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Assessment of the Economic Costs in California, Colorado, Indiana, Maine, Minnesota, New York, and Texas of Legislation Modeled after the New York Twenty First Century Antitrust Act

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ANALYSIS GROUP

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Executive Summary

A flurry of legislative initiatives propose to expand state-level antitrust legislation in the U.S., including in California, Colorado, Indiana, Maine, Minnesota, New York, and Texas. Most notably, the New York Twenty First Century Antitrust Act (hereafter the "New York Bill") would modify the current Donnelly Act that largely mirrors federal antitrust law. If enacted, the New York Bill would create a state-level antitrust regime that is stricter than the federal antitrust regime for all companies operating in New York State. The New York Bill's proposed changes in the likelihood of intervention may increase the risk of inhibiting efficient behavior that increases value for consumers. This white paper examines the potential economic impacts of the New York Bill and similar bills in New York and six other states.

Key Findings:

Implementing the provisions of the New York Bill could have the following economic impacts:

- If implemented in the seven states analyzed (California, Colorado, Indiana, Maine, Minnesota, New York, and Texas), such bills could reduce national GDP by $123 billion in the first year, representing a 0.5% GDP loss, costing 346,000 jobs across the country during the same period. By 2032, nationwide GDP losses could total $1.7 trillion, a 4.4% decrease in GDP, resulting in 3.5 million fewer jobs created.
- In California, implementing such a bill could reduce GDP by 1.1% and reduce job creation by 116,000 in the first year. By 2032, California could experience a GDP loss of $554 billion, a 10.2% decrease in GDP, resulting in 1.2 million fewer jobs created.
- In Colorado, implementing such a bill could reduce GDP by 1.1% and reduce job creation by 18,000 in the first year. By 2032, Colorado could experience a GDP loss of $79 billion, a 10.9% decrease in GDP, resulting in 180,000 fewer jobs created.
- In Indiana, implementing such a bill could reduce GDP by 1.4% and reduce job creation by 22,000 in the first year. By 2032, Indiana could experience a GDP loss of $88 billion, a 12.8% decrease in GDP, resulting in 225,000 fewer jobs created.
- In Maine, implementing such a bill could reduce GDP by 1% and reduce job creation by 3,000 in the first year. By 2032, Maine could experience a GDP loss of $12 billion, a 9.1% decrease in GDP, resulting in 33,000 fewer jobs created.

- In Minnesota, implementing such a bill could reduce GDP by 1.4% and reduce job creation by 22,000 in the first year. By 2032, Minnesota could experience a GDP loss of $87 billion, a 12.9% decrease in GDP, resulting in 220,000 fewer jobs created.
- In New York, implementing such a bill could reduce GDP by 1% and reduce job creation by 58,000 in the first year. By 2032, New York could experience a GDP loss of $281 billion, a 9.1% decrease in GDP, resulting in 597,000 fewer jobs created.
- In Texas, implementing such a bill could reduce GDP by 1.4% and reduce job creation by 86,000 in the first year. By 2032, Texas could experience a GDP loss of $471 billion, a 13.3% decrease in GDP, resulting in 882,000 fewer jobs created.

Figure 1: Summary of Quantified Economic Impacts of Implementing New York Bill Provisions

	First-year Loss			Ten-Year Loss		
Implementation Location	GDP Loss ($ Billion)	GDP Loss (Percent)	Job Creation Loss (Thousands)	GDP Loss ($ Billion)	GDP Loss (Percent)	Job Creation Loss (Thousands)
7-state Implementation, Nationwide Impact	$123	0.5%	346	$1,690	4.4%	3,541
California	$40	1.1%	116	$554	10.2%	1,190
Colorado	$6	1.1%	18	$79	10.9%	180
Indiana	$6	1.4%	22	$88	12.8%	225
Maine	$1	1.0%	3	$12	9.1%	33
Minnesota	$6	1.4%	22	$87	12.9%	220
New York	$20	1.0%	58	$281	9.1%	597
Texas	$35	1.4%	86	$471	13.3%	882

- Small and medium-sized businesses will be negatively impacted by the implementation of legislation modeled after the New York Bill, and a non-trivial share of deterred procompetitive conduct in our model is by small and medium-sized businesses: 4.9% of small business M&A, 28.9% of medium-sized business M&A, and 0.6% of medium-sized business unilateral conduct would be deterred in our model.
- Each $1 of foregone profits by firms is estimated to reduce investment by as much as $0.53 based on the literature.[2] Firms in high-tech industries are estimated to reduce research and development investments by an additional $0.16.[3] Given the scale of estimated foregone profits due to overdeterrence by antitrust authorities, the impact would be a reduction in investment and research and development by billions of dollars each year, with commensurate impacts on innovation and U.S. technological leadership.

2 Jonathan Lewellen and Katharina Lewellen, "Investment and Cash Flow: New Evidence," *Journal of Financial and Quantitative Analysis*, Vol. 51, No. 4, 2016, pp. 1135-1164, p. 1150 ("Controlling just for MB, constrained firms spend an extra $0.19 on working capital, $0.41 on capital expenditures, and $0.53 on all fixed assets for each additional dollar of cash flow, compared with cash flow effects of $0.02, $0.28, and $0.29, respectively, for unconstrained firms. The differences are significant in all three cases, with t-statistics testing equality ranging from 4.50 to 6.12[.]").

3 James Brown, Steven Fazzari, and Bruce Petersen, "Financing Innovation and Growth: Cash Flow, External Equity and the 1990s R&D Boom," *The Journal of Finance*, Vol. 64, No. 1, 2009, pp. 151-185.

The Question at Issue: What are the economic impacts if the provisions of the New York Bill are implemented in the states in question?

The New York Bill would bring more companies under antitrust scrutiny by lowering the market share threshold for a presumption of dominance to 40%, compared to a minimum market share of 50% and often higher needed to establish *prima facie* market power under the Sherman Act.[4] Many smaller businesses in an industry with 40% of a local market may be deemed "dominant" under new state level legislation. In addition, the New York Bill may also lower the bar of intervention and enlarge the set of the conducts presumed illegal to include dominant firms' conduct that limits the incentive of actual or potential competitors to compete, or refusal to deal to handicap a competitor but without necessarily causing demonstrable foreclosure. The New York Bill's most important deviation from current federal law is precluding consideration of objective justifications for investigated conducts. The proposed legislation will not allow the balancing of procompetitive benefits against anticompetitive harm, which will deter adoption of the practices even when they would boost competition overall. The addition of a new "abuse of dominance" category of potential violations further increases the regulatory reach and uncertainty resulting from the New York Bill.

Practices singled out as enforcement targets under the New York Bill can have procompetitive justifications, underscoring the risk of economic losses resulting from indiscriminate enforcement that does not consider efficiencies. We discuss and quantify the economic impact of both "overenforcement" and "overdeterrence" of procompetitive behavior. Overenforcement against procompetitive behavior has been commonly defined in the literature as inhibiting efficient behavior that increases value for consumers.[5] Overenforcement against procompetitive conduct may in turn lead to "overdeterrence" in which firms are deterred from engaging in procompetitive activities.[6] Overdeterrence may reduce valuable investment in intangible assets such as intellectual property or brand equity that are

4 *United States V. Aluminum Co. Of America Et Al*, 91 F. Supp. 333 (S.D.N.Y. 1950), June 2, 1950 at 345 ("[I]t is doubtful whether sixty or sixty-four percent would be enough; and certainly thirty-three per cent is not [enough market share to constitute a monopoly]."); *American Tobacco Co. V. United States*, 147 F.2d 93 (6th Cir. 1945), March 26, 1945; *U.S. V. Dentsply Intern., Inc.*, 399 F.3d 181 (3d Cir. 2005), February 24, 2005 at 187 ("[A] share significantly larger than 55% has been required to establish prima facie market power."); *Bailey V. Allgas, Inc.*, 284 F.3d 1237 (11th Cir. 2002), March 8, 2002 at 1250 ("A market share at or less than 50% is inadequate as a matter of law to constitute monopoly power"); *Blue Cross Blue Shield V. Marshfield Clinic*, 65 F.3d 1406 (7th Cir. 1995), September 18, 1995 at 1411 ("50 percent is below any accepted benchmark for inferring monopoly power from market share."); *U.S. Anchor Mfg., Inc. V. Rule Industries, Inc.*, 7 F.3d 986 (11th Cir. 1993), November 23, 1993 at 1000 ("[W]e have discovered no cases in which a court found the existence of actual monopoly established by a bare majority share of the market.").

5 "Modern Antitrust Enforcement," *Yale School of Management*, https://som.yale.edu/centers/thurman-arnold-project-at-yale/modern-antitrust-enforcement, accessed June 15, 2023 ("Overenforcement occurs when antitrust rules and enforcement are too strict and condemn procompetitive conduct[.]").

6 "Competition and Monopoly: Single-Firm Conduct under Section 2 of the Sherman Act: Chapter 1," *Antutrust Division U. S. Department of Justice*, https://www.justice.gov/archives/atr/competition-and-monopoly-single-firm-conduct-under-section-2-sherman-act-chapter-1, accessed January 23, 2024.

key to the growth and productivity of firms. Excessive merger scrutiny may also disincentivize start-up investment.

Estimating economic impacts from state-level implementation of stricter antitrust standards consistent with the New York Bill is a potentially complex exercise because the magnitude of impacts in each state would be affected by enforcement decisions as well as the courts' interpretation of the new laws. However, certain simplifying assumptions make quantification more tractable while ensuring that our analysis is both conservative and robust. We observe that the provisions of the New York Bill all move in one direction relative to the status quo: increasing the number of avenues by which antitrust enforcers could bring legal challenges against companies, and increasing the number of avenues by which enforcers could secure a victory in court. Under reasonable assumptions, changing the rules to favor antitrust enforcers across all dimensions increases the risk of overenforcement, leading to potential overdeterrence of procompetitive conduct.

Our practical question at issue then becomes: How much procompetitive conduct would be deterred by the provisions of the New York Bill, and what would be the economic costs of such overdeterrence?

Our Analysis Approach:

We develop a stylized model of a firm's decision to engage in certain business conducts based on the principle that a rational firm that identifies a commercial opportunity will proceed with that opportunity unless the expected costs outweigh the expected benefits of the opportunity. To make the model more tractable, we limit our analysis to procompetitive conduct that could potentially be deterred by the provisions of the New York Bill. We use data from the relevant academic literature to estimate the frequency of opportunities for procompetitive conduct, the distribution of expected incremental profits from procompetitive conduct, and the expected incremental costs of increased antitrust enforcement activity from the provisions of the New York Bill. We then use our model to estimate the rate of deterred procompetitive conduct—occurring when the incremental costs exceed the expected benefits as a result of the provisions of the New York Bill. We then use the estimated rate and state-level statistics to quantify state-level and national-level effects on GDP and employment.

Modeling Expected Benefits: In order to quantify these incremental effects following the implementation of the New York Bill, we first estimate the frequency of procompetitive opportunities for both mergers and acquisitions (M&A) and unilateral conduct.

Beginning with M&A, historical data show that about 5% of firms in the U.S. engaged in M&A activity annually[7] and 10% of investigated transactions enter into a negotiated consent agreement or receive a preliminary injunction (hereafter "challenge rate").[8] We make the assumption that the M&A activity that remains unchallenged by the agencies is procompetitive.[9] Thus, the share of firms in the U.S. that engage in procompetitive mergers annually is 4.5%.[10]

To bound this statistic for unilateral conduct, we rely on literature and surveys that study firms' diversification, as well as literature on unilateral conduct facing antitrust challenges and the outcomes of such challenges. We take the share of diversified firms as a proxy of the share of firms that engage in a procompetitive conduct related to bundling, vertical restraints, or other type of commercial practice susceptible to regulatory scrutiny under the new Bill.[11] Thus, the share of firms that engage in procompetitive unilateral conduct such as bundling, vertical restraints or similar at-risk practices is 60%.[12]

Next, we estimate the typical magnitude of expected benefits from profitable opportunities. In the case of M&A activity, we assume that the expected benefit varies across firms but that on average a firm experiences about a 1% increase in profit as a share of revenue per year after the M&A opportunity is consummated, which is consistent with empirical findings in the academic literature.[13] We then estimate the variation of the

7 *See* Gregor Andrade, Mark Mitchell, and Erik Stafford, "New Evidence and Perspectives on Mergers," *Journal of Economic Perspectives*, Vol. 15, No. 2, 2001, pp. 103-120, Figure 1. Another academic paper using more recent data suggests that 6.75% of public firms engaged in M&A Ginger Zhe Jin, Mario Leccese, and Liad Wagman, "M&a and Technological Expansion," *NBER Working Paper No. 31126, https://www.nber.org/system/files/working_papers/w31126/w31126.pdf* 2023.

8 Joseph Clougherty and Jo Seldeslachts, "The Deterrence Effects of Us Merger Policy Instruments," *The Journal of Law, Economics, & Organization*, Vol. 29, No. 5, 2013, pp. 1114-1144, Table 2.

9 We assume that the current regulatory regime rarely challenges procompetitive mergers and challenges most of, if not all, the anticompetitive mergers. We further assume that no procompetitive M&A opportunity is currently deterred. These assumptions, while imperfect, are necessary for the model to be calibrated to a baseline against which the incremental effect of overenforcement is calculated. These assumptions should not be misinterpreted to suggest that every transaction that the current regulatory regime challenges is anticompetitive in nature or that those transactions that are not challenged by the current regulatory regime are necessarily procompetitive. Such a conclusion necessitates case-specific complex inquiry.

10 Given that the historical data we relied on end before 2020, we consider the current regulatory regime that predates 2020. While the new 2023 Merger Guidelines may have an impact on the number of firms engaging in M&A and unilateral conduct, future research is required to analyze its impact on firm's engagement rate in procompetitive opportunities.

11 We assume that the current regulatory regime rarely challenges procompetitive unilateral conducts and challenges most, if not all, the anticompetitive conducts.

12 Stevens et al. (2023) finds that 71% of firms in agrifood supply industry in Minnesota, Wisconsin, Florida, and California are horizontally diversified. See Andrew Stevens and Jim Teal, "Diversification and Resilience of Firms in the Agrifood Supply Chain," *American Journal of Agricultural Economics*, 2023. A survey conducted by McKinsey finds that 75 percent of companies have at least engaged in a business activity outside their core businesses. See "Growing Beyond the Core Business, Survey," *McKinsey & Company*, July 1, 2015, accessed July 3, 2023, at p. 2 ("Three-quarters of respondents say that over the past five years, their companies have pursued at least one business activity in a new category"). BDC 2015 study finds that 68% of small and mid-sized businesses in Alberta, Canada have more than one product or business line. See "Diversify, Diversify, Diversify… a Key Growth Strategy for Small and Mid-Sized Firms," *Business Development Bank of Canada*, November 2015, https://www.bdc.ca/globalassets/digizuite/10407-diversification_financial_performance.pdf, accessed July 3, 2023, Chart 1. To be conservative, we assume that 60% of firms are diversified and engage in unilateral procompetitive conduct.

13 Gregor Andrade, Mark Mitchell, and Erik Stafford, "New Evidence and Perspectives on Mergers," *Journal of Economic Perspectives*, Vol. 15, No. 2, 2001, pp. 103-120, p. 116 ("On average, there is an improvement in operating margins following the merger, on the order of 1 percent, which is statistically significant at the 1 percent level."). Andrade et al (2001) defines operating

stochastic benefit associated with M&A activity across firms that identify an M&A opportunity. In the case of unilateral conduct, we assume that the expected benefit also varies across firms in the same way as for firms that identify an M&A opportunity, but that the average benefit from the conduct for a firm is 5.6% instead of 1%.[14] We further assume the same average benefits irrespective of whether the opportunity is procompetitive or anticompetitive.

We now have both the frequency of procompetitive conduct and the distribution of expected incremental profits from the procompetitive conduct for both M&A and unilateral conduct. These two components combine to provide us with the expected benefits from procompetitive conduct.

Modeling Expected Costs: A firm will only proceed with procompetitive conduct if the expected profits exceed the expected costs, which in our model are driven by increases in the probability of enforcement activity and increases in the probability that the enforcer prevails in court in the event of litigation. Specifically, in our model, a firm's expected regulatory cost is determined by the likelihood of regulatory intervention and the firm-level costs associated with the potential outcomes of such regulatory intervention. The current regulatory regime around M&A activity is well understood and provides a reasonable starting point to illustrate the calibration of the likelihood of regulatory intervention. Federal data on M&A transaction requiring premerger notice are used to calibrate the model due to data availability.

After preliminary review of a premerger filing, the U.S. Department of Justice or the U.S. Federal Trade Commission can issue a Request for Additional Information ("Second Request"), which happens for about 8% of premerger filings (hereafter "investigation rate").[15] If the parties substantially comply with the Second Request, the agencies may (i) close the investigation and let the deal go unchallenged, (ii) enter into a negotiated consent agreement to restore competition, or (iii) file a preliminary injunction pending trial on the merits. The academic literature finds that about 10% of investigated transactions enter into a negotiated

margins as cash flows (operating income) to sales ratio. Cash flows represents firm profits, and are defined as "sales, minus cost of goods sold, and selling and administrative expenses, plus depreciation and goodwill expenses." *See* Paul Healy, Krishna Palepu, and Richard Ruback, "Does Corporate Performance Improve after Mergers?," *Journal of Financial Economics*, Vol. 31, No. 2, 1992, pp. 135-175.

14 Gregory Crawford and Ali Yurukoglu, "The Welfare Effects of Bundling in Multichannel Television Markets," *American Economic Review*, 2012, pp. 643-685. See also Technical Appendix.

15 Joseph Clougherty and Jo Seldeslachts, "The Deterrence Effects of Us Merger Policy Instruments," *The Journal of Law, Economics, & Organization*, Vol. 29, No. 5, 2013, pp. 1114-1144. ("For our main explanatory variables, we adapt the conditional probability approach from the crime-and-punishment literature to the context of U.S. merger policy. At the two-digit level, we construct five conditional probabilities (the five deterrence variables); first, the number of investigations over the number of horizontal mergers (Investigation-Rate)[.]").

consent agreement or receive a preliminary injunction; about 91% of challenged transactions are allowed to proceed, typically subject to consent decrees; and 8.73% of challenged cases are enjoined (hereafter "block rate").[16] We utilize these baseline frequencies to estimate costs that drive the responsiveness of M&A activity to changes in the likelihood of intervention.

To estimate the litigation cost when a firm is challenged, we utilize a 2017 survey, which finds that firms spend on average about 0.39% of their revenue on litigation.[17] The legal costs of antitrust challenge can be particularly high, with attorney fees and costs increasing substantially if the case proceeds past an early motion to dismiss and into fact discovery. Expert-related expenses, including the professional fees of testifying expert witnesses, are typically a significant source of costs in an antitrust case. Another large driver of fees and costs related to litigation is discovery of electronically stored information, notably emails. In a large antitrust case, collection, review, and production of this information can be one of the largest line items in the budget. The litigation cost estimate we use is likely a conservative estimate because the survey estimates the average cost of all legal activity; litigation costs related to antitrust is likely to be more costly and long-lasting.

When a firm is challenged, there are three potential outcomes. First, a firm may agree to a consent decree with the regulatory regime or reach a settlement with the plaintiff. Consent decrees in antitrust will typically be non-monetary and consist of behavioral commitments. The direct costs of these consents can be substantial involving compliance, reporting, and monitoring. Consent decrees may also result in foregone revenues. We assume that foregone revenues as a result of consent decrees or settlements are on average 20% of the benefits. Second, the merger may be enjoined—either because the firm withdraws from the proposed merger or the regulatory regime files a complaint and the court ultimately issues a verdict to block the merger. If this occurs, we assume that the firm forgoes all the benefits associated with the transaction. Third, the court may issue a verdict allowing the firm to merge and the full benefits of the business conduct are realized.

There are similar intervention rates for firms engaging in at-risk unilateral conduct such as bundling or vertical restraints. Like M&A, a firm engaging

16 Joseph Clougherty and Jo Seldeslachts, "The Deterrence Effects of Us Merger Policy Instruments," *The Journal of Law, Economics, & Organization*, Vol. 29, No. 5, 2013, pp. 1114-1144. See also Technical Appendix.

17 "Patterns in Legal Spend Report," *Acritas*, June, 2017, https://phillipskaiser.com/wp-content/uploads/2018/06/acritas_legal_spend_report_2017.pdf, accessed May 31, 2023, p. 6. ("The country where an organization is based has a big impact on its expected spend level. Most countries sit below the global average. The largest part of our sample base is located in the US (39%), and this, combined with the significantly higher ratio of legal spend to revenue here drives the global average up above most other countries.").

in unilateral conduct may get investigated on the regulator's own initiative or due to a complaint by a consumer, another firm, or a regulatory authority. After being investigated, there is a probability that a complaint is filed and litigation ensues. We continue to rely on our estimate that litigation costs in this scenario are on average 0.39% of the firm's revenue. When a firm is under litigation, there are three outcomes. First, a firm may settle with the plaintiff. We assume that foregone revenues as a result of settlements are on average 20% of the benefits. Second, the firm may receive an injunction order from the court in which the firm must stop engaging in the unilateral conduct at issue. Unlike the M&A case, we assume the firm faces the loss of three times the benefits associated with the conduct, as a result the New York Bill permitting the recovery of treble damages. In the third case, the court allows the firm to continue its business conducts.

Modeling Deterrence Impacts: To model the deterrence impact of the New York Bill, we assume that the New York Bill increases the investigation, challenge, and block rates for firms engaging in M&A, and the analogous investigation, litigation, and injunction rates faced by firms engaging in unilateral conduct. The incremental probability of an adverse enforcement outcome is multiplied by the relevant cost estimate from the prior section to determine the expected cost, which is compared against the expected benefit from procompetitive conduct. If the expected costs exceed the expected benefits, the procompetitive conduct is deterred. The full white paper explores in-depth the range of scenarios examined, for which the investigation and challenge rates are reflected in the following table.

Figure 2: Deterrence Increases as Investigation and Challenge Rates Increase Holding the Block Rate Constant Mergers and Acquisitions

Small Firms | Medium Firms | Large Firms

Challenge Rate	Investigation Rate: 0%	10%	20%	30%	40%	50%
0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
10%	0.0%	4.8%	9.3%	13.0%	16.2%	19.1%
20%	0.0%	9.3%	16.2%	21.6%	26.0%	29.7%
30%	0.0%	13.0%	21.6%	27.9%	33.0%	37.1%
40%	0.0%	16.2%	26.0%	33.0%	38.4%	42.8%
50%	0.0%	19.1%	29.7%	37.1%	42.8%	47.3%

In this executive summary, we restrict our focus to our central scenarios, from which we derive our key takeaways.

For M&A, our central scenario uses the mid-point of the range of reasonable potential outcomes for the investigation and challenge rates and assumes that the block rate is 90% to reflect that the New York Bill is likely to block various conducts, including procompetitive conducts, once the conducts are investigated and challenged. Our central estimates of deterrence of procompetitive M&A conduct by firm size are as follows. Note that while large firms have the highest risk of M&A overdeterrence, small and medium-sized firms suffer significant M&A overdeterrence as well.

Change in Probability of Deterrence in Response to Change in the Investigation, Challenge, and Block Rates Mergers and Acquisitions

Firm Size	Investigation Rate	Challenge Rate	Block Rate	Probability of Deterrence of Firms Considering M&A
Small	10.0%	10.0%	90.0%	4.9%
Medium	30.0%	30.0%	90.0%	28.9%
Large	50.0%	50.0%	90.0%	51.0%

Turning to the analysis for unilateral conduct, given our assumption that the prevalence of procompetitive unilateral conduct in the economy is much higher (60%) compared to M&A activity (4.5%), we consider smaller increases in the investigation and litigation rates for unilateral conduct compared to those used for M&A activity. That said, since the New York Bill precludes the consideration of objective justifications for investigated conducts, we consider the same injunction rate of 90% for unilateral conduct as the block rate for M&A activity. Our central estimates of deterrence of procompetitive unilateral conduct by firm size are as follows. Note that while large firms suffer the largest risk of overdeterrence of unilateral conduct, medium-sized firms suffer a significant risk of overdeterrence as well.

Change in Probability of Deterrence in Response to Change in the Investigation, Litigation, and Injunction Rates Unilateral Conduct

Firm Size	Investigation Rate	Litigation Rate	Injunction Rate	Probability of Deterrence of Firms Considering/Engaging in Unilateral Conduct
Small	2.0%	2.0%	90.0%	0.0%
Medium	10.0%	10.0%	90.0%	0.6%
Large	25.0%	25.0%	90.0%	6.4%

Quantifying Economic Impacts: In our stylized model, the firms on the expected benefit distribution below the expected cost for their firm size do not engage in procompetitive conduct and forgo the incremental profits. Firms that have expected benefits higher than the expected cost do gain the benefits of the procompetitive conduct but suffer the expected costs from overdeterrence-led enforcement activity as a reduction in the magnitude of the expected benefits.

Economic theory suggests that lower profits reduce firms' incentives to hire and invest. To measure a firm's responsiveness in its investment decision to a change in profits, we rely on estimates from the academic literature, which vary by firm size and financial condition, which are often related. For simplicity, we use firm size as a proxy for financial condition as evidence suggests that small firms are likely to be more financially constrained than large firms.[18] Utilizing estimates from Lewellen and Lewellen (2016), we assume that small firms that are deterred from adopting procompetitive conducts are constrained and will decrease their investments by $0.53 for every dollar of foregone profit.[19] On the other hand, we assume that large firms that are deterred from adopting procompetitive conducts are less financially constrained and will decrease their investments by $0.29 for every dollar of foregone profit.[20] For medium-sized firms, we assume that some may be constrained while others may not, and on average will decrease their investments by $0.35 for every dollar of foregone

18 Ben Bernanke, "Nonmonetary Effects of the Financial Crisis in the Propagation of the Great Depression," *Americam Economic Review*, 1983, p.257 ("The disruptions of 1930-33 [...] reduced the effectiveness of the financial sector as a whole in performing these services. As the real costs of intermediation increased, some borrowers (especially households, farmers, and small firms) found credit to be expensive and difficult to obtain."); Mark Gertler and Simon Gilchrist, "Monetary Policy, Business Cycles, and the Behavior of Small Manufacturing Firms," *The Quarterly Journal of Economics*, Vol. 109, No. 2, 1994, pp. 309-340, p.313 ("There is a strong correlation between size and the form of external finance. Smaller firms rely heavily on intermediary credit while large firms make far greater use of direct credit, including equity, public debt, and commercial paper[.]").

19 Jonathan Lewellen and Katharina Lewellen, "Investment and Cash Flow: New Evidence," *Journal of Financial and Quantitative Analysis*, Vol. 51, No. 4, 2016, pp. 1135-1164, p. 1162.

20 Jonathan Lewellen and Katharina Lewellen, "Investment and Cash Flow: New Evidence," *Journal of Financial and Quantitative Analysis*, Vol. 51, No. 4, 2016, pp. 1135-1164, p. 1162.

profit.[21] We estimate the reduction in investment due to overdeterrence of procompetitive behavior associated with the New York Bill as the product of the estimated foregone profit and our measure of firm's responsiveness in its investment decision to change in profits, by firm size.

Economic theory suggests that, besides having lower incentives to invest, firms also have lower incentives to engage in innovative R&D activities as a result of lower profits. To measure a firm's responsiveness in its R&D investment to change in profits, we rely on estimates from the academic literature. An academic article by Brown, Fazzari, and Peterson studies the impact of change in profit on R&D spending in industries that are technologically intensive and find that an additional dollar of profits lead to a $0.16 increase in R&D spending by a firm.[22] We estimate the reduction in R&D due to overdeterrence of procompetitive behavior associated with the New York Bill by multiplying the foregone profit in technologically intensive industries with the estimate for firm's responsiveness in its R&D investment to changes in profit.

We express these economic costs as a share of state-level GDP, based on data in 2017. To calculate GDP loss based on the state-level economic costs presented above, we rely on the income approach, used by U.S. Bureau of Economic Analysis. Under the income approach, loss in GDP is calculated as the sum of the reduction in private employee payroll and foregone profits, resulting in a lower GDP growth rate from 2016 to 2017 by 1 pp. Given the lower growth rate, we compare the GDP trajectory under the New York Bill relative to the GDP trajectory absent the Bill from 2023 to 2032. We then report as the loss in GDP the difference between the two trajectories measured in 2023 and 2032.

Another metric that measures the health of the economy is employment, public and private. We quantify these as full-time-equivalent ("FTE") employment losses. Firms also have lower incentives to hire as their profits decrease. If a firm is not expanding as much because of overdeterrence, then it has fewer incentives to keep a large workforce. We quantify the likely reduction in FTE equivalent hiring due to overdeterrence associated with the New York Bill based inference from estimates from the academic literature. Change in private employment can be calculated based on labor sensitivity to change in tax, firm's foregone profit, and firm's pre-tax profit. The change in public employment is driven by the assumption that state and the federal government budget balance remains unchanged. Because the New York Bill decreases state and federal tax revenue, government

21 Jonathan Lewellen and Katharina Lewellen, "Investment and Cash Flow: New Evidence," *Journal of Financial and Quantitative Analysis*, Vol. 51, No. 4, 2016, pp. 1135-1164, p. 1161.

22 James Brown, Steven Fazzari, and Bruce Petersen, "Financing Innovation and Growth: Cash Flow, External Equity and the 1990s R&D Boom," *The Journal of Finance*, Vol. 64, No. 1, 2009, pp. 151-185.

FTE will need to be reduced so that its budget deficit does not get worse. According to data from the Census Bureau, compensation for government employees represents about 44% of government spending.[23] As such, we assume that every one dollar decrease in government tax as a result of the New York Bill translates to a $0.44 decrease in labor compensation for government workers, thus reducing public employment.

Other Impacts Not Formally Modeled: The implementation of legislation modeled after the New York Bill will likely inhibit acquisitions and lower the incentives to invest in start-ups and small firms developing new technologies. This effect may be particularly pronounced in states that are currently hubs for startup development, such as New York, California, Texas, and Colorado. These states may see a significant reduction in venture capital investment if acquisitions become less feasible as a business option. When a venture capital fund invests in a startup, the option to sell the startup through acquisition is an important business option as their size or profitability, may render them unsuitable to become publicly traded.[24] Woodward (2021) assessed the exits of venture-funded companies from August 2002 through the end of March 2020, and found that 4% of the exiting companies made an initial public offering (IPO), 61% were acquired (42% of these at money-losing valuations), and 36% failed completely. Of the 7,247 companies that were acquired, 82% were too small or too unprofitable to consider an IPO.[25] With 61% of startup exits taking the form of acquisitions, and 82% of those acquisitions unable to transition to other exits like IPOs, an outright majority of startup exits, just over 50%, would be at risk of transition from acquisitions to failures. In short, venture capital investment in startups will be much less viable in states whose antitrust policies create massive reductions in the possibility for profitable or loss-mitigating acquisitions exit opportunities for venture capital investors.

Recap: We estimated the economic impacts of state-level antitrust bills that would lead to stricter state-level antitrust standards than are found at the federal level. Our approach used a stylized model of firm behavior in which firms have a distribution of expected incremental profits from engaging in procompetitive conduct and opportunities to engage in such conduct, expect to face costs from overdeterrence-led enforcer activity,

23 Elizabeth McNichol, "Some Basic Facts on State and Local Government Workers," *Center on Budget and Policy Priorities*, June 15, 2012, https://www.cbpp.org/sites/default/files/atoms/files/2-24-11sfp.pdf, accessed July 3, 2023, p.3 ("[T]he total costs of compensation for state and local workers are about 44 percent of state and local spending.").

24 "Irreplaceable Acquisitions: Proposed Platform Legislation and Venture Capital," *Computer and Communications Industry Association Research Center*, November 8, 2021, https://research.ccianet.org/reports/irreplaceable-acquisitions-proposed-platform-legislation-venture-capital/, accessed January 22, 2024.

25 "Irreplaceable Acquisitions: Proposed Platform Legislation and Venture Capital," *Computer and Communications Industry Association Research Center*, November 8, 2021, https://research.ccianet.org/reports/irreplaceable-acquisitions-proposed-platform-legislation-venture-capital/, accessed January 22, 2024.

and only proceed with procompetitive conduct when they have an opportunity if the expected profits exceed the expected costs. Using state-level data on firms, we estimated the impact of state-level antitrust bills on GDP and employment in each of the seven states in question and at the national level after accounting for spillovers that extend nationwide. We found that the implementation of legislation modeled after the New York Bill across the seven states will carry significant costs, including up to $1.7 trillion in foregone GDP nationwide and 3.5 million fewer jobs created over a ten-year period.

Table of Contents

I. Introduction

This white paper evaluates the potential for, and models the likely extent of, incremental economic costs arising from new state level legislative proposals in the area of antitrust that expand the scope of firms that may face antitrust scrutiny and lower the threshold for antitrust intervention. This white paper focuses on the quantification of the incremental economic costs associated with the increased risk of overenforcement against efficient behavior engendered by the proposed New York Twenty First Century Antitrust Act (hereafter, the "New York Bill").[26] Specifically, we quantify the likely overdeterrence of procompetitive behavior of the New York Bill by firm size and estimate the likely firm-level, state-level, and national costs associated with the implementation of legislation modeled after this bill.

Besides New York, other states such as California, Indiana, Minnesota, Texas, Colorado, and Maine are considering new state-level antitrust legislation that would extend the scope of intensity of antitrust enforcement in similar ways to the New York Bill, and in some cases even more so.[27] As such, we model estimates of incremental economic costs of adopting the New York Bill for each of the six states that are considering state-level antitrust legislation as well as a national-level estimate of the overall impact of such a bill if it were to be adopted by all states considering it.

26 "Senate Bill S6748," *2023-2024 Legislative Session, The New York State Senate*, 2023-2024, https://www.nysenate.gov/legislation/bills/2023/S6748, accessed May 22, 2023. See full text at https://legislation.nysenate.gov/pdf/bills/2023/S6748, p. 1 ("AN ACT to amend the general business law, in relation to actions or practices that establish or maintain a monopoly, monopsony or restraint of trade, and in relation to authorizing a class action lawsuit in the state anti-trust law…This act shall be known and may be cited as the 'Twenty-First Century Anti-Trust Act'.")

27 "Assembly Concurrent Resolution No. 95," *Relative to the California Law Revision Commission*, 2021-2022, California, Assembly, pp. 3-4 ("That the Legislature approves for study by the California Law Revision Commission the following new topics: (1) Whether the law should be revised to outlaw monopolies by single companies by single companies as outlawed by Section 2 of the Sherman Act, as proposed in New York State's 'Twenty-First Century Anti-Trust Act' … (2) Whether the law should be revised in the context of technology companies… (3) Whether the law should be revised in any other fashion such as approvals for mergers and acquisitions…"); "H.F. No. 1563," *State of Minnesota, House of Representatives*, February 3, 2023, accessed July 6, 2023, p. 1 ("Be it enacted by the Legislature of the state of Minnesota: It is unlawful for any person or persons with a dominant position in Minnesota with respect to (1) conducting any business, trade, or commerce, (2) a labor market, or (3) furnishing a service, to abuse the dominant position."); Lee, Freiberg, and Howard, "H.F. No. 2823," *State of Minnesota, House of Representatives*, March 6, 2023, https://wdoc.house.leg.state.mn.us/leg/LS93/HF2823.0.pdf, accessed May 24, 2023, p. 1 ("A bill for an act relating to consumer protection; modifying provisions governing deceptive trade practices and consumer fraud…"); "Texas Senate Hears Testimony on Bills Seeking to Expand Ag's Authority to Pursue Antitrust Litigation," *Southeast Texas Record*, https://setexasrecord.com/stories/642063688-texas-senate-hears-testimony-on-bills-seeking-to-expand-ag-s-authority-to-pursue-antitrust-litigation, accessed July 11, 2023 ("Two Texas bills seeking to expand the authority of the attorney general to pursue antitrust actions have passed the House and were heard by the Senate State Affairs Committee yesterday morning."); Phil Weiser, Colorado Attorney General, "Attorney General Phil Weiser Says Antitrust Enforcement at a Critical Juncture as Modern Market Forces Push Antitrust Law into New Territory," *State of Colorado*, April 21, 2022, https://coag.gov/press-releases/4-21-22/, accessed April 11, 2023 ("Attorney General Phil Weiser today joined Nebraska Attorney General Doug Peterson in submitting joint comments on the Federal Trade Commission and U.S. Department of Justice's joint initiative to revise the Horizontal Merger Guidelines, which was announced earlier this year… 'State attorneys general are uniquely situated to monitor local anticompetitive behavior,' Weiser said"); "H.P. 1161, an Act to Protect Maine's Consumers by Establishing an Abuse of Dominance Right of Action and Requiring Notification of Mergers," *131st Maine Legislature, House of Representatives*, April 27, 2023, https://legislature.maine.gov/legis/bills/getPDF.asp?paper=HP1161&item=1&snum=131, accessed May 31, 2023, p. 5 ("This bill establishes a right of action against a person with a dominant position … The bill increases the cap on monetary penalties from $10,000 to $50,000 for violations of provisions of law relating to the acquisition of gasoline and heating oil assets and increases the notification requirement from 30 days to 90 days. The bill increases the cap on monetary penalties from $100,000 to $250,000 for violations of provisions of law relating to antimonopoly provisions.").

The white paper focuses on the economic costs of a probable increase in overenforcement against procompetitive behavior and does not examine the potential benefits from the policy change. Any economic gains from an increase in enforcement against anticompetitive or abusive practices brough about by the New York Bill would have to be weighed against these estimated costs to demonstrate a positive net economic effect of the new policy. This exercise is beyond the scope of this paper.

Section II explains the context in which the current state-level legislative proposals are arising and explains the economic theory as to why the novel aspects of these proposals generate a risk of overenforcement. **Section III** discusses in more detail how some commercial conducts that may come under scrutiny can be procompetitive and can generate economic efficiencies. Two case studies provide a practical illustration of the economic risks of overenforcement against these conducts. **Section IV** presents a framework for calculating the economic impact of the New York Bill from the increased risk of overenforcement against efficient conduct. **Section V** presents the nationwide costs of the generalized adoption of such legislation. **Section VI** discusses the likelihood that the proposed state-level legislations achieve their intended objectives. **Section VII** presents the state-by-state breakdown of the economic costs for California, Indiana, Minnesota, Texas, Colorado, and Maine.

II. State-level Antitrust Legislative Proposals

Proposals to extend the remit of state level antitrust legislation have emerged as a response to concerns about the ability of markets to deliver across an array of economic and social objectives.[28] The discussion around the current performance of markets seems to have converged on antitrust policy as the instrument of choice to solve a series of macroeconomic and social ailments.[29] State legislative initiatives and in particular the New York

28 *See* David Morar and Anne Washington, “How a Compliance Mindset Undermines Antitrust Reform Proposals,” *Brookings Institution*, September 3, 2020, https://www.brookings.edu/techstream/how-a-compliance-mindset-undermines-antitrust-reform-proposals/, accessed May 22, 2023 (“For years, technology ethicists have considered how to square the interests of major companies with the interests of society as a whole, and recent approaches to ethics in the technology industry provide a cautionary tale for antitrust policy [...] Ethical statements and audits reduce complex matters of societal power to a series of checkboxes, thereby obscuring other questions and unchosen alternatives”).

29 David Ingram, “Can Anyone Rein in Big Tech? Activists Look to Statehouses,” *NBC News*, November 9, 2021, https://www.nbcnews.com/tech/tech-news/can-anyone-rein-big-tech-activists-look-statehouses-rcna4850, accessed May 22, 2023 (“[S]ome of the tech industry’s critics are paying more attention to state legislatures and city councils as places where they can curtail the power of companies they say are too dominant. [...] A bill passed the New York Senate this year to overhaul state antitrust law to ban ‘abuse of dominance’ by corporations[.]”); Parmy Olson, “The Way to Police Big Tech Is through Us States,” *The Washington Post*, September 22, 2022, https://www.washingtonpost.com/business/the-way-to-police-big-tech-is-through-us-states/2022/09/22/aab2c0de-3a7f-11ed-b8af-0a04e5dc3db6_story.html, accessed May 22, 2023 (“Aside from sparking irritation in tech circles, it has put a spotlight on an area where states are making greater headway than Congress: passing laws to regulate the free-wheeling dominance of Big Tech firms. [...] Even so, like California’s new rules, they underscore the growing importance of state-level firepower in regulating tech. [...] [M]ore state legislators should try to pick up the slack and pass sorely needed legislation that addresses infringements of privacy, online harms and market abuse by these firms.”); “States Seen as Next Battlefield for Big Tech Antitrust Case,” *S&P Global*, October 4, 2022, https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/states-seen-as-next-battlefield-for-big-tech-antitrust-cases-72173093, accessed April 19,

Bill can be understood as an attempt to move the needle of antitrust policy towards a more interventionist and possibly equity-minded intervention framework.

The proposed New York Bill sets the objective of preventing the accumulation of excessive power by firms and creates tools to prohibit behavior that may lead companies to increase their market and economic power. It proposes to do so by expanding the definition of monopolies and monopolization, expanding the scope of unilateral conduct covered by antitrust statutes and lowering the legal standards for intervention. It also brings labor markets in scope of antitrust enforcement. The proposed bill permits class action in antitrust suits and the recovery of treble damages.

To different degrees, the proposed New York Bill and other state level initiatives reflect an intention to increase the remit of regulatory enforcement to preserve opportunities for a larger number and variety of players.[30] Regardless of the intentions of the proposed policies or the accuracy of the underlying support for these policies, the current proposals run the risk of generating significant overdeterrence of efficient behavior leading to economic costs, in particular against the most dynamic businesses in each region.

A. Policy Debate around Antitrust Policy

Macroeconomic concerns

The current conversation around the need to increase the remit of antitrust policy can be traced back to a 2016 Issue Brief by the Council of Economic Advisers during President Obama Administration.[31] The brief described a picture of decreasing economic opportunities for the vast majority of the population and an accumulation of undeserved wealth by a minority of economic players. Because these trends were associated with the emergence of a relatively small number of large profitable firms, for example in health, telecommunications, or transport, a key proposal was to strengthen antitrust enforcement as

2023 ("State politicians impatient with the pace of federal movement on Big Tech antitrust concerns are likely to follow California in using their own laws and resources to take action, policy experts said.").

30 "Assembly Concurrent Resolution No. 95," *Legislative Counsel Bureau, State of California*, August 23, 2022, p. 2-3 ("Whereas, New York State is considering legislation that would fundamentally rewrite its antitrust laws. The legislative findings in the proposed act in part state that 'The legislature hereby finds and declares that there is great concern for the growing accumulation of power in the hands of large corporations ... It is time to update, expand and clarify our laws...'. That the Legislature approves for study by the California Law Revision Commission the following new topics: (1) Whether the law should be revised to outlaw monopolies by single companies as outlawed...").

31 "Benefits of Competition and Indicators of Market Power," *Council of Economic Advisers Issue Brief*, April 2016, https://obamawhitehouse.archives.gov/sites/default/files/page/files/20160414_cea_competition_issue_brief.pdf, accessed May 22, 2023, p. 1 ("Several indicators suggest that competition may be decreasing in many economic sectors... This brief argues that consumers and workers would benefit from additional policy actions by the government to promote competition within a variety of industries. In addition, more work is needed to understand how policies that promote competition should be applied in the digital economy and other technologically dynamic sectors.").

a remedy to the perceived suppression of a larger variety of worthy market players that was leading to less competition, higher prices, and a drop in consumer welfare.[32] This policy objective to strengthen antitrust legislation in support of a competitive process more favorable to a greater number of businesses has since been continuously promoted inside and outside the government.[33]

Since the 2016 Issue Brief, there has been a vigorous debate about the factors behind the emergence of certain large and very profitable firms.[34] Although some have attributed the emergence of these firms to anticompetitive behavior, a large body of research points to important role of new technologies and intangible resources in generating remarkable efficiencies and driving productivity, firm expansion, and market concentration.[35] According to this research, technological capabilities and the ability to adopt new IT resources are a significant factor of firm growth and productivity.[36] Sectors in which firms became more reliant on digital technologies and intangible assets such as IP or brand equity have seen both increases in concentration and large productivity gains.[37] Yet, much of the commentary has focused on presumed harm from lack of competition rather than on gains in productivity.

32 "Benefits of Competition and Indicators of Market Power," *Council of Economic Advisers Issue Brief*, April 2016, https://obamawhitehouse.archives.gov/sites/default/files/page/files/20160414_cea_competition_issue_brief.pdf, accessed May 22, 2023. p. 4-5, ("[B]etween the early 1990s and 2006, the average Herfindahl-Hirschman Index (HHI) for hospital markets increased by about 50 percent to almost 3,200. This would be the level associated with just three equal-sized competitors in a market. FCC (2015) reports that the average HHI for wireless providers in a market increased from under 2,500 in 2004 to over 3,000 in 2014.Prater et al. (2012) document an increase in railroad market concentration between 1985 and 2007."), p. 14 ("[I] ndicators suggest there is more market concentration, higher profits for a few firms, and declining entry, all of which could result from less competition. Competition policies and robust reaction to market power abuses can be an important way in which the government makes sure the market provides the best outcomes for society with respect to choice, innovation, and price as well as fair labor and business markets.")

33 Lina Khan, "Remarks of Chair Lina M. Khan as Prepared for Delivery Fordham Annual Conference on International Antitrust Law & Policy," *Federal Trade Commission*, September 16, 2022, https://www.ftc.gov/system/files/ftc_gov/pdf/KhanRemarksFordhamAntitrust20220916.pdf, accessed May 22, 2023, p. 5 ("Congress, and later the Supreme Court, observed that markets can consolidate rapidly. Congress therefore determined that the antitrust agencies should break these trends at their outset, well before they gather momentum. The amendments to Section 7 equipped the agencies to block mergers if there was an incipient trend towards concentration or reduced competition.").

34 Dennis Carlton, "Some Observations on Claims That Rising Market Power Is Responsible for U.S. Economy Ills and That Lax Antitrust Is the Villain," *Competition Policy International*, 2020, pp. 1-12, pp. 5-6; Carl Shapiro, "Antitrust in a Time of Populism," *International Journal of Industrial Organization*, Vol. 61, November 2018, pp. 714-748 ("Shapiro (2018)"), pp. 731-733.

35 Industry concentration has been found to be correlated with more patent intensity and higher labor productivity. *See* David Autor et al., "The Fall of the Labor Share and the Rise of Superstar Firms," *The Quarterly Journal of Economics*, Vol. 135, No. 2, 2020, pp. 645-709, p. 703 ("A final set of results shows that the growth of concentration is disproportionately apparent in industries experiencing faster technical change as measured by the growth of patent intensity or total factor productivity, suggesting that technological dynamism, rather than simply anticompetitive forces, is an important driver—though likely not the only one—of this trend.")

36 James Bessen, "Information Technology and Industry Concentration," *Boston University School of Law, Scholarly Commons at Boston University School of Law*, Vol. Paper No. 17-41, December 1, 2017, p. 1 ("Successful IT systems appear to play a major role in the recent increases in industry concentration and in profit margins, more so than a general decline in competition.")

37 Carol Corrado, Charles Hulten, and Daniel Sichel, "Intangible Capital and Us Economic Growth," *Review of income and wealth*, Vol. 55, No. 3, September 2009, pp. 661-685, p. 663 ("We find that the inclusion of intangibles makes a significant difference in the measured pattern of economic growth: the growth rates of output and of output per worker are found to increase at a noticeably more rapid rate when intangibles are included than under the baseline case in which intangible capital is completely ignored, and capital deepening (when expanded to include both tangibles and intangibles) becomes the unambiguously dominant source of growth in labor productivity."); Nicolas Crouzet and Janice Eberly, "Intangibles, Investment, and Efficiency," *AEA Papers and Proceedings*, Vol. 108, 2018, p. 431 ("In retail, these trends have been accompanied by a rise in productivity, as the sector adopted technology-driven improvements in business practices. This rise in productivity coincided with the rise in concentration, demonstrating how concentration may be a byproduct of efficiency gains among industry leaders. Moreover, both over time, and across subgroups of the sector, higher productivity is associated with a growing importance of intangible capital.")

Concerns about market dominance motivate attempts to use antitrust tools to limit the growth and 'excessive' size and profitability of larger firms in an effort to support a more distributed market structure. However, research recognizes that such attempts will have a different impact depending on whether firm growth has been achieved through productive investments or anticompetitive conduct.[38] If technological or organizational innovation is indeed increasing the optimal scale and the efficiency level of firms, clamping down on growth opportunities as a matter of policy and artificially limiting the size of firms that use procompetitive tools to grow can carry aggregate economic costs.

The digital disruption

No sector illustrates better the connection between efficiency, growth, and size than the digital services sector. The past two decades saw the emergence of digital services providers operating with relatively few physical assets and labor, using instead the power of technology and connectivity to generate new types of value. Digital services providers such as platforms connect businesses and users in multiple ways to generate opportunities for sharing and trading, provide valuable insights, and offer newly integrated solutions for individual users and businesses alike.[39] Travel sites, real estate services, online stores and marketplaces, on demand streaming services, app stores, or social networking services are all examples of new services that have dramatically decreased transaction costs and have provided enormous new opportunities for both businesses and individual users.

The disruptive impact of these new services and business models, as well as the rapid growth of the most successful among them has led some economic actors and policy makers to express concerns about their size and economic clout as well as their market impact.[40]

38 Carl Shapiro, "Antitrust in a Time of Populism," *International Journal of Industrial Organization*, Vol. 61, November 2018, pp. 714-748, pp. 743-745 ("The empirical evidence supports moving… [s]upports increased vigilance in preventing dominant firms with durable market power from engaging in business practices that exclude their actual and potential rivals… The danger to effective antitrust enforcement is that today's populist sentiments are fueling a 'big is bad' mentality, leading to policies that will slow economic growth and harm consumers … [M]ore efficient firms tend to grow relative to others…[D]ismembering some of our most successful companies will significantly reduce economic efficiency.")

39 Digital platforms are defined "as a set of digital resources—including services and content—that enable value-creating interactions between external producers and consumers." *See* Panos Constantinides, Ola Henfridsson, and Geoffrey Parker, "Introduction—Platforms and Infrastructures in the Digital Age," *Information Systems Research*, Vol. 29, No. 2, 2018, pp. 381-400, p. 381("We define digital platforms as a set of digital resources—including services and content—that enable value-creating interactions between external producers and consumers.").

40 *See, e.g.*, "How Can Publishers Respond to the Power of Platforms?," *Nieman Lab*, April 27 2022, https://www.niemanlab.org/2022/04/how-can-publishers-respond-to-the-power-of-platforms/, accessed April 19, 2023 ("Large technology companies such as Facebook and Google — in competition with a few others including Amazon, Apple, Microsoft, and a handful of companies elsewhere — increasingly define the way the internet works and thereby influence the structure of the entire digital media environment."); Fiona Scott-Morton et al., "Report of the Committee for the Study of Digital Platforms, Market Structure and Antitrust Subcommittee," *George Stigler Center for the study of the economy and the state, University of Chicago Booth School of Business*, 2019, p. 8 ("Technology platforms present particular challenges for antitrust enforcement. Markets tip and the resulting market power is durable, so even effective antitrust enforcement is unlikely to generate fragmented markets."), p. 11 ("[T] riggered growing concerns about the power of a small number of firms to control and influence billions of lives. As an increasing volume and range of commercial activities have been digitalized, society has witnessed the emergence of certain key platforms and gatekeepers and a shift in market dynamics."); Lina Khan, "Remarks of Chair Lina M. Khan," *Charles River Associates Conference, Competition & Regulation in Disrupted Times, Brussels, Belgium*, March 31, 2022, pp. 2-3 ("Today, distinct features of

These digital companies are but the most recent expression of a decades-long trend toward increases in productivity led by firms that have become larger by using better technology, organizational innovation, and a reliance on intangible assets.[41] Despite the benefits generated by large digital services providers, concerns about the potential for these large firms to produce anticompetitive harm or to limit competitor access to customers or inputs have made these businesses a target of choice for a more interventionist antitrust policy approach seeking to promote a more leveled market landscape.

Antitrust as a policy tool

Concerns about equality, the political clout of large and successful companies, or even the need to defend democracy have all fed into the debate on the need for a more stringent antitrust policy.[42] As legitimate as these wider social objectives may be as independent policy issues, there is no consensus that antitrust policy is the right instrument to address them. The legal and institutional framework of antitrust intervention is currently built for the purpose of intervening against attempts to monopolize markets, agreements to restraint trade, or conduct amounting to unfair competition.[43] The intellectual underpinning and the body of law that support it have been designed to address

digital technologies have ushered in new market dynamics and business strategies that require us to update our approach once again… Minimal marginal costs have enabled digital platforms to grow larger and more quickly, while network effects and high barriers to entry have protected incumbents and led certain markets to tip towards a single winner… Across markets, dominant digital platforms have come to capture control over key arteries of commerce and communications. After achieving a gatekeeper position, these firms can exercise their power in a host of ways… Enforcers and lawmakers have responded to this playbook, recognizing that practices like self-preferencing and blocking interoperability are or should be unlawful.”).

41 Joe Kennedy, “Monopoly Myths: Are Superstar Firms Stifling Competition or Just Beating It?,” *Information Technology & Innovation Foundation*, January 11, 2021, https://itif.org/publications/2021/01/11/monopoly-myths-are-superstar-firms-stifling-competition-or-just-beating-it/, accessed June 2, 2023 (“Over the past few decades, many firms have gained market share in their industries, so much so that they have been coined “superstar” firms. This phenomenon has been especially true in digital markets wherein the nation’s largest Internet firms have created platforms fueling rapid growth, but it has occurred across many industries… Although some firms have gained even more market share, this has generally not been because the firms used market power to succeed, nor does it suggest reduced economic welfare. Rather, in this environment, a few firms appear to have figured out how to be much more innovative and competitive, and have acted effectively on those insights, enabling them to outperform laggard firms… [S]uperstars differ from other firms in the same industry not just because they are big. Rather, they outperform other firms in the same industry along a variety of variables, including innovation. They have gained this differentiation not by using market power, but by crafting better strategy and executing more effectively than their competitors. Most of them have invested heavily in IT systems, as well as in complementary intangibles, including organizational change, worker training, and intellectual property (IP). When successful (often they are not), these investments have made them more productive and more competitive, allowing them to grow by taking market share from laggards in their industry.”)

42 Thomas Jeffrey Horton, “Rediscovering Antitrust’s Lost Values,” *University of New Hampshire Law Review*, Vol. 16, No. 2, 2018, available at SSRN: https://ssrn.com/abstract=3152619, pp. 196-238 (“Congress has continued to face similar philosophical and ideological conflicts for more than a century…. [I]t can be seen that the proponents of our early antitrust statutes shared such explicit and implied values as a belief in fair competition (equality of opportunity), economic diversity, and economic fairness through government oversight. Meanwhile, the opponents shared such express and implied values as efficiency through economic concentration, freedom of contract, protection of private property rights, and neo-Darwinian notions of ‘survival of the fittest.’”); Michael Allen, Kenneth Scheve, and David Stasavage, “Democracy, Inequality, and Antitrust,” *Available at SSRN 4358176*, 2023, pp. 5-29 (“Another key concern behind antitrust regulation particular to democracies is the distorting effect of market concentration on political power… Reforms like antitrust legislation at this time were seen not only as ways of dealing with imbalances in market power, but more fundamentally as ways to stabilize democracy itself.”)

43 “Sherman Antitrust Act,” *26 Stat. 209, 15 U.S.C. §§ 1-7*, 1890; “Federal Trade Commission Act of 1914,” *United States Congress*, September 26, 1914, p. 3 (“Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, (1) Every contract, combination in the form of trust or other-wise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations is hereby declared to be illegal… (2) Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty…”)

firm conduct within markets and not macroeconomic outcomes, or the interests of any particular group of businesses.[44] This likely makes antitrust policy ill-suited for achieving larger structural objectives, such as increasing the number of firms in a market, which tend to be anchored in broader economic and institutional factors.[45]

That said, there is a potential for market abuse in concentrated markets and the rationale for a sound antitrust policy remains as pertinent today as it was when initially conceived. The exercise that policymakers have tried to get right in the design and implementation of antitrust rules is the determination of the boundary between innovative and procompetitive conduct on one side, and harmful anti-competitive behavior on the other.[46] The line has moved over the years, with periods of both over and under enforcement. [47] The current calls for more stringent enforcement mirror past populist episodes that ignored the economic costs that overenforcement would entail. In this context, a careful assessment of regulatory intervention is important to prevent the deterrence of efficient and innovative behavior. Establishing the equivalent of 'efficiency offenses' may generate durable macroeconomic costs.

B. Motivation for State Level Initiatives

Despite the scholarship illustrating the linkages between the adoption of efficient organizations and technology on one side and firm growth on another, some policymakers ignore the economic factors that give rise

44 George Stigler, "The Origin of the Sherman Act," *The Journal of Legal Studies*, Vol. 14, No. 1, 1985, pp. 1-12, available at http://www.jstor.org/stable/724314, pp. 2-8 ("[T]here is no reason to expect that farmers were more vulnerable to monopolistic exploitation than the remainder of the population… If a nation wished to protect its small business (including family farms), it could employ traditional instruments such as protective tariffs and government subsidies (including credit subsidies) … The common-law opposition to restraints of trade, and to monopolies (which customarily had been conferred by the state), was part of our English heritage, and in the nineteenth century Americans adhered to this opposition considerably more strongly than the English. The Sherman Act implemented this policy by its provisions for public and private (treble-damage) enforcement of prohibitions against restrictive practices."); Horace Robbins, "'Bigness,' the Sherman Act, and Antitrust Policy," *Virginia Law Review*, Vol. 39, No. 7, 1953, pp. 907-948, available at https://doi.org/10.2307/1069774.

45 Carl Shapiro, "Antitrust: What Went Wrong and How to Fix It," *Antitrust*, Vol. 35, No. 3, 2021, pp. 33-45, available at http://faculty.haas.berkeley.edu/shapiro/fixingantitrust.pdf, p. 1 ("However, antitrust is not a cure-all. For example, while stronger antitrust enforcement tends to lessen income inequality, the primary policies for that purpose are the tax system and government programs that help lower-income households obtain various goods and services, including nutrition, education, and health care. Those who over-promise what antitrust can realistically deliver are doing a disservice to the very people they profess they are trying to help. They also threaten to breed skepticism regarding the value of antitrust policy and enforcement if antitrust fails to deliver the broader social and economic transformation that has been promised").

46 Naomi Lamoreaux, "The Problem of Bigness: From Standard Oil to Google," *Journal of Economic Perspectives*, Vol. 33, No. 3, 2019, pp. 94-117, p. 95 ("The boundary between anticompetitive practices and those that enhanced efficiency nonetheless remained difficult to draw."); Carl Shapiro, "Antitrust in a Time of Populism," *International Journal of Industrial Organization*, Vol. 61, November 2018, pp. 714-748, p.745 (" We understand quite well how to use antitrust to protect competition and consumers, at least conceptually. This enterprise centers on the economic notion of market power, and relies heavily on industrial organization economics…Today's populist sentiments pose a threat as well as an opportunity for antitrust. The danger to effective antitrust enforcement is that today's populist sentiments are fueling a 'big is bad' mentality, leading to policies that will slow economic growth and harm consumers…Economic growth will be undermined if firms are discouraged from competing vigorously for fear that they will be found to have violated the antitrust laws, or for fear they will be broken up if they are too successful.").

47 Naomi Lamoreaux, "The Problem of Bigness: From Standard Oil to Google," *Journal of Economic Perspectives*, Vol. 33, No. 3, 2019, pp. 94-117, p. 95 ("The line between behaviors seen as violating the law and those viewed as legally acceptable shifted back and forth; regulators were excessively vigilant in some periods and excessively lax in others."); Carl Shapiro, "Antitrust in a Time of Populism," *International Journal of Industrial Organization*, Vol. 61, November 2018, pp. 714-748, p.721 ("All of this chatter has even reached the ivory tower. The shifting terms of the debate were impossible to miss at the University of Chicago conference in March 2017… The Chicago School ushered in a far more circumscribed approach to antitrust enforcement around 1980. Yet one speaker after another at this conference argued that antitrust enforcement needs to be strengthened").

to large firms or concentrated industries, and consider an increase in the relative size of firms or the level of concentration as fundamentally problematic.[48] They sustain that a failure to properly enforce antitrust rules contributes to this trend.[49] They also consider that dominant companies exert undue influence and impose unfair commercial conditions without being held accountable.[50] This latter concern actually opens the motivation for the New York State legislative proposal.[51] The digital sector is particularly mentioned as the principal expression of this problem.[52] The potential imbalance of economic power in commercial dealings seems to be the general concern in some cases motivating establishing a fairness standard in competition.[53] Some legislators also advocate for antitrust to protect the freedom to conduct business and he protection of smaller businesses is in some cases assimilated to the protection of innovation.[54] For example, California assembly

48 Fred Ashton, "The Ftc's Populist Push Is Jeopardizing Its Credibility," *The Hill*, January 26, 2023, https://thehill.com/opinion/finance/3831531-the-ftcs-populist-push-is-jeopardizing-its-credibility/, accessed May 24, 2023 ("The FTC's lack of success in following its 'big is bad' theory of harm not only wastes valuable agency resources but jeopardizes its credibility, as well.").

49 "Assembly Concurrent Resolution No. 95," *Relative to the California Law Revision Commission*, 2021-2022, California, Assembly, p. 2 ("The American Antitrust Institute published a policy brief in 2016 finding that '[t]here is a growing consensus that inadequate antitrust policy has contributed to the concentration problem and associated inequality effects.'"); Minnesota Attorney General Keith Ellison at a June 15, 2022 meeting said that his office will "continue to work with and organize legislation at the state legislature to devote more resources to tracking and understanding the risks of consolidation". *See* Noah Fish, "Minnesota Ag Keith Ellison Preaches Antitrust Authority at Mfu Discussion," *AGWeek*, June 15, 2022, https://www.agweek.com/news/policy/minnesota-ag-keith-ellison-preaches-antitrust-authority-at-mfu-discussion, accessed May 31, 2023.("Ellison said that his office will 'continue to work with and organize legislation at the state legislature to devote more resources to tracking and understanding the risks of consolidation' in Minnesota. 'So we can develop the tools to fight this scourge', he said."); Colorado Attorney General Phil Weiser said, "Our market landscape shifted significantly in the past 10-20 years, and the guidelines must take account of those changes. We need the right tools to stop anticompetitive behavior and ensure mergers do not decrease competition and harm consumers."[9] *See* Phil Weiser, Colorado Attorney General, "Attorney General Phil Weiser Says Antitrust Enforcement at a Critical Juncture as Modern Market Forces Push Antitrust Law into New Territory," *State of Colorado*, April 21, 2022, https://coag.gov/press-releases/4-21-22/, accessed April 11, 2023 ("'Our market landscape shifted significantly in the past 10-20 years, and the guidelines must take account of those changes,' Weiser said. 'We need the right tools to stop anticompetitive behavior and ensure mergers do not decrease competition and harm consumers.'").

50 "Sb 933: Protecting Workers and Small Businesses from Dominant Corporations," *American Economic Liberties Project*, June 2021, https://www.economicliberties.us/wp-content/uploads/2021/06/NY-Antitrust-Bill-Explainer_6.2.pdf, accessed May 24, 2023, p. 1 ("[A] dramatic erosion of antimonopoly rules, which has harmed workers and small and medium size businesses by allowing a few corporations to become dominant in many sectors of the economy...[F]ollows federal interpretations of antitrust law, making it difficult for enforcers, workers, or small and mid-sized businesses to hold dominant corporations accountable for predatory and unfair tactics.").

51 "Senate Bill S6748," *2023-2024 Legislative Session, The New York State Senate*, 2023-2024, https://www.nysenate.gov/legislation/bills/2023/S6748, accessed May 22, 2023. See full text at https://legislation.nysenate.gov/pdf/bills/2023/S6748, p. 1 ("The legislature hereby finds and declares that there is great concern for the growing accumulation of power in the hands of large corporations. These companies possess great and increasing power over all aspects of our lives. More than one hundred years ago, the state and federal governments identified these same after corporate combinations and trusts came to dominate the economy... It is time to update, expand and clarify our laws to ensure that these dominant corporations cannot abuse their power in ways that undermine competition to the detriment of workers, small businesses and communities in New York.").

52 See for example specific mention in the California Assembly concurrent resolution, "Assembly Concurrent Resolution No. 95," *Relative to the California Law Revision Commission*, 2021-2022, California, Assembly, pp. 1-2 ("[O]n June 3, 2019, the House of Representatives' Judiciary Committee's Subcommittee on Antitrust, Commercial and Administrative Law, launched a bipartisan investigation into competition in digital markets which in part concluded: '...we firmly believe that the totality of the evidence produced during this investigation demonstrates the pressing need for legislative action and reform.'").

53 Lee, Freiberg, and Howard, "H.F. No. 2823," *State of Minnesota, House of Representatives*, March 6, 2023, https://wdoc.house.leg.state.mn.us/leg/LS93/HF2823.0.pdf, accessed May 24, 2023, pp. 1-2 ("A person engages in a deceptive trade practice when, in the course of business, vocation, or occupation, the person: (13) engages in (i) unfair methods of competition, or (ii) unfair or conscionable acts or practices... The act, use, or employment by any person of any fraud, unfair or unconscionable practice... [i]s enjoinable as provided in section 325F.70.").

54 "Assembly Concurrent Resolution No. 95," *Relative to the California Law Revision Commission*, 2021-2022, California, Assembly, pp. 3-4 ("That the Legislature approves for study by the California Law Revision Commission the following new topics: (2) Whether the law should be revised in the context of technology companies so that analysis of antitrust injury in that setting reflects competitive benefits such as innovation and permitting the personal freedom of individuals to start their own businesses and not solely whether such monopolies act to raise prices.").

member Wicks, sitting in one of the most innovative regions in the world, expressed that "as our country's largest economy and hub of innovation, it's critical that California join Congress and other state governments in their efforts to revamp antitrust laws."[55] In addition, proponents of state legislation reform also tend to advocate for antitrust policy to consider a wider range of benefits to be derived from properly functioning markets indicating a tendency to use antitrust policy for a variety of social or economic objectives the policy has so far not been designed for.[56]

Many states have already acted on their pro-enforcement policy stance and have initiated or joined antitrust complaints under federal law. The possibility of unsympathetic courts and the uncertainty about enforcement at the federal level is further motivating some States to enact state level legislation. In that context, the legislative proposal of the New York State senate can easily be interpreted as a policy-setting exercise. Other states such as California and Maine are indeed looking at New York's initiative as a legislative template or adopting the terminology related to abuse of dominance.[57]

C. Twenty First Century Antitrust Act Bill

At the time of writing, the New York state legislature is currently considering what is probably the most significant state bill to strengthen antitrust enforcement in the country. It was filed by New York State Senator Mike Gianaris in July 2020, it passed the Senate in June 2021, and was delivered to the Assembly after two rounds of amendments in May 2022.[58] The proposal of the bill coincided with the congressional hearings of large technology companies, and it built momentum with

55 "Bipartisan Resolution Would Study California's Antitrust Laws," *Paso Robles Daily News*, July 5, 2021, https://pasoroblesdailynews.com/bipartisan-resolution-would-study-californias-antitrust-laws/128300/, accessed June 2, 2023("'As we emerge from the pandemic, we need to do all we can to allow small businesses to compete, and make sure that such a great deal of power doesn't fall into so few hands. As our country's largest economy and hub of innovation, it's critical that California join Congress and other state governments in their efforts to revamp antitrust laws.'").

56 "Assembly Concurrent Resolution No. 95," *Relative to the California Law Revision Commission*, 2021-2022, California, Assembly, The resolution mentions issues of inequity as a motivation for action. p. 2 ("WHEREAS, The American Antitrust Institute published a policy brief in 2016 finding that "[t]here is a growing consensus that inadequate antitrust policy has contributed to the concentration problem and associated inequality effects."); The New York Bill seeks to ensure that labor markets are open and fair, "Senate Bill S6748," *2023-2024 Legislative Session, The New York State Senate*, 2023-2024, https://www.nysenate.gov/legislation/bills/2023/S6748, accessed May 22, 2023. See full text at https://legislation.nysenate.gov/pdf/bills/2023/S6748, p. 2 ("The legislature further finds and declares that one of the purposes of the state's antitrust laws is to ensure that our labor markets are open and fair.")

57 "Assembly Concurrent Resolution No. 95," *Relative to the California Law Revision Commission*, 2021-2022, California, Assembly, p. 3 ("That the Legislature approves for study by the California Law Revision Commission the following new topics: (1) Whether the law should be revised to outlaw monopolies by single companies as outlawed by Section 2 of the Sherman Act, as proposed in New York State's 'Twenty-First Century Anti-Trust Act' …"); "H.P. 1161, an Act to Protect Maine's Consumers by Establishing an Abuse of Dominance Right of Action and Requiring Notification of Mergers," *131st Maine Legislature, House of Representatives*, April 27, 2023, https://legislature.maine.gov/legis/bills/getPDF.asp?paper=HP1161&item=1&snum=131, accessed May 31, 2023, pp. 2-3 ("It is unlawful for a person with a dominant position in the conduct of any business, trade or commerce, in any labor market or in the furnishing of any service in this State to abuse that dominant position… In any action brought under this section, a person's dominant position may be established by: A) Direct evidence… B) Indirect evidence… C) A combination of direct and indirect evidence… Presumption; dominant position…").

58 "Senate Bill S6748," *2023-2024 Legislative Session, The New York State Senate*, 2023-2024, https://www.nysenate.gov/legislation/bills/2023/S6748, accessed May 22, 2023. See full text at https://legislation.nysenate.gov/pdf/bills/2023/S6748.

the federal legislative proposals targeting the technology sector. But the New York Bill has a wider reach, impacting all firms conducting business or furnishing services in the state of New York.[59] The proposed bill would modify the current New York state antitrust legislation, the Donelly Act that mirrors federal legislation, creating for the first time a stricter antitrust regime for all companies operating in New York State.

Content of legislation

The proposed New York Bill sets the objective of preventing the accumulation of excessive power by firms and therefore creates the tools to prohibit behavior that may lead companies to increase their market and economic power.[60] It proposes to do so by expanding the definition of monopolies and monopolization, expanding the scope of unilateral conduct covered by antitrust statutes and lowering the legal standards for intervention. It also brings labor markets in scope of antitrust enforcement. The Bill permits class action in antitrust suits and the recovery of treble damages. Note that, unlike federal antitrust law, New York State does allow for indirect class actions in antitrust cases.

The current Donnelly Act already prohibits agreements to restrain trade, similar to Section 1 of the Sherman Act. The Bill adds enforcement against monopolization and attempts at monopolization, in a language equivalent to that of Section 2 of the Sherman Act. But in addition, the Bill includes the prohibition of 'abuse of dominance', a standard that resembles European antitrust law and, in particular, Article 102 of the Treaty for the Functioning of the European Union (TFEU). Abuse of dominance in the Bill is defined to include conduct that tends to foreclose or limit the ability of one or more actual or potential competitors to compete. Two examples are given of conduct that tend to have that effect: leveraging dominance across markets to limit competition and refusals to deal. The Attorney General will be able to adopt rules as to what constitutes abuse of dominance. They are also empowered to issue guidance on the interpretation of market share and market conditions relevant for the finding of abuse of dominance.

59 "Senate Bill S6748," *2023-2024 Legislative Session, The New York State Senate*, 2023-2024, https://www.nysenate.gov/legislation/bills/2023/S6748, accessed May 22, 2023. See full text at https://legislation.nysenate.gov/pdf/bills/2023/S6748, p. 2 ("For the purpose of establishing or maintaining any such monopoly, monopsony, or unlawfully interfering with the free exercise of any activity in the conduct of any business, trade or commerce or in the furnishing of any service in this state any business, trade or commerce or the furnishing of any service is or may be restrained, is hereby declared to be against public policy, illegal and void.")

60 "Senate Bill S6748," *2023-2024 Legislative Session, The New York State Senate*, 2023-2024, https://www.nysenate.gov/legislation/bills/2023/S6748, accessed May 22, 2023. See full text at https://legislation.nysenate.gov/pdf/bills/2023/S6748, p. 1 ("It is time to update, expand and clarify our laws to ensure that these dominant corporations cannot abuse their power in ways that undermine competition to the detriment of workers, small businesses and communities in New York… Firms with monopoly or monopsony power are contrary to the public interest. Accordingly, attempts to create monopolies or monopsonies through anti-competitive conduct should also be treated as actions contrary to the interests of the people of the state of New York and should be penalized accordingly.")

Under the New York Bill, dominance can be established with direct or indirect evidence. The Bill describes examples of direct evidence as the ability to determine prices or contract terms unilaterally, to degrade quality or reduce output without suffering reduction in profitability, and, in the context of labor markets, as unilateral wage setting, the imposition of non-compete clauses, or no-poach agreements.[61] Indirect evidence will typically come from market shares of a relevant market. A company will be presumed dominant with a 40% or greater market share for a seller and 30% or greater for a buyer. The Bill also states that if direct evidence is sufficient to demonstrate a dominant position or an abuse of such dominant position, the definition of a relevant market will not be required.[62]

The Bill establishes new state level pre-merger notification requirement for parties involved in transactions where one of the transacting entities has assets or annual net sales in New York of more than $9.2 million. This is compared to the $92 million threshold of the HSR Act. The Bill also doubles the waiting period from 30 days to 60. Criteria for the assessment of mergers will also include the potential impact on labor markets.

The Bill includes new criminal penalties for anticompetitive agreements and attempts to monopolize. The maximum imprisonment term will be 15 years (as opposed to 4 under federal law) and fines to individuals are increased from $100,000 to $1 million. Fines to corporations are increased from $1 million to $100 million. The statute of limitations is increased from 3 to 5 years.

Differences with the current antitrust regime

The New York Bill would represent a qualitative evolution in antitrust enforcement in the United States. The addition of the abuse of dominance standard and the way this abuse is defined seem to modify the objectives of U.S. antitrust enforcement away from fighting monopolization and towards a protection of less powerful competitors and of the competitive structure. The Bill enables enforcement against expressions of market power rather than against market monopolization by unmeritorious means, as Section 2 has traditionally been interpreted.

61 "Senate Bill S6748," *2023-2024 Legislative Session, The New York State Senate*, 2023-2024, https://www.nysenate.gov/legislation/bills/2023/S6748, accessed May 22, 2023. See full text at https://legislation.nysenate.gov/pdf/bills/2023/S6748, pp. 2-3 ("(1) Examples of direct evidence include, but are not limited to, the unilateral power to set prices, terms, conditions, or standards; the unilateral power to dictate non-price contractual terms without compensation; or other evidence that a person is not constrained by meaningful competitive pressures, such as the ability to degrade quality or reduce output without suffering reduction in profitability. In labor markets, examples of direct evidence include, but are not limited to, the use of non-compete clauses or no-poach agreements, or the unilateral power to set wages.").

62 "Senate Bill S6748," *2023-2024 Legislative Session, The New York State Senate*, 2023-2024, https://www.nysenate.gov/legislation/bills/2023/S6748, accessed May 22, 2023. See full text at https://legislation.nysenate.gov/pdf/bills/2023/S6748, p. 3.("(3) If direct evidence is sufficient to demonstrate that a person has a dominant position or has abused such a dominant position, no court shall require definition of a relevant market in order to evaluate the evidence, find liability, or find that a claim has been stated under this paragraph.").

Under the Bill, foreclosure of a single potential competitor by a company with a 40% market share now raises a risk of antitrust scrutiny without any need to show an attempt or even possibility of market monopolization, as is currently the case under federal law. A conduct that merely limits the ability of a potential competitor to effectively compete or 'handicaps' one type of competitors could effectively be challenged under this Act.

The Bill also increases the reliance on thresholds for presumption that are set at much lower levels than the current federal thresholds. For example, market power is presumed after a 40% market share or from evidence that the company sets contractual terms without a bargaining process. Under the New York Bill, some conducts such as tying or refusal to deal, currently analyzed under the rule of reason under federal law, are presumed *per se* harmful after a determination of dominance, without analysis of the contextual facts.

The New York Bill extends the analysis of competitive harm to potential competitors and effects on innovation. There is no current framework to perform an assessment of damage to potential competitors or to predict innovation paths. Strong reliance on such dynamic effects introduces a higher degree of discretion and speculation.

The elimination of procompetitive justifications from the assessment of the conducts investigated is the most significant difference with the current regime and marks a clear departure from the consumer welfare standard. Positive impact from the conduct benefiting consumers, such as product or process innovation, reduction in transaction costs, or improved quality, become irrelevant in the face of harm to competitors. Under the current rule of reason approach of the Sherman Act, once a conduct has been found to create competitive harm, a firm can argue for the benefits to consumers of the investigated practice. If the benefits from the conduct are found to be larger than the anticompetitive harm and if there is no less restrictive way of achieving these benefits, the conduct is found valid. For example, U.S. Courts have evolved over time to accept that some conducts previously considered *per-se* harmful, such as resale price maintenance for example, need to be analyzed under a 'rule of reason' for their potential to generate consumer benefits and efficiencies.[63] The absence of such an 'efficiency

63 *See Leegin Creative Leather Products, Inc. V. Psks, Inc.*, 551 U.S. 877, June 28, 2007, where U.S. Supreme Court ruled that vertical price restraints such as resale price maintenance ("RPM") were not *per se* illegal in the United States and are to be judged by the rule of reason, balancing any anticompetitive harm against possible procompetitive benefits. The EU has also evolved towards the same approach as *Leegin*. *See* Judgment of the Court, "Établissements Consten S.À.R.L. And Grundig-Verkaufs-Gmbh V Commission of the European Economic Community. Joined Cases 56 and 58-64.," July 13, 1966, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A61964CJ0056, accessed January 22, 2024, where the European Court of Justice requires that competitive harm needs to be shown for antitrust cases related to vertical price restraints. *See* Jacques Buhart, Stéphane Dionnet, and Frédéric Pradelles, "Vertical Agreements & Restriction of Competition by Object: What's New in Europe?,"

defense' dramatically increases the likelihood of prohibiting efficient procompetitive behavior among a large variety of firms. This is all the more relevant as more complex arrangements susceptible to attract scrutiny are often adopted by firms that are sophisticated and innovative and likely to increase productivity and grow on that basis.[64]

The low thresholds for dominance and merger review will bring into scope companies that are smaller in size than traditionally scrutinized, imposing regulatory costs on firms that may be on their way to becoming big players. By increasing the focus on regional dominance, the state of New York risks preventing its firms from acquiring national relevance and developing the scale needed for the efficiencies of new technologies to fully materialize.

Finally, by bringing labor markets into the remit of antitrust law, the New York bill becomes a de facto regulator of labor markets, a domain that has traditionally required dedicated institutional settings with organized stakeholders and collective bargaining mechanisms.

Other States' Proposals

Besides New York, other states are considering new state-level antitrust legislation that would extend the scope of intensity of antitrust enforcement in similar ways, and in some cases even more so. California adopted a resolution asking the California Law Revision Commission to study the possible revision of state-level antitrust legislation (the Cartwright Act) to include attempts at monopolization, as in the Section 2 of the Sherman Act.[65] The resolution asked to consider non-price injuries such as harm to innovation or personal freedom to start a business, and to be able to approve mergers and acquisitions ("M&A").[66]

McDermott Will & Emery, July 11, 2023, https://www.mwe.com/insights/vertical-agreements-restriction-of-competition-by-object-whats-new-in-europe/, accessed January 22, 2024, where the Court of Justice of the European Union emphasized that when evaluating resale price maintenance, competitive harm needs must take into account efficiency defenses. *See also* Jacques Buhart, Stéphane Dionnet, and Frédéric Pradelles, "Vertical Agreements & Restriction of Competition by Object: What's New in Europe?," *McDermott Will & Emery*, July 11, 2023, https://www.mwe.com/insights/vertical-agreements-restriction-of-competition-by-object-whats-new-in-europe/, accessed January 22, 2024, ("Super Bock case has paved the way for EU law to adopt a more flexible and informal approach towards RPM, close to the one applied in the United States."). *See* Christian Ahlborn, David Evans, and Jorge Padilla, "The Antitrust Economics of Tying: A Farewell to Per Se Illegality," *Antitrust Bulletin*, 2004, https://www.justice.gov/sites/default/files/atr/legacy/2006/11/13/219224_b.pdf, accessed January 23, 2024, where DOJ described how "modem economic thinking supports a rule of reason approach toward tying," stating that one must conduct "a rule of reason" analysis of both potential pro- and anticompetitive effects of tying. In 2001, United States Court of Appeals, District of Columbia Circuit applied the rule of reason to tying on computer software platforms. See *U.S. V. Microsoft Corp.*, 253 F.3d 34 (D.C. Cir. 2001), June 28, 2001 at 84.

64 For example, manufacturers with higher brand equity typically adopt sophisticated distribution policies with complex agreements with retailers in order to protect and grow the value of their brand. Restrictive contracts are also common to support transactions involving intellectual property.

65 "Assembly Concurrent Resolution No. 95," *Relative to the California Law Revision Commission*, 2021-2022, California, Assembly, p. 3 ("That the Legislature approves for study by the California Law Revision Commission the following new topics: (1) Whether the law should be revised to outlaw monopolies by single companies as outlawed by Section 2 of the Sherman Act, as proposed in New York State's 'Twenty-First Century Anti-Trust Act' …").

66 "Assembly Concurrent Resolution No. 95," *Relative to the California Law Revision Commission*, 2021-2022, California, Assembly, p. 3-4 ("That the Legislature approves for study by the California Law Revision Commission the following new topics: (2) Whether

The Commission will also consider limiting existing exemptions to antitrust law based on their 'tangible or intangible' benefits to Californians.[67] In this exercise, the California legislature considers the New York Bill as a relevant document.[68]

In March 2023, the House of Representatives in the State of Minnesota introduced a bill (HF 2823) amending the trade regulations and consumer protection chapters of the Minnesota Statutes 2022.[69] The definition of deceptive trade practices is amended to include a prohibition of "unfair methods of competition, or unfair or conscionable acts or practices."[70] These "unfair or unconscionable practices" would be prohibited alongside deceptive practices, whether or not a person has in fact been damaged.[71] Enforcement will require the proof that the practice is a method of competition, act, or practice that offends public policy as established by the Minnesota rules or law, is immoral, unethical, oppressive, or unscrupulous, or is substantially injurious to consumers, competitors, or other business persons.[72] This bill introduces a new standard of fairness in its trade and consumer protection regulation that is undefined and may extend to non-economic injury.[73] As drafted, the new standard ignores the FTC criteria defining unfair practices and allows any person or business injured (or offended)

the law should be revised in the context of technology companies so that analysis of antitrust injury in that setting reflects competitive benefits such as innovation and permitting the personal freedom of individuals to start their own businesses and not solely whether such monopolies act to raise prices.")

67 "Assembly Concurrent Resolution No. 95," *Relative to the California Law Revision Commission*, 2021-2022, California, Assembly, p. 4 ("That the Legislature approves for study by the California Law Revision Commission the following new topics: (3) Whether the law should be revised in any other fashion such as approvals for mergers and acquisitions and any limitation of existing statutory exemptions to the state's antitrust laws to promote and ensure the tangible and intangible benefits of free market competition for Californians; and be it further.").

68 "Assembly Concurrent Resolution No. 95," *Relative to the California Law Revision Commission*, 2021-2022, California, Assembly, p. 3 ("That the Legislature approves for study by the California Law Revision Commission the following new topics: (1) Whether the law should be revised to outlaw monopolies by single companies as outlawed by Section 2 of the Sherman Act, as proposed in New York State's 'Twenty-First Century Anti-Trust Act' …").

69 Lee, Freiberg, and Howard, "H.F. No. 2823," *State of Minnesota, House of Representatives*, March 6, 2023, https://wdoc.house.leg.state.mn.us/leg/LS93/HF2823.0.pdf, accessed May 24, 2023, p. 1 ("A bill for an act relating to consumer protection; modifying provisions governing deceptive trade practices and consumer fraud; amending Minnesota Statutes 2022, sections 325D.44, subdivisions 1, 2; 325F.69, subdivision 1, by adding a subdivision.").

70 Lee, Freiberg, and Howard, "H.F. No. 2823," *State of Minnesota, House of Representatives*, March 6, 2023, https://wdoc.house.leg.state.mn.us/leg/LS93/HF2823.0.pdf, accessed May 24, 2023, p. 1-2 ("A person engages in a deceptive trade practice when, in the course of business, vocation, or occupation, the person… engages in (i) unfair methods of competition, or (ii) unfair or conscionable acts or practices…").

71 Lee, Freiberg, and Howard, "H.F. No. 2823," *State of Minnesota, House of Representatives*, March 6, 2023, https://wdoc.house.leg.state.mn.us/leg/LS93/HF2823.0.pdf, accessed May 24, 2023, p. 2 ("The act, use, or employment by any person of any fraud, unfair or unconscionable practice, false pretense, false promise, misrepresentation, misleading statement or deceptive practice, with the intent that others rely thereon in connection with the sale of any merchandise, whether or not any person has in fact been misled, deceived, or damaged thereby, is enjoinable as provided in section 325F.70.").

72 Lee, Freiberg, and Howard, "H.F. No. 2823," *State of Minnesota, House of Representatives*, March 6, 2023, https://wdoc.house.leg.state.mn.us/leg/LS93/HF2823.0.pdf, accessed May 24, 2023, p. 3 ("For purposes of this section, an unfair method of competition or an unfair or unconscionable act or practice is any method of competition, act, or practice that: (1) offends public policy as established by the statutes, rules, or common law of Minnesota; (2) is immoral, unethical, oppressive, or unscrupulous; or (3) is substantially injurious to consumers, competitors, or other business persons.").

73 The definition of unfair act or practice in the Minnesota proposal is based on principles established in FTC v. Sperry & Hutchinson Co., 405 U.S. 233, 244, n.5 (1972) and have never led to a proper actionable framework. The FTC greatly restricted its own discretion by clarifying its policy in the Deception Policy Statement, appended to In the Matter of Cliffdale Associates, Inc., 103 F.T.C. 110, 174 (1984) and in the FTC Act amendments of 1994 (15 U.S.C. § 45(n).) *See* ""Cliffdale Associates, Inc."," *Federal*

by any conduct of any business to have standing.[74] This is a qualitative jump from a proposal previously introduced in the Minnesota state legislature, which replicates the New York Bill but stays closer to the antitrust tradition in that it stresses the need for an anticompetitive effect to find a violation, does not rely on fairness provisions, and offers the possibility of an objective justification that outweighs the competitive harm.[75]

In April 2023, the state legislature of Maine referred to the Committee on Innovation, Development, Economic Advancement, and Business a proposal of "An Act to Protect Maine's Consumers by Establishing an Abuse of Dominance Right of Action and Requiring Notification of Mergers."[76] The bill is sponsored by Representative Rebecca Millett. The Maine bill proposal is modeled after the New York Bill with a few differences. The threshold for the presumption of dominance is set at 60% of market share for a seller, instead of 40% in the New York Bill, and 50% for a buyer, instead of 30% in the New York Bill. On the other hand, the Maine bill establishes an extensive list of behaviors that are presumed abusive. These include more specifically tying, bundling, self-preferencing, or a refusal to interoperate. It also includes refusal to deal, refusal to provide access to an essential facility or resource that is necessary to compete effectively, the purchase of a scarce intermediate input or service required by a competitor, refusal to supply scarce goods or services to a competitor or a consumer, the use of anti-steering provisions or most-favored-nation provisions with suppliers, the imposition of exclusivity agreements on suppliers or consumers, and predatory practices in the form of pricing a good or service below incremental costs. The sum of these presumptions appears to impose an extensive duty to supply on companies with a market share of 60% or above. As in the New York Bill, evidence of procompetitive effects is not a defense of abuse of dominance and does not offset or cure competitive harm. Other states have expressed interest in legislative reform. For example, Colorado Attorney General Phil Weiser has

Trade Commission, 103 F.T.C. 110, 1984, accessed July 10, 2023; "Federal Trade Commission Act Amendments of 1994," *United States Congress*, July 21, 1994.

74 The FTC defines unfair act or unfair practice as one that "causes or is likely to cause substantial injury to consumers which is not reasonably avoidable by consumers themselves and not outweighed by countervailing benefits to consumers and to competition."

75 "H.F. No. 1563," *State of Minnesota, House of Representatives*, February 3, 2023, accessed July 6, 2023, pp. 1-2 ("Be it enacted by the Legislature of the state of Minnesota: In an action brought under this section, a person's dominant position may be established by direct evidence, indirect evidence, or a combination of direct and indirect evidence…Evidence of nonpretextual competitive benefits resulting from an abuse of dominance may be a defense only if the nonpretextual competitive benefits significantly outweigh the competitive harm.").

76 "H.P. 1161, an Act to Protect Maine's Consumers by Establishing an Abuse of Dominance Right of Action and Requiring Notification of Mergers," *131st Maine Legislature, House of Representatives*, April 27, 2023, https://legislature.maine.gov/legis/bills/getPDF.asp?paper=HP1161&item=1&snum=131, accessed May 31, 2023, p. 5 ("This bill establishes a right of action against a person with a dominant position in the conduct of any business, trade or commerce, in any labor market or in the furnishing of any service in this State that abuses that dominant position.")

welcomed the revision of federal merger guidelines but has also stated that state attorneys general are uniquely situated to monitor local anticompetitive behavior.[77]

D. Economic Theory Predicts that the New York Bill Increases the Risk of Overenforcement Against Efficient Behavior

Overenforcement against procompetitive behavior has been commonly defined in the literature as inhibiting efficient behavior that increases value for consumers.[78] Chicago School and Harvard School commentators tend to share the view that the cost of overenforcement on dominant firm conducts can be higher than the cost of underenforcement on these conducts.[79] Overenforcement is also not only costly because it challenges particular firms' efficient behavior but also because it deters other similarly situated firms from adopting these procompetitive practices.[80]

Determinants of risk of overenforcement

The New York Bill looks to change the parameters of intervention in ways that economic theory predicts will increase the risk of overenforcement.

First, by design, the New York Bill will bring more companies into scope of antitrust scrutiny, by, for example lowering the market share threshold to be presumed dominant to 40% compared to a minimum of market share of 50%, and often higher, needed to warrant intervention under the Sherman Act. Many smaller businesses with 40% of a local market share may come into scope of new state level legislation. A number of these will not be large corporations although they may be businesses of regional significance whose expansion may disturb less efficient rivals. New businesses in scope of the regulation may internalize the regulatory risk from adopting scrutinized behavior and be deterred from it.

77 Phil Weiser, Colorado Attorney General, "Ag Weiser Testimony: Before the Joint Committee on the Judiciary Regarding the Dol Performance Plan," *State of Colorado*, January 19, 2023, https://coag.gov/blog-post/ag-weiser-testimony-joint-judiciary-committee-dol-performance-plan-1-19-2023/, accessed January 22, 2024 ("First, the Colorado Antitrust Act needs to be updated. The last time the General Assembly made major revisions to this law was 31 years ago. Our marketplace has experienced major changes over those three decades, particularly with the rise of online markets and new products unimaginable to the legislature when they wrote our current antitrust act. This year, I am asking the legislature to update the Antitrust Act to account for those new needs and ensure the law can best protect consumers.").

78 "Modern Antitrust Enforcement," *Yale School of Management*, https://som.yale.edu/centers/thurman-arnold-project-at-yale/modern-antitrust-enforcement, accessed June 15, 2023 ("Overenforcement occurs when antitrust rules and enforcement are too strict and condemn procompetitive conduct[.]").

79 William Kovacic, "The Intellectual DNA of Modern U.S. Competition Law for Dominant Firm Conduct: The Chicago/Harvard Double Helix," *Columbia Business Law Review*, Vol. 1, 2007 p. 35 ("The second presumption endorses the elements of economic theory that favor giving individual firms broad freedom to select product development, pricing, and distribution strategies... [T] his presumption generally disfavors intervention to control the conduct of dominant enterprises. In this regard, Chicago School and Harvard School commentators tend to share the view that the social costs of enforcing antitrust rules involving dominant firm conduct too aggressively exceed the costs of enforcing them too weakly.").

80 See for example, Nat'l Collegiate Athletic Ass'n V. Alston ("[M]istaken condemnations of legitimate business arrangements are especially costly, because they chill the very procompetitive conduct the antitrust laws are designed to protect.").

Second, the New York Bill extends the scope of the conducts presumed illegal, sometimes significantly so. The New York Bill would prohibit behavior that extends beyond attempts to monopolize or concerted behavior, which are the behaviors currently in scope of federal antitrust enforcement. New behaviors in scope would include dominant firms limiting the incentive of actual or potential competitors to compete or refusing to deal to handicap a competitor but without necessarily causing foreclosure. This will bring previously exempted and potentially efficient conduct into regulatory scrutiny. The uncertainty relating to the exact scope of enforcement and the standards for assessment would increase regulatory uncertainty for many businesses that are currently unaffected by antitrust policy.

Third, the elimination of the objective justification may amount to a regime of *per se* prohibitions of certain conducts for dominant firms. Firms may be dissuaded from adopting these conducts even when they have procompetitive effect in terms of the net overall value created for consumers.[81]

Finally, proposed legislation appears to significantly raise the cost of being found infringing by raising the level of penalties. The importance of higher penalties is relevant for all firms since the absence of the possibility to provide an objective justification for the investigated conduct, and the lower threshold for a finding of harm, may produce a real risk of enforcement against procompetitive behavior.

The increased risk of a challenge and the larger cost associated with that challenge will deter some firms from adopting procompetitive conduct that might have helped them grow, diversify, or innovate.

Overenforcement and the "abuse of dominance" standard

In addition to bringing more and smaller businesses in scope of antitrust enforcement, the New York Bill adds a new type of antitrust offense, the abuse of dominance, for which there is no legal precedent or analytical framework in the United States. Firms will have little guidance and few ways to find out whether their business decisions can fall foul of this new provision and may hesitate to adopt efficient conducts in face of such uncertainty.

81 David Gelfand and Linden Bernhardt, "Vertical Restraints: Evolution from Per Se to Rule of Reason Analysis," *ABA Antitrust Section Fall Forum*, November 16, 2017, https://www.clearygottlieb.com/~/media/organize-archive/cgsh/files/2017/publications/aba-antitrust-section-fall-forum-vertical-restraints-evolution-from-per-se-to-rule-of-reason-analysis-11-16-17.pdf, accessed May 31, 2023, p. 1 ("For plaintiffs, this meant that if a violation could be categorized as per se unlawful, the case was easy to bring. Antitrust counselors would advise clients to avoid these categories of conduct but would worry much less about conduct that was likely to be analyzed under the rule of reason.").

The uncertainty around the abuse of dominance standard is also likely to increase in the next few years. The concept of abuse of dominance appears borrowed from European Union legislation and in particular from Article 102 of the Treaty of the Functioning of the European Union (TFEU).[82] For the last 15 years, the implementation of Article 102 in the EU has been guided by the consumer welfare standard and an effect-based and evidence-driven approach.[83] This situation may be changing with the European Commission's recent amendment of its guidance and announcement of new guidelines for the implementation of Article 102.[84] The guardrails present in the "abuse of dominance" standard in the form of economic grounding and stated protection of efficiencies are arguably weakening in Europe. The European Union is host to the regulatory community that developed the concept of 'abuse of dominance' and defines it for the world via the many international regulatory cooperation networks.[85] As various states in the United States consider the inclusion of abuse of dominance standard, this very concept may be evolving towards higher levels of discretion and uncertainty.

As for the efficacy of the standard, evidence shows ambiguous results. In the past decades, Article 102 has supported stronger enforcement activity in Europe compared to the US against certain types of unilateral conduct.[86] The general higher enforcement standard in the EU has not correlated with more competitive or innovative economies. In fact, the EU lags in innovation and competitiveness compared to both the United States and China.[87] Its growth rate has also not been superior.

82 Article 102 that came into effect in 2009 was formerly Article 82. See "Article 102 — (Ex Article 82 Tec)," *Lexparency.org*, https://lexparency.org/eu/TFEU/ART_102/, accessed July 12, 2023.

83 "Communication from the Commission — Guidance on the Commission's Enforcement Priorities in Applying Article 82 of the Ec Treaty to Abusive Exclusionary Conduct by Dominant Undertakings," *Official Journal of the European Union*, Vol. 45, No. 7, February 24, 2009, pp. 7-20,*, pp. 7-8 ("In applying Article 82 to exclusionary conduct by dominant undertakings, the Commission will focus on those types of conduct that are most harmful to consumers... In applying the general enforcement principles set out in this Communication, the Commission will take into account the specific facts and circumstances of each case... the Commission is mindful that what really matters is protecting an effective competitive process and not simply protecting competitors."; Svend Albæk, "Consumer Welfare in Eu Competition Policy," Aims and values in competition law, 2013, pp. 67-88. -*

84 "Antitrust: Commission Announces Guidelines on Exclusionary Abuses and Amends Guidance on Enforcement Priorities," *European Commission Press Release*, March 27, 2023, https://ec.europa.eu/commission/presscorner/detail/en/ip_23_1911, accessed May 24, 2023 ("The Commission has therefore published today a Call for Evidence with a view to adopt Guidelines on the application of Article 102 TFEU to exclusionary conduct... The Guidelines will aim at increasing legal certainty to the benefit of consumers, businesses and national competition authorities and courts... The amendments follow the significant developments in the case law of the EU courts on Article 102 TFEU and, accordingly, in the Commission's enforcement practice, also taking account of market developments. It aims at enhancing transparency on the principles underpinning the Commission's enforcement priorities in relation to abusive exclusionary conduct in line with the principle of good administration.").

85 Publications from OECD or the International Competition Network often reflect the interpretations of the European Commission. The European Commission competition enforcer (DG COMP) has established various bilateral dialogues with agencies around the world, including in the United States.

86 Maureen Ohlhausen, "U.S.-E.U. Convergence: Can We Bridge the Atlantic?," *Federal Trade Commission, Remarks at the 2016 Goergetown Global Antitrust Symposium Dinner*, September 19, 2016, p. 2 ("The abuse-of-dominance standard in Europe is stricter and reaches further than American rules on exclusionary conduct. Excessive pricing can violate Article 102, but never the Sherman Act. U.S. law treats vertical restraints more leniently than E.U. law does."). Since 1999, 97% of the conducts challenged by the plaintiffs have been found to have no anticompetitive effect by the courts). See Michael Carrier, "The Four-Step Rule of Reason," *Antitrust*, Vol. 33, No. 2, 2019, available at https://www.antitrustinstitute.org/wp-content/uploads/2019/04/ANTITRUST-4-step-RoR.pdf, pp. 1-2 ("In the first stage, the plaintiff must show a significant anticompetitive effect. [...] Court dispose of 97% of cases at the first stage, on the grounds that there is no anticompetitive effect.").

87 "Gii 2022 Results," *WIPO*, 2022, https://www.wipo.int/edocs/pubdocs/en/wipo-pub-2000-2022-section3-en-gii-2022-results-global-innovation-index-2022-15th-edition.pdf, accessed July 11, 2023, p. 45 ("The United States continues to lead in several key innovation indicators. Singapore, China, Hong Kong (China) and Israel follow.").

High levels of uncertainly and regulatory risks in the face of costly enforcement processes will have a deterrent effect with uncertain benefits. The risk for costly overenforcement is very present in the New York Bill that relies on vague concepts of harm and eliminates any possibility of efficiency defense. The latest proposals in Minnesota and Maine are even more expansive and less bound to a known analytical framework. Such bills would at the moment create extraordinary uncertainty. The risk of opportunistic complaints in this environment also seems large.

III. Efficiency Motivations of Certain Business Conducts that May Face Increased Scrutiny Under the New York Bill

To remain competitive, businesses adopt processes that reduce costs, give them access to valuable inputs, or increase the value of their products or services to their consumers. Higher value to consumers can come from reducing transaction costs or producing a superior or novel product. Businesses determine contractual relations with their customers and business partners to achieve all these goals. Over time, much more has been understood about the channels for anticompetitive impact but also about the procompetitive motivations of a variety of contracts or other restrictive commercial practices. This section briefly summarizes possible efficiency motivations for those practices that have been singled out as enforcement targets of the New York Bill and are likely to come under scrutiny. We detail the circumstances where these practices generate a risk of anticompetitive effect and note that currently most practices are seldom found to be anticompetitive. The digital space presents a particularly interesting environment for the discussion.

A. Vertical Restraints and Refusal to Deal

Refusal to deal is one of the vertical restraints commonly assessed in antitrust. Vertical restraints can take many forms and can be challenged under sections 1 and 2 of the Sherman Act and section 3 of the Clayton Act. Currently, the assessment under these laws generally involves the application of the rule of reason, balancing any anticompetitive harm against possible procompetitive benefits.[88]

88 David Gelfand and Linden Bernhardt, "Vertical Restraints: Evolution from Per Se to Rule of Reason Analysis," *ABA Antitrust Section Fall Forum*, November 16, 2017, https://www.clearygottlieb.com/~/media/organize-archive/cgsh/files/2017/publications/aba-antitrust-section-fall-forum-vertical-restraints-evolution-from-per-se-to-rule-of-reason-analysis-11-16-17.pdf, accessed May 31, 2023 ("Vertical restraints in particular have been almost entirely removed from the realm of *per se* treatment... [C]ourts now typically analyze vertical conduct under the rule of reason... The rule of reason, however, requires consideration of the circumstances surrounding the restraint, including the effects of the restraint in the particular case and any procompetitive benefits.").

The New York Bill describes a refusal to deal "with the effect of unnecessarily excluding or handicapping actual or potential competitors" as a potentially abusive behavior.[89] Under the Bill, evidence of procompetitive effects cannot offset anticompetitive harm. This is particularly relevant because of the well documented efficiencies that can come from vertical restraints.[90]

In principle, businesses have the freedom to select with whom they want to engage in business. But refusals to deal become unlawful when they lead to market foreclosure of competitors and monopolization.[91] This has been traditionally understood as involving denial of access to an essential input or an essential facility, or granting access on conditions that prevent effective competition.[92] The bar to prohibit a refusal to deal is currently high: the plaintiff must show the refusal amounts to an attempt to monopolize the market and must argue for the viability of the strategy.[93] The reason for the high standard is the generally accepted procompetitive rationale for excluding a potential competitor from accessing an input that was established through previous investment. Companies need to obtain a return from their investment if these investments are to occur in the first place. On the other hand, withdrawing existing access to an input or facility from a commercial partner with no objective procompetitive rationale may merit regulatory scrutiny.[94]

Allegations of anti-competitive behavior have been raised against Apple or Amazon for excluding or discriminating against competitors in downstream or complementary services by not granting equal access to

89 "Senate Bill S6748," *2023-2024 Legislative Session, The New York State Senate*, 2023-2024, https://www.nysenate.gov/legislation/bills/2023/S6748, accessed May 22, 2023. See full text at https://legislation.nysenate.gov/pdf/bills/2023/S6748, p. 3 ("(ii) In any action brought under this paragraph, abuse of a dominant position may include, but is not limited to, conduct that tends to foreclose or limit the ability or incentive of one or more actual or potential competitors to compete, such as leveraging a dominant position in one market to limit competition in a separate market, or refusing to deal with another person with the effect of unnecessarily excluding or handicapping actual or potential competitors.").

90 Vincent Verouden, "Vertical Agreements: Motivation and Impact," *Issues in Competition Law and Policy, American Bar Association, Section of Antitrust Law, Editor: WD Collins*, 2008, p. 1816 ("There are circumstances in which they improve the efficiency of supplier-distributor relationships and increase competition."), p. 1822 ("A different efficiency motive that has been given for exclusive dealing arrangements is that they ensure that the distributors market the products "with maximum energy and enthusiasm…"), p. 1827 ("While there are exceptions, generally vertical restraints inspired by an internal efficiency motive may well improve welfare."); Jean Tirole, *The Theory of Industrial Organization*, MIT press, 1988, p. 186 ("theoretically, the only defensible position on vertical restraints seems to be the rule of reason. Most vertical restraints can increase or decrease welfare, depending on the environment. Legality or illegality per se thus seems unwarranted.").

91 *Verizon Communications, Inc. V. Law Offices of Curtis V. Trinko, Llp*, 540 U.S., January 13, 2004 at 408 ("Under certain circumstances, a refusal to cooperate with rivals can constitute anticompetitive conduct and violate § 2.")

92 See *Verizon Communications, Inc. V. Law Offices of Curtis V. Trinko, Llp*, 540 U.S., January 13, 2004 at 398, 411 ("[T]he indispensable requirement for invoking the doctrine is the unavailability of access to the 'essential facilities', [a]ccess to individual network elements on an "unbundled" basis… Part of Verizon's §251(c)(3) UNE obligation is the provision of access to operations support systems (OSS), without which a rival cannot fill its customers' orders…").

93 *United States of America V. Miscrosoft Corporation*, 253 F.3, June 28, 2001 d 34, 58 ("Second, the plaintiff, on whom the burden of proof of course rests, [m]ust demonstrate that the monopolist's conduct indeed has the requisite anticompetitive effect. In a case brought by a private plaintiff, the plaintiff must show that its injury is 'of the type that the statute was intended to forestall…'").

94 *Aspen Skiing Co. V. Aspen Highlands Skiing Corp., 472 U.S.*, No. 84-510, June 19, 1985, ¶ 597 ("'We are concerned with conduct which unnecessarily excludes or handicaps competitors. This is conduct which does not benefit consumers by making a better product or service available — or in other ways — and instead has the effect of impairing competition.'").

resources such as data or technology features.[95] In the matter of *Epic v. Apple*, the Ninth Circuit Court of Appeals recognized the procompetitive benefits of Apple's refusal to open its operating system on mobile devices to competing app stores and acknowledged the benefits that this restriction provided for the ecosystem quality. This reasserted the finding of the District Court that the "restrictions seek to enhance consumer appeal and differentiate Apple products by improving iOS security and privacy", which amounts to a form of competition on the merits with an investment in quality.[96] The Court found that Apple's differentiated offering provides enhanced choice across mobile ecosystems, a space where the Apple App Store was found to compete on digital mobile game transactions against non-iOS App Stores including the Google's Play Store.

Refusal to deal, as well as other practices of vertical restraints, can in many instances incentivize investment by protecting property rights or other intangible investments such as quality or brand equity. Intangible assets and brand equity can play a significant role in shaping a firm's performance and competitiveness in the marketplace. Empirical studies have documented the crucial role played by the development on intangible assets on firm performance.[97] The presence of intangibles was identified in a study as a significant determinant of growth for smaller firms, for which authors claimed they could "radically change the future".[98]

The New York Bill considers refusal to deal to be an abuse of dominant position without the need to examine any procompetitive justification, potentially prohibiting the practice for firms with only 40% market share. Such a company may be found infringing if a competitor claims that it cannot adequately compete without access to the product or service at stake. It is also unclear at this stage whether the New York Bill will

95 *Steven Floyd V. Amazon.Com, Inc. And Apple Inc.*, No. 2:22-cv-01599, Document 37, JCC Amended Class Action Complaint, February 27, 2023 ("Steven Floyd V. Amazon.Com, Inc. And Apple Inc."), ¶ 4 ("This case concerns an unlawful horizontal agreement between Apple and Amazon to eliminate or at least substantially reduce the competitive threat posed by third-party merchants.), ¶ 49 ("From the outset of these discussions, the parties discussed 'gating' third-party merchants that sold Apple products."), ¶ 58 ("In denying numerous merchants access to intermediation services offered by Amazon to connect them to consumers, and the lack of opportunities to become merchants on other platforms, there was reduced competition for these merchants' services, as well as the goods sold by them.").

96 *United States Court of Appeals, Ninth Circuit, Epic Games, Inc. V. Apple, Inc.*, No. 21-16506, April 24, 2023, ¶ 45 ("A procompetitive rationale is 'a [1] nonpretextual claim that [the defendant's] conduct is [2] indeed a form of competition on the merits because it involves, for example, greater efficiency or enhanced consumer appeal.'...[F]ound that Apple implemented the restrictions to improve device security and user privacy-thereby enhancing consumer appeal and differentiating iOS devices and the App Store from those products' respective competitors.").

97 Stefano Denicolai, Enrico Cotta Ramusino, and Francesco Sotti, "The Impact of Intangibles on Firm Growth," *Technology Analysis & Strategic Management*, Vol. 27, No. 2, 2015, pp. 219-236, p. 1 ("This study investigates and measures the impact of intangibles on firm growth...The empirical analysis explores a proprietary database of 294 listed companies headquartered in Europe. Findings confirm that intangibles are crucial in fostering firm performance, show that this effect varies with firm size and that an additional boost is created by externally generated intangibles.").

98 Stefano Denicolai, Enrico Cotta Ramusino, and Francesco Sotti, "The Impact of Intangibles on Firm Growth," *Technology Analysis & Strategic Management*, Vol. 27, No. 2, 2015, pp. 219-236, p. 14 ("Even if intangibles remain crucial for large organisations, it is sensible to assume that they may radically change the future of a small firm, while big companies are relatively more dependent on a higher number of strategic factors, both internal and external").

require some element of indispensability to determine an abuse, as is currently the case.[99]

A regime that reduces a firms ability to protect its own assets and forces it to open up its assets to competitors simply because it is deemed to have 40% share of a market defined by regulators (be it technology, intellectual property, data, userbase, or any differentiating factor) will disincentivize such investments across similar firms. Similar disincentives to develop crucial intangible capital may derive from overenforcement of other forms of vertical restraints.

B. Tying and Leveraging Market Power Across Markets

The New York Bill also names leveraging of market power across markets as an abuse of dominance, applicable to all firms whether digital or not. Leveraging of market power across markets have traditionally taken the form of bundling or tying of different products. In addition to tying and bundling, leveraging of market power across markets can also include newly typified conducts for which standards of assessment are still unclear, such as ‘self preferencing’ or data based ‘envelopment’, whereby a company aggregates data across markets and allegedly gains an unsurmountable advantage in a market where it is not yet dominant.[100]

Most of the scholarship calling for stricter antitrust enforcement in the digital space mentions the risk that companies offering multiple services may leverage dominance in one market into an adjacent one. Some jurisdictions in Europe have even created specific legal designations to describe (often digital) companies who are thought to be particularly able to extend dominance in one market into other markets.[101]

99 *Verizon Communications, Inc. V. Law Offices of Curtis V. Trinko, Llp*, 540 U.S., January 13, 2004, at 398, 411 ("‘[E]ssential facilities’ doctrine crafted by some lower courts, under which the Court of Appeals concluded respondent’s allegations might state a claim. The indispensable requirement for invoking that doctrine is the unavailability of access to the ‘essential facilities’…").

100 *Google and Alphabet V. Commission*, No. T-612/17, November 10, 2021, ¶ 56(" As regards the principles at issue, the Commission stated that the prohibitions in Article 102 TFEU and Article 54 of the EEA Agreement could cover not only the conduct of an undertaking that was tending to strengthen its position on the market on which it was already dominant, but also the conduct of an undertaking in a dominant position on a given market that was tending to extend its position to a neighbouring market by distorting competition"); Daniele Condorelli and Jorge Padilla, "Harnessing Platform Envelopment in the Digital World," *Journal of Competition Law & Economics*, Vol. 16, No. 2, 2020, pp. 143-187, p. 13(" When looking at it from a competition policy perspective, we can see self-preferencing as a practice involving tying in one side of the market, which also manifests itself as vertical restraint in another side"), p. 28 ("As Schepp and Wambach (2015) explain: ‘The linkage of […] data can give companies more insights into user habits, enabling them to further improve their services and reinforce their market position. Generally speaking, the more data a company can combine, the better its chances to gain knowledge that can be used to strengthen its market position’"), p. 45 ("Privacy policy tying allows firms with a dominant position in a platform market to combine and monetise data across platforms in a way that is not replicable or contestable.").

101 Since the 10th Amendment to the German Competition Act, Germany has created the figure of "companies with paramount significance for competition across markets," the EC has created the figure of "gatekeepers" in its new Digital Markets Act, and the UK is considering naming companies having Strategic Market Status in its new digital markets regulation regime. See "Abuse Control," *Bundeskartellamt*, https://www.bundeskartellamt.de/EN/Abusecontrol/abusecontrol_node.html, accessed July 12, 2023, ("[T]he Bundeskartellamt can also prohibit certain practices by undertakings ‘of paramount significance for competition across markets’ that pose a threat to effective competition."); "Digital Markets Act: Rules for Digital Gatekeepers to Ensure Open

While the NY Bill is consistent with some scholarship calling for stricter enforcement, particularly in the digital space, it may have the unintended consequences of reducing innovation or limiting innovation.

Tying and other conduct typified as leveraging across markets can be anticompetitive when a dominant company uses its flagship product to increase sales of another of its complementary products and deprives its competitors from the necessary scale for entering this secondary market or engages in predatory pricing in that market. [102] There are recognized procompetitive rationales associated with tying. Joint supply of complementary products can be efficient for users due to convenience or better performance. The joint supply of products can also reduce costs or enable innovation through efficient technology integration. This is particularly the case when innovation requires coordinated investments. Tying can also allow more efficient pricing when consumers have heterogenous tastes.[103]

Originally a *per se* offense, tying has increasingly been assessed under a rule of reason standard. In particular, the rule of reason has become the norm in the case of tying software products since the Microsoft case.[104] Tying was initially established as a per-se violation is *United States V. United Shoe Machinery Corp* in 1953.[105] A historical account recounts how United Shoe provided machines, as well as "a flow of machine

Markets Enter into Force," *European Commission*, October 31, 2022, https://ec.europa.eu/commission/presscorner/detail/en/ip_22_6423, accessed July 11, 2023 ("[T]he EU Digital Markets Act (DMA) will enter into force. The new Regulation will put an end to unfair practices by companies that act as gatekeepers in the online platform economy. [...] The DMA defines when a large online platform qualifies as a "gatekeeper". These are digital platforms that provide an important gateway between business users and consumers – whose position can grant them the power to act as a private rule maker, and thus creating a bottleneck in the digital economy."); "U.K. Digital Markets Competition and Consumer Bill Sets out New Regime to Regulate Big Tech," *Armstrong Teasdale*, May 22, 2023, https://www.armstrongteasdale.com/thought-leadership/u-k-digital-markets-competition-and-consumer-bill-sets-out-new-regime-to-regulate-big-tech/#:~:text=Regulate%20Big%20Tech-,U.K.%20Digital%20Markets%20Competition%20and%20Consumer%20Bill%20Sets,Regime%20to%20Regulate%20Big%20Tech&text=The%20U.K.%20Government%27s%20much%2Dawaited,regulatory%20regime%20for%20digital%20markets., accessed July 11, 2023 ("The Digital Markets regime provides that the [Competition and Markets Authority] may designate undertakings having a powerful market position in any digital activity in the UK as undertakings having Strategic Market Status.").

102 Michael Whinston, "Tying, Foreclosure, and Exclusion," *American Economic Review*, Vol. 80, No. 4, 1990, pp. 837-859, p. 837 ("tying provides a mechanism whereby a firm with monopoly power in one market can use the leverage provided by this power to foreclose sales in, and thereby monopolize, a second market."), p. 840 ("tied product rivals can find their sales foreclosed and continued operation unprofitable. Second, even when tying is not profitable in this static sense, it may be in a dynamic sense when the exclusion of rivals through predation is possible."); Jean Tirole, "The Analysis of Tying Cases: A Primer," *Competition Policy International*, Vol. 1, No. 1, 2005, pp. 1-25, p. 3 ("The reason for concern about tying by a dominant firm is that tying serves more to hurt and eliminate rivals from the tied market than to enhance efficiency in the ways listed above. Tying is one of the many strategies that dominant firms can employ for anticompetitive reasons… [T]ying cases should be analyzed as predation cases.").

103 Barry Nalebuff, "Bundling, Tying, and Portfolio Effects," *DTI Economics Paper*, Vol. 1, No. 2, 2003, pp. 1-128, pp. 27-29 ("[W]e assume that each customer has some preference for one product over the other…If, for example, the merging firms have a superior cost or product position and, thus, a larger share, then the bundle discount can lead to increased efficiency.").

104 *United States of America V. Miscrosoft Corporation*, 253 F.3, June 28, 2001 at 34, 95, p.38 ("We hold that the rule of reason, rather than per se analysis, should govern the legality of tying arrangements involving platform software products.), p. 48 ("Our judgment regarding the comparative merits of the per se rule and the rule of reason is confined to the tying arrangement before us, where the tying product is software whose major purpose is to serve as a platform for third-party applications and the tied product is complementary software functionality.").

105 *United States V. United Shoe Machinery Corp.*, 110 F. Supp. 295, February 18, 1953, at 297 ("[T]he methods used by United in establishing economically discriminatory rates of profit on different machine types, have had additional adverse effects on competition… United's market strength has also been increased to some extent by its acquisitions of patents and its purchases, for scrap, of second-hand machines…Obedient to these and other appellate rulings, the Court holds that United falls not within

services", but also practiced a number of contractual restrictions including the tying of the machines.[106] These practices turned out to have some positive impact in that they "reduced the capital and technical knowledge required to enter the shoe business, encouraging a myriad of small firms to take advantage of local knowledge and high-powered incentives". Eventually, "the Court chose to go after the structure of the firm's contracts, ... forbidding any restrictive provisions". It appears that the ruling "proved disastrous not only for United but also for the American shoe industry, which as a result went into decline well before the era of cheap international imports."[107]

Today, digital services providers bring a myriad of bundled tools and services that support small business and developers, a fact that is rarely mentioned in the discussion around these digital players.[108] Access to these tools also come with service terms. The experience of United Shoe, where the possible market making impact of the practices investigated were not considered, may serve as a cautionary tale about the costs of ignoring the objective justifications of firm conduct.

C. Mergers and Acquisitions

Despite a lack of definitive evidence that this is the case, commentators and policy makers have suggested that lax merger control is to blame for an increase in economic concentration and the emergence of large powerful firms.[109] A recently published article examining acquisitions in the pharmaceutical sector coined the term 'killer acquisition' to describe the acquisition of potential competitors and even though the article found that such acquisitions represented only 5% to 7% of total acquisitions

the exceptions, but within the main thrust of the doctrine applied in the *Aluminum* and subsequent cases, for it has exercised effective market control by the business practices and methods already indicated.").

106 Richard Langlois, "Hunting the Big Five: Twenty-First Century Antitrust in Historical Perspective," *The Independent Review*, Vol. 23, No. 3, 2019, pp. 411-433, p. 424 ("Rather than selling its machines, however, United followed a long-standing practice in similar industries of only leasing machines, which effectively turned its product into a service. United provided not only a flow of machine services but also repair services and, perhaps most importantly, detailed knowledge about how to set up a shoe factory... United's contracting practices: '[a] practice like that of the Shoe Machinery Trust of denying to the individual the right to lease a certain machine unless he will take his other machines from the trust, so that competition is killed; that is, a practice under which he who controls an indispensible [sic] article of commerce uses it to kill competition...").

107 Richard Langlois, "Hunting the Big Five: Twenty-First Century Antitrust in Historical Perspective," *The Independent Review*, Vol. 23, No. 3, 2019, pp. 411-433,, p. 423 ("The ruling proved disastrous not only for United but also for the American shoe industry, which as a result went into decline well before the era of cheap international imports.").

108 Examples of such tools can easily be found online. *See* "Amazon Developers," *Amazon*, https://developer.amazon.com/, accessed June 1, 2023 ("AWS Developer Center: Find tools, documentation and sample code to build applications in your favorite language"); *Meta*, https://business.facebook.com/, accessed June 1, 2023; *Meta*, https://business.facebook.com/, accessed June 1, 2023 ("Oversee all of your Pages, accounts and business assets in one place. Easily create and manage ads for all your accounts. Track what's working best with performance insights.)"; *Google AI*, https://ai.google/tools/, accessed June 14, 2023 ("Build: Learn ML, Go from idea to model, Productionize and launch..."); "Apple Worldwide Developers Conference," *Apple*, https://developer.apple.com/wwdc23/, accessed June 1, 2023 ("Sessions: Learn how to create your most innovative apps and games ... Labs: Get one-on-one guidance from Apple engineers, designers, and other experts...").

109 Dennis Carlton, "Some Observations on Claims That Rising Market Power Is Responsible for U.S. Economy Ills and That Lax Antitrust Is the Villain," *Competition Policy International*, 2020, pp. 1-12, p. 1 ("There has been an outpouring of scholarly articles in economics linking increases in market power throughout the U.S. economy to poor economic performance, often with the implication that lax antitrust is a primary cause of the increase in market power.").

examined, the article contributed to the idea that merger control needs to become stricter and more mergers need to be blocked.[110]

Acquiring a competitor can result in anticompetitive harm if the resulting company benefits from a significant increase in market power, and no cost savings or other benefits are passed on to consumers. Acquiring a supplier upstream or a distributor downstream can also open opportunities for anticompetitive foreclosure. Complex foreclosure strategies can in principle be enabled with the expansion of a diversified business to new strategic products although the practical relevance of such complex anticompetitive mechanisms is unclear.[111]

A merger can also result in a firm producing at a larger and more efficient scale. It can generate efficiencies through economies of scope and the use of shared resources and knowhow across a broader range of products or activities. An acquisition can also bring complementary assets and technology and enable new products and innovation. For example, many innovative companies complement their investments with the acquisition of complementary capabilities they do not possess. In practice, most acquisitions are considered efficient and without anticompetitive effects. Only rarely is a merger challenged for its anticompetitive potential and only a fraction of those ends up being blocked by the courts.

In the technology sector, where many acquisitions involve target companies that are relatively small, there are calls to evaluate the possibility that these acquisitions eliminate a potential future competitor. The acquisition of Giphy, a gif repository, by Meta was blocked by the UK regulators on those grounds. Some critics of the UK regulators' decision find the assessments of such dynamic effects speculative as there are few recognized tools to assess potential competition and even less to assess dynamic harm to competition or innovation.[112] On the other hand, given the role of acquisitions as an exit strategy, a stronger enforcement against acquisitions by big digital services providers may inhibit such acquisitions and lower incentives to invest in start-ups developing interesting new technologies.[113] In the digital space, restricting efficient

110 Colleen Cunningham, Florian Ederer, and Song Ma, "Killer Acquisitions," *Journal of Political Economy*, Vol. 129, No. 3, 2021, pp. 649-702, p. 652("[W]e find that projects acquired by an incumbent with an overlapping drug are 23.4% less likely to have continued development activity compared to drugs acquired by non-overlapping incumbents").

111 Eliana Garcés and Daniel Gaynor, "Conglomerate Mergers: Developments and a Call for Caution," *Journal of European Competition Law & Practice*, Vol. 10, No. 7, 2019, pp. 457-462.

112 David Teece, "Big Tech and Strategic Management: How Management Scholars Can Inform Competition Policy," *Academy of Management Perspectives*, Vol. 37, No. 1, 2023, pp. 1-15.

113 Paul Gompers, Will Gornall, Steven N Kaplan, and Ilya Strebulaev, "How Do Venture Capitalists Make Decisions?," *Journal of Financial Economics*, Vol. 135, No. 1, 2020, pp. 169-190, p. 7 ("Largely consistent with actual outcomes, VCs claimed they exited roughly three-fourths of their successful deals via acquisition rather than through an IPO."); Gary Dushnitsky and Daniel Sokol, "Mergers, Antitrust, and the Interplay of Entrepreneurial Activity and the Investments That Fund It," *Vanderbilt Journal of Entertainment & Technology Law*, Vol. 24, No. 2, 2022, pp. 255-287,p. 256-257 ("Proposed antitrust legislation focused on

mergers to protect future competition may inhibit innovation at the platform and at the start-up levels in the name of uncertain benefits from expected, but not certain, future competition.

D. Illustrating the Impact of Possible Challenges to Business Behavior: Two Case Studies

This section presents two case studies illustrating the impact of possible challenges to business behavior flagged as possibly abusive in the New York Bill. We select cases where the behavior has procompetitive effects to illustrate the types of economic costs that would arise with the prohibition of these practices due to not considering their objective justifications and the efficiencies they generate. These case studies are not meant to be a prediction but to illustrate scenarios that are rendered possible by legislation such as the New York Bill.

Enforcing Against the Bundling of Online Travel Services

This case study shows how an antitrust challenge under the New York Bill could eliminate efficiencies in the travel industry by preventing the bundling of travel services to the detriment of consumers, small and medium hotels, and the economy overall.

Online hotel booking sites refer to digitalized hotel booking services delivered through online marketplaces that match travelers and hotels. They sometimes function as online travel agencies (OTA) with a wide range of complementary activities related to trip planning, flight reservation, car rental, or other activities. They allow the booking of services as well as the management of reservations online. Online travel and hotel booking services have become popular among potential travelers due to their convenience and the ease with which users can compare a wide variety of options. 83% of US adults now prefer to book their travel online, with online travel agencies accounting for 52% of online hotel bookings.[114]

Online hotel booking sites allow users to personalize their search for accommodations based on a large variety of parameters, provide extensive information and pictures that improve the search experience,

regulating mergers threatens the entrepreneurial ecosystem, a significant driver of innovation... Altering this entrepreneurial ecosystem creates significant barriers to innovation and reduces the incentives for firms to exit the market via acquisition. The danger of the proposed legislative changes is that these regulatory interventions may destroy entrepreneurial value in terms of a firm's financial value, as well as innovation (with different forms of innovation described later in this Article) in the economy more broadly").

114 Steve Deane, "Over 60 Online Travel Booking Statistics (2022)," *Stratos Jet Charters, Inc.*, January 4, 2022, https://www.stratosjets.com/blog/online-travel-statistics/, accessed May 25, 2023 ("Before we break down the nitty-gritty, here are the most important statistics you need to know: 83% of US adults want to book their trips online."); Jill Menze, "The States of Online Travel Agencies," *PhocusWire*, April 7, 2022, https://www.phocuswire.com/the-state-of-online-travel-agencies, accessed May 25, 2023 ("In 2021, online travel agencies (OTAs) accounted for 52% of the hotel online market, but share is expected to decline to 48% in 2025").

and customer reviews. They also often provide added flexibility, payment options, and guarantees. Online hotel booking sites have increased choice, reduced transaction costs, reduced uncertainty and at the same time they have typically provided competitive pricing.

These sites have also provided hotels and complementary businesses with increased reach, allowing them to increase their customer base. Listing on online booking sites generates more reservations and can also increase the number of reservations booked through direct sales.[115] In particular, smaller hotels have been able to better compete with large chains, thanks to the marketing tools, data insights, and other business tools made available to them by the online booking sites. In 2019, 46% of OTA guests stayed at independent hotels, compared to 28% for hotel guests overall.[116]

The higher convenience and lower prices for travelers, and the more effective marketing for hotels, have resulted in an increase in the overall number of bookings. An economic study estimates that online travel services increased accommodation reservations by 47.5 million nights in 2019, adding $18.6 billion to the economy, and 167,000 jobs.[117] The U.S. online travel market was expected to grow 18% in 2022 to $76.7 billion.[118]

Online booking of travel accommodation is a relatively fragmented market where online booking sites providing vacation rentals operate alongside hotel sites, online travel agencies sites, and online aggregator services. According to one report, the two largest hotel booking sites in the United States together represented about 40% of the online accommodation market in 2021.[119] But, for argument's sake, if one were to define a very narrow market for online travel agency services excluding direct hotel sales and aggregators, that market could be characterized as a duopoly with the two largest players exhibiting a high

115 Chris Anderson, "The Billboard Effect: Online Travel Agent Impact on Non-Ota Reservation Volume," *Cornell Hospitality Report*, 2009, p. 5 ("The study estimates the incremental reservations from listing on Expedia (not including the reservations actually made at Expedia) at 7.5 to 26 percent for the four properties in this study."). *See also* Chris Anderson and Saram Han, "The Billboard Effect: Still Alive and Well," *Cornell Hospitality Report* Vol. 17, No. 11, 2017, p. 1 As a follow-up on two earlier studies, this report confirms the so-called billboard effect on demand that occurs when online travel agents (OTAs) include a particular hotel in their listings. Even though many guests book directly with the hotel brand, this study's findings are similar to those of earlier studies which showed that being listed on an OTA site increased reservations through the hotel brand's site").

116 "The Economic Impact of Online Travel Agencies in the United States," *Tourism Economics*, 2019-2021 , p. 6 ("OTAs have traditionally been particularly important for independent hotels. Pre-pandemic, 46% of OTA guests stayed at independent hotels (2019), compared to 28% for hotel guests overall.")

117 "The Economic Impact of Online Travel Agencies in the United States," *Tourism Economics*, 2019-2021, p. 4 ("Key impacts of the OTAs in the United States in 2019: 47.5 million additional nights in 2019 generated by OTAs in 2019, $18.6 billion total incremental GDP impact attributable to OTAs in 2019, 167,000 total incremental jobs impact attributable to OTAs in 2019.").

118 Jill Menze, "The States of Online Travel Agencies," *PhocusWire*, April 7, 2022, https://www.phocuswire.com/the-state-of-online-travel-agencies, accessed May 25, 2023 ("The online travel market is expected to grow 18% in 2022 to $76.7 billion, a figure just shy of 2019 gross bookings, new research from Phocuswright reveals.").

119 David Curry, "Travel App Revenue and Usage Statistics (2023)," *Business of Apps*, May 24, 2023, https://www.businessofapps.com/data/travel-app-market/, accessed July 11, 2023, see "Online booking app US market share 2022."

joint market share and could be found dominant under the New York Bill.[120] In addition, large online hotel booking sites typically offer pre-established terms and conditions to the myriad of small hotels using their services. For that reason alone, a large hotel booking site could be found dominant under antitrust legislation resembling the New York Bill.

Online hotel booking sites have become more sophisticated travel service providers by bundling and aggregating various complementary offers. This provides a valued convenience to users and one-stop digital shops that allow travelers to book their entire trip on one site are seeing the most travel sales.[121] The bundling of travel services has been shown to produce cheaper offers and increase sales[122] and has been very successful, with one source reporting that online sites that offer hotel reservations captured a 35% share of car rentals in the United States in 2021.[123]

Beyond the added convenience to customers, hotel booking sites have at least two main motives for integrating or bundling complementary travel services. First, it allows for more efficient pricing in the case of undisclosed heterogenous customer tastes.[124] Second, adding a service that is complementary to one of the services provided allows the site to expand in ways that increase the overall value for all its users.[125] For example, a large hotel booking site adding rental car services can count on its existing users to attract rental car companies and then add new users to the site that are attracted by the convenience of the rental car

120 We do not express any views as to the appropriateness of defining a relevant antitrust market for online travel agency services. *See* Ben Walker, "Online Travel Agencies Market Share across the World," *Mize*, https://www.hotelmize.com/blog/online-travel-agencies-market-share-across-the-world/, accessed May 25, 2023 ("The United States is the largest travel market in the world, accounting for $2.1 trillion in 2019. In the same year, the number of international tourist arrivals to the U.S. reached nearly 80 million after being on the increase for more than a decade. The two OTA giants, Expedia and Booking Holdings, continue to dominate in the US, representing 92% of the OTA market, says Phocuswright"); Jill Menze, "The States of Online Travel Agencies," *PhocusWire*, April 7, 2022, https://www.phocuswire.com/the-state-of-online-travel-agencies, accessed May 25, 2023 ("Phocuswright's research reveals that for the U.S. core OTA business (excluding Vrbo and Egencia), Expedia and Booking collectively accounted for roughly 93% of the OTA leisure and unmanaged travel business market in 2021. Globally, Expedia reported gross bookings of 67% and Booking 79% compared to 2019 levels. Compared to 2020, Expedia nearly doubled its global gross bookings in 2021, while Booking more than doubled its 2020 figure").

121 Steve Deane, "Over 60 Online Travel Booking Statistics (2022)," *Stratos Jet Charters, Inc.*, January 4, 2022, https://www.stratosjets.com/blog/online-travel-statistics/, accessed May 25, 2023. ("Currently, one-stop digital shops that allow travelers to book their entire trip on one site are seeing the most travel sales. Many experts think these companies will have 41% of the market share by 2020").

122 Jungkeun Kim, Peter Beomcheol Kim, and Jae-Eun Kim, "Different or Similar Choices: The Effect of Decision Framing on Variety Seeking in Travel Bundle Packages," *Journal of Travel Research*, Vol. 57, No. 1, 2018, pp. 99-115.

123 Jill Menze, "The States of Online Travel Agencies," *PhocusWire*, April 7, 2022, https://www.phocuswire.com/the-state-of-online-travel-agencies, accessed May 25, 2023. ("For air and car rentals, though supplier websites are the preferred booking channel, OTAs gained share in both segments, with online air gross bookings capturing 20% in 2021 compared to 19% in 2020, and car rentals at 35%, up from 32% in 2020.").

124 Barry Nalebuff, "Price Discrimination and Welfare," *CPI Journal*, Vol. 5, 2009; Jungkeun Kim, Peter Beomcheol Kim, and Jae-Eun Kim, "Different or Similar Choices: The Effect of Decision Framing on Variety Seeking in Travel Bundle Packages," *Journal of Travel Research*, Vol. 57, No. 1, 2018, pp. 99-115

125 Daniel Mandrescu, "Tying and Bundling by Online Platforms–Distinguishing between Lawful Expansion Strategies and Anti-Competitive Practices," *Computer Law & Security Review*, Vol. 40, 2021.p.4 ("Two- or multi sided (online and offline) platforms have a significantly different approach to value creation compared to non-platform single-sided businesses. The creation of value by non-platform undertakings commonly follows a linear path throughout the entire chain of distribution from production to the end customer where each link in the chain adds a certain unit of value before being sold onwards. By contrast, the creation of value in the case of platforms occurs following a successful triangular relation where the added value of the platform lies in enabling the interaction between two (or more) of its separate customer groups").

bundle. The new users subsequently expand the number of customers available to the hotels on the site. Adding complementary service offerings in this value enhancing way is a natural growth strategy for digital service providers.[126] Not using it may expose the digital service provider to other sites entering its main line of business instead.[127]

Let us assume an online travel booking site offers hotel booking services and car rental services but ranks car rental services according to strict quality services. Let's assume this site competes aggressively with hotels and other accommodation rental services. Under the New York Bill, an alliance of small New York car rental companies could complain to regulators that their services are not given sufficient prominence on this hotel booking site and argue that the bundling of car rental services with hotel booking services by such a popular hotel booking site consists of leveraging market power from one market to another with the effect of decreasing their incentive to compete.[128] The regulators could very well rely on the findings of a significant market share in a narrowly defined market and/or the existence of imposed terms and conditions to establish dominance, despite an intense competition in the market for online accommodation booking services. The regulators could then find competitive harm in the rental car market without the hotel booking site having any market power on that market. Because efficiency justifications are not allowed to compensate for anticompetitive harm, the hotel booking site could be ordered without further scrutiny to unbundle its car rental and hotel booking services and see its packaged offers prohibited. Similar online booking sites would cease to offer such bundles to avoid the cost and penalty of a regulatory challenge.

Given the demonstrated market making impact of online travel agency services, the impact of a bundling prohibition, and the lower number of transactions this would entail, would likely be felt in terms of loss of nights booked, particularly in smaller and less urban hotels, and a decrease in

126 Daniel Mandrescu, "Tying and Bundling by Online Platforms–Distinguishing between Lawful Expansion Strategies and Anti-Competitive Practices," *Computer Law & Security Review*, Vol. 40, 2021. p.7 ("By facilitating an additional interaction, the platform is able to offer such customers a better deal and prevent them from switching to competing platforms while also increasing the participation on the platform at the cost of direct and indirect competitors and thus gaining a competitive advantage. For example, car rental booking platforms offering only a single interaction - namely the car rental booking functionality - will have a tough time competing for consumers with platforms that offer multiple related or complementary interactions like Booking.com.").

127 Christopher Elliott, "Car Rental Companies Are in a "Transformative" Stage. Here's What It Means for You," *Forbes*, September 23, 2018, https://www.forbes.com/sites/christopherelliott/2018/09/23/car-rental-companies-are-in-a-transformative-stage-heres-what-it-means-for-you/?sh=1e1031676dd5, accessed May 25, 2023 ("Hertz is yet another example of a car rental company offering more than cars. In some respects, it's playing catch-up with online travel agencies, which for many years have tried to upsell customers on additional travel products.").

128 "Senate Bill S6748," *2023-2024 Legislative Session, The New York State Senate*, 2023-2024, https://www.nysenate.gov/legislation/bills/2023/S6748, accessed May 22, 2023. See full text at https://legislation.nysenate.gov/pdf/bills/2023/S6748, p.3 ("In any action brought under this paragraph, abuse of a dominant position may include, but is not limited to, conduct that tends to foreclose or limit the ability or incentive of one or more actual or potential competitors to compete, such as leveraging a dominant position in one market to limit competition in a separate market, or refusing to deal with another person with the effect of unnecessarily excluding or handicapping actual or potential competitors.")

cars rented. With less visitors, jobs and revenues associated with services to travelers would likely be impacted. These services might include retail, restaurants, tourist attractions, and entertainment. It is far from sure that these negative shocks would be compensated by any additional rental car transactions from the smaller rental car outlets. Finally, online booking sites would likely be inhibited from innovation in business models and product offerings, further lowering their potential growth.

Enforcing Against Refusal to Deal

This case study shows how intervening against a refusal to deal by an e-commerce marketplace with a remedy of providing non-discriminatory access to a service can potentially degrade the quality of the offerings to the detriment of all stakeholders involved.

Digital marketplaces grow by facilitating and creating opportunities for valuable connections. Digital marketplaces connect different types of users. For instance, online marketplaces connect merchants and consumers. Online marketplaces can operate as online retailers by connecting producers directly to consumers, but they can also attract third-party retailers that use them as an additional online distribution channel. A marketplace that provides an attractive selection of offerings and a good purchasing experience attracts more buyers, which further expands the reach of all participating merchants and expands its appeal for the business side. Online marketplaces have an interest in the success of the merchants they host, and they help them grow by creating an optimal customer experience. They also provide merchants with technology tools and services such as attractive display, customer reviews, payment services, contract templates, or delivery services.

Users value online shopping. In the U.S., 16.4% of retail purchases are expected to take place online in 2023.[129] The online shopping market is dynamic and very diverse with online marketplaces competing with the online stores of brick-and-mortar retailers, online stores of producers, pure online retailers, or social media shopping apps. Amazon, Walmart, eBay, Best Buy, or Target are some of the largest online shopping players in the U.S.[130]

Merchants find value in online marketplaces because they generally lower their operating costs, provide much wider reach, support a better customer experience, and help gather data insights. Online

129 Anna Baluch and Kelly Main, “38 E-Commerce Statistics of 2023,” *Forbes*, February 8, 2023, https://www.forbes.com/advisor/business/ecommerce-statistics/, accessed May 25, 2023. (“In the U.S., 16.4% of retail purchases are expected to take place online in 2023.”).

130 “Market Share of Leading Retail E-Commerce Companies as of June 2022,” *Statista*, 2023, https://www.statista.com/statistics/274255/market-share-of-the-leading-retailers-in-us-e-commerce/, accessed July 11, 2023

marketplaces are particularly attractive for smaller businesses. Products from small- and medium-sized businesses (SMBs) accounted for roughly 60% of sales in Amazon stores.[131]

Most leading online marketplaces make retailers' participation conditional on fulfilling some criteria and following certain rules. Participation rules may include a blend of quality requirements, legal compliance requirements, and governance rules that protect the customer experience, prevent fraudulent behavior, but also ensure the quality and brand reputation of the online marketplace.

This governance is necessary to support the continued attraction of the online marketplace and its long-term performance. For example, online shopping fraud is the second category of online fraud (after imposter scams), with a median loss of $180.[132] Because a fraudulent experience has an impact on the merchant's reputation and the confidence consumers place in them, an online marketplace must take measures to minimize the presence of fraudulent retailers.[133] A good shopping experience is also frictionless. Customers have been found to abandon their cart online when confronted with a sign-in process, fees that are added along the way, or long shipping delivery times.[134] A seller's likelihood of success is also enhanced by its ability to employ sophisticated and evocative design elements on its product page.[135] In order to maintain its overall attractiveness an online marketplace will have to establish some participation rule that prevent some low quality retailers from degrading the many dimensions of quality and the overall experience.

131 Daisy Quaker, "Amazon Stats: Growth, Sales, and More," *Amazon*, March 31, 2022, https://sell.amazon.com/blog/amazon-stats, accessed May 25, 2023. ("More than 1.7 million SMBs sell in the Amazon store, making up close to 60% of Amazon retail sales, and contributing more than 2.2 million jobs globally.").

132 "Consumer Sentinel Network Data Book," *Federal Trade Commission*, 2022, https://www.ftc.gov/system/files/ftc_gov/pdf/CSN-Data-Book-2022.pdf, p. 8; "New Ftc Data Show Consumers Reported Losing Nearly $8.8 Billion to Scams in 2022," *Federal Trade Commission*, February 23, 2023, https://www.ftc.gov/news-events/news/press-releases/2023/02/new-ftc-data-show-consumers-reported-losing-nearly-88-billion-scams-2022, accessed July 3, 2023 ("The FTC received fraud reports from 2.4 million consumers last year, with the most commonly reported being imposter scams, followed by online shopping scams.").

133 Stephanie Chevalier, "E-Commerce Fraud - Statistics & Facts," *Statista*, Jun 7, 2023, https://www.statista.com/topics/9240/e-commerce-fraud/#topicOverview, accessed July 3, 2023topicOverview ("[I]t has become imperative for online retailers to enhance their prevention and countermeasures against these attacks effectively. [...] In recent years, the overall proportion of victims of online shopping scams who suffered financial losses has consistently remained above 70 percent. As websites serve as the primary channel for online shopping scams, this scenario inevitably tarnishes the reputation of merchants and undermines the trust that consumers place in them."). Stephanie Chevalier, "E-Commerce Fraud - Statistics & Facts," *Statista*, Jun 7, 2023, https://www.statista.com/topics/9240/e-commerce-fraud/#topicOverview, accessed July 3, 2023topicOverview ("[I]t has become imperative for online retailers to enhance their prevention and countermeasures against these attacks effectively. [...] In recent years, the overall proportion of victims of online shopping scams who suffered financial losses has consistently remained above 70 percent. As websites serve as the primary channel for online shopping scams, this scenario inevitably tarnishes the reputation of merchants and undermines the trust that consumers place in them.").

134 Anna Baluch and Kelly Main, "38 E-Commerce Statistics of 2023," *Forbes*, February 8, 2023, https://www.forbes.com/advisor/business/ecommerce-statistics/, accessed May 25, 2023. ("The most common reason online shoppers abandon their cart is because of additional costs like shipping, taxes and fees (48%); 24% of online shoppers abandon their cart because the site wanted them to create an account; 22% drop out of an online shopping session because shipping is too slow.").

135 Alexander Bleier, Colleen Harmeling, and Robert Palmatier, "Creating Effective Online Customer Experiences," *Journal of Marketing*, Vol. 83, No. 2, 2019, pp. 98-119, p.110 ("In an era in which web design is becoming increasingly important (Wolfinbarger and Gilly 2003), sellers' success depends on their ability to employ design elements on product web pages to evoke effective customer experiences that not only convey information but also entertain, imply human interactions, and mimic sensory experiences from the offline world.").

Many large online marketplaces face a competitive environment but may still come under antitrust regulatory scrutiny. For example, Wayfair is an online e-commerce marketplace specialized in furniture. It represents about 33% of online furniture sales and one of its closest competitors online is Amazon which represented about 30% of online furniture sales in 2019.[136] Wayfair faces competition from other specialized online furniture sellers such as West Elm, diversified online merchants such as Amazon or Walmart, online channels of manufacturers, and brick and mortar furniture retailers such as IKEA or Pottery Barn. Furniture is still mostly purchased offline with 53% of people buying furniture doing so in-store. Of the 43% who buy furniture online, only 25% purchased it on an e-commerce marketplace and 18% purchased directly from a brand's website.[137] Wayfair likely faces vibrant competition. Yet, if it were to grow a bit more it might reach the threshold of presumed dominance in the New York Bill. If the market were to be defined as the market for furniture bought in specialized online furniture stores, Wayfair is likely well above the threshold of the presumption of dominance under the New York Bill.[138] In addition, given that Wayfair hosts over 20,000 suppliers on its site,[139] it likely imposes non-negotiable standardized contracts on the majority of its business users. This practice could also be viewed as direct evidence of dominance under the New York Bill.

A local furniture seller may try to access the marketplace and be blocked due to noncompliance with the marketplace's rules. Under the New York Bill, this merchant can challenge the furniture website in Court under allegation of refusal to deal.

Although regulators are unlikely to pressure online marketplaces to include unsafe or fraudulent merchants on their sites, they may not consider the willingness to maintain a certain brand identity or standard of quality as an objective justification for refusal to deal. In their evaluation of a refusal to deal, according to the New York Bill, efficiency justification cannot compensate for the competitive harm. So, a regulator would have to consider that the benefits in terms of a higher

136 April Berthene, "Wayfair.Com Dominates Online Furniture Sales," *Digital Commerce 360*, February 13, 2020, https://www.digitalcommerce360.com/2020/02/13/wayfair-com-dominates-online-furniture-sales/, accessed May 25, 2023. ("In 2019, Wayfair had the largest market share with 33.4% of online furniture sales; Amazon came in second at 29.7% market share. The next-closest retailer was Walmart.com, with only 4.7% of the online furniture market. Market share does not equal 100% because of many smaller retailers making up the remaining share, according to 1010data.").

137 "Preferred Purchasing Channels for Furniture in the United States in 2022," *Statista*, https://www.statista.com/statistics/1327969/online-vs-in-store-furniture-purchases-us/, accessed May 31, 2023. ("According to a survey conducted in March 2022 in the United States, more than half of respondents (53 percent) reported that they shopped for furniture in-store. In comparison, around 43 percent reported they shopped for furniture online: 25 percent opted for an e-commerce platform, while 18 percent opted for buying furniture directly on the brand's website.").

138 We do not express any views as to the appropriateness of defining a relevant antitrust market for specialized online furniture stores.

139 Wayfair Inc., Form 10-K, December 31, 2022, p. 4 ("Through our e-commerce platform, we offer customers [...] over 40 million products from 20 thousand suppliers.").

degree of competition of a third-party developer challenging a first party app is superior to the objective of preserving a curated environment in the online marketplace.

The e-commerce marketplace may be required to accommodate merchants that provide a service at subpar customer experience compared to the quality positioning and reputation of the marketplace or do not correspond to the strategic considerations of the marketplace in terms of business development. This lower quality of services could take the form of inferior products but also excessive tracking and soliciting, low quality of display, or lower quality of service for deliveries.

Low quality stores on the marketplace would likely discourage users from participating in the overall marketplace, reducing the performance and growth potential of the marketplace as a whole, as well as the businesses it supports. A degraded experience would likely affect the market reach of the marketplace and by extension the market reach of all businesses using the marketplace. One can imagine that incentives to innovate and invest in quality would decrease for both merchant-users and the marketplace.

If all similarly situated marketplaces face the same risk to see a challenge to their ability to reject merchants that do not align with their brand positioning, they may be deterred to issue strict differentiating rules. As a result, different marketplaces' experiences could converge, and the lack of differentiation could result in a market much more prone to tipping towards a single marketplace.[140] This would likely reduce the options for both merchants and users.

140 Carmelo Cennamo, "Competing in Digital Markets: A Platform-Based Perspective," *Academy of Management Perspectives*, Vol. 35, No. 2, 2021, pp. 265-291.

IV. Framework for Estimation of Economic Cost of Overenforcement Associated with the New York Bill

By lowering the threshold of intervention and downplaying the benefits from a variety of firm behavior, the new state level legislative proposals run the risk of deterring efficiency enhancing commercial practices. This will likely come at an economic cost. This section presents a framework that allows for the estimation of firm-level and then state-level economic costs of overenforcement associated with the New York Bill.

We quantify the economic costs associated with the increased risk of overenforcement as the economic costs of litigious intervention against efficient procompetitive behavior, as well as the economic costs of deterrence of a firm's adoption of efficient and procompetitive behavior. To quantify the deterrence effect, we estimate the change in firms' adoption of scrutinized conduct to changes in the likelihood of intervention. We then consider the impact on the firm of an increase in the likelihood of overenforcement that may arise if the New York Bill is implemented and quantify the incremental economic costs associated such overenforcement against efficient conduct.

Simplifying our approach to its core components, we use figures from the relevant literature to estimate the distribution of firms' expected benefits from engaging in procompetitive conduct, estimate the frequency of opportunities to engage in procompetitive conduct, estimate the costs of incremental enforcement activity and a range of expected enforcement activity under the New York Bill by firm size, and then compare the expected costs against expected benefits by firm size category. If a firm has net positive expected benefits, we assume the procompetitive conduct proceeds, albeit at expected benefits reduced in magnitude commensurately with the expected costs. We identify the magnitude of the deterred procompetitive conduct and estimate resulting foregone profits, and use state-specific statistics on firms to scale these impacts for an individual state.

Each of the sections below provides more detail on the implementation of this approach at each step.

A. Modeling a Firm's Decision to Engage in Certain Business Conducts Under a Given Regulatory Regime

We develop a stylized model of a firm's decision to engage in certain business conducts based on the principle that a rational firm that identifies a new opportunity will proceed with that opportunity unless the expected costs outweigh the expected benefits of the opportunity.

For ease of exposition, we choose M&A activity as the example of conduct that will come under heightened scrutiny and enforcement. This example serves as a good illustration as it has been widely studied in the academic literature. We will then adapt and apply our framework to study the economic cost of overenforcement of other conducts such as vertical restraints and tying.

In order to quantify the responsiveness of M&A activity to changes in the likelihood of intervention, we calibrate a stylized model of the firm's decision to engage in M&A activity using the historic frequency of federal regulatory intervention.[141] In our model, firms vary in the probability that they identify profitable M&A opportunities. If a firm identifies an M&A opportunity, the firms must decide whether or not to proceed with the M&A weighing the benefits of the M&A opportunity against the expected costs associated with potential litigious intervention. If the expected regulatory costs outweigh the expected benefits, the firm abandons the M&A opportunity and is considered deterred.

While there are historic data on undeterred M&A activity, a challenge of our approach is that we do not observe statistics about procompetitive M&A activity that was deterred. We calibrate our model using data on undeterred M&A activity found in the academic literature. With some additional assumptions, our methodology then allows us to estimate the share of firms that identify a procompetitive M&A opportunity, which in turn enables us to generate predictions regarding the likely change in procompetitive M&A activity in response to changes in the likelihood of litigious intervention.

We then model firm's decision to engage in unilateral conduct by adapting the calibrated model for firm's decision to engage in M&A. In particular, we adjust a number of estimates, namely the change in the likelihoods of regulatory decisions, the firm-level expected benefit and cost associated with the conduct, and the share of firms that identify a procompetitive opportunity to engage in such conduct.

141 Clougherty and Seldeslachts (2013) finds that the number of announced mergers decreases by 10.8 percent after an increase in the challenge rate of 32 percentage points. *See* Joseph Clougherty and Jo Seldeslachts, "The Deterrence Effects of Us Merger Policy Instruments," *The Journal of Law, Economics, & Organization*, Vol. 29, No. 5, 2013, pp. 1114-1144. See also Technical Appendix ("Using this regression coefficient, we find that a one standard deviation increase in challenge rate leads to decrease in the log number of mergers, which corresponds to 10.8% () decline in the number of mergers").

Firm-Level Expected Benefits Associated with Certain Business Conducts

Firms choose to pursue a new business conduct because there are expected economic benefits to be gained from that conduct. For example, a firm may want to acquire a complementary supplier to offer an integrated solution to its clients. A firm may decide to integrate a new service to its product offering in order to reduce transaction costs, such as when a retailer offers parking services to its customers, or an online merchant provides a payment service. As another example, a cable network may decide to foreclose some shows from its network to preserve its brand. Not all firms are in the position to benefit from such practices. Firms that develop and then protect intellectual property or brand equity, or firms that have a higher level of technological capability are more likely to adopt these practices. Firms operating under more uncertainty also use different commercial tactics to manage risk.

It is generally understood that only firms with significant market power will be able to profit from anticompetitive behavior and measures of market share and market power are used to screen for possible antitrust violations. On the other hand, the procompetitive benefits of some commercial practices do not necessitate market power, but may be more easily achieved by particular types of firms for which these practices make economic sense. For example, vertical restraints in distribution make more sense for companies with higher quality branded products or with client specific investments. Tying will make more sense in the case where the value from complementarity of the products tied can be technologically enhanced.

Our model focuses on procompetitive conduct, so the firm-specific ability to identify profitable opportunities is not related to market power but rather intends to measure a degree of productive capability consistent with more complex commercial arrangements. Firms' ability to identify profitable opportunities is likely to be positively correlated with the level of innovation and complexity of the product, the importance of intangible assets in terms of intellectual property or brands, as well as managerial capabilities. For simplicity, we model firms receiving profitable opportunities as a random variable. In the case of M&A activity, we assume that the expected benefit varies across firms but that on average a firm experiences about a 1% increase in profit as a share of revenue per year after the M&A opportunity is consummated, which is consistent with empirical findings in the academic literature.[142]

142 Gregor Andrade, Mark Mitchell, and Erik Stafford, "New Evidence and Perspectives on Mergers," *Journal of Economic Perspectives*, Vol. 15, No. 2, 2001, pp. 103-120, p. 116 ("[o]n average, there is an improvement in operating margins following the merger, on the order of 1 percent, which is statistically significant at the 1 percent level."). Andrade et al (2001) defines operating

We then estimate the variation of the stochastic benefit associated with M&A activity across firms that identify an M&A opportunity. In the case of unilateral conduct, we assume that the expected benefit also varies across firms in the same way as for firms that identify an M&A opportunity, but that the average benefit from the conduct for a firm is 5.6% instead of 1%.[143] We further assume the same average benefits irrespective of whether the opportunity is procompetitive or anticompetitive.

Firm-Level Expected Cost Associated with Litigious Intervention

A firm's expected regulatory cost is determined by the likelihood of regulatory intervention and the firm-level costs associated with the potential outcomes of such regulatory intervention. The current regulatory regime around M&A activity is well understood and provides a reasonable starting point to illustrate the calibration of the likelihood of regulatory intervention above a certain threshold based on firm size and, in the context of mergers, deal size.

If a premerger notice is required, firms must submit a notice of proposed mergers under the Hart-Scott-Rodino (HSR) Amendments to the Clayton Act. After preliminary review of the premerger filing, the U.S. Department of Justice or the U.S. Federal Trade Commission can issue a Request for Additional Information ("Second Request"), which happens for about 8% of premerger filings (hereafter "investigation rate").[144] If the parties substantially comply with the Second Request, the agencies may (i) close the investigation and let the deal go unchallenged, (ii) enter into a negotiated consent agreement to restore competition, or (iii) file a preliminary injunction pending trial on the merits. The academic literature finds that about 10% of investigated cases enter into a negotiated consent agreement or receive a preliminary injunction (hereafter "challenge rate"), about 91% of challenged cases agree to consent decrees, and about 8.73% of challenged cases are enjoined (hereafter "block rate").[145] We rely on these frequencies to estimate the responsiveness of M&A activity to changes in the likelihood of intervention.

margins as cash flows (operating income) to sales ratio. Cash flows represents firm profits, and are defined as "sales, minus cost of goods sold, and selling and administrative expenses, plus depreciation and goodwill expenses." *See* Paul Healy, Krishna Palepu, and Richard Ruback, "Does Corporate Performance Improve after Mergers?," *Journal of Financial Economics*, Vol. 31, No. 2, 1992, pp. 135-175.

143 Gregory Crawford and Ali Yurukoglu, "The Welfare Effects of Bundling in Multichannel Television Markets," *American Economic Review*, 2012, pp. 643-685. See also Technical Appendix.

144 Joseph Clougherty and Jo Seldeslachts, "The Deterrence Effects of Us Merger Policy Instruments," *The Journal of Law, Economics, & Organization*, Vol. 29, No. 5, 2013, pp. 1114-1144. ("For our main explanatory variables, we adapt the conditional probability approach from the crime-and-punishment literature to the context of U.S. merger policy. At the two-digit level, we construct five conditional probabilities (the five deterrence variables); first, the number of investigations over the number of horizontal mergers (Investigation-Rate).").

145 Joseph Clougherty and Jo Seldeslachts, "The Deterrence Effects of Us Merger Policy Instruments," *The Journal of Law, Economics, & Organization*, Vol. 29, No. 5, 2013, pp. 1114-1144. See also Technical Appendix.

To estimate the litigation cost when a firm is challenged, we rely on a 2017 survey, which finds that firms spend on average about 0.39% of their revenue on litigation.[146] The legal costs of antitrust challenge can be particularly high, with attorney fees and costs increasing substantially if the case proceeds past an early motion to dismiss and into fact discovery.[147] Expert-related expenses, including the professional fees of testifying expert witnesses, are typically a significant source of costs in an antitrust case. Another large driver of fees and costs related to litigation is discovery of electronically stored information, notably emails. In a large antitrust case, collection, review, and production of this information can be one of the largest line items in the budget.[148] The litigation cost estimate we use is likely a conservative estimate because the survey estimates the average cost of all legal activity; litigation costs related to antitrust is likely to be more costly and long-lasting.

When a firm is challenged, there are three outcomes. First, a firm may agree to a consent decree with the regulatory regime or reach a settlement with the plaintiff. Consent decrees in antitrust will typically be non-monetary and consist of behavioral commitments. The direct costs of these consents can be substantial involving compliance, reporting, and monitoring. Consent decrees may also result in foregone revenues.[149] We assume that foregone revenues as a result of consent decrees or settlements are on average 20% of the benefits. Second, the merger may be enjoined—either because the firm withdraws from the proposed merger or the regulatory regime files a complaint and the court ultimately issues a verdict to block the merger. If this occurs, we assume that the firm forgoes all the benefits associated with the transaction. Third, the court may issue a verdict allowing the firm to merge and the full benefits of the business conduct are realized.

146 "Patterns in Legal Spend Report," *Acritas*, June, 2017, https://phillipskaiser.com/wp-content/uploads/2018/06/acritas_legal_spend_report_2017.pdf, accessed May 31, 2023, p. 6. ("The country where an organization is based has a big impact on its expected spend level. Most countries sit below the global average. The largest part of our sample base is located in the US (39%), and this, combined with the significantly higher ratio of legal spend to revenue here drives the global average up above most other countries.").

147 Paul Saint-Antoine et al., "Private Antitrust Litigation in the United States: Overview," *Thomson Reuters Practical Law*, March 01, 2019, https://uk.practicallaw.thomsonreuters.com/6-632-8692?transitionType=Default&contextData=(sc.Default)&firstPage=true#co_anchor_a841683, accessed May 31, 2023co_anchor_a841683. ("Another large driver of fees and costs related to litigation is discovery of electronically stored information (ESI), predominantly e-mails. [...] A defendant involved in complex antitrust litigation can expect attorneys' fees and costs to often exceed USD1 million per year, with such fees and costs increasing substantially if the case proceeds past an early motion to dismiss and into fact discovery.").

148 Paul Saint-Antoine et al., "Private Antitrust Litigation in the United States: Overview," *Thomson Reuters Practical Law*, March 01, 2019, https://uk.practicallaw.thomsonreuters.com/6-632-8692?transitionType=Default&contextData=(sc.Default)&firstPage=true#co_anchor_a841683, accessed May 31, 2023co_anchor_a841683. ("The fees associated with reviewing e-mails and other electronic documents can account for around three-quarters of the ESI (electronically stored information) budget item.").

149 Thad Westbrook, Mitchell Brown, and Thomas Hydrick, "Consent Decrees' Hidden Costs to Businesses and Consumers," *Washington Legal Foundation*, July 30, 2021, https://www.wlf.org/2021/07/30/publishing/consent-decrees-hidden-costs-to-businesses-and-consumers/, accessed May 31, 2023. ("Lost opportunity costs occur when a business is forced to forego productivity in order to comply with the terms of a consent decree. In extreme cases, these costs can lead to bankruptcy. This was the case in a 2018 settlement between the Department of Justice and Cantrell Drug Company. Because the company was forced to forego certain activity until it remediated its past deficiencies and proved compliance, the company was forced to declare bankruptcy.").

There are similar intervention rates for firms engaging in at-risk unilateral conduct such as bundling or vertical restraints. Like M&A, a firm engaging in unilateral conduct may get investigated on the regulator's own initiative or due to a complaint by a consumer, another firm, or a regulatory authority. After being investigated, there is a probability that a complaint is filed and litigation ensues. We continue to rely on our estimate that litigation costs in this scenario are on average 0.39% of the firm's revenue. When a firm is under litigation, there are three outcomes. First, a firm may settle with the plaintiff. We continue to assume that foregoneforegone revenues as a result of settlements are on average 20% of the benefits. Second, the firm may receive an injunction order from the court in which the firm must stop engaging in the unilateral conduct at issue. Unlike the M&A case, we assume the firm faces the loss of three times the benefits associated with the conduct, as a result the New York Bill permitting the recovery of treble damages.[150] In the third case, the court allows the firm to continue its business conducts. We assume that the New York Bill increase the investigation, litigation, and injunction rates faced by firms engaging in unilateral conduct.[151]

Estimating the Prevalence of Procompetitive Opportunities

The framework as presented so far focuses on firms' weighing the expected net benefits against the expected litigation costs when the firm considers a particular conduct, but we have yet to quantify the share of firms that consider a *procompetitive* conduct.

To bound this statistic for M&A, we rely on empirical findings from the academic literature. First, the empirical findings show that about 5% of firms in the U.S. engaged in M&A activity in 1998.[152] We assume that the current regulatory regime rarely challenges procompetitive mergers and challenges most of, if not all, the anticompetitive mergers.[153] Under this assumption, no procompetitive M&A opportunity is deterred, and one can infer the share of procompetitive mergers based on the observed challenge rate. Since the observed challenge rate is

150 "Senate Bill S6748," *2023-2024 Legislative Session, The New York State Senate*, 2023-2024, https://www.nysenate.gov/legislation/bills/2023/S6748, accessed May 22, 2023. See full text at https://legislation.nysenate.gov/pdf/bills/2023/S6748, p.4 ("The state, or any political subdivision or public authority of the state, or any person who shall sustain damages by reason of any violation of this section, shall recover three-fold the actual damages sustained thereby, as well as costs not exceeding ten thousand dollars, and reasonable attorneys' fees.").

151 Using the assumption that the same variation in benefit for bundling or vertical restraint follows the same estimated variation in benefit for adopting M&A, we do not need estimates for various rates for bundling or vertical restraint in the as-is world.

152 *See* Gregor Andrade, Mark Mitchell, and Erik Stafford, "New Evidence and Perspectives on Mergers," *Journal of Economic Perspectives*, Vol. 15, No. 2, 2001, pp. 103-120, Figure 1.

153 In the model, we assume that no procompetitive M&A opportunity is challenged. This is a simplifying assumption which allows us to calculate the share of observed M&A activities that are viewed as procompetitive.

10%,[154] the remaining 90% of all M&A activity can be mostly viewed as procompetitive. Thus, the share of firms in the U.S. that engage in procompetitive mergers each year is 4.5%.[155]

To bound this statistic for unilateral conduct, we rely on surveys that study firms' diversification. While we are not aware of articles that quantify the share of firms that engage in practices such as tying or vertical restraints, a number of articles have studied the share of firms that receive revenues from multiple products or service lines and are therefore more likely to engage in more sophisticated commercial practices. We observe that firms engaging in unilateral conducts rarely lose an antitrust challenge. Assuming that the current regulatory regime will challenge most anticompetitive conducts related to unilateral conduct, while allowing unilateral conducts that are procompetitive to continue, the share of diversified firms is a proxy of the share of firms that engage in a procompetitive conduct related to bundling, vertical restraints, or other type of commercial practice susceptible of regulatory scrutiny under the new Bill. Under this assumption, we assume that 60% of firms engage in procompetitive bundling, vertical restraints or similar at-risk practice.[156]

B. Estimating the Economic Cost of the Implementation of Legislation Modeled after the New York Bill

As explained above, the New York Bill looks to change the parameters of intervention in ways that will significantly increase the likelihood of overenforcement. The New York Bill lowers the bar of intervention against firm conduct and extends the scope of the conducts presumed illegal. In the context of our stylized model, the New York Bill may increase the intervention rates, because of the lowered thresholds for dominance and merger review and the elimination of objective justifications, which in turn increases the expected cost associated with litigious intervention. The increase in expected cost associated with litigious intervention increases the likelihood that a firm will be deterred from proceeding with adopting a procompetitive conduct, with the ensuing negative economic impact.

154 Joseph Clougherty and Jo Seldeslachts, "The Deterrence Effects of Us Merger Policy Instruments," *The Journal of Law, Economics, & Organization*, Vol. 29, No. 5, 2013, pp. 1114-1144, Table 2.

155 4.5 percent = 0.045 = 0.9 x 0.05.

156 Stevens et al. (2023) finds that 71% of firms in agrifood supply industry in Minnesota, Wisconsin, Florida, and California are horizontally diversified. See Andrew Stevens and Jim Teal, "Diversification and Resilience of Firms in the Agrifood Supply Chain," *American Journal of Agricultural Economics*, 2023. A survey conducted by McKinsey finds that 75 percent of companies have at least engaged in a business activity outside their core businesses. See "Growing Beyond the Core Business, Survey," *McKinsey & Company*, July 1, 2015, accessed July 3, 2023, at p. 2 ("Three-quarters of respondents say that over the past five years, their companies have pursued at least one business activity in a new category"). BDC 2015 study finds that 68% of small and mid-sized businesses in Alberta, Canada have more than one product or business line. See "Diversify, Diversify, Diversify… a Key Growth Strategy for Small and Mid-Sized Firms," *Business Development Bank of Canada*, November 2015, https://www.bdc.ca/globalassets/digizuite/10407-diversification_financial_performance.pdf, accessed July 3, 2023, Chart 1. To be conservative, we assume that 60% of firms are diversified and engage in unilateral procompetitive conduct.

As of this writing, we recognize that there is a certain degree of uncertainty around the degree to which the intervention rates for M&A and unilateral conduct will increase, particularly given the authority under the New York Bill for state attorneys general to make rules that define how to interpret market shares for finding dominance and what particular conducts might constitute an abuse of such dominance. As such, in the discussion below we offer estimates of economic costs of overenforcement given our current understanding of the New York Bill and the corresponding increases in the intervention rates that we consider realistic, but our framework is flexible and can be used to calculate alternative estimates if and when there is more clarity about the intervention rates under the New York Bill.

In this section we first outline the methodology to quantify of the deterrence effect of the New York Bill for small, medium, and large firms. Then, we discuss our approach to quantifying the incremental economic costs that will likely be incurred due to the deterrence effect of the New York Bill.

Quantification of the deterrence effect of the New York Bill

To quantify the deterrence effect of the New York Bill by firm size, we rely on our stylized model discussed in the previous section and calculate the share of firms that are deterred from adopting certain business conducts associated with higher intervention rates.

We illustrate our findings by studying the impact of changes in the investigation rate and challenge rate among the firms that are investigated in increments of 10 pp, holding all other estimates constant, including the block rate of 8.73% among the firms that are challenged. The change in investigation rate and challenge rate is likely to be greater for large firms than small firms.[157] This is because the new standard of intervention may lead to more presumptions of harm, as signaled by the exclusion of objective justifications, and large firms will be more likely to come under investigation due to the mere fact of their size and market shares. Given the lower market share thresholds for intervention and the more local nature of the markets in scope, some medium sized firms as

157 We define small firms to be firms with 1 to 99 employees, medium firms to be firms with 100 to 499 employees, and large firms to be firms with 500 or more employees, consistent with academic articles and official classifications across countries. See Mohammad Rahaman, "Access to Financing and Firm Growth," *Journal of Banking & Finance*, Vol. 35, No. 3, 2011, pp. 709-723, p. 12 ("The European Commission classifies a firm with 1-99 employees as a small firm, a firm with 100-499 employees as a medium firm and a firm with 500 or more employees as a large firm. Using this definition, I stratify my sample into small, medium and large firms for the period of 1991-2001 using the year 1991 employment level as the initial employment size of the firm."); John Haltiwanger, Ron Jarmin, and Javier Miranda, "Who Creates Jobs? Small Versus Large Versus Young," *Review of Economics and Statistics*, Vol. 95, No. 2, 2013, pp. 347-361, p. 350 ("The figure shows the fraction of job creation and job destruction accounted for by small (fewer than 500 workers) and large firms (500 workers and above)."); "Small and Medium Businesses: Driving a Large-Sized Economy," *StatsCan*, June 27, 2022, https://statics.teams.cdn.office.net/evergreen-assets/safelinks/1/atp-safelinks.html, accessed July 12, 2023 ("Statistics Canada considers a small enterprise as one with fewer than 100 employees, including those that do not report any employment. Medium-sized enterprises have 100 to 499 employees, and a large one has over 500.").

well as some small firms with local relevance could be facing some risk from complaints. To the extent that some complaints focus on narrower market definition, intervention on medium sized firms may turn out to resemble interventions on large firms. For this reason, we consider a range of challenge and investigation rates for medium sized firms. Under the current regime, firms with procompetitive business conducts are largely undeterred, so any incidence of deterrence as a result of the changes in the intervention rates are due to the approval of the New York Bill. **Table 1** illustrates our findings:

- Assuming that the New York Bill increases the investigation rate and challenge rate for small firms to 10% (and holding the block rate constant at 8.73%) for M&A, the probability that a small firm will be deterred increases by 4.8 pp.
- Assuming that the New York Bill increases the investigation rate and challenge rate for medium firms to the range of 20% to 40% (and holding the block rate constant at 8.73%) for M&A, the probability that a medium firm will be deterred increases between 16.2 pp to 38.4 pp.
- Assuming that the New York Bill increases the investigation rate and challenge rate for large firms to 50% (and holding the block rate for challenged firms constant at 8.73%) for M&A, the probability that large firm will be deterred increases by 47.3 pp.

As **Table 1** illustrates, the probability of deterrence, especially for large firms, increases significantly. The significant effect of investigation and challenge rates on the probability of deterrence demonstrate that the process is in itself the punishment—more firms are deterred even though the likelihood that the challenged merger will be blocked is the same. This effect may be due to the cost imposed by the uncertainty inherent to legal processes and the risk of a costly settlement.

Table 1: Deterrence Increases as Investigation and Challenge Rates Increase Holding the Block Rate Constant Mergers and Acquisitions

Small Firms | Medium Firms | Large Firms

Challenge Rate \ Investigation Rate	0%	10%	20%	30%	40%	50%
0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
10%	0.0%	4.8%	9.3%	13.0%	16.2%	19.1%
20%	0.0%	9.3%	16.2%	21.6%	26.0%	29.7%
30%	0.0%	13.0%	21.6%	27.9%	33.0%	37.1%
40%	0.0%	16.2%	26.0%	33.0%	38.4%	42.8%
50%	0.0%	19.1%	29.7%	37.1%	42.8%	47.3%

While **Table 1** shows the changes in probability of deterrence by varying only two rates at a time, the New York Bill is likely to increase all three rates at the same time. To quantify the full effect of the introduction of the New York Bill for various conducts, we vary the investigation rate, the challenge rate among the firms that are investigated, and the block rate among the firms that are challenged simultaneously. For the purposes of our modeling, when estimating the impact on medium firms we use the mid-point of the range for the investigation and challenge rate and assume that the block rate is 90% to reflect that the New York Bill is likely to block various conducts once the conducts are investigated and challenged. **Table 2** illustrates our findings for firms engaged in M&A activity:

- Small firms: Assuming that the New York Bill increases the investigation rate and challenge rate to 10% and the block rate to 90%, the probability that a small firm will be deterred increases by 4.9 pp.
- Medium firms: Assuming that the New York Bill increases the investigation rate and challenge rate to 30% and the block rate to 90%, the probability that a medium firm will be deterred increases by 28.9 pp.
- Large firms: Assuming that the New York Bill increases the investigation rate and challenge rate to 50% and the block rate to 90%, the probability that large firm will be deterred increases by 51 pp.

Table 2: Change in Probability of Deterrence in Response to Change in the Investigation, Challenge, and Block Rates Mergers and Acquisitions

Firm Size	Investigation Rate	Challenge Rate	Block Rate	Probability of Deterrence of Firms Considering M&A
Small	10.0%	10.0%	90.0%	4.9%
Medium	30.0%	30.0%	90.0%	28.9%
Large	50.0%	50.0%	90.0%	51.0%

Turning to the analysis for unilateral conduct, given our assumption that the prevalence of procompetitive unilateral conduct in the economy is much higher (60%) compared to M&A activity (4.5%), we consider smaller increases in the investigation and litigation rates for unilateral conduct compared to those used for M&A activity. That said, since the New York Bill precludes the consideration of objective justifications for investigated conducts, we consider the same injunction rate of 90% for unilateral conduct as the block rate for M&A activity. **Table 3** illustrates our findings for firms engaging in unilateral conduct.

- Small firms: Assuming that the New York Bill increases the investigation rate and litigation rate to 2% and the injunction rate to 90%, the probability that a small firm will be deterred does not measurably increase.
- Medium firms: Assuming that the New York Bill increases the investigation rate and litigation rate to 10% and the injunction rate to 90%, the probability that a medium firm will be deterred increases by 0.6 pp.
- Large firms: Assuming that the New York Bill increases the investigation rate and litigation rate to 25% and the injunction rate to 90%, the probability that large firm will be deterred increases by 6.4 pp.

Table 3: Change in Probability of Deterrence in Response to Change in the Investigation, Litigation, and Injunction Rates Unilateral Conduct

Firm Size	Investigation Rate	Litigation Rate	Injunction Rate	Probability of Deterrence of Firms Considering/Engaging in Unilateral Conduct
Small	2.0%	2.0%	90.0%	0.0%
Medium	10.0%	10.0%	90.0%	0.6%
Large	25.0%	25.0%	90.0%	6.4%

Quantification of the economic costs associated with the New York Bill

The New York Bill is expected to result in significant economic costs at the firm level, such as loss in firm profits, increased litigation expenses, lower hiring, and lower investment including lower R&D spending. Firm-level foregoneforegone profits result in lower tax income for state federal governments. In turn, both private and public employment is expected to be lower than would have occurred absent the legislation. We discuss how to quantify each of these types of costs in this section.

As discussed above in **Section IV.A**, the immediate economic cost of overenforcement is the loss of expected benefits from adopting a procompetitive conduct, which results in lower firm-level profits than what would have been achieved absent the legislation. In addition to the reduction in profits associated with the transaction, overenforcement-led challenges also result in economic costs in the form of litigation expenses, which are 0.39% of firm revenues.

Economic theory suggests that lower profits affect firms' incentives to hire and invest, including R&D activities. To measure a firm's responsiveness in its investment decision to a change in profits, we rely on estimates from the academic literature. For instance, an academic article finds that a decrease in a firm's profit is associated with lower investment.[158] These articles also suggest that the degree of responsiveness of firm's investment to profit differs by a firm's financial condition.[159] A firm that is financially constrained is likely to be more responsive to changes in profit because it experiences a higher cost of capital. Specifically, Lewellen and Lewellen (2016) finds that a one dollar decrease in profit for firms that are financially constrained is associated with a decrease of $0.53 of additional investment while the same decrease in profit for firms that are not financially constrained is associated with a decrease of $0.29 of additional investment.[160] Literature on financial frictions suggests that small firms are likely to be more constrained than large firms.[161] Therefore, we assume the small firms that are deterred from adopting procompetitive conducts are constrained and will decrease their investments by $0.53 for every dollar of foregoneforegone profit. On the other hand, we assume that large firms that are deterred from adopting procompetitive conducts are not constrained and will decrease their investments by $0.29 for every dollar of foregoneforegone profit. For medium firms, we assume that some may be constrained while others may not, and on average will decrease their investments by $0.35 for every dollar of foregoneforegone profit. We estimate the reduction in investment due to overenforcement of procompetitive behavior associated with the New York Bill as the product of the estimated foregoneforegone profit and our measure of firm's responsiveness in its investment decision to change in profits, by firm size.

158 Jonathan Lewellen and Katharina Lewellen, "Investment and Cash Flow: New Evidence," *Journal of Financial and Quantitative Analysis*, Vol. 51, No. 4, 2016, pp. 1135-1164, pp. 1135-1137., p.1137 ("Our results suggest that investment and cash flow are strongly linked after controlling for a firm's investment opportunities. For the full sample of firms, basic ordinary least squares (OLS) investment regressions (with no correction for measurement error in q) show that an additional dollar of cash flow is associated with an extra $0.14 of working capital, $0.26 of capital expenditures, and $0.35 of total long-term investment, with the remainder split fairly evenly between additions to cash holdings ($0.15), reductions in debt ($0.13), share repurchases ($0.13), and dividends ($0.06).").

159 Steven Fazzari, Glenn Hubbard, and Bruce Petersen, "Financing Constraints and Corporate Investment," *Brookings Papers on Economic Activity*, Vol. 19, No. 1, 1988, pp. 141-206, Tables 4, 9; Jonathan Lewellen and Katharina Lewellen, "Investment and Cash Flow: New Evidence," *Journal of Financial and Quantitative Analysis*, Vol. 51, No. 4, 2016, pp. 1135-1164, Table 4, p.1150 ("Table 4 divides the sample into constrained and unconstrained firms. The results show that cash flow effects are strong in both groups but tend to be significantly higher among constrained firms (i.e., those expected to need external financing)").

160 Jonathan Lewellen and Katharina Lewellen, "Investment and Cash Flow: New Evidence," *Journal of Financial and Quantitative Analysis*, Vol. 51, No. 4, 2016, pp. 1135-1164, p. 1150 ("Controlling just for MB, constrained firms spend an extra $0.19 on working capital, $0.41 on capital expenditures, and $0.53 on all fixed assets for each additional dollar of cash flow, compared with cash flow effects of $0.02, $0.28, and $0.29, respectively, for unconstrained firms. The differences are significant in all three cases, with ř-statistics testing equality ranging from 4.50 to 6.12.").

161 Ben Bernanke, "Nonmonetary Effects of the Financial Crisis in the Propagation of the Great Depression," *Americam Economic Review*, 1983 (p.257. "The disruptions of 1930-33 reduced the effectiveness of the financial sector as a whole in performing these services. As the real costs of intermediation increased, some borrowers (especially households, farmers, and small firms) found credit to be expensive and difficult to obtain."); Mark Gertler and Simon Gilchrist, "Monetary Policy, Business Cycles, and the Behavior of Small Manufacturing Firms," *The Quarterly Journal of Economics*, Vol. 109, No. 2, 1994, pp. 309-340, p.313 ("There is a strong correlation between size and the form of external finance. Smaller firms rely heavily on intermediary credit while large firms make far greater use of direct credit, including equity, public debt, and commercial paper.").

Economic theory suggests that, besides having lower incentives to invest, firms also have lower incentives to engage in R&D activities as a result of lower profits. To measure a firm's responsiveness in its R&D investment to change in profits, we rely on estimates from the academic literature. An academic article by Brown, Fazzari, and Peterson studies the impact of change in profit on R&D spending in industries that are technologically intensive and find that an additional dollar of profits lead to a $0.16 increase in R&D spending by a firm.[162] We estimate the reduction in R&D due to overenforcement of procompetitive behavior associated with the New York Bill by multiplying the foregoneforegone profit in technologically intensive industries with the estimate for firm's responsiveness in its R&D investment to changes in profit.[163]

In addition to the firm-level costs discussed above, the firm-level foregoneforegone profits result in lower tax income for state federal governments. Specifically, the decrease in firms' profits leads to a decline in tax revenues collected by state and federal governments. A base rate of 6.5% for corporate state tax rate in New York implies that a $1 decline in firms' profits would reduce state business tax revenues by $0.065.[164] The foregoneforegone state tax revenue is calculated by multiplying the corporate state tax rate of 6.5% by the firm's foregoneforegone profit.[165] Similarly, the foregoneforegone federal corporate tax revenue is calculated by multiplying the federal corporate tax rate of 21%[166] by the firm's foregoneforegone profit.[167]

Table 4 summarizes the economic costs of overdeterrence associated with the New York Bill for the state of New York. Overdeterrence of procompetitive behavior under the New York Bill provisions leads to a combined foregoneforegone profit of $12.4 billion per year. Total litigation costs increase by $256 million per year. The foregoneforegone investment and R&D are $3.7 billion per year. The foregoneforegone state tax revenue for New York is $805 million per year and the foregoneforegone federal tax revenue is $2.6 billion per year.

162 James Brown, Steven Fazzari, and Bruce Petersen, "Financing Innovation and Growth: Cash Flow, External Equity and the 1990s R&D Boom," *The Journal of Finance*, Vol. 64, No. 1, 2009, pp. 151-185.

163 Our estimated impact of overenforcement on R&D is likely an underestimation of the true effect. If some growth paths are closed by the prohibition of some conducts, the incentives to innovate to take advantage of these opportunities will disappear. For example, if a commercial innovation bundling complementary services into a single technological platform carries regulatory risk, then the company may desist from building the technology. Or if the most efficient way to grow a high-end brand is through exclusive agreements and this is now prohibited, then the incentives to invest and grow the brand may be greatly diminished.

164 *See* "Definitions for Article 9-a Corporations," *New York State, Department of Taxation and Finance*, January 9, 2023, https://www.tax.ny.gov/bus/ct/def_art9a.htm#eni, accessed July 3, 2023.

165 We abstract from any state-level tax deduction programs available to firms.

166 *See* "Key Elements of the U.S. Tax System," *The Tax Policy Center Briefing Book*, https://www.taxpolicycenter.org/briefing-book, accessed July 11, 2023 ("The United States imposes a tax on the profits of US resident corporations at a rate of 21 percent (reduced from 35 percent by the 2017 Tax Cuts and Jobs Act).").

167 We abstract from any federal tax deduction programs available to firms.

Table 4: Annual State-level Economic Costs of Deterrence (Millions of $) New York State

Economic Costs	Mergers & Acquisitions	Unilateral Conduct	Total
Forgone Profits	$500	$11,891	$12,391
Litigation Costs	$38	$219	$256
Forgone Investment & R&D	$157	$3,577	$3,734
Private Forgone Payroll	$120	$2,829	$2,949
Forgone State Tax Revenue	$33	$773	$805
Forgone Federal Tax Revenue	$105	$2,497	$2,602

Our model suggests that the New York Bill's heightened scrutiny of procompetitive business conducts will likely predominantly affect large firms, but many small and medium firms will experience overdeterrence as well. **Table 5** summarizes our findings.

Table 5: Annual State-level Economic Costs of Deterrence, by Firm Size (Millions of $) New York State

	Mergers & Acquisitions			Unilateral Conduct		
Economic Costs, by Firm Size	Small	Medium	Large	Small	Medium	Large
Forgone Profits	$18	$52	$430	$27	$369	$11,495
Litigation Costs	$1	$4	$33	$1	$8	$210
Forgone Investment & R&D	$10	$18	$128	$14	$131	$3,431
Private Forgone Payroll	$4	$14	$102	$6	$99	$2,724
Forgone State Tax Revenue	$1	$3	$28	$2	$24	$747
Forgone Federal Tax Revenue	$4	$11	$90	$6	$78	$2,414

We express these economic costs as a share of state-level GDP, based on data in 2017. To calculate GDP loss based on the state-level economic costs presented above, we rely on the income approach, used by U.S. Bureau of Economic Analysis.[168] Under the income approach, loss in GDP is calculated as the sum of the reduction in private employee payroll and foregoneforegone profits, resulting in a lower GDP growth rate from 2016 to 2017 by 1 pp. Given the lower growth rate, we compare the GDP trajectory under the New York Bill relative to the GDP trajectory absent the Bill from 2023 to 2032. We then report as the loss in GDP the difference between the two trajectories measured in 2023 and 2032.

Another metric that measures the health of the economy is employment. There are two sources of employment losses: private and public; we quantify these as full-time-equivalent ("FTE") employment losses. Firms also have lower incentives to hire as their profits decrease. If a

168 "Concepts and Methods of the U.S. National Income and Product Accounts," *Bureau of Economic Analysis*, December 2022, https://www.bea.gov/resources/methodologies/nipa-handbook/pdf/all-chapters.pdf, accessed June 14, 2023.

firm is not expanding as much because of overenforcement, then there are less incentives for a firm to keep a large workforce. We quantify the likely reduction in FTE equivalent hiring due to overdeterrence of procompetitive behavior associated with the New York Bill based inference from estimates from the academic literature.[169] Change in private employment can be calculated based on labor sensitivity to change in tax, firm's foregoneforegone profit, and firm's pre-tax profit.[170] The change in public employment is driven by the assumption that state and the federal government balance budget remains unchanged. Because the New York Bill decreases state and federal revenue, government FTE will need to be reduced so that its budget deficit does not get worse. According to data from the Census Bureau, compensation for government employees represents about 44% of government spending.[171] As such, we assume that every one dollar decrease in government tax as a result of the New York Bill translates to a $0.44 decrease in labor compensation for government workers, thus reducing public employment.

The total private and public FTE losses result in a lower employment growth rate from 2016 to 2017 by 0.6 pp for New York State. Given the lower growth rate, we compare the employment trajectory under the New York Bill relative to the employment trajectory absent the Bill from 2023 to 2032. We then report as the loss in employment the difference between the two trajectories measured in 2023 and 2032.

Table 6 shows the GDP and FTE losses for the state of New York. In the first year, the New York Bill would decrease GDP by $20 billion, representing a decrease in GDP growth of 1%. Similarly, the New York Bill would decrease FTE by 58 thousand in the first year. In 2032, the New York Bill would decrease New York's GDP by a total of $281 billion and decrease FTE by a total of 597 thousand.

Table 6: GDP and FTE Losses New York State

Year	GDP Loss ($ billion)	FTE Loss (Thousands)
2023	20	58
2032	281	597

169 Specifically, a one percentage point increase in corporate tax leads to a 0.4 percentage decline in employment. Xavier Giroud and Joshua Rauh, "State Taxation and the Reallocation of Business Activity: Evidence from Establishment-Level Data," *Journal of Political Economy*, Vol. 127, No. 3 2019, pp. 1262-1316, p. 4. ("We consider the complete sample of all U.S. establishments from 1977-2011 belonging to firms with at least 100 employees and having operations in at least two states. On the extensive margin, we find that a one percentage point increase (decrease) in the state corporate tax rate leads to the closing (opening) of 0.03 establishments belonging to firms organized as C corporations in the state. This corresponds to an average change in the number of establishments per C corporation of 0.4%.").

170 Specifically, change in employment is calculated as:

171 Elizabeth McNichol, "Some Basic Facts on State and Local Government Workers," *Center on Budget and Policy Priorities*, June 15, 2012, https://www.cbpp.org/sites/default/files/atoms/files/2-24-11sfp.pdf, accessed July 3, 2023, p.3 ("[T]he total costs of compensation for state and local workers are about 44 percent of state and local spending").

V. Nationwide Economic Cost of Legislation Modeled after the New York Bill

Estimated cost of overenforcement nationwide

- GDP loss: -0.5% in 2023 ($123 billion)
- Jobs loss: -0.2% in 2023 (346 thousand FTE)

By 2032, this represents a loss of GDP of over $1.6 trillion and over 3.5 million jobs

How?

- The states of California, Texas, New York, Indiana, Minnesota, Colorado, and Maine experience a lower GDP and employment growth trajectory.
- Lower firm profits in the states of California, Texas, New York, Indiana, Minnesota, Colorado, and Maine have additional spillover effects nationwide that result in additional GPD and job losses.

Our findings suggest that the implementation of legislation modeled after the New York Bill across all the states of California, Texas, New York, Indiana, Minnesota, Colorado, and Maine would likely result in a 0.5% of foregone national GDP in 2023 and a loss of employment of 0.2% of national employment in 2023. The nationwide economic cost would be $123 billion in the first year and over $1.6 trillion ten years from now, resulting in a loss of 346 thousand FTE jobs in the first year and over 3.5 million FTE jobs ten years from now.

Given their respective relative sizes, it is perhaps unsurprising that the greatest contributors to the national GDP and employment losses associated with the implementation of legislation modeled after the New York Bill are **California, Texas, and New York**. We estimate that national spillover effects arising from lower profits across the seven states are sizable, namely **$9 billion in foregoneforegone GDP and 21 thousand in foregone national employment in 2023**, which are in the order of magnitude of the GDP and employment losses associated with the implementation of legislation modeled after the New York Bill in Indiana or Minnesota. This suggests that the implementation of such legislation will likely not only affect those states that adopt it but will likely have a broader impact that will be felt nationwide.

Table 7: Nationwide GDP Loss Associated with the Implementation of Legislation Modeled after the New York Bill Across Seven States 2023-2032

State	GDP Loss in 2023 $ Billion	GDP Loss in 2023 Percent	GDP Loss in 2032 $ Billion	GDP Loss in 2032 Percent
California	40	1.1%	554	10.2%
Texas	35	1.4%	471	13.3%
New York	20	1.0%	281	9.1%
Indiana	6	1.4%	88	12.8%
Minnesota	6	1.4%	87	12.9%
Colorado	6	1.1%	79	10.9%
Maine	1	1.0%	12	9.1%
Subtotal	115	0.4%	1,571	4.1%
National Spillover	9	0.0%	119	0.3%
National	123	0.5%	1,690	4.4%

Table 8: Nationwide FTE Loss Associated with the Implementation of Legislation Modeled after the New York Bill Across Seven States 2023-2032

State	FTE Loss in 2023 Thousands	FTE Loss in 2023 Percent	FTE Loss in 2032 Thousands	FTE Loss in 2032 Percent
California	116	0.6%	1,190	6.3%
Texas	86	0.6%	882	6.2%
New York	58	0.6%	597	5.9%
Indiana	22	0.7%	225	6.6%
Minnesota	22	0.7%	220	7.1%
Colorado	18	0.6%	180	5.9%
Maine	3	0.5%	33	4.8%
Subtotal	325	0.2%	3,327	2.1%
National Spillover	21	0.0%	214	0.1%
National	346	0.2%	3,541	2.2%

VI. Will the Legislative Proposals Achieve Their Intended Goals?

The objective of the state level legislative proposals expanding the remit of antitrust enforcement is to counter the "growing accumulation of power in the hands of dominant corporations" that is perceived to have nefarious effects on small businesses, workers, and society as a whole.[172] The method chosen is to increase the scope of intervention by lowering the threshold of dominance and eliminating the consideration of efficiency gains from conduct that may negatively impact competitors. It becomes also easier to intervene against behavior that leverages dominance across markets.

The proposed legislations will increase uncertainty and regulatory risk for a large number of firms, including smaller ones that are not currently considered to be in scope of enforcement under federal law. Many firms, and particularly those gaining prominence, will abandon behavior that might have helped them accelerate their growth. This overenforcement will have a negative economic impact in terms of firm growth, firm profitability, investment, and overall economic performance of the state. Assuming the California, Texas, New York, Indiana, Minnesota, Colorado, and Maine adopted this legislation, the impact nationwide could be of $123 billion in 2023. At the state level, a state like New York could lose $20 billion in 2023 from adopting this legislation and over-enforcing against efficient behavior.

For this negative economic impact to be compensated, newly protected competitors would have to generate additional activity, revenues, and innovation that is at least equivalent to the suppressed amount. The literature shows that smaller firms are on average less efficient and less likely to innovate than larger ones that have successfully harnessed technology and intangible capital.[173] In fact, smaller firms are often the beneficiaries of the presence of large firms and their ecosystems of partnerships. Forcing a more equal distribution of firms may just eliminate some of the economic contribution of the most dynamic and innovative

172 "Senate Bill S6748," *2023-2024 Legislative Session, The New York State Senate*, 2023-2024, https://www.nysenate.gov/legislation/bills/2023/S6748, accessed May 22, 2023. See full text at https://legislation.nysenate.gov/pdf/bills/2023/S6748, p.1 ("The legislature hereby finds and declares that there is great concern for the growing accumulation of power in the hands of dominant corporations. These companies possess great and increasing power over all aspects of our lives.").

173 Vijay Govindarajan, Baruch Lev, Anup Srivastava, and Luminita Enache, "The Gap between Large and Small Companies Is Growing. Why?," *Harvard Business Review*, August 16, 2019, https://hbr.org/2019/08/the-gap-between-large-and-small-companies-is-growing-why, accessed July 12, 2023 "When we examine the main driver of enterprise performance and growth – the rate of investment in tangible and intangible (R&D, brands, technology, human resources, etc.) assets – we find a dramatic increase in the gap between how much large and small companies invest in intangibles. [...] On average, a large company spent $330 million on R&D in 2017, while the average small company spent a paltry $6 million – obviously insufficient to keep pace with a large competitor, except through a fortuitous discovery. The decreasing productivity of R&D investments makes matters worse for small companies.").

firms without obtaining any compensating economic benefit from the preservation of competitors. Rivalry generates value and innovation but not every firm can provide this type of rivalry. Overly protecting less efficient competitors by providing avenues for opportunistic litigation could lead to less efficient and underperforming markets.

This white paper does not address non-economic objectives of the proposals. Its findings serve to illustrate that the new standards proposed by the New York State legislature present a risk of a chilling effect on efficient conduct by firms of all sizes at a significant economic cost. Over the years, the cumulative negative economic effect of overenforcement against efficient conduct can only accumulate.

More productive ways of supporting vibrant economic markets that do not unduly favor large firms could be utilized to avoid disproportionately affecting smaller firms, implement policies that facilitate the diffusion of technology and know-how, or provide support for effective IP strategies for small and medium companies. Eliminating economic disparities may not have to focus on eliminating the efficiencies of larger players but rather on raising everyone's performance.

VII. State-by-State Breakdown of Economic Cost of Legislation Modeled after the New York Twenty First Century Antitrust Act

California

Economic Cost of Legislation Modeled after the New York Twenty First Century Antitrust Act

California is the largest economy in the United States. As of year-end 2022, California's GDP stands at $3.6 trillion, accounting for approximately 14.1% of the US GDP.[174] Over the past decade, California's economy achieved an average annual growth of 5.5%.[175]

Estimated cost of overenforcement in California

GDP loss:

-1.1% per year *or* **$40bn**

Jobs loss:

-0.6% per year *or* **116k FTE**

By 2032, this represents a ***loss of GDP*** of

$554 billion and **1.2 million jobs**

How?

- Innovative start-ups attract less investment due to a lower likelihood of an acquisition exit strategy.
- Large technology firms are deterred from efficiently integrating services and innovating in new markets.
- Large and medium sized health providers are deterred from developing partnerships for innovation in the supply of health services.
- Successful entertainment companies do form distribution partnerships that enhance the value of their proprietary content.
- Large wholesalers are deterred from improving supply chain efficiencies through acquisitions.
- Successful online e-commerce sites do not implement strategies that help develop business or brands.

174 "GDP by State, 'Table 1. Gross Domestic Product by State and Region: Level and Percent Change from Preceding Period'," *U.S. Bureau of Economic Analysis*, 2022, https://www.bea.gov/data/gdp/gdp-state, accessed June 29, 2023.

175 "Interactive Data Tables," *U.S. Bureau of Economic Analysis, Regional Data: GDP and Personal Income*, https://apps.bea.gov/itable/?ReqID=70&step=1, accessed June 29, 2023".

While California is known as the world's leading region in information and digital technologies, represented by some of the world's most valuable and innovative companies such as Apple, Alphabet, and Meta.[176] Its economy is diverse and is composed of a variety of large sectors, including agriculture, finance, entertainment and manufacturing, as shown in **Table 1**. With regards to agriculture, the state produces over a third of vegetables and three-quarters of fruits and nuts in the US.[177] California is also home to large financial institutions like Wells Fargo[178] and Capital Group,[179] as well as biotech companies such as Gilead Sciences[180] and BioMarin Pharmaceutical.[181]

Table 1: Top 5 Industries in the State of California (by revenue)[182]

Industry	Firm Count	Employment	Revenues ($ Billions)	Share by Firm Size: Small	Medium	Large
Household Appliances and Electrical and Electronic Goods Merchant Wholesalers	4,306	109,593	$215.23	92%	4%	4%
Insurance Carriers	467	124,191	$197.28	56%	9%	35%
Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers	2,726	48,366	$162.78	92%	4%	4%
Grocery and Related Product Merchant Wholesalers	5,199	122,714	$147.85	94%	4%	2%
Drugs and Druggists' Sundries Merchant Wholesalers	1,684	40,797	$146.74	94%	3%	3%
Total	**763,803**	**14,896,625**	**$4,749**	**97%**	**2%**	**1%**

Our findings suggest that the implementation of legislation modeled after the New York Bill in the state of California would likely result in a **1.1% of foregone state GDP** in 2023 and **a loss of employment of 0.6%** of state employment in 2023. The economic cost for the state of California would be 40 billion in the first year and $554 billion ten years from now, resulting in **a loss of 116 thousand FTE jobs** in the first year and **1.2 million FTE jobs** ten years from now.

176 Evan Tarver, "The Biggest Companies in Silicon Valley," *Investopedia*, January 22, 2022, https://www.investopedia.com/articles/markets/103015/biggest-companies-silicon-valley.asp, accessed July 11, 2023

177 "California Agricultural Production Statistics," *California Department of Food and Agriculture*, https://www.cdfa.ca.gov/Statistics/, accessed July 3, 2023 ("Over a third of the country's vegetables and three-quarters of the country's fruits and nuts are grown in California.").

178 "Wells Fargo Mailing Addresses," *Wells Fargo*, https://www.wellsfargo.com/help/addresses/, accessed July 11, 2023

179 "The Capital Group Companies Inc Company Profile," *Dun & Bradstreet*, https://www.dnb.com/business-directory/company-profiles.the_capital_group_companies_inc.a01bdddbe380d08ee71b8709bc60d469.html, accessed July 11, 2023

180 "U.S. Locations," *Gilead*, https://www.gilead.com/our-company/us-locations, accessed July 11, 2023

181 "Locations," *Biomarin*, https://careers.biomarin.com/locations, accessed July 11, 2023, ("Our headquarters and original manufacturing facilities are located just north of San Francisco in Marin County.")

182 **Note**: This table shows the top five NAICS 4-digit industries in California State ranked by industry revenue. Source: "2017 Statistics of U.S. Businesses (Susb) Data," *United States Census Bureau*, March 2023, https://www.census.gov/data/datasets/2020/econ/susb/2020-susb.html, accessed July 14, 2023.

Table 2: Economic Costs of Implementation of Legislation Modeled after the New York Bill State of California

Year	GDP Loss ($ billion)	FTE Loss (Thousands)
2023	40	116
2032	554	1,190

We find that large firms will likely be most impacted by the implementation of legislation modeled after the New York Bill. Large firms may more easily come under scrutiny for particular services, products, or distribution channels in which they specialize. But small and medium sized businesses with local relevance or niche specialization may also come under scrutiny. This could be the case of car part wholesalers for example.

We expect that of the top five industries, as shown in **Table 1** above, Insurance Carriers to be particularly affected by the proposed legislation. But large wholesale merchants in the groceries or druggist sectors may also come under scrutiny for their commercial practices if the more numerous smaller firms find it difficult to grow. More broadly, there are 52 industries in California for which large firms represent over 10% of all firms in the industry.

California is also well-known as the home of start-up companies that focus on innovation.[183] Many start-ups develop technology that can be better deployed and enhanced by the larger players that acquire them. Eliminating an acquisition exit may decrease the value of start-ups technology and lower their ability to grow. The implementation of legislation modeled after the New York Bill will hinder the evolution of the technology sector as the most successful firms are deterred from developing new products that set them apart from potential competitors. Given California's position as the hub for innovation of the world, this type of legislation has the potential to be particularly harmful, and its negative impact will spread beyond the state of California.

183 Shobhit Seth, "Why Is Silicon Valley a Startup Heaven?," *Investopedia*, December 19, 2022, https://www.investopedia.com/articles/personal-finance/061115/why-silicon-valley-startup-heaven.asp, accessed July 11, 2023, ("The location also continues to attract new startups. Even international tech companies hope to get a footprint in Silicon Valley").

Colorado

Economic Cost of Legislation Modeled after the New York Twenty First Century Antitrust Act

As of year-end 2022, the state of Colorado has a GDP of approximately $484 billion, making up just over 1.9% of the US GDP.184 Colorado's economy experienced an average growth rate of 5.8% over the last decade.[185]

Estimated cost of overenforcement in Colorado

GDP loss:

-1.1% per year *or* **$6bn**

Jobs loss:

-0.6% per year *or* **18k FTE**

By 2032, this represents a ***loss of GDP*** of

$79 billion and **180 thousand jobs**

How?

- Large telecommunications service providers are deterred from adopting efficient strategies to sell portfolios of services.
- Large wholesalers are deterred from improving supply chain efficiencies through acquisitions.
- Large insurance providers refrain from improving their value offer through strategic partnerships.
- Medium sized automobile dealers drop commercial practices that develop a car manufacturer's brand equity.

184 "GDP by State, 'Table 1. Gross Domestic Product by State and Region: Level and Percent Change from Preceding Period'," *U.S. Bureau of Economic Analysis*, 2022, https://www.bea.gov/data/gdp/gdp-state, accessed June 29, 2023.

185 "Interactive Data Tables," *U.S. Bureau of Economic Analysis, Regional Data: GDP and Personal Income*, https://apps.bea.gov/itable/?ReqID=70&step=1, accessed June 29, 2023".

Being one of the Rocky Mountain states, Colorado has a rich history in mining, but over time, its economy has diversified, and the state gradually built up a technology sector in the past three decades.[186] As shown in **Table 1**, Colorado's economic development is now led by technology and service sectors. Large technology companies based in the state include Arrow Electronics and Dish Network, while companies such as Lockheed Martin are also major employers. Other major companies headquartered or have large presence in the state include telecommunications carriers (Comcast and AT&T), healthcare services providers (DaVita and Envision Healthcare), manufacturing company (Ball Corporation), financial services company (Western Union), and insurance companies (Metropolitan Life Insurance Company and UnitedHealthcare).[187]

Table 1: Top 5 Industries in the State of Colorado (by revenue)[188]

Industry	Firm Count	Employment	Revenues ($ Billions)	Share by Firm Size: Small	Medium	Large
Wired and Wireless Telecommunications Carriers	173	39,386	$26.80	68%	9%	23%
Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers	276	5,559	$24.77	73%	12%	15%
Insurance Carriers	161	22,535	$22.68	31%	7%	62%
Automobile Dealers	590	23,101	$18.00	89%	8%	3%
Drugs and Druggists' Sundries Merchant Wholesalers	179	4,290	$17.47	85%	3%	12%
Total	**139,678**	**2,371,694**	**$641**	**95%**	**2%**	**2%**

Our findings suggest that the implementation of legislation modeled after the New York Bill in the state of Colorado would likely result in a **1.1% of foregone state GDP** in 2023 and **a loss of employment of 0.6%** of state employment in 2023. The economic cost for the state of Colorado would be $6 billion in the first year and $79 billion ten years from now, resulting in **a loss of 18 thousand FTE jobs** in the first year and **180 thousand FTE jobs** ten years from now.

186 Alison Felix, "A Look Back at the Rocky Mountain Economy 100 Years Ago," *Federal Reserve Bank of Kansas City*, December 14, 2017, https://www.kansascityfed.org/denver/rocky-mountain-economist/rme-2017q4/, accessed July 3, 2023 ("The Rocky Mountain States have a rich mining history; the industry attracted many individuals to the region in the 19th and early 20th centuries. The high concentration of minerals and agricultural products were heavily relied upon by local manufacturing firms, which depended on raw materials for their inputs. However, similar to the agriculture industry, technological development has also occurred in the manufacturing sector across the United States. Specifically, improvements in technology have led to productivity gains in manufacturing, meaning fewer workers are needed to produce a given amount of product. The expansion of international trade has also led to increased competition and a rise in off-shore production of some manufactured goods. These forces, along with increased demand for service-oriented industries, have led to a decline in the share of manufacturing employment in the Rocky Mountain States from more than 13 percent in 1920 to fewer than 5 percent in 2016.").

187 "Major Employers," *Colorado Office of Economic Development & International Trade*, https://choosecolorado.com/doing-business/major-employers/, accessed July 11, 2023. Michael Conway, "Colorado Insurance Industry Statistical Report," *Colorado Department of Regulatory Agencies, Division of Insurance*, December 31, 2021

188 **Note**: This table shows the top five NAICS 4-digit industries in Texas State ranked by industry revenue. **Source**: "2017 Statistics of U.S. Businesses (Susb) Data," *United States Census Bureau*, March 2023, https://www.census.gov/data/datasets/2020/econ/susb/2020-susb.html, accessed July 14, 2023.

Table 2: Economic Costs of Implementation of Legislation Modeled after the New York Bill State of Colorado

Year	GDP Loss ($ billion)	FTE Loss (Thousands)
2023	6	18
2032	79	180

We find that large firms will likely be most impacted by the implementation of legislation modeled after the New York Bill. Large firms may more easily come under scrutiny for particular services, products, or distribution channels in which they specialize. But small and medium sized businesses with local relevance or niche specialization may also come under scrutiny.

Given the large presence of large firms in the telecom, insurance, and wholesale industries in Colorado, we expect that these industries will be particularly affected by the proposed legislation. More broadly, there are 88 industries in Colorado for which large firms represent over 10% of all firms in the industry. Arrow Electronics, for example, is one of the largest companies from Colorado and specializes in the sale and distribution of electronic components and computer products. In addition, it engages in value-added services and such as design engineering, cloud services, and supply chain services.[189] It commercial practices may be scrutinized for negative impact on competitors. The company serves leading technology companies and is constantly engaged in innovation. Any complaint by a customer or rival on one market of its specialty would expose this large complex innovative business to regulatory risk.

In addition, we find that some small and medium businesses, such as automobile dealers exclusively serving a car manufacturer, will likely also be negatively impacted by the implementation of legislation modeled after the New York Bill. Their exposure will depend on the nature of the vertical contracts they sign or the growth strategies they adopt. Enforcing against practices that support brand equity, product line innovations, investment in intangibles, and intellectual property will deprive small and medium firms from particularly efficient paths to growth.

189 "Where Opportunity Meets Technology," *Arrow Electronics*, https://www.arrow.com/company, accessed July 11, 2023, ("Arrow Electronics guides innovation forward for over 210,000 leading technology manufacturers and service providers.")

Indiana

Economic Cost of Legislation Modeled after the New York Twenty First Century Antitrust Act

As of year-end 2022, the state of Indiana has a GDP of approximately $456 billion, making up just under 1.8% of the US GDP.[190] Indiana's economy experienced an average growth rate of 4.3% over the last decade.[191]

Estimated cost of overenforcement in Indiana

GDP loss:

-1.4% per year *or* **$6bn**

Jobs loss:

-0.7% per year *or* **22k FTE**

By 2032, this represents a ***loss of GDP*** of

$88 billion and **225 thousand jobs**

How?

- Large manufacturers are less prone to provide customers with integrated offers.
- Small and medium sized manufacturers are deterred from improving efficiencies through acquisitions.
- Large insurance providers are deterred from proposing cost savings portfolios of products.
- Large and medium sized health providers are prevented from developing partnerships for innovation in the supply of health services.

190 "GDP by State, 'Table 1. Gross Domestic Product by State and Region: Level and Percent Change from Preceding Period'," *U.S. Bureau of Economic Analysis*, 2022, https://www.bea.gov/data/gdp/gdp-state, accessed June 29, 2023.

191 "Interactive Data Tables," *U.S. Bureau of Economic Analysis, Regional Data: GDP and Personal Income*, https://apps.bea.gov/itable/?ReqID=70&step=1, accessed June 29, 2023".

Indiana's economy is heavily centered around manufacturing. As shown in **Table 1**, three of the top five industries in Indiana are related to motor vehicle manufacturing. The state is home to some of the largest motor vehicle and motor vehicle parts manufacturers in the US, including Thor Industries, Lippert, Cummins, Forest River and Allison Transmission. It also boasts a large presence of global carmakers such as Toyota, Subaru and General Motors.[192] Indiana is also the largest steel-producing state in the US,[193] and hosts large steel manufacturing companies such as US Steel and Cleveland-Cliffs.[194] In addition, the state is home to large insurance companies such as Elevance Health (formerly named Anthem).[195]

Table 1: Top 5 Industries in the State of Indiana (by revenue)[196]

				Share by Firm Size		
Industry	**Firm Count**	**Employment**	**Revenues ($ Billions)**	**Small**	**Medium**	**Large**
Motor Vehicle Manufacturing	19	18,010	$34.10	37%	16%	47%
Insurance Carriers	184	28,256	$30.96	35%	5%	60%
Motor Vehicle Parts Manufacturing	255	57,532	$24.82	57%	15%	28%
General Medical and Surgical Hospitals	59	114,818	$20.74	0%	24%	76%
Motor Vehicle Body and Trailer Manufacturing	130	49,820	$20.41	69%	15%	16%
Total	**109,706**	**2,779,124**	**$768**	**94%**	**3%**	**3%**

Our findings suggest that the implementation of legislation modeled after the New York Bill in the state of Indiana would likely result in a **1.4% of foregone state GDP** in 2023 and **a loss of employment of 0.7%** of state employment in 2023. The economic cost for the state of Indiana would be $6 billion in the first year and $88 billion ten years from now, resulting in **a loss of 22 thousand FTE jobs** in the first year and **225 thousand FTE jobs** ten years from now.

192 "Motor Vehicle Manufacturing Companies in Indiana, United States of America," *Dun & Bradstreet*, https://www.dnb.com/business-directory/company-information.motor_vehicle_manufacturing.us.indiana.html, accessed July 11, 2023, "Segmenting Indiana's Automotive Manufacturing Industry: Jobs and Wages," *InContext*, https://www.incontext.indiana.edu/2010/may-june/article2.asp, accessed July 11, 2023

193 Joseph Pete, "Indiana Again Leads Nation in Steel Production," *Times of Northwest Indiana*, February 4, 2023, https://www.nwitimes.com/news/local/indiana-again-leads-nation-in-steel-production/article_a93cb23d-eeb8-55c7-958b-9518cee5e9e2.html, accessed July 3, 2023 ("Indiana again led the nation in steel production last year, single-handedly accounting for nearly a fourth of the nation's output.").

194 Joseph Pete, "Indiana Again Leads Nation in Steel Production," *Times of Northwest Indiana*, February 4, 2023, https://www.nwitimes.com/news/local/indiana-again-leads-nation-in-steel-production/article_a93cb23d-eeb8-55c7-958b-9518cee5e9e2.html, accessed July 3, 2023. ("Cleveland-Cliffs and U.S. Steel's mills in Northwest Indiana are some of the largest in the world.")

195 "Contact Us," *Elevance Health*, https://www.elevancehealth.com/contact-us, accessed July 11, 2023

196 **Note**: This table shows the top five NAICS 4-digit industries in Indiana State ranked by industry revenue. **Source**: "2017 Statistics of U.S. Businesses (Susb) Data," *United States Census Bureau*, March 2023, https://www.census.gov/data/datasets/2020/econ/susb/2020-susb.html, accessed July 14, 2023.

Table 2: Economic Costs of Implementation of Legislation Modeled after the New York Bill State of Indiana

Year	GDP Loss ($ billion)	FTE Loss (Thousands)
2023	6	22
2032	88	225

We find that large firms will likely be most impacted by the implementation of legislation modeled after the New York Bill. Large firms may more easily come under scrutiny for particular services, products, or distribution channels in which they specialize. But small and medium sized businesses with local relevance or niche specialization may also come under scrutiny. This would be the case of small car parts manufacturers for example.

Given the presence of large firms in a variety of manufacturing industries in Indiana, we expect that these industries will be particularly affected by the proposed legislation. More broadly, there are 112 industries in Indiana for which large firms represent over 10% of all firms in the industry. Large firms may more easily come under scrutiny for commercial practices such as expanding their bundled offers or developing privileged commercial relationships. Their acquisition strategy may also be closely scrutinized. Thor Industries, for example, is a large company from Indiana and specializes in the manufacturing of recreational vehicles through many subsidiaries.[197] The company went through a series of mergers and acquisitions over the years.[198] Motor vehicle manufacturing is a global business, and efficiency is key to ensure competitiveness. This is usually achieved through having large scale in production. Any complaint by a customer or rival of one of these brands targeting pro-competitive growth strategies would expose this large, complex, and cost-sensitive business to regulatory risk.

197 *THOR COMPANIES*, https://www.thorindustries.com/thor-companies, accessed July 11, 2023. ("Together, the THOR Industries family of companies represents the world's largest manufacturer of recreational vehicles. We've chosen our family wisely, so your choice is that much easier.").

198 "Acquisitions by Thor Industries," *Tracxn*, May 22, 2023, https://tracxn.com/d/acquisitions/acquisitionsbyThor-Industries, accessed July 11, 2023

Maine

Economic Cost of Legislation Modeled after the New York Twenty First Century Antitrust Act

As of year-end 2022, Maine's GDP is approximately $84 billion, accounting for 0.33% of the US GDP.[199] Over the last ten years, Maine's GDP has shown consistent growth with an average annual growth rate of 4.6%.[200]

Estimated cost of overenforcement in Maine

GDP loss:

-1% per year *or* $1bn

Jobs loss:

-0.5% per year *or* 3k FTE

Over 10 years this represents a ***loss of GDP*** of

$12 billion and **33 thousand jobs**

How?

- Large insurance firms are deterred from supplying efficient portfolios of products.
- Large and medium sized health providers are prevented from developing partnerships for innovation in the supply of health services.
- Large groceries stores do not engage in some price strategies that efficiently grow demand.
- Medium sized automobile dealers drop commercial practices that develop a car brand equity.

199 "GDP by State, 'Table 1. Gross Domestic Product by State and Region: Level and Percent Change from Preceding Period'," *U.S. Bureau of Economic Analysis*, 2022, https://www.bea.gov/data/gdp/gdp-state, accessed June 29, 2023.

200 "Interactive Data Tables," *U.S. Bureau of Economic Analysis, Regional Data: GDP and Personal Income*, https://apps.bea.gov/itable/?ReqID=70&step=1, accessed June 29, 2023.

Historically reliant on industries like agriculture, forestry, and fishing, Maine's economy has diversified over the course of last century to become more industrialized, and manufacturing and services sectors increasingly contribute to its economic performance.[201] As shown in **Table 1**, leading economic industries in the state are insurance companies, petroleum wholesalers, hospitals, and retail trade. The largest businesses in Maine include healthcare services providers (such as MaineHealth), retail trade firms (Hannaford Bros. Co., Walmart, and L.L.Bean), and financial services companies (TD Bank, Unum Group, and Wex).[202]

Table 1: Top 5 Industries in the State of Maine (by revenue)[203]

				Share by Firm Size		
Industry	**Firm Count**	**Employment**	**Revenues ($ Billions)**	**Small**	**Medium**	**Large**
Insurance Carriers	73	8,161	$8.20	14%	8%	78%
Petroleum and Petroleum Products Merchant Wholesalers	20	358	$5.33	20%	20%	60%
General Medical and Surgical Hospitals	17	34,761	$5.22	0%	47%	53%
Automobile Dealers	292	6,918	$4.06	95%	4%	1%
Grocery Stores	472	17,423	$3.92	97%	1%	1%
Total	**34,190**	**513,745**	**$112**	**95%**	**2%**	**3%**

Our findings suggest that the implementation of legislation modeled after the New York Bill in the state of Maine would likely result in a **1% of foregone state GDP** in 2023 and **a loss of employment of 0.5%** of state employment in 2023. The economic cost for the state of Maine would be $1 billion in the first year and $12 billion ten years from now, resulting in **a loss of 3 thousand FTE jobs** in the first year and **33 thousand FTE jobs** ten years from now.

201 *See, e.g.*, "1870-1920: The End of the Ocean Highway," *Maine History Online*, https://www.mainememory.net/sitebuilder/site/905/page/1316/print, accessed June 29, 2023; "1946-1970: A Different Place," *Maine History Online*, https://www.mainememory.net/sitebuilder/site/909/page/1320/print?popup=1, accessed June 29, 2023; "2017 Statistics of U.S. Businesses (Susb) Data," *United States Census Bureau*, March 2023, https://www.census.gov/data/datasets/2020/econ/susb/2020-susb.html, accessed July 14, 2023.

202 "Top Private Employers in Maine by Average Monthly Employment - 4th Quarter 2022," *Maine.gov*, https://www.maine.gov/labor/cwri/publications/pdf/MaineTop50Employers.pdf, accessed June 29, 2023.

203 **Note**: This table shows the top five NAICS 4-digit industries in Maine State ranked by industry revenue. **Source**: "2017 Statistics of U.S. Businesses (Susb) Data," *United States Census Bureau*, March 2023, https://www.census.gov/data/datasets/2020/econ/susb/2020-susb.html, accessed July 14, 2023.

Table 2: Economic Costs of Implementation of Legislation Modeled after the New York Bill State of Maine

Year	GDP Loss ($ billion)	FTE Loss (Thousands)
2023	1	3
2032	12	33

We find that large firms will likely be most impacted by the implementation of legislation modeled after the New York Bill. Given the large presence of large firms in the insurance, petroleum, and hospital industries in Maine, we expect that these industries will be particularly affected by the proposed legislation. More broadly, there are 67 industries in Maine for which large firms represent over 10% of all firms in the industry. Large firms may more easily come under scrutiny for particular products or distribution channels in which they specialize. The Baker Company for example is the largest company from Maine and specializes in the sale of medical and laboratory equipment.[204] It sells proprietary technology, offers solutions and bundles of complementary equipment, and is engaged in research, development, and distribution partnerships with a variety of other businesses. Any complaint by a customer or competitor on one market of its specialty would expose such a large complex innovative business to regulatory risk.

Retailers dominating their local markets, could also come under scrutiny from price policies that expand overall demand but hurt competitors. Or a grocery chain like Hannaford may also not be able to enter distribution agreements protective of its local quality image.

In addition, we find that some small and medium businesses, such as automobile dealers exclusively serving a car manufacturer, will likely also be negatively impacted by the implementation of legislation modeled after the New York Bill. Their exposure will depend on the nature of the vertical contracts they sign or the growth strategies they adopt. Enforcing against practices that support brand equity, product line innovations, investment in intangibles, and intellectual property will deprive small and medium firms from particularly efficient paths to growth.

204 "About Baker," *Baker*, https://bakerco.com/about-baker/, accessed July 11, 2023, ("Baker has been at the forefront of engineering, testing and production of reliable laboratory contamination control equipment.")

Minnesota

Economic Cost of Legislation Modeled after the New York Twenty First Century Antitrust Act

As of year-end 2022, the state of Minnesota has a GDP of approximately $446 billion, making up just around 1.75% of the US GDP.[205] Minnesota's economy experienced an average growth rate of 4.1% over the last decade.[206]

Estimated cost of overenforcement in Minnesota

GDP loss:

-1.4% per year *or*
$6bn

Jobs loss:

-0.7% per year *or*
22k FTE

By 2032, this represents a ***loss of GDP*** of

$87 billion and **220 thousand jobs**

How?

- Large insurance providers are deterred from adopting efficient strategies to improve efficiencies through increasing the number of customers.
- Large and medium sized health providers are deterred from developing partnerships for innovation in the supply of health services.
- Large wholesalers refrain from improving supply chain efficiencies through mergers and acquisitions.
- Medium sized automobile dealers drop commercial practices that develop a car brand equity.
- Successful online e-commerce sites do not implement strategies that help develop business or brands.

205 "GDP by State, 'Table 1. Gross Domestic Product by State and Region: Level and Percent Change from Preceding Period'," *U.S. Bureau of Economic Analysis*, 2022, https://www.bea.gov/data/gdp/gdp-state, accessed June 29, 2023.

206 "Interactive Data Tables," *U.S. Bureau of Economic Analysis, Regional Data: GDP and Personal Income*, https://apps.bea.gov/itable/?ReqID=70&step=1, accessed June 29, 2023".

Minnesota has a diverse economy, ranging from insurance, wholesale to healthcare. As shown in **Table 1**, two out of the top five industries in Minnesota are highly concentrated. Minnesota is home to insurance company UnitedHealth, as well as healthcare provider Mayo Clinic and medical device company Medtronic and acts as the US headquarters for Allianz Life Insurance. Other large companies in the state include 3M and General Mills, financial services company US Bancorp, and retailers Target and BestBuy.[207]

Table 1: Top 5 Industries in the State of Minnesota (by revenue)[208]

				Share by Firm Size		
Industry	**Firm Count**	**Employment**	**Revenues ($ Billions)**	**Small**	**Medium**	**Large**
Insurance Carriers	262	42,390	$68.11	55%	5%	40%
Agencies, Brokerages, and Other Insurance Related Activities	3,341	27,399	$28.36	97%	1%	2%
Professional and Commercial Equipment and Supplies Merchant Wholesalers	535	25,797	$26.69	82%	6%	12%
Wholesale Electronic Markets and Agents and Brokers	1,102	7,689	$22.16	99%	0%	1%
General Medical and Surgical Hospitals	69	117,525	$20.43	0%	58%	42%
Total	**119,376**	**2,685,047**	**$789**	**95%**	**2%**	**2%**

Our findings suggest that the implementation of legislation modeled after the New York Bill in the state of Minnesota would likely result in a **1.4% of foregone state GDP** in 2023 and **a loss of employment of 0.7%** of state employment in 2023. The economic cost for the state of Minnesota would be $6 billion in the first year and $87 billion ten years from now, resulting in **a loss of 22 thousand FTE jobs** in the first year and **220 thousand FTE jobs** ten years from now.

Table 2: Economic Costs of Implementation of Legislation Modeled after the New York Bill State of Minnesota

Year	GDP Loss ($ billion)	FTE Loss (Thousands)
2023	6	22
2032	87	220

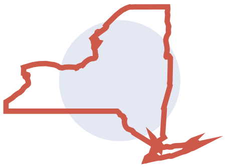
207 "Top Employers," *MN Employment and Economic Development*, https://mn.gov/deed/data/economic-analysis/top-companies/, accessed July 11, 2023; "Top Companies," *MN Employment and Economic Development*, https://mn.gov/deed/data/economic-analysis/top-companies/, accessed July 11, 2023. "Top Employers," *MN Employment and Economic Development*, https://mn.gov/deed/data/economic-analysis/top-companies/, accessed July 11, 2023 "Top Employers," *MN Employment and Economic Development*, https://mn.gov/deed/data/economic-analysis/top-companies/, accessed July 11, 2023

208 **Note**: This table shows the top five NAICS 4-digit industries in Minnesota State ranked by industry revenue. **Source**: "2017 Statistics of U.S. Businesses (Susb) Data," *United States Census Bureau*, March 2023, https://www.census.gov/data/datasets/2020/econ/susb/2020-susb.html, accessed July 14, 2023.

We find that large firms will likely be most impacted by the implementation of legislation modeled after the New York Bill. Large firms may more easily come under scrutiny for particular services, products, or distribution channels in which they specialize. But small and medium sized businesses with local relevance or niche specialization may also come under scrutiny.

Minnesota is the home to some large insurance carriers, whose operational efficiencies benefit from being able to diversify risks through an enlarged network of insurers. More broadly, there are 91 industries in Minnesota for which large firms represent over 10% of all firms in the industry. BestBuy, for example, is a large company from Minnesota and selling consumer electronics through both in-store and online channels. The company benefits tremendously from having a large network of physical stores and warehouses across the country. Any complaint by a customer or competitor against one of its commercial growth strategies would expose such a large, complex, and cost-sensitive business to regulatory risk.

In addition, we find that some small and medium businesses, such as wholesale brokers and agents exclusively serving a manufacturer or brand, will likely also be negatively impacted by the implementation of legislation modeled after the New York Bill. Their exposure will depend on the nature of the vertical contracts they sign or the growth strategies they adopt. Enforcing against practices that support brand equity, product line innovations, investment in intangibles, and intellectual property will deprive small and medium firms from particularly efficient paths to growth.



New York

Economic Cost of Legislation Modeled after the New York Twenty First Century Antitrust Act

New York State has long been a **center for innovation, trade, and finance**, contributing significantly to the US economy. As of year-end 2022, with a GDP of approximately $2 trillion,[209] New York is the third-largest state in the US and accounts for 8.1% of the overall US GDP.[210] With the exception of 2020, when the COVID-19 pandemic caused a downturn, New York's GDP has grown consistently each year over the past decade with an average annual growth rate of 4.5%.[211]

Estimated cost of overenforcement in Maine

GDP loss:

-1% in 2023 *or* **$20bn**

Jobs loss:

-0.6% in 2023 *or* **58k FTE**

By 2032, this represents a ***loss of GDP*** of

$281 billion and **597 thousand jobs**

How?

- Large financial firms adopt less efficient commercial strategies to sell portfolios of products.
- Large and medium sized health providers are dissuaded from developing partnerships for innovation in the supply of health services.
- Successful local players in the hospitality sector refrain from building attractive portfolio offerings.
- Successful online e-commerce sites do not implement strategies that help develop business or brands.
- Large wholesalers are prevented from improving supply chain efficiencies through acquisitions.
- Innovative start-ups have a lower likelihood to exit through acquisitions and receive less investment.

209 A state's GDP is the value of production originating from all industries in the state, as defined by the BEA, and serves as a key indicator for its economic performance.

210 "GDP by State, 'Table 1. Gross Domestic Product by State and Region: Level and Percent Change from Preceding Period'," *U.S. Bureau of Economic Analysis*, 2022, https://www.bea.gov/data/gdp/gdp-state, accessed June 29, 2023.

211 "Interactive Data Tables," *U.S. Bureau of Economic Analysis, Regional Data: GDP and Personal Income*, https://apps.bea.gov/itable/?ReqID=70&step=1, accessed June 29, 2023".

The state's economic landscape is composed of a diverse range of industries, with a specialization in finance, insurance, healthcare, wholesale, and technology. As shown in **Table 1**, financial services and insurance related industries dominate economic activity in New York State. Wall Street, renowned as the global financial hub, hosts globally prominent financial institutions, including the world's largest stock exchanges (the New York and the NASDAQ),[212] leading retail and investment banks (Bank of America, J.P. Morgan Chase, Goldman Sachs, and Morgan Stanley),[213] insurance companies (AIG and MetLife),[214] and asset management firms (BlackRock and Blackstone).[215] New York also acts as a pivotal trade hub and hosts prominent wholesalers, major apparel brands and pharmaceutical firms. In addition, New York boasts a large presence of legal and professional services firms such as the "big four" accounting firms[216] and numerous "big law" firms.[217]

Table 1: Top 5 Industries in the State of New York (by revenue)[218]

Industry	Firm Count	Employment	Revenues ($ Billions)	Share by Firm Size: Small	Medium	Large
Insurance Carriers	420	98,822	$158.45	57%	10%	34%
Securities and Commodity Contracts Intermediation and Brokerage	1,241	95,450	$108.20	87%	5%	8%
Depository Credit Intermediation	690	151,908	$91.43	67%	17%	16%
Other Financial Investment Activities	4,542	87,682	$85.80	93%	3%	3%
General Medical and Surgical Hospitals	120	421,102	$78.14	4%	17%	78%
Total	**465,566**	**8,261,269**	**$2,582**	**97%**	**2%**	**1%**

212 Amali Vinupriyadharshini and Xavir Mahimairaj, "A Comparative Study on Financial Technology Used in Stock Exchanges – Nse, Nyse, Nasdaq, Jpx and Sse," *International Journal of Research in Advent Technology (IJRAT) Special Issue*, 2019, available at http://www.ijrat.org/downloads/Conference_Proceedings/ICFTWF-19/paper-1.pdf, ("This article studies the financial technology of National stock exchange (NSE) India, New York Stock Exchange (NYSE), National Association of Securities Dealer's Automated Quotation (NASDAQ) USA, Japan Exchange Group (JPX) and Shanghai Stock Exchange (SSE) China. These exchanges are the largest in the world based on their market capitalization and NSE"s fintech is compared with them.").

213 Mark Kendall, "101 Best & Most Active New York Investment Banks," *Investor Available*, 2021, https://investoravailable.com/101-best-most-active-new-york-investment-banks/, accessed July 11, 2023, Kevin Payne and Emily Batdorf, "Best Banks in New York for July 2023," *Forbes*, July 5, 2023, https://www.forbes.com/advisor/banking/best-banks-in-new-york/, accessed July 11, 2023

214 Mark Rosanes, "The Largest Insurance Companies in the Us - Based on Market Cap," *Insurance Business America*, March 08, 2023, https://www.insurancebusinessmag.com/us/guides/the-largest-insurance-companies-in-the-us--based-on-market-cap-438805.aspx, accessed July 11, 2023

215 Ty Haqqi, "25 Biggest New York Companies and Stocks," *Yahoo*, January 9, 2023, https://www.yahoo.com/now/25-biggest-york-companies-stocks-205929793.html, accessed July 11, 2023

216 "The Rise, Fall and Re-Emergence of the Big 4 in Law," *Thomson Reuters*, 2014, https://blogs.thomsonreuters.com/answerson/wp-content/uploads/sites/3/2014/04/infographic-re-emergence-big-4-accounting-firms-law.pdf, accessed July 11, 2023, "The Ipa 500," *INSIDE Public Accounting*, https://insidepublicaccounting.com/top-firms/ipa-500/, accessed July 11, 2023; "The Ipa 500," *INSIDE Public Accounting*, https://insidepublicaccounting.com/top-firms/ipa-500/, accessed July 11, 2023

217 "New York Legal Market," *Georgetown Law*, https://www.law.georgetown.edu/your-life-career/career-exploration-professional-development/for-jd-students/explore-legal-careers/legal-markets/new-york-legal-market/, accessed July 11, 2023, ("New York is the largest legal market by headcount in the country.").

218 **Note**: This table shows the top five NAICS 4-digit industries in New York State ranked by industry revenue. **Source**: "2017 Statistics of U.S. Businesses (Susb) Data," *United States Census Bureau*, March 2023, https://www.census.gov/data/datasets/2020/econ/susb/2020-susb.html, accessed July 14, 2023.

Our findings suggest that the implementation of legislation modeled after the New York Bill in the state of New York would likely result in a **1% of foregone state GDP** in 2023 and **a loss of employment of 0.6%** of state employment in 2023. The economic cost for the state of New York would be $20 billion in the first year and $281 billion ten years from now, resulting in **a loss of 58 thousand FTE jobs** in the first year and **597 thousand FTE** jobs ten years from now.

Table 2: Economic Costs of Implementation of Legislation Modeled after the New York Bill State of New York

Year	GDP Loss ($ billion)	FTE Loss (Thousands)
2023	20	58
2032	281	597

We find that large firms will likely be most impacted by the implementation of legislation modeled after the New York Bill. Large firms may more easily come under scrutiny particularly if they specialize in specific services, products, or distribution channels where they gain a certain prominence.

Given the extensive presence of large firms in New York State as shown in **Table 1** above, we expect that of the top five industries, Insurance Carriers, Depository Credit Intermediation, and General Medical and Surgical Hospitals to be particularly affected by the proposed legislation. **Large firms may come under scrutiny for commercial practices** such as bundling some of their financial services or establishing demand expanding distribution deals. More broadly, for 64 industries in New York State, large firms represent over 10% of all firms in the industry.

In addition, we find that small and medium businesses will likely also be negatively impacted by the implementation of legislation modeled after the New York Bill. These businesses may come under scrutiny as soon as they gain local relevance or if they acquire a high degree of specialization. This is more likely to happen in innovative services, processes, and products.

Enforcing against practices that support product line innovations, investment in intangibles, and intellectual property may **deprive successful small and medium firms from particularly efficient paths of growth**.

For example, New York State is the home of some successful fashion brands such as Rag & Bone or the Tapestry house of brands that includes Kate Spade New York, Coach, and Stuart Weitzman.[219] Numerous e-commerce businesses aspire

219 Ben Widdicombe, "How Did Fashion's Rag & Bone Take the Steady Route to Success?," *Observer*, July 15, 2015, https://observer.com/2015/07/how-did-fashions-rag-and-bone-take-the-steady-route-to-success/, accessed July 11, 2023, "Our Brands," *Tapestry*, https://www.tapestry.com/our-brands/, accessed July 11, 2023

to enable the same level of success and brand recognition with sophisticated and sometimes exclusive distribution practices. These commercial strategies may be deterred due to regulatory risk.

The implementation of legislation modeled after the New York Bill will likely inhibit acquisitions and lower incentives to invest in start-ups and small firms developing new technologies. This is particularly significant in a state like New York that is a hub for startup development. The result is a **reduction in venture capital investment** if acquisition becomes a less likely exit strategy.[220]

220 George Ford, Randolph Beard, and Michael Stern, "Innovation, Exit, and Restrictions on Tech Mergers and Acquisitions," *Phoenix Center Policy Bulletin* Vol. 50 2021, p. 1 ("[W]e find that statutory restrictions on acquisitions by the large platforms adversely affect investments in innovations and alter the innovator-investor exit strategy, incentivizing innovators to transfer their innovations to dominant firms in even earlier stages to avoid antitrust scrutiny.").

Texas

Economic Cost of Legislation Modeled after the New York Twenty First Century Antitrust Act

As of year-end 2022, the state of Texas has a GDP of approximately $2.4 trillion, making up just over 9.25% of the US GDP.[221] Texas' economy experienced an average growth rate of 5.2% over the last decade.[222]

Estimated cost of overenforcement in Texas

GDP loss:

-1.4% per year *or* **$35bn**

Jobs loss:

-0.6% per year *or* **86k FTE**

By 2032, this represents a ***loss of GDP*** of

$471 billion and **882 thousand jobs**

How?

- Large petroleum producers do not implement acquisitions strategies that help improve efficiencies
- Large insurance providers are deterred from offering efficient bundles of services.
- Large manufacturers are less able to provide customers with integrated solutions.
- Medium sized automobile dealers drop commercial practices that develop a car brand equity.
- Large wholesalers are prevented from improving supply chain efficiencies through mergers and acquisitions.
- Innovative start-ups receive less investment due to a lower likelihood of an acquisition exit strategy.

221 "GDP by State, 'Table 1. Gross Domestic Product by State and Region: Level and Percent Change from Preceding Period'," *U.S. Bureau of Economic Analysis*, 2022, https://www.bea.gov/data/gdp/gdp-state, accessed June 29, 2023.

222 "Interactive Data Tables," *U.S. Bureau of Economic Analysis, Regional Data: GDP and Personal Income*, https://apps.bea.gov/itable/?ReqID=70&step=1, accessed June 29, 2023".

Texas is the second-largest economy in the US. The state boasts an impressive lineup of large companies, leading the country with the most companies in the Fortune 500, with 53 in total as of 2022.[223] Still, as shown in **Table 1**, the petroleum industry dominates the top 5 industries in Texas. Some of the world's largest oil and energy companies, such as ExxonMobil, Valero, Occidental Petroleum, Chevron, and BP have a significant presence in the state.[224] Texas also has a large health insurance industry with companies such as Blue Cross and Blue Shield of Texas, UnitedHealthcare Insurance and Sierra Health and Life Insurance, either headquartered or have a large presence in the state.[225] The state is also home to many innovative technology companies such as Dell, Texas Instruments, Oracle and Tesla, and telecommunications giant AT&T, as well as pharmaceutical and healthcare companies like McKesson and Tenet.[226]

Table 1: Top 5 Industries in the State of Texas (by revenue)[227]

Industry	Firm Count	Employment	Revenues ($ Billions)	Share by Firm Size: Small	Medium	Large
Petroleum and Petroleum Products Merchant Wholesalers	562	17,632	$485.61	83%	7%	10%
Petroleum and Coal Products Manufacturing	120	22,683	$148.77	51%	13%	37%
Insurance Carriers	490	119,253	$120.63	59%	9%	32%
Oil and Gas Extraction	2,171	50,078	$107.39	94%	3%	3%
Automobile Dealers	3,444	120,356	$100.38	91%	8%	1%
Total	**442,641**	**10,580,160**	**$3,704**	**96%**	**2%**	**1%**

Our findings suggest that the implementation of legislation modeled after the New York Bill in the state of Texas would likely result in a **1.4% of foregone state GDP** in 2023 and **a loss of employment of 0.63%** of state employment in 2023. The economic cost for the state of Texas would be $35 billion in the first year and $471 billion ten years from now, resulting in **a loss of 86 thousand FTE jobs** in the first year and **882 thousand FTE jobs** ten years from now.

223 "Texas Leads the Nation as Home to the Most Fortune 500 Companies," *Office of the Texas Governor Greg Abbott*, May 24, 2022, https://gov.texas.gov/news/post/texas-leads-the-nation-as-home-to-the-most-fortune-500-companies, accessed July 3, 2023 ("Texas now leads the nation as home to the most Fortune 500 companies, overtaking states like New York and California in the 2022 Fortune 500 list. With 53 Fortune 500 corporate headquarters calling Texas home, the state's business-friendly climate and skilled workforce surpassed New York's 51 corporate headquarters and California's 50.").

224 "Energy Sector in Texas," *Texas Economic Development Corporation*, https://businessintexas.com/business-sectors/energy/, accessed July 11, 2023

225 "Top 40 List of Insurers in Texas," *Texas Department of Insurance*, https://www.tdi.texas.gov/company/top40.html, accessed July 11, 2023

226 Adriana Thompson, "Top 25 Fortune 500 Companies Headquartered in Texas," *Concordia University Texas*, June 24, 2021, https://www.concordia.edu/blog/top-25-fortune-500-companies-headquartered-in-texas.html, accessed July 11, 2023, "Contact," *Tesla*, https://www.tesla.com/contact, accessed July 11, 2023

227 **Note**: This table shows the top five NAICS 4-digit industries in Texas State ranked by industry revenue. **Source**: "2017 Statistics of U.S. Businesses (Susb) Data," *United States Census Bureau*, March 2023, https://www.census.gov/data/datasets/2020/econ/susb/2020-susb.html, accessed July 14, 2023.

Table 2: Economic Costs of Implementation of Legislation Modeled after the New York Bill State of Texas

Year	GDP Loss ($ billion)	FTE Loss (Thousands)
2023	35	86
2032	471	882

We find that large firms will likely be most impacted by the implementation of legislation modeled after the New York Bill. Large firms may more easily come under scrutiny for particular services, products, or distribution channels in which they specialize. But small and medium sized businesses with local relevance or niche specialization may also come under scrutiny. This would be the case of automobile dealers for example.

We expect that of the top five industries, as shown in **Table 1** above, Petroleum and Petroleum Products Merchant Wholesalers, Petroleum and Coal Products Manufacturing and Insurance Carriers to be particularly affected by the proposed legislation. More broadly, for 74 industries in Texas, large firms represent over 10% of all firms in the industry.

The oil industry and energy sector more broadly require enormous capital investment to operate,[228] and they also have to comply with numerous legislations related to production safety and environmental standards. Consequently, these industries are populated with large companies who are better positioned undertake the necessary investments and navigate the regulatory regime. Nonetheless, the acquisition strategies of these companies may come under scrutiny. Large health insurers providers may also be deterred from adopting efficient negotiating practices with suppliers that could lower their prices.

In addition, like California, Texas is also well-known for start-up companies that focus on innovation.[229] Many start-ups develop technology that can be better deployed and enhanced by the larger players that acquire them. Eliminating an acquisition exit may decrease the value of start-ups technology and lower their ability to grow. The implementation of legislation modeled after the New York Bill will hinder the evolution of the technology sector by lowering the incentive to invest in start-ups if acquisition by a big, established companies becomes more difficult and hence investors lose a promising exit option. This type of legislation will be particularly harmful, and its negative impact will spread beyond the state of Texas.

228 "Oil and Gas Industry: A Research Guide," *Library of Congress*, https://guides.loc.gov/oil-and-gas-industry, accessed July 11, 2023. ("The processes and systems involved in producing and distributing oil and gas are highly complex, capital-intensive, and require state-of-the-art technology.")

229 Mary Ann Azevedo, "Austin Emerges as a City of Unicorns and Tech Giants," *TechCrunch*, April 6, 2022, https://techcrunch.com/2022/04/06/how-austin-texas-has-evolved-into-a-city-of-unicorns-and-tech-giants/, accessed July 11, 2023. ("Austin made headlines in 2021 for being "the place" for startup founders and venture capitalists alike to set up shop.")

Finally, some small and medium businesses, such as automobile dealers exclusively serving a car manufacturer, may also likely be negatively impacted by the implementation of legislation modeled after the New York Bill. Their exposure will depend on the nature of the vertical contracts they sign or the growth strategies they adopt. Enforcing against practices that support brand equity, product line innovations, investment in intangibles, and intellectual property will deprive small and medium firms from particularly efficient paths to growth.

VIII. Technical Appendix

A. Modeling a Firm's Decision to Engage in Certain Business Conducts Under a Given Regulatory Regime

Model of firm's decision to proceed with M&A opportunity

Consider a set of firms with M&A opportunities in a given year, irrespective of whether the opportunity is procompetitive or anti-competitive. Each firm decides whether or not to proceed with the opportunity by comparing its observed benefits and expected costs.

Prior to proceeding with the merger, firm i observes its benefit of the merger, denoted as $benefit_{im}$. Suppose further that the $benefit_{im}$ follows a log-normal distribution with mean $benefit_m$. Mathematically, $benefit_{im}$ can be rewritten as:

$$benefit_{im} = benefit_m \times \varepsilon_i$$

where $benefit_m$ is the average benefit (as a percent of firm revenues) and ε_i is the idiosyncratic benefit component that follows a log-normal distribution, is always greater than zero, and has a mean of one.[230] The interpretation is that some firms receive benefits that are higher/lower than the average benefit, $benefit_m$. For instance, if ε_i is 0.9, then firm i's benefit of a merger opportunity is 10% lower than the average. If ε_i is 1.1, then firm i's benefit is 10% higher than the average.

Suppose that with probability a_m the merger is investigated.[231] If the merger is investigated, there is probability c_m the merger is challenged by either the imposition of remedies or outright prohibition.[232] If the merger is challenged, the firm pays the litigation costs d_m (as a percent of firm revenues). Conditional on being challenged, a firm may agree to a consent decree with probability r_m or the merger may be blocked with probability b_m.[233] If the merger is blocked, the firm loses the expected benefits of the merger. If a consent decree is reached, the firm loses a

230 As a technical matter, $E(\varepsilon_i) = e^{\mu+\sigma Z}$ where Z is a standard normal, so $\mu + \sigma Z$ is a normal distribution with μ as its mean and σ as its standard deviation. When $\mu = -\sigma^2/2$, $E(\varepsilon_i) = 1$.

231 "Investigation" refers to receiving Second Request from the FTC and DOJ. *See* Joseph Clougherty and Jo Seldeslachts, "The Deterrence Effects of Us Merger Policy Instruments," *The Journal of Law, Economics, & Organization*, Vol. 29, No. 5, 2013, pp. 1114-1144, Table 1.

232 "Challenge" refers to the imposition of a remedy or the outright prohibition of the merger by the FTC and DOJ. *See* Joseph Clougherty and Jo Seldeslachts, "The Deterrence Effects of Us Merger Policy Instruments," *The Journal of Law, Economics, & Organization*, Vol. 29, No. 5, 2013, pp. 1114-1144, Table 1.

233 "Block" refers to the merger being prohibited by the FTC and DOJ or the firm challenging the prohibition and losing in court. *See* Joseph Clougherty and Jo Seldeslachts, "The Deterrence Effects of Us Merger Policy Instruments," *The Journal of Law, Economics, & Organization*, Vol. 29, No. 5, 2013, pp. 1114-1144, Table 1. Remedied refers to the cases that are challenged and not prohibited: $r_m = 1 - \frac{\beta_m}{1 - loss_m}$, where $loss_m$ is the DOJ/FTC court loss rate.

fraction of the expected benefit $\varphi < 1$.[234] The expected regulatory cost associated with the merger for firm *i* is then:

$$cost_{im} = a_m c_m (d_m + r_m \times \varphi \times benefit_{im} + b_m \times benefit_{im})$$

The expected value of the merger given the likelihood of the associated costs of litigation, the expected remedies, and the likelihood that the merger would be blocked, is given by the difference between the benefit and the expected cost. The firm decides to proceed with the M&A opportunity if the expected value of the merger, $benefit_{im} - cost_{im}$, is greater than zero. The probability that a given firm with the M&A opportunity proceeds is the probability that the expected value of the opportunity is greater than zero, which is:

$$p = P\left(benefit_m \times \varepsilon_i \times \left(1 - a_m c_m (b_m + r_m \phi\right) - a_m c_m d_m > 0)\right) \#(1)$$

There are six potential outcomes:

- $1-p$ share of firms with no profitable M&A opportunities given their characteristics and the regulatory environment.
- $p(1 - a_m)$ share of firms with profitable M&A opportunities that are not investigated by authorities.
- $p a_m (1 - c_m)$ share of firms with profitable M&A opportunities that are investigated by authorities but are not challenged.
- $p a_m c_m r_m$ share of firms with profitable M&A opportunities that are investigated by authorities, challenged, and a consent decree is reached.
- $p a_m c_m b_m$ share of firms with profitable M&A opportunities that are investigated by authorities, challenged, and blocked in court.
- $p a_m c_m (1 - r_m - b_m)$ share of firms with profitable M&A opportunities that are investigated by authorities, challenged, and not blocked in court.

Calibration

We calibrate most parameters to estimates found in academic literature. The remaining parameters are calibrated such that the prediction of the model matches to the relationship between the number of mergers and the challenge rate estimated in the academic literature.

234 In case of remedies, firms need to offer asset divestures or restrictive agreements to antitrust authorities. Such agreements can be costly because they reduce deal synergies. See Jana Fidrmuc, Peter Roosenboom, and Eden Quxian Zhang, "Antitrust Merger Review Costs and Acquirer Lobbying," *Journal of Corporate Finance*, Vol. 51, 2018, pp. 72-97., p.72 ("All large deals face regulatory costs and risks during the antitrust merger review process.2 Although acquiring firms in successful deals avoid paying termination fees, they may need to offer asset divestitures or restrictive agreements to address antitrust concerns. Such negotiated concessions are costly because they reduce projected deal synergies. In addition, the regulatory process gives rise to indirect costs associated with increased interim uncertainty.").

Table 1 below describes the estimates used in the academic literature. The expected benefits of a merger, $benefit_m$, is set to be 1% of firm's profit as a share of its revenue, based on Andrade et al. (2001).[235] We set the investigation rate, a_m, defined as the percent of announced mergers investigated, to be 8%. We set the challenge rate conditional on being investigated, c_m, defined as the number of antitrust actions over the number of antitrust investigations, at 10%. We set the rate at which mergers are blocked conditional on being challenged, b_m, at 8.73%.[236] These estimates are obtained from Clougherty and Seldeslachts (2013).

Each firm faces expected costs related to regulatory investigations and challenges. We set expected litigation costs, d_m, to be 0.39% of firm revenue, based on a 2017 survey conducted by Acritas.[237]

Table 1: Parameters Based on Estimates from the Literature

Parameter	Description	Value	Source
$benefit_m$	Expected benefit of merger	1% of revenues	Andrade, Mitchell, and Stafford, "New evidence and perspectives on mergers," Journal of Economic Perspectives, 2001.
φ	Share of benefits lost if consent decree is reached	20%	Authors' assumption
a_m	Investigation rate	8% of proposed mergers	Clougherty, Joseph A., and Jo Seldeslachts. "The deterrence effects of US merger policy instruments," Journal of Law, Economics, & Organization, 2013.
c_m	Challenge rate	10% of investigated cases	Clougherty, Joseph A., and Jo Seldeslachts. "The deterrence effects of US merger policy instruments," Journal of Law, Economics, & Organization, 2013.

235 Gregor Andrade, Mark Mitchell, and Erik Stafford, "New Evidence and Perspectives on Mergers," *Journal of Economic Perspectives*, Vol. 15, No. 2, 2001, pp. 103-120, p. 116 ("On average, there is an improvement in operating margins following the merger, on the order of 1 percent, which is statistically significant at the 1 percent level."). Andrade et al (2001) defines operating margins as cash flows (operating income) to sales ratio. Cash flows represents firm profits, and are defined as "sales, minus cost of goods sold, and selling and administrative expenses, plus depreciation and goodwill expenses." *See* Paul Healy, Krishna Palepu, and Richard Ruback, "Does Corporate Performance Improve after Mergers?," *Journal of Financial Economics*, Vol. 31, No. 2, 1992, pp. 135-175, p.5 ("We use pre-tax operating cash flows to measure improvements in operating performance. We define operating cash flows as sales, minus cost of goods sold, and selling and administrative expenses, plus depreciation and goodwill expenses.").

236 Block rate is computed as the prohibition rate times one minus court-loss-rate (cases that FTC/DOJ lost) out of prohibitions. $b_m = prohibit_m(1 - loss_m)$.

237 "Patterns in Legal Spend Report," *Acritas*, June, 2017, https://phillipskaiser.com/wp-content/uploads/2018/06/acritas_legal_spend_report_2017.pdf, accessed May 31, 2023, p. 6 ("The country where an organization is based has a big impact on its expected spend level. Most countries sit below the global average. The largest part of our sample base is located in the US (39%), and this, combined with the significantly higher ratio of legal spend to revenue here drives the global average up above most other countries.").

Parameter	Description	Value	Source
b_m	Block rate	8.73% of challenged cases	Clougherty, Joseph A., and Jo Seldeslachts. “The deterrence effects of US merger policy instruments,” 2013.[238]
d_m	Litigation cost	0.39% of revenues	Acritas, Patterns in Legal Spend Report, June 2017.
l_m	DOJ/FTC Court loss rate	3%	Clougherty, Joseph A., and Jo Seldeslachts. “The deterrence effects of US merger policy instruments,” Journal of Law, Economics, & Organization, 2013.

To calibrate α, the firm-level variation in the possible benefits of a merger opportunity, we rely on the empirical findings from Clougherty and Seldeslachts (2013) article on the deterrence effects of U.S. Merger Policy instruments. Clougherty and Seldeslachts (2013) finds that the number of announced horizontal mergers decreases by 10.8% after an increase in the challenge rate of 32 pp.[239]

Note that equation (1) can be rewritten as:

$$p = 1 - F\left(\ln \frac{a_m c_m d_m}{benefit_m\left(1 - a_m c_m \left(b_m + r_m \varphi\right)\right)}\right)$$

Where F is a CDF of the normal distribution with mean μ and variance σ^2. μ is set to be $\mu = -\sigma^2/2$ so that ε_i has a mean of one. The parameter σ is calibrated to match the regression results such that the model predicts a decrease in number of firms that decide to proceed with the merger by 10.8% when the challenge rate (c_m) increases by 32 pp. (from 10% to 42%).[240]

Based on Clougherty and Seldeslachts (2013) results, c_m increases to $\hat{c}_m = c_m + 0.32$. Then the number of firms that decide to merge changes as follows:

238 According to Clougherty and Seldeslachts (2013) average prohibition rate for challenged mergers in the US is 9% and average FTC/DOJ loss rate for prohibited mergers is 3%. We compute block rate as the prohibition rate times one minus court-loss-rate $b_m = prohibit_m(1 - loss_m) = 8.73\%$. *See* Joseph Clougherty and Jo Seldeslachts, “The Deterrence Effects of Us Merger Policy Instruments,” *The Journal of Law, Economics, & Organization*, Vol. 29, No. 5, 2013, pp. 1114-1144.

239 Clougherty and Seldeslachts (2013) runs a linear regression of log industry-level number of mergers on lagged industry-level challenge rate. The resulting coefficient in the most preferred specification is significant at 5% level and equal to minus 0.359 (table 5). Using this regression coefficient, we find that a one standard deviation increase in challenge rate leads to $-0.359 \times 0.32 = -0.115$ decrease in the log number of mergers, which corresponds to 10.8% ($\exp(-0.115) - 1$) decline in the number of mergers. *See* Joseph Clougherty and Jo Seldeslachts, “The Deterrence Effects of Us Merger Policy Instruments,” *The Journal of Law, Economics, & Organization*, Vol. 29, No. 5, 2013, pp. 1114-1144.

240 0.32 is one standard deviation of the challenge rate at the SIC-2 and year level according to Clougherty and Seldeslachts (2013) (table 2). We use the estimated regression coefficient of -0.359 (table 5) between log of the number of mergers and investigation rate to compute the predicted percent change in the number of mergers. *See* Joseph Clougherty and Jo Seldeslachts, “The Deterrence Effects of Us Merger Policy Instruments,” *The Journal of Law, Economics, & Organization*, Vol. 29, No. 5, 2013, pp. 1114-1144.

$$\frac{\widehat{N_m}}{N_m} = \frac{1 - F\left(\ln\frac{a_m \widehat{c_m} d_m}{benefit_m\left(1 - a_m \widehat{c_m}\left(b_m + r_m\varphi\right)\right)}\right)}{1 - F\left(\ln\frac{a_m c_m d_m}{benefit_m\left(1 - a_m c_m\left(b_m + r_m\varphi\right)\right)}\right)}$$

Using the parameters specified in **Table 1**, firm-level variation, σ, is calibrated to 2.06 such that the model predicts $\frac{\widehat{N_m}}{N_m} = 0.892$, a 10.8% decrease in the number of mergers.

Modeling Deterrence of Procompetitive M&A Activity

The model described above considers *all* mergers. We impose additional assumptions to make inference on how firms adopting *procompetitive* mergers would respond to the challenge rate and prohibit rate.

- First, we assume that the distribution which governs the distribution of firm's idiosyncratic cost of being challenged associated with procompetitive merger opportunities follows the same distribution that was calibrated in **Section VIII.A.** The distribution (but not the probability) of firm specific benefits from anti-competitive and procompetitive mergers are assumed to be the same in the population of firms around the enforcement threshold. Once challenged, both procompetitive and anticompetitive mergers face the same cost.
- Second, we assume that the expected benefits from the merger and the litigation costs for procompetitive mergers are the same as the expected benefits and costs calibrated in **Section VIII.A** for the entire population of firms in the area around the enforcement threshold.
- Third, we assume that the investigation rate for procompetitive mergers is the same as the investigation rate observed in the data. Further, we assume that the agencies currently recognize the benefit of procompetitive mergers and would not challenge any of these mergers in the as-is world. In other words, all procompetitive mergers are not challenged and therefore are not blocked in the as-is world.

In addition to these assumptions, we also estimate the share of firms that consider a procompetitive merger opportunity. Let μ denote this share. Assuming that the policy currently challenges most anti-competitive mergers and no procompetitive mergers, the approximate share of procompetitive mergers in total mergers is 90% (one minus current challenge rate) and firms considering procompetitive mergers are not deterred. Then, restricting our attention to the firms with procompetitive merger opportunities, according to the model, μp share of firms are involved in procompetitive mergers. According to Andrade et al. (2001), the share of public firms engaged in M&A activities is equal research.cclanet.org

to 5% in 1998.[241] Given this figure, we calibrate procompetitive merger opportunity probability as:

$$\mu = \frac{90\% \times 5\%}{p} = 4.5\%$$

241 See Gregor Andrade, Mark Mitchell, and Erik Stafford, "New Evidence and Perspectives on Mergers," *Journal of Economic Perspectives*, Vol. 15, No. 2, 2001, pp. 103-120, at Figure 1.

Modelling Deterrence of Unilateral Conduct

We adapt the model calibrated for M&A activity to unilateral conduct. In particular, we adjust a number of estimates, namely the intervention rates, firm-level expected benefit, cost associated with unilateral conduct, and the share of firms that identify a procompetitive opportunity of such conduct. We assume that the intervention rates for unilateral conduct are lower. We assume that the expected benefit has the same dispersion as the one we calibrated for the M&A opportunity, but that the average benefit from the conduct for a firm is 5.6% instead of 1%.[242] We assume that the firm faces the loss of three times the benefits associated with the opportunity, as a result of the New York Bill permitting the recovery of treble damages.[243] Finally, we assume that 60% of firms receive a procompetitive unilateral conduct opportunity based on the share of multi-product firms.[244]

B. Estimating the Economic Cost of the Implementation of Legislation Modeled after the New York Bill

Quantification of the Deterrence Effect of the New York Bill

We model the likely overdeterrence associated with the New York Bill by increasing the intervention rate for M&A activity and unilateral conduct. Changes in these rates have two effects: 1) more firms are deterred from procompetitive activity and 2) more firms are likely to face over-enforcement on procompetitive activity. Ultimately, both effects decrease the procompetitive conduct.

To quantify the overall share of firms affected by the increase in likelihood of enforcement for M&A activity, we multiply the probability of deterrence among firms considering an M&A opportunity by 4.5%, the share of firms in the U.S. that encounter a procompetitive M&A opportunity. **Table 2** illustrates the share of (i) firms that are deterred,

242 Gregory Crawford and Ali Yurukoglu, "The Welfare Effects of Bundling in Multichannel Television Markets," *American Economic Review*, 2012, pp. 643-685. The paper finds that profits in the cable industry—an industry with bundle products, an example of unilateral conduct—falls by 12.7 when unbundling occurs. Furthermore, the average margin in the cable industry is 44 percent. Therefore, the benefit, defined as change in profit as a share of sales, is then $\frac{\Delta profit}{Sales} = \frac{\Delta profit}{profit}\frac{profit}{Sales} = \frac{\Delta profit}{profit}\frac{(p-c)}{p} = (0.127)(0.44) = 5.6\%$.

243 "Senate Bill S6748," *2023-2024 Legislative Session, The New York State Senate*, 2023-2024, https://www.nysenate.gov/legislation/bills/2023/S6748, accessed May 22, 2023. See full text at https://legislation.nysenate.gov/pdf/bills/2023/S6748, p.4 ("The state, or any political subdivision or public authority of the state, or any person who shall sustain damages by reason of any violation of this section, shall recover three-fold the actual damages sustained thereby, as well as costs not exceeding ten thousand dollars, and reasonable attorneys' fees.").

244 Stevens et al. (2023) finds that 71% of firms in agrifood supply industry in Minnesota, Wisconsin, Florida, and California are horizontally diversified. *See* Andrew Stevens and Jim Teal, "Diversification and Resilience of Firms in the Agrifood Supply Chain," *American Journal of Agricultural Economics*, 2023, Table 2, p. 8. A survey conducted by McKinsey finds that 75 percent of companies have at least engaged in a business activity outside their core businesses. *See* "Growing Beyond the Core Business, Survey," *McKinsey & Company*, July 1, 2015, accessed July 3, 2023, at p. 2 ("Three-quarters of respondents say that over the past five years, their companies have pursued at least one business activity in a new category"). BDC 2015 study finds that 68% of small and mid-sized businesses in Alberta, Canada have more than one product or business line. *See* "Diversify, Diversify, Diversify... a Key Growth Strategy for Small and Mid-Sized Firms," *Business Development Bank of Canada*, November 2015, https://www.bdc.ca/globalassets/digizuite/10407-diversification_financial_performance.pdf, accessed July 3, 2023, Chart 1, p. 4. To be conservative, we assume that 60% of firms are diversified and engage in unilateral procompetitive conduct.

(ii) firms that still proceed with the mergers and are challenged, (iii) firms that reach consent decrees, and (iv) firms that are enjoined from the merger.

Table 2: Table 2: Share of Firms Impacted by Overenforcement Mergers and Acquisitions

Firm Size	Share of Firms Deterred	Share of Firms Experiencing Enforcement Activities		
		Challenge	Consent Decree	Enjoin
Small	0.22%	0.04%	0.00%	0.04%
Medium	1.30%	0.29%	0.02%	0.26%
Large	2.30%	0.55%	0.04%	0.50%

Similarly, to quantify the overall share of firms affected by the increase in likelihood of enforcement for unilateral conduct, we multiple the probability of deterrence among firms considering a procompetitive conduct by 60%, the share of firms in the U.S. that engage in procompetitive unilateral conducts. **Table 3** illustrates the share of (i) firms that are deterred, (ii) firms that still proceed with the unilateral conducts and are challenged through litigation, (iii) firms that reach a settlement, and (iv) firms that receive an injunction.

Table 3: Table 3: Share of Firms Impacted by Overenforcement Unilateral Conduct

Firm Size	Share of Firms Deterred	Share of Firms Experiencing Enforcement Activities		
		Litigation	Settlement	Injunction
Small	0.00%	0.02%	0.00%	0.02%
Medium	0.39%	0.60%	0.04%	0.54%
Large	3.86%	3.51%	0.25%	3.16%

To quantify the economic losses associated with the deterred, remedied, and blocked merger and unilateral conduct opportunities, we rely on the 2017 Census Bureau's Statistics of U.S. Businesses (SUSB) that contains state-level information on number of firms, number of establishments, employment, annual payroll, and receipts (operating revenues) for most U.S. business establishments by different firm size bins.[245] The SUSB data also provide economic activity measures for different firm size bins, NAICS industries, and states.

245 The SUSB data covers all U.S. business establishments with paid employees. The SUSB covers all NAICS industries except crop and animal production; rail transportation; Postal Service; pension, health, welfare, and vacation funds; trusts, estates, and agency accounts; office of notaries; private households; and public administration. The SUSB also excludes most government employees. The SUSB data also excludes non-employer firms. *See* "About This Program," *United States Census Bureau*, April 1, 2022, https://www.census.gov/programs-surveys/susb/about.html, accessed July 3, 2023.

Quantification of the Economic Costs Associated with the New York Bill

In addition to foregone profits and litigation costs, other economic costs associated with the New York Bill include foregone investment, lower tax revenues, and reduced job creation.

c. Foregone investment and R&D

Lewellen and Lewellen (2016) reports that a one dollar increase in firm cash flow is associated with an additional $0.35 of total long-term investment (defined as changes in fixed assets). They also report that a dollar of additional cash flow is associated with $0.29 of additional investment for firms that are least likely to be constrained and $0.53 of additional investment for firms that are the most likely to be constrained.[246]

We assume that small firms are constrained and have an investment elasticity equal to 0.53, while large firms are unconstrained and have an investment elasticity of 0.29. For medium firms we use an average investment elasticity of 0.35. We compute investment losses by multiplying investment elasticities by the firms' profit losses from the New York's Bill.

Brown et.al. (2009) estimate that a one dollar increase in profit is associated with an additional $0.16 of R&D for firms in high-tech industries.[247] To quantify the R&D losses caused by the New York's bill we computed the profit losses for the small, medium, and large firms in high-tech industries and multiplied them by the R&D elasticity.[248]

246 Jonathan Lewellen and Katharina Lewellen, "Investment and Cash Flow: New Evidence," *Journal of Financial and Quantitative Analysis*, Vol. 51, No. 4, 2016, pp. 1135-1164, p.1137 ("Our results suggest that investment and cash flow are strongly linked after controlling for a firm's investment opportunities. For the full sample of firms, basic ordinary least squares (OLS) investment regressions (with no correction for measurement error in q) show that an additional dollar of cash flow is associated with an extra $0.14 of working capital, $0.26 of capital expenditures, and $0.35 of total long-term investment."), p.1150 ("Controlling just for MB, constrained firms spend an extra $0.19 on working capital, $0.41 on capital expenditures, and $0.53 on all fixed assets for each additional dollar of cash flow, compared with cash flow effects of $0.02, $0.28, and $0.29, respectively, for unconstrained firms.").

247 Brown et. al. (2009) identifies high tech industries by SIC codes 283, 357, 366, 382, 384, and 737. *See* James Brown, Steven Fazzari, and Bruce Petersen, "Financing Innovation and Growth: Cash Flow, External Equity and the 1990s R&D Boom," *The Journal of Finance*, Vol. 64, No. 1, 2009, pp. 151-185, Table II. We matched SIC codes to NAICS codes using the SIC-NAICS crosswalk. *See* "Sic to Naics Crosswalk," *NAICS Association*, https://www.naics.com/sic-naics-crosswalk-search-results/, accessed July 3, 2023.

248 We computed total revenues for firms in high tech industries and we assumed that share of affected firms and conduct benefits are the same as for the overall economy.

d. Foregone tax revenues

Federal tax rate is flat at 21% and state level taxes vary by state.[249] We abstract from any income or expenses that may be tax-deductible as a result of state or federal policies. The impact of overenforcement on procompetitive conduct opportunities can be computed by applying federal and state level tax rates to firms' profit losses.

e. Foregone Payroll and FTE losses

We use empirical evidence on the employment response to corporate tax rates to estimate the elasticity of employment with respect to profit changes. According to Giroud and Rauh (2019) paper a 1 pp increase in the corporate tax rate leads to a 0.4 pp decline in employment[250]:

$$\frac{\partial L}{\partial \tau}\frac{1}{L} = -.4$$

where L is employment and τ is tax.

The response of employment to a marginal change in profits can be computed as:

$$\frac{\partial L}{\partial \pi} = \frac{\partial L}{\partial \tau}\frac{1}{L} \times \frac{L}{1} \times \left(\frac{1}{\frac{\partial \pi}{\partial \tau}}\right) = -0.4 \times \frac{L}{1} \times \left(\frac{1}{\frac{\partial \pi}{\partial \tau}}\right)$$

where π denotes firms' profits and can be computed as revenue minus cost adjusted for taxes:

The derivative of profits with respect to corporate tax rate is:

249 *See* "Key Elements of the U.S. Tax System," *The Tax Policy Center Briefing Book*, https://www.taxpolicycenter.org/briefing-book, accessed July 11, 2023 ("The United States imposes a tax on the profits of US resident corporations at a rate of 21 percent (reduced from 35 percent by the 2017 Tax Cuts and Jobs Act)."); Janelle Fritts, "State Corporate Income Tax Rates and Brackets for 2023," *Tax Foundation*, January 24, 2023, https://taxfoundation.org/publications/state-corporate-income-tax-rates-and-brackets/, accessed July 3, 2023. We used tax rates for ">$0" bracket for most states: 6.5% for New York (*See* "Definitions for Article 9-a Corporations," *New York State, Department of Taxation and Finance*, January 9, 2023, https://www.tax.ny.gov/bus/ct/def_art9a.htm#eni, accessed July 3, 2023eni), 8.84% for California (See "Business Tax Rates," *State of California, Franchise Tax Board*, September 21, 2021, https://www.ftb.ca.gov/file/business/tax-rates.html, accessed July 3, 2023.), 4.9% for Indiana (*See* "Corporate Tax and Sales Tax History," *Indiana Department of Revenue*, https://www.in.gov/dor/business-tax/tax-rates-fees-and-penalties/corporate-tax-and-sales-tax-history/, accessed July 3, 2023), 9.8% for Minnesota (*See* Joel Michael, "Corporate Franchise Tax," *The Research Department of the Minnesota House of Representatives*, June 2015, https://www.house.mn.gov/hrd/pubs/ss/sscorpft.pdf, accessed July 3, 2023), 0% for Texas (*See* "Corporate Franchise Tax," *Austin Chamber*, https://www.austinchamber.com/economic-development/taxes-incentives/corporate-franchise-tax, accessed July 3, 2023), and 4.55% for Colorado (See "Corporate Income Tax," *First Regular Session 74th, Colorado General Assembly*, https://leg.colorado.gov/agencies/legislative-council-staff/corporate-income-tax%C2%A0, accessed July 3, 2023). For Maine, we conservatively selected 8.33% tax rate which corresponds to ">1,050,000" bracket because most business belong to this bracket or higher.

250 See Xavier Giroud and Joshua Rauh, "State Taxation and the Reallocation of Business Activity: Evidence from Establishment-Level Data," *Journal of Political Economy*, Vol. 127, No. 3 2019, pp. 1262-1316, p. 31. The paper argues that a rise in state-level taxation affects employment through two main channels. First, businesses might hire less employees due to the change in after-tax profits. On the other hand, businesses might also move their activities across states. The paper estimates that the total effect is split roughly equally between these two channels. Similarly, New York's bill can affect New York's employment by changing firms' profits and by incentivizing New York's firms move their employees to different states. (p.2 "State-level business taxation could depress business activity through several channels. Businesses that might otherwise have hired or invested might simply not do so due to the difference between the pre-tax and after-tax profits, or alternatively business might move their activities to another U.S. state.").

$$\frac{\partial \pi}{\partial \tau} = -(P-C)Q = -\pi_{pretax}$$

The impact of change in profit on private employment is:

In 2023, average gross margin (ratio of pre-tax profit to revenue) was equal to 36% for the US firms.[251] We can use this statistic to extrapolate for the missing data on profits (pre-tax):

$$\pi^*_{i,\ \text{pre-tax}} = Revenue_i \times 0.36$$

where π_i denotes the total pre-tax profit of i = small, medium, large firms in New York, and $Revenue_i$ denotes the total revenue of i = small, medium, large firms in New York.

The impact of change in profit on private employment of small, medium and large firms can be estimated as:

$$\Delta \text{Employment}_i = 0.4\, \text{L}_i \frac{\Delta \text{Profit}_i}{\pi^*_{i,\ pre-tax}}$$

where Δ Profit$_i$ denotes benefit losses due to New York bill's effect on mergers and other conduct.

Change in private payroll can be computed by multiplying the change in private employment by the average wage of small, medium, and large firms.

We further assume that 44% of state and government budget losses from New York Bill would have been spent on state employees.[252] To compute these additional FTE losses, we divide 44% of state tax losses by the average wage of state government employees,[253] and we divide 44% of federal tax losses by the average wage of federal government employees in the state.[254]

251 Aswath Damodaran, "Margins by Sector (Us)," January 2023, https://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/margin.html, accessed July 3, 2023.

252 Elizabeth McNichol, "Some Basic Facts on State and Local Government Workers," *Center on Budget and Policy Priorities*, June 15, 2012, https://www.cbpp.org/sites/default/files/atoms/files/2-24-11sfp.pdf, accessed July 3, 2023, p.3 ("[T]he total costs of compensation for state and local workers [is] about 44 percent of state and local spending.

253 Maine has multiple brackets for state corporate income tax: 3.5% for firms whose incomes are between $0 and $350,000; 7.93% for forms whose incomes are between $350,000 and $1,050,000; 8.33% for firms whose incomes are between $1,050,000 and $3,500,000; and 8.93% for firms whose incomes are above $3,500,000. The average revenue for a firm in Maine is $3.3 million per year. In 2023, average gross margin (ratio of pre-tax profit to revenue) was equal to 36% for the US firms, which means the average pre-tax profit for a firm in Maine is above $1,050,000. Therefore, we assume that the average firm in Maine falls in the income bracket between $1,050,000 and $3,500,000 and faces a corporate tax rate of 8.33%.

254 Government wages are computed using the data from Bureau of Labor Statistics, Quarterly Census of Employment and Wages, Employment and Wages, Annual Averages 2017. See "Employment and Wages, Annual Averages 2017," *U. S. Bureau of Labor Statistics*, October 6, 2022, https://www.bls.gov/cew/publications/employment-and-wages-annual-averages/2017/home.htm, accessed July 3, 2023.

f. 10-year projection of GDP and FTE losses

To calculate GDP loss, we rely on the income approach, used by U.S. Bureau of Economic Analysis.[255] That is, loss in GDP in 2017 is calculated as the sum of foregone profits and decrease in private employee payroll calculated in **Section VIII.C**.[256] We compute the decrease in GDP growth in 2017 as GDP loss divided by GDP in 2016.

To calculate GDP loss in 2023 to 2032, we compare the GDP trajectory under the New York Bill to the GDP trajectory without the New York Bill. To calculate the GDP trajectory without the New York Bill, we assume that each year the state's GDP grows based on the annual growth rate of CBO's projection of US GDP.[257] To calculate the GDP trajectory under the New York Bill, we assume that each year the state's GDP grows based on the annual growth rate of US GDP provided by CBO, minus the decrease in GDP growth as a result of the New York Bill. The difference in the GDP trajectories in each year reflect the GDP losses due to the New York Bill.

Similarly, to calculate FTE loss in 2023 to 2032, we compare the FTE trajectory under the New York Bill to the FTE trajectory without the New York Bill. We calculate the FTE trajectory without the New York Bill by assuming that each year the state's FTE grows based on the annual growth rate of CBO's projection of US total nonfarm employment provided.[258] To calculate FTE trajectory under the New York Bill, we assume that each year the state's FTE grows based on the annual growth rate of US employment provided by CBO, minus the decrease in FTE growth as a result of the New York Bill. The difference in the FTE trajectories in each year reflect the FTE losses due to the New York Bill.

255 "Concepts and Methods of the U.S. National Income and Product Accounts," *Bureau of Economic Analysis*, December 2022, https://www.bea.gov/resources/methodologies/nipa-handbook/pdf/all-chapters.pdf, accessed June 14, 2023.

256 We use state level GDP in 2017 to be consistent with our main source for firms' revenues (SUSB) which is only available in 2017.

257 CBO does not provide state-level GDP projections. We assume that state-level GDP grows at the same rate as the US GDP.

258 CBO does not provide state-level employment projections. We assume that state-level employment grows at the same rate as the US total employment.

g. National Spillover on GDP and FTE losses

i. Overview

After estimating the state-level economic impacts of antitrust overenforcement associated with the New York Bill implemented in the seven states, we estimate the nationwide impact of such legislation by aggregating the state effects and accounting for spillovers that extend nationwide. In this section, we describe the methodology to calculate these national spillovers. Specifically, we account for national spillovers by examining the impact of foregone profits in seven states on the aggregate U.S. GDP, utilizing the input-output ("IO") framework.

ii. Nationwide Impact on Household Income and Consumption

Our model suggests that the New York Bill will likely affect firm's profit, which in turns affects the stakeholders' incomes of the affected firms. A reduction in stakeholders' incomes will in turn affect their consumptions and other household consumptions. To measure the how change in firm's profit affects its stakeholder's income, we rely on Lewellen and Lewellen (2016) article, which finds that a one dollar decrease in profit for firms is associated with a decrease of \$0.06 of dividend payouts and \$0.13 of share repurchases, leading to \$0.19 decrease in a stakeholder's income for \$1 decline in firm profits.[259] To measure how this would change the stakeholders' consumption, we rely on estimates from the academic literature which finds that households consume approximately 50% of change in their income. For example, Parker et al. (2013) finds that average response of total consumption expenditure ranges from \$0.5 to \$0.9% to a \$1 change in income.[260] To be conservative, we use the lower bound estimate of \$0.5.

iii. Production Network Methodology

We trace the impact of this change in household consumption on the U.S. economy using IO production network structure. Specifically, we use Leontief's Input-Output Model which measures the interconnectedness of sectors in an economy through supply (purchase) inputs to (from) each other.[261] Output of a firm in each sector can

259 Jonathan Lewellen and Katharina Lewellen, "Investment and Cash Flow: New Evidence," *Journal of Financial and Quantitative Analysis*, Vol. 51, No. 4, 2016, pp. 1135-1164. While a \$1 decline in firm profits also leads to a decline of \$0.13 of debt reduction, leading to higher household income, we conservatively exclude the changes in household income from firms' debt repayments.

260 Jonathan Parker, Nicholas Souleles, David Johnson, and Robert McClelland, "Consumer Spending and the Economic Stimulus Payments of 2008," *American Economic Review*, Vol. 103, No. 6, 2013, pp. 2530-2553, p. 2531. ("We also find a significant effect on the purchase of durable goods and related services, primarily the purchase of vehicles, bringing the average response of total CE consumption expenditures to about 50 to 90 percent of the payments during the three-month period of receipt.") *See also* Bunn, Le Roux, Reinold, and Surico (2018) who find that the average marginal propensity to consume out of a negative income shock is estimated to be between 0.46 and 0.68. Philip Bunn, Jeanne Le Roux, Kate Reinold, and Paolo Surico, "The Consumption Response to Positive and Negative Income Shocks," *Journal of Monetary Economics*, Vol. 96, 2018, pp. 1-15

261 Wassily Leontief, "Input-Output Economics," *Scientific American*, Vol. 185, No. 4, October 1951, pp. 15-21.

be consumed by other firms in the same sector or other sectors as intermediate inputs, purchased by government, and final consumers. We now present a methodology to assess how changes in household consumption propagate through the wider economy through these interconnected sectors.

Consider an economy with N sectors, denoted by $i = 1,2,\dots,N$. Assume that sector j requires a_{ij} units of intermediate input from sector i to produce one unit of a sector j good. Let $x_1, x_2, \dots, x_n$ be total output of each sector $i = 1,2,\dots,N$, respectively, and amount consumed by government/consumers is b_i. Then, IO linkages in this economy can be represented by the following set of equations:

$$x_i = \sum_{j=1}^{N} a_{ij} x_j + b_i,\ i = 1,2,\dots,N.$$

Or, in matrix form $X = AX + B$, where X is a vector of outputs, B is a vector of final demand, and A is the IO matrix.

$$A = \begin{pmatrix} a_{11} & \cdots & a_{1N} \\ \vdots & \ddots & \vdots \\ a_{N1} & \cdots & a_{NN} \end{pmatrix}, X = \begin{pmatrix} x_1 \\ \vdots \\ x_N \end{pmatrix}, B = \begin{pmatrix} b_1 \\ \vdots \\ b_N \end{pmatrix}$$

This system of equations represents the economy at a stationary equilibrium. If overenforcement changes the final demand B, then the change in final output for each sector would be:

$$\Delta X = A\Delta X + \Delta B$$

We can transform the above system of equations as

$$\Delta X = (I_n - A)^{-1}\Delta B$$

Where I_n is an n-dimensional identity matrix.

iv. US IO Matrix

To apply the methodology discussed above, we construct an IO table for the US using the 2017 Bureau of Economic Analysis ("BEA") Use Table. The BEA Use Table is a matrix, where each row of the matrix represents the amount of the sector in that row that is used by the sector in that column.[262]

262 Following di Giovanni et al. (2023), we remove the following sectors to perform our analysis: government sectors, scrap, used and secondhand goods and noncomparable imports and rest-of-the-world adjustment. *See* Julian Di Giovanni, "ebnem Kalemli-Özcan, Alvaro Silva, and Muhammed Yildirim, "Quantifying the Inflationary Impact of Fiscal Stimulus under Supply Constraints," *National Bureau of Economic Research, Working Paper 30892*, 2023.

To begin with, we normalize the cells of the Use Table by the total output of each column sector to get the matrix A described above. Matrix A is also called the technology matrix or the direct requirement matrix. Each cell in a column of the direct requirements matrix shows how many cents of each producing industry's goods and/or services are required to produce one dollar of the consuming industry's production and are called technical coefficients.

We then use the matrix A to get the matrix $(I_n - A)^{-1}$, which is also called the Leontief Inverse matrix, or total requirement matrix. Each cell in a column of this matrix represents cents by which the output of every row industry would go up for a dollar increase in output of the column industry.

The BEA Use Table also includes the personal consumption expenditure for goods and services in each sector, which can be utilized to determine the proportion of household consumption allocated to each sector. Utilizing the BEA Use Table, we then calculate the decline in demand by households for their goods and services due to overenforcement, that is the vector ΔB.

v. Quantification of National Spillovers

Given the vector of consumption change of the stakeholders, ΔB, and the Leontief Inverse matrix, $(I_n - A)^{-1}$, we can calculate the change in final output for each sector as $\Delta X = (I_n - A)^{-1} \Delta B$.

We then calculate value added to output ratio for each sector using the BEA Use Table and multiply it by output loss in each sector (that is, elements of the vector, ΔX) to determine value added loss in each industry. Finally, we aggregate the value-added loss in each industry to get the loss in GDP.

vi. GDP and FTE Losses from National Spillovers

We assume that spillover effects result in additional drop in the national GDP growth rate. We compute this percentage loss by dividing aggregate value added of spillover losses derived in the previous section by the national GDP. We compute the US GDP growth path under the New York's bill policy with and without spillovers, and we attribute the difference between the two to the GDP losses from spillovers. To compute the National FTE losses from spillover effects, we use the relationship between GDP changes and unemployment changes. According to Ball et.al. (2017), a 1% decrease in GDP results in 0.4 pp increase in unemployment rate.263 Assuming that labor force does not change due to the New York Bill, this relationship implies that a 1% decrease in GDP results in 0.4 pp decrease in the employment rate. We use this relationship together with yearly GDP losses due to the spillover and CBO projections of the Labor Force to derive the FTE spillover losses in 2023 and 2032.

263 See Laurence Ball, Daniel Leigh, and Prakash Loungani, "Okun's Law: Fit at 50?," *Journal of Money, Credit and Banking*, Vol. 49, No. 7, 2017, pp. 1413-1441.

IX. References

Legal Documents

- *American Tobacco Co. V. United States*, 147 F.2d 93 (6th Cir. 1945), March 26, 1945.
- *Aspen Skiing Co. V. Aspen Highlands Skiing Corp., 472 U.S.*, No. 84-510, June 19, 1985.
- *Bailey V. Allgas, Inc.*, 284 F.3d 1237 (11th Cir. 2002), March 8, 2002.
- *Blue Cross Blue Shield V. Marshfield Clinic*, 65 F.3d 1406 (7th Cir. 1995), September 18, 1995.
- *Google and Alphabet V. Commission*, No. T-612/17, November 10, 2021.
- *Leegin Creative Leather Products, Inc. V. Psks, Inc.*, 551 U.S. 877, June 28, 2007.
- *Nat'l Collegiate Athletic Ass'n V. Alston*, 141 S. Ct., June 21, 2021.
- *Steven Floyd V. Amazon.Com, Inc. And Apple Inc.*, No. 2:22-cv-01599, Document 37, JCC Amended Class Action Complaint, February 27, 2023.
- *U.S. Anchor Mfg., Inc. V. Rule Industries, Inc.*, 7 F.3d 986 (11th Cir. 1993), November 23, 1993.
- *U.S. V. Dentsply Intern., Inc.*, 399 F.3d 181 (3d Cir. 2005), February 24, 2005.
- *U.S. V. Microsoft Corp.*, 253 F.3d 34 (D.C. Cir. 2001), June 28, 2001.
- *United States Court of Appeals, Ninth Circuit, Epic Games, Inc. V. Apple, Inc.*, No. 21-16506, April 24, 2023.
- *United States of America V. Miscrosoft Corporation*, 253 F.3, June 28, 2001.
- *United States V. Aluminum Co. Of America Et Al*, 91 F. Supp. 333 (S.D.N.Y. 1950), June 2, 1950.
- *United States V. United Shoe Machinery Corp.*, 110 F. Supp. 295, February 18, 1953.
- *Verizon Communications, Inc. V. Law Offices of Curtis V. Trinko, Llp*, 540 U.S., January 13, 2004.

Financial Documents

- Wayfair Inc., Form 10-K, December 31, 2022.

Public Documents

- *Google AI*, https://ai.google/tools/, accessed June 14, 2023.
- *Meta*, https://business.facebook.com/, accessed June 1, 2023.
- *THOR COMPANIES*, https://www.thorindustries.com/thor-companies, accessed July 11, 2023.
- "1870-1920: The End of the Ocean Highway," *Maine History Online*, https://www.mainememory.net/sitebuilder/site/905/page/1316/print, accessed June 29, 2023.
- "1946-1970: A Different Place," *Maine History Online*, https://www.mainememory.net/sitebuilder/site/909/page/1320/print?popup=1, accessed June 29, 2023.
- "2017 Statistics of U.S. Businesses (Susb) Data," *United States Census Bureau*, March 2023, https://www.census.gov/data/datasets/2020/econ/susb/2020-susb.html, accessed July 14, 2023.
- "About Baker," *Baker*, https://bakerco.com/about-baker/, accessed July 11, 2023.
- "About This Program," *United States Census Bureau*, April 1, 2022, https://www.census.gov/programs-surveys/susb/about.html, accessed July 3, 2023.
- "Abuse Control," *Bundeskartellamt*, https://www.bundeskartellamt.de/EN/Abusecontrol/abusecontrol_node.html, accessed July 12, 2023.
- "Acquisitions by Thor Industries," *Tracxn*, May 22, 2023, https://tracxn.com/d/acquisitions/acquisitionsbyThor-Industries, accessed July 11, 2023.
- "Amazon Developers," *Amazon*, https://developer.amazon.com/, accessed June 1, 2023.
- "Antitrust: Commission Announces Guidelines on Exclusionary Abuses and Amends Guidance on Enforcement Priorities," *European Commission Press Release*, March 27, 2023, https://ec.europa.eu/commission/presscorner/detail/en/ip_23_1911, accessed May 24, 2023.
- "Apple Worldwide Developers Conference," *Apple*, https://developer.apple.com/wwdc23/, accessed June 1, 2023.

- "Article 102 — (Ex Article 82 Tec)," *Lexparency.org*, https://lexparency.org/eu/TFEU/ART_102/, accessed July 12, 2023.
- "Assembly Concurrent Resolution No. 95," *Legislative Counsel Bureau, State of California*, August 23, 2022.
- "Assembly Concurrent Resolution No. 95," *Relative to the California Law Revision Commission*, 2021-2022, California, Assembly.
- "Benefits of Competition and Indicators of Market Power," *Council of Economic Advisers Issue Brief*, April 2016, https://obamawhitehouse.archives.gov/sites/default/files/page/files/20160414_cea_competition_issue_brief.pdf, accessed May 22, 2023.
- "Bipartisan Resolution Would Study California's Antitrust Laws," *Paso Robles Daily News*, July 5, 2021, https://pasoroblesdailynews.com/bipartisan-resolution-would-study-californias-antitrust-laws/128300/, accessed June 2, 2023.
- "Business Tax Rates," *State of California, Franchise Tax Board*, September 21, 2021, https://www.ftb.ca.gov/file/business/tax-rates.html, accessed July 3, 2023.
- "California Agricultural Production Statistics," *California Department of Food and Agriculture*, https://www.cdfa.ca.gov/Statistics/, accessed July 3, 2023.
- "The Capital Group Companies Inc Company Profile," *Dun & Bradstreet*, https://www.dnb.com/business-directory/company-profiles.the_capital_group_companies_inc.a01bdddbe380d08ee71b8709bc60d469.html, accessed July 11, 2023.
- ""Cliffdale Associates, Inc."," *Federal Trade Commission, 103 F.T.C. 110*, 1984, accessed July 10, 2023.
- "Communication from the Commission — Guidance on the Commission's Enforcement Priorities in Applying Article 82 of the Ec Treaty to Abusive Exclusionary Conduct by Dominant Undertakings," *Official Journal of the European Union*, Vol. 45, No. 7, February 24, 2009, pp. 7-20.
- "Competition and Monopoly: Single-Firm Conduct under Section 2 of the Sherman Act: Chapter 1," *Antutrust Division U. S. Department of Justice*, https://www.justice.gov/archives/atr/competition-and-monopoly-single-firm-conduct-under-section-2-sherman-act-chapter-1, accessed January 23, 2024.
- "Concepts and Methods of the U.S. National Income and Product Accounts," *Bureau of Economic Analysis*, December 2022, https://www.bea.gov/resources/methodologies/nipa-handbook/pdf/all-chapters.pdf, accessed June 14, 2023.
- "Consumer Sentinel Network Data Book," *Federal Trade Commission*, 2022, https://www.ftc.gov/system/files/ftc_gov/pdf/CSN-Data-Book-2022.pdf.
- "Contact," *Tesla*, https://www.tesla.com/contact, accessed July 11, 2023.
- "Contact Us," *Elevance Health*, https://www.elevancehealth.com/contact-us, accessed July 11, 2023.
- "Corporate Franchise Tax," *Austin Chamber*, https://www.austinchamber.com/economic-development/taxes-incentives/corporate-franchise-tax, accessed July 3, 2023.
- "Corporate Income Tax," *First Regular Session 74th, Colorado General Assembly*, https://leg.colorado.gov/agencies/legislative-council-staff/corporate-income-tax%C2%A0, accessed July 3, 2023.
- "Corporate Tax and Sales Tax History," *Indiana Department of Revenue*, https://www.in.gov/dor/business-tax/tax-rates-fees-and-penalties/corporate-tax-and-sales-tax-history/, accessed July 3, 2023.
- "Definitions for Article 9-a Corporations," *New York State, Department of Taxation and Finance*, January 9, 2023, https://www.tax.ny.gov/bus/ct/def_art9a.htm#eni, accessed July 3, 2023.
- "Digital Markets Act: Rules for Digital Gatekeepers to Ensure Open Markets Enter into Force," *European Commission*, October 31, 2022, https://ec.europa.eu/commission/presscorner/detail/en/ip_22_6423, accessed July 11, 2023.
- "Diversify, Diversify, Diversify... a Key Growth Strategy for Small and Mid-Sized Firms," *Business Development Bank of Canada*, November 2015, https://www.bdc.ca/globalassets/digizuite/10407-diversification_financial_performance.pdf, accessed July 3, 2023.
- "The Economic Impact of Online Travel Agencies in the United States," *Tourism Economics*, 2019-2021.

- “Employment and Wages, Annual Averages 2017,” *U. S. Bureau of Labor Statistics*, October 6, 2022, https://www.bls.gov/cew/publications/employment-and-wages-annual-averages/2017/home.htm, accessed July 3, 2023.
- “Energy Sector in Texas,” *Texas Economic Development Corporation*, https://businessintexas.com/business-sectors/energy/, accessed July 11, 2023.
- “Federal Trade Commission Act Amendments of 1994,” *United States Congress*, July 21, 1994.
- “Federal Trade Commission Act of 1914,” *United States Congress*, September 26, 1914.
- “GDP by State, ‘Table 1. Gross Domestic Product by State and Region: Level and Percent Change from Preceding Period’,” *U.S. Bureau of Economic Analysis*, 2022, https://www.bea.gov/data/gdp/gdp-state, accessed June 29, 2023.
- “Gii 2022 Results,” *WIPO*, 2022, https://www.wipo.int/edocs/pubdocs/en/wipo-pub-2000-2022-section3-en-gii-2022-results-global-innovation-index-2022-15th-edition.pdf, accessed July 11, 2023.
- “Growing Beyond the Core Business, Survey,” *McKinsey & Company*, July 1, 2015, accessed July 3, 2023.
- “H.F. No. 1563,” *State of Minnesota, House of Representatives*, February 3, 2023, accessed July 6, 2023.
- “H.P. 1161, an Act to Protect Maine’s Consumers by Establishing an Abuse of Dominance Right of Action and Requiring Notification of Mergers,” *131st Maine Legislature, House of Representatives*, April 27, 2023, https://legislature.maine.gov/legis/bills/getPDF.asp?paper=HP1161&item=1&snum=131, accessed May 31, 2023.
- “How Can Publishers Respond to the Power of Platforms?,” *Nieman Lab*, April 27 2022, https://www.niemanlab.org/2022/04/how-can-publishers-respond-to-the-power-of-platforms/, accessed April 19, 2023.
- “Interactive Data Tables,” *U.S. Bureau of Economic Analysis, Regional Data: GDP and Personal Income*, https://apps.bea.gov/itable/?ReqID=70&step=1, accessed June 29, 2023.
- “The Ipa 500,” *INSIDE Public Accounting*, https://insidepublicaccounting.com/top-firms/ipa-500/, accessed July 11, 2023.
- “Irreplaceable Acquisitions: Proposed Platform Legislation and Venture Capital,” *Computer and Communications Industry Association Research Center*, November 8, 2021, https://research.ccianet.org/reports/irreplaceable-acquisitions-proposed-platform-legislation-venture-capital/, accessed January 22, 2024.
- “Key Elements of the U.S. Tax System,” *The Tax Policy Center Briefing Book*, https://www.taxpolicycenter.org/briefing-book, accessed July 11, 2023.
- “Locations,” *Biomarin*, https://careers.biomarin.com/locations, accessed July 11, 2023.
- “Major Employers,” *Colorado Office of Economic Development & International Trade*, https://choosecolorado.com/doing-business/major-employers/, accessed July 11, 2023.
- “Market Share of Leading Retail E-Commerce Companies as of June 2022,” *Statista*, 2023, https://www.statista.com/statistics/274255/market-share-of-the-leading-retailers-in-us-e-commerce/, accessed July 11, 2023.
- “Modern Antitrust Enforcement,” *Yale School of Management*, https://som.yale.edu/centers/thurman-arnold-project-at-yale/modern-antitrust-enforcement, accessed June 15, 2023.
- “Motor Vehicle Manufacturing Companies in Indiana, United States of America,” *Dun & Bradstreet*, https://www.dnb.com/business-directory/company-information.motor_vehicle_manufacturing.us.indiana.html, accessed July 11, 2023.
- “New Ftc Data Show Consumers Reported Losing Nearly $8.8 Billion to Scams in 2022,” *Federal Trade Commission*, February 23, 2023, https://www.ftc.gov/news-events/news/press-releases/2023/02/new-ftc-data-show-consumers-reported-losing-nearly-88-billion-scams-2022, accessed July 3, 2023.
- “New York Legal Market,” *Georgetown Law*, https://www.law.georgetown.edu/your-life-career/career-exploration-professional-development/for-jd-students/explore-legal-careers/legal-markets/new-york-legal-market/, accessed July 11, 2023.
- “Oil and Gas Industry: A Research Guide,” *Library of Congress*, https://guides.loc.gov/oil-and-gas-industry, accessed July 11, 2023.
- “Our Brands,” *Tapestry*, https://www.tapestry.com/our-brands/, accessed July 11, 2023.

- "Patterns in Legal Spend Report," *Acritas*, June, 2017, https://phillipskaiser.com/wp-content/uploads/2018/06/acritas_legal_spend_report_2017.pdf, accessed May 31, 2023.
- "Preferred Purchasing Channels for Furniture in the United States in 2022," *Statista*, https://www.statista.com/statistics/1327969/online-vs-in-store-furniture-purchases-us/, accessed May 31, 2023.
- "The Rise, Fall and Re-Emergence of the Big 4 in Law," *Thomson Reuters*, 2014, https://blogs.thomsonreuters.com/answerson/wp-content/uploads/sites/3/2014/04/infographic-re-emergence-big-4-accounting-firms-law.pdf, accessed July 11, 2023.
- "Sb 933: Protecting Workers and Small Businesses from Dominant Corporations," *American Economic Liberties Project*, June 2021, https://www.economicliberties.us/wp-content/uploads/2021/06/NY-Antitrust-Bill-Explainer_6.2.pdf, accessed May 24, 2023.
- "Segmenting Indiana's Automotive Manufacturing Industry: Jobs and Wages," *InContext*, https://www.incontext.indiana.edu/2010/may-june/article2.asp, accessed July 11, 2023.
- "Senate Bill S6748," *2023-2024 Legislative Session, The New York State Senate*, 2023-2024, https://www.nysenate.gov/legislation/bills/2023/S6748, accessed May 22, 2023. See full text at https://legislation.nysenate.gov/pdf/bills/2023/S6748.
- "Sherman Antitrust Act," *26 Stat. 209, 15 U.S.C. §§ 1-7*, 1890.
- "Sic to Naics Crosswalk," *NAICS Association*, https://www.naics.com/sic-naics-crosswalk-search-results/, accessed July 3, 2023.
- "Small and Medium Businesses: Driving a Large-Sized Economy," *StatsCan*, June 27, 2022, https://statics.teams.cdn.office.net/evergreen-assets/safelinks/1/atp-safelinks.html, accessed July 12, 2023.
- "States Seen as Next Battlefield for Big Tech Antitrust Case," *S&P Global*, October 4, 2022, https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/states-seen-as-next-battlefield-for-big-tech-antitrust-cases-72173093, accessed April 19, 2023.
- "Texas Leads the Nation as Home to the Most Fortune 500 Companies," *Office of the Texas Governor Greg Abbott*, May 24, 2022, https://gov.texas.gov/news/post/texas-leads-the-nation-as-home-to-the-most-fortune-500-companies, accessed July 3, 2023.
- "Texas Senate Hears Testimony on Bills Seeking to Expand Ag's Authority to Pursue Antitrust Litigation," *Southeast Texas Record*, https://setexasrecord.com/stories/642063688-texas-senate-hears-testimony-on-bills-seeking-to-expand-ag-s-authority-to-pursue-antitrust-litigation, accessed July 11, 2023.
- "Top 40 List of Insurers in Texas," *Texas Department of Insurance*, https://www.tdi.texas.gov/company/top40.html, accessed July 11, 2023.
- "Top Companies," *MN Employment and Economic Development*, https://mn.gov/deed/data/economic-analysis/top-companies/, accessed July 11, 2023.
- "Top Employers," *MN Employment and Economic Development*, https://mn.gov/deed/data/economic-analysis/top-companies/, accessed July 11, 2023.
- "Top Private Employers in Maine by Average Monthly Employment - 4th Quarter 2022," *Maine.gov*, https://www.maine.gov/labor/cwri/publications/pdf/MaineTop50Employers.pdf, accessed June 29, 2023.
- "U.K. Digital Markets Competition and Consumer Bill Sets out New Regime to Regulate Big Tech," *Armstrong Teasdale*, May 22, 2023, https://www.armstrongteasdale.com/thought-leadership/u-k-digital-markets-competition-and-consumer-bill-sets-out-new-regime-to-regulate-big-tech/#:~:text=Regulate%20Big%20Tech-,U.K.%20Digital%20Markets%20Competition%20and%20Consumer%20Bill%20Sets,Regime%20to%20Regulate%20Big%20Tech&text=The%20U.K.%20Government%27s%20much%2Dawaited,regulatory%20regime%20for%20digital%20markets., accessed July 11, 2023.
- "U.S. Locations," *Gilead*, https://www.gilead.com/our-company/us-locations, accessed July 11, 2023.
- "Wells Fargo Mailing Addresses," *Wells Fargo*, https://www.wellsfargo.com/help/addresses/, accessed July 11, 2023.
- "Where Opportunity Meets Technology," *Arrow Electronics*, https://www.arrow.com/company, accessed July 11, 2023.

- Ahlborn, Christian, David Evans, and Jorge Padilla, "The Antitrust Economics of Tying: A Farewell to Per Se Illegality," *Antitrust Bulletin*, 2004, https://www.justice.gov/sites/default/files/atr/legacy/2006/11/13/219224_b.pdf, accessed January 23, 2024.
- Albæk, Svend, "Consumer Welfare in Eu Competition Policy," *Aims and values in competition law*, 2013, pp. 67-88.
- Allen, Michael, Kenneth Scheve, and David Stasavage, "Democracy, Inequality, and Antitrust," *Available at SSRN 4358176*, 2023.
- Anderson, Chris, "The Billboard Effect: Online Travel Agent Impact on Non-Ota Reservation Volume," *Cornell Hospitality Report*, 2009.
- Anderson, Chris, and Saram Han, "The Billboard Effect: Still Alive and Well," *Cornell Hospitality Report* Vol. 17, No. 11, 2017.
- Andrade, Gregor, Mark Mitchell, and Erik Stafford, "New Evidence and Perspectives on Mergers," *Journal of* 15, No. 2, 2001, pp. 103-120.
- Ashton, Fred, "The Ftc's Populist Push Is Jeopardizing Its Credibility," *The Hill*, January 26, 2023, https://thehill.com/opinion/finance/3831531-the-ftcs-populist-push-is-jeopardizing-its-credibility/, accessed May 24, 2023.
- Autor, David, David Dorn, Lawrence Katz, Christina Patterson, and John Van Reenen, "The Fall of the Labor Share and the Rise of Superstar Firms," *The Quarterly Journal of Economics*, Vol. 135, No. 2, 2020, pp. 645-709.
- Azevedo, Mary Ann, "Austin Emerges as a City of Unicorns and Tech Giants," *TechCrunch*, April 6, 2022, https://techcrunch.com/2022/04/06/how-austin-texas-has-evolved-into-a-city-of-unicorns-and-tech-giants/, accessed July 11, 2023.
- Ball, Laurence, Daniel Leigh, and Prakash Loungani, "Okun's Law: Fit at 50?," *Journal of Money, Credit and Banking*, Vol. 49, No. 7, 2017, pp. 1413-1441.
- Baluch, Anna, and Kelly Main, "38 E-Commerce Statistics of 2023," *Forbes*, February 8, 2023, https://www.forbes.com/advisor/business/ecommerce-statistics/, accessed May 25, 2023.
- Bernanke, Ben, "Nonmonetary Effects of the Financial Crisis in the Propagation of the Great Depression," *Americam Economic Review*, 1983.
- Berthene, April, "Wayfair.Com Dominates Online Furniture Sales," *Digital Commerce 360*, February 13, 2020, https://www.digitalcommerce360.com/2020/02/13/wayfair-com-dominates-online-furniture-sales/, accessed May 25, 2023.
- Bessen, James, "Information Technology and Industry Concentration," *Boston University School of Law, Scholarly Commons at Boston University School of Law*, Vol. Paper No. 17-41, December 1, 2017.
- Bleier, Alexander, Colleen Harmeling, and Robert Palmatier, "Creating Effective Online Customer Experiences," *Journal of Marketing*, Vol. 83, No. 2, 2019, pp. 98-119.
- Brown, James, Steven Fazzari, and Bruce Petersen, "Financing Innovation and Growth: Cash Flow, External Equity and the 1990s R&D Boom," *The Journal of Finance*, Vol. 64, No. 1, 2009, pp. 151-185.
- Buhart, Jacques, Stéphane Dionnet, and Frédéric Pradelles, "Vertical Agreements & Restriction of Competition by Object: What's New in Europe?," *McDermott Will & Emery*, July 11, 2023, https://www.mwe.com/insights/vertical-agreements-restriction-of-competition-by-object-whats-new-in-europe/, accessed January 22, 2024.
- Bunn, Philip, Jeanne Le Roux, Kate Reinold, and Paolo Surico, "The Consumption Response to Positive and Negative Income Shocks," *Journal of Monetary Economics*, Vol. 96, 2018, pp. 1-15.
- Carlton, Dennis, "Some Observations on Claims That Rising Market Power Is Responsible for U.S. Economy Ills and That Lax Antitrust Is the Villain," *Competition Policy International*, 2020, pp. 1-12.
- Carrier, Michael, "The Four-Step Rule of Reason," *Antitrust*, Vol. 33, No. 2, 2019, available at https://www.antitrustinstitute.org/wp-content/uploads/2019/04/ANTITRUST-4-step-RoR.pdf.
- Cennamo, Carmelo, "Competing in Digital Markets: A Platform-Based Perspective," *Academy of Management Perspectives*, Vol. 35, No. 2, 2021, pp. 265-291.
- Chevalier, Stephanie, "E-Commerce Fraud - Statistics & Facts," *Statista*, Jun 7, 2023, https://www.statista.com/topics/9240/e-commerce-fraud/#topicOverview, accessed July 3, 2023.

- Clougherty, Joseph, and Jo Seldeslachts, “The Deterrence Effects of Us Merger Policy Instruments,” *The Journal of Law, Economics, & Organization*, Vol. 29, No. 5, 2013, pp. 1114-1144.
- Condorelli, Daniele, and Jorge Padilla, “Harnessing Platform Envelopment in the Digital World,” *Journal of Competition Law & Economics*, Vol. 16, No. 2, 2020, pp. 143-187.
- Constantinides, Panos, Ola Henfridsson, and Geoffrey Parker, “Introduction—Platforms and Infrastructures in the Digital Age,” *Information Systems Research*, Vol. 29, No. 2, 2018, pp. 381-400.
- Conway, Michael, “Colorado Insurance Industry Statistical Report,” *Colorado Department of Regulatory Agencies, Division of Insurance*, December 31, 2021.
- Corrado, Carol, Charles Hulten, and Daniel Sichel, “Intangible Capital and Us Economic Growth,” *Review of income and wealth*, Vol. 55, No. 3, September 2009, pp. 661-685.
- Court, Judgment of the, “Établissements Consten S.À.R.L. And Grundig-Verkaufs-Gmbh V Commission of the European Economic Community. Joined Cases 56 and 58-64.,” July 13, 1966, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A61964CJ0056, accessed January 22, 2024.
- Crawford, Gregory, and Ali Yurukoglu, “The Welfare Effects of Bundling in Multichannel Television Markets,” *American Economic Review*, 2012, pp. 643-685.
- Crouzet, Nicolas, and Janice Eberly, “Intangibles, Investment, and Efficiency,” *AEA Papers and Proceedings*, Vol. 108, 2018.
- Cunningham, Colleen, Florian Ederer, and Song Ma, “Killer Acquisitions,” *Journal of Political Economy*, Vol. 129, No. 3, 2021, pp. 649-702.
- Curry, David, “Travel App Revenue and Usage Statistics (2023),” *Business of Apps*, May 24, 2023, https://www.businessofapps.com/data/travel-app-market/, accessed July 11, 2023.
- Damodaran, Aswath, “Margins by Sector (Us),” January 2023, https://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/margin.html, accessed July 3, 2023.
- Deane, Steve, “Over 60 Online Travel Booking Statistics (2022),” *Stratos Jet Charters, Inc.*, January 4, 2022, https://www.stratosjets.com/blog/online-travel-statistics/, accessed May 25, 2023.
- Denicolai, Stefano, Enrico Cotta Ramusino, and Francesco Sotti, “The Impact of Intangibles on Firm Growth,” *Technology Analysis & Strategic Management*, Vol. 27, No. 2, 2015, pp. 219-236.
- Di Giovanni, Julian, "ebnem Kalemli-Özcan, Alvaro Silva, and Muhammed Yildirim, “Quantifying the Inflationary Impact of Fiscal Stimulus under Supply Constraints,” *National Bureau of Economic Research, Working Paper 30892*, 2023.
- Dushnitsky, Gary, and Daniel Sokol, “Mergers, Antitrust, and the Interplay of Entrepreneurial Activity and the Investments That Fund It,” *Vanderbilt Journal of Entertainment & Technology Law*, Vol. 24, No. 2, 2022, pp. 255-287.
- Elliott, Christopher, “Car Rental Companies Are in a “Transformative” Stage. Here’s What It Means for You,” *Forbes*, September 23, 2018, https://www.forbes.com/sites/christopherelliott/2018/09/23/car-rental-companies-are-in-a-transformative-stage-heres-what-it-means-for-you/?sh=1e1031676dd5, accessed May 25, 2023.
- Fazzari, Steven, Glenn Hubbard, and Bruce Petersen, “Financing Constraints and Corporate Investment,” *Brookings Papers on Economic Activity*, Vol. 19, No. 1, 1988, pp. 141-206.
- Felix, Alison, “A Look Back at the Rocky Mountain Economy 100 Years Ago,” *Federal Reserve Bank of Kansas City*, December 14, 2017, https://www.kansascityfed.org/denver/rocky-mountain-economist/rme-2017q4/, accessed July 3, 2023.
- Fidrmuc, Jana, Peter Roosenboom, and Eden Quxian Zhang, “Antitrust Merger Review Costs and Acquirer Lobbying,” *Journal of Corporate Finance*, Vol. 51, 2018, pp. 72-97.
- Fish, Noah, “Minnesota Ag Keith Ellison Preaches Antitrust Authority at Mfu Discussion,” *AGWeek*, June 15, 2022, https://www.agweek.com/news/policy/minnesota-ag-keith-ellison-preaches-antitrust-authority-at-mfu-discussion, accessed May 31, 2023.
- Ford, George, Randolph Beard, and Michael Stern, “Innovation, Exit, and Restrictions on Tech Mergers and Acquisitions,” *Phoenix Center Policy Bulletin* Vol. 50 2021.
- Fritts, Janelle, “State Corporate Income Tax Rates and Brackets for 2023,” *Tax Foundation*, January 24, 2023, https://taxfoundation.org/publications/state-corporate-income-tax-rates-and-brackets/, accessed July 3, 2023.

- Garcés, Eliana, and Daniel Gaynor, “Conglomerate Mergers: Developments and a Call for Caution,” *Journal of European Competition Law & Practice*, Vol. 10, No. 7, 2019, pp. 457-462.
- Gelfand, David, and Linden Bernhardt, “Vertical Restraints: Evolution from Per Se to Rule of Reason Analysis,” *ABA Antitrust Section Fall Forum*, November 16, 2017, https://www.clearygottlieb.com/~/media/organize-archive/cgsh/files/2017/publications/aba-antitrust-section-fall-forum-vertical-restraints-evolution-from-per-se-to-rule-of-reason-analysis-11-16-17.pdf, accessed May 31, 2023.
- Gertler, Mark, and Simon Gilchrist, “Monetary Policy, Business Cycles, and the Behavior of Small Manufacturing Firms,” *The Quarterly Journal of Economics*, Vol. 109, No. 2, 1994, pp. 309-340.
- Giroud, Xavier, and Joshua Rauh, “State Taxation and the Reallocation of Business Activity: Evidence from Establishment-Level Data,” *Journal of Political Economy*, Vol. 127, No. 3 2019, pp. 1262-1316.
- Gompers, Paul, Will Gornall, Steven N Kaplan, and Ilya Strebulaev, “How Do Venture Capitalists Make Decisions?,” *Journal of Financial Economics*, Vol. 135, No. 1, 2020, pp. 169-190.
- Govindarajan, Vijay, Baruch Lev, Anup Srivastava, and Luminita Enache, “The Gap between Large and Small Companies Is Growing. Why?,” *Harvard Business Review*, August 16, 2019, https://hbr.org/2019/08/the-gap-between-large-and-small-companies-is-growing-why, accessed July 12, 2023.
- Haltiwanger, John, Ron Jarmin, and Javier Miranda, “Who Creates Jobs? Small Versus Large Versus Young,” *Review of Economics and Statistics*, Vol. 95, No. 2, 2013, pp. 347-361.
- Haqqi, Ty, “25 Biggest New York Companies and Stocks,” *Yahoo*, January 9, 2023, https://www.yahoo.com/now/25-biggest-york-companies-stocks-205929793.html, accessed July 11, 2023.
- Healy, Paul, Krishna Palepu, and Richard Ruback, “Does Corporate Performance Improve after Mergers?,” *Journal of Financial Economics*, Vol. 31, No. 2, 1992, pp. 135-175.
- Horton, Thomas Jeffrey, “Rediscovering Antitrust’s Lost Values,” *University of New Hampshire Law Review*, Vol. 16, No. 2, 2018, available at SSRN: https://ssrn.com/abstract=3152619.
- Ingram, David, “Can Anyone Rein in Big Tech? Activists Look to Statehouses,” *NBC News*, November 9, 2021, https://www.nbcnews.com/tech/tech-news/can-anyone-rein-big-tech-activists-look-statehouses-rcna4850, accessed May 22, 2023.
- Kendall, Mark, “101 Best & Most Active New York Investment Banks,” *Investor Available*, 2021, https://investoravailable.com/101-best-most-active-new-york-investment-banks/, accessed July 11, 2023.
- Kennedy, Joe, “Monopoly Myths: Are Superstar Firms Stifling Competition or Just Beating It?,” *Information Technology & Innovation Foundation*, January 11, 2021, https://itif.org/publications/2021/01/11/monopoly-myths-are-superstar-firms-stifling-competition-or-just-beating-it/, accessed June 2, 2023.
- Khan, Lina, “Remarks of Chair Lina M. Khan,” *Charles River Associates Conference, Competition & Regulation in Disrupted Times, Brussels, Belgium*, March 31, 2022.
- Khan, Lina, “Remarks of Chair Lina M. Khan as Prepared for Delivery Fordham Annual Conference on International Antitrust Law & Policy,” *Federal Trade Commission*, September 16, 2022, https://www.ftc.gov/system/files/ftc_gov/pdf/KhanRemarksFordhamAntitrust20220916.pdf, accessed May 22, 2023.
- Kim, Jungkeun, Peter Beomcheol Kim, and Jae-Eun Kim, “Different or Similar Choices: The Effect of Decision Framing on Variety Seeking in Travel Bundle Packages,” *Journal of Travel Research*, Vol. 57, No. 1, 2018, pp. 99-115.
- Kovacic, William, “The Intellectual DNA of Modern U.S. Competition Law for Dominant Firm Conduct: The Chicago/Harvard Double Helix,” *Columbia Business Law Review*, Vol. 1, 2007.
- Lamoreaux, Naomi, “The Problem of Bigness: From Standard Oil to Google,” *Journal of Economic Perspectives*, Vol. 33, No. 3, 2019, pp. 94-117.
- Langlois, Richard, “Hunting the Big Five: Twenty-First Century Antitrust in Historical Perspective,” *The Independent Review*, Vol. 23, No. 3, 2019, pp. 411-433.
- Lee, Freiberg, and Howard, “H.F. No. 2823,” *State of Minnesota, House of Representatives*, March 6, 2023, https://wdoc.house.leg.state.mn.us/leg/LS93/HF2823.0.pdf, accessed May 24, 2023.
- Leontief, Wassily, “Input-Output Economics,” *Scientific American*, Vol. 185, No. 4, October 1951, pp. 15-21.

- Lewellen, Jonathan, and Katharina Lewellen, “Investment and Cash Flow: New Evidence,” *Journal of Financial and Quantitative Analysis*, Vol. 51, No. 4, 2016, pp. 1135-1164.
- Mandrescu, Daniel, “Tying and Bundling by Online Platforms–Distinguishing between Lawful Expansion Strategies and Anti-Competitive Practices,” *Computer Law & Security Review*, Vol. 40, 2021.
- McNichol, Elizabeth, “Some Basic Facts on State and Local Government Workers,” *Center on Budget and Policy Priorities*, June 15, 2012, https://www.cbpp.org/sites/default/files/atoms/files/2-24-11sfp.pdf, accessed July 3, 2023.
- Menze, Jill, “The States of Online Travel Agencies,” *PhocusWire*, April 7, 2022, https://www.phocuswire.com/the-state-of-online-travel-agencies, accessed May 25, 2023.
- Michael, Joel, “Corporate Franchise Tax,” *The Research Department of the Minnesota House of Representatives*, June 2015, https://www.house.mn.gov/hrd/pubs/ss/sscorpft.pdf, accessed July 3, 2023.
- Morar, David, and Anne Washington, “How a Compliance Mindset Undermines Antitrust Reform Proposals,” *Brookings Institution*, September 3, 2020, https://www.brookings.edu/techstream/how-a-compliance-mindset-undermines-antitrust-reform-proposals/, accessed May 22, 2023.
- Nalebuff, Barry, “Bundling, Tying, and Portfolio Effects,” *DTI Economics Paper*, Vol. 1, No. 2, 2003, pp. 1-128.
- Nalebuff, Barry, “Price Discrimination and Welfare,” *CPI Journal*, Vol. 5, 2009.
- Ohlhausen, Maureen, “U.S.-E.U. Convergence: Can We Bridge the Atlantic?,” *Federal Trade Commission, Remarks at the 2016 Goergetown Global Antitrust Symposium Dinner*, September 19, 2016.
- Olson, Parmy, “The Way to Police Big Tech Is through Us States,” *The Washington Post*, September 22, 2022, https://www.washingtonpost.com/business/the-way-to-police-big-tech-is-through-us-states/2022/09/22/aab2c0de-3a7f-11ed-b8af-0a04e5dc3db6_story.html, accessed May 22, 2023.
- Parker, Jonathan, Nicholas Souleles, David Johnson, and Robert McClelland, “Consumer Spending and the Economic Stimulus Payments of 2008,” *American Economic Review*, Vol. 103, No. 6, 2013, pp. 2530-2553.
- Payne, Kevin, and Emily Batdorf, “Best Banks in New York for July 2023,” *Forbes*, July 5, 2023, https://www.forbes.com/advisor/banking/best-banks-in-new-york/, accessed July 11, 2023.
- Pete, Joseph, “Indiana Again Leads Nation in Steel Production,” *Times of Northwest Indiana*, February 4, 2023, https://www.nwitimes.com/news/local/indiana-again-leads-nation-in-steel-production/article_a93cb23d-eeb8-55c7-958b-9518cee5e9e2.html, accessed July 3, 2023.
- Quaker, Daisy, “Amazon Stats: Growth, Sales, and More,” *Amazon*, March 31, 2022, https://sell.amazon.com/blog/amazon-stats, accessed May 25, 2023.
- Rahaman, Mohammad, “Access to Financing and Firm Growth,” *Journal of Banking & Finance*, Vol. 35, No. 3, 2011, pp. 709-723.
- Robbins, Horace, “‘Bigness,’ the Sherman Act, and Antitrust Policy,” *Virginia Law Review*, Vol. 39, No. 7, 1953, pp. 907-948, available at https://doi.org/10.2307/1069774.
- Rosanes, Mark, “The Largest Insurance Companies in the Us - Based on Market Cap,” *Insurance Business America*, March 08, 2023, https://www.insurancebusinessmag.com/us/guides/the-largest-insurance-companies-in-the-us--based-on-market-cap-438805.aspx, accessed July 11, 2023.
- Saint-Antoine, Paul, Joanne Lewers, Lee Roach, Lucas Michelen, John Yi, and Amanda Pasquini, “Private Antitrust Litigation in the United States: Overview,” *Thomson Reuters Practical Law*, March 01, 2019, https://uk.practicallaw.thomsonreuters.com/6-632-8692?transitionType=Default&contextData=(sc.Default)&firstPage=true#co_anchor_a841683, accessed May 31, 2023.
- Scott-Morton, Fiona, Pascal Bouvier, Ariel Ezrachi, Bruno Jullien, Roberta Katz, Gene Kimmelman, Douglas Melamed, and Jamie Morgenstern, “Report of the Committee for the Study of Digital Platforms, Market Structure and Antitrust Subcommittee,” *George Stigler Center for the study of the economy and the state, University of Chicago Booth School of Business*, 2019.
- Seth, Shobhit, “Why Is Silicon Valley a Startup Heaven?,” *Investopedia*, December 19, 2022, https://www.investopedia.com/articles/personal-finance/061115/why-silicon-valley-startup-heaven.asp, accessed July 11, 2023.

- Shapiro, Carl, "Antitrust in a Time of Populism," *International Journal of Industrial Organization*, Vol. 61, November 2018, pp. 714-748.
- Shapiro, Carl, "Antitrust: What Went Wrong and How to Fix It," *Antitrust*, Vol. 35, No. 3, 2021, pp. 33-45, available at http://faculty.haas.berkeley.edu/shapiro/fixingantitrust.pdf.
- Stevens, Andrew, and Jim Teal, "Diversification and Resilience of Firms in the Agrifood Supply Chain," *American Journal of Agricultural Economics*, 2023.
- Stigler, George, "The Origin of the Sherman Act," *The Journal of Legal Studies*, Vol. 14, No. 1, 1985, pp. 1-12, available at http://www.jstor.org/stable/724314.
- Tarver, Evan, "The Biggest Companies in Silicon Valley," *Investopedia*, January 22, 2022, https://www.investopedia.com/articles/markets/103015/biggest-companies-silicon-valley.asp, accessed July 11, 2023.
- Teece, David, "Big Tech and Strategic Management: How Management Scholars Can Inform Competition Policy," *Academy of Management Perspectives*, Vol. 37, No. 1, 2023, pp. 1-15.
- Thompson, Adriana, "Top 25 Fortune 500 Companies Headquartered in Texas," *Concordia University Texas*, June 24, 2021, https://www.concordia.edu/blog/top-25-fortune-500-companies-headquartered-in-texas.html, accessed July 11, 2023.
- Tirole, Jean, "The Analysis of Tying Cases: A Primer," *Competition Policy International*, Vol. 1, No. 1, 2005, pp. 1-25.
- Tirole, Jean, *The Theory of Industrial Organization*, MIT press, 1988.
- Verouden, Vincent, "Vertical Agreements: Motivation and Impact," *Issues in Competition Law and Policy, American Bar Association, Section of Antitrust Law, Editor: WD Collins*, 2008.
- Vinupriyadharshini, Amali, and Xavir Mahimairaj, "A Comparative Study on Financial Technology Used in Stock Exchanges – Nse, Nyse, Nasdaq, Jpx and Sse," *International Journal of Research in Advent Technology (IJRAT) Special Issue*, 2019, available at http://www.ijrat.org/downloads/Conference_Proceedings/ICFTWF-19/paper-1.pdf.
- Walker, Ben, "Online Travel Agencies Market Share across the World," *Mize*, https://www.hotelmize.com/blog/online-travel-agencies-market-share-across-the-world/, accessed May 25, 2023.
- Weiser, Phil, Colorado Attorney General, "Ag Weiser Testimony: Before the Joint Committee on the Judiciary Regarding the Dol Performance Plan," *State of Colorado*, January 19, 2023, https://coag.gov/blog-post/ag-weiser-testimony-joint-judiciary-committee-dol-performance-plan-1-19-2023/, accessed January 22, 2024.
- Weiser, Phil, Colorado Attorney General, "Attorney General Phil Weiser Says Antitrust Enforcement at a Critical Juncture as Modern Market Forces Push Antitrust Law into New Territory," *State of Colorado*, April 21, 2022, https://coag.gov/press-releases/4-21-22/, accessed April 11, 2023.
- Westbrook, Thad, Mitchell Brown, and Thomas Hydrick, "Consent Decrees' Hidden Costs to Businesses and Consumers," *Washington Legal Foundation*, July 30, 2021, https://www.wlf.org/2021/07/30/publishing/consent-decrees-hidden-costs-to-businesses-and-consumers/, accessed May 31, 2023.
- Whinston, Michael, "Tying, Foreclosure, and Exclusion," *American Economic Review*, Vol. 80, No. 4, 1990, pp. 837-859.
- Widdicombe, Ben, "How Did Fashion's Rag & Bone Take the Steady Route to Success?," *Observer*, July 15, 2015, https://observer.com/2015/07/how-did-fashions-rag-and-bone-take-the-steady-route-to-success/, accessed July 11, 2023.
- Zhe Jin, Ginger, Mario Leccese, and Liad Wagman, "M&A and Technological Expansion," *NBER Working Paper No. 31126, https://www.nber.org/system/files/working_papers/w31126/w31126.pdf* 2023.