# Understanding Data Privacy Regulation: A Look at the Economic Footprint of Data Privacy and Regulation Thereof

**Robert Shapiro**
and
**Siddhartha Aneja**

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## *Executive Summary*

Business models of many American companies rely on the collection and use of personal information. As these models have evolved, consumer advocates and politicians alike have become increasingly concerned with data privacy.

Multiple regulatory and legislative proposals have sprung up, most with little chance of becoming law; however, in order to understand why policymakers need to pay attention to how the regulations take form, we assessed the economic impact some of the most well publicized legislative efforts would have by determining how much of the US economy would be subject to the laws put into effect. The proposals we looked at share certain basic features:

- They apply to companies with substantial revenues or in possession of information from substantial numbers of people.

- They direct those companies to protect the privacy of the personal data they collect.

- They direct those companies to tell people if their personal data are collected and about any commercial use of their data by those companies or third parties.

- They direct those companies to inform people of their right to opt out of the commercial use of their data by those companies or third parties.

For purposes of our analysis, we selected the proposal that was applicable to the largest number of entities. The legislation would apply to all publicly traded and privately held companies subject to regulation by the Federal Trade Commission (FTC) with annual revenues of at least $50 million or data on 1 million or more people. Our analysis found that the revenue criteria alone would affect about half of the U.S. economy.

- The legislation would cover 41,772 large and medium size businesses across the economy, excluding the two industries not subject to FTC authority (financial services and common carrier transportation).

- In 2019, those covered businesses accounted for $8.601 trillion of GDP or 45.8 percent of the combined output by private, non-governmental enterprises subject to the legislation and 40.1 percent of the nation's total output.

- In 2019, those covered companies employed 61,082,672 people or 47.6 percent of all jobs in private businesses and 38.8 percent of all employment.

- In 2019, these covered businesses also had a combined market value of $91.88 trillion or 69.9 percent of the market value of all private companies.

# The Economic Footprint of Proposals to Regulate the Protection of Data Privacy

## Robert J. Shapiro and Siddhartha Aneja[1]

### I. Introduction

Most businesses recognize that personal data and the individual and collective profiles derived from those data have economic value, and the business models of many companies now include the revenues that can be derived from such data. These developments have raised concerns about the privacy of people's personal data.

Multiple state and federal proposals have surfaced offering different solutions for establishing data privacy. The proposals garnering the most press and, therefore, political attention share certain basic features. They all cover companies that collect information from substantial numbers of Americans. They also all cover those companies in industries subject to regulation by the Federal Trade Commission (FTC), which include nearly all businesses except those in financial services and "common carrier" transportation services.[2]

In order for policymakers to craft a more effective regulatory regime that protects data privacy for the greatest number of people without sacrificing the consumer and economic benefits of the digital economy, policymakers need to understand the economic scope of the proposals. For purposes of this analysis, we selected the proposal with the most expansive definition of what companies would be subject to it. The proposal we assessed[3] covers all publicly traded and privately held companies subject to FTC regulation with annual revenues of $50 million or more, or that hold data on 1 million or more people.

We find that such legislation would cover 41,772 publicly traded and privately held large and medium sized businesses. Those businesses had a combined market value of $91.88 trillion in 2019 or 69.9 percent of the market value of all U.S. companies. They employed 61,082,672 people in 2019, or 47.6 percent of all jobs in private businesses in 2019. Finally, those businesses accounted for $8.601 trillion of GDP in 2019 or 40.14 percent of the nation's total output in 2019 and 45.8 percent of the output by private, non-governmental enterprises. Given the outsized impact that potential privacy legislation would have on the overall economy, policymakers would be wise to fully consider the economic ripple-effects of such legislation and take care at the outset to avoid economic disruption.

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[1] We want to acknowledge USTelecom for its support for this analysis. We also recognize the excellent research conducted by Isaac Yoder from Sonecon, LCC. The views and conclusions are solely those of the authors.

[2] Some communications service providers offer services that are regulated as "common carrier" services, and thus would similarly be excluded from FTC oversight under the proposed privacy laws discussed herein. However, many communications services, like most broadband services, are not classified as "common carrier" services and would therefore be subject to FTC privacy oversight. For purposes of this paper, we have included all communications service provider revenue as subject to FTC oversight throughout. We further note that some legislative proposals would in fact include common carrier activities as subject to FTC jurisdiction for purposes of a privacy law.

[3] Wyden (2019).

## II.     The Market Value of Companies Covered by Draft Legislative Proposals

All proposals we examined would cover both privately held businesses and public corporations traded on the New York Stock Exchange, Nasdaq, and other security exchanges. Determining the market value of privately held companies is challenging because, by contrast with publicly traded companies, the prices of the shares of privately held businesses are not publicly known.[4] Further, researchers have long found that the value of privately held companies is greater than the value of corporations traded on U.S. markets.  For example, one study found that in 2002, public companies accounted for only 37 percent of the total value of all businesses in the United States.[5]

Therefore, we derive the market value of companies covered by the data privacy proposals from other data that cover all companies.  The Statistics of Income (SOI) issued by the Internal Revenue Service (IRS) provide the best data on the revenues and net worth of all U.S. companies.[6] The most recent SOI data on the revenues of businesses that file tax returns, covering both those publicly traded and those privately-held, come from 2013.  In that year, 7,612 U.S. companies had revenues of $50 million to $100 million, 10,544 companies had revenues of $100 million to $250 million, and 7,960 companies had revenues of more than $250 million.  The IRS data show that the combined net worth or book value (assets minus liabilities) of the 26,116 companies that reported annual revenues of $50 million or more totaled $27.4 trillion in 2013.

 A company's market value is not equivalent to its net worth.  Facebook's $619.4 billion market value on January 8, 2020, for example, was equal to 6.56 times its net worth.[7]  In January 2013, the average ratio for all public companies of their market value to their net worth or book value was 2.11.[8]  We apply this ratio to privately held as well as publicly traded companies; on this basis, all U.S. companies with revenues of $50 million or more in 2013 had a combined market value of $57.81 trillion in 2019 (27.4 * 2.11 = 57.81).

Next, we adjust this result for the aggregate increase in the market value of U.S. companies since 2013.  The broadest index of public companies is the Wilshire 5000, which increased 77.7 percent from mid-year 2013 to mid-year 2019.[9]  Applying that rate of increase to both privately held and publicly traded companies, we estimate that the market value of all U.S. companies with revenues of $50 million or more in 2013 was $102.7 trillion in December 2019.

Finally, since the federal data privacy proposals we looked at cover companies in industries subject to FTC regulation, we exclude companies in industries not subject to that regulation. The FTC's authority extends across industries and sectors with two notable exceptions.  First, the FTC cannot regulate financial services firms, including banks, savings and loans, federal credit unions,

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[4] Privately held businesses may be privately held "C" corporations, S corporations, also include closely held corporations, limited liability corporations, or partnerships.

[5] Anderson (2009).

[6]  Internal Revenue Service (2020).

[7] Yahoo! Finance (2020).

[8] Stern School of Business (2019).

[9] Federal Reserve Bank of St. Louis (2020-A).

and insurance companies. The total market capitalization of publicly held financial services companies was estimated at \$7.53 trillion in December 2019.[10] While large publicly traded companies dominate the industry, some financial services firms are privately held. Research shows that publicly held institutions accounted for more than 93 percent of all banks with at least \$150 million in assets in the 1990s,[11] and industry consolidation increased following the 2008-2009 financial crisis.[12] Assuming that the ratio of assets of publicly traded and privately held financial institutions is similar to the ratio of the market value of the two groups, the market value of privately held financial institutions was about \$567 billion in December 2019, and the industry's total market value was \$8.1 trillion.

The other major group of companies not subject to FTC regulation are "common carriers." The common carriers not subject to FTC jurisdiction include mainly transportation companies in the airline, air freight and logistics, and trucking and railroad industries.[13] Recent estimates of the market capitalization of those industries' publicly held companies total \$937.1 billion: Airlines were worth \$208.96 billion, air freight and logistics firms were worth \$200.98 billion, and trucking and railroads were worth \$527.18 billion.[14] Across the economy, publicly traded companies account for 34.1 percent of all companies, and we apply that share to the transportation sector. On this basis, we estimate that the total market value of common carrier transportation companies, both privately held and publicly traded, was \$2.748 trillion in December 2019.[15]

To review our analysis, we estimated that all U.S. publicly traded and privately held companies had a combined market value of \$124.6 trillion in 2019. From this total, we exclude two major industries not subject to FTC regulation, financial services and common carrier transportation services. We estimated that in December 2019, the market value of financial services companies was \$8.1 trillion, and the market value of the transportation services companies was \$2.75 trillion, together totaling \$10.85 trillion. Therefore, we calculate that the publicly traded and privately held businesses covered by federal data privacy legislation had a combined market value of \$91.88 trillion in 2019, or 69.9 percent of the market value of all U.S. companies.[16]

## III. The Numbers of Employees and Companies Potentially Covered by Draft Data Privacy Legislation

Next, we estimate the total employment of those companies that would be covered by a new federal data privacy law. The Bureau of Labor Statistics (BLS) provides the best data on

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[10] Fidelity (2020).

[11]  Beatty, Ke, and Petroni (2002).

[12] A. T. Kearney (2018).

[13] For these purposes communications service providers are not considered common carriers and treated as subject to FTC jurisdiction. *See* n.2 *supra*.

[14] Fidelity (2020).

[15] 937.1 / 0.341 = 2,748.2

[16] The IRS reports that the net worth of all U.S. companies in 2013 was \$35,079.3 billion * 2.11 = \$74,017.3 billion * 1.777 = \$131,528.8 billion. Internal Revenue Services (2020).

employment by private sector firms.[17] However, the BLS data are disaggregated by firms' total employment – more than 500 employees, 250 to 499 employees, 100 to 249 employees, and so on[18]– while the coverage of the legislative proposals on data privacy focuses on their revenues ($50 million or more). Even some companies with more than 500 employees generate less than $50 million in annual revenues, such as some janitorial enterprises and small restaurant chains. Moreover, revenues per employee vary greatly across and within industries. By one estimate, revenues per employee across the economy average $300,000 for Fortune 500 companies, $200,000 at all large companies, and $100,000 at smaller companies.[19]

Therefore, we rely on the Statistics on U.S. Businesses (SUSB) issued by the Census Bureau data, particularly the SUSB data series on the number of employees and firms by annual revenues size and by industry or NAICS code.[20] The latest SUSB data with annual receipts are from 2012, and we calculate that 43,982 businesses out of 5,726,160 firms had annual revenues of $50 million or more in that year.[21] Next, we exclude firms with revenues of $50 million or more in the two industries not subject to FTC regulation – 3,669 companies in financial services and 1,629 companies in common carrier transportation services.[22] Now, we estimate that the data privacy legislation would have covered 38,684 businesses in 2012, or 0.68 percent of all private businesses operating in 2012.

To estimate the number of companies that would have been covered by the legislation in 2019, we apply the 0.68 percent share of all private businesses to recent BLS data. The most recent BLS "Quarterly Data Series on Business Employment Dynamics" covers the number of private firms in the first quarter of 2019. However, there is a consistent measurement difference between the number of firms reported by the SUSB and the total number reported by the BLS: From 2007 to 2017, the SUSB data totals averaged 1.17 times the BLS data totals.[23] The BLS data cover 5,282,000 businesses operating in the first quarter of 2019.[24] Adjusting this total for the measurement difference, we estimate that 6,183,307 companies operated under SUSB criteria in 2019 (5,282,000 *1.1706). Finally, we apply the 0.68 percent share of all companies with $50 million or more in annual revenues to that estimate of total businesses and calculate that the federal data privacy legislation would cover 41,772 companies in 2019.

We also use the SUSB data to estimate the number of employees working for companies covered by the data privacy legislation. Those data show that firms with more than $50 million in

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[17]  Bureau of Labor Statistics (2020-A).

[18] Bureau of Labor Statistics (2020-C).

[19] Small Business Matters (2017).

[20] Revenues or receipts data are available only through the Economic Census, which occurs in years ending in 2 and 7. At the time, the most recent data available covers 2012.

[21] Census Bureau (2012-A).

[22] *Ibid.* Businesses Financial services: Finance minus real estate; Transportation services: Transportation and warehousing, minus postal service and warehousing.

[23] Bureau of Labor Statistics (2020-A); and Census Bureau (2012-B).

[24] Bureau of Labor Statistics (2020-D).

annual revenues employed 61,740,194 people in 2012.[25] Next, we exclude the firms in this group that are not subject to FTC regulation – financial service firms with 4,408,236 employees in 2012 and common carrier transportation firms with 2,741,180 employees in 2012. On this basis, we calculate that the companies subject to the data privacy legislation employed 55,177,766 people in 2012, or 47.6 percent of all private firm employees. Finally, we apply that share to total private sector employment in 2019. As 128,345,000 Americans worked for private sector companies in 2019, we estimate that 61,082,672 people (47.59 percent) were employed in 2019 in companies that would be subject to data privacy legislation.[26] They also represent 38.8 percent of total U.S. employment in 2019.[27]

## IV.    GDP Produced by Companies Potentially Covered by Current Legislative Data Privacy Proposals

Finally, we examine the contribution to GDP by the companies covered under the various congressional data privacy proposals. The Small Business Administration (SBA) issues the best data on GDP contributed by all large and all small businesses, most recently for 2014.[28] However, the SBA data disaggregate those businesses by defining a large business as one with at least 500 employees and a small business as one with fewer than 500 employees; there is no rigorous way to bridge those SBA data to the SUSB data on companies by revenues.

Therefore, we adopt a more direct approach. We begin with the average GDP generated per worker: BEA reports that total GDP was $21,427.7 billion in 2019. After excluding GDP produced by financial service and common carrier transportation companies, private businesses produced $16,559.4 billion in GDP in 2019.[29] Further, BLS reports that private sector companies in all industries except financial services and common carrier transportation services employed 117,595,350 people in 2019.[30] On this basis, we estimate that those employees each produced an average of $140,817 of GDP in 2019. Since we found that the federal data privacy legislation would cover companies that employed 61,082,672 people in 2019, we estimate that those companies produced employees of companies with revenues of at least $50 million in industries subject to the FTC produced $8,601.5 billion of GDP in 2019,[31] or 45.8 percent of all GDP contributed by private, non-governmental enterprises[32] and 40.1 percent of all GDP in 2019.[33]

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[25] Census Bureau (2012-A).

[26] Bureau of Labor Statistics (2020-E).

[27] Bureau of Labor Statistics (2020-D)

[28] Kobe (2018).

[29] Bureau of Economic Analysis (2020-B). Finance and Real Estate minus Real Estate, and Transportation and Warehousing minus warehousing.

[30] Bureau of Labor Statistics (2020-F).

[31] 61,082,672 * $140,816.7925.

[32] $8,601,470,000,000 / $18,796,800,000,000 = 0.457602674

[33] $8,601,470,000,000 / $21,427,689,500,000 = 0.401418069

## V. Conclusions

Public concerns about how businesses handle and safeguard the personal information they collect from and about their customers and clients have spurred serious concerns throughout the halls of Congress and state capitols across the country. This analysis has explored the economic reach of current legislative proposals intended to establish data privacy protections.

We establish that under the most expansive definition of covered companies, federal data privacy protections would cover much of the U.S. economy. In 2019, those businesses had a combined market value of nearly $92 trillion or nearly 70 percent of the market value of all publicly traded and privately held companies. They employed more than 61 million people or more than 47 percent of all Americans working in the private sector. Finally, they accounted for $8.6 trillion of U.S. GDP or nearly 46 percent of all private sector output.

Information collection is a vital tool in today's marketplace, even for those businesses where data collection and marketing is incidental to the core business model. Accordingly, changes to the nation's privacy laws would impact and implicate at least seventy percent of the nation's economy. When considering data privacy, policymakers must carefully deliberate before acting and appreciate the broad scope of the nation's economy that would be subject to such laws and regulations in order to evaluate and appreciate the costs and benefits of their actions—including impacts on start-up businesses and innovation.

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**Robert J. Shapiro** is the chairman of Sonecon, LLC, a private firm that provides economic and security-related advice and analysis to senior officials of the U.S. and foreign governments and senior executives of U.S. businesses and non-profit organizations. He also is a Senior Policy Fellow of the Georgetown University McDonough School of Business, a board director of Medici Ventures, and an Advisory Board member of Cote Capital, Gilead Sciences and Civil Right Defenders. Dr. Shapiro has advised, among others, President Bill Clinton, Vice President Al Gore, Jr., British Prime Minister Tony Blair, Treasury Secretaries Timothy Geithner and Robert Rubin, British Foreign Secretary David Miliband, and many U.S. Senators and Representatives. He also has advised senior executives of global companies including AT&T, ExxonMobil, Amgen, Gilead Science, Google, Elliot Management, and Nasdaq, as well as non-profit organizations including the International Monetary Fund, the Center for American Progress and the Progressive Policy Institute. Before co-founding Sonecon, Dr. Shapiro was the Under Secretary of Commerce for Economic Affairs. Prior to that service, he was co-founder and Vice President of the Progressive Policy Institute and, before that, Legislative Director and Economic Counsel for Senator Daniel Patrick Moynihan. Dr. Shapiro also served as the principal economic advisor to Bill Clinton in his 1991-1992 campaign, a senior economic advisor to Hillary Clinton in 2015-2016, and as economic advisor to the presidential campaigns of Barack Obama, John Kerry and Al Gore. He has been a Fellow of Harvard University, the Brookings Institution, and the National Bureau of Economic Research. Dr. Shapiro holds a Ph.D. and M.A. from Harvard University, a M.Sc. from the London School of Economics and Political Science, and an A.B. from the University of Chicago. He is widely published in scholarly journals and popular outlets.

**Siddhartha Aneja** was a Director and Senior Analyst at Sonecon, LLC, where he conducted extensive quantitative analysis of the internet, educational outcomes, tax policies, health care costs, and other economic matters. Prior to joining Sonecon, he was research associate at the Institute for Education and Social Policy at New York University (NYU), where he conducted research on links between childhood health, employment, and educational outcomes and other issues related to urban education. Mr. Aneja's research has been published in peer-reviewed journals including the *JAMA Pediatrics* and the *Journal of School Health*. He also served as an Americorps Volunteer for City Year Little Rock. Mr. Aneja holds a B.A. in Mathematics-Economics from Wesleyan University and a M.P.A. from the Robert F. Wagner Graduate School of Public Service at New York University. He currently studies law at the Georgetown University School of Law.