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Transacting in Data: Tax, Privacy, and the New Economy

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TRANSACTING IN DATA: TAX, PRIVACY, AND THE NEW ECONOMY

ADAM B. THIMMESCH[†]

ABSTRACT

The technological developments of recent decades have allowed companies to collect staggering amounts of consumer data by offering “free” access to digital products like search engines and social-media platforms. Scholars in a variety of fields recognize that this practice represents a new type of market exchange, but our tax laws and tax scholars have thus far ignored this aspect of the new economy. That inattention means that transactions in data currently benefit from an implicit exemption from tax. This Article brings light to that issue by providing the first analysis of the relationship between the personal-data market and our domestic tax instruments. That analysis shows that personal-data transactions do fit within those tax instruments, but that several factors will prevent them from actually being taxed. The resulting tax preference for data creates a distortion in the market that results in lost tax revenue and that undermines efforts to reform the personal-data market to better account for individual privacy interests. This Article considers those issues and concludes by urging the recognition of the tax preference for data in the broader U.S. regulatory structure related to data and personal privacy.

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[†] Assistant Professor of Law, University of Nebraska College of Law. I would like to thank the participants at the 2015 Junior Tax Scholars’ Conference, at the 2015 Southeastern Association of Law Schools Annual Conference, and at the 2015 Big Ten Junior Faculty Conference for their helpful comments and suggestions. I am also greatly appreciative of the generous comments given by participants at multiple workshops at the University of Nebraska College of Law. All errors and omissions are my own.

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INTRODUCTION

The modern Internet ecosystem is largely built on the collection, analysis, and monetization of consumer data. The business model popularized by companies like Facebook and Google operates by offering consumers access to desirable digital products in exchange for the opportunity to collect their personal information. Google, for example, provides access to its search engine, Gmail, and Google Docs without charging a cash fee. Instead, it makes money by monitoring consumers' use of those products and by using the resulting data to sell targeted advertising.¹ Of course, Google is just the tip of the iceberg. Individuals now create data for a wide range of companies in every industry and of every size. Consumer information is the fuel of the “big data” era.²

1. See *Privacy Policy*, GOOGLE.COM, <https://www.google.com/policies/privacy/> (last modified Aug. 29, 2016) (indicating that Google “use[s] various technologies to collect and store information when you visit a Google service” for purposes such as generating advertising revenue); *Privacy: Your Data*, GOOGLE.COM, <https://privacy.google.com/data-we-collect.html> (last visited Aug. 31, 2016) (indicating that Google “store[s] and protect[s] what you create using [its] services”); see also ANNA BERNASEK & D. T. MONGAN, *ALL YOU CAN PAY: HOW COMPANIES USE OUR DATA TO EMPTY OUR WALLET* 61–66 (2015) (discussing Google’s scanning practices with respect to its Gmail service).

2. Some uses of those data are positive and some are negative. Just as data can improve how we address problems in the energy and health sectors, they can be used to discriminate against individuals or to exploit their personal psychological traits to sell them more widgets. Michael Mattioli, *Disclosing Big Data*, 99 MINN. L. REV. 535, 539–44 (2014) (discussing the potential benefits of big data); Lior Jacob Strahilevitz, *Toward a Positive Theory of Privacy Law*, 126 HARV. L. REV. 2010, 2021–31 (2013) (discussing the information that is gleaned from the collection of data); Omer Tene & Jules Polonetsky, *Big Data for All: Privacy and User Control in the Age of Analytics*, 11 NW. J. TECH. & INTELL. PROP. 239, 243–56 (2013) (discussing the range of potential costs and benefits of

This market reality is well known by technologists and privacy scholars who have long recognized that data function as an asset, or even as a currency, in today's world.³ These scholars accept that the digital products of today's economy are not free even though they are provided without a cash charge. Instead, consumers buy access to those products with their data.⁴ Some analysts even explicitly characterize this practice as a new form of barter transaction.⁵

The recognition of this market reality and the growth and proliferation of the market in personal data have spawned a significant literature regarding the intersection of personal data, privacy, and the Internet.⁶ Scholars have also evaluated the impact of this data economy on our nation's consumer-protection and antitrust laws.⁷ Others have looked at

big data); Adrienne LaFrance, *People's Deepest, Darkest Google Searches Are Being Used Against Them*, ATLANTIC (Nov. 3, 2015), <http://www.theatlantic.com/technology/archive/2015/11/google-searches-privacy-danger/413614>.

3. WORLD ECON. FORUM, PERSONAL DATA: THE EMERGENCE OF A NEW ASSET CLASS 18–19 (2011) [hereinafter WORLD ECON. FORUM, PERSONAL DATA], http://www3.weforum.org/docs/WEF_ITTC_PersonalDataNewAsset_Report_2011.pdf; WORLD ECON. FORUM, RETHINKING PERSONAL DATA: STRENGTHENING TRUST 7 (2012) [hereinafter WORLD ECON. FORUM, TRUST], http://www3.weforum.org/docs/WEF_IT_RethinkingPersonalData_Report_2012.pdf; James C. Cooper, *Privacy and Antitrust: Underpants Gnomes, the First Amendment, and Subjectivity*, 20 GEO. MASON L. REV. 1129, 1130 (2013). The role of personal data in the new economy has been long recognized. See JOHN HAGEL III & MARC SINGER, NET WORTH: SHAPING MARKETS WHEN CUSTOMERS MAKE THE RULES, at xiii (1999) (“In many respects, we are moving from an era of competition on the Internet, which represented the battle for traffic, into a new era in which the defining battle is that for customer profiles. The winners and losers in this new era will be determined by who has rights to on-line [sic] customer profiles.”).

4. See, e.g., Cooper, *supra* note 3, at 1129–31; Chris Jay Hoofnagle & Jan Whittington, *Free: Accounting for the Costs of the Internet's Most Popular Price*, 61 UCLA L. REV. 606, 608 (2014).

5. 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); Tene & Polonetsky, *supra* note 2, at 255. This recognition goes well beyond the academe. See Brad Meehan, *Responsible Personalization: How Brands Can Build Trust with Consumers*, ADVERTISINGAGE (Aug. 7, 2015), <http://adage.com/article/digitalnext/responsible-personalization-brands-build-trust/299843/AdvertisingAge> (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”); Press Release, Canadian Council of Pub. Relations Firms, Personal Data and Brand Trust: A Modern-Day Barter System (July 15, 2015, 16:08), <http://www.prnewswire.com/news-releases/personal-data-and-brand-trust-a-modern-day-barter-system-515487331.html> (discussing consumers' willingness to barter with their data); Doug Laney, *The (Possible) Tax Advantages of Bartering with Information*, GARTNER BLOG NETWORK (Aug. 10, 2014), <http://blogs.gartner.com/doug-laney/the-possible-tax-advantages-of-bartering-with-information/>.

6. See, e.g., Julie E. Cohen, *Examined Lives, Informational Privacy and the Subject as Object*, 52 STAN. L. REV. 1373, 1374–75 (2000); James P. Nehf, *Recognizing the Societal Value in Information Privacy*, 78 WASH. L. REV. 1, 1–4 (2003); Scott R. Peppet, *Unraveling Privacy: The Personal Prospectus and the Threat of a Full-Disclosure Future*, 105 NW. U. L. REV. 1153, 1154–56 (2011); Paula Samuelson, *Privacy as Intellectual Property?*, 52 STAN. L. REV. 1125, 1126–28 (2000); Paul M. Schwartz, *Privacy and Democracy in Cyberspace*, 52 VAND. L. REV. 1609, 1610–13 (1999); Schwartz, *supra* note 5, at 2056–59; Daniel J. Solove, *Conceptualizing Privacy*, 90 CALIF. L. REV. 1087, 1088–90 (2002); Tene & Polonetsky, *supra* note 2, at 240–41.

7. See, e.g., Ryan Calo, *Consumer Subject Review Boards: A Thought Experiment*, 66 STAN. L. REV. ONLINE 97, 97–100 (2013) (discussing consumer privacy law and big data); Cooper, *supra* note 3, at 1129–30 (discussing privacy considerations in antitrust issues); Hoofnagle & Whittington,

the impact of this use of data on our Fourth Amendment protections.⁸ Notwithstanding this vast literature and the broad recognition of the role of data as an asset in today's economy, however, the market for personal data has been virtually invisible to our tax system and to our tax scholars. The only meaningful analyses of the tax consequences of the personal-data economy have occurred in the international arena, but those analyses have largely focused on the digital economy, writ large, rather than on the specific impact of the use of data in that economy.⁹ They have also focused narrowly on the ability of firms to shift value to jurisdictions with low or no tax and the resulting impact on the global allocation of the corporate income-tax base.¹⁰ That more limited focus has meant that some very basic questions have gone unexplored. Are personal-data transactions taxable events under U.S. tax laws? If so, would it be possible to tax them? Should we tax them? Are there consequences that stem from not taxing them?

The failure to consider these questions is remarkable. The personal-data market is one in which nearly every U.S. taxpayer is taking part and one from which they derive great value. The unique aspects of the personal-data economy also raise critical questions regarding the design of our tax systems for the future. The purpose of this Article is to explore those issues by analyzing how the personal-data economy intersects with the U.S. tax system. Doing so serves several purposes. First, it introduces the tax community and tax scholarship to the personal-data market. Second, it introduces tax considerations to those evaluating the personal-data market. Finally, it evaluates the dynamic relationship between the tax and data worlds. In that vein, it demonstrates how the personal-data market is escaping and undermining our domestic tax instruments and how we might change those tax instruments to compensate. It also evaluates how our taxes might impact the evolution of the personal-data market. To the extent that the current system provides a tax preference for the use of data,¹¹ that tax preference might well work as a tax penalty on the development of a data market that is more protective of individual

supra note 4, at 657–59 (evaluating consumer-protection and privacy issues); John M. Newman, *Antitrust in Zero-Price Markets: Foundations*, 164 U. PA. L. REV. 149, 151–52 (2015) [hereinafter Newman, *Zero-Price*] (discussing antitrust issues in “zero-price markets”); Nathan Newman, *Search, Antitrust, and the Economics of the Control of User Data*, 31 YALE J. ON REG. 401, 402–05 (2014) (evaluating antitrust implications in Google’s use of user data).

8. See generally Orin S. Kerr, *Applying the Fourth Amendment to the Internet: A General Approach*, 62 STAN. L. REV. 1005 (2010); Orin S. Kerr, *The Fourth Amendment and New Technologies: Constitutional Myths and the Case for Caution*, 102 MICH. L. REV. 801 (2004); Daniel J. Solove, *Digital Dossiers and the Dissipation of Fourth Amendment Privacy*, 75 S. CAL. L. REV. 1083 (2002) [hereinafter Solove, *Digital Dossiers*]; Daniel J. Solove, *Reconstructing Electronic Surveillance Law*, 72 GEO. WASH. L. REV. 1264 (2004). See also Omer Tene, *What Google Knows: Privacy and Internet Search Engines*, 2008 UTAH L. REV. 1433, 1470–72 (2008).

9. See *infra* Section II.A (discussing recent reports published by the Organization for Economic Co-operation and Development and researchers hired by the French government).

10. See *infra* Section II.A.

11. A “tax preference” in this context means a tax-favored status in the form of an implicit tax exemption for transactions involving data. See *infra* Section III.B.

privacy interests. This Article is therefore important both for those interested in tax policy and for those interested in the structure and evolution of the personal-data economy. The two are inextricably intertwined, for better or for worse.

This Article proceeds in three main Parts. Part I provides background information on the personal-data market and the existing non-tax analyses of that market. Part II then looks at how the international tax community has analyzed personal-data exchanges and at how those exchanges should be characterized for domestic tax purposes. It disagrees with the construct that the international community has adopted and argues that a market-exchange model is appropriate. It then analyzes the theoretical tax consequences of that characterization and evaluates the practical impediments that will prevent the taxation of those transactions under that construct. The conclusion of that analysis is that there is, and will likely continue to be, a tax preference for the use of data as a currency.

Part III turns to the available options for addressing the unavoidable intersection between tax, privacy, and the personal-data economy. It first looks at how we might either (1) modify our current tax instruments to best ameliorate the tax preference for data, or (2) use new tax instruments to address that preference or to promote beneficial data practices. That analysis necessarily evaluates the tax system against the current personal-data economy. This Article also, however, examines how our tax systems will likely impact the data economy of the future. It discusses several current movements to modify the personal-data economy to better account for individuals' privacy interests and analyzes how they interact with the current personal-data tax exemption. Part III calls for a more comprehensive approach to privacy and data regulation in the United States, and Part IV concludes.

I. BACKGROUND

A. *The Personal-Data Market*

Data collection is ubiquitous in today's society. The technological advancements of recent decades have allowed companies to collect and monetize a staggering amount of data on individual consumers. We now create data when we go online, drive, exercise, turn on the lights, and even wash our clothes.¹² The data market is not new, of course. Compa-

12. See, e.g., THERESA M. PAYTON & THEODORE CLAYPOOLE, *PRIVACY IN THE AGE OF BIG DATA* 77, 87, 127–28, 173–74 (2014); Scott R. Peppet, *Regulating the Internet of Things: First Steps Toward Managing Discrimination, Privacy, Security, and Consent*, 93 *TEX. L. REV.* 85, 98–104, 108, 112, 114–15, 117 (2014) (discussing the extensive data created by the “Internet of Things”); Kyle Vanhemert, *This Brilliant Washing Machine Is a Roadmap for the Internet of Things*, *WIRED* (Apr. 7, 2014, 6:30 AM), <http://www.wired.com/2014/04/this-brilliant-internet-connected-washer-is-a-roadmap-for-the-internet-of-things/>.

nies have long collected consumer data like names, addresses, and telephone numbers. The data collection of today's economy is simply more efficient and varied. Instead of asking consumers to fill out notebooks tracking their television viewing habits, for example, consumers are directly tracked through their cable boxes.¹³ Similarly, Internet Service Providers and websites can collect consumer data as individuals use the Internet.¹⁴ Retailers also directly track consumer behavior through the use of store loyalty cards and checkout scanners.¹⁵

This modern data collection serves many different functions. There are some data aggregators that collect data only to resell it. Those firms, often referred to as data brokers, gather data directly from consumers, from other data aggregators, or from publicly available sources and then sell access to those data to other firms.¹⁶ There are also some data aggregators that collect and use customer data solely to better market their own products. For example, a local grocery store might collect data simply to better understand its customers and how they respond to coupons or sales. One of the most significant data-collection practices in the modern economy is done by businesses whose activities fall somewhere between these two extremes. That type of data collection occurs as part of a multi-sided platform and is the business model used by companies like Google and Facebook.

13. Shalini Ramachandran & Suzanne Vranica, *Comcast Seeks to Harness Trove of TV Data*, WALL STREET J. (Oct. 20, 2015, 5:30 AM), <http://www.wsj.com/articles/comcast-seeks-to-harness-trove-of-tv-data-1445333401>; *Time Warner Cable Subscriber Privacy Notice*, TIME WARNER CABLE (Apr. 2016), http://help.twcable.com/twc_privacy_notice.html (indicating that the company collects many types of data from subscribers, including "the programs, features and services" that they use).

14. LORI ANDREWS, *I KNOW WHO YOU ARE AND I SAW WHAT YOU DID: SOCIAL NETWORKS AND THE DEATH OF PRIVACY* 19 (2012) (discussing a lawsuit against an internet service provider that allowed the monitoring of its subscriber's internet usage); PAYTON & CLAYPOOLE, *supra* note 12, at 189–91, 205–06; *see also* Solove, *Digital Dossier*, *supra* note 8, at 1098–1100 (discussing the ramifications of the collection of personal information by, among others, cable companies and Internet Service Providers on the government's ability to gather information); *Privacy Policy*, NETZERO.NET, <https://www.netzero.net/start/landing.do?page=www/legal/privacy#I> (last updated Nov. 12, 2014) (listing the vast amounts of information collected by the company including a user's browser, software on computers and mobile devices, processor type, operating system, IP address, websites visited, and location data); *Website Privacy Policy*, TIME WARNER CABLE, <https://www.timewarnercable.com/en/our-company/legal/privacy-policy.html> (last updated Sept. 2012) (noting that the company collects information on the websites that customers visit, their IP addresses, computer hardware and software, and "other Web usage activity and data," among other classes of data).

15. BERNASEK & MONGAN, *supra* note 1, at 76–79; Timothy R. Graeff & Susan Harmon, *Collecting and Using Personal Data: Consumers' Awareness and Concerns*, 19 J. CONSUMER MARKETING 302, 304 (2002) (discussing the use of store loyalty cards to collect personal data).

16. FED. TRADE COMM'N, *DATA BROKERS: A CALL FOR TRANSPARENCY AND ACCOUNTABILITY* 1–3 (May 2014), <https://www.ftc.gov/system/files/documents/reports/data-brokers-call-transparency-accountability-report-federal-trade-commission-may-2014/140527databrokerreport.pdf> (discussing the data-broker industry). The data-broker industry includes companies like Acxiom, which licenses business data (e.g., names, telephone numbers, business classification code, location information, etc.) and personal residential data (e.g., telephone numbers, names, addresses, mobile use, etc.). *See Business Data*, ACXIOM, <http://www.databyacxiom.com/business-data.html> (last visited Aug. 29, 2016); *Residential Data*, ACXIOM, <http://www.databyacxiom.com/residential-data.html> (last visited Aug. 29, 2016).

The multi-sided platform is at the heart of the digital economy and is defined by a business that serves two distinct but complementary customer bases: (1) consumers who use a digital product, and (2) advertisers who pay for access to those consumers.¹⁷ Google, for example, provides a wide range of products to consumers, including its e-mail service, digital mapping software, online word-processing software, web browser, search engine, social-media sites, and media offerings.¹⁸ Instead of charging users a cash fee for access to those services, it collects data from them, and it uses those data to sell targeted advertising.¹⁹ It thus uses one side of its business model, the provision of digital goods to consumers, to facilitate another side of its business model, the generation of advertising income.

The importance of this business model is reflected in Google's financial performance. In 2015, Google derived approximately 90% of its revenue, over \$67 billion, from advertising.²⁰ This has led some to opine that Google's product is actually its users and not its digital software offerings.²¹ Google is not alone in this of course. Popular social-media platforms like Facebook, Twitter, and Instagram all operate in the same way. They offer "free" products but generate revenue by collecting and monetizing users' information. Other websites, like many news websites, operate similarly, with customer data and advertising as the revenue drivers.²²

17. See David S. Evans, *Antitrust Issues Raised by the Emerging Global Internet Economy*, 102 NW. U. L. REV. 1987, 1994–96 (2008) (discussing the multisided platform).

18. *Products*, GOOGLE.COM, <http://www.google.com/about/products/> (last visited Aug. 29, 2009).

19. Evans, *supra* note 17, at 1997–2002 (discussing Google's advertising revenue and business model).

20. Alphabet Inc. & Google Inc., Annual Report (Form 10-K) (Feb. 11, 2016) [hereinafter Google Annual Report], <https://www.sec.gov/Archives/edgar/data/1288776/000165204416000012/goog10-k2015.htm> (reporting that approximately \$67 billion of Google's \$75 billion in revenue in 2015 resulted from advertising). This has led some to the conclusion that individual users are Internet companies' products, rather than their customers.

21. PAYTON & CLAYPOOLE, *supra* note 12, at 33–34 ("In most instances, when you use free services, what's really for sale is you and all the digital data nuggets you provide when you use the service."); Scott Goodson, *If You're Not Paying for It, You Become the Product*, FORBES (Mar. 5, 2012, 12:34 PM), <http://www.forbes.com/sites/marketshare/2012/03/05/if-youre-not-paying-for-it-you-become-the-product/> ("If you're not paying for it; you are the product." (citation omitted)); Jonathan Zittrain, *Meme Patrol: "When Something Online is Free, You're Not the Customer, You're the Product,"* HARV. BLOGS: FUTURE OF THE INTERNET (Mar. 21, 2012), <http://blogs.law.harvard.edu/futureoftheinternet/2012/03/21/meme-patrol-when-something-online-is-free-youre-not-the-customer-youre-the-product/> (exploring the source of this sentiment).

22. Some online newspapers have even started using so-called "survey walls" to collect data as payment for access. Under the survey-wall method, a consumer is required to answer some basic research questions before she is granted access to a website. Unsurprisingly, Google is at the forefront of this method of data acquisition. PAUL McDONALD, MATT MOHEBBI & BRETT SLATKIN, GOOGLE INC., COMPARING GOOGLE CONSUMER SURVEYS TO EXISTING PROBABILITY AND NON-PROBABILITY BASED INTERNET SURVEYS 3, https://www.google.com/insights/consumersurveys/static/consumer_surveys_whitepaper_v2.pdf (last visited Sept. 18, 2016). Google even competes for this business by touting its ability to ask fewer questions of users because it can infer information about a respondent by using the respond-

The data being collected by these firms are often classified into three types—volunteered data, observed data, and inferred data.²³ Volunteered data are the data that consumers actively provide to data aggregators.²⁴ This can be their names, birthdays, addresses, places of work, and the things that they “like.”²⁵ Observed data include data that are gathered based on a consumer’s behaviors and activities and are collected without the knowledge or special effort of the consumer.²⁶ They are collected through the use of various technological tools, like cookies, flash cookies, browser fingerprinting, GPS tracking, deep packet inspection, and history sniffing.²⁷ Some companies are even tracking users through smartphone applications that “listen” for ultrasonic pitches that are embedded into television advertisements.²⁸ Given the variety of these data-collection tools, there are many different types of observed data. Those include information regarding what individuals purchase, the Internet links that they click on, what they search for, the Internet browser that they use, what music they listen to, how long they hover over articles or headlines, and the types of advertisements to which they respond.²⁹

The final category of data, inferred data, is comprised of data that can be inferred based solely on a consumer’s information profile.³⁰ For example, a data aggregator may be able to infer that an individual is

ent’s IP address and a cookie that it places on the respondent’s machine to track the respondent’s web history. *Id.*

23. WORLD ECON. FORUM, PERSONAL DATA, *supra* note 3, at 7.

24. *Id.* at 14.

25. Of course, some data that users contribute are not necessarily personal at all. When a user discloses a relationship or a meal with another person, for example, he or she discloses personal information of that other person as well. We could thus question how effectively the law can be tailored to allow individuals full control over their data or whether those data are really worthy of protection at all. See Michael Birnhack, *Reverse Engineering Informational Privacy Law*, 15 YALE J.L. & TECH. 24, 86 (2013) (recognizing that European Union (EU) privacy protections fail to take this issue into account); Steven L. Willborn, *Notice, Consent, and Nonconsent: Employee Privacy in the Restatement*, 100 CORNELL L. REV. 1423, 1423, 1425–27 (2015) (noting that some information is simply not “private” and worthy of legal protection).

26. WORLD ECON. FORUM, PERSONAL DATA, *supra* note 3, at 14.

27. Omer Tene & Jules Polonetsky, *To Track or “Do Not Track”?: Advancing Transparency and Individual Control in Online Behavioral Advertising*, 13 MINN. J.L. SCI. & TECH. 281, 288–89, 292–96, 298–99 (2012) (discussing these different online-tracking technologies).

28. Dan Goodin, *Beware of Ads That Use Inaudible Sound to Link Your Phone, TV, Tablet, and PC*, ARS TECHNICA (Nov. 13, 2015, 11:00 AM), <http://arstechnica.com/tech-policy/2015/11/beware-of-ads-that-use-inaudible-sound-to-link-your-phone-tv-tablet-and-pc/>.

29. See, e.g., WORLD ECON. FORUM, TRUST, *supra* note 3, at 18 (“Observed data is created as a result of a transaction between an individual and an organization—location data from a mobile phone, credit card transactions, purchase history at a retailer, etc.”); Ryan Calo, *Digital Market Manipulation*, 82 GEO. WASH. L. REV. 995, 1003–04 (2014) (providing a list of information that websites can collect from consumers); Andrew Griffin, *Facebook News Feed Algorithm to Track How Long Users Spend Reading Stories*, INDEPENDENT (June 15, 2015), <http://www.independent.co.uk/life-style/gadgets-and-tech/news/facebook-news-feed-algorithm-to-track-how-long-users-spend-reading-stories-10320715.html>; Steve Rosenbush, *Facebook Tests Software to Track Your Cursor on Screen*, WALL STREET J.: CIO J., (Oct. 30, 2013, 7:15 AM), <http://blogs.wsj.com/cio/2013/10/30/facebook-considers-vast-increase-in-data-collection/> (discussing the types of tracking that Facebook and other online websites perform).

30. WORLD ECON. FORUM, PERSONAL DATA, *supra* note 3, at 7, 14.

pregnant based on her recent web searches and her in-store purchases.³¹ It may also be able to determine a person's credit worthiness based upon whether he purchased felt pads for the bottom of the legs of his kitchen chairs.³² Inferred data thus represent a type of educated guess about an individual.

The different types of data collected and their different uses raise a number of questions regarding the personal-data market. These include whether consumers understand the implications of that market and whether consumers are being adequately compensated for their data. These aspects of the personal-data market have been explored in the technology and privacy literature as well as in the popular press. The following Section provides some background on that literature with a specific focus on how it has viewed the personal-data exchange and the evolution of the personal-data economy.

B. Existing Analyses of the Personal-Data Market

The scope and importance of the personal-data market is well known in the technology and privacy sectors. The World Economic Forum, for example, has a long-running project called "Rethinking Personal Data,"³³ which has resulted in a series of reports that evaluate the personal-data market and its impact on society.³⁴ Those reports broadly recognize that personal data has emerged as a new asset class that impacts our entire society.³⁵ They also recognize that personal data are becoming "a primary currency of the digital economy."³⁶ Other analysts repeat these observations. Some have gone so far as to call data the "lifeblood of the new economy,"³⁷ and there is a widespread recognition that personal data are being used as consideration for access to the digital products of today's economy.³⁸ Both academics³⁹ and the popular press⁴⁰ recognize

31. Charles Duhigg, *How Companies Learn Your Secrets*, N.Y. TIMES MAG. (Feb. 16, 2012), <http://www.nytimes.com/2012/02/19/magazine/shopping-habits.html>? (discussing how retailers use inferred data and relaying the remarkable story of the father who became aware that his high-school-aged daughter was pregnant when Target sent her coupons for baby-related items).

32. WORLD ECON. FORUM, PERSONAL DATA, *supra* note 3, at 14; Strahilevitz, *supra* note 2, at 2021.

33. WORLD ECON. FORUM, PERSONAL DATA, *supra* note 3.

34. *Id.*

35. *Id.* at 5.

36. *Id.* at 18.

37. PIERRE COLLIN & NICOLAS COLIN, TASK FORCE ON TAXATION OF THE DIGITAL ECONOMY 33 (Jan. 2013) [hereinafter FRENCH REPORT], http://www.hldataprotection.com/files/2013/06/Taxation_Digital_Economy.pdf; EUROPEAN DATA PROTECTION: COMING OF AGE 191 (Serge Gutwirth et al. eds., 2013); WORLD ECON. FORUM, TRUST, *supra* note 3, at 7; GEORGE O. M. YEE, PRIVACY PROTECTION MEASURES AND TECHNOLOGIES IN BUSINESS ORGANIZATIONS: ASPECTS AND STANDARDS 173 (2012); Anupam Chander & Uy en P. L e, *Data Nationalism*, 64 EMORY L.J. 677, 721 (2015); Schwartz, *supra* note 5, at 2069–70; Joe Callahan, *Data: The Oil in Today's New Economy*, FIRST INSIGHT: BLOG (July 17, 2015), <http://www.firstinsight.com/blog/data-the-oil-in-todays-new-economy>.

38. See, e.g., European Data Protection Supervisor, Preliminary Opinion on Privacy and Competitiveness in the Age of Big Data 8–10 (Mar. 2014), <https://secure.edps.europa.eu/EDPSWEB/webdav/site/mySite/shared/Documents/Consultation/Opini>

that access to “free” digital products online is not free at all, but that consumers pay for that access by relinquishing their data.⁴¹ Some analysts even recognize that consumers are involved in a new type of barter exchange.⁴²

The growth of this new type of personal-data exchange has led to broad discussions regarding the inherent tradeoffs between maintaining personal privacy and the benefits that individuals receive from disclosing their personal information.⁴³ Theoretically, consumers can make economically rational decisions to exchange their data or their privacy for access to digital products, and some scholars feel that government need

ons/2014/14-03-26_competition_law_big_data_EN.pdf; Schwartz, *supra* note 5, at 2056–57; Viviane Reding, Vice President, European Comm’n, Speech at the Innovation Conference Digital, Life, Design: The EU Data Protection Reform 2012: Making Europe the Standard Setter for Modern Data Protection Rules in the Digital Age (Jan. 22, 2012), http://europa.eu/rapid/press-release_SPEECH-12-26_en.htm (“Personal data is the currency of today’s digital market.”); Adam Fisch, *There’s a New Currency in Town and It’s Not the Malawian Kwacha or Azerbaijani Manat*, HUFFPOST TECH. U.K.: THE BLOG (Feb. 23, 2015, 11:04), http://www.huffingtonpost.co.uk/adam-fisch/new-currency_b_6721866.html; David Zax, *Is Personal Data the New Currency?*, MIT TECH. REV. (Nov. 30, 2011), <http://www.technologyreview.com/view/426235/is-personal-data-the-new-currency/>.

39. Hoofnagle & Whittington, *supra* note 4, at 608 (noting that “free” online services “carry a hidden charge: the forfeit of one’s personal information”); Juan Pablo Carrascal et al., *Your Browsing Behavior for a Big Mac: Economics of Personal Information Online 189* (May 13–17, 2013) (research paper prepared for the Twenty-Second International World Wide Web Conference), <http://www2013.wwwconference.org/proceedings/p189.pdf>; Christopher Riederer et al., *For Sale: Your Data by: You* (Nov. 14–15, 2011) (research paper prepared for the Tenth ACM Workshop Hot Topics in Networks (HotNets-X)), <http://www.cs.columbia.edu/~mani/hotnetsX-final85.pdf>.

40. For example, when Microsoft released Windows 10 in mid-2015, it provided the software to existing Windows customers without charge. Commentators had no trouble recognizing that the software was not actually free, but that consumers were paying for this new software with their data. Geoffrey A. Fowler, *Windows 10 Isn’t Spyware but It Wants Your Data*, WALL STREET J. (Aug. 5, 2015, 8:00 AM), <http://blogs.wsj.com/personal-technology/2015/08/05/windows-10-isnt-spyware-but-it-wants-your-data/>; Laurie Segall, *Your Private Data Pays for ‘Free’ Facebook and Google*, CNN MONEY (Jan. 28, 2011, 6:56 PM), http://money.cnn.com/2011/01/28/technology/google_data_privacy_day/; Natasha Singer, *Sharing Data, but Not Happily*, N.Y. TIMES (June 4, 2015), <http://www.nytimes.com/2015/06/05/technology/consumers-conflicted-over-data-mining-policies-report-finds.html>; Ben Wright, *Do You Want Free Facebook or a Say in Where Your Personal Data Are Stored? It’s Unlikely You Will Have Both*, TELEGRAPH (Oct. 7, 2015, 9:30 AM), <http://www.telegraph.co.uk/finance/newsbysector/mediatechnologyandtelecoms/digital-media/11915673/Do-you-want-free-Facebook-or-a-say-in-where-your-personal-data-is-stored-its-unlikely-you-will-have-both.html>.

41. A recent Pew Research Center study found that consumers did seem to understand that they were trading data for benefits. LEE RAINIE & MAEVE DUGGAN, PEW RESEARCH CTR., *PRIVACY AND INFORMATION SHARING 6–7* (2016), <http://www.pewinternet.org/2016/01/14/2016/Privacy-and-Information-Sharing/>.

42. See sources cited *supra* note 5.

43. See Laura Brandimarte & Alessandro Acquisti, *The Economics of Privacy*, in THE OXFORD HANDBOOK OF THE DIGITAL ECONOMY 547 (Martin Peitz & Joel Waldfogel eds., 2012) (discussing the “economics of privacy”); JOSEPH TUROW, MICHAEL HENNESSY & NORA DRAPER, ANNENBERG SCH. FOR COMM’N UNIV. OF PA., *THE TRADEOFF FALLACY 4–9* (2015), https://www.asc.upenn.edu/sites/default/files/TradeoffFallacy_1.pdf; Ryan Calo, *Privacy and Markets: A Love Story*, 91 NOTRE DAME L. REV. 649, 658 (2015); Jules Polonetsky & Omer Tene, *Privacy and Big Data: Making Ends Meet*, 66 STAN. L. REV. ONLINE 25, 26 (2013) (“Finding the right balance between privacy risks and big data rewards may very well be the biggest public policy challenge of our time.”).

not interfere to mandate particular data-protection practices.⁴⁴ Others, however, feel that individuals are not able to fully participate in the market for their data. They argue that informational asymmetries, behavioral biases, and structural problems in the data market prevent that market from functioning effectively.⁴⁵

Recent research tends to suggest that consumers are indeed unhappy with how their personal data are being collected and utilized.⁴⁶ Consumers have continued to allow that collection and use, however, because they have felt that they had to do so if they wanted to be fully engaged members of today's society.⁴⁷ That is beginning to change though, and there are significant efforts being directed toward modifying how Internet commerce is conducted. The Berkman Klein Center for Internet & Society at Harvard, for example, runs a project named ProjectVRM.⁴⁸ That project focuses on the concept of vendor relationship management (VRM) which is focused on making consumers empowered economic actors with respect to their data.⁴⁹ The project urges the development of technology that allows individuals to more fully control their own data and how others use those data.⁵⁰ The focus is on giving consumers control of their relationships with vendors instead of simply being economic units for vendors to capture.⁵¹ Consumers could do this if they could collect and control their own data, if they had the ability to selectively share those data, or if they could control the conditions under which others

44. See Brandimarte & Acquisti, *supra* note 43, at 552–55; Calo, *supra* note 43, at 655–57 (discussing these propositions).

45. See Alessandro Acquisti & Jens Grossklags, *Privacy Attitudes and Privacy Behavior*, in THE ECONOMICS OF INFORMATION SECURITY 165, 165–66 (L. Jean Camp & Stephen Lewis eds., 2004); Alessandro Acquisti & Jens Grossklags, *What Can Behavioral Economics Teach Us About Privacy?*, in DIGITAL PRIVACY 363, 364–65 (Alessandro Acquisti et al. eds., 2008); Brandimarte & Acquisti, *supra* note 43, at 555–57, 564; Calo, *supra* note 29, at 1013–15; Calo, *supra* note 43, at 650–51; A. Michael Froomkin, *Regulating Mass Surveillance as Privacy Pollution: Learning from Environmental Impact Statements*, 2015 U. ILL. L. REV. 1713, 1728–37 (2015); Daniel J. Solove, *Introduction: Privacy Self-Management and the Consent Dilemma*, 126 HARV. L. REV. 1879, 1880–81 (2013).

46. MARY MADDEN, PEW RESEARCH CTR., PUBLIC PERCEPTIONS OF PRIVACY AND SECURITY IN THE POST-SNOWDEN ERA (2014), <http://www.pewinternet.org/2014/11/12/public-privacy-perceptions/>; TUROW, HENNESSY & DRAPER, *supra* note 43, at 3.

47. TUROW, HENNESSY & DRAPER, *supra* note 43, at 4 (“[T]he larger percentages of people in the population who are resigned compared to people who believe in . . . tradeoffs . . . indicate that in the real world people who [exchange] their data [for benefits] are more likely to do it while resigned rather than as the result of cost-benefit analysis.”); see also Solove, *Digital Dossiers*, *supra* note 8, at 1158 (concluding that people would have to live “as Information Age hermits, without credit cards, banks, Internet service, phones and television” if they did not want to share their information with third parties).

48. *Project VRM*, BERKMAN KLEIN CTR., <https://cyber.law.harvard.edu/research/projectvrm> (last updated July 5, 2016).

49. *Id.* (vendor relationship management is in contrast to “customer relationship management,” which focuses on how vendors can best capture consumers).

50. See PROJECT VRM, http://cyber.law.harvard.edu/projectvrm/Main_Page (last updated Sept. 4, 2016).

51. DOC SEARLS, THE INTENTION ECONOMY: WHEN CUSTOMERS TAKE CHARGE 164–65 (2012).

could use their data.⁵² A number of digital products currently incorporate these VRM concepts.⁵³

One specific VRM-like proposal is to create cash markets in which individuals can sell their personal data. For example, noted author and computer scientist Jaron Lanier has suggested a world where individuals receive micro-payments each time their data are used.⁵⁴ Others focus on the development of personal-data banks or vaults where consumers store and sell access to their data.⁵⁵ Scholars have explored this type of market development by experimenting with cash markets for data in laboratory experiments.⁵⁶ Others have created, or are creating, firms that actually provide that service.⁵⁷ Some businesses also have developed platforms that provide compensation for data without using the data-bank model. The now-defunct social-media platform “tsu,” for example, shared its advertising revenue with users based on their activities on the site.⁵⁸ A similar platform, Bonzo Me, pays users 80% of the advertising revenue that is derived from their posts.⁵⁹

Those changes to the data economy are being explored as responses to generalized concerns regarding personal privacy, but they might also be compelled due to individuals’ increased use of technology that blocks tracking and online advertising.⁶⁰ Those actions directly undercut the advertising side of the multi-sided business model and could require that businesses move towards a cash-subscription model or a model that al-

52. *Id.*

53. *VRM Development Work*, PROJECT VRM, http://cyber.law.harvard.edu/projectvrm/VRM_Development_Work (last updated Oct. 4, 2016).

54. JARON LANIER, WHO OWNS THE FUTURE 317 (2013).

55. See Kenneth C. Laudon, *Markets and Privacy*, COMM. ACM, Sept. 1996, at 92, 99–100; Tom Simonite, *Sell Your Personal Data for \$8 a Month*, MIT TECH. REV. (Feb. 12, 2014), <http://www.technologyreview.com/news/524621/sell-your-personal-data-for-8-a-month/>.

56. See Christina Aperjis & Bernardo A. Huberman, *A Market for Unbiased Private Data: Paying Individuals According to Their Privacy Attitudes*, FIRST MONDAY (May 2012), <http://journals.uic.edu/ojs/index.php/fm/article/view/4013/3209#p1>; Riederer et. al., *supra* note 39, at 1; Jacopo Staiano et al., *Money Walks: A Human-Centric Study on the Economics of Personal Mobile Data I* (Sept. 13–17, 2014) (research paper prepared for the 2014 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp 2014)), <https://arxiv.org/pdf/1407.0566.pdf>.

57. *Consumers Could License Their Data*, WARC (Jan. 28, 2016), http://www.warc.com/LatestNews/News/Consumers_could_license_their_data.news?ID=36111; Zax, *supra* note 38. Companies that offer this service include DATACOU, <https://datacoup.com> (last visited Oct. 16, 2016), and PERSONAL BLACKBOX, <http://pbb.me/> (last visited Oct. 16, 2016).

58. TSU, <https://www.tsu.co/about> (last visited Jan. 27, 2016).

59. *What Can You Do on BonzoMe?*, BONZO ME (Sept. 17, 2014), <http://bonzome.com/what-can-you-do-on-bonzome/>.

60. See PAGEFAIR & ADOBE, THE COST OF AD BLOCKING: 2015 AD BLOCKING REPORT (2015), https://downloads.pagefair.com/wp-content/uploads/2016/05/2015_report-the_cost_of_ad_blocking.pdf; Ted McConnell, *Don't Let Viewers Renege on the Social Contract*, MEDIAPOST (Sept. 9, 2015, 12:17 AM), <http://www.mediapost.com/publications/article/257938/dont-let-viewers-renege-on-the-social-contract.html> (discussing ways to discourage ad-blocking); *With Ad Blocking Use on the Rise, What Happens to Online Publishers?*, NPR.ORG: ALL TECH CONSIDERED (July 20, 2015, 6:14 PM), <http://www.npr.org/sections/alltechconsidered/2015/07/20/424630545/with-ad-blocking-use-on-the-rise-what-happens-to-online-publishers>.

lows users to take more control of their data. Regardless of the approach taken, though, individuals will have to pay for their desired digital products one way or another. Along these lines, some have advocated for cash-subscription options for websites, including Facebook.⁶¹ Those individuals would rather pay with cash than with their data. One research firm even predicted that 2016 would be a “tipping point,” with more companies offering paid, ad-free subscription models.⁶²

In sum, it is clear that the personal-data market is of great economic importance and that it raises significant issues regarding personal privacy. The market is receiving considerable attention by consumers, privacy scholars, and technologists. It has thus far, however, gone largely unnoticed by our tax system and by our tax scholars. Part II of this Article remedies that omission.

II. PERSONAL-DATA TAXATION

The personal-data market is a critical part of today’s economy, but that market has largely escaped the attention of the tax community. The only real tax analysis of the personal-data market has been done by the international tax community in the context of reports regarding the taxation of the digital economy more broadly. This Section explores that analysis and discusses how transactions in data should be treated for U.S. tax purposes. The latter discussion includes analyses of (1) the theoretical tax consequences to individual consumers as data providers; (2) the theoretical tax consequences to businesses as data aggregators; and (3) the pragmatic factors that will impede the taxation of personal-data transactions as they occur today.⁶³

A. *The Personal-Data Market, the Digital Economy, and Global Taxation*

The modern economy presents many challenges for our global tax systems. Multi-national firms are able to use complex corporate structures and international tax rules to direct their profits into jurisdictions

61. See Calo, *supra* note 29, at 1047–48 (considering this option for consumer-protection reasons); Zeynep Tufekci, *Mark Zuckerberg, Let Me Pay for Facebook*, N.Y. TIMES (June 4, 2015), <http://www.nytimes.com/2015/06/04/opinion/zeynep-tufekci-mark-zuckerberg-let-me-pay-for-facebook.html>; *Dear Software Companies, Please Let Me Pay You Money*, CREATIVE REALIST (Dec. 18, 2012), <http://www.creativerealist.com/post/38234666233/dear-software-companies-please-let-me-pay-you>; Mark Schaefer, *Dear Facebook. Please Let Me Pay You.*, BUSINESSGROW.COM, <http://www.businessgrow.com/2013/02/07/dear-facebook-please-let-me-pay-you/> (last visited Sept. 3, 2016).

62. Harriet Taylor, *Privacy Will Hit Tipping Point in 2016*, CNBC (Nov. 9, 2015, 8:35 AM), <http://www.cnn.com/2015/11/09/privacy-will-hit-tipping-point-in-2016.html> (discussing a privacy report issued by Forrester Research).

63. The tax analysis of this article presumes that data aggregators are subject to corporate income tax and that data providers are individuals subject to the personal income tax. This is done for the purpose of simplicity only.

with low or no tax.⁶⁴ This has motivated significant tax scholarship that analyzes how to best modify our international tax rules to ensure that multi-national firms' profits are taxed at some desired level.⁶⁵ The use of personal data in the modern economy adds to the general challenges facing global taxation because it gives firms another way to build value that is difficult to assign to a particular activity or jurisdiction. For this reason, the commercialization of personal data has been recognized in two recent reports that more generally analyze the global tax issues created by the digital economy—a report issued by the Organization for Economic Co-Operation and Development in 2015 (the OECD Report)⁶⁶ and an earlier 2013 report commissioned by the French government (the French Report).⁶⁷ Both of those Reports recognize that personal-data transactions are a key component of the digital economy and address the difficulty of determining how those transactions should be characterized for tax purposes.⁶⁸

The OECD Report very briefly does the latter and notes that those transactions could be seen either as taxable barter transactions or as “free goods” transactions.⁶⁹ The Report does not detail the tax consequences of those constructs or analyze whether one is preferred over the other.⁷⁰ Instead, the Report suggests that the characterization issue is not of great importance because the value that personal-data transactions create will

64. See Chris William Sanchirico, *As American as Apple Inc.: International Tax and Ownership Nationality*, 68 TAX L. REV. 207, 207–10 (2015) (referencing the general scholarship and debate regarding U.S. corporate tax avoidance). See generally JANE G. GRAVELLE, CONG. RESEARCH SERV., TAX HAVENS: INTERNATIONAL TAX AVOIDANCE AND EVASION 9–10 (2015), <https://www.fas.org/sgp/crs/misc/R40623.pdf>; J. Clifton Fleming, Jr., Robert J. Peroni & Stephen E. Shay, *Getting Serious About Cross-Border Earnings Stripping: Establishing an Analytical Framework*, 93 N.C. L. REV. 673, 675 (2015); Edward D. Kleinbard, *Stateless Income*, 11 FLA. TAX REV. 699, 701–02 (2011).

65. See generally ARTHUR COCKFIELD ET AL., TAXING GLOBAL DIGITAL COMMERCE (3d rev. ed. 2013) (broadly evaluating the impact of the digital economy on global tax systems); Fleming, Peroni & Shay, *supra* note 64; Kleinbard, *supra* note 64; Edward D. Kleinbard, *The Lessons of Stateless Income*, 65 TAX L. REV. 99 (2011).

66. ORG. FOR ECON. CO-OPERATION & DEV., ADDRESSING THE TAX CHALLENGES OF THE DIGITAL ECONOMY, ACTION 1: 2015 FINAL REPORT (2015) [hereinafter OECD REPORT], http://www.oecd-ilibrary.org/taxation/addressing-the-tax-challenges-of-the-digital-economy-action-1-2015-final-report_9789264241046-en. The OECD Report was issued as part of its Base Erosion and Profits Shifting Project that it initiated in 2013. *Id.* at 3. That project included a 15-point Action Plan to “ensure that profits are taxed where economic activities take place and value is created.” *Id.* Action 1 of that Action Plan called for research into ways to “address the tax challenges of the digital economy.” *Id.* at 11. One outcome of that call was the publication of the 285-page OECD Report. See generally *id.* That report discusses much more than just personal data of course. It broadly discusses the challenges that the digital economy, including the use of personal data in that economy, presents with respect to both direct taxes like income taxes, and to indirect taxes like consumption taxes. See generally *id.*

67. In 2012, the French government commissioned a comprehensive report on the impacts of the digital economy on that country's tax system. The resulting report, the French Report, was issued in January 2013, and specifically identified personal data as the “common denominator” and the “core of value creation” in the digital economy. FRENCH REPORT, *supra* note 37, at 35.

68. See generally *id.*; OECD REPORT, *supra* note 66.

69. OECD REPORT, *supra* note 66, at 104.

70. See *id.*

ultimately be taxed when data aggregators convert it into advertising income.⁷¹ For reasons discussed below, this is not a satisfactory way of handling the issue.⁷²

The French Report provides a relatively more robust analysis. It details how the modern economy has been built on the “regular and systematic monitoring” of consumers who are not being provided with any monetary payment for the resulting data.⁷³ It also reasons that those data are “free or nearly free” to data aggregators because the data are collected as a “positive externalit[y]” of an online application that can be provided by those firms at a near-zero marginal cost.⁷⁴ The Report’s focus on these factors results in its adoption of a “free-labour construct” under which consumers are treated as unpaid laborers—and not as beneficiaries of a market exchange.⁷⁵ This is not to say that the Report does not consider other potential tax constructs. It does.⁷⁶ Among the models considered are those that would incorporate some sort of taxable-exchange theory, but the Report concluded that none of those constructs fit the personal-data exchange in a workable way.⁷⁷ The Report did also specifically raise the question of whether individual users would have tax consequences under a market-exchange theory if one took that construct to the “extreme.”⁷⁸ That possibility was dismissed quickly even though the Report did recognize that individual consumers do get access to online applications in exchange for their data.⁷⁹

The adoption of the free-labor model seems to be best explained by the motivation for the Report. The authors of the Report were focused on determining how France could best respond to the new economy and multi-national firms’ aggressive tax planning.⁸⁰ They were not asked to find a model that best reflected economic reality. It is thus not surprising that the authors would adopt a model that narrowed the inquiry to data aggregators and that ignored the tax consequences to consumers.⁸¹ In doing so, however, the Report was far more limited in scope than this Article is intended to be, and we can fairly question the extent to which its analysis is helpful to that goal.

71. *Id.*

72. *See infra* Section III.A.1.

73. FRENCH REPORT, *supra* note 37, at 2.

74. *Id.* at 49.

75. *Id.* at 2, 49–54, 79, 102, 114–16.

76. *Id.* at 79–80.

77. *Id.* at 79–84.

78. *Id.* at 116. This was done in the span of one sentence in the text and in one sentence in a footnote. *Id.*

79. *Id.* at 81. This, of course, creates an inconsistency. The report posits that consumers are not being paid for their data, that companies are not being paid for their digital products, but that both are receiving something valuable from the other. *See generally id.*

80. *Id.* at 1–3.

81. *Id.* at 2–3.

Properly categorizing personal-data transactions requires us to recognize that consumers actually do receive compensation for their data. They generally do not receive cash, but they benefit immensely in other ways. The wide range of “free” digital products that are available today is staggering. We live in a world where all of humanity’s accumulated information—and Pokémon Go—is readily available at a moment’s notice. We pay for hardware to access that information, but the information and entertainment is provided without a cash fee. Consumers are undeniably getting something in return for their data. In fact, economists have valued the consumer welfare gains from “free” online products at approximately \$100 billion per year in the U.S. alone.⁸² To claim that consumers are getting nothing from the deal is thus inaccurate.⁸³

It is equally inaccurate to say that data aggregators are getting free labor from consumers. Although Google does get each additional user’s data for a very low cost, its near-zero marginal cost is a function of providing a digital product, not of the personal-data market. Digital goods are largely non-rivalrous; they can be replicated infinitely, at low cost, and without any drain on the primary resource.⁸⁴ The marginal cost of selling software on a CD-ROM includes the cost of a disk, manufacturing time, and packaging. The marginal cost of providing another person access to online software involves some incremental burden on server space, but that is it. Having a near-zero marginal cost, though, does not mean that digital goods have no cost.⁸⁵ Firms spend significant sums to develop products that consumers will use repeatedly.⁸⁶ It is critical that

82. Erik Brynjolfsson & Joo Hee Oh, *The Attention Economy: Measuring the Value of Free Digital Services on the Internet 3* (Dec. 16–19, 2012) (research paper prepared for the Thirty-Third International Conference on Information Systems), <http://aisel.aisnet.org/cgi/viewcontent.cgi?article=1045&context=icis2012>.

83. This is, of course, not to say that consumers are being adequately compensated for their data, just that they are being compensated in some amount. *See supra* notes 44–45 and accompanying text (discussing the challenges preventing a perfectly functioning market for personal data).

84. COCKFIELD ET AL., *supra* note 65, at 30; Hoofnagle & Whittington, *supra* note 4, at 620–22; Samuelson, *supra* note 6, at 1138. The nonrivalrous nature of digital goods is consistent with the nonrivalrous nature of intellectual property and data. *See* Mark A. Hall, *Property, Privacy, and the Pursuit of Interconnected Electronic Medical Records*, 95 IOWA L. REV. 631, 661 (2010) (“Information by its nature is nonrivalrous, meaning it can be used by many people at once without depletion.”); Eric E. Johnson, *The Economics and Sociality of Sharing Intellectual Property Rights*, 94 B.U. L. REV. 1935, 1940–42 (2014) (describing the nonrivalrous nature of intellectual property); Mark A. Lemley, *Property, Intellectual Property, and Free Riding*, 83 TEX. L. REV. 1031, 1050–51 (2005) (“Information is what economists call a pure ‘public good,’ which means both that its consumption is nonrivalrous—my use of an idea does not impose any direct cost on you—and that it is not something from which others can easily be excluded.”); *see also* Mark A. Lemley, *IP in a World Without Scarcity*, 90 N.Y.U. L. REV. 460, 466–71 (2015) (discussing the impact of technology on scarcity).

85. COCKFIELD ET AL., *supra* note 65, at 29–30 (noting that information goods do not have fixed, marginal costs and that the fixed costs can be “quite high”); Hoofnagle & Whittington, *supra* note 4, at 622–24.

86. Google Annual Report, *supra* note 20 (revealing that Google and its parent company spent over \$16 billion on research and development in 2015); *see also* Facebook, Annual Report (Form 10-K) (Jan. 28, 2016), <https://www.sec.gov/Archives/edgar/data/1326801/000132680116000043/fb-12312015x10k.htm> (revealing that Facebook had a “cost of revenue” of almost \$2.9 billion in 2015).

a business using a multi-sided platform provide users “with a fluid, reassuring and stimulating experience.”⁸⁷ Absent those factors, its flow of data ceases and its business will fail. It is therefore incorrect to claim that data aggregators receive data for free. They might have great economies of scale, but they *do pay* for their data. The free-labor construct is thus inappropriate, at least for data aggregators who utilize a multi-sided business model.⁸⁸

The sum of this analysis is that the utilization of a free-labor model in international tax analyses should not guide how we think about personal-data transactions for domestic tax purposes. The actual functioning of the personal-data market supports the adoption of a market-exchange model under which we recognize that firms acquire data by providing consumers with access to desirable digital products and that consumers use their data to acquire access to those products.⁸⁹

and also spent nearly \$5 billion on research and development; Facebook’s cost of revenue “consists primarily of expenses associated with the delivery and distribution of [its] products”).

87. FRENCH REPORT, *supra* note 37, at 53 (such a service “makes it possible to infiltrate the data-to-day activities and even the private life of individuals”); Nadezhda Purtova, *The Illusion of Personal Data as No One’s Property*, 7 LAW INNOVATION & TECH. 83, 107 (2015).

88. The free-labor construct might be more apt for data aggregation that occurs in connection with other types of exchanges. A consumer purchasing internet or cable television access, for example, will pay a cash subscription charge, but he or she will also likely be monitored and will transfer personal data to the service provider as he or she uses its product. ANDREWS, *supra* note 14, at 19 (discussing a lawsuit against an internet service provider that allowed the monitoring of its subscribers’ internet usage); PAYTON & CLAYPOOLE, *supra* note 12, at 189–91; Ramachandran & Vranica, *supra* note 13. In this situation, the traditional commercial exchange might incorporate the exchange of data into the cash price charged. It is also possible, however, that the data exchange might be unknown to the consumer and that the consumer might not be able to understand or be able to extract the value of the data that he or she is transferring. This would be consistent with scholarship showing that consumers are poorly informed participants in the data market, are often unaware that they are market participants at all, or are simply resigned to providing their data. *See supra* notes 43–47 and accompanying text; *see also* Nathan Newman, *The Costs of Lost Privacy: Consumer Harm and Rising Economic Inequality in the Age of Google*, 40 WM. MITCHELL L. REV. 849, 860–63 (2014) (discussing the many forces working against a competitive market for personal data). We thus might be more comfortable with the free-labor construct in the context of exchanges where consumers are paying a cash price for their benefit of choice.

89. This article has thus far focused on individuals as exchanging their personal data for access to digital goods, but it is not necessarily clear that this characterization is accurate. To start, it is not clear that personal data is something that can be owned or that such ownership is transferable. The proper characterization of data has been discussed for years in the property and privacy literature, and some advocate for a property construct for personal data, but those data do not necessarily fall within our classical conception of property. They certainly are not currently protected as property. *See, e.g.,* BERNASEK & MONGAN, *supra* note 1, at 194–200; Cohen, *supra* note 6, at 1374–77; Samuelson, *supra* note 6, at 1130–52; Schwartz, *supra* note 5, at 2094–2116; Solove, *Digital Dossiers*, *supra* note 8, at 1112–15. Data also share some qualities with goods and some qualities with services. Like goods they can be stored and delivered from a location other than where they are produced. Like services, however, they are intangible. MICHAEL MANDEL, PROGRESSIVE POLICY INST., BEYOND GOODS AND SERVICES: THE (UNMEASURED) RISE OF THE DATA-DRIVEN ECONOMY 1–2 (2012), http://www.progressivepolicy.org/wp-content/uploads/2012/10/10.2012-Mandel_Beyond-Goods-and-Services_The-Unmeasured-Rise-of-the-Data-Driven-Economy.pdf.

The uncertainties regarding how to characterize data make it a bit uneasy to accept a construct under which individuals are transferring those data as payment for access to digital goods.

The type of data involved might also further undermine a construct under which consumers are deemed to be selling their data. Volunteered data, for example, certainly look like something that an individual transfers to an aggregator. Those data represent information held by the individual

B. The Personal-Data Market and Domestic Taxation

1. Personal-Data Transactions and the Income Tax

Determining whether a particular event results in taxable income begins with Internal Revenue Code (the Code) § 61, which provides that gross income includes “all income.”⁹⁰ The Supreme Court has noted that Congress intended to “exert . . . the full measure of its taxing power” in enacting that definition and has interpreted it to mean that income includes all “accessions to wealth, clearly realized, and over which the taxpayers have complete dominion.”⁹¹ That is a very broad formulation,⁹² and the fact that money does not exchange hands is not dispositive.⁹³ Indeed, barter transactions are clearly taxable under the Code.⁹⁴ Our income tax laws treat a party to such an exchange as if she had traded her goods or services for cash and then used those funds to purchase the good or service from the other party to the exchange.⁹⁵ The key to understanding and evaluating the tax consequences of a barter transaction is to break it into its component parts. For example, a lawyer who trades her

and purposefully given to the aggregator. Observed data, on the other hand, look much different. Those data are captured through the effort of the aggregator and may have been previously unknown to the individual—the speed at which they type in a comments section or their responses to behavioral prompts for example. The individual as data transferor looks less apt on those facts. They look much more like a service provider.

This characterization issue is interesting in the abstract but becomes important only if one determines that individuals have income from engaging in personal-data transactions. That issue is considered in depth below. See *infra* Section II.B.1.

90. 26 U.S.C. § 61(a) (2012). “Gross income” ultimately becomes “taxable income” after the application of deductions and personal exemptions. 26 U.S.C. § 63 (2012). The tax analysis of this Article presumes that data aggregators are subject to corporate income tax and that data providers are individuals subject to the personal income tax. This is done for simplicity only.

91. *Comm’r v. Glenshaw Glass Co.*, 348 U.S. 426, 429–31 (1955). State income taxes generally defer to the Code in determining a taxpayer’s income that is subject to tax. See 2 JEROME R. HELLERSTEIN & WALTER HELLERSTEIN, *STATE TAXATION* ¶ 20.02 (3d ed. 2000). This Section will therefore focus on the federal income-tax laws, but taxpayers with federal taxable income would likely have state income-tax consequences as well, to the extent that they were subject to such a tax.

92. There is an academic debate about whether the § 61 formulation provides a rule or a standard. See Alice G. Abreu & Richard K. Greenstein, *Defining Income*, 11 FLA. TAX REV. 295, 330 (2011) [hereinafter Abreu & Greenstein, *Defining Income*]; Alice G. Abreu & Richard K. Greenstein, *It’s Not a Rule: A Better Way to Understand the Definition of Income*, 13 FLA. TAX REV. 101, 101–02 (2012); Alice G. Abreu & Richard K. Greenstein, *The Rule of Law as a Law of Standards: Interpreting the Internal Revenue Code*, 64 DUKE L.J. ONLINE 53, 55 (2015); Lawrence Zelenak, *Custom and the Rule of Law in the Administration of the Income Tax*, 62 DUKE L.J. 829, 829–30 (2012). This debate and its implications for the taxation of personal-data transactions will be discussed in greater detail below with respect to the taxation of data providers under the barter-exchange model. See *infra* Section II.B.1.

93. Section 1031 of the Internal Revenue Code does allow for the deferral of gain on certain exchanges of property, but multiple conditions must be met for that deferral provision to apply. See 26 U.S.C. § 1031 (2012).

94. See 26 U.S.C. § 83(a), (b) (2012) (providing rules for the inclusion in gross income of gains from the receipt of property in exchange for services); Treas. Reg. § 1.61–2(d)(1) (as amended in 2003) (providing that the fair market value of property or services received in exchange for services is included in gross income); Rev. Rul. 79-24, 1979-1 C.B. 60. See generally Robert I. Keller, *The Taxation of Barter Transactions*, 67 MINN. L. REV. 441 (1982) (broadly discussing the taxation of barter exchanges).

95. Rev. Rul. 79-24, 1979-1 C.B. 60.

legal services for painting services is treated as if she had provided legal services for a cash fee and then used that income to purchase the painting services.⁹⁶ Her tax consequences from engaging in the barter are the same as if she had engaged in those two separate transactions.

This barter model applies easily to the personal-data transactions of today's economy. Under a market-exchange model, data aggregators sell access to their digital products in exchange for personal data, and consumers sell their data in exchange for access to digital products. No cash is exchanged in those transactions, but each side transfers something of value to the other. As a result, our tax laws dictate that data providers should report income on the sale of their data and that data aggregators should report income on the sale of access to their digital products. The occurrence of a taxable event is relatively clear as a conceptual matter.

This basic analysis is not meant to suggest that the tax analysis is that limited. Many other considerations come into play, both for data providers and for data aggregators, and the following Parts look more closely at the particular issues that arise on each side of the exchange.

a. Income Tax, Data Providers, and the Market-Exchange Model

The practical impact of the conclusions above should not be lost on readers. Treating personal-data transactions as barter exchanges means that individuals who post something on Facebook or who use Gmail are engaged in taxable transactions. It means that each entry into a search engine is a taxable sale of data and a taxable sale of access to that digital product. That result may be surprising at first, but should not be particularly provocative to those familiar with economic or tax analyses. Individual personal-data exchanges are the equivalent of two separate market transactions, and we would absolutely tax them if they occurred in those two steps. For example, Facebook could run two independent businesses—one that paid individuals to take part in experiments and another that sold access to its social-media platform. If it ran those two distinct businesses, we would have no trouble saying that individuals who received compensation for participating in the experiments had taxable income.⁹⁷ The analysis should be no different when the steps are combined and individual users are paid for their data with direct access to the website.

This conclusion is at the heart of the entire barter-exchange doctrine. Exchanges of value have tax consequences regardless of whether

96. *Id.*; Keller, *supra* note 94, at 443 (discussing the “two-payment approach” to characterizing barter transactions).

97. See *O'Connor v. Comm'r*, 104 T.C.M. (CCH) 571 (2012) (finding that compensation received for participating in a medical research study was includable in the recipient's gross income under Code § 61).

the exchange is facilitated by currency.⁹⁸ Any other rule would make tax avoidance too simple. Service providers, whether employees or independent contractors, could just demand payments of tax-free, in-kind benefits rather than of taxable cash compensation. That result would clearly be problematic—except as an intended subsidy.

The conclusion that individuals generate income from personal-data barter is straightforward once one adopts the market-exchange model. More broadly, however, that conclusion is the same under general tax principles, even if one does not feel comfortable with using the barter-exchange characterization.⁹⁹ Under a more general analysis, the basic question is still whether an individual consumer who receives access to a “free” digital product has received an “accession to wealth” in the *Glenshaw Glass* sense.¹⁰⁰ As noted above, that formulation appears incredibly broad, and there is some resulting discussion regarding whether “income” under the Tax Code is as broad as an economic concept of income or whether pragmatic factors result in a tax definition of “income” that is more narrow.

Under a broad, economic theory of income, though, the ability to access Google Docs or Facebook is a benefit that is clearly realized without the taxpayer having paid for its value in cash. If the benefit received were a copy of Microsoft Word, we would have no problem identifying the fact of a taxable event. The answer should be no different, as a conceptual matter, simply because the benefit is provided digitally. A consumer who receives a free digital product is in an economically superior position to one who has to pay cash for that same product.

This conclusion is fine as a normative matter, but our positive law does provide a number of exclusions from gross income for gains that constitute income in the economic sense. Gifts, for example, are accessions to wealth in the broad sense, but they are not taxed.¹⁰¹ Certain fringe benefits are treated the same way.¹⁰² Indeed, the statutory exclu-

98. This is clear as an abstract normative matter, but the receipt of in-kind benefits has always presented troubles for discussions of how to define and measure income. See HENRY C. SIMONS, *PERSONAL INCOME TAXATION: THE DEFINITION OF INCOME AS A PROBLEM OF FISCAL POLICY* 53 (1938).

99. Some might, for example, contest that individuals can enter into a taxable exchange if they are unaware that it is occurring or if they did not actually possess the information being bartered. Some may just reject the idea that individuals are engaged in a market transaction out of hand.

100. *Comm'r v. Glenshaw Glass Co.*, 348 U.S. 426, 431 (1955).

101. 26 U.S.C. § 102(a) (2012). This statutory exclusion might come to mind for certain readers that are not intimately familiar with the tax laws. One could argue that companies are effectively making a gift to users when they give them access to their products without charge. For tax purposes, though, gifts are transfers made with “detached and disinterested generosity,” and the intent of the donor controls in making that determination. *Comm'r v. Duberstein*, 363 U.S. 278, 285 (1960) (citing *Comm'r v. Lo Bue*, 351 U.S. 243, 246 (1956)). A transfer of access to a digital product in exchange for data is not a gift under that standard. The transferor of access to the product is doing so out of self-interest.

102. 26 U.S.C. §§ 119, 132 (2012). Courts have also allowed certain non-statutory exclusions from gross income that are more consistent with a standard-based conception of § 61. In *United*

sion for *de minimis* fringe benefits under Code § 132 appears to be a close fit for the gains derived by individuals in personal-data transactions.¹⁰³

The *de-minimis* exclusion applies to “any property or service the value of which is . . . so small as to make accounting for it unreasonable or administratively impracticable.”¹⁰⁴ That standard takes into account the frequency with which the benefit is provided.¹⁰⁵ As a result, a single meal might have *de minimis* value, but might fail to be *de minimis* if provided every day.¹⁰⁶ That construct could apply well to consumer gains from data transfers because of the values involved and the difficulties inherent in tracking those exchanges. The value of a single visit to Pinterest or WebMD hardly seems large enough to make accounting for it reasonable or practicable. The analysis is different, of course, for users who log into their Gmail accounts daily or who store a large number of photographs on Facebook’s servers. Nonetheless, some might still feel that the *de minimis* exemption should apply in those situations because of the values and administrative difficulties that would be involved with taxing the resulting gains.

The *de minimis* construct is certainly appealing, but it is not perfectly applicable to personal-data barterers. First, there are qualitative differences between the typical *de minimis* fringe benefit and personal-data gains. The former are generally provided either (1) as a side benefit of an existing relationship (as in the case of coffee in an employer’s break

States v. Gotcher, for example, the Fifth Circuit evaluated a case in which a married couple received a free trip to Germany. 401 F.2d 118, 119 (5th Cir. 1968). The cost of that trip was paid by Mr. Gotcher’s employer and by the Volkswagen Company, which was attempting to induce him into investing in a Volkswagen dealership. *Id.* at 119–23. The court determined that no statutory exclusion from gross income applied, but that the receipt of the trip was not taxable regardless. *Id.* at 124. The court reasoned that the benefit was not taxable because Volkswagen provided the trip for its own benefit and not to personally benefit Mr. Gotcher. *Id.* at 123–24. The court also relied on the fact that the benefit was business in nature—Mr. Gotcher’s activities were oriented around business matters, not pleasure. *Id.* at 122. The court also found it compelling that Mr. Gotcher did not have a choice to go on the trip. *Id.* at 123.

One could argue that taxpayers engaged in personal-data barterers should not have income under a *Gotcher*-like analysis. The providers of digital products do so to benefit themselves and not their users. The most significant problem with applying *Gotcher*, however, is that the benefits that individuals receive in personal-data barterers are not like the highly controlled business trip that Mr. Gotcher received. They are inherently personal and controlled by those individuals. See Abreu & Greenstein, *Defining Income*, *supra* note 92, at 311–12 (critiquing *Gotcher* as “not withstand[ing] rigorous analysis” and thus providing more reasons why its analysis should not be extended to personal-data transactions). Facebook does not guide users through its social media site to show off its capabilities. Consumers use that product at their leisure and as they wish to derive some personal benefit. For these reasons, a *Gotcher*-like analysis should not result in the conclusion that personal-data gains are not includable in a taxpayer’s gross income even though that case did apply an extra-statutory exclusion from gross income. See *Gotcher*, 401 F.2d at 123–24.

103. 26 U.S.C. § 132(a)(4), (e)(1) (2012).

104. *Id.* That Code provision is specifically directed at benefits provided to employees, but a Treasury Regulation issued under that section extends the term “employee” to include all recipients of such a benefit. 26 C.F.R. § 1.132-1(b)(4) (as amended in 1993).

105. 26 U.S.C. § 132(e)(1); 26 C.F.R. § 1.132-6 (as amended in 1992).

106. 26 C.F.R. § 1.132-6.

room) or (2) in an effort to induce the creation of a new business relationship (as in the case of free samples at your local grocery store). Personal-data exchanges typically do not fall within either situation. The benefit received by a data provider is the entirety of the compensation that she receives for engaging in a business relationship with a data aggregator—it is not received as incident to an existing commercial relationship. Additionally, the “free” digital products of the Internet are often not provided to induce a future purchase of that very product.¹⁰⁷ Facebook does not give a free month of access to its social-media site in order for it to sell a year’s worth of access. It provides ongoing access as part of a continuous data exchange.

We must also recognize that looking at each individual instance of a personal-data barter fails to account for the aggregate value of the digital products received by taxpayers over the course of a year. Treasury Regulations explaining the *de minimis* rule give examples like “occasional cocktail parties” or “coffee, doughnuts, and soft drinks.”¹⁰⁸ Digital products that are continuously available are different. First, they are not an occasional splurge; they represent a significant aspect of the economy and how we spend our free time. Again, economists have estimated that the free services of the Internet create over \$100 billion of consumer surplus in the United States each year.¹⁰⁹ The issue is not that personal-data transactions have no or *de minimis* value; it is that the value is spread among many micro-transactions.¹¹⁰ That makes administering a tax on those transactions very difficult, but it does not change the fact that those transactions do generate value for data providers.¹¹¹

107. This is different for businesses that offer free applications as an incentive for users to purchase in-app upgrades or improvements. That business model is labeled as the “freemium” model. See Vineet Kumar, *Making “Freemium” Work*, HARV. BUS. REV., May 2014, at 27–29, <https://hbr.org/2014/05/making-freemium-work> (explaining the “freemium” business model). The game “Clash of Clans” is an incredible example of this business model. The game can be downloaded for free, but players can purchase in-game upgrades. That approach has been wildly successful as the game generated \$1.8 billion of revenue in 2014. Stuart Dredge, *Clash of Clans Heads 2014’s Billion-Dollar Mobile Games – Open Thread*, GUARDIAN (Dec. 9, 2014, 2:30 PM), <http://www.theguardian.com/technology/2014/dec/09/clash-of-clans-billion-dollar-mobile-games>. How the Tax Code should apply to the provision and receipt of these freemium services is certainly worth considering, but cannot be undertaken within the confines of this Article.

108. 26 C.F.R. § 1.132–6.

109. Brynjolfsson & Oh, *supra* note 82, at 3. Others have valued a single Gmail account at over \$3500 and have estimated that its value grows by over \$1000 each year. Jay Garmon, *What is My Gmail Account Actually Worth?*, BOSTINNO (July 25, 2012, 4:56 PM), <http://bostinno.streetwise.co/channels/what-is-my-gmail-account-actually-worth/>. The valuation method used was based upon the time that it would take for a person to recreate the data in one account and uses U.S. Department of Labor statistics on the average annual salary in the United States. *Id.* That method is obviously questionable because much of an e-mail account is data that is of no value to a person. In that vein, it is worth noting that the company providing this estimate is in the business of selling data-backup services. Nonetheless, the time that we spend using digital products does evidence how important and, hence, how valuable they are to us.

110. Thanks to Shu-Yi Oei for this observation.

111. There is, admittedly, some tension between this analysis and how *de minimis* fringe benefits are often defined in practice. Continuously available coffee or tea in an office breakroom certainly shares many of these same characteristics. They are provided in a number of micro transactions

This issue is central to broader discussions regarding how technology has changed the generation of income in the modern economy. Technology allows individuals to sell slivers of their time or their assets to various parties rather than simply working for one employer or dedicating their assets solely to business use. They can drive for Uber at night or on the weekends. They can use Airbnb to rent out their homes when they are traveling. The result is that income is generated in smaller sums and in greater numbers of transactions than when one has a single source of compensation. The value of those transactions might be insignificant alone, but meaningful in the aggregate. This does not mean, however, that we exempt the income from each transaction as *de minimis*. Rather, we tax their aggregate value.¹¹²

None of this analysis is meant to suggest that personal-data transactions should be taxed like income from the sharing economy. Rather, the point of discussing these issues is to recognize that we cannot simply raise our hands in defeat as income generation becomes fragmented or fails to be mediated by large players. We cannot allow technology to erode our tax bases by default in this way. It is thus no answer to say that we can do nothing because personal-data gains are *de minimis*. Those gains still constitute income in the broadest sense, and we must consider their impact on our tax system.

This point applies equally to the application of a more flexible conception of income under the Code. The analysis provided to this point has assumed that Code § 61 extends to all economic income, as suggested by the *Glenshaw Glass* formulation.¹¹³ Some argue, however, that Code § 61 does not extend to all income despite the broad language used by the Supreme Court in that case. Professors Alice Abreu and Richard Greenstein, for example, have argued that the concept of “income” under Code § 61 is more malleable and subject to societal influences.¹¹⁴ They point to the failure of the Internal Revenue Service (the IRS) to tax the receipt of child support payments, free samples, and record-breaking home run balls as evidence that the definition of “income” is a standard

and their collective value might be quite high at the end of the year. Perhaps, then, personal-data gains are not so different than existing *de minimis* fringe benefits. That observation is apt, but is not necessarily problematic for the preceding analysis. First, scholars recognize that the concept of tax-free fringe benefits has expanded in recent years and may need to be reconsidered. See Jay A. Soled & Kathleen DeLaney Thomas, *Revisiting the Taxation of Fringe Benefits*, 91 WASH. L. REV. 761, 764–65 (2016) (discussing the expansion of employer-provided fringe benefits in recent years). Second, personal-data gains are different from free cups of coffee for other reasons. Again, the typical cup of coffee is provided incident to an existing commercial relationship, as noted above. Further, tracking personal-data gains may be much more practicable than tracking how many cups of tea an employee drinks. The very nature of the digital economy means that the required information is being collected and stored in some fashion. *But see infra* Section II.C.4 (discussing the potential challenges created by the ability of Internet users to hide their true identity).

112. This is achieved, practically, through the imposition of information-reporting mechanisms. Shu-Yi Oei & Diane M. Ring, *Can Sharing Be Taxed?*, 93 WASH. U. L. REV. 989 (2016).

113. *Comm’r v. Glenshaw Glass Co.*, 348 U.S. 426, 431 (1955).

114. Abreu & Greenstein, *Defining Income*, *supra* note 92, at 339–48.

that is much different than the broad rule suggested by *Glenshaw Glass*.¹¹⁵ They conclude instead that noneconomic values impact the definition of income.¹¹⁶ Under their theory, the IRS must consider equity, efficiency, and administrability in determining what benefits constitute income under the Code.¹¹⁷

One could easily conclude that the receipt of “free” digital products in today’s society does not generate income under this standard-based conception. The theoretical income that results from accessing those products would seem to be income that the federal government would have difficulty taxing without creating a “firestorm of controversy” much like the theoretical income realized when one catches a record-breaking home run ball.¹¹⁸ More specifically, we might reasonably conclude that the benefits being received by individuals are not taxable transactions given concerns of equity, efficiency, and administrability. Indeed, those concerns are discussed below in this Article’s analysis of why individuals’ gains from personal-data transactions ultimately will not be subject to tax.¹¹⁹ It may very well be, then, that personal-data gains will not be included in taxpayers’ gross incomes, even though they constitute income in an economic sense. It is imperative to recognize, though, that excluding them from income under that theory is excluding them due to practical concessions and not because they are not accessions to wealth. That is a critical distinction for purposes of this Article and will be discussed in much greater detail below.

In the end, personal-data transactions appear to plainly result in economic income to individual taxpayers because the benefits received by taxpayers in those transactions are accessions to wealth in a broad sense. Those transactions would therefore be taxable if Code § 61 is as broad as *Glenshaw Glass* suggests.¹²⁰ If, however, Code § 61 provides a more flexible standard, it might be that those transactions would not result in income that is taxable, but they would generate income nonetheless.

115. *Id.* at 298–99, 344.

116. *Id.* at 346.

117. *Id.* at 345; see also Adam S. Chodorow, *Ability to Pay and the Taxation of Virtual Income*, 75 TENN. L. REV. 695, 736–41 (2008) (discussing the ability to pay as a pragmatic limitation on the economic income that should be subject to federal income tax); Leandra Lederman, “*Stranger than Fiction*”: *Taxing Virtual Worlds*, 82 N.Y.U. L. REV. 1620, 1658–70 (2007) (applying similar considerations to the question of whether income from activities in “virtual worlds” like Second Life should be taxable).

118. Abreu & Greenstein, *Defining Income*, *supra* note 92, at 342.

119. See *infra* Section II.C. The lack of a fair market value, or the incredibly small value, for the benefits received in personal-data barter might be enough for some to conclude that they do not result in gross income under the Code. See Bryan T. Camp, *The Play’s the Thing: A Theory of Taxing Virtual Worlds*, 59 HASTINGS L.J. 1, 25–28 (2007).

120. See *Comm’r v. Glenshaw Glass Co.*, 348 U.S. 426, 429–31 (1955) (concluding that the term “income” includes all “accessions to wealth, clearly realized, and over which the taxpayers have complete dominion”).

b. Income Tax, Data Aggregators, and the Market-Exchange Model

Just as the market-exchange model has tax consequences for individual taxpayers, it has tax consequences for data aggregators as well. As described above, application of that model suggests that data aggregators should be viewed as engaging in taxable barter exchanges through which they sell access to their digital products in exchange for consumer data. Theoretically, they would report income on the sale of that access and take a tax-cost basis in the data that they acquire.¹²¹ Those conclusions follow naturally from established law and do not seem quite as troubling as the conclusion that individual consumers should be taxed on their personal-data gains. Data aggregators are, after all, engaged in intentional commercial behavior.

The more difficult question that arises with respect to the data aggregators' income is *where* it should be reported. Data aggregators will most often operate in multiple jurisdictions, which means that they will be subject to various rules dictating how to divide their income among those jurisdictions.¹²² Those rules effectively apportion taxing power based on how that income is characterized. For example, the Code provides that income derived from the performance of services is sourced to the place where the services are performed, while the sourcing of income

121. A taxpayer's basis in an asset is generally his "cost" for that asset. 26 U.S.C. § 1012 (2012). When taxpayers obtain an asset in a taxable transaction, the taxpayers obtain a tax-cost basis equal to the amount included in their income even though they do not necessarily pay a cash price for that asset. See 26 C.F.R. § 1.61-2 (as amended in 2003) (providing that a taxpayer has a basis in property acquired in exchange for the performance of services equal to the fair market value of the property received); 26 C.F.R. § 1.83-1(e) (as amended in 2003) (recognizing that taxpayers obtain basis in an asset when they pay tax on the receipt of that asset); 26 C.F.R. § 1.83-2(a) (as amended in 2016).

122. The mechanics by which income is divided among jurisdictions go well beyond what is needed in this Article, but some basic information will assist one who is new to international or multistate taxation. To begin, the Tax Code generally taxes U.S. citizens and residents on their worldwide income. See 26 U.S.C. §§ 1, 61 (2012); see also JOEL D. KUNTZ & ROBERT J. PERONI, U.S. INTERNATIONAL TAXATION ¶ B1.03 (25th ed. 2016). They are allowed foreign tax credits, however, for foreign taxes that they pay on their foreign-source income. 26 U.S.C. § 904 (2012); KUNTZ & PERONI, *supra* ¶ B4.01. The result of those rules is that the U.S. essentially cedes taxing power over that income to the foreign jurisdiction. When the taxpayer is not a U.S. citizen or resident, the U.S. only taxes the taxpayer's U.S.-source income or income that is effectively connected with a U.S. trade or business. KUNTZ & PERONI, *supra* ¶ C1.02[1]. These rules are often modified by tax treaties that provide rules particular to residents of the contracting countries. *Id.* ¶ C4.01[1]. Regardless, the function of the source rules is to effectively divide taxing power over a taxpayer's income among the jurisdictions involved.

In contrast to this method of dividing taxing power at the national level, U.S. state corporate income taxes generally divide a taxpayer's income by the use of an apportionment method. Under that system, income is not generally attributed to a particular jurisdiction and taxed by that jurisdiction. 2 HELLERSTEIN & HELLERSTEIN, *supra* note 91, ¶¶ 8.01, 8.04. *But see id.* ¶ 8.04 (explaining that certain types of income are "allocated"). Rather, a business's income is apportioned among the states by looking at the mix of a taxpayer's property, payroll, and sales around the country. *Id.* ¶¶ 8.05, 8.15. The precise weight given to each particular factor differs by state and can sometimes be zero. The result is that 100% of a taxpayer's sales could be attributed to State A, but if 100% of its property and payroll are in State B, it could pay tax on only one-third of its income to State A.

from the sale of physical inventory depends on a number of factors, including whether the inventory was created or acquired.¹²³ U.S. states apportion income according to different rules as well, and states' rules are not consistent with one another. For example, different rules apply to the apportionment of income from services,¹²⁴ but states generally apportion income from inventory sales to the state where the property is delivered.¹²⁵

That issue is of critical importance to our understanding of the taxation of data aggregators' gains from personal-data transactions. A typical personal-data transaction is one in which a consumer uses a cloud-based website in exchange for personal data.¹²⁶ The data aggregator in that situation should be viewed as selling access to its software for data. The resulting income would therefore be taxed in accordance with where income from the sale of that type of access is sourced. The problem, however, is that the proper tax classification of income from the sale of access to cloud-computing services is unclear under international and state tax laws. Scholars recognize that such income could be treated as being derived from the sale of a service, a sale of a product, a lease, a license, or some mixture thereof.¹²⁷ That issue has not yet been resolved, so we cannot be sure where a data aggregator would source its income from a personal-data barter. Obviously, the resolution of that issue will impact

123. 26 U.S.C. §§ 861(a)(3), (a)(6), 862(a)(3), (a)(6), 863, 865 (2012); *see also* KUNTZ & PERONI, *supra* note 122, ¶ A2.03 (discussing the sourcing rules that apply to different types of income).

124. COCKFIELD ET AL., *supra* note 65, at 411–23.

125. 2 HELLERSTEIN & HELLERSTEIN, *supra* note 91, ¶12.02.

126. This is often labeled as a transaction involving “software as a service,” or “SaaS.” PETER MELL & TIMOTHY GRANCE, NAT’L INST. OF STANDARDS & TECH., U.S. DEP’T OF COMMERCE, THE NIST DEFINITION OF CLOUD COMPUTING 2 (2011), <http://nvlpubs.nist.gov/nistpubs/Legacy/SP/nistspecialpublication800-145.pdf>.

127. *See* COCKFIELD ET AL., *supra* note 65, at 242–43, 300–02; OECD REPORT, *supra* note 66, at 104–05; Walter Hellerstein & John Sedon, *State Taxation of Cloud Computing*, J. TAX’N, July 2012, at 27–31; David J. Shakow, *The Taxation of Cloud Computing and Digital Content*, 140 TAX NOTES 333, 333–50 (2013). *See generally* Orly Mazur, *Taxing the Cloud*, 103 CALIF. L. REV. 1 (2015). The question of how the tax rules should characterize and source income from the sale of digital products is important, but beyond the scope of this Article. It is worth mentioning, however, that income from personal-data transactions differs from the income from other sales of cloud computing or software as a service transaction in many ways. For example, in the cash market, consumers generally purchase access to a digital product for some set period of time, and the price is fixed for that period. In a personal-data transaction, however, the transaction is ongoing, and the purchase price rises with each use. Professor Mazur has recently reasoned that characterizing the sale of access to online software as services income may be appropriate, in part, because of the retailer’s ongoing responsibility to maintain its software and its concomitant shouldering of the risk of software failure. *See* Mazur, *supra* at 24–25. Part of the access fee thus looks like an upfront payment for technical services to keep the website or software operations. That component is not generally a part of the usual personal-data transaction, however, because users do not prepay for future use. Individuals generally have no ongoing right of use, and they pay with new data each time they use a digital product. This is important not because it suggests that personal-data transactions should not result in services income to the data aggregator, but to highlight that the analysis of how to source that income might be different when we discuss transactions involving data rather than cash. The market transactions are not the same.

how those barter transactions are taxed, and that consequence should be kept in mind as those analyses move forward.

2. Personal-Data Transactions and the State Sales Tax

Income taxes are obviously of great importance in the United States, but sales taxes also play a critical role in most states' finances. It is thus worth briefly considering whether personal-data transactions are theoretically subject to those taxes. To start, state laws are generally drafted broadly enough to apply to sales of taxable products for consideration of any kind, so barter transactions are taxable if the items being swapped are taxable.¹²⁸ The question therefore becomes whether personal data or digital products are taxable when sold. Those are more difficult questions.¹²⁹ Sales of data and digital products have historically not been in the tax base because state sales taxes were adopted in the 1930s¹³⁰ and thus applied primarily to the sale of tangible personal property and to some services.¹³¹ Obviously, though, the rise of the Internet and digital commerce have caused sales of digital products and services to displace sales of tangible goods, and states have struggled with whether and how to reform their taxes in response.¹³²

To date, sales of data have escaped legislative attention, but many states have now extended their consumption taxes to include digital versions of goods that would be taxable if sold in physical form.¹³³ That has generally included digital books, music, and video games.¹³⁴ Some apply very technical rules to digital software transactions generally.¹³⁵ A few states have more recently considered expanding those taxes to specifically cover cloud-computing transactions more broadly.¹³⁶ In 2015, for ex-

128. 2 HELLERSTEIN & HELLERSTEIN, *supra* note 91, ¶ 19A.04[2][c]–[d].

129. See COCKFIELD ET AL., *supra* note 65, at 411–21, 423 (broadly discussing the issues involved when determining whether and where cloud computing services are subject to state sales tax).

130. 2 HELLERSTEIN & HELLERSTEIN, *supra* note 91, ¶ 12.02.

131. *Id.* ¶ 12.04[1].

132. *Id.* ¶ 13.06[1]. See generally Martin Eisenstein & Michael Carey, *Transaction Taxes on Information Technologies: The Threat*, 74 ST. TAX NOTES 689 (2014).

133. See, e.g., ARK. CODE ANN. § 26-52-301(3)(C)(iii)(a) (2016); KY. REV. STAT. ANN. § 139.200(1)(b) (West 2016); MISS. CODE ANN. § 27-65-26 (2016); NEB. REV. STAT. § 77-2701.16(9) (2016); N.J. STAT. ANN. § 54:32B-3(a) (West 2014) (amended 2016); TENN. CODE ANN. § 67-6-233(a) (2015); WIS. STAT. § 77.52(1)(d) (2015); WYO. STAT. ANN. § 39-15-103(a)(i)(P) (2016); see also 2 HELLERSTEIN & HELLERSTEIN, *supra* note 91, ¶¶ 13.06[1], 19A.04[2][c][vii] (discussing the application of sales tax to digital products under states' laws and under the Streamlined Sales and Use Tax Agreement).

134. See, e.g., ARK. CODE ANN. § 26-52-301(3)(C)(iii); KY. REV. STAT. ANN. §§ 139.010(9), 139.200(1)(b) (West 2016); MISS. CODE ANN. § 27-65-26(3)(a); NEB. REV. STAT. § 77-2701.16(9); N.J. STAT. ANN. §§ 54:32B-2(zz), 54:32B-3(a) (West 2014) (amended 2016); TENN. CODE ANN. § 67-6-233(a)–(b); WIS. STAT. § 77.51(1a), (3p)–(3pc), (17x) (2016); WYO. STAT. ANN. §§ 39-15-101(a)(xliviii), 39-15-103(a)(i)(P) (2016).

135. See, e.g., statutes cited *supra* note 134.

136. Arthur R. Rosen & Hayes R. Holderness, *Cloud Computing: An Update*, 77 ST. TAX NOTES 355 *passim* (2015); Mark Peters & Greg Bensinger, *States Eye Taxes on Streaming Video and Cloud Computing*, WALL STREET J. (Aug. 20, 2015, 3:13 PM), <http://www.wsj.com/articles/states-eye-taxes-on-streaming-video-and-cloud-computing->

ample, the City of Chicago extended its personal property lease transaction tax to certain cloud-based services through an administrative ruling by the city's Department of Finance.¹³⁷ It also extended its transaction tax on "amusements" to digital services like Netflix.¹³⁸ Tennessee has extended its sales-tax statutes to apply specifically to remotely accessed software.¹³⁹ The Washington Business & Occupations Tax—a gross receipts tax—applies similarly.¹⁴⁰ Other states have acted to the contrary and completely exempt cloud-based software from their sales taxes.¹⁴¹

The debates about whether and how to tax these transactions are ongoing and multifaceted.¹⁴² We can be sure, however, that attention to this issue will only grow as the economy shifts further into the cloud. Once states *do* extend their sales taxes to those digital products, the question will be whether and how to tax that access when it is provided in exchange for data rather than for cash. Again, bartering for a taxable good or service does not eliminate the state sales tax, so personal-data transactions would be taxable unless some other statutory exclusion applied.¹⁴³

1440095146; Jeff John Roberts, *The Taxman Comes for Cloud Companies like Netflix, and Confusion Reigns*, FORTUNE (Sept. 8, 2015, 8:33 AM), <http://fortune.com/2015/09/08/cloud-computing-tax/>. Most states' laws have not specifically addressed cloud computing, but some states do exclude cloud-computing transactions from their tax base, whether by statute, regulation, or administrative guidance. See 2 HELLERSTEIN & HELLERSTEIN, *supra* note 91, ¶ 13.06A[2] (comprehensively analyzing the application of state sales taxes to cloud-computing transactions).

137. CITY OF CHI., DEP'T OF FIN., PERSONAL PROPERTY LEASE TRANSACTION TAX RULING NO. 12 (2015), http://www.cityofchicago.org/content/dam/city/depts/rev/supp_info/TaxRulingsandRegulations/LeaseTaxRuling12-06092015.pdf. The City has delayed implementation of that tax. See generally David Sawyer, *Chicago Delays Lease Tax Implementation for Cloud Computing*, 77 ST. TAX NOTES 596 (2015).

138. CITY OF CHI., DEP'T OF FIN., AMUSEMENT TAX RULING NO. 5 (2015), http://www.cityofchicago.org/content/dam/city/depts/rev/supp_info/TaxRulingsandRegulations/AmusementTaxRuling5-06092015.pdf.

139. TENN. CODE ANN. § 67-6-231(a) (2016).

140. WASH. REV. CODE § 82.04.050(6)(c)(i) (2016); WASH. ADMIN. CODE § 458-20-15503(203)(a) (2016).

141. This has occurred through statute, regulation, or other administrative guidance. See, e.g., COLO. REV. STAT. § 39-26-102(15)(c)(I)(C) (2016); IDAHO CODE § 63-3616(b) (2016); MO. CODE REGS. ANN. tit. 12, § 10-109.050(3)(I) (2016); NEB. DEP'T OF REVENUE, NEBRASKA SALES AND USE TAX GUIDE FOR COMPUTER SOFTWARE 3 (2011), <http://www.revenue.nebraska.gov/info/6-511.pdf>; WYO. DEP'T OF REVENUE, COMPUTER SALES AND SERVICES (2014), <http://revenue.wyo.gov/ComputerSalesandServices.pdf>.

142. See generally Paul Jones, *Online Services Tax Trend Raises Concerns*, 77 ST. TAX NOTES 916 (2015).

143. Including personal-data barterers in the tax base does not mean, of course, that taxing them would be easy. Issues of valuation, identification, and enforcement would be prominent. See *infra* Section II.C. Determining how states would tax multijurisdictional consumption of digital products would similarly be an issue. See COCKFIELD ET AL., *supra* note 65, at 298–99 (providing examples that illustrate the difficulty of imposing a consumption tax on the cross-border consumption of digital goods). Collecting the tax would also be significantly impacted by the constitutional limitations imposed on state taxing power under the Dormant Commerce Clause. The Supreme Court has long held that states do not have the power to compel vendors to collect their sales taxes unless the vendors have a physical presence within their boundaries. See *Quill Corp. v. North Dakota*, 504 U.S. 298, 309–19 (1992) (discussing the Court's nexus standard under the Dormant Commerce Clause). This has given rise to the issues related to the collection of sales tax on sales completed on the Inter-

3. Summary

The preceding analyses established that personal-data transactions generate tax consequences for individual consumers and for data aggregators, at least at a theoretical level. Whether they will generate *actual* tax consequences depends on several other factors, and that issue is discussed further below. Notwithstanding that analysis, the theoretical account of personal-data taxation that has been presented herein is important for many reasons. First, as discussed above with respect to the taxation of individual data providers, the structure of the data market provides a nice glimpse into the broader pressures that the modern economy is placing on our traditional tax instruments. Just as the sharing economy and the decentralization of income generation have placed pressure on tax reporting, the ability of individuals to consume leisure goods by selling slivers of their data or time puts structural pressure on our income tax. As an offshoot of that idea, personal-data transactions represent a further blurring of the line between business and personal activities, which is a critical distinction in our current Tax Code.¹⁴⁴ Finally, personal-data transactions provide companies with an immense opportunity to shift their tax burdens among jurisdictions or to avoid tax all together. To the extent that the sale of digital products is not taxed until the acquired data are monetized, companies have a greater ability to determine their own tax obligations by intentionally planning where and how that monetization occurs. These consequences are explored more fully in Part III.

C. Practical Impediments to Taxing Personal-Data Transfers

Notwithstanding the previous analysis, it is not particularly difficult to appreciate that personal-data transactions are unlikely be taxed, at

net. See David Gamage & Devin J. Heckman, *A Better Way Forward for State Taxation of E-Commerce*, 92 B.U. L. REV. 483, 484–86 (2012); Adam B. Thimmesch, *Testing the Models of Tax Compliance: The Use-Tax Experiment*, 2015 UTAH L. REV. 1107, 1107–10, 1114 (2015). Congress is currently evaluating legislation that would change that rule, but it continues to restrict state authority and the outlook for Congressional intervention is bleak. A data aggregator that sold access to its digital good in exchange for personal data might therefore be outside the reach of the state taxing authority even if the transaction were included in the tax base.

It is also important to note that current rules in the U.S. might place a burden on individual taxpayers to report and pay the tax of their own accord in this situation. Every state with a sales tax has a compensating use tax, which applies when the purchaser does not remit the required amount of tax to the vendor. Adam B. Thimmesch, *Taxing Honesty*, 118 W. VA. L. REV. 147, 151–60 (2015) (comprehensively discussing the state use tax). That can occur when a purchase was originally tax exempt, when the vendor fails to collect the tax as legally required, or when the Constitution protects the vendor from the state's authority to require the collection of that tax as discussed above. *Id.* at 155–57 (discussing the various situations in which use taxes apply). Individual consumers would thus have an obligation to pay use tax on the access of digital goods in exchange for their personal data if their state's laws were drafted broadly enough. Of course, few individuals know of or pay the use tax. *Id.* at 153–54 (discussing current data on use-tax compliance). Thus, it is fair to expect that virtually no one would pay a use tax on their personal-data transactions if those transactions were, indeed, subject to tax.

144. Compare 26 U.S.C. § 162 (2012) (providing a deduction for business expenses), with 26 U.S.C. § 262 (2012) (denying deductions for personal expenses).

least in their current form, in the United States. There are a host of practical impediments to taxing those transactions under the theoretical construct outlined above. Many of those impediments mirror the factors that make taxing the digital economy difficult more generally (e.g., sourcing, jurisdiction, administration, etc.). This Section, however, focuses on some of the major obstacles and policy considerations that apply specifically to implementing a tax on data transactions. Some of those apply equally to the imposition of tax on data aggregators and on data providers, while others apply more clearly only to the latter. In total, these include (1) seemingly insurmountable valuation problems; (2) the difficulties of line drawing; (3) the distribution of the resulting tax burden; (4) the anonymous Internet; and (5) the lack of political will. These factors collectively undermine the ability of a tax on personal-data transactions to meet the equity, efficiency, and administrability goals that are the hallmarks of tax-policy analyses.¹⁴⁵

1. The Uncertain Value of Personal Data and the Digital Products That They Buy

Perhaps the biggest barrier to applying our existing tax instruments to personal-data transactions is the problem of how to value the personal data and the digital products being traded. One obvious requirement for the reporting of income is that the amount of income be determinable.¹⁴⁶ Reporting income based upon an objective “fair market value” is well engrained in our tax system.¹⁴⁷ That can be difficult in the barter context, however, because no cash is used.¹⁴⁸ The tax law generally resolves that problem by having taxpayers reference market transactions in the same goods or services. Thus, if a lawyer generally charges \$250 an hour, a barter including an hour of her services would generate \$250 of income.¹⁴⁹ This approach does not apply cleanly to personal-data barter, however, because there has often never been a cash market for the benefits traded on either side. There have never been real cash markets for personal data and no one has ever paid to Google something or to use Facebook or Instagram.¹⁵⁰

145. Victor Fleischer, *A Theory of Taxing Sovereign Wealth*, 84 N.Y.U. L. REV. 440, 497–98 (2009) (labeling these three factors as “the traditional tax policy goals”); Lederman, *supra* note 117, at 1658 (noting that these three factors are “[t]he tax policy concerns usually considered in evaluating the appropriateness of a tax or provision”); Shu-Yi Oei, *Getting More by Asking Less: Justifying and Reforming Tax Law’s Offer-in-Compromise Procedure*, 160 U. PA. L. REV. 1071, 1082 (2012) (identifying these factors as the “three traditional criteria of tax policy analysis”).

146. See Camp, *supra* note 119, at 25 (“Taxpayers cannot report as ‘gross income’ an economic abstraction.”).

147. *Id.*

148. See Keller, *supra* note 94, at 448–51, 454–55, 457 (discussing a variety of valuation theories in the barter context).

149. *Id.* at 443–44.

150. The lack of a cash price for such products has resulted in some confusion regarding the nature of the economic exchange outside of the tax area as well. For example, at least one court has determined that state consumer-protection laws do not apply to individuals engaged in personal-data

Valuing those products is also difficult because personal-data transactions are generally ongoing rather than static. Even though a consumer might get a similar benefit from Microsoft Word as she does from Google Docs, she purchases those products in very different types of transactions. A purchase of Microsoft Word involves an initial cash outlay that entitles her to access the software for some set period of time.¹⁵¹ Google Docs, in contrast, is purchased on a pay-as-you-go basis. A user creates an account with an initial outlay of data, but need pay nothing more if she does not use the product. Each time she does use the product, though, she receives a greater benefit and compensates Google with more data. That dynamic makes it difficult for us to make direct comparisons between the value of old economy goods and their digital, bartered-for-data counterparts. The products may be similar, but the commercial transactions underlying their sale are not. It is thus difficult to take valuation guidance from transactions in the old economy.

One method that economists have used to value the “free” digital products of the Internet is to value consumers’ access to those products by valuing the time that they spend using them.¹⁵² That approach works well in getting a rough idea of the value that individuals place on those online products. It does not tell us, however, what Google or Facebook could charge in a cash market. Under the economists’ approach, we view consumers as paying differential amounts based on the value of their time,¹⁵³ but cash markets do not operate in that way. Generally, a seller demands a fixed price, and people who demand the good at or above that price buy. The method used by economists measures the consumer surplus, not the market price.¹⁵⁴ The method also fails to recognize the different values that individuals might place on their time in different contexts. A person who makes \$20 an hour at her job might use Facebook

transactions because they did not pay for the resulting service. See Hoofnagle & Whittington, *supra* note 4, at 658. This has led some to argue that companies like Facebook should have to declare a price for its product. *Id.* at 661–62. The zero-price construct also creates confusion for antitrust analyses. See generally Newman, *Zero-Price*, *supra* note 7, at 198–206.

151. Historically, that period of use would be perpetuity, but Microsoft now markets cloud-based access through which a consumer purchases the right to access the product for a more limited duration. For example, one can purchase a year’s worth of access to Microsoft’s Office 365 for seventy dollars a year. *Buy Office*, MICROSOFT.COM, <https://products.office.com/en-us/buy/office> (last visited Aug. 20, 2016).

152. *E.g.*, Brynjolfsson & Oh, *supra* note 82, at 2–6; Austan Goolsbee & Peter J. Klenow, *Valuing Consumer Products by the Time Spent Using Them*, 96 AM. ECON. REV. 108, 108 (2006); Jacques Bughin, *The Web’s €100 Billion Surplus*, MCKINSEY Q. (Jan. 2011), http://www.mckinsey.com/insights/media_entertainment/the_webs_and_8364100_billion_surplus.

153. Brynjolfsson & Oh, *supra* note 82, at 5 (stating that their model assumes “that the opportunity cost of leisure is higher for high income people”).

154. Consumer surplus is the aggregate value of the difference between what consumers are willing to pay for a product and the amount that the market demands. N. GREGORY MANKIW, *PRINCIPLES OF MICROECONOMICS* 135–41 (6th ed. 2012). The market price, in contrast, is based on the aggregate supply and demand curves in the relevant market. *Id.* at 77–78. A consumer might therefore value an item at \$20, but the market overall might demand a price of only \$15. In that situation, we would say that the product has a market value of \$15, a subjective value of \$20, and that a purchase of the product results in a consumer surplus of \$5 for our one consumer.

for half of an hour to get a reprieve from work, but it is unlikely that she would pay \$10 for that pleasure. She just needs a break. It is a matter of biology, not market preference. Determining a value under this method therefore might be informative of the massive importance of the digital products that are provided in today's economy, but it does not help establish market values for those products for tax purposes. Placing a market value on the "free" digital products of the Internet is thus very difficult.

It is equally difficult to value the personal-data involved in those exchanges. To start, each individual datum is largely worthless to an aggregator. It is the network effects that result in significant gains to the aggregator when enough data are collected.¹⁵⁵ Further complicating matters is the fact that the ultimate value of personal data to an aggregator includes the value generated by that aggregator through the use of its algorithms or other data-management tools.¹⁵⁶ The monetized value of those data is not the value of the raw data, and isolating the value of the raw data may be impossible. Indeed, none of the economists interviewed in connection with the French Report were able to provide a method for determining that value.¹⁵⁷ An OECD report issued in 2013 explored the variety of available methods for valuing personal data but noted significant differences and potential difficulties with each.¹⁵⁸ Ultimately, the report looked to new developments that would create market-based estimates of data's value.¹⁵⁹ Amusingly, the report noted that "[b]etter data is needed to understand the economic value of personal data."¹⁶⁰

Valuing data barter is also difficult because of the non-rivalrous nature of the data involved.¹⁶¹ Data can be replicated infinitely without any loss to the original source. That factor makes it impossible to apply our traditional valuation metrics. Again, to value barter exchanges, we generally look at the price at which the bartered goods or services are traded in the cash market. An asset that sells for \$50 is bartered for \$50 worth of goods or services. A person would not barter that asset for \$15 worth of services and deprive herself of the other \$35 of value. With personal data, however, she may have no qualms providing her \$50 of data for a benefit worth \$35. She can simultaneously sell her data to another buyer to generate more benefit. This makes it impossible to deter-

155. See OECD REPORT, *supra* note 66, at 101 (discussing the importance of network effects in the digital economy).

156. Solove, *Digital Dossiers*, *supra* note 8, at 1113.

157. FRENCH REPORT, *supra* note 37, at 117.

158. ORG. FOR ECON. CO-OPERATION & DEV., EXPLORING THE ECONOMICS OF PERSONAL DATA: A SURVEY OF METHODOLOGIES FOR MEASURING MONETARY VALUE 4 (2013) [hereinafter OECD 2013 REPORT], http://www.oecd-ilibrary.org/science-and-technology/exploring-the-economics-of-personal-data_5k486qtxldmq-en; see also Jeff Lawton, *Can You Quantify the Value of Your Data?*, COST MGMT., Mar.-Apr. 2015, 2015 WL 3456813.

159. OECD 2013 REPORT, *supra* note 158, at 33.

160. *Id.* at 5.

161. *But see* Purtova, *supra* note 87, at 99-109 (arguing that data are rivalrous based on the current data market).

mine *the* value for personal data, and to apply the traditional approach to valuing barter exchanges. Data do not have a singular value.

Overall, the valuation issues with respect to personal-data transactions seem to effectively preclude their taxation, at least on an individual-transaction basis. Unless and until a market price develops for personal data or for the digital products that are the tools of data collection, it may be impossible to set their value. That means that we will likely be unable to apply our traditional tax instruments directly to those exchanges despite their theoretical inclusion in the tax base.¹⁶²

2. The Expansive Scope of Data Transactions

Taxing personal-data transactions would also be difficult due to the challenges of defining the transactions to which such a tax applied. The mind can run wild once one starts thinking about taxing data transactions and in-kind benefits. Two academics discussing their papers at a conference are engaged in a data barter. So are two parents exchanging ideas about which children's shoes are the most durable. Are those taxable exchanges of data? What about a person who watches television? Does he have a taxable accession to wealth?¹⁶³

This is clearly a problem if one seeks absolute academic tidiness. As a practical matter, we will never tax two individuals who share tips on how to best mow their lawns or how to cook a favorite dish, so how can we ever tax an individual who shares that same information in exchange for access to a web forum? Realistically, however, we draw lines all of the time in tax law.¹⁶⁴ An underinclusive rule is better than a woefully underinclusive rule or no rule at all. We might thus say that sharing ideas at a conference is as much of a taxable transaction, theoretically, as using Google Docs, but we might feel that it is okay to tax the latter and not the former.

As a concept, then, drawing lines is fine. The difficulty is drawing lines that actually capture the transactions that we want to tax (presuma-

162. It is worth recognizing that existing law already accounts for situations where directly valuing the barter exchange is impossible. Keller, *supra* note 94, at 495 (discussing the application of the open-transaction doctrine to this situation). In that situation, the taxation is delayed until a barter participant monetizes the asset that was obtained. *Id.* Our current tax rules applicable to data aggregators effectively provide this result. They are taxed when they monetize the data by selling more products, selling advertising, or by generating gain in some other way. The open-transaction doctrine does not apply so well to data providers, however, because they do not monetize the digital products that they receive in the barter exchange. They consume them.

163. Many jurisdictions across the globe do impose taxes based on the receipt of public television. Kimberly Massey, *License Fee*, in *ENCYCLOPEDIA OF TELEVISION* 1358–59 (Horace Newcomb ed., 2d ed. 2004); Tim Masters, *How is TV Funded Around the World?*, *BBC NEWS* (Mar. 31, 2014), <http://www.bbc.com/news/entertainment-arts-26546570>. Those taxes are nominally a payment in exchange for the television programming, but they function the same as a tax on the benefit that the television provides.

164. See generally David A. Weisbach, *Line Drawing, Doctrine, and Efficiency in the Tax Law*, 84 *CORNELL L. REV.* 1627, 1632 (1999).

bly transactions with large data aggregators) while leaving the others untouched (perhaps personal exchanges of information). For example, we could limit a personal-data tax to transactions (1) that involve digital transfers of data and (2) that are commercial in nature. Under that type of standard, a transfer of data for access to Facebook would be taxable whereas the transfer of knowledge by two doctors having lunch would not be taxable. What if, however, the doctors e-mailed to share information about their recent results with a particular treatment method? That would suddenly be taxable as an electronic transfer of information in exchange for a commercial benefit. Limiting our view to digital transfers of business information may therefore not be limited enough.

A more restrained approach might be to exclude data-for-data transfers and only capture transfers of data for other benefits, like access to digital products. The Code already defers the recognition of gain on certain transfers of “like kind” assets.¹⁶⁵ We could extend that statutory exclusion to include all personal-data exchanges that involve data on both sides. That would work to exclude our doctors from taxation, but again the devil is in the details. Could Facebook argue that it is merely providing data to its users? What about CNN.com? A data-for-data exemption might exempt too much.

None of this analysis is intended to indicate that lines could not be drawn. However, the task would be difficult and the “safest” lines to draw would be the most tightly drawn and thus potentially underinclusive. If we were to travel down this road, significant work would need to be done to properly determine the personal-data transactions that were subject to tax and how to define them. That task could prove immensely difficult in practice.

3. The Impact of a Tax on Data Providers

The valuation and line-drawing issues discussed above will likely prevent the direct taxation of either side involved in the personal-data barter. It is worth recognizing, however, that the imposition of tax on individuals’ personal-data gains would be particularly problematic because such a tax would likely be (1) one that disproportionately impacts lower-income taxpayers and (2) inefficient from an economic perspective.

To start, a tax on individuals’ personal-data gains would likely impact lower-income taxpayers to a greater degree than higher-income tax-

165. 26 U.S.C. § 1031(a)(1) (2012). That section applies to particular assets and they must be held for investment of business purposes. *Id.* Section 1031 would therefore not apply on its terms to the personal-data barter discussed in this Article. It is the concept, however, that could be extended to those transactions.

payers because, as adjusted for access,¹⁶⁶ they use the Internet more for leisure purposes.¹⁶⁷ To the extent that their leisure time is spent using the “free” digital products received in personal-data barter, a personal-data tax would thus likely impact them to a greater degree.¹⁶⁸ Their leisure time would be taxable whereas the leisure time of wealthier individuals would not be taxed.¹⁶⁹ The result is a tax that would be regressive, at least among taxpayers with access to the Internet.¹⁷⁰

It seems fair to expect that the use of digital products would decline dramatically in the face of such a tax. The appeal of wishing a friend “Happy Birthday” on Facebook would be significantly reduced if it were accompanied with a tax bill. This would be especially true for users who have little disposable income. The result would be that higher-income individuals would continue to enjoy those products at a greater clip than our lower-income individuals.¹⁷¹

This impact might suggest that a tax on personal data would be largely inefficient as a reverse Ramsey tax.¹⁷² The demand for the “free” digital products of the Internet is likely incredibly elastic, especially

166. Our very lowest-income citizens may not have any access to Internet beyond that provided at public libraries. Usage among that population would naturally be low, but any existing usage would likely be directed primarily to free digital products.

167. Scott Wallsten, *What Are We Not Doing When We're Online?*, in *ECONOMIC ANALYSIS OF THE DIGITAL ECONOMY* 68–70 (Avi Goldfarb et al. eds., 2015); Avi Goldfarb & Jeff Prince, *Internet Adoption and Usage Patterns Are Different: Implications for the Digital Divide*, *INFO. ECON. & POL'Y*, Mar. 2008, at 2, 14; Austan Goolsbee & Peter J. Klenow, *supra* note 152, at 110–11.

168. Of course, the actual impact of a tax on data barter would likely be nonexistent for taxpayers with very low income levels due to the presence of the standard deduction and personal exemptions. 26 U.S.C. §§ 63(b), 151(a)–(c) (2012).

169. In this way, a tax on data would be a close approximation to taxing the imputed leisure income of low-income taxpayers, but leave high-income taxpayers without a tax on the imputed value of their leisure time. See SIMONS, *supra* note 98, at 52–53 (discussing the imputation of income from individuals' leisure time). The vertical inequity of that result is clear.

170. The actual regressivity of a personal-data tax would depend on the current levels of Internet access among income groups, the use of the “free” digital goods that would generate that tax, and how many of the impacted individuals were subject to the tax. An empirical assessment of those factors is well beyond the conceptual goals of this Article.

171. This impact actually highlights one benefit of the current personal-data market—it is largely egalitarian. Individuals of every income level generally have the same purchasing power in that market. A high-income individual obtains the same access to Google as a low-income individual. They similarly obtain the same access to Facebook and to Instagram. If we taxed those benefits, however, they might be taken out of the reach of low-income individuals. The tax cost of those products would likely have a disproportionate impact on our poorest citizens.

172. A Ramsey tax is a tax directed at goods or services that have the lowest elasticities of demand. The goal of such a tax is to reduce the distortions that taxes create in the market. See Joseph Bankman & David A. Weisbach, *The Superiority of an Ideal Consumption Tax over an Ideal Income Tax*, 58 *STAN. L. REV.* 1413, 1420 n.10 (2006) (“Under Ramsey taxation, we should levy a tax on goods with low elasticity of demand because the quantities consumed are likely to change less when subject to taxation as compared to goods with high elasticities”); Terrance O'Reilly, *Principles of Efficient Tax Law: Apocrypha*, 27 *VA. TAX REV.* 583, 593–94 (2008) (discussing the inverse elasticity rule); see also F. P. Ramsey, *A Contribution to the Theory of Taxation*, 37 *ECON. J.* 47, 47 (1927) (analyzing how to design taxes so as to minimize utility losses). A reverse Ramsey tax would thus be a tax on items with very high elasticities of demand and would maximize market distortions.

among less-affluent citizens. We can thus fairly question whether such a tax would serve any role at all.¹⁷³

4. The Anonymous Internet

Another practical impediment to taxing individuals on their personal-data gains is the fact that the Internet operates largely anonymously.¹⁷⁴ Some websites do require individuals to provide their identity in exchange for services, and users can intentionally give up their anonymity to access those sites. Users can falsify that information, though, so we may not be certain that their identities are truly known. Further, it seems that it is more often the case that individuals can access digital products without disclosing their identities at all. Many websites do not require a customer account, and those that do often allow the use of pseudonyms.

Of course, one basic principal underlying this Article is that data aggregators are able to identify individuals and obtain highly detailed information based only on their online activities even without the users' knowledge or consent.¹⁷⁵ Websites can track users through their IP addresses, for example, and combine that information with other known information to identify the particular user.¹⁷⁶ For the majority of users, then, there may be no true anonymity in a general sense. Knowing an individual user's identity for marketing purposes, though, is not the same as knowing that identity for tax purposes. Google might know that your IP address is being used to conduct a web search, but it does not neces-

173. The efficiency analysis in this paragraph does not even touch on the incredibly high administrative costs that would be involved with a tax on personal-data gains. Taxpayer compliance with such a tax would hinge on the existence of a third-party reporting structure for those transactions. See Leandra Lederman, *Reducing Information Gaps to Reduce the Tax Gap: When Is Information Reporting Warranted?*, 78 *FORDHAM L. REV.* 1733, 1737–41 (2010) (discussing the importance of third-party information reporting for tax compliance and when its costs are warranted); see also Leandra Lederman, *Statutory Speed Bumps: The Roles Third Parties Play in Tax Compliance*, 60 *STAN. L. REV.* 695, 697–98 (2007). See generally Susan C. Morse, *Tax Compliance and Norm Formation Under High-Penalty Regimes*, 44 *CONN. L. REV.* 675, 679 (2012). The compliance rate for income that is not subject to third-party withholding or information reporting is estimated to be less than fifty percent. Theodore Black et al., *Federal Tax Compliance Research: Tax Year 2006 Tax Gap Estimation 1*, 3 (Mar. 2012) (Internal Revenue Serv., Research, Analysis, and Statistics Working Paper), <http://www.irs.gov/pub/irs-soi/06rastg12workppr.pdf> (reporting an estimated voluntary compliance rate of forty-four percent for income that is not subject to information reporting or withholding). That would likely involve either the data aggregator or potentially the data provider's Internet Service Provider. Either would have difficulty both valuing the personal-data transactions and identifying the person to whom the information report should be directed. See *supra* Section II.C.1 (discussing the valuation difficulties with taxing personal-data transactions); see also *infra* Section II.C.4 (discussing the difficulties of the anonymous internet). The sheer volume of the personal-data transactions that occurs would also create extreme administrative difficulties. In the end, then, the administrative costs of imposing a tax directly on personal-data transactions would counsel against the adoption of such a tax unless technological advances significantly reduced these concerns.

174. See COCKFIELD ET AL., *supra* note 65, at 31–32 (discussing the challenges that online anonymity presents for tax compliance in the digital economy).

175. See *supra* Section I.A (discussing observed and inferred data).

176. As noted above, Google touts its ability to identify individual users without having to ask for identifying information. See MCDONALD, MOHEBBI & SLATKIN, *supra* note 22, at 3.

sarily know that it was a visitor in your home who entered the inquiry. Users can also make their IP addresses virtually meaningless for identification purposes through the use of technological tools like proxy servers or by using services like Tor.¹⁷⁷ Data aggregators (assisted by government) could perhaps get through those tools of obfuscation in many cases,¹⁷⁸ but the process would likely be too costly to be reasonably practicable as a requirement of tax administration.¹⁷⁹

It can be debated whether the anonymous Internet is a net benefit or detriment. What cannot be debated, however, is that the anonymous Internet precludes the comprehensive taxation of individuals' personal-data gains. We may be able to capture some of them, and maybe the most valuable among them, but we cannot capture them all. It is simply impractical to assume that we can reasonably require digital-service providers to accurately identify all of their users and those users' access to their digital products.

5. Political Will

One final impediment to the extension of our current tax instruments to personal-data transactions is the American public's lack of appetite for new taxes, especially those on Internet-based activities. The public seems to abhor the expansion of the tax base to incorporate digital forms of "old economy" transactions. We see this in the form of the Internet Tax Freedom Act, which prevents the imposition of tax on Internet access.¹⁸⁰ We see this in opposition to the collection of sales tax on Internet purchases.¹⁸¹ We have more recently seen this in the disapproval of

177. Anupam Chander, *Googling Freedom*, 99 CALIF. L. REV. 1, 15 (2011) (discussing the use of anonymizing technologies to assist individuals in speaking out against repressive governments); Ira S. Rubinstein, Ronald D. Lee & Paul M. Schwartz, *Data Mining and Internet Profiling: Emerging Regulatory and Technological Approaches*, 75 U. CHI. L. REV. 261, 274-78 (2008) (discussing available anonymizing technologies); *About Tor*, TORPROJECT.ORG, <https://www.torproject.org/about/overview.html.en> (last visited Aug. 21, 2016) (providing information about the Tor network).

178. The term "obfuscation" is not used pejoratively in this context. The ability to hide one's IP address can have significant benefits, whether one is reporting or accessing the Internet from within a repressive regime or whether one wants to retain their privacy in an overly intrusive Internet culture. See generally Chander, *supra* note 177, at 15; Jason Koebler, *Public Libraries Will Operate Tor Exit Nodes to Make the Service More Secure*, MOTHERBOARD (July 30, 2015, 11:23 AM), <http://motherboard.vice.com/read/public-libraries-will-operate-tor-exit-nodes-to-make-the-service-more-secure> (discussing the debates surrounding, and the benefits of, Tor).

179. Of course, individuals could be taxed on these transactions *indirectly* through a tax on the data aggregators. That approach would not require individual users to be personally identified. This type of indirect-taxation approach is more fully discussed below. This Section, however, is focused specifically on the difficulties that would be encountered if one desired to directly tax individuals on their personal-data gains.

180. Internet Tax Freedom Act, Pub. L. No. 105-277, § 1101(a)(1), 112 Stat. 2681, 719 (1998) (codified at 47 U.S.C. § 151 (2012)).

181. See *Conservatives Oppose So-Called Marketplace Fairness Act*, HEARTLAND INST., <https://www.heartland.org/no-net-tax> [<https://perma.cc/P2PY-W3NB>] (last updated Sept. 18, 2015, 2:43 PM) (listing a wide range of individuals and groups opposed to a federal bill that would allow states greater authority to require online retailers to collect their taxes); see also DON'T TAX THE

the expansion of the state sales taxes to streaming services like Netflix or Spotify.¹⁸² The American public cares little for the theoretical completeness of the tax system and seems to care deeply that the Internet be a tax-free zone. Promoting a tax on Facebook access might just get one black-balled from the political class. The politics in this area will thus likely prevent any tax on individuals' or aggregators' personal-data gains.¹⁸³

III. TAX, PRIVACY, AND THE NEW ECONOMY

The preceding Sections establish that personal-data transactions are technically taxable transactions, but that practical and political issues will prevent them being taxed directly.¹⁸⁴ That means that our tax system currently provides, and will continue to provide, an implicit tax preference for those transactions. Transactions that would be taxable if engaged in for cash consideration are nontaxable because they are done as digital barter. That implicit tax exemption has implications both within and without the field of taxation, and appreciating its existence is thus critically important for tax and non-tax scholars alike.

Within the tax field, the first takeaway from this conclusion is that the digital economy has created a new way of generating income that cannot be effectively taxed, and we must be cognizant of this fact as the personal-data market continues to evolve. We have already seen significant attention paid to the so-called sharing economy and the challenges that it presents for our current tax instruments.¹⁸⁵ Technology will undoubtedly continue to create further opportunities for tax-base erosion

INTERNET, <https://donttaxtheinter.net/> (last visited Sept. 3, 2016) (compiling news stories and articles opposing efforts to grant states greater authority to require online retailers to collect their taxes).

182. Kacey Drescher, *State Dept. of Revenue to Tax Online Streaming Services*, WFSB 12 NEWS (Aug. 1, 2015, 9:30 PM), <http://www.wsfa.com/story/29467470/state-dept-of-revenue-to-tax-online-streaming-services#.VZfRI9QBBLI>; John Pletz, *Chicago Tax on Streaming, Cloud Services Raises Tech Entrepreneurs' Ire*, CRAIN'S CHI. BUS. (July 7, 2015), <http://www.chicagobusiness.com/article/20150707/BLOGS11/150709902/fear-and-loathing-over-chicagos-new-cloud-tax>.

183. Political pressure might also come as a result of the economic consequences of a unilateral tax on personal-data transactions by the U.S. government. A tax on data aggregators, specifically, might be viewed as just one more tax measure undermining the competitiveness of the United States in the global economy. A market-based tax might eliminate those concerns to some extent, given the importance of the U.S. populace to the data aggregation economy, but these considerations should be taken into account. Thanks to Matt Schaefer for raising this point.

184. It is worth repeating that the analysis provided above has focused solely on personal-data transactions that occur as a part of the multi-sided platform business model of companies like Facebook and Google. As noted above, there are many personal-data transactions that occur outside of that business model, and the taxation of those types of data transactions might not present the same conceptual difficulties. One prominent example is where cash discounts are given in exchange for data, like in the context of customer-loyalty programs. Those discounts could easily be tracked and subjected to information reporting for income-tax purposes. They might also be taken into account for purposes of state sales taxes. See Gregg D. Barton & Andrea Templeton, *The Price of Customer Loyalty: Rewards Programs and Sales and Use Tax Issues*, JDSUPRA BUS. ADVISOR (Sept. 23, 2015), <http://www.jdsupra.com/legalnews/the-price-of-customer-loyalty-rewards-46017/> (introducing the sales-and-use-tax issues presented by customer-loyalty programs).

185. See generally Oei & Ring, *supra* note 112, at 1027–30 (analyzing the tax consequences of the sharing economy).

within the context of the personal-data economy—and more broadly. Recognizing the personal-data exemption is thus an important part of taking stock of the tax base in the new economy.¹⁸⁶

The current tax preference for the use of data as a currency also has implications beyond the erosion of the tax base. Research suggests that the market for data suffers from significant inefficiencies and creates legal issues in the privacy, consumer protection, and antitrust contexts.¹⁸⁷ Some scholars have even shown that large-scale data aggregation and behavioral psychology could be combined to influence elections globally.¹⁸⁸ The U.S. government also frequently requests that companies provide them with information that they have gathered from users of their applications.¹⁸⁹

The ramifications of personal-data transactions are thus widespread, and the tax exemption for data has equally broad implications. To the extent that the tax system aids in the lack of consumer salience of the commercial exchange, implicitly promotes the use of personal data, or effectively prevents the development of consumer-favorable data practices, we must evaluate whether and how to account for those impacts. The following Sections address those issues. We may not be able to directly tax personal-data transactions, but that does not mean that we can do nothing or that we can ignore the impact of our tax system on the market for personal data. The two are intertwined. Section A provides insight into how our tax system could best account for the current personal-data economy. That includes a discussion of (1) how to reform our current tax instruments to at least indirectly account for the value created by personal-data transactions and (2) the merit of creating new tax instruments that might supplement our current taxes and help to promote beneficial data practices.

Section B changes the focus. Instead of looking at how the current personal-data economy should drive changes to our tax system, it looks at how the current tax system will impact the evolution of the personal-

186. See *id.* at 1027–29; Soled & Thomas, *supra* note 111, at 786–90 (analyzing how the taxation of fringe benefits should be reformed for the modern economy).

187. See generally Calo, *supra* note 29, at 1003–04 (discussing the potential for market manipulation); Hoofnagle & Whittington, *supra* note 4, at 608–09 (discussing the impacts of zero-price market on consumers); Newman, *Zero-Price*, *supra* note 7, at 169–70 (discussing the role of anti-trust law in zero-price markets). See also sources cited *supra* note 43 (listing a number of articles that discuss the legal implications of the personal-data market).

188. See Robert Epstein & Ronald E. Robertson, *The Search Engine Manipulation Effect (SEME) and Its Possible Impact on the Outcomes of Elections*, 2015 PROC. NAT'L ACAD. SCI. U.S. E4512, E4512, <http://www.pnas.org/content/112/33/E4512.full.pdf>.

189. GOOGLE TRANSPARENCY REPORT, GOOGLE, <https://www.google.com/transparencyreport/userdatarequests/> (last visited Aug. 21, 2016); Nick Bilton, *Tech Companies Offer Update on Government Data Requests*, N.Y. TIMES: BITS (Feb. 3, 2014, 4:29 PM), <http://bits.blogs.nytimes.com/2014/02/03/tech-companies-release-government-data-requests/>; Kia Kokalitcheva, *Twitter Sees 52% Spike in Government and Copyright Info Requests*, FORTUNE (Aug. 11, 2015, 5:07 PM), <http://fortune.com/2015/08/11/twitter-transparency-report/>.

data economy. The current tax preference for the use of personal data is equally a tax penalty on other types of market exchanges.¹⁹⁰ More specifically, it is a tax penalty on a transfer of data for cash. As a result, even if we would favor the latter for privacy or other reasons, our current tax system will discourage it. That impact has thus far gone unrecognized in the current debates regarding the personal-data economy. Section B remedies the resulting void by looking at some predominant visions for the future of the personal-data market and by analyzing how the tax system will impact those visions. Section C concludes by calling for the recognition of the personal-data tax exemption in the broader U.S. regulatory approach to personal data.

A. Tax and the Current Personal-Data Economy

1. The Role of Existing Tax Instruments

One way to respond to our inability to directly tax personal-data transactions is to tax them *indirectly*. The way to do that in the context of our existing tax instruments is through a tax on the monetization of personal data by the data aggregators or by their shareholders. Those monetization events would generally include (1) an aggregator's sale of additional products or advertising based upon those data and (2) the sale of stock by a shareholder of an aggregator.¹⁹¹ Notwithstanding the ease of taxing those monetization events, however, it is not a perfect substitute for taxing the initial personal-data barter.

Deferring the taxation of personal-data gains until a monetization event could distort the taxes that are paid in several ways, including (1) if the jurisdiction that would tax the personal-data transaction does not have jurisdiction to tax the monetization event; (2) if the income from the monetization event is not sourced to the same jurisdiction as would income from the personal-data barter; and (3) if the monetization event is subject to a different tax rate than the rate at which the personal-data gains would be taxed.

To illustrate, assume that a data aggregator makes a taxable sale of a digital product in the United States in a personal-data barter. Assume further that the United States would tax the aggregator's income from that sale if it could conceivably do so. Instead, however, the aggregator is able to collect the personal data on a tax-free basis—given the limitations

190. Tax scholarship generally recognizes that the difference between a penalty for engaging in an activity and a bonus for not engaging in that activity is one of framing. Edward J. McCaffery & Jonathan Baron, *Thinking About Tax*, 12 PSYCHOL. PUB. POL'Y & L. 106, 115 (2006).

191. The receipt of a dividend from an aggregator would also be a monetization event, but one that seems less likely than the others. See FRENCH REPORT, *supra* note 37, at 2 (noting the pressure against issuing dividends in the digital economy). Recall also that the OECD Report minimized the concerns related to the proper characterization of the personal-data transaction because taxing jurisdictions' taxation of data aggregators' advertising revenue would match their taxation of the barter transactions. OECD REPORT, *supra* note 66, at 104.

discussed above—and its shareholders experience a concomitant increase in the value of their stock. One of its foreign shareholders then sells her shares and monetizes a portion of the value created by the personal-data barter. In that situation, taxing that shareholder's monetization event will indirectly tax the personal-data barter, but in a distorted way. Instead of the United States taxing the aggregator's gains, the foreign country will tax its residents' gains.¹⁹² That country might also have a preferential rate for those gains, so even the *amount* of tax would be lower.¹⁹³ Taxing the monetization event as a proxy for taxing the personal-data barter would thus result in the tax revenue being shifted among jurisdictions and potentially being reduced in amount.¹⁹⁴

We could further illustrate these issues by assuming that the data aggregator used a foreign entity to collect the data and to monetize the value of those collected data by selling advertising. Under current United States tax treaties, the U.S. might not have jurisdiction to tax the advertising income of the foreign entity because the firm does not have a "permanent establishment" within the U.S.¹⁹⁵ Further, even if the company did have a permanent establishment in the country, our tax rules might not treat that particular income as subject to U.S. tax. That income could be classified as foreign-source income under the rules applicable to services income.¹⁹⁶ Due to these rules, taxing the monetization event would not be a proxy for taxing the personal-data barter. The value created by that barter would escape U.S. taxation completely.

192. KUNTZ & PERONI, *supra* note 122, ¶ C3.09. A foreign shareholder is generally protected from U.S. taxation of its gains on the sale of stock in a U.S. company. *Id.* Under certain conditions, however, that gain may be subject to U.S. tax. *Id.*

193. See ROBERT CARROLL & GERALD PRANTE, ERNST & YOUNG LLP, CORPORATE DIVIDEND AND CAPITAL GAINS TAXATION: A COMPARISON OF THE UNITED STATES TO OTHER DEVELOPED NATIONS 12 (2012), http://www.theasi.org/assets/EY_ASI_Dividend_and_Capital_Gains_International_Comparison_Report_2012-02-03.pdf (reporting that "[a]bout four-fifths of the OECD and BRIC countries tax capital gains at rates below the rates applied to ordinary income").

194. This might be true even if the shareholder is a U.S. shareholder. A U.S. individual's gain on the sale of an aggregator's stock might well qualify as long-term capital gain, which is subject to a preferential rate of taxation. 26 U.S.C. § 1(h)(1) (2012). A shareholder could also be tax exempt of course.

195. KUNTZ & PERONI, *supra* note 122, ¶¶ A1.04. Countries' tax jurisdiction is often determined by reference to bi-lateral tax treaties, which typically limit a country's taxing power to firms that have established a "permanent establishment" within it. *Id.* ¶¶ A1.04, C4.05. Historically, establishing a permanent establishment has required certain types of physical presence within a taxing jurisdiction. *Id.* ¶ C4.05[2].

196. The Code does not provide a sourcing rule that specifically addresses advertising income. In the context of "old economy" advertising, advertising revenue has been sourced according to the U.S. tax rules applicable to services income. See *Peidras Negras Broad. Co. v. Comm'r*, 43 B.T.A. 297, 312 (1941), *nonacq.*, 1941-1 C.B. 18, *aff'd*, 127 F.2d 260 (5th Cir. 1942); see also Gary D. Sprague et al., *Federal Taxation of Software and E-Commerce*, Tax Mgmt. Portfolio (BNA) [U.S. Income Portfolios Library] No. 555, pt. II, § B.3. Under that rule, advertising income is sourced to the location where the services are performed. 26 U.S.C. §§ 861(a)(3), 862(a)(3) (2012). That rule, of course, may not be appropriate in the digital economy if we desire to shift to a more complete market-based sourcing regime. See Assaf Y. Prussak, *The Income of the Twenty-First Century: Online Advertising as a Case Study for the Implications of Technology for Source-Based Taxation*, 16 TUL. J. TECH. & INTEL. PROP. 39, 62–70 (2013).

These illustrations are not meant to suggest that giving attention to indirectly taxing personal-data barterers would be pointless. To the contrary, the issues regarding taxing jurisdiction and the proper sourcing of income from digital transactions are at the core of the discussions currently being undertaken with respect to how to tax digital transactions more generally. Recognizing the role of personal-data transactions in that economy, however, both adds to the importance of those discussions and colors how we view those issues. The personal-data barter particularly adds to the discussions regarding expanding the permanent-establishment concept beyond physical presences.¹⁹⁷ It also informs our discussions of how to tax transactions involving cloud-based services. Those transactions often include a payment with data, which means that taxing those transactions will be done indirectly through the taxation of the data aggregators' sales or advertising revenue. The result might be that we need to align the rules for sourcing those categories of income as a way to reduce the tax distortions created by the personal-data exemption.

The sum of this analysis is that discussions regarding how to best reform our tax systems for the digital age should consider how to best account for the fact that personal-data transactions are going untaxed. If we are going to use the corporate income tax on advertising revenue as a proxy for taxing those transactions, we will need to ensure that the jurisdictional and sourcing rules reflect that role. Critically, we will also need to maintain that tax. That realization is one important takeaway from this analysis—the corporate income tax will play a critical role in the tax system of the future because it is likely the most direct and comprehensive way of taxing the value derived by personal-data transactions. Its elimination would significantly reduce the opportunities for our tax system to capture that value. A consumption tax is not going to fill that role.

This realization is important because it cuts against a significant body of work that is aimed at critiquing the corporate income tax as a normative matter and that often does so in connection with a call for greater reliance on consumption taxes.¹⁹⁸ It does, however, support the

197. See, e.g., COCKFIELD ET AL., *supra* note 65, at 468 (discussing potential expansion of the permanent-establishment concept to reflect modern business realities); FRENCH REPORT, *supra* note 37, at 4, 63–64, 113–15 (discussing the challenges that the digital economy creates under traditional conceptions of a permanent establishment); OECD REPORT, *supra* note 66, at 78–79, 88, 100–02, 106–11, 147–48 (discussing the potential expansion of the permanent-establishment concept to include digital presences). It is important to note, of course, that the OECD rejected the adoption of an economic-nexus type permanent-establishment rule in its recent BEPS Project. *Id.* at 148 (noting that a digital permanent-establishment concept was not recommended due to the anticipated benefits from other proposals).

198. The literature critiquing the corporate income tax is voluminous. See Rueven S. Aviyonah, *Corporations, Society, and the State: A Defense of the Corporate Tax*, 90 VA. L. REV. 1193, 1197 (2004) (noting the extensive critique of corporate income tax and that “no academic has in recent years mounted a serious, convincing normative defense of why this cumbersome tax should be retained”); Omri Marian, *Jurisdiction to Tax Corporations*, 54 B.C. L. REV. 1613, 1622–23 (2013) (“[O]ne thing that legal scholars and public finance economists agree upon (a rare occasion indeed), is that corporate taxation, as a legal model, is absolutely inefficient.”); Darien Shanske, *A*

idea that reliance on different tax instruments is beneficial as a way of controlling for the weaknesses inherent in each tax.¹⁹⁹ The conclusion is therefore important as we continue to analyze optimal tax design. We may not like the corporate income tax as a matter of economic efficiency, but it can be used to address the challenges that the digital economy creates for our personal income taxes and consumption taxes. Further attention to capital-gains preferences, jurisdictional limits, and the proper sourcing of income are thus warranted given the continued growth of the personal-data economy.²⁰⁰

2. The Potential Role for Alternative Tax Instruments

The preceding Part has focused on how current tax instruments could be modified to address the personal-data economy. It may be, though, that the best way to approach the current personal-data exemption is to adopt completely new tax instruments that more directly address the personal-data market. Those new tax instruments could help both to offset lost tax revenue and to encourage the development of beneficial data-protection practices and technology. This approach is considered in the French Report, the OECD Report, and to an extent by governments worldwide.

The French Report specifically suggests a special tax on companies that collect data through the “regular and systematic monitoring of users’ activity.”²⁰¹ The tax would apply only to aggregators who monitor more than a particular number of users, and the report specifically suggests that such a tax could be an actual charge per monitored user.²⁰² The OECD Report proposed consideration of an “equalization levy . . . as an alternative way to address the broader direct tax challenges of the digital economy.”²⁰³ The report proposed alternative bases for such a tax, in-

New Theory of the State Corporate Income Tax: The State Corporate Income Tax as Retail Sales Tax Complement, 66 TAX L. REV. 305, 327 (2013) (noting the “ferocious debate” regarding whether consumption or income taxes are ideal).

199. See generally David Gámage, *The Case for Taxing (All of) Labor Income, Consumption, Capital Income, and Wealth*, 68 TAX L. REV. 355, 357–58 (2015) (arguing that the weaknesses in one form of taxation can be mitigated through the application of a different form of taxation that does not suffer the same weaknesses).

200. One other interesting caveat to this discussion is that states’ tax systems are currently much better structured to handle these issues than our federal tax system. This is largely because states have a greater ability than the federal government to tax firms that have no physical presence within their boundaries and many already use market-state sourcing methods. 2 HELLERSTEIN & HELLERSTEIN, *supra* note 91, ¶¶ 6.11[1], 9.18[3][a], 10.07 (discussing U.S. states’ taxing jurisdiction, the use of market-state sourcing rules, and the move away from the cost-of-performance standard); Adam B. Thimmesh, *The Illusory Promise of Economic Nexus*, 13 FLA. TAX REV. 157, 161–87 (2012) (discussing the economic-nexus standard for state taxing jurisdiction); Douglas A. Wick, *A Categorization of State Market Sourcing Rules*, 74 ST. TAX NOTES 351, 351 (2014) (“The cost of performance method is waning, and market sourcing is taking its place.”). In addition, the structure of the state corporate income tax may allow it to be a rough proxy for the consumption taxes that are going uncollected on personal-data transactions. Shanske, *supra* note 198, at 308, 315–17.

201. FRENCH REPORT, *supra* note 37, at 121–23.

202. *Id.* at 123.

203. OECD REPORT, *supra* note 66, at 115–17.

cluding data gathered from in-country users.²⁰⁴ An excise tax on data transfers starts to look indistinguishable from a “bit tax,” which has been proposed for years.²⁰⁵

Several countries have also implemented or discussed diverted profits taxes—often referred to as “Google taxes”—that seek to ensure that corporations do not escape taxation through the use of clever corporate structuring.²⁰⁶ Those diverted profits taxes operate by imposing some minimum level of tax on companies who are deemed to have engaged in abusive activities to artificially lower their tax burden.²⁰⁷ Although those taxes are not specifically tied to the personal-data economy, they would impact firms that operate in that space and use international tax structuring to avoid income tax on their gains. Other forms of alternative tax instruments are undoubtedly possible and further thought should be given to those options.

It is also worth recognizing that a new tax could be used not only to raise revenue, but also—or alternatively—to positively influence how data are collected and used. For example, a tax could be structured so that the actual tax rate is tied to the adoption of certain prescribed standards.²⁰⁸ For example, the tax rate could be reduced for taxpayers that implemented best practices published by the government or who provided more consumer control over their data. The particular tax-rate “trigger” could also be used to help to spur positive technological developments that might allow greater data protection. In that vein, some have posited that the technology behind Bitcoin—blockchain—could be used to allow individuals better control over access to their data.²⁰⁹ An alterna-

204. *Id.* at 116. This type of tax could be viewed as the new-economy version of a severance tax. U.S. states have long imposed those taxes on the extraction of resources like coal, oil, and timber. 2 HELLERSTEIN & HELLERSTEIN, *supra* note 91, ¶¶ 4.18, 4.18[1]. It might be fair to view personal data as a natural resource of a source jurisdiction in the digital economy and tax its extraction consistent with these historic taxes.

205. A bit tax is a transactional tax on the “transmission of digital information.” COCKFIELD ET AL., *supra* note 65, at 480 n.45. The bit tax proposals have been largely undermined by the practical concerns inherent in such a tax. *Id.*

206. *Budget 2015: ‘Google Tax’ Introduction Confirmed*, BBC NEWS (Mar. 18, 2015), <http://www.bbc.com/news/business-31942639>; Giuseppe Fonte & Gavin Jones, *Italy’s Renzi Faces Uphill Struggle over Google Tax Plan*, REUTERS (Sept. 30, 2015, 11:38 AM), <http://www.reuters.com/article/2015/09/30/us-italy-tax-internet-analysis-idUSKCNORU1HS20150930>; Michael Herh, *Taxing Google: Government to Introduce Google Tax Next Year*, BUSINESSKOREA (Oct. 19, 2015, 6:15 PM), <http://www.businesskorea.co.kr/english/news/ict/12539-taxing-google-government-introduce-google-tax-next-year>.

207. Karen Hughes et al., *The U.K. Diverted Profits Tax*, 123 J. TAX’N 37, 37–39 (2015); J. Harold McClure & Saumyanil Deb, *The Google Tax: Transfer Pricing or Formulary Apportionment?*, J. INT’L TAX’N, June 2015, at 61.

208. This approach was also recommended in the French Report. FRENCH REPORT, *supra* note 37, at 123.

209. Guy Zyskind et al., *Decentralizing Privacy: Using Blockchain to Protect Personal Data 180–84* (May 21–22, 2015) (research paper prepared for 2015 IEEE CS Security and Privacy Workshops), <http://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=7163223>; Guy Zyskind et al., *Enigma: Decentralized Computation Platform with Guaranteed Privacy 1, 9, 12* (n.d.) (unpublished manuscript), http://enigma.media.mit.edu/enigma_full.pdf.

tive tax that did not apply where that technology was used might give a nice nudge to support its development and implementation.²¹⁰ The law would not require it, but it would promote it.

In the end, this is not the place to promote particular policy goals or to suggest particular tax instruments to achieve those goals. Further scholarship should explore those issues. What is important is that we recognize the interplay between the tax system and our broader policy goals related to data and data protection. It is possible that we could craft alternative tax instruments to address both the tax and privacy concerns raised by the personal-data market.

B. Tax and the Personal-Data Economy of the Future

Many scholars and individual consumers have been unhappy with the current state of the data market, and they have pushed for a market in which individuals have greater control over the collection and use of their data.²¹¹ Those efforts have begun to have effect. For example, consumers are now taking advantage of applications that allow them to easily see and block particular tracking programs.²¹² Consumers are also adopting ad blockers in greater numbers.²¹³ Those efforts impede the collection of observed data and undermine the multi-sided business model by preventing websites from offering better-identified “targets” for advertising. A recent study suggests that the use of those blockers will result in the loss of nearly \$22 billion of ad revenue per year.²¹⁴

Of course, when consumers block online tracking and the advertising that results, data aggregators fail to benefit from offering their digital products. This has not gone without notice, and that changed value proposition has very recently been recognized as a threat to the “free” Internet.²¹⁵ Some sites have responded by blocking users who use ad block-

210. Importantly, that type of “trigger” might well tie into traditional tax concepts. If a user has the right to unilaterally and completely revoke their data at any time, we can fairly question the value of the barter to the aggregator. The aggregator receives an asset, but also grants the provider with a unilateral call option with a zero strike price.

211. See *supra* Section I.B.

212. *Add-ons*, MOZILLA.ORG, <https://addons.mozilla.org/en-US/firefox/extensions/?sort=users> (last visited Oct. 23, 2016) (listing a Ghostery, an add-on that blocks tracking programs, as a most popular extension for the Firefox browser); Owen Williams, *You Should Be Using These Browser Extensions to Keep Yourself Safe Online*, TNW (May 18, 2015), <http://thenextweb.com/apps/2015/05/18/you-should-be-using-these-browser-extensions-to-keep-yourself-safe-online/> (discussing several programs that block tracking programs online).

213. PAGEFAIR & ADOBE, *supra* note 60, at 1, 4.

214. *Id.* at 3; Elizabeth Dwoskin, *Ad-Blocking Software Will Cost the Ad Industry \$22 Billion This Year*, WALL STREET J.: DIGITS (Aug. 10, 2015, 6:28 PM), <http://blogs.wsj.com/digits/2015/08/10/ad-blocking-software-will-cost-the-ad-industry-22-billion-this-year/?mod=e2tw>; Mark Scott, *Study of Ad-Blocking Software Suggests Wide Use*, N.Y. TIMES: BITS (Aug. 10, 2015, 12:01 AM), <http://bits.blogs.nytimes.com/2015/08/10/study-of-ad-blocking-software-suggests-wide-use/>.

215. Hayley Tsukayama, *Online Ad-Blocking Is on the Rise. That's Bad News for Everyone.*, WASH. POST: THE SWITCH (Aug. 10, 2015), <https://www.washingtonpost.com/news/the-switch/wp/2015/08/10/online-ad-blocking-is-on-the-rise-thats-bad-news-for-everyone/>. See *general-*

ers.²¹⁶ Others have moved to a subscription model, and one research firm posited that 2016 would be a tipping point in that regard.²¹⁷ Its analysis suggests that more firms might begin implementing a “freemium” model where consumers can continue to use a basic service for free but also pay a fee to avoid tracking and/or advertising.²¹⁸

Some have responded to the personal-data market by pushing for change in the other direction. Instead of working towards a model where individuals pay to not be tracked, they have focused on a model under which consumers are paid cash compensation for their data. This includes the payment for data stored in “personal data banks” or “personal data vaults”²¹⁹ and micropayments based upon the use of data without the same centralization of control.²²⁰

All of these models address the privacy concerns inherent in the current personal-data market,²²¹ but they could suffer from a significant tax disadvantage. To start, the freemium model removes perhaps the most critical impediment to taxing personal-data barter—the valuation problem. If Facebook determines a price for accessing its service without being tracked or subjected to advertising, it sets a value that could be used for tax purposes. A tax administrator could argue that the fee represents the market price for the digital product or the personal data normally traded for that product and that a consumer who purchases that good with their data or their time has an accession to wealth in that amount.

ly PAGEFAIR, <https://pagefair.com/about/> (last visited Oct. 23, 2016) (providing information about PageFair, which is a company that seeks to address the interests of advertisers, consumers, and publishers).

216. Molly Brown, *Use an Ad Blocker? The Washington Post Is Now Probably Blocking You*, GEEKWIRE (Sept. 10, 2015, 9:49 AM), <http://www.geekwire.com/2015/use-an-ad-blocker-the-washington-post-is-now-probably-blocking-you/>.

217. See Daniel Heppner, *AdBlock Pressuring YouTube into a Paid Subscription Model*, GAZETTE REV. (Sept. 27, 2015), <http://gazetterevue.com/2015/09/adblock-pressuring-youtube-into-a-paid-subscription-model/>; Taylor, *supra* note 62.

218. See Taylor, *supra* note 62.

219. Jerry Kang et al., *Self-Surveillance Privacy*, 97 IOWA L. REV. 809, 828–29 (2012) (proposing “personal data guardians” to curate the personal data vaults); Thomas Heath, *Web Site Helps People Profit from Information Collected About Them*, WASH. POST (June 26, 2011), http://www.washingtonpost.com/business/economy/web-site-helps-people-profit-from-information-collected-aboutthem/2011/06/24/AGPgkRmH_story.html; Min Mun et al., *Personal Data Vaults: A Locus of Control for Personal Data Streams* (Nov. 30–Dec. 3, 2010) (research paper prepared for the Sixth International Conference on Emerging Networking Experiments and Technologies (CoNEXT)), http://conferences.sigcomm.org/co-next/2010/CoNEXT_papers/17-Mun.pdf; *How It Works*, DATACUP, <https://datacoup.com/docs> (last visited Oct. 23, 2016); POWR OF YOU, <https://www.powrofyou.com/> (last visited Oct. 23, 2016); TEAMDATA, <https://personal.com> (last visited Oct. 23, 2016).

220. LANIER, *supra* note 54, at 20, 274–75, 286–87 (discussing the nano-payment approach).

221. They address the privacy concerns only to the extent that (1) personal data are no longer collected by the data aggregators or (2) consumers are adequately paid for their personal data or, alternatively stated, their privacy loss. Under a freemium model where consumers merely pay to avoid advertising, the privacy implications of data collection would not be addressed.

The introduction of a cash option could thus make it easier to tax those who do not take that option.²²²

The data-bank model presents a similar tax problem because it removes several of the key impediments to taxing personal-data sales. First, it centralizes the transfer of an individual's data so that those transfers are easily identifiable. It also ensures that we know exactly when and how an individual's data were accessed and what the individual got in return for that access. Finally, it removes a layer of anonymity and establishes a third party—the data bank operator—that can be subject to information-reporting and withholding obligations. These factors might very well prevent the widespread adoption of the data-bank model. They could turn a non-taxable barter into a taxable sale with the result that individuals could see the purchasing power of their data decline by up to 40% or more.²²³

These results highlight the distortion that the current tax exemption creates in the market for data and reveal one simple, but critical insight of this Article—that the current tax preference for personal-data barter is equally a tax penalty on other forms of market transactions. All else being equal, the tax law favors the former and places a burden on any move to the latter. Any suggested change to the personal-data market will have to take that into account.

These considerations apply even if we assume a personal-data market that does not evolve to introduce cash compensation somewhere in the exchange. The Vendor Relationship Management (VRM) approach, for example, allows consumers to more effectively barter with their data rather than allowing them to be paid in cash.²²⁴ Doc Searls, a noted technology author, lays out his view of a VRM world in detail in his book titled *The Intention Economy*.²²⁵ In that book, he envisions a world where users take a very active role in the use and dissemination of their data. For example, they might agree to share their location, purchase history, and payment data with a coffee shop in order to ensure that their lattes

222. Of course, users who opt to take the “free” version could credibly argue that the benefit that they receive is worth less than the value of the premium product. To begin, a free version that suffered from intrusive advertising would certainly have a lower intrinsic value to a consumer. Second, a user who declined the premium version would necessarily not value that version at its asking price—they would have purchased it otherwise. The actual valuation would thus depend on the precise product offering. A subscription fee that only preempted data collection—and not advertising—would be most likely to represent the taxable value of the personal data generally collected by the aggregator. A subscription fee that only preempted advertising would be least likely to represent the value of that personal data. The fee in that case would be most related to the negative value of viewing advertising and not the value of personal data.

223. The top marginal tax rate for the federal income tax is currently 39.6%. 26 U.S.C. § 1 (2012). Many individuals would also have to pay state income taxes on their cash payments, and some might have to pay sales taxes on the goods that they purchased with that cash.

224. See *supra* Section I.B (discussing the VRM Project at Harvard's Berkman Klein Center).

225. See generally SEARLS, *supra* note 51.

are waiting for them at the counter when they arrive.²²⁶ They agree to share those data, however, only if the vendor agrees with how they will be used.

A data approach where users control their data is one that is consistent with the current expanded use of ad blockers, Do Not Track technology, and other methods of depriving aggregators of their data or the benefits of those data. Data providers and data aggregators might find the VRM approach more palatable than those other approaches, however, because it might allow for more acceptable advertising, which would allow the continued use of the advertising-funding model.²²⁷ Consumers, in turn, might not feel the need to block advertising or all tracking if they had more control.²²⁸

The tax consequences of a VRM approach that focuses on user control rather than on cash remuneration are more complicated than those discussed above. To the extent that the personal-data market evolves to give users more control, but without introducing cash transactions, the tax system may be unable to tax them for the lack of a method of valuation. However, to the extent that individuals more purposefully use their data and do so to greater personal benefit, taxation might become more compelling and perhaps more realistic. Further, to the extent that a VRM approach relies on a central access point for one's data, then there would again be one single source of information on the extent of an individual's data bartering. We would no longer drop data like breadcrumbs as we travel across the Internet. We would sell them from a storefront.

This Section has discussed only some of the possible futures for the personal-data market. Regardless of which way the commercial Internet ecosystem evolves, however, there are at least two questions that we will need to ask ourselves. First, do the technologies that we are considering undercut any of the current impediments to the taxation of the personal-data economy? Second, do those strategies or technologies make it more compelling that transactions in data be taxed as a normative matter? If the answer to either is "yes," then proponents of those developments must address how to handle the potential tax penalty on that type of market evolution. For better or worse, the tax system currently provides a preference for the voluminous, anonymous, obfuscated data-collection practices that occur online. The impact of that tax preference may very well be to work against otherwise beneficial developments in the personal-data economy, and we must keep that factor in mind as we consider how to best reform that economy.

226. *Id.* at 11–12.

227. See Doc Searls, *How #adblocking Matures from #NoAds to #SafeAds*, HARV. BLOGS: DOC SEARLS WEBLOG (Oct. 22, 2015), <https://blogs.law.harvard.edu/doc/2015/10/22/how-adblocking-matures-from-noads-to-safeads/>.

228. See *id.*

C. A Unified Regulatory Approach to Personal Data

The personal-data economy impacts many areas of our lives and, as a result, the effects of the tax exemption for personal data extend far beyond our revenue system. The final policy proposal of this Article is therefore that this tax exemption be taken into account in the broader U.S. regulatory structure related to personal data and personal privacy. The tax exemption for transactions in data is a regulatory benefit provided to the personal-data market, and it should be recognized as such.

The government clearly has non-tax interests in regulating the personal-data market. The Federal Trade Commission, for example, regulates the data market to protect consumer privacy and data security.²²⁹ It is thus reasonable for the nation's regulatory policies to take a holistic view of the government's role in that market. As noted above, the personal-data tax exemption represents nothing more than a regulatory benefit provided to those operating in the personal-data economy. It thus functions to promote the use of data as a payment method rather than the use of cash. Viewed in this way, it seems advisable for the government to take that benefit into account as it evaluates the merits of regulating other aspects of the personal-data economy. For example, privacy regulations imposed by Congress or actions taken by the FTC might impose costs on the data industry, and viewed alone, those regulations might not survive a typical cost-benefit analysis. Viewed in context, however, those costs might merely offset the current regulatory benefit provided to that industry by our tax system and thus might function well to offset the inefficiency that the personal-data exemption represents. Taking into account the tax benefit provided by the personal-data exemption might therefore tip the scales in favor of other regulatory approaches to data protection.²³⁰

CONCLUSION

Scholars in a number of fields have evaluated the impact of the wide-scale data collection, analysis, and commodification that nearly

229. See generally FED. TRADE COMM'N, 2014 PRIVACY AND DATA SECURITY UPDATE (Jan. 2015), https://www.ftc.gov/system/files/documents/reports/privacy-data-security-update-2014/privacydatasecurityupdate_2014.pdf (discussing the Commission's efforts to protect consumer privacy and data security); Calo, *supra* note 43, at 681–85 (discussing the role of the FTC in this area).

230. A comprehensive cost-benefit approach for data regulation would also be entirely consistent with how the federal government evaluates regulatory action by executive agencies. See Exec. Order No. 13,563, 76 Fed. Reg. 3821 (Jan. 21, 2011), *reprinted in* 5 U.S.C. § 601 app. at 102–03 (2012); Richard H. Pildes & Cass R. Sunstein, *Reinventing the Regulatory State*, 62 U. CHI. L. REV. 1, 3–4, 6–7 (1995) (describing the origins of the federal government's use of cost-benefit analyses with respect to evaluating federal regulations); Amy Sinden, *Formality and Informality in Cost-Benefit Analysis*, 2015 UTAH L. REV. 93, 148–52 (2015) (discussing the current status of the federal rules regarding cost-benefit analyses). Notably, Executive Order 13,563 recognizes that economic activities are regulated by multiple agencies and calls for coordination across those agencies. Exec. Order No. 13,563, 76 Fed. Reg. 3821 (Jan. 21, 2011), *reprinted in* 5 U.S.C. § 601 app. at 102–03 (2012).

defines the modern economy. To date, however, tax scholars and our tax laws have ignored this market. This Article addresses that void by providing a comprehensive analysis of how transactions in data should be viewed for purposes of our domestic tax laws. That analysis shows that personal-data transactions are market exchanges that fall within the reach of our nation's tax laws. There are, however, many practical impediments to actually taxing those transactions. The result is that there now exists, and will continue to exist, an implicit tax preference for the use of data as a currency.

Our inability—and perhaps unwillingness—to directly tax personal-data transactions does not mean that those exchanges should be ignored though. Those exchanges impact how we view and address the broader challenges that the modern economy presents for our taxing systems. They might also justify alternative forms of tax instruments that would indirectly tax their value or that would promote positive social goals with respect to data collection and protection.

The tax exemption for personal-data transactions also impacts how we address the market for data more broadly. First, privacy scholars and technologists working on how to best modify that market to better protect individual interests must understand that they are working against a tax system that will promote the status quo. Positive data-management practices or technologies that allow users to better control or benefit from their data might very well also reduce the factors that currently preclude the taxation of personal-data transactions. Finally, at a very basic level, the tax exemption for those transactions operates as a regulatory benefit for those transactions. That benefit should be taken into account in the broader U.S. regulatory structure surrounding personal data, privacy, and the new economy.