327, 2023-2024 Sess. (Ca. 2024)

[46] H.B. 732, 2020 Reg. Sess. (Md. 2021). The tax is applied to annual gross revenues derived from digital advertising services in Maryland. It uses a graduate rate structure based on global annual gross revenues, ranging from 2.5% to 10%. *Id.*

[47] *See* Kim & Shanske, ***supra*** note 15.

[48] *See* Bryan P. Spears, *Federal Judge Dismisses First Amendment Challenge to Digital Ad Tax,* Md. Matters (July 12, 2024 7:27 PM), https://marylandmatters.org/2024/07/12/federal-judge-dismisses-first-amendment-challenge-to-digital-ad-tax/.

It is also worth noting that there have been recent legal developments in Europe that could provide insight into how courts and tax authorities are testing the barter theory. In the United Kingdom, an ongoing collective lawsuit against Meta alleges that the company abused its dominant market position to monetize users' personal data without proper compensation.[49] Similarly, in Italy, authorities are investigating Meta for alleged tax evasion, arguing that user data provided in exchange for access to platforms like Facebook and Whatsapp constitutes a taxable transaction subject to VAT.[50]

Economic considerations:

Revenue Potential

Given the immense value of data transactions in the digital economy, the revenue potential of data barter taxes is substantial. The revenue potential depends on the measure used to determine the tax base. If advertising expenditure is used then the estimates under the Advertising Tax approach apply. As an additional illustration, we provide some numbers building estimates from the number of digital users and the time they spend using these platforms for social media only (more detail provided in the Appendix). An important input into this measure is the value of digital services per user-hour which may need to be derived from mandated firm financial disclosures or could possibly be estimated using consumer surveys. Assuming this value to be an extremely conservative $10 would imply a revenue potential of around $18mn per year for California Social Media using a range of extremely conservative assumptions and a 7.5% consumption tax. This is significantly below the estimate for the advertising tax, which reflects the potentially substantial underestimate of the value of digital services per user-hour. In fact, we also illustrate in Appendix 2 that a higher hours used and value estimate easily get to $100mn in revenue, still using a 7.5% tax rate. True estimates would depend on data obtained from mandated disclosures from online platforms.

Data Barter Tax and Economic Models

From an economic perspective, the rationale for data barter taxes aligns with broader principles of consumption taxation. Consumption taxes are generally universal, applied to most goods and services in an economy.[51] Notably, goods which do not have consumption taxes are usually those with positive externalities that provide benefits beyond the individual consumer. Conversely, goods subject to higher taxes, such as excise taxes or "sin taxes," are typically associated with negative externalities. Examples include taxes on alcohol, tobacco, or gambling, where the higher tax rate is justified by the broader societal costs these products can incur.

Following this economic logic, the lack of consumption taxation for digital services equates to the odd position that digital services have positive externalities. As discussed in our framework, we expect this to be false. Model 1 (substitutes with externalities) and model 3 (behavioral) argue that they instead have negative externalities, and, similarly, they appear to undermine the provision of public goods like journalism under model 2 (public goods). This supports the implementation of taxes on digital

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[49] Facebook Must Face $3.5 bln UK Mass Action Over Market Dominance, Tribunal Rules, Reuters (Feb. 15, 2024 7L28 AM), https://www.reuters.com/legal/facebook-must-face-37-bln-uk-mass-action-over-market-dominance-tribunal-rules-2024-02-15/.

[50] Richard Asquith, EU Reviews Italy's Facebook VAT Assessment for 'Free' Platform, VATCalc (Dec. 22, 2023), https://www.vatcalc.com/italy/italy-assess-facebook-for-vat-on-users-data-in-return-for-free-portal-access/.

[51] *See Consumption Tax,* Tax Found., https://taxfoundation.org/taxedu/glossary/consumption-tax/.

services that are, at least, at parity with other consumption taxes. Further, if the bulk collection of user data is associated with negative externalities (the erosion of privacy, potential for data manipulation, etc.) then taxing at an even higher rate is justified, similar to excise taxes on other goods with negative societal impacts.

This approach not only provides a theoretical basis for implementing data barter taxes, but also offers a framework for determining appropriate tax rates. By assessing the scale and nature of the negative externalities associated with large-scale data collection and use, policymakers can calibrate tax rates to reflect the true societal cost of these practices. This could potentially create a more balanced digital economy where the value extracted from user data is more equitably distributed and the societal costs of data-driven business models are more accurately reflected in market dynamics.

Further Considerations and Economic Trade-Offs:

Implementing a data barter tax involves navigating a complex landscape of competing interests and potential consequences. User experience is likely to be affected as companies might pass on the cost of the tax to their users. This could manifest in various ways, such as introducing fees for previously free services or reducing service completely. The result might be a digital landscape where users have to pay (either monetarily or through degraded services) for platforms they previously accessed freely, which may widen digital divides.[52] There is an important trade-off here between consumers paying for the news they value versus the desirability of news that is widely available to the public.

Data barter tax enforcement also presents administrative challenges.[53] Ensuring compliance and accurate data valuation and reporting is complex, given the intangible and rapidly evolving nature of data assets. Tax authorities would need to develop new capabilities and methodologies to audit and verify the value of data exchanges, which could be resource-intensive and technically challenging.

Digital Services Tax

A digital services tax is typically a gross-basis tax on revenue from specific digital services.[54] It aims to capture value created in jurisdictions where large tech companies have users but limited physical presence. This approach has gained traction internationally as a means to address the tax challenges posed by the relatively borderless nature of the digital economy.

Unlike digital sales taxes, which apply to the purchase of goods or services, digital services taxes are typically applied to the revenue derived from providing specific digital services, regardless of whether the service involves direct sales to users. These services often include digital advertising, data

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[52] *What is the Digital Divide?,* N.C. Dep't Info. Tech., https://www.ncbroadband.gov/digital-divide/what-digital-divide (last visited Oct. 14, 2024).

[53] The administrative challenges do not appear overly threatening, however. Gross receipts taxes are relatively simple and only apply to a few taxpayers. *See* Darien Shanske & Young Ran (Christine) Kim, *Digital Barter Taxes are Good Tax Policy,* 112 Tax Notes State 765 (2024); Young Ran (Christine) Kim & Darien Shanske, *Digital Barter Taxes: A Legal Defense,* 112 Tax Notes State 865 (2024).

[54] *See* Riley Stotzky & Adrianna Fano, *Taxation in the Digital Economy: Digital Services Taxes, Pillar one, and the Path Forward,* Bipartisan Pol'y Ctr. (Oct. 26, 2023), https://bipartisanpolicy.org/blog/taxation-in-the-digital-economy-digital-services-taxes-pillar-one-and-the-path-forward/.

transmission and monetization, and intermediation services.[55]

Legal and implementation challenges:

Digital services taxes face both legal and implementation challenges from the Internet Tax Freedom Act (ITFA) and the Commerce Clause. As demonstrated by the legal challenges to Maryland's Digital Advertising Gross Revenues Tax, opponents will argue that a digital services tax is discriminatory against electronic commerce and thus violative of the ITFA. This concern will likely be a central point of contention for any proposed digital services tax in the United States. Furthermore, state-level digital services taxes, as with any state tax, must be fairly apportioned and non-discriminatory to comply with the Commerce Clause restrictions.

As with digital advertising taxes, explaining non-discriminatory framings of the tax might be effective. For example, such taxes can be accurately described as targeting data-driven or personalized advertising rather than digital advertising as a whole.[56]

While these challenges have posed obstacles for the approach in the U.S., several countries have implemented digital services taxes with varying approaches and rates. For instance, France has introduced a 3% digital services tax on revenue from digital interfaces and targeted advertising.[57] The United Kingdom, on the other hand, has implemented a 2% tax on revenues of search engines, social media platforms, and online marketplaces.[58] These international examples provide valuable insight into the structure and impact of existing digital services taxes.

Economic considerations:

Revenue Potential

As with other options, estimating revenue potential is complicated by the lack of required firm data on digital sales. This collection should be mandated as part of the taxation legislation. Nevertheless, rough estimates can be obtained from U.S. Bureau of Economic Analysis data. Considerable uncertainty exists about the exact apportionment of industry classification codes to precise digital services being produced. However, a rough estimate described in our Appendix would suggest total sales in California of around $91bn in 2023, thus implying $913mn in tax revenue for a 1% sales tax on digital services. The large estimate reflects the wide range of digital services that might be included in a new tax. However, since the data is only available at the aggregate level, this estimate does not include a progressive threshold. Consequently, some caution is needed when comparing this estimate to other

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[55] Kim & Shanske, *supra* note 15, at 757; Allison Christians & Tarcísio Diniz Magalhães, *17 Ways to Regulate BigTech with Tax,* SSRN Journal (2024), https://papers.ssrn.com/abstract=4741869. Richard Pomp, *Resisting the Siren Song of Gross Receipts Taxes: From the Middle Ages to Maryland's Tax on Digital Advertising,* SSRN Journal (2022); Farl. A. Frieden & Douglas L. Lindholm, *State Digital Services Taxes: A Bad Idea Under Any Theory*, Tax Notes (Apr. 10, 2023), https://www.taxnotes.com/special-reports/digital-economy/state-digital-services-taxes-bad-idea-under-any-theory/2023/04/07/7g9bc.

[56] See discussion of ITFA-avoiding framings in Section on data barter taxes.

[57] Raphaël Béra, *Announced, Proposed, and Implemented: Key Features of France's DST,* DLA Piper, https://www.dlapiper.com/es-pr/insights/publications/2021/02/announced-proposed-and-implemented-key-features-of-frances-dst (last visited Oct. 11, 2024).

[58] *See* Clifford Chance, UK Government Announces Radical New Digital Services Tax (2018), https://www.cliffordchance.com/content/dam/cliffordchance/briefings/2018/10/uk-government-announces-radical-new-digital-services-tax.pdf (last visited Oct. 11, 2024).

revenue estimates. Still, the scope for revenue here appears larger than for advertising taxes, which focus on a smaller number of digital platforms.[59]

Efficiency and Economic Models

One primary concern associated with digital services taxes is inefficient reductions in the sale of digital products. By increasing the cost of digital services, digital services taxes could lead to decreased consumption of these services, potentially hampering growth and innovation in the digital sector.

There are also distributional concerns to consider. The fees associated with digital services taxes have the potential to be regressive because they eat into a larger portion of lower-income household budgets, raising questions about equity and the broader societal impact of such taxes.

On the other hand, digital services taxes could help discourage services that create negative externalities.[60] For example, if social media services are seen as undermining child safety or replacing quality journalism, digital services taxes could help align their provision more closely with societally optimal levels. This may vary from service to service, however, and could therefore be considered less useful to advance these goals compared to advertising taxes. Like the other tax options, digital services taxes indirectly support the provision of public goods like quality journalism.[61] However, digital services taxes don't directly address the issues raised in other models.[62]

Extension of Retail Sales Taxes to Digital Goods and Services

Another option is to extend traditional sales tax principles to the digital realm. It's important to note that, for the purposes of this analysis, we distinguish digital sales taxes from digital services taxes based on their application and scope. Digital sales taxes specifically target direct, transactional sales of digital goods or services to end-users and are typically applied to the price paid by the consumer.[63] This distinction helps differentiate these taxes from broader digital services taxes that might apply to other aspects of digital business models.

Digital sales taxes are imposed on electronically delivered products, in-app purchases, digital services, or online subscriptions. As the digital economy continues to grow, many jurisdictions are adapting their tax systems to capture this increasingly significant segment of commerce.

Historically, sales taxes have been applied primarily to "tangible personal property" — physical goods that can be seen, weighed, measured, felt, or touched. However, the rise of digital goods and services has challenged this traditional definition and raised questions about the appropriate scope of sales taxation. The debate over whether to broaden the scope of sales taxes to include digital goods has gained traction in multiple states across the United States and abroad.[64]

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[59] For example, the estimated U.S. digital advertising market was around $270bn in 2023. Based on the industry sales data from the BEA, digital services alone (not including goods as described later) could be as high as $784bn (although this certainly includes some items that are not digital services as defined in this Paper).

[60] *See* framework model 1 (substitutes with externalities).

[61] *See* framework model 2 (public goods).

[62] *See* framework model 3 (behavioral) and model 4 (competition).

[63] See above for an explanation of Digital Services Taxes. Digital Services Taxes target revenue generated by digital service providers, often from indirect sources like advertising, data monetization, or fees from digital intermediation.

[64] See Appendix for more details.

The application of sales taxes to digital goods presents unique definitional challenges. In the United States, two primary approaches have emerged. Some jurisdictions have opted to expand existing laws treating intangible goods as tangible personal property, while others have chosen not to tax digital products at all.

In states where digital products are classified as services, the taxation approach may depend on whether the state imposes a sales tax on services in general. For instance, a subscription to a digital service might be considered taxable, whereas a one-time digital purchase (like renting a movie) might be treated more like personal property.

Legal Challenges

Digital sales taxes applied to digital goods and subscriptions are generally less contentious than other forms of digital taxation. The fundamental principle behind these taxes is that companies selling services or products online should be subject to the same tax treatment as their non-digital counterparts. Generally, digital sales taxes do not face significant ITFA challenges because they do not even theoretically discriminate against digital products: all products are subject to the sales tax. However, when states are reluctant to expand the scope of their sales tax base to include the performance of personal services, ITFA challenges could arise if the base is only expanded to digital services. Commerce Clause concerns are also unlikely considering that many states have already successfully implemented such taxes without significant pushback.

Economic considerations:

Revenue Potential

For this tax, there is considerable uncertainty regarding the total size of the market for digital goods. Using the economic activity approach described for digital services, we estimate a very approximate size of the California digital goods market as $71bn for 2023. A 1% tax on this market would then yield $707mn in revenue per year. However, the same caveats as with digital services exist – this likely includes certain items that should not be included and omits some that should. Another approach is to estimate the app store market size in the U.S., forecast at around $74bn in the U.S. A 1% tax applied just to this segment (split out by population for just California) would imply revenue of $90mn, however, this excludes a large range of digital goods such as software, e-books, and more. In spite of this uncertainty, as before, it appears these taxes may generate more revenue than advertising-based taxes, subject to the data uncertainty (see Appendix for more information). For digital services, see the digital services tax section, but we have estimated this could raise $913mn in tax revenue for a 1% sales tax.

Economic Models and Trade-Offs

The analysis included in the discussion of a digital services tax applies similarly here. In brief, concerns include inefficient reductions in digital goods sales as well as distributional concerns associated with regressive taxes. However, these taxes could also discourage the overprovision of goods that create negative externalities and help sustain public goods like quality journalism.[65]

[65] *See* framework, models 1 (substitutes with externalities) and 2 (public goods).

D. Option 2: User Fees and Data Mining Taxes

User fees or data mining taxes represent a novel approach to digital taxation, focusing on the collection and use of consumer data regardless of its ultimate purpose.[66] This approach fundamentally treats user data as a commodity in which citizens have a cognizable interest, which legislators have the authority to protect through taxation.

The underlying justification is that companies profiting from user data should compensate the public for this resource, drawing a parallel with how natural resource extraction is often taxed. This concept aligns with the common metaphor of data as the "new oil" of the digital age. Just as governments levy taxes or royalties on the extraction of natural resources, some argue, governments should likewise be able to capture value from the extraction and use of personal data from their populace.[67]

This taxation method has several key advantages:

1. Basis of Calculation: Rather than focusing on ad revenue, the tax is based on the number of users residing in a specific state from which the company collects personal data. This can be measured using industry-standard metrics like "average monthly users" or "unique monthly visitors."
2. Flexibility: The framework can be tailored to achieve specific policy objectives by defining the scope of covered entities, imposing a gradual rate structure, or setting a high user threshold.
3. Efficiency: It avoids the inefficiencies of the income tax framework where the wealth generated by data collection isn't necessarily reflected in company revenues.

Moreover, this revenue extraction method could be seen as a way to internalize the negative impacts associated with large-scale data collection and use. By imposing a cost on data collection, companies might be incentivized to be more judicious in their data practices, potentially leading to better alignment with societal interests.

The structure of the tax could vary, but the general principle is that a corporation pays a fee every time it collects user data.[68] The goal is to balance the positive and negative effects of massive data aggregation.

Additionally, introducing a user fee or data mining tax would offer a novel approach aimed at addressing the value of user data, potentially incentivizing a shift towards data minimization practices. This approach could encourage companies to be more selective in their data collection, aligning their practices more closely with privacy-preserving efforts.[69]

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[66] Robert D. Plattner, *The Virtues of a Simple Excise Tax on Personal Consumer Data,* Tax Notes (Dec. 12, 2022), https://www.taxnotes.com/special-reports/digital-economy/virtues-simple-excise-tax-personal-consumer-data/2022/12/09/7ffrb (discussing a data mining tax that treats consumer data like "valuable commodity, like oil or precious metals," that can be easily tailored to achieve specific policy goals); Omri Marian, *Taxing Data,* 47 BYU L. Rev. 511, 562 (2022) ("Under the proposed framework, taxpayers are the users of data … [but a] successful design would exempt most taxpayers from data tax and will only capture heavy users, for whom big data collection and analysis is an integral part of the business model.").

[67] Wei Cui, *The Digital Services Tax: A Conceptual Defense,* 73 Tax L. Rev. 69 (2019).

[68] Babcock, *supra* note 16, at 307.

[69] Such an approach could create economic incentives for privacy by attaching costs to data collection, encouraging companies to limit unnecessary data gathering.

However, this approach also faces some minor challenges, including the difficulty in accurately valuing user data,[70] issues related to anonymity and user tracking,[71] and administrative complexities arising from the continuous nature of data transactions.[72] Despite these challenges, user fees or data mining taxes can offer a more accurate explanation for the nexus between data collection and value creation, especially when targeted toward local users within a jurisdiction.

Legal and implementation challenges:

There are two main legal challenges that may arise when introducing user fees or data mining taxes. However, it is worth noting that both challenges are tenuous and should not deter legislative attempts to pursue this approach. The first challenge involves definitional issues, as legally defining "personal data" or "data mining" for tax purposes could prove contentious.

The second relates to the Internet Tax Freedom Act (ITFA), which requires consideration during the legislative drafting process. Legislation might attempt to encompass data collected through both online and offline business activities to avoid violating the ITFA.[73] This approach would aim to avoid discriminating against Internet-based activities. However, critics might still pursue an ITFA action because traditional brick-and-mortar retailers likely collect less taxable data than their online counterparts and will thus be less affected by such a tax, arguably amounting to discrimination. The inherent differences in taxing digital versus physical data collection could necessitate varying rules, which might also be perceived as discriminatory against digital data collection. This hypothetical scenario illustrates the challenges that drafters of user fee-based approaches may face, but such arguments are unlikely to pose a real threat to legislation.

Indeed, various jurisdictions have also proposed or considered implementing data mining taxes, each with unique approaches to rates, thresholds, and tax bases. These approaches can be broadly categorized into four main types: per-individual rate, revenue-based, flat fee, and progressive structure approach.

The per-individual rate approach would charge a fixed amount per resident affected by data collection. For example, New York's proposed Data Mining Tax[74] would impose a monthly charge of $0.05 per resident user. Such an approach could include tiered rates based on the number of affected residents, directly tying the tax to data collection volume and thus incentivizing companies to be more selective in their data collection practices.

In contrast, a revenue-based approach would tax a percentage of gross income derived from personal data.[75] While this method aims to more directly capture the economic value of data, it may present greater implementation and monitoring challenges than the other methods.

A flat fee approach, as proposed by the DC Tax Revision Commission, would charge a fixed fee per

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[70] Thimmesch, *supra* note 28, at 174–78; Babcock, *supra* note 16, at 307.

[71] Thimmesch, *supra* note 28; Babcock, *supra* note 164, at 307.

[72] Jared Walczak, *States Consider Digital Taxes Amidst Conflicting Rationales,* Tax. Found. (May 2021), https://files.taxfoundation.org/20210507112717/States-Consider-Digital-Taxes-Amidst-Conflicting-Rationales.pdf; Thimmesch, *supra* note 28, at 178.

[73] *See, e.g.,* S.B. 2012, 2023–2024 Leg. Sess. (N.Y. 2023).

[74] *Id. See* Plattner, *supra* note 57.

[75] For example, Washington's proposed HB 1303 suggests a 1.8% tax on the annual gross income of businesses engaged in the sales of personal data or exchanging personal data for consideration. Like New York's proposal, this tax would apply to both online and offline data sales and exchanges.

consumer above a certain threshold.[76] Although this approach may be easier to administer, it could not scale as effectively to align with the value generated from data and could disproportionately affect smaller companies operating just above the threshold.

Last, a progressive structure would combine elements of both per-individual and tiered approaches. For example, Illinois' proposed Commercial Data Collector Tax (2023) would impose fees ranging from $0.05 per consumer per month to a fixed $2,250,000 per month plus $0.5 per consumer, based on the number of consumers affected.[77] This approach attempts to balance the impact on smaller data collectors while still scaling with consumer and data collection volume.

Overall, these proposals generally aim for a technology-neutral approach, applying to both online and offline data collectors. Nevertheless, each approach strikes a different balance between administrability and accurate value capture, with unique implications for data collection practices.

Economic considerations:

From the perspective of economic theory, these measures are desirable because they directly tax the collection of individuals' data, broadly considered one of the core harms associated with digital services.[78] However, since the tax addresses the same implicit transactions as the barter tax, it results in largely the same benefits and costs as the digital barter tax.[79] However, the implied revenue potential here is moderate while the economic efficiency scores higher.

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[76] The District of Columbia's Tax Revision Commission proposed a flat fee of $4 per consumer for any company extracting data from over 50,000 DC residents. Joe Bishop-Henchman, *DC Tax Revision Commission Chairman Releases First Draft of Recommendations,* Nat. Taxpayers Union Found. (Jan. 12, 2024), https://www.ntu.org/foundation/detail/dc-tax-revision-commission-chairman-releases-first-draft-of-recommendations.

[77] S.B. 2307, 103rd Gen. Assemb. (Il. 2023).

[78] Romer, *supra* note 20; Acemoglu & Johnson, ***supra*** note 24.

[79] For further detail about the costs and benefits associated with a digital barter tax, see discussion above.

E. Option 3: Mandated Collective Bargaining

Mandated collective bargaining represents another proposed solution to address the imbalance between large tech platforms and journalism providers. This approach requires platforms to negotiate with a collective body representing journalism providers, aiming to secure fair compensation for the use of their content. The theoretical justification lies in correcting market failures and ensuring that journalism providers receive appropriate remuneration for the value they bring to these platforms.

Legal and implementation challenges:

Implementing a mandatory collective bargaining process between online platforms and news organizations will raise numerous legal obstacles.

First, the First Amendment poses significant challenges to mandatory collective bargaining in the digital space. Freedom of association concerns arise from the potential conflict with precedents like Janus, where the Supreme Court held that requiring individuals to endorse ideas they disagree with runs counter to First Amendment principles.[80] In the context of digital platforms, mandatory collective bargaining could be seen as forcing association or endorsement of collective positions. Likewise, mandatory collective bargaining may implicate platforms' freedom of speech if it directly or indirectly dictates which content they publish, which may be likened to "must-carry" rules, thereby infringing upon the platforms' editorial discretion.[81] If mandatory collective bargaining obligates platforms to host and distribute certain content, regardless of whether it aligns with their editorial policies, it could constitute compelled speech.[82] Policymakers should anticipate this critique and craft mandatory collective bargaining frameworks that avoid the must-carry dilemma.

However, the legal landscape is still evolving, as evidenced by the Supreme Court's recent decision to hear cases like *Moody v. NetChoice* and *NetChoice v. Paxton.*[83] The Court's highly anticipated decisions in these two cases were expected to clarify how courts should treat the role of content moderation by online platforms, but the Court declined to directly address the issue and instead ruled on other grounds.

Second, challengers of the approach could invoke the Dormant Commerce Clause if state-level laws mandating collective bargaining are seen as having an extraterritorial impact on interstate commerce.[84] Avoiding jurisdictional overreach could be complex when administering collective bargaining involving digital platforms, particularly when determining user location.[85]

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[80] Janus v. Am. Fed'n of State, Cnty, & Mun. Emps, Council 31, 585 U.S. 878 (2018).

[81] Any restrictions on content distribution by platforms would likely be subject to strict scrutiny, requiring a compelling state interest and narrow tailoring. Congressional Research Service, Free Speech: When and Why Content-Based Laws are Presumptively Unconstitutional (Jan. 10, 2023), https://crsreports.congress.gov/product/pdf/IF/IF12308.

[82] *See* Wooley v. Maynard, 430 U.S. 705 (1977).

[83] 144 S. Ct. 2383 (2024).

[84] *See generally* Constitution Annotated, *Overview of the Dormant Commerce Clause,* Congress.gov, https://constitution.congress.gov/browse/essay/artI-S8-C3-7-1/ALDE_00013307/ (last visited Oct. 11, 2024).

[85] *See* Eric Goldman, *California'as Proposed Fix to the Journalism Crisis is Unconstitutional and Worse than Socialism (Comments on the the California Jounralism Protection Act, CJPA),* Tech. & Marketing Law Blog (June 22, 2023), https://blog.ericgoldman.org/archives/2023/06/californias-proposed-fix-to-the-journalism-crisis-is-unconstitutional-and-worse-than-socialism-comments-on-the-california-journalism-protection-act-cjpa.htm

Third, due process concerns associated with mandatory arbitration provisions could theoretically arise, though these are unlikely to significantly impede implementation. Potential challenges could be mitigated through thoughtful legislative design. Existing precedent supports the constitutionality of mandatory arbitration in certain contexts.[86] Although worth noting, due process concerns should not deter policymakers from considering this alternative.

Collective bargaining initiatives for media organizations have emerged at various governmental levels, each aiming to address the power imbalance between news providers and online platforms. At the federal level in the United States, Congress introduced the Journalism Competition and Preservation Act (JCPA), proposing a four-year safe harbor from antitrust laws. This would allow news organizations to collectively negotiate with digital platforms over content use, potentially leveling the playing field for smaller media outlets. At the state level, California's AB886 (2024)[87] initially sought to establish a similar system for journalism providers and online platforms. However, due to intense lobbying from online platforms and even more intense division among news outlets, the bill's future is uncertain as of August 2024.[88]

International Examples

Internationally, several countries have proposed or implemented similar measures. Australia paved the way with its News Media Bargaining Code,[89] which requires online platforms to negotiate payment deals with Australian news media outlets.[90] Canada followed suit with its Online News Act,[91] mandating that digital platforms negotiate compensation deals with news publishers for content use. In the United Kingdom, the proposed Digital Market, Competition, and Consumer Bill would also include provisions that could impact platform-publisher relationships.[92] It's important to mention that these proposals are not without flaws. In particular, the implementation of the Australian model has raised significant concerns about the lack of meaningful transparency requirements. The opacity around agreements made between newsrooms and platforms has prompted questions about the legislation's effectiveness and the potential for increased platform influence in the Australian news market.[93]

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[86] In *Board of Trustees of Western Conference of Teamsters Pension Trust Fund v. Thompson Building Materials, Inc.,* an action was filed under the Multiemployer Pension Plan Amendments Act. 749 F.2d 1396 (9th Cir. 1984). The Court of Appeals held that: (1) Congress did not violate due process by imposing funding liabilities on employers who, after enactment of the MPPAA, withdrew from plans inadequately funded to meet their pension benefit obligations; (2) employers are not denied an impartial tribunal by giving the fund's trustees initial responsibility to determine the withdrawal liability; (3) employer was afforded all the process to which it was due; (4) the mandatory arbitration provisions are not unconstitutional; (5) the Act does not affect an uncompensated taking of the employer's property; and (6) Congress could rationally defer a decision on whether to adopt special liability rules for involuntary employer withdrawals caused by union action. *Id.*

[87] California Journalism Preservation Act, A.B. 886 2023–2024 Reg. Sess. (2023) (in committee).

[88] Instead, the state secured a nonbinding agreement with Google, who committed to contributing $125 million for a journalism fund over five years, though implementation details remain unclear. Jenny Jarvie, *AI? New Jobs? California's Local News Deal with Google Leaves Lots of Unanswered Questions,* L.A. Times (Sept. 20, 2024, 3:00 AM), https://www.latimes.com/world-nation/story/2024-09-20/inside-california-legislators-local-news-deal-with-google.

[89] Treasury Law Amendment (News Media and Digital Platforms Mandatory Bargaining Code) Bill 2021 (Austl.).

[90] The Code includes provisions for binding arbitration if negotiations fail, ensuring that publishers receive fair compensation for their content.

[91] Online News Act S.C., 2023, c. 23 (Can.).

[92] The bill grants the Digital Markets Unit (DMU) the authority to oversee fair competition and potentially mandate agreements that ensure news publishers are fairly compensated by platforms.

[93] Diana Bossio et al., *A Different Playbook for the Same Outcome? Examining Google's and Meta's Strategic Responses to Australia's News Media Bargaining Code,* News Media & Society (2024), https://journals.sagepub.com/doi/10.1177/14614448241232296.

Economic considerations

Relatively little work has been done to understand the economic implications of collective bargaining approaches. The best analysis to date examines the Australian News Media Bargaining Code, which sought to establish negotiation power for news outlets to demand payment for the use of their material by large online platforms, especially Google and Meta. Although providing some evidence of an alternative funding model for the public good of journalism, concerns remain that these bargaining codes primarily help larger media entities, with sufficient size to attract technology companies' attention to engage in negotiations. Though there may be enforcement approaches that counteract this, requiring online platforms to negotiate with 100+ media companies may be infeasible in practice. Numerous reports show that smaller companies are routinely denied revenues despite high engagement in local news, which has the strongest public good rationale.[94] This approach has limited room to improve efficiency by reducing negative externalities and supporting positive externalities. However, collective bargaining has the benefit of being one of the few approaches to address the monopoly power (Model 4) of the large online platforms because it shifts the balance of power between news providers and platforms, though it does so less systematically than ring-fencing or divestment approaches. Nevertheless, the revenue potential here is likely limited relative to other more systematic approaches.

[94] *Id.;* Loan Cong To Nguyen & Michael O'Connor Keefe, *News Feeds are No Longer Free: Policy Implications From Australia,* 56 Applied Econ. 3822 (2023), https://www.tandfonline.com/doi/full/10.1080/00036846.2023.2208846?scroll=top&needAccess=true#abstract.

F. Conclusion

As digital platforms continue to dominate the information economy, policymakers face the complex challenge of adequately addressing the negative impact that platforms have on society. This white paper has explored six approaches to revenue extraction from online platforms, each with its own set of advantages, legal challenges, and economic implications.

The options examined represent a spectrum of potential solutions, from taxes to user fees and collective bargaining. Each approach offers unique benefits:

- General advertising taxes and data barter taxes provide a broad-based approach to capturing revenue from digital advertising, with the potential for substantial revenue generation. These proposals can also be seen as leveling the playing field between digital and traditional commerce.
- Digital services taxes and expanding sales taxes to include digital goods and services focuses on leveling the playing field between digital and traditional commerce.
- User fees and data mining taxes offer a novel approach aimed at addressing the value of user data.
- Mandated collective bargaining presents a structural solution to power imbalances between platforms and, in our case study, journalists and news media organizations.

Each option also invites legal and implementation challenges grounded in the Internet Tax Freedom Act, the Commerce Clause, and the First Amendment. Several key considerations emerge from these challenges. First, any chosen approach must be designed to account for the need to withstand legal challenges at the state and federal levels. Second, the practical challenges of implementing and enforcing new taxation or regulatory schemes must be anticipated to avoid overloading the administrative system and delaying the impact of the tax. Third, the distributional impacts of any revenue extraction method should be explicitly defined. For example, earmarked taxes, where revenue is specifically allocated to address an issue (e.g., journalism crisis or youth mental health) could help ensure the burden of taxation is balanced by tangible societal benefits.

While there is no perfect solution, a combination of approaches may offer the most comprehensive and effective policy strategy. We recommend focusing future efforts on general advertising taxes and data barter taxes, which appear to promise the best balance of legal resilience and economic effectiveness.

Appendix 1 – Cost Pass-Through Analysis

In the below we provide a very brief analysis of the potential for cost pass-through when taxing advertising, particularly of advertising sales by technology companies. A more detailed analysis might grapple with more granular aspects of the theory and empirical arguments below. Based on our analysis we conclude that the potential for pass-through of advertising style taxes on technology companies is likely less than 100% and in line with other forms of taxation.

Simple theory: from the perspective of basic economic theory, firms subject to lower degrees of competition typically have the freedom to **not** pass through costs such as taxes. This can be seen from the optimization decisions of monopolistic versus perfectly competitive firms. Perfectly competitive firms already price at marginal cost based on standard results from industrial organization. Therefore the imposition of a tax will be passed through 1:1 to the price as it increases firms' marginal costs. As a result however, firms will likely experience a fall in demand which is undesirable and could in fact lower their profits (except in the case of perfectly inelastic demand).

Monopolists, by contrast, set prices based on the optimization condition that their Marginal Revenue = Marginal Cost. An increase in marginal costs due to additional taxation therefore will change this optimality condition and in most cases will not lead prices to fully reflect the change in marginal cost. This can be seen from simple charting examples of the monopoly optimization problem.

Note however that these conclusions depend on the type of tax levied. The above holds for unit or revenue taxes. Profit taxes are typically not passed through at all since these do not affect the optimality conditions in the model and therefore firms continue to charge the same price and produce the same quantity as without the profit tax.

A key parameter here is demand elasticity — which measures how much demand changes given a change in price. Usually this parameter must be estimated. There are good reasons why advertising might be quite elastic for companies (they reduce it substantially in response to price changes) which implies lower pass-through. For example, although advertising can be quite beneficial for firms, it is unlikely to be considered as essential as buying material inputs which are necessary to produce output. Gentzkow et al (2024) present evidence that suggests advertising is fairly elastic though there is wide variation (i.e. there is not just one price as would be the case under inelastic demand).

Other theoretical arguments: another important issue with additional taxes is reducing the returns to innovation. There is evidence from the corporate taxation literature that corporation tax reduces aggregate innovation. However, this evidence is for economy-wide taxes, not sector specific taxes. It might be hard to extrapolate to taxes levied specifically on one industry (e.g. technology firms), especially if these taxes are implemented progressively.

Empirical evidence: empirical academic research is scarce on the taxation under consideration in this report. Windfall taxes have been studied. Rao (2018) examines windfall taxes in the oil industry, however their focus is on the quantity produced, which does fall. However the oil industry is quite different from companies that generate advertising revenues.

The study that probably gets closest to examining relevant pass-through to consumers is Baker et al. (2020 — although note this has yet to be peer-reviewed). They examine a large dataset of retail customers and find that pass-through averages 30%–40%. Importantly though, the authors find a lot of heterogeneity: pass-through is larger for luxury goods aimed at higher paying customers (possibly more akin to advertising) and in markets with less competition. Nevertheless these are all retail goods, not business inputs like advertising. Overall though, it is reasonable to conclude that pass-through of advertising taxes to consumers will likely be significantly less than 100%.

Appendix 2 – Revenue Estimates

In the below we provide estimated tax revenues for the approaches described in the main text. Where possible we provide progressive tax estimates. However due to data availability this is only possible in some cases. In general, progressive thresholds help to shield smaller companies from taxes but reduce tax revenue.

Advertising tax

The table below provides illustrative tax revenue estimates for California.

	Tax Rate on Revenue >$2bn			
	0.5%	1%	2%	4%
Est. tax revenue/year	$67.5mn	$135mn	$270mn	$540mn

Notes: calculations are for a progressive tax on those with more than $2bn in revenue. Estimates are from eMarketer data applied to California (population used to divide total digital advertising revenue). 3 companies currently meet the $2bn per year threshold (Alphabet ($8.6bn), Meta ($6.7bn) and Amazon ($4.2bn)). For these, the tax is progressive and therefore the first $2bn is not taxed for each company.

Data barter tax

Various approaches can be used here to define the tax base. We illustrate using a bottom-up measurement of the amount of barter occurring, using the number of users and the time they spend on the platform. Legislation could require disclosure by companies to determine the true value. The first three columns show data needed to accurately calculate the tax take that could be estimated from disclosures. Here we use data from publicly available sources.

Note we use a range of extremely conservative assumptions here. Simply switching Time spent on digital to 6 and taking the $20 value per user hour already easily gets one to $100mn in revenue.

Time spent on digital (US)	Number of users (CA)	Assumed value per user hour ($)	Total value (Mns)	Tax amount (Mns)			
				5.0%	7.5%	10.0%	15.0%
2.3	28,620,517	5.0	120,135	6,007	9,010	12,013	18,020
		10.0	240,269	12,013	18,020	24,027	36,040
		15.0	360,404	18,020	27,030	36,040	54,061
		20.0	480,538	24,027	36,040	48,054	72,081

**Time spent and number of users from consumer data providers GWI, adjusted for California based on population. Similar to estimates by the Pew Research center: https://www.pewresearch.org/internet/2021/04/07/social-media-use-in-2021/. Pew reports that 7 out of 10 Americans use social media, so this assumes 70% of the US population (roughly 350m in 2024) use it each day. Note these estimates are for social media usage. Overall digital services usage including browsing the web, streaming as well as social media is likely to be much higher (other sources suggest this could be 6-7 hours a day; https://ourworldindata.org/grapher/daily-hours-spent-with-digital-media-per-adult-user).*

Digital services/goods tax

We use Bureau of Economic Analysis (BEA) industry data to provide a rough approximation of tax revenue. We assume that BEA industry 511 – publishing industries, except internet (includes software) represents digital goods. We assume that BEA industry 514 – Data processing, internet publishing, and other information services represents digital services. Rough comparison with applicable NAICS industry codes look similar and thus corroborate this mapping.

For our purposes here, we focus on sales/receipts or revenue taxes so we examine the gross output tables, since this is principally a measure of sales or receipts, and it's roughly equal to the market value of the products an industry sells. However, regional accounts only include personal income (similar to GDP). Therefore we use US gross output values and split out by population.

Note there is considerable uncertainty on whether digital goods and services precisely sit within these classifications and to effectively tax digital goods and services new data collection would be needed.

The following table provides the CA total revenue estimates for these industries and illustrative tax takes based on a range of taxation rates. Note it is not possible to include progressive thresholds here.

Type	NAICS Approximation	Gross Output by Industry (Nominal, CA, mns)				Illustrative tax takes (2023)			
		2020	2021	2022	2023	0.5%	1.0%	2.0%	4.0%
Digital goods	Publishing industries, except internet (includes software)	53,186	58,762	65,610	70,744	354	707	1,415	2,830
Digital services	Data processing, internet publishing, and other information services	64,000	77,903	85,985	91,278	456	913	1,826	3,651

Appendix 3 – Digital Sales Tax Examples

Digital Sales Tax Proposals that have succeeded in the U.S.

State & Law/Bill	Tax Rate	Notes
Arkansas	6.5%	Digital games are exempt; other digital products are taxable. Specified Digital products include digital audio works, digital audio-visual works, digital books, and digital code.
Connecticut	1%	Digital goods and data processing services are taxed in the same way.
Colorado	2.9%	Tangible personal property includes digital goods that are delivered or stored by digital means, including, but not limited to, video, music, or electronic books. The method of delivery does not impact the taxability of a sale of tangible personal property.
Georgia	4%	"Specified digital products" means digital audio-visual works, digital audio works, or digital books.
Idaho	6%	Digital products are goods that are delivered or accessed electronically, usually through the internet. Media streaming services and eBooks usually fall into this category.
Indiana	7%	Digital products are taxed as "tangible personal property" and include prewritten computer software.
Kentucky	6%	Digital property regardless of whether "The purchaser has the right to permanently use the property; The purchaser's right to access or retain the property is not permanent; or The purchaser's right of use is conditioned upon continued payment;"
Louisiana	4.45%	Digital products are taxed as "tangible personal property."
Maryland	6%	"Digital product" means a product that is obtained electronically by the buyer or delivered by means other than tangible storage media through the use of technology having electrical, digital, magnetic, wireless, optical, electromagnetic, or similar capabilities.
Maine	5.5%	Rate for all tangible personal property.
Mississippi	7%	"Specified digital products" are electronically transferred digital audiovisual works, digital audio works, and digital books.
Nebraska	5.5%	Digital audio works, digital audio visual work, digital books. See guidance.
New Jersey	6.625%	New Jersey imposes a tax on the retail sale of specified digital products and on receipts for installing, maintaining, servicing, or repairing specified digital products.
North Carolina	6.75%-7%	The general State, applicable local, and applicable transit rates of sales and use tax apply to the sales price of certain digital property that is sold at retail. The tax applies regardless of whether the purchaser of the property has the right to use it permanently or to use it without making continued payments.

New Mexico	4.63%	Digital goods are generally subject to New Mexico gross receipts tax.
Ohio	5.75%	Specified digital products are taxable whether rented or owned.
Pennsylvania	6%	The commonwealth's 6% sales and use tax applies to the purchase of digital products delivered to a customer electronically, digitally, or by streaming
Rhode Island	7%	Specified digital products are subject to Rhode Island sales and use tax as of October 1, 2019. Taxable products include digital movies, digital TV shows, digital books, digital music, and related items that are streamed or downloaded to computers, phones, or other devices, as well as subscriptions to streaming audio and streaming visual products.
Tennessee	7%	The sale, lease, licensing, and use of digital audio-visual works, digital audio works, and digital books are subject to sales and use tax. This group of products is referred to as specified digital products.
Texas	6.25%	Digital goods are taxable in Texas when the items would be taxable if delivered in physical form. Per Texas Code Sec. 151.010, the sale or use of a taxable item in electronic form instead of on physical media does not alter the item's tax status.
Utah	4.85%	Products transferred electronically are subject to Utah sales tax.
Vermont	6%	Digital downloads, including remotely accessed prewritten software, are generally taxable. Digital videos are also taxable, but digital photographs are exempt.
Wisconsin	5%	Wisconsin sales and use tax generally applies to the sales of and the storage, use, or other consumption in Wisconsin of "specified digital goods," "additional digital goods," and "digital codes." However, specified digital goods are exempt if the sale of such goods in tangible form is exempt.
Wyoming	4%	Digital products and digital codes delivered electronically are subject to Wyoming sales tax when transferred to the purchaser for permanent use. Digital products include but aren't limited to software, music, video, reading materials, or ringtones.
Washington	6%	Sales and use tax applies to all digital products, regardless of how they're accessed or whether the purchaser obtains a permanent or nonpermanent right of use.
Washington DC	6.5%	Sales tax applies to digital audiovisual works, digital audio works, digital books, digital codes, digital applications and games, and any other otherwise taxable tangible personal property electronically or digitally delivered, whether electronically or digitally delivered, streamed, or accessed and whether purchased singly, by subscription, or in any other manner, including maintenance, updates, and support.

Appendix 4 – Digital Services Tax Examples

The table below provides an overview of digital services tax proposals that are currently in effect, ongoing, or have failed as of September 2024.

State & Law/Bill	Tax Rate	Tax Base	Threshold	Notes	Status
Maryland Digital Advertising Gross Revenue Tax	From 2.5% (min $100 million global annual gross revenues) to 10% (over $15 billion global annual gross revenues)	Annual gross revenues derived from digital advertising services in Maryland.	$100 million global annual revenue	Tax does not apply to non-digital advertising.mary	In effect
New York S1124 (2021)	2.5% to 10%	Annual gross revenue from digital ad services in the state.	$100 million of global annual gross revenues	Tax does not apply to non-digital advertising.	Stalled in committee
Connecticut HB6187	10%	Annual gross revenues from digital advertising services in Connecticut.	$10bn in annual worldwide gross revenues	Tax does not apply to non-digital advertising.	Died in committee
Indiana HB1312 (2021) and SB 372 (2022)	7% plus $1/ user in a calendar year.	Annual gross revenues from social media advertising in Indiana.	More than 1 million active Indiana account holders and annual gross revenue derived from social media ad services in Indiana of at least $1 million.	Tax does not apply to non-digital advertising.	Introduced — dead
Texas HB 4467 (2021)	2.5% to 10%	Annual gross revenues from social media advertising in the State.	At least $1 million and gross revenue for the reporting period at least $100 million.	Tax does not apply to non-digital advertising.	Introduced — dead

Tennessee SB 1899 (2024)	9.5%	Annual gross revenues derived from data transactions from digital advertising services in the state.	At least $50 million in annual gross revenues derived from advertising services in the state in a calendar year.	Tax does not apply to non-digital advertising.	Withdrawn
Montana HB 363	10%	Annual gross revenues from digital ad services in Montana.	$25 million of worldwide annual gross revenue from digital advertising.	Tax does not apply to non-digital advertising.	Failed
California AB 2829 (2023)	5%	Annual gross revenues derived from digital advertising services in California.	Minimum $100 million in global annual gross revenue.	Tax does not apply to non-digital advertising.	Ongoing
California SB1327	7.25%	Gross receipts derived from data extraction transactions.	Minimum $2.5 billion in gross receipts derived from data extraction.	"Data extraction transaction" defined as "transaction where the taxpayer sells user information or access to users to advertisers, and engages in a barter by providing (partially) free services to the user.	Ongoing
West Virginia V SB 605	2.5-10%	Annual digital ad revenues	Top tax rate: 10% of the assessable base for a party with global annual gross revenues exceeding $15,000,000,000.	Tax does not apply to non-digital advertising.	Ongoing
West Virginia S605 (2021)	2.5% to 10%	Annual gross revenues derived from digital ad services in the state.	$100 million of global annual gross revenues	Tax does not apply to non-digital advertising.	Stalled in committee

Nebraska LB1310 and LB 1354 (2024)	7.5%	Portion of gross advertising revenue derived from sales to customers in Nebraska which are delivered or provided to a location within Nebraska.	At least $1billion of annual combined gross advertising revenue.	Tax does not apply to non-digital advertising.	Indefinitely postponed
Massachu-setts H3081 (2021) and H2894	5% to 15%	Annual gross revenues from digital ad services in MA.	$100 thousand in annual gross revenues from digital ad services.	The tax does not apply to non-digital advertising. // H2984 would be a specific excise tax on local revenues from digital ads.	Stalled in committee

International Examples

The table below provides a non-exhaustive overview of digital services tax currently implemented or proposed outside of the United States.

Country	Tax Rate	Scope	Global Revenue Threshold	Domestic Revenue Threshold	Status
Austria	5%	Online advertising	EUR 750 million	EUR 25 million	Implemented
Belgium	3%	Selling of user data, selling advertising space on a digital platform, and digital intermediation services	EUR 750 million	EUR 5 million	Proposed
Czech Republic	5%	Online advertising, transmission of user data, digital interface to facilitate the provision of supplies of goods and services	EUR 750 million	CZK 100 million	Proposed
Denmark	2% (3% sur-charge)	On-demand, audio-visual media service providers	-	DKK 15 million	Implemented
France	3%	Provision of a digital interface and advertising services based on users' data	EUR 750 million	EUR 25 million	Implemented
Hungary	8%	Advertising revenue	-	HUF 100 million	Implemented
Italy	3%	Advertising on a digital interface, multilateral digital interface that allows users to buy/sell goods and services, and transmission of user data generated from using a digital interface	EUR 750 million	EUR 5.5 million	Implemented
Poland (PL)	2%	Audiovisual media service and audiovisual commercial communication	-	-	Implemented
Portugal	4%, 1%	Audiovisual commercial communication on video-sharing platforms (4%), subscriptions for video-on-demand services	-	-	Implemented
Spain	3%	Online advertising services, sale of online advertising, and sale of user data	EUR 750 million	EUR 3 million	Implemented
Switzerland	4%	Gross income generated in Switzerland from streaming or television services	-	CHF 2.5 million	Implemented
Turkey	8%	Online services including advertisements, sales of content, and paid services on social media websites	EUR 750 million	TRY 20 million	Implemented
United Kingdom	2%	Social media platforms, Internet search engines, Online marketplace	GBP 500 million	GBP 25 million	Implemented

Appendix 5 — Data Mining/User Fee Examples

The table below provides an overview of digital mining/user fee proposals that are currently in effect, ongoing, or have failed as of September 2024.

State & Law/Bill	Tax Rate	Tax Base	Threshold	Notes	Status
New York Data Mining Tax S4959	$0.05 per individual per month, increasing depending on the number of NY customers	Number of NY consumers subject to the collection of data.	Collecting data over 1 million New Yorkers in a month	Tax applies to commercial data collectors only, both online and offline.	Signed by Governor
Washington HB 1303	1.8%	Annual gross income of the business	Engaging in the sales of personal data or exchanging personal data for consideration. Tax is equal to the gross income of the business multiplied by the rate of 1.8%.	The tax applies to both online and offline data sales/ exchanges.	Stalled
DC Tax Revision Commission	$4/consumer	"tax on businesses that are extracting data from D.C. residents at an annual rate of $4 per participant."	Any company extracting data from over 50,000 DC residents.	Is not a general tax on digital services.	Recom-mended
Illinois Commercial Data Collector Tax (2023 — proposed)	Progressive, from $0.5/ consumer/month to $2,250,000 per month plus $.5 per consumer per month (for collectors with +10 million consumers in the state.	Progressive tax based on number of consumers in the state.	Excise tax on the collection of Illinois consumer data by "commercial data collectors" that impacts data used for ad/marketing.	Digital and non-digital.	In committee

Appendix 6 — General Advertising Tax examples

The table below provides an overview of general advertising tax proposals that are currently in effect, ongoing, or have failed as of September 2024.

State & Law/Bill	Tax Rate	Tax Base	Threshold	Notes	Status
New Mexico	4.8%	Annual gross receipts of a website/app provider from any advertising on a website/app when the website/app may be accessed/viewed in New Mexico.	$100,000 taxable gross receipts threshold.	The reporting location for gross receipts is the business location of the digital platform provider The tax applies to both online and offline data sales/ exchanges. The new rules extended the existing gross receipts tax, which is already applicable to print, billboard, radio, and television ads, to digital advertising.	In effect
Nebraska Advertising Services Act LB1354	7.5%	Assessable base means the portion of gross advertising revenue that is derived from sales to customers where services are delivered within Nebraska.	Ad services in the state with over $1bn in US revenue.	Digital advertising services means advertising services on a digital interface. The term includes advertisements in the form of banner advertising, search engine advertising, interstitial advertising, and other comparable advertising services.	Indefinitely postponed