FIRST SUPPLEMENT TO MEMORANDUM 2026-29

Antitrust Law: Status Update (Mergers Public Comment)

This supplement presents public comment received by the Commission related to Memorandum 2026-29.[1] The public comments are attached as Exhibits to this supplement.

As with prior memoranda, a brief description of each commentator is below.

Developers Alliance

This comment was submitted by Jake Ward, the Chairman of Developers Alliance. According to its letter, the Developers Alliance is "a leading advocate for the global developer workforce and the companies that depend on them."[2]

Software & Information Industry Association

This comment was submitted by Morten C. Skroejer, the Vice President of Competition & Trade Policy for the Software & Information Industry Association (SIIA). According to its website:

> SIIA is the voice for the specialized information industry. Our members provide

[1] Any California Law Revision Commission document referred to in this memorandum can be obtained from the Commission. Recent materials can be downloaded from the Commission's website (www.clrc.ca.gov). Other materials can be obtained by contacting the Commission's staff, through the website or otherwise. The Commission welcomes written comments at any time during its study process.

Any comments received will be a part of the public record and may be considered at a public meeting. However, comments that are received less than five business days prior to a Commission meeting may be presented without staff analysis.

[2] Letter from Developers Alliance, August 7, 2026, EX 1.

> data, content and information that drives the global economy, informs financial networks and connects learners and educators. SIIA unites, defends and promotes our diverse membership. Learn more about our educational and networking opportunities, events and benefits helping you grow your business, your career and the industry at large.[3]

Association for Competitive Technology

This comment was submitted by Graham Dufault, General Counsel, and Kedharnath Sankararaman, Policy Counsel, for the Association for Competitive Technology. According to its website:

> The Association for Competitive Technology (ACT) is a global trade association for small and medium-sized technology companies. Our members are entrepreneurs, innovators, and independent developers within the global app ecosystem that engage with verticals across every industry. We work with our members and governments to promote a policy environment that rewards and inspires innovation while providing resources that help them raise capital, create jobs, and continue to build incredible technology.
>
> ACT members are located around the world, showing that with coding skills and an internet connection, an app maker can succeed from anywhere. Because of low barriers to entry, the app marketplace has seen high growth in areas that have not been traditional tech hubs. For example, more than 83 percent of app companies exist outside these traditional tech hubs.[4]

Connected Commerce Council

This comment was submitted by Rob Retzlaff, the Executive Director of the Connected Commerce Council. According to its website:

> The Connected Commerce Council (3C) is a non-profit organization with a single goal: to promote small businesses' access to essential digital technologies and tools. 3C provides small businesses with access to the market's most effective digital tools available, provides coaching to optimize growth and efficiency, and works to cultivate a policy environment that considers and respects the interests of today's small businesses.[5]

Chamber of Progress

This comment was submitted by Robert Singleton, the Senior Director of Policy and Public Affairs, California and US West for Chamber of Progress. According to its website:

> Chamber of Progress is a tech industry coalition devoted to a progressive

[3] SIIA, "About Us."

[4] ACT, "About."

[5] The Connected Commerce Council, "About." The website also notes that it is not a membership organization and list its partners as Google and Amazon.

> society, economy, workforce, and consumer climate. We back public policies that will build a fairer, more inclusive world in which all people benefit from technological leaps.[6]

National Association of Manufacturers

This comment was submitted by C. Edward Allen, Senior Director of Corporate Finance Policy, and Jake Kuhns, the Vice President of Domestic Policy, for the National Association of Manufacturers (NAM). According to its website, NAM is "the one-stop shop for manufacturers and manufacturing, delivering unmatched expertise in advocacy, workforce development, legal action and operational excellence."[7]

International Center for Law & Economics

This comment was submitted by Geoffrey A. Manne, the President and Founder, Eric Fruits, Director of Economic Research, and Brian Albrecht, Chief Economist, for the International Center for Law & Economics (ICLE). According to their letter, "ICLE is a nonprofit, nonpartisan global research and policy center founded to build the intellectual foundations for sensible, economically grounded policy."[8]

National Asian/Pacific Islander American Chamber of Commerce & Entrepreneurship

This comment was submitted by Chiling Tong, the President and CEO of the National Asian/Pacific Islander American Chamber of Commerce & Entrepreneurship (National ACE). According to its website, National ACE "advance[s] Asian American and Pacific Islander entrepreneurs and the broader small business community."[9]

John W. Mayo

This comment was submitted by John W. Mayo, Professor of Economics, Business, and Public Policy at the Georgetown University McDonough School of Business and Executive Director of the Georgetown Center for Business and Public Policy.[10]

Biocom

This comment was submitted by Gilbert Lara, Biocom's Government Affairs Manager. According to its website:

> Biocom is the largest life science membership association, bringing together

[6] Chamber of Progress.
[7] NAM, "About the NAM."
[8] Letter from the International Center for Law & Economics, August 7, 2026, EX 57.
[9] National ACE, "About."
[10] Professor Mayo's biography can be found here.

> innovators, investors, researchers and industry leaders while delivering the connections, business solutions, fund opportunities and advocacy needed to accelerate growth and strengthen competitiveness.[11]

PUBLIC COMMENT

Developers Alliance did not support or oppose the proposed language in Memorandum 2026-29 but instead suggested frameworks for analyzing proposed merger language.

> The Developers Alliance supports effective enforcement against mergers that threaten competition. We respectfully urge the Commission to pair that objective with an equally serious assessment of how its recommendation will affect startups and small and independent developers.
>
> A carefully tailored approach can protect competition without weakening the investment, acquisition opportunities, integrated tools, and commercialization pathways that help California's developers and small businesses grow.[12]

SIIA expressed concerns with the options presented and submitted a July 2026 Oxford Economics report, commissioned by SIIA, which evaluates the potential economic impact of various state-level antitrust initiatives, including California. Among its findings:

> - The literature highlights that regulatory fragmentation--defined as overlapping or inconsistent rules enforced by multiple authorities--can impose meaningful economic costs on firms.
> - The literature also suggests that regulatory uncertainty and heightened enforcement intensity can alter firms' strategic decisions. Common responses include delayed or scaled-back investment, postponed hiring, increased spending on compliance and legal advice, and a reallocation of resources away from expansion activities.[13]

The Association for Competitive Technology remains concerned with the proposed language and opposes a California-specific merger law:

> While ACT strongly supports effective competition enforcement aimed at protecting consumers, we remain deeply concerned with the revised draft language options presented in Memorandum 2026-29. Reorganizing the prior options into a Basic Merger Framework and optional additions does not resolve their central defects. The Basic Framework would establish a California-specific merger cause of action, codify a structural presumption drawn from *United States v. Philadelphia National Bank*, and direct courts to harmonize the statute with the 2023 Federal Merger Guidelines. The additional options include fixed concentration thresholds, a restrictive rebuttal standard, or an untested "appreciable risk" test. ACT opposes

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[11] Biocom.

[12] Letter from Developers Alliance, August 6, 2026, EX 2-3.

[13] Valentyna Katsalap and Alice Gambarin, *The Consequences of Divergent State Antitrust Laws and Enforcement*, Oxford Economics, July 2026. EX 10.

> any California-specific merger standard that departs from the well-established federal framework that currently allows procompetitive technology mergers to proceed.[14]

The Connected Commerce Council did not take a position, but also cautioned the Commission to "consider potential harms to California entrepreneurs and small-business owners, and to strive to avoid inadvertently discouraging M&A activity that helps California's small businesses grow, innovate, compete, and succeed."[15]

The Chamber of Progress does not want the Commission to recommend a merger statute. They write:

> California already has the authority and capacity to investigate and challenge anticompetitive transactions. The proposal does not fill an enforcement gap. It creates a second substantive regime that would expose transactions already reviewed under federal law to separate California litigation under different presumptions and an unprecedentedly low liability standard.[16]

NAM also does not want the Commission to recommend a separate California statute, rather "the NAM recommends that California continue to rely on the Clayton Act's well-established legal framework, which has provided greater certainty for merging parties while protecting competition for decades."[17]

ICLE presents a list of recommendations for the Commission's consideration:

> In order of priority, we respectfully recommend that the Commission:
>
> - Decline to adopt the "appreciable risk . . . more than a de minimis amount" formulation. If the Commission wishes to clarify "may be," the staff's "reasonable probability" alternative is a defensible route, provided it is drafted to govern the assessment of the record as a whole and not paired with codified presumptions.
> - Decline to codify the PNB [Philadelphia National Bank] presumption in statutory text, leaving structural inference to case law. At a minimum, replace "evidence clearly showing" with a burden-of-production standard consistent with Baker Hughes, and resolve the conflict between subsections (c) and (e).
> - Strike the statutory HHI and market-share thresholds or recast them as triggers for closer scrutiny rather than presumptions of illegality.
> - Strike the 2023 Merger Guidelines provision. At most, permit courts to consider contemporaneous federal merger guidelines as nonbinding

[14] Letter from the Association for Competitive Technology, August 7, 2026, EX 41.
[15] Letter from Connected Commerce Council, August 7, 2026, EX 49.
[16] Letter from Chamber of Progress, August 7, 2026, EX 50.
[17] Letter from NAM, August 7, 2026, EX 56.

interpretive aids to the extent consistent with California law.

- Return the "tend to create a monopoly or monopsony" clause to subsection (a) where it operates alongside the substantiality requirement or add a substantiality element to subsection (b).
- Add a size-of-transaction threshold harmonized with SB 25[18] and the federal HSR thresholds,[19] and specify the remedies and private rights of action, if any, that attach.
- Defer adoption of a substantive merger standard until the Commission has at least one filing cycle of data under SB 25.

> Should the Commission nonetheless wish to proceed now, a restrained statute—one tracking Section 7's operative text, retaining substantiality, keeping both prongs within a single competitive effects analysis, and leaving market definition, concentration, entry, and efficiencies to case law— would give California courts ample room to reach anticompetitive mergers without the difficulties described above.[20]

National ACE expressed concerns about the draft options and recommends:

> …the Commission prioritize regulatory harmonization and refrain from adopting the "appreciable risk" standard, the Herfindahl-Hirschman Index-based presumption of illegality, or any other options that could significantly increase regulatory burdens and uncertainty for California's small businesses. We urge the Commission to weigh the systemic impact of increased legal uncertainty on the small business ecosystem, as duplicative merger review processes disproportionately burden the early-stage firms we represent, while threatening the cycle of innovation and reinvestment in California.[21]

Professor John W. Mayo submitted comments on Memorandum 2026-29, and shared concerns with some assertions, notably that there was a weakening in antitrust enforcement after 1974 and that the federal courts subjected plaintiffs to an increased burden of proof. He submits an article in rebuttal of these points and suggests that:

> At a minimum, these findings suggest that the most immediate and effective policy change to heighten antitrust scrutiny of mergers may lie not with wholesale changes to California's mergers statutes, but rather through budget appropriations.[22]

Biocom urges the Commission to not pursue a California-specific merger statute:

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[18] 2026 Cal. Stat. ch. 3 (SB 25, Umberg) allows the California Attorney to receive federal merger disclosure notifications, as specified.

[19] Federal Trade Commission, Competition Matters, *New HSR thresholds and filing fees for 2026*.

[20] Letter from International Center for Law & Economics, August 7, 2026, EX 67.

[21] Letter from National ACE, August 7, 2026, EX 70.

[22] Letter from John M. Mayo, August 7, 2026, EX 73; Jeffrey T. Macher, et al, "The evolution of contracting: evidence from the US freight rail industry," *The Journal of Law, Economics, and Organization,* 2025, 41, 316-347.

Life science M&A is not a symptom of market failure, it is the very system that has created the state's second largest industry which has consistently added jobs to California's economy, year-over-year. As the empirical record demonstrates, M&A is a proven driver of innovation that brings new therapies to patients who need them most.

Biocom urges the Commission to … maintain alignment with established federal antitrust standards.[23]

Does the Commission have any questions about these public comments?

Respectfully submitted,

Sarah Huchel
Chief Deputy Director

Sharon Reilly
Executive Director

[23] Letter from Biocom, August 7, 2026, EX 128.

August 7, 2026

Re: MEMORANDUM 2026-29 – Draft Language Options for Mergers and Acquisitions

Dear California Law Revision Commission,

The Developers Alliance—a leading advocate for the global developer workforce and the companies that depend on them—submits the following comments on Memorandum 2026-29.

The consequences of merger policy extend well beyond large acquiring firms. Startups and independent developers participate in the mergers-and-acquisitions ecosystem as founders, acquisition targets, customers, and users of products that acquisitions help improve and distribute. We therefore urge the Commission to evaluate the impact on small developers and startups before directing staff to prepare a draft Tentative Recommendation.

Competition policy should protect startups and small developers from anticompetitive consolidation. It should also preserve legitimate acquisition pathways, investment incentives, and access to integrated tools and distribution networks. California can advance both goals through targeted enforcement and clear standards that distinguish harmful transactions from beneficial ones. As the California Law Revision Commission decides on draft language, the Developers Alliance urges Commissioners to:

1. Consider the role of mergers and acquisitions in the startup ecosystem

The Commission should assess how the proposed language would impact the startup and small-business ecosystem. In particular, that assessment should examine effects on early-stage financing, founder exit opportunities, valuation and deal certainty, and access to capital, talent, infrastructure, and distribution.

For many founders, the possibility of a future acquisition motivates them to build innovative products. An acquisition may allow a small developer's product to reach more users, gain access to security and compliance resources, integrate with complementary services, or survive when independent commercialization is impractical. Overregulating mergers and acquisitions would be a disservice to the determined developers and founders who build innovative solutions that attract buyers.

2. Recognize the indirect effects of mergers and acquisitions

Beyond the direct role that mergers and acquisitions play in the startup ecosystem, the Commission should also consider their indirect benefits for small developers. Developers frequently leverage products and services that have been improved, expanded, or made more accessible following a merger. These include affordable cloud infrastructure, coding tools, app marketplaces, payment processing systems, analytics platforms, and cybersecurity services.

These benefits are especially important for small teams that often lack the resources to build this infrastructure internally or work with numerous third parties. An integrated platform can lower development and transaction costs, shorten time to market, improve security, and give a small developer immediate access to more customers.

In this way, the effects of merger policy extend beyond the firms directly involved in a transaction. Policies that discourage beneficial combinations may increase costs and slow improvements for the broader developer ecosystem. Those effects can fall disproportionately on smaller developers, who are least able to absorb higher prices, integration burdens, security risks, or delays in accessing improved services. The Commission should assess not only whether a transaction changes competition between the merging firms, but also whether it enables efficiencies, innovation, investment, and broader access to tools that help small developers compete with larger companies.

3. Prioritize a targeted approach

The Developers Alliance urges the Commission to avoid broad policies that treat all mergers as presenting the same competitive risks. Transactions vary substantially in their purpose, structure, market context, and impacts. Merger policy should therefore focus on transactions that are likely to reduce competition and harm consumers, not those that help small teams and promote startup success.

This distinction is especially important for startups and independent developers. For some founders, acquisition is not an unintended consequence of building a successful company; it is a legitimate business objective contemplated from the outset. It’s vital to target anticompetitive transactions without also disincentivizing startups from innovating and attracting buyers.

4. Minimize implementation burdens

A distinct, complex California merger regime could impose significant implementation and compliance burdens, especially for small teams. Differences between state and federal requirements may force parties to conduct separate legal analyses, prepare additional evidence, and navigate overlapping review processes.

These burdens would fall disproportionately on startups and small and independent developers. Larger companies may be able to absorb additional legal and administrative expenses, but small firms may not. The Commission should therefore ensure that recommendations are clear, predictable, and practical to administer, and do not put smaller teams at a disadvantage.

Conclusion

The Developers Alliance supports effective enforcement against mergers that threaten competition. We respectfully urge the Commission to pair that objective with an equally serious assessment of how its recommendations will affect startups and small and independent developers.

A carefully tailored approach can protect competition without weakening the investment, acquisition opportunities, integrated tools, and commercialization pathways that help California's developers and small businesses grow. We appreciate the Commission's consideration of these comments and welcome the opportunity to provide additional information.

Sincerely,

Jake Ward
Developers Alliance, Chairman

SIIA

August 6, 2026

The Honorable Richard Simpson
Chairperson
California Law Revision Commission
c/o Legislative Counsel Bureau
925 L Street, Suite 275
Sacramento, CA 95814
VIA EMAIL: sreilly@clrc.ca.gov

Re: Comments on Memorandum 2026-29, Draft Language Options for Mergers and Acquisitions

Dear Chair Simpson and Members of the Commission:

On behalf of the Software & Information Industry Association ("SIIA"), we appreciate the opportunity to provide these comments in response to Staff Memorandum 2026-29, "Draft Language Options for Mergers and Acquisitions," published on July 24, 2026 ("Staff Memo").[1]

While we appreciate the Staff Memo's detailed historical review, we are concerned that the main options presented—specifically the "appreciable risk" standard, codified HHI presumptions, and broader divergence from the federal Clayton Act framework[2]—would impose quantifiable economic costs on California's businesses, workers, and competitiveness without demonstrating that such a departure is appropriate or necessary.

Grounding these concerns, a July 2026 Oxford Economics report[3] evaluates the impact of state-level antitrust fragmentation, including California's COMPETE Act (AB 1776)[4] and similar New York legislation.[5] Combining economic literature with a survey of 502 California and New York business leaders, the report provides key empirical data that warrant the Commission's close attention before recommending a path forward.

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[1] Cal. Law Revision Comm'n, Staff Memorandum 2026-29, *Draft Language Options for Mergers and Acquisitions* (July 24, 2026), https://clrc.ca.gov/pub/2026/MM26-29.pdf

[2] 15 U.S.C. § 18.

[3] Oxford Econ., *The Consequences of Divergent State Antitrust Laws and Enforcement* (July 2026) (prepared for the Software & Information Industry Association), https://www.oxfordeconomics.com/wp-content/uploads/2026/07/Oxford-Economics-SIIA-regulatory-fragmentation-1.pdf

[4] COMPETE Act, A.B. 1776, 2025–2026 Reg. Sess. (Cal. 2026).

[5] *See*, *e.g.*, Twenty-First Century Anti-Trust Act, A.B. 2015, 2025–2026 Reg. Sess. (N.Y. 2025).

Regulatory Fragmentation Imposes Real, Measurable Costs

The Oxford Economics report finds that state divergence from the Clayton Act standard would force businesses to bear two cost burdens: duplication costs (redundant multi-jurisdictional filings) and, more significantly, inconsistency costs (the legal uncertainty when identical conduct is treated differently across jurisdictions). The report finds a direct link between this type of regulatory fragmentation to slower firm growth, reduced productivity, and declining M&A and investment activity.

Several of the options in the Staff Memo would pose this exact risk. Replacing the Clayton Act standard with an "appreciable risk of lessening competition more than a de minimis amount," for example, was criticized in the Commission's own record as a "new and untested legal standard" that would create substantial uncertainty without any established case law to interpret it.[6]

The report quantifies what this uncertainty would mean in practice: 39% of surveyed businesses expect merger approval processes to take longer under state-specific antitrust provisions, and 55% say that they expect the possibility of a state attorney general suing to block a merger would influence their decision about whether to pursue a deal at all.

The Threshold Effects Fall Hardest on Smaller and Newer Businesses

The report also highlights the significant distributional impacts that would flow from increased fragmentation. While large firms can absorb new and additional compliance costs, smaller businesses bear a disproportionate burden because fixed legal expenses represent a larger share of their revenue. Notably, 52% of minority-owned and 78% of veteran-owned businesses expect increased legal burdens under state rules, compared to 35% overall. Applying a mechanical HHI presumption (1,800 threshold / 100-point change) would exacerbate this disparity by penalizing startups and smaller companies that lack the capital to rebut structural presumptions through expensive economic studies and in the courts, even for transactions that are procompetitive.

Divergence May Encourage Businesses and Investment to Relocate

Perhaps most significant for California policymakers, the Oxford Economics report found that 35% of respondents would actively consider relocating operations to states that hew more closely to federal antitrust standards, rising to 41% among multistate firms and 52% among startups that are less than five years old—the very companies whose growth, and eventual acquisition, California's innovation economy depends on. The report estimates that if even just 20% to 30% of businesses that say they would consider such a move actually follow through, California could see the departure of 55,000 to 82,000 firms.

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[6] *See* Cal. Law Revision Comm'n, Staff Memorandum 2026-21, *Draft Language Options for Mergers and Acquisitions and Additional Public Comment* (May 15, 2026), https://clrc.ca.gov/pub/2026/MM26-21.pdf; *see also* Cal. Law Revision Comm'n, Staff Memorandum 2025-42, *Public Comment Analysis and Draft Language Options for Mergers and Acquisitions* (Sept. 10, 2025), https://clrc.ca.gov/pub/2025/MM25-42.pdf.

Before Recommending Specific Language, the Commission Should Pause to Weigh the Larger Stakes

The concerns raised above are significant on their own, but we would also urge the Commission to consider the larger picture. The Commission's role, as defined by its enabling statute, is to assist the Legislature and Governor by studying California law and recommending reforms that can be reliably enacted and applied.[7] That mission is best served when a recommendation's core substance survives the legislative process largely intact.

The Commission's experience with AB 1776 underscores how the legislative process can unpredictably alter even thoroughly vetted proposals. Because M&A carries even greater economic and cross-border stakes than single-firm conduct, we respectfully urge the Commission to evaluate how such legislative dynamics could produce unintended consequences that undermine the regulatory certainty its recommendations seek to provide California's businesses, workers, and broader economy.

Divergence From Federal Standards Could Invite Preemption

Finally, the Commission should be mindful of the broader risk of federal preemption. Merger enforcement has relied on a unified federal framework under the Clayton Act since 1914. As the Oxford Economics report notes, while state-level experimentation offers value, excessive divergence disrupts cross-border commerce. Subjecting multi-state mergers to conflicting state rules generates the type of interstate friction that historically has prompted Congress, or federal courts under the Dormant Commerce Clause,[8] to enforce preemption in favor of a uniform national market.

Should California adopt a standard that departs significantly from the federal framework—particularly as other states may follow with their own variations—the resulting fragmentation could accelerate such a preemption outcome. Ironically, preemption would override the specific protections California aims to create and strip the state of its leadership role in merger enforcement altogether. Because of this, we respectfully urge the Commission to evaluate these broader national ramifications alongside in-state considerations before finalizing any recommendations.

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SIIA thanks the Commission for considering our views, and we look forward to continuing our engagement on these important issues. We would welcome the opportunity to respond to any follow-up questions the CLRC may have.

Respectfully submitted,

S/Morten C. Skroejer
Vice President, Competition & Trade Policy

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[7] Cal. Gov't Code §§ 8289, 8291.
[8] U.S. Const. art. I, § 8, cl. 3.

JULY 2026

THE CONSEQUENCES OF DIVERGENT STATE ANTITRUST LAWS AND ENFORCEMENT

PREPARED FOR SOFTWARE & INFORMATION INDUSTRY ASSOCIATION (SIIA)

EX 7

ABOUT OXFORD ECONOMICS

Oxford Economics was founded in 1981 as a commercial venture with Oxford University's business college to provide economic forecasting and modeling to UK companies and financial institutions expanding abroad. Since then, we have become one of the world's foremost independent global advisory firms, providing reports, forecasts and analytical tools on more than 200 countries, 100 industries sectors, and 8,000 cities and regions. Our best-in-class global economic and industry models and analytical tools give us an unparalleled ability to forecast external market trends and assess their economic, social and business impact.

Headquartered in Oxford, England, with regional centers in New York, London, Frankfurt, and Singapore, Oxford Economics has offices across the globe in Belfast, Boston, Cape Town, Chicago, Dubai, Dublin, Hong Kong, Los Angeles, Mexico City, Milan, Paris, Philadelphia, Stockholm, Sydney, Tokyo, and Toronto. We employ 700 staff, including more than 450 professional economists, industry experts, and business editors—one of the largest teams of macroeconomists and thought leadership specialists. Our global team is highly skilled in a full range of research techniques and thought leadership capabilities from econometric modeling, scenario framing, and economic impact analysis to market surveys, case studies, expert panels, and web analytics.

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JULY 2026

The modeling and results presented here are based on information provided by third parties, upon which Oxford Economics has relied in producing its report and forecasts in good faith. Any subsequent revision or update of those data will affect the assessments and projections shown.

To discuss the report further please contact:

Valentyna Katsalap: vkatsalap@oxfordeconomics.com

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CONTENTS

EX 9

EXECUTIVE SUMMARY

BACKGROUND CONTEXT AND STUDY OBJECTIVES

In recent years, states have assumed a more active role in antitrust policy and enforcement, with increased litigation by state Attorneys General and the development of state-level antitrust legislation that, in some instances, departs from federal standards. Examples include state efforts to regulate algorithmic pricing (e.g., Ohio, Arizona, California, and New York) and proposals to expand state involvement in merger review through pre-merger notification or oversight requirements (e.g., Colorado and California).

Recent proposed antitrust legislative developments in California and New York stand out as particularly significant. In both states, proposed reforms aim to substantially expand state antitrust authority, particularly with respect to unilateral conduct. In New York, the Twenty-First Century Antitrust Act has been introduced repeatedly since 2020 and has passed the State Senate multiple times, most recently in 2025, but has consistently failed to advance in the Assembly. In California, following a 2022 directive to review state antitrust law, the California Law Revision Commission (CLRC) recommended amending the Cartwright Act through the COMPETE Act (AB 1776) to expand single-firm liability, reduce reliance on federal standards, and explore enhanced state-level merger oversight.

This study, commissioned by the Software & Information Industry Association (SIIA), examines how fragmented antitrust development may affect economies, communities, and markets. The report proceeds in three parts: a review of the literature to establish a conceptual foundation for understanding the impacts of regulatory fragmentation; a survey of 502 businesses in California and New York to assess anticipated effects of the proposed antitrust measures; and a forward-looking discussion outlining plausible paths for antitrust legislative developments in the United States.

MAJOR INSIGHTS AND CONCLUSIONS

The literature highlights that regulatory fragmentation--defined as overlapping or inconsistent rules enforced by multiple authorities--**can impose meaningful economic costs on firms**. When legal standards diverge across jurisdictions, firms face both duplication costs, such as redundant reporting or parallel regulatory reviews, and inconsistency costs, arising from uncertainty about how similar conduct will be assessed under different legal regimes. Empirical studies link higher degrees of regulatory fragmentation to increased operating costs, reduced productivity, slower firm growth, and lower levels of investment and merger activity.

The literature also suggests that regulatory uncertainty and heightened enforcement intensity can alter firms' strategic decisions. Common responses include delayed or scaled-back investment, postponed hiring, increased spending on compliance and legal advice, and a reallocation of resources away from expansion activities. These effects are not evenly distributed: multistate firms and larger firms are more exposed to inconsistent rules across jurisdictions, while small and medium-sized businesses (SMBs) may be disproportionately affected by fixed compliance costs and limited legal resources.

Our business survey offers insight into firms' expectations regarding proposed state-level antitrust reforms (modeled after California's proposals). A substantial share of respondents anticipate increased compliance burdens if new state-specific antitrust rules are adopted. The most frequently cited concerns include higher legal and advisory costs, greater time devoted to compliance activities, and increased uncertainty about permissible business practices. These concerns are more pronounced among firms operating in multiple states and among respondents reporting greater familiarity with the proposed legislation.

Survey results also suggested that regulatory divergence might influence firms' location and expansion decisions. Over one-third of respondents indicated that they would consider relocating operations to states that adhered only to federal antitrust standards if new state rules were introduced. Relocation considerations were notably higher among multistate firms, younger firms, and firms in sectors with relatively higher geographic mobility. While stated intent does not necessarily translate into actual relocation, the findings indicate that regulatory policy can factor into business location decisions and investment planning.

In addition, **a meaningful share of firms reported expectations of delayed hiring or changes in job composition**, reflecting broader concerns about uncertainty and cost pressures. Firms also anticipated effects on merger and acquisition activity, with many respondents expecting longer transaction timelines and increased deterrence due to the prospect of additional state-level scrutiny. Collectively, the survey evidence aligns with the literature in suggesting that regulatory fragmentation may influence business behavior across compliance, investment, labor, and strategic transactions.

Our analysis suggests three potential scenarios for the future of state-level antitrust reform in the United States. The first envisions broad divergence from federal standards, with multiple states adopting expansive antitrust laws that materially reshape enforcement expectations nationwide, following the example of states such as California or New York. The second anticipates more limited convergence around specific provisions, such as supplemental merger review or labor-market considerations, without a comprehensive departure from federal doctrine. The third scenario foresees limited state-level adoption, with legislative initiatives narrowed or curtailed due to legal, economic, or political concerns.

Across these scenarios, a central economic trade-off emerges between state autonomy and regulatory uniformity. While state-level experimentation can allow jurisdictions to pursue locally tailored competition policies and to act as laboratories for reform, increased divergence risks raising compliance costs, legal uncertainty, and barriers to interstate commerce, particularly for firms operating across state lines. The long-term economic effects of expanded state antitrust authority will depend on how these trade-offs are managed in practice, as well as on the degree of coordination among legislatures, enforcement agencies, and courts in preserving market integration while accommodating regulatory variation.

SECTION 1.
INTRODUCTION AND POLICY CONTEXT

Antitrust enforcement in the United States operates under a system often described as *cooperative federalism* (Jernudd, 2023).[1] Under this approach, responsibility for antitrust enforcement is shared between two federal agencies (the Department of Justice and the Federal Trade Commission) and state Attorneys General (state AGs), who can bring antitrust actions in court under both state and federal law. A defining feature of this enforcement framework is the expectation that overlapping enforcement agencies will work together and coordinate their efforts.

When states introduce antitrust laws that significantly diverge from federal laws, the system moves from cooperation to fragmentation. Over the past few years, states have taken a more active role in antitrust, including greater enforcement activity by state AGs, as well as proposed state legislation to create new, state-specific, antitrust legal standards that differ from federal law (as an example, multiple states are considering or enacting laws regulating algorithmic pricing (e.g., Ohio, Arizona, California, New York) and requiring pre-merger notifications (e.g., Colorado, California)).[2]

State divergence in antitrust raises several important considerations. One is that states prioritize local interests, without considering spillover effects on other states, interstate commerce, or broader national welfare.[3] Additionally, state divergence can decrease predictability, increase legal uncertainty, and increase compliance costs for firms operating in multiple states. As an illustration, federal merger clearance may not translate into clearance from state agencies that apply different legal standards.

New York and California are two of the most frequently cited states pursuing antitrust regimes that diverge significantly from federal law. The two states are also home to some of the most well-established and diverse business environments, with high concentrations of startups, small- and medium-sized businesses (SMBs), and minority-owned businesses. The Bay Area and New York City are ranked as the world's top two startup ecosystems, based on VC investment, enterprise value, ecosystem momentum, unicorns, university linkages, and patents.[4] In 2026, California was home to roughly one-third of startups and raised over 85% of total venture capital funding in the U.S.[5] Both California and New York also have a higher proportion of minority-owned firms than the national average, with minority-owned businesses accounting for 46% of all California businesses[6] and 26.4% of all New York firms, compared with 21.7% nationally.[7]

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[1] Ingrid Ulrika Jernudd, "Federal Versus State Antitrust Enforcement: Furthering Competition Through Cooperation," *The Georgetown Journal of Law & Public Policy* 21, no. 2 (2023), pp.577–594, accessed May 2026.
[2] Allen Carter, "Current trends in state antitrust enforcement," *Antitrust Law Source*, Porter Wright, May 2025, accessed May 2026.
[3] Ingrid Ulrika Jernudd, "Federal Versus State Antitrust Enforcement: Furthering Competition Through Cooperation," *The Georgetown Journal of Law & Public Policy* 21, no. 2 (2023), pp.577-594, accessed May 2026.
[4] Based on Dealroom.co, data, accessed May 01, 2026.
[5] Based on Dealroom.co data, accessed May 01, 2026.
[6] California Office of the Small Business Advocate, "The State of Diverse Businesses in California," CAMEO Network, June 2023, accessed May 2026.
[7] Office of the New York State Comptroller, "DiNapoli Releases Profile of New York's Small Business Owners," March 2024, accessed May 2026.

EX 12

Box 1: Competition regulation in the EU

While differing in many respects from the U.S. model, the EU's competition regime also relies on a form of dual enforcement. The European Commission sets the EU's antitrust rules that govern trade among member states, while member states have their own national competition laws to regulate domestic anticompetitive behavior. Similar to U.S. federal antitrust regulations, EU-level rules set minimum standards, and national laws may include provisions beyond those rules. While the European Commission is the primary enforcer of EU-level competition rules, national competition authorities are also empowered to enforce them.[8]

This institutional arrangement can give rise to certain coordination and consistency challenges. The coexistence of overlapping rules and enforcement authorities allows the same conduct to be examined in parallel proceedings at the EU and national levels.[9] [10] In addition, differences between EU-level and national laws and enforcement approaches can lead to inconsistent legal assessments and outcomes for similar conduct. A recent illustration of the latter is the divergent treatment of Amazon's marketplace pricing practices under the European Commission's Digital Markets Act (DMA) and Germany's national competition law. Under the EU's DMA, Amazon (as a designated gatekeeper for its core platform services, including Amazon Marketplace[11]) must comply with a fixed list of obligations.[12] Germany's competition law, on the other hand, takes a more flexible approach: it designates Amazon at the company level as having "paramount significance for competition across markets"[13] and empowers Germany's competition enforcement agency to identify and prohibit specific practices on a case-by-case basis, such as price control mechanisms Amazon imposed on marketplace sellers, the prohibition of which recently resulted in an ordered disgorgement of €59 million in economic benefits.[14]

For firms operating across multiple member states, regulatory fragmentation translates into higher legal burdens and increased legal uncertainty, as companies must account for both EU-level rules and enforcement and potentially differing national enforcement outcomes. These dynamics are not limited to large multinational firms: SMBs and start-ups can also be affected by regulatory fragmentation through inconsistent competition enforcement across EU member states, particularly when uneven enforcement across jurisdictions leads to variation in competitive conditions within the EU single market.[15]

More broadly, differing antitrust rules and enforcement practices across member states can also have wider implications for market outcomes and consumer welfare. To the extent that regulatory divergence influences firms' decisions about market entry or expansion, it may affect the level of competition in specific national markets, with possible consequences for consumer choice and pricing.[16]

[8] Firat Cengiz, European Parliament, "An Academic View on the Role and Powers of National Competition Authorities," Study for the ECON Committee, April 2016.
[9] Selcukhan Ünekbas, "Two Faces of Inefficiency in European Competition Law," Truth on the Market, November 2025, accessed May 2026.
[10] Veerle Peters and Małgorzata Kozak, "Double Jeopardy of Article 102 TFEU and the DMA – the Challenges of a Multi-Level Enforcement System," *Utrecht Law Review* 21, no. 2 (2025) pp.95–110, accessed May 2026.
[11] European Commission, Digital Markets Act, Gatekeepers Portal, accessed June 2026.
[12] Digital Markets Act, The final text for the Digital Markets Act, accessed June 2026.
[13] Beatrice Stange, International Bar Association, Digital platform regulation: developments in Germany, accessed June 2026.
[14] Bundeskartellamt, "Bundeskartellamt Prohibits Amazon from Applying So-Called Price Control Mechanisms and Orders the Disgorgement of 59 Million Euros in Economic Benefits," February 2026, accessed June 2026.
[15] European Commission, "Commission Staff Working Document: Impact Assessment Accompanying the Proposal for a Directive to Empower the Competition Authorities of the Member States to Be More Effective Enforcers and to Ensure the Proper Functioning of the Internal Market," SWD(2017) 114 final. Brussels, March 2017, accessed May 2026.
[16] Ibid.

1.1. PROPOSED REGULATORY CHANGES IN NEW YORK AND CALIFORNIA

New York's **Twenty-First Century Anti-Trust Act (SB 335)** was first introduced in 2020 and has been reviewed by the New York State Assembly on multiple occasions, but has not been approved.[17] In its most recent iteration, the bill was passed by the Senate in 2025 but did not pass the Assembly.[18] Our understanding is that the bill intends to significantly broaden the Donnelly Act (New York's primary antitrust statute) by introducing several new regulatory provisions, such as the prohibition of anticompetitive conduct by a single firm, a lower threshold for the abuse-of-dominance standard, a comparatively more stringent pre-merger notification requirement, and a requirement to consider the impacts of commerce activities on labor markets.[19]

In 2022, the California Legislature tasked the California Law Revision Commission (CLRC) with reviewing antitrust laws. The latest recommendation by the CLRC is to amend the Cartwright Act to prohibit anticompetitive conduct by a single firm (**the COMPETE Act, or AB 1776**) and reduce reliance on federal antitrust standards. The Commission also recommends developing state-level M&A oversight, though the details are still unclear.[20]

Studies have attempted to estimate the economic impacts of enacting these divergent state antitrust laws. For example, a 2024 study commissioned by CCIA assessed the potential effects of implementing an abuse-of-dominance law stricter than federal standards (modeled on New York's proposed Twenty-First Century Antitrust Act) across New York and several other states, using a cost-analysis approach.[21] The study argued that the Bill might deter some pro-competitive practices which had potential efficiency benefits, and the authors calculated the economic value of such pro-competitive conduct. The analysis estimated that first-year costs from lowered efficiency would be around 1%–1.5% of state GDP, with a projected long-term loss of GDP of the order of 9%–13% over a 10-year horizon. A similar study evaluating the impacts of California's AB 1776 Bill estimated the magnitude of loss at 1.6% of GDP in the first year after its implementation and 13.8% over 10 years (CCIA, 2026).[22] While these studies are highly informative, they do not attempt to estimate the benefits from blocking or deterring anticompetitive conduct, which can be sizeable.

1.2. SCOPE OF THE STUDY

This report, commissioned by the Software & Information Industry Association (SIIA), provides evidence-based insights into how fragmented antitrust development could affect economies, communities, and markets, using evidence from existing literature and findings from a business survey. The remainder of the report is organized as follows:

- Section 2 introduces the conceptual basis, drawing on the literature on regulatory fragmentation, compliance costs, and regulatory uncertainty.
- Section 3 presents findings from a survey of businesses in California and New York, highlighting areas of concern as expressed by respondents.

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[17] Tyler Ross, "Do Not Pass 'Go'; Do Not Collect $200: Anti-monopoly Law Reintroduced in the New York Legislature," Shinder Cantor Lerner, February 2025, accessed May 2026.
[18] LegiScan, "NY S00335 | 2025-2026 | General Assembly," accessed May 2026.
[19] Jared P. Nagley and Helen Cho Eckert, "Amending New York's Donnelly Act: If at First You Don't Succeed, Try, Try, and Try Again," National Law Review, January 2025, accessed May 2026.
[20] California Law Revision Commission, "Antitrust Law: Single Firm Conduct," preprint recommendation, March 2026, accessed May 2026.
[21] Eliana Garces, et al., Computer & Communications Industry Association, "Assessment of Economic Costs of Imposing Abuse of Dominance Standards at the State Level," May 2024.
[22] Trevor Wagener, Computer & Communications Industry Association, "Rushed COMPETE Act Could Cost California $1 Trillion in GDP and 1.6 Million Jobs in 10 Years," April 2026.

EX 14

- Section 4 discusses the findings and speculates on likely antitrust developments.
- Section 5 concludes.
- Section 6 is the Technical Appendix that includes a detailed discussion of the survey (including the full questionnaire) and supplementary tables.

SECTION 2. BUSINESS AND COMMUNITY IMPACTS: EVIDENCE FROM THE LITERATURE

There has historically been disagreement among policymakers and other commentators on the value and role of state-level antitrust legislation and enforcement. On the one hand, uniform federal rules promote efficiency by ensuring that firms compete under the same rules regardless of location, reducing compliance costs and minimizing compliance errors. On the other hand, state laws and enforcement can be complementary to federal enforcement if focused on local markets or during periods of perceived federal underenforcement.[23] This section reviews the economic literature on firms' response to regulatory fragmentation and uncertainty, and implications for state-level legislation.

2.1. REGULATORY FRAGMENTATION, FIRM PERFORMANCE, AND COMPLIANCE COSTS

Regulatory fragmentation is defined as a situation in which multiple agencies oversee the same issue.[24] The regulations issued by different agencies can be similar but not identical or even conflicting. Areas with low regulatory fragmentation are typically characterized by a single or dominant regulator, whereas high fragmentation is characterized by numerous regulators, with often unclear divisions of regulatory and enforcement oversight. Antitrust regulation already features a degree of fragmentation, as it is overseen by two federal agencies (the Department of Justice and the Federal Trade Commission) and a state agency (the Office of the Attorney General). Additional state-level legislative developments, such as the ones proposed in New York and California, would run the risk of further fragmenting laws and enforcement in this policy area.

Regulatory fragmentation has recently attracted increased attention in academic literature, particularly in terms of its effects on economic activity. Empirical evidence shows that regulatory fragmentation is detrimental to firm performance. In particular, evidence suggests fragmentation can lead to higher operating costs, lower productivity, lower profitability, lower sales growth, and lower asset growth.[25] Additionally, it can discourage new firms' entry, force some incumbent firms to exit, and deter M&A activity.[26] The literature suggests that greater coordination or consolidation among regulators can significantly reduce the additional legal and compliance burdens created by fragmented regulatory oversight.

According to Kalmenovitz et al. (2025), there are two main channels through which regulatory fragmentation impacts firms' cost base: duplication and inconsistency.

Duplication costs arise when multiple agencies impose similar regulations. These costs typically take the form of redundant reporting, overlapping audits, and parallel legal engagements. For example, firms involved in mergers and acquisitions in California that must file Hart-Scott-Rodino (HSR) filings with the federal agencies (DOJ and FTC) will also, starting in 2027, file the same form and supporting documents with the California

[23] Eric J. Stock, "State Antitrust Enforcement in the National Economy: Promoting More Democratic and Effective Outcomes Through State Reliance on Federal Law," *Antitrust* 39, no. 2 (Spring 2025) pp.14–20, accessed May 2026.
[24] Joseph Kalmenovitz, et al., "Regulatory Fragmentation," *The Journal of Finance* 80, no. 2 (2025) pp.1081–1126, accessed May 2026.
[25] Joseph Kalmenovitz, et al., "Regulatory Fragmentation," *The Journal of Finance* 80, no. 2 (2025) pp.1081–1126, accessed May 2026.
[26] Ming Gu, et al., "Juggling Red Tape: The (Un)intended Effects of Regulatory Fragmentation on Takeover Targets," SSRN, May 2026, accessed May 2026.

EX 16

Attorney General. This will result in additional form filing and monitoring, a parallel waiting period, higher exposure to ambiguity, and overall higher compliance costs.

Inconsistency costs arise from differences in requirements between regulatory agencies. Such costs are usually a heavier burden than duplication costs. If states have variation in rules, the costs of compliance can increase for companies that operate in multiple states.[27] Additionally, **inconsistency can increase uncertainty** if it is not guaranteed that the same situation will receive the same level of clearance across different agencies. For example, under federal law, predatory pricing implies setting prices below cost with a reasonable probability of raising prices later to cover losses. AB 1776 frames predatory pricing differently; it is viewed as part of exclusionary single-firm conduct and defined as pricing practices that aim to exclude rivals or distort competition, even if prices are set above costs. This divergence between state and federal regulation will result in higher spending on in-house counsel or outside legal advisors, as well as consultants to determine which pricing strategies are legal under the new legislation, a higher likelihood of being involved in litigation or audit, and a limited ability to use a standardized approach to prices and contracts at the national level.

Regulatory inconsistency is a key mechanism through which regulatory fragmentation impacts multistate firms' growth prospects. When rules are not uniform, firms cannot simply scale up their operations across state borders; they must either tailor their approaches on a state-by-state basis or adopt the most restrictive approach across all states in which they operate, and this provides a disincentive for cross-state expansion.

Regulatory fragmentation can disproportionately impact small and medium firms, particularly where fragmented enforcement interacts with fixed compliance costs and legal uncertainty. For example, the broad language in the proposed AB 1776 may create uncertainty regarding which business practices fall within the scope of heightened scrutiny. Depending on enforcement priorities and approaches to market definition, there is a risk that some small- and medium-sized businesses operating in narrow or local markets could face increased exposure to investigation or litigation. More generally, proposed state-level antitrust reforms could raise compliance-related costs for small- and medium-sized firms and, indirectly, affect their cost structures if larger upstream firms adjust pricing to reflect higher regulatory or enforcement burdens.[28]

2.2. FIRM RESPONSES TO UNCERTAINTY AND REGULATORY INTENSITY

As discussed in the previous section, regulatory fragmentation can increase uncertainty for affected businesses. The costs associated with policy uncertainty are large and likely operate independently of actual policy outcomes.[29] This section reviews empirical evidence on how firms respond to uncertainty, regulatory burden, and active state antitrust enforcement, as reflected in investment behavior, and employment and hiring decisions. It also explores the literature around antitrust activity and market entry and exit, and M&A activity.

2.2.1. INVESTMENT DECISIONS

A large body of economic literature has examined the relationship between uncertainty and investment decisions. Studies agree that uncertainty provides an incentive to delay investment, especially if investment projects are difficult to reverse or firms are financially constrained.[30] While economists predict investment is

[27] Amanda Reid, "The Mathematics of Regulatory Fragmentation: Understanding the Multiplicative Costs of State-Level Platform Requirements," *IP Theory* 15, no. 1 (2025) Article 2, accessed May 2026.
[28] Data Catalyst Institute, "Race to Regulation: Assessing the Impact of Proposed U.S. State Competition Bills on Small & Medium-sized Businesses," August 2023, accessed May 2026.
[29] Oxford Economics, International Chamber of Commerce, "The Cost of Uncertainty on Investment: Quantifying the Impact of Policy Volatility on Investment in the Global Economy," April 2026, accessed May 2026.
[30] Ben S. Bernanke, "Irreversibility, Uncertainty, and Cyclical Investment," *Quarterly Journal of Economics* 98, no. 1 (1983) pp.85–106, accessed May 2026.

typically postponed rather than abandoned in the face of uncertainty, the short-term economic impacts are tangible, manifesting in slower output and GDP growth.

Recent research further suggests that regulatory burden can lead firms to shift their focus from investment to compliance and lobbying, with the latter aimed at reducing future regulatory burden.[31]

2.2.2. IMPLICATIONS FOR LABOR MARKETS

As with capital investment, uncertainty often leads to delayed hiring, particularly when labor markets are characterized by large hiring or firing costs.[32] This, in turn, can delay the launch of training programs or investment in skill development.

Regulatory intensity can also lead to similar outcomes. Kalmenovitz (2023) found that when facing surging costs due to higher regulatory intensity, companies concentrated on a smaller number of less-regulated business segments and pull resources away from hiring.[33] The effect was found to be economically large.

Studies commissioned by the Computer & Communications Industry Association (CCIA) also found a negative relationship between stricter *state antitrust standards* and job creation (as noted in Section 1.1). In a 2024 study, they estimated that implementing an abuse-of-dominance law stricter than federal standards (modeled on New York's proposed Twenty-First Century Antitrust Act) would result in significant job cuts due to higher compliance and litigation costs, as well as delays in investment and hiring due to uncertainty and compressed profit margins.[34] Using a similar approach, a 2026 paper evaluated the impacts of California's AB 1776 Bill and found the impacts (GDP and job losses) to be 40% higher than estimates for the New York Bill.[35]

It should be acknowledged, however, that stronger state antitrust *enforcement* has, in some instances, benefited labor markets, for example, by addressing no-poach agreements that received limited attention from federal agencies. State Attorneys General—particularly Washington State—began aggressively enforcing antitrust laws against no-poach agreements before the DOJ brought criminal prosecutions, and those state-led actions helped catalyze broader federal enforcement efforts.[36]

2.2.3. IMPACTS ON MARKET ENTRY/EXIT DYNAMICS

State antitrust activity can shape perceptions of the business climate, and these perceptions may influence firms' entry and expansion behavior.[37] The overall effect depends on whether stronger enforcement mainly makes markets more open to competition or instead raises costs and uncertainty for firms.

Empirical literature suggests that active state-level antitrust enforcement modestly discourages firm entry or expansion, particularly among larger, more established firms that are more likely to attract regulatory scrutiny. As discussed previously, heightened enforcement increases expected compliance and litigation costs, which can alter firms' strategic calculations regarding market participation and growth. These effects are not uniform

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[31] Joseph Kalmenovitz, "Regulatory Intensity and Firm-Specific Exposure," *The Review of Financial Studies* 36, no. 8 (2023) pp.3311–3347, accessed May 2026.
[32] Nicholas Bloom, "The impact of uncertainty shocks," *Econometrica* 77, no. 3 (2009), pp. 623-685.
[33] Joseph Kalmenovitz, "Regulatory Intensity and Firm-Specific Exposure," *The Review of Financial Studies* 36, no. 8 (2023) pp.3311–3347, accessed May 2026.
[34] Eliana Garces, et al., Computer & Communications Industry Association, "Assessment of Economic Costs of Imposing Abuse of Dominance Standards at the State Level," May 2024.
[35] Trevor Wagener, Computer & Communications Industry Association, "Rushed COMPETE Act Could Cost California $1 Trillion in GDP and 1.6 Million Jobs in 10 Years," April 2026.
[36] Christina Grey, "State Antitrust Enforcement of No-Poach Agreements and Non-Compete Agreements," *CPI Antitrust Chronicle*, September 2022, pp.3–7, accessed May 2026.
[37] Robert M. Feinberg and Thomas A. Husted, "Patterns of Establishment Entry and State-Level Antitrust," *Journal of Competition Law & Economics* 7, no. 4 (2011) pp.813–823, accessed May 2026.

across firms, with larger firms more likely to be affected.[38] Moreover, evidence indicates that political factors and the broader antitrust environment also play a significant role in shaping firm exit decisions. These findings suggest that state antitrust enforcement influences firm dynamics not only through direct legal constraints but also through expectations about political and regulatory conditions.[39]

Antitrust enforcement can also affect the startup ecosystem, though there is no consensus yet on the direction of impact. One strand of literature argues that exit opportunities are key entrepreneurial incentives. When antitrust enforcement substantially reduces the expected likelihood, timing, or value of acquisition exits, it increases perceived risk for founders and investors, potentially reducing startup formation and VC investment.[40] Other studies find that weaker antitrust enforcement leads to fewer startup formations. Zhang (2023) found that in regions with DOJ antitrust enforcement cutbacks, annual VC investment per startup fell by roughly 17% in the five years after the change.[41] Taken together, these findings suggest that antitrust enforcement can influence startup activity in opposing ways, with its overall effect depending on how enforcement shapes both competitive conditions and exit prospects.

2.2.4. MERGERS AND ACQUISITIONS ACTIVITY

Empirical research shows that active antitrust enforcement can significantly deter merger and acquisition (M&A) activity, largely due to increased uncertainty in the deal-making process. This happens through two main channels.

First, **uncertainty about regulatory outcomes**—such as whether a deal will be approved or what conditions might be imposed—can lead firms to delay or abandon transactions, especially when enforcement priorities shift at the state or federal level. Policy risk and uncertainty in merger review processes are found to disproportionately deter foreign acquirers from participating in local M&A markets.[42]

Second, the greater **likelihood of regulatory intervention** raises the perceived costs of pursuing deals, discouraging firms from attempting them in the first place. For example, regulatory enforcement in an industry may signal that future M&A transaction attempts in that industry will be subject to stricter scrutiny. Using U.S. data from the 1980s and 1990s, Clougherty and Seldeslachts (2013) showed that the probability of an antitrust challenge (where authorities demand a remedy or block a deal) emerged as the strongest predictor of reduced merger activity in the same industry.[43] By contrast, the mere fact that a deal is investigated—or that regulators have won in court in the past—showed weaker or no deterrence. More recent evidence points in the same direction. Analyzing nearly 7,000 mergers, de Bodt et al. (2024) found that merger activity in affected industries dropped by about 17%–21% in the three years after an antitrust intervention, and by as much as 34% when a deal was blocked or heavily litigated.[44]

[38] Ibid.
[39] Robert M. Feinberg, et al., DIW Berlin, "Does State Antitrust Enforcement Drive Establishment Exit?," DIW Discussion Papers No. 1323, August 2013, accessed May 2026.
[40] Brian J. Broughman, et al., "No Exit," *New York University Law Review* 100, no. 5 (2025), accessed May 2026.
[41] Wentian Zhang, arXiv, "The Effect of Antitrust Enforcement on Venture Capital Investments," arXiv:2312.13564, May 2024, accessed May 2026.
[42] Joseph A. Clougherty and Nan Zhang, "Foreign Investor Reactions to Risk and Uncertainty in Antitrust: U.S. Merger Policy Investigations and the Deterrence of Foreign Acquirer Presence," *Journal of International Business Studies* 52 (2021) pp.454–478, accessed May 2026.
[43] Joseph A. Clougherty and Jo Seldeslachts, Tinbergen Institute, "The Deterrence Effects of U.S. Merger Policy Instruments," Discussion Paper TI 2011-095/1, July 2011, accessed May 2026.
[44] Eric de Bodt, et al., "The Deterrence Effect of M&A Regulatory Enforcements," *Journal of Corporate Finance* 85 (2024), article 102559, accessed May 2026.

EX 19

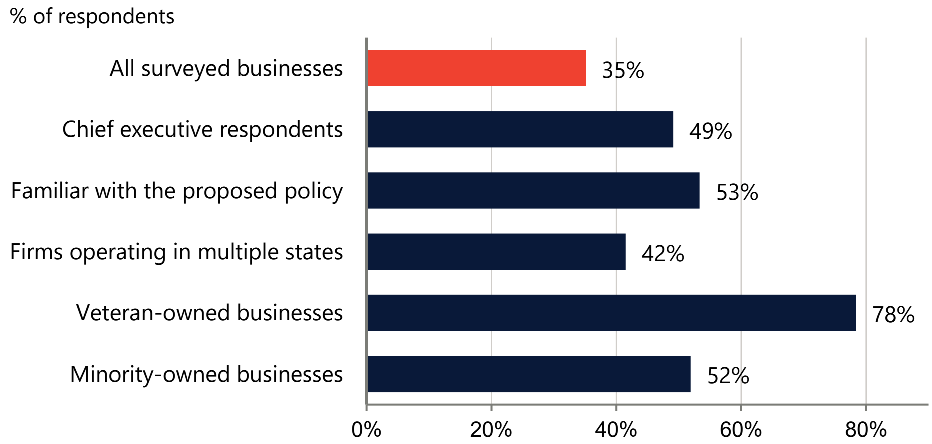
SECTION 3. BUSINESS AND COMMUNITY IMPACTS: SURVEY EVIDENCE

This section summarizes findings from a survey of 500 businesses in California and New York. The survey asked firms how a proposed antitrust law would affect their operations if adopted in their state. The legal framework presented to respondents was largely based on the California Law Revision Commission's recommendation on single firm conduct. More details on the survey, including demographic characteristics of the respondents and the full questionnaire, can be found in the Technical Appendix.

3.1. INCREASE IN COMPLIANCE BURDEN FOR BUSINESSES

As documented in Section 2, divergent state laws are expected to increase firms' legal and compliance burden. In our survey, over one-third of businesses (35%) expected an increase in the compliance burden if the proposed state antitrust legislation were adopted in their state (Figure 1).[45]

Figure 1: Share of businesses that anticipate an increase in compliance burden[46]



Sample n = 502
Question: Would new state-level antitrust legislation create additional compliance burdens for businesses like yours?
Source: YouGov, Oxford Economics

Expectations of higher compliance costs were more pronounced among respondents who reported greater familiarity with the proposed legislation (53%) and among those in the most senior positions, particularly CEOs (49%). This may reflect the fact that most informed respondents are more likely to anticipate impacts by identifying relevant provisions and indirect effects.

[45] This and the following charts in this section include only those subgroups for which the results are statistically significantly different.

[46] All survey figures, unless otherwise stated, are from YouGov Plc. Total sample size was 502 U.S. decision makers. Fieldwork was undertaken between March 19 and 30, 2026. The survey was carried out online.

EX 20

Firms that operated across multiple states were also more likely (42%) to anticipate a higher legal burden when state laws diverged from federal rules, as they must navigate multiple antitrust regimes.

Compared with the survey average, veteran- and minority-owned businesses were also more likely to expect an increase in legal burden, at 78% and 52%, respectively. Evidence suggests that business and legal uncertainty can have a disproportionate impact on such firms since they tend to be smaller, credit-constrained, and rely on state and federal programs, such as public procurement or certification programs.

Among respondents anticipating an increase in compliance burden, the most frequently cited concerns were higher costs for legal advice, compliance reviews, or administrative support (62%); more hours spent on paperwork, reporting, and compliance activities (60%); and greater uncertainty about which business practices were allowed.

Figure 2: Nature of compliance burden

Sample n = 176
Question: In what ways would you expect the new state-level antitrust legislation to increase compliance or operational burdens for businesses like yours? (Please select all that apply.)
Source: YouGov, Oxford Economics

Although it is challenging to quantify these costs in dollar terms, experience from other regulatory areas indicates that compliance costs can be high, oftentimes disproportionately burdening small firms, as illustrated in Box 2. These comparisons should be interpreted with caution, as privacy protection laws tend to apply broadly across firms, whereas antitrust enforcement is more targeted; thus, while such examples provide useful insights, they do not constitute a strictly like-for-like comparison.

Box 2: U.S. Privacy and Data Protection

U.S. privacy and data protection are among the most fragmented areas of regulation. In the absence of a federal privacy law, many states have passed state-level laws regulating the commercial collection and use of private data, beginning with California's first comprehensive consumer privacy statute in 2018. State laws differ significantly in terms of scope, thresholds, and enforcement. For example, every state has its own data breach notification statute with unique triggers and disclosure requirements, which complicates matters for any company handling customer data nationwide. Oversight is performed by state Attorneys General and federal agencies, such as the Federal Trade Commission (FTC) and federal authorities overseeing sectoral federal laws (e.g., the U.S. Department of Health and Human Services Office for Civil Rights for health data (HIPAA)).

The resulting patchwork imposes heightened compliance costs, as firms must navigate divergent rules across states and legal uncertainty, since what is lawful or required in one jurisdiction may differ in another.[47] The impacts are most pronounced for firms operating across multiple states, especially larger consumer-facing companies (e.g., retail chains, e-commerce, tech platforms, banks, fintech) that must tailor their practices to a variety of state laws. Small businesses and start-ups are also heavily impacted, lacking the compliance teams and budgets of big corporations. A 2023 Deloitte survey found that over 60% of US companies of all sizes cited state-level inconsistencies as their top challenge in privacy compliance.[48]

Multiple studies have calculated the magnitude of costs of regulatory fragmentation in the privacy and data protection area. Estimates suggest that, if all 50 states adopted their own distinct data protection laws, the resulting estimated out-of-state compliance costs could reach $98 billion to $112 billion annually, with small businesses bearing at least $20 billion of that burden.[49]

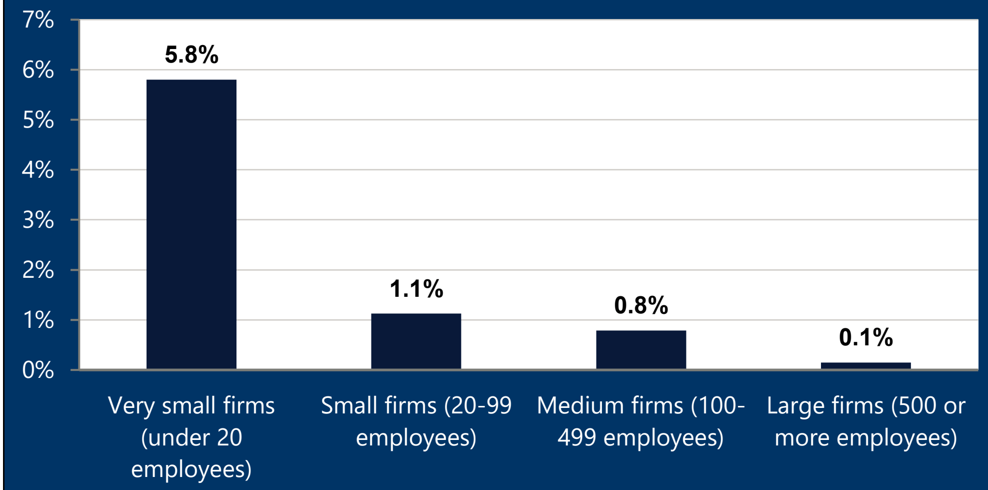
At the company level, studies find that the initial costs of complying with state-level legislation can be quite high and often disproportionately affect smaller firms relative to larger businesses. For example, the initial cost of compliance with the California Consumer Privacy Act (CCPA, 2018) is estimated at about $50,000 for firms with fewer than 20 employees, $100,000 for firms with 20 to 100 employees, $450,000 for firms with 100 to 500 employees, and approximately $2 million for firms with over 500 employees.[50]

A back-of-the-envelope estimate using nationwide SUSB data indicates that compliance costs account for a substantially larger share of receipts for smaller firms, reaching as high as 5.8% of annual receipts for firms with fewer than 20 employees, compared with just 0.1% for firms with more than 500 employees.[51] At the aggregate level, the authors of the study estimate that total cost of initial compliance with the CCPA at approximately $55 billion, which was equivalent to approximately 1.8% of California Gross State Product in 2018.

[47] Alexis Dessaints, "The American patchwork of privacy laws: navigating state-level fragmentation," DPO Consulting, November 2025, accessed May 2026.
[48] As cited in Alexis Dessaints, "The American patchwork of privacy laws: navigating state-level fragmentation," DPO Consulting, November 2025, accessed May 2026.
[49] Daniel Castro, et al., Information Technology and Innovation Foundation, "The Looming Cost of a Patchwork of State Privacy Laws," January 2022, accessed May 2026.
[50] David Roland-Holst, et al., California Department of Justice, "Standardized Regulatory Impact Assessment: California Consumer Privacy Act of 2018 Regulations," August 2019, accessed March 2026.
[51] The compliance costs were converted to 2022 dollars and then estimated as a percentage of firm receipts by size category using 2022 Statistics of U.S. Businesses (U.S. Census Bureau, "Statistics of U.S. businesses (SUSB)," 2022, accessed April 2026).

EX 22

Figure B1: Compliance costs as a share of receipts by firm size



Source: Oxford Economics, SUSB

For startups, compliance costs can even exceed their average monthly cash flows.[52] An Engine report (2023) finds that the initial costs of complying with privacy laws range from $100,000 to $300,000, while expanding into another state incurs additional costs of $15,000 to $60,000 per state. The same report indicates that the average monthly resources for a venture-backed, seed-stage startup are $55,000.[53]

The burden is further amplified by the dual cost structure businesses face; in addition to substantial initial compliance costs, they incur data breach-related expenses when breaches do occur. The data breach response requirements also vary by state and require state-specific processes,[54] [55] increasing complexity and cost, especially for organizations operating across multiple jurisdictions. This applies to all businesses with large data storage requirements, such as online retail and e-commerce, financial services, and healthcare.

Regulatory fragmentation also means that consumers' privacy protections depend heavily on where they live, creating unequal and inconsistent safeguards for personal data. This geographic variability can be confusing for consumers, who often interact with the same digital services across state lines and reasonably expect similar levels of privacy protection. Moreover, uneven protections can undermine trust in digital services, reduce transparency around data practices, and complicate consumers' ability to understand or exercise their rights.

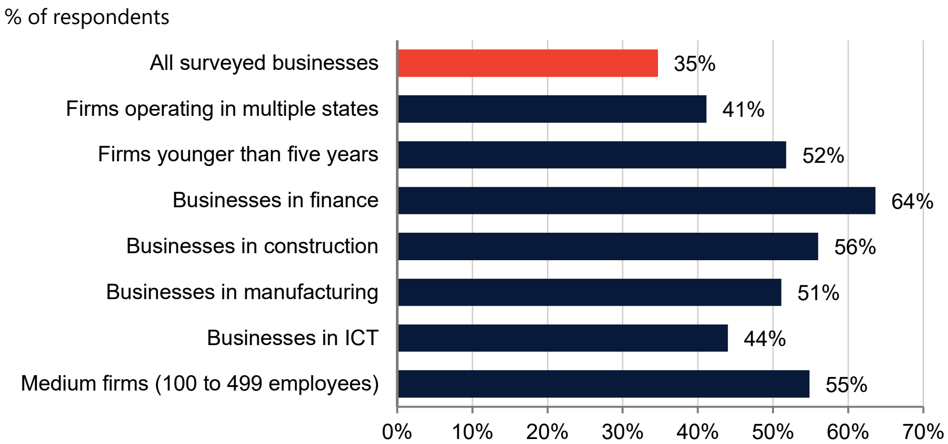
3.2. RELOCATION RISKS

Survey responses indicated that regulatory fragmentation may influence firms' location decisions, as suggested by some evidence covered in Section 2. Over one-third of businesses surveyed (35%) said they would consider relocating to a state that only followed federal antitrust law when faced with the prospect of newly introduced state-specific legislation.

[52] Engine, "Privacy Patchwork Problem: Costs, Burdens, and Barriers Encountered by Startups," March 2023, accessed April 2026.
[53] Engine, "The State of the Startup Ecosystem," 2021, accessed May 2026.
[54] Amelia M. Gerlicher, and Todd M. Hinnen, Perkins Coie, "Security Breach Notification Chart," 2025, accessed April 2026.
[55] Privacy Rights Clearinghouse, "Data Breach Notification Laws: 50 States + DC Survey 2026 Edition," 2026, accessed April 2026.

Results varied significantly across subgroups. Unsurprisingly, the share was higher among businesses operating in multiple states (41%), as they already had legal, administrative, and logistical infrastructure in other locations and were more likely to shift expansion, HQ functions, or new investment elsewhere (Figure 3).

Figure 3: Share of businesses that would consider relocation



Sample n = 502
Question: To what extent do you think your business would consider relocating to a state that only follows federal antitrust laws (and does not have additional state level antitrust standards)?
Source: YouGov, Oxford Economics

Young businesses (under five years of operation) were also more likely to consider relocation (52%). This is consistent with empirical research showing that the probability of moving decreases with a firm's age, irrespective of regulatory changes.[56]

Consideration to relocate also varied by industry, with higher shares reported among firms in ICT (44%), finance (64%), construction (56%), and manufacturing (51%). Overall, these patterns broadly align with industry-level mobility documented in the literature, suggesting that firms in sectors with lower relocation barriers are more likely to consider relocating if the proposed legislation were adopted.[57]

Surveyed medium-sized firms (100-499 employees) were more likely than smaller firms (under 100 employees) to report a consideration to relocate to a state with only federal antitrust regulation, likely reflecting their greater ability to absorb the fixed costs associated with relocation.

To contextualize the share of survey respondents that would consider relocating to a state with federal antitrust regulations only, the national baseline of firms actually relocating across state lines in any given year is less than 1% per annum.[58] This suggests that state-level regulatory divergence may meaningfully shape firms' location decisions by raising the relative cost of operating in certain jurisdictions. In the case of New York and California, this might further exacerbate an existing trend of negative net business migration.[59]

[56] Oyvind Lervik Nilsen, et al., "Where and why do firms choose to move? Empirical evidence from Norway," *Journal of Transport and Land Use* 13, no.1 (2020), pp. 207-225.
[57] For example, researchers find that consumer services firms are the least likely to relocate. Relative to consumer services, the probability of relocation is estimated to be 25% higher for manufacturing firms, 70% higher for construction firms, 100% higher for transport, warehousing, and communications firms, and 110 % higher for producer services firms. Michiel de Bok and Frank van Oort, "Agglomeration Economies, Accessibility and the Spatial Choice Behavior of Relocating Firms," *Journal of Transport and Land Use* 4, no. 1 (2011) pp.5–24, accessed May 2026.
[58] Akbar Sadeghi, et al., U.S. Bureau of Labor Statistics, "Firm Migrations in the United States: Magnitude and Trends," *Monthly Labor Review*, June 2023, accessed May 2026.
[59] Akbar Sadeghi, et al., U.S. Bureau of Labor Statistics, "Firm Migrations in the United States: Magnitude and Trends," *Monthly Labor Review*, June 2023, accessed May 2026.

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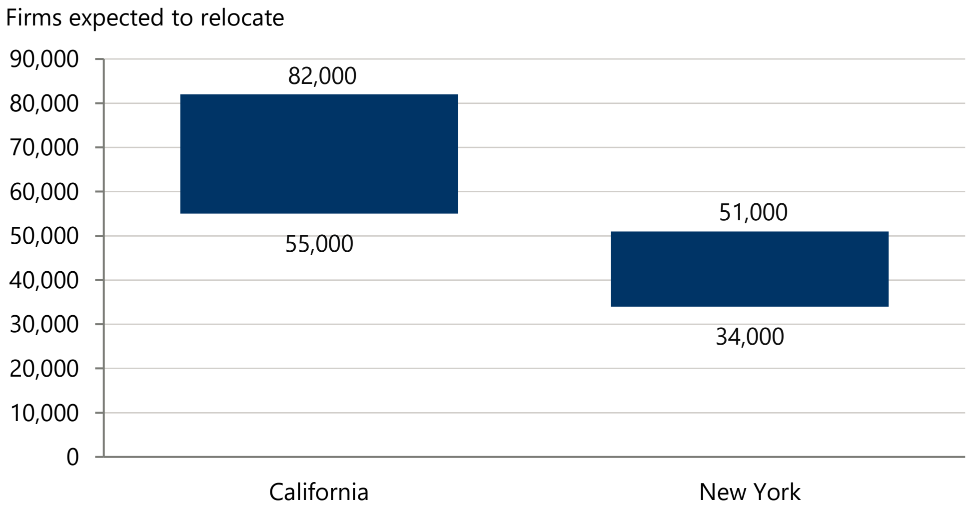
These survey responses should not be interpreted as implying that all firms considering relocation would ultimately move. The survey captures stated openness to relocation under a hypothetical policy change, whereas evidence from other contexts suggests that actual follow-through is typically lower. [60] Even so, if only 20% to 30% of respondents indicating they would consider relocation were ultimately to move, the implied business outflows could still be substantial. In California, for example, that would correspond to roughly 55,000 to 82,000 firms (Figure 4). The associated employment effects would depend on the size and industry mix of relocating firms but could still be meaningful. [61] These figures are illustrative rather than predictive and are intended only to show the potential scale of effects if even a minority of firms acted on stated relocation intentions.

Figure 4: Potential number of firms that could relocate from California and New York to other states



Source: Oxford Economics, YouGov, SUSB

Accelerated outmigration patterns could have broader economic consequences for these states, including reductions in the business tax base, slower employment growth, and weakened agglomeration effects in key industries. Over time, this dynamic raises the risk that regulatory divergence contributes to a vicious cycle in which business departures shrink the economic base, potentially constraining fiscal capacity and further altering the policy environment.

Interestingly, even the *intent* to relocate has important implications for local communities. Empirical literature shows that both actual relocations and the threat of relocation are associated not only with job losses but also with deteriorating working conditions. These negative effects are often more pronounced in firms that consider relocation but ultimately remain. When relocation enters negotiations, workers' bargaining power weakens,

[60] There is typically a gap between the share of respondents who report a consideration to relocate and those who actually relocate. Evidence from Germany, for example, suggests that the gap between relocation talks and actual relocations is 57.4% on average, see Heiner Dribbusch, Eurofound, "Impact of Company Relocations on Working Conditions," April 2007, accessed May 2026. Although this data point is derived from a European study with a different context, and there is no exact U.S. counterpart, the core distinction between relocation announcements and realized relocation decisions remains highly relevant to the United States. U.S. firms operate in a comparatively flexible restructuring environment, with weaker employment protections, lower collective-bargaining coverage, and strong interstate competition for investment. These features may make relocation threats particularly credible and may amplify their effects on workers and local stakeholders even when announced relocations are not ultimately carried out. The paper is therefore useful as a benchmark for analyzing the gap between relocation discourse and realized firm behavior.

[61] Josh Bivens, Economic Policy Institute, "Updated Employment Multipliers for the U.S. Economy," January 2019, accessed April 2026.

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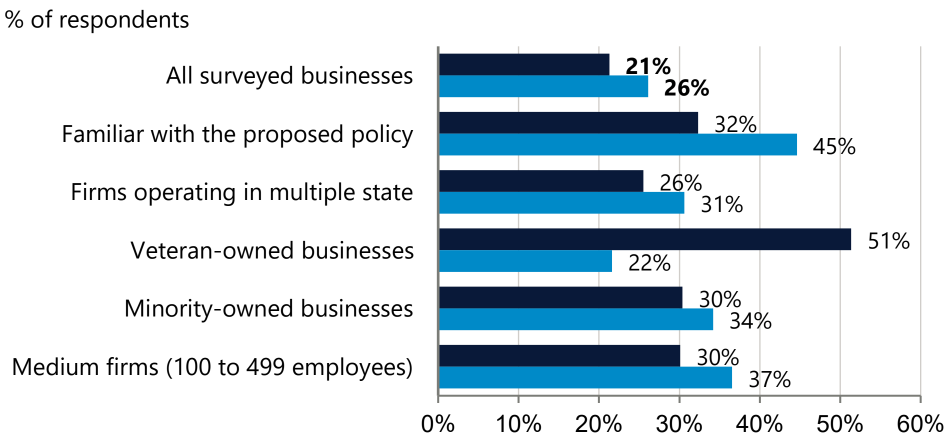
leading to concessions. As a result, the intent of relocation can have effects on workers and communities that are as significant as relocation itself.[62]

At the individual level, displaced workers often experience lasting setbacks, as job loss can lead to downward movement along the job ladder into lower-paying firms, occupations, or industries, resulting in persistent declines in earnings.[63] These impacts may be especially pronounced for low-skilled workers, whose lower geographic mobility limits their ability to respond by relocating to areas with better employment opportunities.[64]

3.3. DELAYS IN HIRING AND CHANGES IN JOB COMPOSITION

As noted in Section 2, uncertainty incentivizes firms to delay hiring. Over one-fifth of businesses in our sample (21%) reported a possibility of hiring delays connected to the proposed regulatory changes, and over one-quarter (26%) expected changes in job composition (i.e., job roles or skill needs may change, but total employment will not) (Figure 5). Consistent with previous findings, respondents who were more likely to anticipate an increase in legal burdens also reported a higher likelihood of hiring delays and/or changes in job composition.

Figure 5: Share of businesses that expect hiring delays or changes in job composition



Sample n = 502
Question: And what impact would the proposed state-level antitrust legislation have on hiring at your company if implemented in your state?
Source: YouGov, Oxford Economics

Delays in hiring can have broad community impacts. When hiring slows, workers are less likely to change jobs, and unemployment spells tend to last longer.[65] This can weaken local economic activity. The effects are not evenly distributed across demographic groups. New graduates are particularly vulnerable, as limited entry-level job openings can delay labor market entry, negatively impacting their future employment prospects.[66] As

[62] Heiner Dribbusch, Eurofound, "Impact of Company Relocations on Working Conditions," April 2007, accessed May 2026.
[63] Shakked Noy, National Bureau of Economic Research, "The Effects of Job Loss on Low-Wage Workers," *NBER Digest*, September 2023, accessed May 2026.
[64] Matthew J. Notowidigdo, "The Incidence of Local Labor Demand Shocks," Northwestern University working paper, March 2019, accessed May 2026.
[65] Ray Maurer, "Hiring comes to a halt in July," SHRM, August 2025, accessed May 2026.
[66] Daiji Kawaguchi, and Tetsushi Murao, "Labor-Market Institutions and Long-Term Effects of Youth Unemployment," *Journal of Money, Credit and Banking* 46, no. S2 (2014), pp. 95–116, accessed May 2026.

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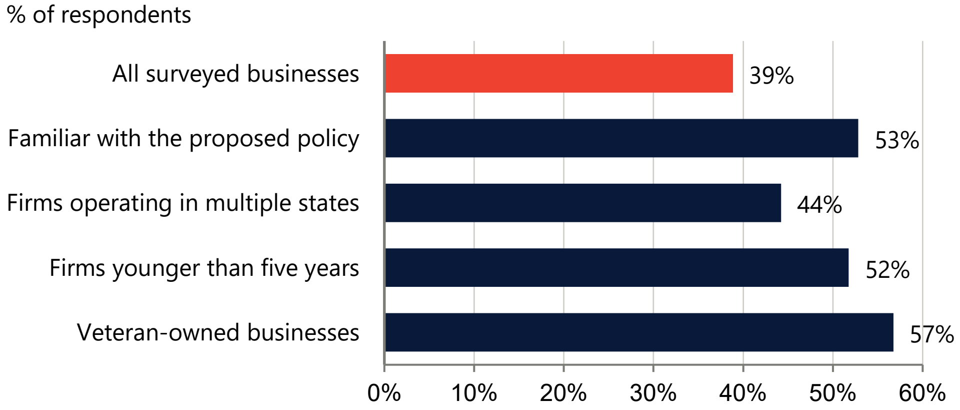
discussed previously, low-skilled workers may also be disproportionately affected, given their lower likelihood of geographic mobility to regions with stronger job markets.[67]

3.4. M&A ACTIVITY UNDER STATE ENFORCEMENT

When antitrust regulations become stricter, merger review processes can be expected to lengthen. Consistent with this view, 39% of survey respondents expected acquisitions to take longer in the event of the introduction of state-specific merger provisions, due to added review time and regulatory scrutiny.[68]

Figure 6: Share of businesses that expect acquisitions to take longer

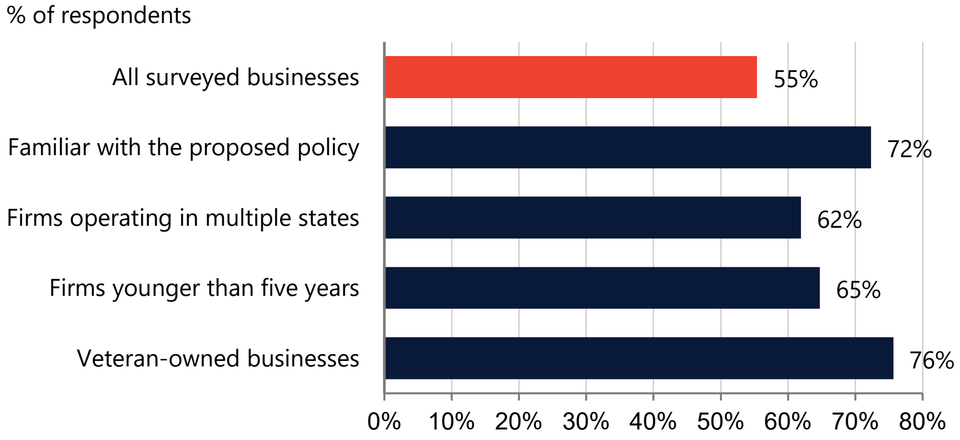


Sample n = 502
Question: Which of the following statements do you agree with? The proposed state-level antitrust legislation will mean acquisitions by businesses may take longer to complete due to added review or uncertainty
Source: YouGov, Oxford Economics

Moreover, in our survey, 55% of businesses said they expected the *possibility* of the state suing to block a merger to influence a business's interest in pursuing the deal. This aligns with the literature predicting that state antitrust activity can deter not only current deals but also similar future deals, as it signals that they will also be subject to increased scrutiny.

[67] Matthew J. Notowidigdo, "The Incidence of Local Labor Demand Shocks," Northwestern University working paper, March 2019, accessed May 2026.
[68] Results should be treated with caution since at the time the survey was fielded, the California Law Revision Commission proposal for merger provisions was not defined.

Figure 7: Share of businesses that expect state suing to block a merger to influence a business's interest in pursuing the deal



Sample n = 502
Question: If your state adopted additional merger-related provisions, how likely or unlikely it is that the possibility of the state suing to block a merger would influence a business's interest in pursuing the deal?
Source: YouGov, Oxford Economics

Responses among firms younger than five years displayed even larger shares agreeing with the statements above. This is especially relevant in light of the fact that young firms are more likely to consider being acquired, as found in both the survey and the literature. [69]

[69] Elena Cefis, and Orietta Marsili, "Born to Flip: Exit Decisions of Entrepreneurial Firms in High-Tech and Low-Tech Industries," *Journal of Evolutionary Economics* 21, no. 3 (2011), pp. 473–498, accessed May 2026.

SECTION 4. PROJECTED POLICY OUTCOMES AND SCENARIOS

As described in Section 1.1, California and New York are considering state-level antitrust laws that diverge significantly from federal standards. Whether these initiatives will lead to broader regulatory divergence across the United States, or whether the current model of cooperative federalism will remain predominant, will depend on several interrelated factors.

One of the most important factors is **whether these legislative proposals are ultimately enacted in the initial adopter states**.[70] At present, the outcome remains uncertain. The AB 1776 (the COMPETE ACT) has passed the Assembly, but to become law, it must also pass the Senate and receive the Governor's approval, with a deadline of August 31 for legislative passage.[71] New York's Twenty-First Century Anti-Trust Act (SB 335) passed the State Senate in 2025 but did not advance in the Assembly. Should at least one of the bills pass and become law, subsequent developments, including early enforcement activity, judicial review, and observed economic and business responses, are likely to shape their longer-term influence.

If enacted, it is anticipated that the state Attorney General's office will pursue high-profile cases using the new antitrust regulations, such as AB 1776, as a basis for enforcement actions. The **outcomes of such early cases will largely shape businesses' expectations about how aggressively the law will be enforced and how likely future deals are to face challenge.** That is important because, in our survey, 55% of businesses said that the *possibility* of the state suing to block a merger would influence a firm's interest in pursuing the deal, suggesting that antitrust enforcement can deter not only the transactions directly challenged, but also similar future deals by signalling increased scrutiny**.**

The **state antitrust bills could have implications beyond firms physically located in the enacting state**. For example, AB 1776 would apply not only to firms located or headquartered in California, but also to firms engaged in business or trade in California.[72] As a result, the practical reach of such legislation may extend to out-of-state firms with commercial activity connected to the state. This raises potential constitutional questions under the Dormant Commerce Clause, particularly its extraterritoriality doctrine. Under this principle, state laws that directly regulate or have the practical effect of controlling commerce occurring wholly outside the state's borders are treated as presumptively invalid—a stricter standard than the general balancing test applied to laws that merely burden interstate commerce. Whether AB 1776, as applied to out-of-state firms, would cross that line depends on how courts assess the nexus between the regulated conduct and California—a question that existing doctrine does not yet resolve for novel state antitrust frameworks of this scope.[73]

Economic impacts and business responses may also play an important role in whether similar state-level antitrust laws are adopted in other states. Proposals such as AB 1776 place greater emphasis on preventing anticompetitive conduct, including conduct that may not be actionable under current federal standards.[74] Critics argue this could lead to slower economic growth, greater operational complexity, and uncertainty. Consistent with these concerns, our survey evidence suggests that businesses anticipate tangible effects: for example, around one in five firms report expectations of delayed hiring, while approximately 35% anticipate an increased legal and compliance burden if the proposed state antitrust legislation were adopted in their state.

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[70] Craig Volden, et al., "A Formal Model of Learning and Policy Diffusion," August 2008, accessed May 2026.
[71] Brian C. Rocca, et al., "California Legislature Proposes Major Cartwright Act Expansion with 'Single Firm Conduct' Provision," Morgan Lewis, April 2026, accessed May 2026.
[72] Eric Fruits, et al., "Competing Against Competition: The COMPETE Act's Antitrust Overreach," International Center for Law & Economics, May 2026, accessed May 2026.
[73] Ibid.
[74] Ibid.

How these trade-offs are perceived—both by businesses operating under the new rules and by policymakers in other states—may serve as a cautionary signal to other states considering similar legislative approaches. Additionally, sustained organized business opposition to state antitrust bills may play a role in shaping political outcomes.

Political alignment is an additional consideration.[75] The early introduction of similar bills in New York and California indicates that subsequent adoption is likely to be concentrated in politically progressive states, such as Washington and Massachusetts, rather than uniformly across all jurisdictions.

Taken together, these factors suggest several plausible paths forward, as illustrated below

Figure 8: Scenarios for divergence in state-level antitrust enforcement

Scenario 1: Broad divergence from federal antitrust standards	Scenario 2: Partial convergence on limited state-level provisions	Scenario 3: Limited adoption for state-level antitrust laws
In this scenario, California and/or New York enact comprehensive antitrust reforms that withstand legal challenges and business opposition, and state courts start giving priority to these laws over federal case precedents. Firms engaged in commerce with these states adjust their practices accordingly, regardless of their headquarters location. Other progressive states with larger economies—including Massachusetts, Illinois, and Washington—follow suit in adopting divergent state antitrust regulations.	In this scenario, some limited provisions will gain traction and be adopted across multiple states (mostly in Democratic-majority, larger states), while broader departures from federal standards do not. This may include provisions such as a parallel state merger review system in addition to the federal Hart-Scott-Rodino (HSR) Act, or considerations of labor market impacts, but not a complete overhaul of the antitrust laws, as in Scenario 1. This scenario is plausible if California and/or New York enact their respective bills, but the scope of those bills is substantially constrained by legal challenges and practical enforcement limitations, resulting in incremental rather than comprehensive reform.	In this scenario, legislative proposals are scaled back, delayed, or abandoned due to concerns about legal uncertainty, enforceability, or economic impact. Judicial decisions or political opposition may constrain implementation, limiting the influence of state-level antitrust reforms beyond the initial proposals. Developments in New York provide an illustration of how such dynamics might unfold.

The three scenarios outline a continuum of state-level antitrust divergence, ranging from broad fragmentation (Scenario 1) to partial convergence (Scenario 2), to more limited adoption (Scenario 3). However, even where convergence is partial, in the context of digital markets, significant fragmentation still arises as these firms operate across jurisdictions by default and cannot avoid compliance obligations through relocation. As a result, digital companies must align with the most stringent rules in major markets, meaning that even partial adoption can generate significant compliance costs, complexity, and legal uncertainty beyond the adopting states.

Collectively, these developments underscore some key economic trade-off between state autonomy and regulatory uniformity. State-level experimentation allows jurisdictions to tailor competition policy to local economic conditions and policy priorities and can serve as a testing ground for alternative approaches to antitrust enforcement. At the same time, greater divergence across states may increase compliance costs, legal

[75] Stefano DellaVigna and Woojin Kim, National Bureau of Economic Research, "Policy Diffusion and Polarization across U.S. States," Working Paper No. 30142, June 2022, accessed May 2026

uncertainty, and barriers to interstate commerce, particularly for firms operating at scale or across multiple states. The long-term economic effects of expanded state antitrust authority will therefore depend on how these competing considerations are balanced in practice, as well as on the extent to which courts, enforcement agencies, and legislatures coordinate to mitigate fragmentation while preserving space for regulatory variation.

SECTION 5. CONCLUSIONS

The aim of this report is to evaluate the consequences of divergent antitrust legislation and enforcement. Drawing on evidence from the literature, policy case studies, and business survey analysis, this section presents a set of insights relevant to policymakers:

1. **The merits of cooperative federalism**. U.S. antitrust enforcement has historically operated within a system of cooperative federalism, in which federal and state enforcement agencies operate in parallel while coordinating their efforts**.** Departures from this approach—through state antitrust provisions that differ substantially from federal standards—may increase regulatory fragmentation, potentially leading to greater legal complexity, uncertainty, and coordination challenges.
2. **The role of state-level antitrust enforcement**. State antitrust enforcement is best directed on competition issues with a strong local dimension or on supplementing federal enforcement in areas receiving limited attention. States seeking to promote antitrust reform on fundamentally national issues should do so by utilizing their antitrust enforcement tools under federal antitrust mechanisms, not state law.
3. **Duplication and inconsistency costs.** Regulatory fragmentation can affect firms' operating costs through both duplication and inconsistency. Duplication costs arise when multiple agencies impose similar requirements, resulting in redundant reporting obligations, overlapping audits, and parallel legal proceedings. Inconsistency costs stem from differing regulatory requirements across agencies and states, often imposing a greater burden than duplication costs, as they drive up compliance expenses and increase uncertainty when identical situations may be assessed differently by different authorities.
4. **Distributional effects across firms.** The effects of regulatory fragmentation may vary across firms. Regulatory fragmentation affects multistate firms by introducing inconsistent rules that prevent seamless scaling across states, forcing firms to either customize operations on a jurisdiction-by-jurisdiction basis or adopt the most restrictive standards nationwide. Regulatory fragmentation can also disproportionately impact small and medium-sized firms, particularly where fixed compliance costs represent a larger share of overall operating expenses.
5. **Investment and hiring effects.** Empirical evidence suggests that regulatory fragmentation is associated with uncertainty, slowing investment and hiring. In response, some firms may postpone capital investment and hiring, which can slow output growth and delay workforce training and skill development.
6. **Antitrust enforcement and M&A activity.** Empirical research shows that active antitrust enforcement can significantly deter merger and acquisition activity. This largely stems from increased uncertainty in the deal-making process. The effects operate through both uncertainty about regulatory approval and the heightened risk of regulatory intervention. The probability of an antitrust challenge (where authorities demand a remedy or block a deal) emerges as the strongest predictor of reduced merger activity in the same industry.
7. **Survey evidence on anticipated firm response.** Survey evidence from businesses in California and New York suggests proposed state antitrust laws could increase legal burdens, make firms consider relocation, delay hiring, and negatively impact M&A activity. Approximately one-third of respondents were concerned about increased legal burdens if state-level antitrust legislation similar to California's proposal were adopted. Respondents also reported that regulatory changes could influence decisions related to hiring, location, and merger activity, including expectations of longer transaction timelines or increased regulatory scrutiny.
8. **Broader economic implications.** To the extent that regulatory changes influence firm location or hiring decisions, they can translate into broader economic consequences for affected states. Firm

relocation can shrink the local tax base, slow employment growth, and worsen working conditions, while hiring delays can extend unemployment spells.

9. **Possible scenarios.** The adoption of divergent state antitrust frameworks will depend on a combination of economic, legal, and institutional factors, such as whether the proposed legislative developments are enacted in the early adopter states, early enforcement outcomes, challenges regarding the legality of the proposed antitrust developments, their economic impacts if implemented, and the political alignment of other states.

Overall, efforts to expand state antitrust authority highlight a central trade-off between the potential benefits of state-level policy experimentation and the economic costs of regulatory fragmentation, with long-term outcomes depending on how effectively divergence is balanced with coordination.

SECTION 6. TECHNICAL APPENDIX

6.1. SURVEY

In March 2026, YouGov conducted an online survey of businesses in New York and California. The sample consisted of 502 respondents, split about evenly between the two states, and was designed to include at least 50 large firms (with 500 or more employees) per state. It was selected at random within these groups. Respondents included business owners and partners, chairpersons, chief executives, managing directors, non-executive directors, other board-level executives, and senior managers below board level.

Table A1: Demographic characteristics of survey respondents

Characteristic	Category	N	%
Business location	California	250	50%
	New York	252	50%
Firm size	Small business (1-99 employees)	274	55%
	Medium business (100-499 employees)	93	19%
	Large business (500 or more employees)	135	27%
Years in operation	Up to 1 year	10	2%
	1 to 2 years	22	4%
	2 to 5 years	53	11%
	5 to 10 years	95	19%
	Over 10 years	314	63%
	Don't know	8	2%
Operate in mutiple states	Yes	294	59%
	No	208	41%
Business qualifies as one of the following	Minority-owned business	79	16%
	Women-owned business	95	19%
	Veteran-owned business	37	7%
	Disadvantaged business enterprise	16	3%
	None of the above	322	64%
	Prefer not to say	11	2%
Industry in which business operates	Arts, entertainment, and recreation	28	6%
	Construction	50	10%
	Finance and insurance	33	7%
	Healthcare services and social assistance	23	5%
	Information technology	100	20%
	Professional, technical, and scientific services	44	9%
	Real estate	25	5%

	Retail trade	27	5%
	Other	172	34%
Respondent's responsibility at work	Owner/proprietor	161	32%
	Partner	34	7%
	Chairperson	11	2%
	Chief executive	59	12%
	Managing director	110	22%
	Non executive director	26	5%
	Other board-level manager/director	20	4%
	Other senior manager or director below board level	81	16%

Questionnaire

Before taking the survey, respondents were provided with an overview of antitrust legislative developments in California (shown below). New York businesses were instructed to respond to questions considering the potential of New York implementing similar regulatory changes.

In 2022, the California Legislature asked the California Law Revision Commission (CLRC), an independent agency that studies state laws and suggests improvements, to review the Cartwright Act, California's main antitrust law.

The Cartwright Act, unlike Section 2 of the Sherman Act, does not currently regulate single-firm conduct. The CLRC has recommended that significant changes be made to the Act aimed at preventing any single company, no matter how small or large, from engaging in any "restraint of trade" or from monopolizing any part of trade or commerce.

The recommendation, if adopted into law, also instructs state courts to ignore federal court antitrust rulings, which could create regulatory uncertainty for firms that are currently complying with federal antitrust guidelines. The CLRC's recommendations are now being introduced as a bill in the California legislature.

1. How familiar or unfamiliar are you with these proposed changes to state antitrust legislation?
    - Very familiar
    - Somewhat familiar
    - Somewhat unfamiliar
    - Very unfamiliar
    - Don't know
2. Would you expect the proposed state antitrust legislation to have a positive or negative impact on your business, or would it make no difference?
    - Very positive impact
    - Somewhat positive impact
    - It would make no difference
    - Somewhat negative impact
    - Very negative impact
    - Don't know
3. Would new state-level antitrust legislation create additional compliance burdens for businesses like yours?
    - Yes
    - No
    - Don't know

4. (If 3 = Yes) In what ways would you expect the new state-level antitrust legislation to increase compliance or operational burdens for businesses like yours? (Please select all that apply)
    - More hours spent on paperwork, reporting and compliance activities
    - Higher costs for legal advice, compliance reviews, or administrative support
    - Greater uncertainty about which business practices are allowed
    - Additional steps required before making business decisions (e.g. contracts, partnerships, pricing changes)
    - Increased risk of audits, investigations, or regulatory scrutiny
    - Delays in completing transactions such as mergers, acquisitions, or major contracts
    - Need for additional staff training on new requirements
    - Other [open] Please specify
    - Don’t know
5. To what extent do you think your business would consider relocating to a state that only follows federal antitrust laws (and does not have additional state-level antitrust standards)?
    - Definitely would consider
    - Probably would consider
    - Neutral / No opinion either way
    - Probably would not consider
    - Definitely would not consider
6. How do you expect the proposed state-level antitrust legislation to impact your business’s prospects (e.g. future success, growth potential etc.)? (Please select all that apply. If you do not think the proposed state-level antitrust legislation will have any impact on your business's prospects, please select the “Not applicable” option)
    - Lower sales growth
    - Higher sales growth
    - Lower margins
    - Higher margins
    - Lower product/service prices
    - Higher product/service prices
    - Reduced ability to enter new markets
    - Improved ability to enter new markets
    - Delayed deal-making processes in mergers and acquisitions
    - Improved deal-making processes in mergers and acquisitions
    - Other [open] Please specify
    - Don’t know
    - Not applicable - I do not think the proposed state-level antitrust legislation will have an impact on my business's prospects
7. a. (For businesses in California) How has the proposed state-level antitrust legislation affected, or how do you expect it to affect, your business’s investment plans? (Please select the option that best applies.)
    - Investment has **increased** due to the proposal
    - Investment has **decreased** due to the proposal
    - No change so far, but investment is **likely to increase** over the next three years
    - No change so far, and investment is **expected to remain** about the same over the next three years
    - No change so far, but investment is **likely to decrease** over the next three years
    - Don't know

    b. (For businesses in New York) If implemented in your state, how do you expect the proposed state level antitrust legislation to affect your business’ investment plans over the following three years? (Please select the option that best applies.)

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- Investment is likely to increase
- Investment is expected to remain about the same
- Investment is likely to decrease
- Don't know

8. a. In your opinion, if implemented in your state, how is the proposed state-level antitrust legislation likely to affect employment at your business?

    - Employment is likely to increase
    - Employment will remain about the same
    - Employment is likely to decrease

    b. And what impact would the proposed state-level antitrust legislation have on hiring at your company if implemented in your state?

    - Hiring plans are likely to be delayed or put on hold
    - Job roles or skill needs may change, but total employment will not
    - Neither of these
    - Don't know

9. In your opinion, if implemented in your state, how is the proposed state-level antitrust legislation likely to affect wages at your business?

    - I expect wages to increase
    - I expect wages to stay about the same
    - I expect wages to decrease
    - Don't know

10. Has your business considered participating in a merger or acquisition, whether as a buyer or as a potential target? (Please select the option that best applies, thinking about your business's current position.)

    - Yes, my business is actively considering an acquisition
    - Yes, my business is open to being acquired
    - Yes, my business is open to either a merger or acquisition
    - No, my business has not considered a merger or acquisition but might do in the future
    - No, my business has not considered a merger or acquisition and would never consider this
    - Don't know

11. If implemented in your state, how do you expect the proposed state-level antitrust legislation to affect the valuation of businesses in general, in the context of acquisitions?

    - It will lower the value of acquisition targets
    - It will have no impact on acquisition targets
    - It will increase the value of acquisition targets
    - It will make valuations more uncertain or harder to determine
    - Don't know

12. a. And if implemented in your state, how do you expect the proposed state-level antitrust legislation affect the likelihood that acquisition by businesses will be completed?

    - Increase the likelihood that deals will be completed
    - No meaningful impact on deal completion
    - Decrease the likelihood that deals will be completed
    - Don't know

    b. And still think about if the proposed state-level antitrust legislation was implemented in your state. Which, if any, of the following statements do you agree with?

    The proposed state-level antitrust legislation…

- ...will mean acquisitions by businesses may take longer to complete due to added review or uncertainty
- ...will mean deals are harder to structure or negotiate, even if not less likely overall
- None of these
- Don't know

13. If your state adopted additional merger-related provisions, how likely or unlikely do you think it is that the possibility of the state suing to block a merger, would influence a business's interest in pursuing the deal?

- Very likely
- Somewhat likely
- Neither likely nor unlikely
- Somewhat unlikely
- Very unlikely
- Don't know

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August 07, 2026

Association for Competitive Technology

The Honorable Richard Simpson
Chairperson
California Law Revision Commission
c/o Legislative Counsel Bureau
925 L Street, Suite 275
Sacramento, California 95814

RE: ACT Comments on Memorandum 2026-29 (Draft Language Options for Mergers and Acquisitions)

Dear Chairperson Simpson and Members of the Commission,

We at the Association for Competitive Technology (ACT) appreciate the opportunity to submit these supplemental comments to the California Law Revision Commission regarding Memorandum 2026-29 on Draft Language Options for Mergers and Acquisitions.[1] This letter builds on the written comments ACT submitted on March 30, 2026, and the verbal comments provided at the Commission's March 20, 2026, meeting.[2] ACT represents the small business and startup technology developer community around the world that creates the software and connected devices driving internet of things (IoT) use cases across consumer and enterprise contexts. Today, the domestic value of the ecosystem ACT represents is approximately $1.8 trillion, supporting 6.1 million U.S. jobs, and serving as a key driver of the $8 trillion IoT revolution.[3] Our members rely on predictable, evidence-based merger enforcement to raise capital, scale their innovations, and compete in the marketplace.

[1] California Law Revision Commission, Memorandum 2026-29, Draft Language Options for Mergers and Acquisitions (July 24, 2026), https://clrc.ca.gov/pub/2026/MM26-29.pdf.
[2] Association for Competitive Technology (ACT), *Follow-Up Comments on Memorandum 2026-14 (Draft Language Options for Mergers and Acquisitions)* 1 (Mar. 30, 2026) (noting that the submission "serves to reiterate and expand upon the verbal comments provided by ACT at the Commission's March 20, 2026, meeting"), https://actonline.org/2026/03/31/act-comments-to-the-california-law-revision-commission-on-proposed-merger-provisions/.
[3] Association for Competitive Technology, Fast Facts, https://actonline.org/wp-content/uploads/Fast-FactS_Website.pdf.

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While ACT strongly supports effective competition enforcement aimed at protecting consumers, we remain deeply concerned with the revised draft language options presented in Memorandum 2026-29. Reorganizing the prior options into a Basic Merger Framework and optional additions does not resolve their central defects. The Basic Framework would establish a California-specific merger cause of action, codify a structural presumption drawn from *United States v. Philadelphia National Bank*, and direct courts to harmonize the statute with the 2023 Federal Merger Guidelines. The additional options include fixed concentration thresholds, a restrictive rebuttal standard, or an untested "appreciable risk" test. ACT opposes any California-specific merger standard that departs from the well-established federal framework that currently allows procompetitive technology mergers to proceed.

California Already Has the Tools and Information Needed to Review Mergers

Before recommending a new substantive merger standard, the Commission should identify the problem that existing law cannot solve. California is already an active merger enforcer and has adopted targeted pre-merger notification requirements where the legislature identified a specific need. Acquisitions of retail grocery firms and retail drug firms are already subject to notice to the Attorney General of California, generally at least 180 days before closing.[4] California has also enacted the California Uniform Antitrust Premerger Notification Act, commonly described as a state-level "mini-HSR" law. Beginning January 1, 2027, certain parties filing federally will be required to provide the California Attorney General with a complete electronic copy of the federal Hart-Scott-Rodino (HSR) form within one business day, along with the same additional documentary material in specified circumstances. These laws give California early and detailed visibility into transactions with a meaningful connection to the state, while the California Attorney General's existing federal enforcement authority provides a mechanism to challenge transactions that threaten competition, without creating a separate merger standard.[5]

These are already being put into use. For example, in July 2026, the California Attorney General led a coalition of 12 state attorneys general in challenging Paramount Skydance Corporation's proposed acquisition of Warner Bros. The states secured a temporary restraining order and then an agreement preventing the parties from merging until June 1,

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[4] Cal. Corp. Code §§ 14700-14707; 2023 Cal. Stat. ch. 457 (AB 853), https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202320240AB853.

[5] Cal. Bus. & Prof. Code §§ 16780-16787; 2026 Cal. Stat. ch. 3 (SB 25). The Act applies to federal premerger notifications filed on or after January 1, 2027. https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202520260SB25.

2027, or until after a decision on the merits, whichever occurs first. Whatever one's view of that transaction, the matter demonstrates that California can investigate, challenge, and halt a merger under the existing federal standard when it believes the evidence supports intervention.[6] A separate state standard would add uncertainty and litigation risk without addressing a demonstrated enforcement gap.

Acquisition is a Core Pathway for Startup Success and Innovation

For the startups and small businesses we represent, acquisition is often the most realistic and pro-consumer path to success. Initial public offerings are costly, risky, and inaccessible to most small firms. Recent market data underscores this reality: initial public offerings accounted for only 3.8 percent of all U.S. venture-backed exits between 2023 and 2025, while mergers and acquisitions dominated, accounting for 73.7 percent of those exits.[7] Acquisition allows innovative products and services to reach scale quickly by combining them with complementary resources, technical expertise, and distribution networks.

Crucially, even for firms not actively seeking an acquisition, closing down or severely restricting acquisition prospects negatively impacts their enterprise value. This directly affects a startup's ability to negotiate with potential investors. Founders maintain leverage when investors know the company has value on the open market. A merger policy that undermines this pathway risks reducing startup formation, deterring early-stage investment, and ultimately weakening long-run competition.[8]

The average duration of a significant U.S. merger investigation reached 12.3 months in 2025, compared with an average of 8.1 months between 2011 and 2016. Delay itself can force parties to abandon a transaction irrespective of the merits, and the costs fall hardest on startups for whom time and capital are the scarcest resources. Layering a separate California standard onto an already lengthy and uncertain national process would compound those harms.[9]

Strict Structural Presumptions Risk Punishing Procompetitive Innovation

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[6] California Office of the Attorney General, "Attorney General Bonta Files Lawsuit to Block $110 Billion Warner Bros./Paramount Merger" (July 13, 2026), https://oag.ca.gov/news/press-releases/attorney-general-bonta-files-lawsuit-block-110-billion-warner-brosparamount.

[7] Ashurst Perkins Coie, "10 Ways to Exit Your Startup" (Aug. 19, 2025) (citing PitchBook's 2025 U.S. Venture Capital Outlook), https://www.ashurstperkinscoie.com/en/insights/10-ways-to-exit-your-startup/.

[8] Mercatus Center, George Mason University, "Prioritizing Innovation in Antitrust Merger Analysis" (August 15, 2024), https://www.mercatus.org/research/policy-briefs/prioritizing-innovation-antitrust-merger-analysis.

[9] Association for Competitive Technology, M&A Review in the AI Era: Why Fast, Predictable Merger Timelines Matter for Small Businesses (2026), https://actonline.org/wp-content/uploads/MA-Review-in-the-AI-Era-June-2026.pdf.

ACT is particularly concerned that the Basic Merger Framework would codify the *Philadelphia National Bank* structural presumption, while the optional Federal Merger Guidelines language would add fixed Herfindahl-Hirschman Index (HHI) and market-share thresholds to California law. Under that option, a merger would be presumed unlawful if it resulted in a market with an HHI above 1,800 and an increase above 100 points, or a firm with more than 30 percent market share and an HHI increase above 100 points. The merging parties could rebut that presumption only by satisfying a demanding standard that limits consideration of procompetitive benefits to the same relevant market.

Market share and concentration measures can be poor proxies for competitive dynamics in innovation-driven markets. *Philadelphia National Bank* itself involved a horizontal merger between two commercial banks. The Supreme Court did not create a universal 30 percent bright line, and Memorandum 2026-29 acknowledges the same and that no particular percentage was deemed critical. California should not transform the facts of a 1963 horizontal banking case into a statutory presumption governing vertical transactions, multi-sided platforms, artificial intelligence partnerships, and zero-price digital markets.[10]

The mismatch is particularly clear in zero-price and multi-sided markets, where competition often occurs through quality, privacy, security, functionality, innovation, attention, and access rather than a posted price. Small app developers and connected device companies rarely build products that fit neatly into a single market. Their innovations touch multiple markets simultaneously, operating as multi-sided platforms that coordinate demands across distinct groups of users. A static share calculated in a contested market definition cannot substitute for evidence that a transaction is likely to harm competition.[11]

Furthermore, codifying specific enforcement thresholds into statute is a drastic step. Federal merger guidelines have been revised numerous times since 1968 precisely because markets and economic understanding evolve. Locking any single iteration into permanent California law is a blunt and disproportionate response. The Commission should not elevate a time-bound agency policy document into a durable rule that will apply long after federal policy and market conditions have changed.[12]

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[10] United States v. Philadelphia National Bank, 374 U.S. 321, 364-65 (1963); California Law Revision Commission, Memorandum 2026-29, at 6 & n.34 (July 24, 2026) (noting that the case did not establish a bright line and that the Court did not deem any particular market-share percentage critical).
[11] David S. Evans, "The Antitrust Economics of Multi-Sided Platform Markets," Yale Journal on Regulation (2003), https://gai.gmu.edu/wp-content/uploads/sites/27/2021/05/Session-13_Evans-Platforms.pdf.
[12] U.S. Department of Justice & Federal Trade Commission, 2023 Merger Guidelines (noting previous issuances and revisions in 1968, 1982, 1984, 1992, 1997, 2010, and 2020), https://www.justice.gov/atr/2023-merger-guidelines.

Consider a small startup that develops an artificial intelligence algorithm capable of substantially improving medical-imaging diagnoses. The startup possesses valuable technology but lacks the computing infrastructure, hospital relationships, regulatory expertise, cybersecurity systems, and distribution network needed to deploy it at scale. A larger health-technology company may provide those complementary assets, allowing hospitals and clinicians to adopt the technology sooner and enabling patients to benefit from faster and more accurate diagnoses.

The transaction may also present legitimate competitive questions, such as whether the acquirer could restrict the technology to its own platform or disadvantage rival diagnostic tools. But those risks must be weighed against benefits occurring across the broader health-technology ecosystem. A structural presumption based only on the acquirer's share of a narrowly defined health-software market could condemn the transaction without adequately considering improved access for hospitals, better outcomes for patients, lower deployment costs, and stronger opportunities for continued innovation. A rebuttal rule that recognizes benefits only within the narrowly alleged market would ignore the cross-market efficiencies that often make acquisitions of small technology companies valuable in the first place.

The Unique Risks in the Artificial Intelligence Era

The risks of these proposals are especially acute in the artificial intelligence era. Artificial intelligence requires immense computational resources and capital. The next generation of artificial intelligence innovation will come from startups partnering with, or being acquired by, larger firms that can provide the necessary infrastructure. If California makes these acquisitions presumptively illegal based on rigid structural shortcuts, the state risks choking off the very ecosystem that makes California the global leader in artificial intelligence.

Speed is a decisive competitive factor in markets for AI models, tools, and services. Offerings that reflect the state of the art today may be surpassed within months, and competitive advantage depends on rapid access to complementary inputs such as data, talent, compute, distribution, security, and implementation expertise. AI transactions can combine these capabilities to help products reach customers faster, improve product quality, expand output, and strengthen competition in infrastructure markets. A static presumption built around concentration or a 30 percent share is poorly suited to that dynamic process.[13]

[13] Association for Competitive Technology, *supra* note 9.

Novel Standards and Purpose Statements Create Unprecedented Uncertainty

The "appreciable risk" option remains especially troubling. Replacing the established Clayton Act standard with an untested prohibition on mergers that create an "appreciable risk" of lessening competition by more than a *de minimis* amount introduces unprecedented uncertainty. This novel standard has never been adopted as the operative merger test by any jurisdiction. Former federal antitrust economists have warned that an "appreciable risk" standard represents the smallest risk that might be deemed sufficient, raising serious concerns about over-enforcement. That kind of uncertainty chills the very exit opportunities that drive early-stage investment and startup formation in California.[14]

Memorandum 2026-29 also presents a new "reasonable probability" alternative. That formulation is materially less problematic than the "appreciable risk" option because it preserves the familiar Clayton Act text and draws on existing legislative history and case law. However, the proposed language states that courts shall not require more certainty than a reasonable probability, without equally making clear that a mere possibility is insufficient.

Finally, the proposed Purpose Statement, which directs courts to treat federal case law as nonbinding while separately requiring courts to consider and harmonize the statute with the 2023 Federal Merger Guidelines, would sever California from decades of precedent that provides predictability to the market. It would create an unjustified asymmetry by diminishing judicial precedent while elevating a nonbinding agency policy document. A divergent California merger law would lead to a patchwork of state-level regulations, increasing compliance costs and delaying transactions critical to business growth. A patchwork of state laws creates significant uncertainty for developers and deployers, especially small businesses that lack the resources of larger competitors.[15]

Conclusion

ACT urges the Commission to reject these divergent standards. California's existing industry-specific notification laws, the newly enacted California Uniform Antitrust Premerger Notification Act, and the Attorney General's active use of Section 7

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[14] Gregory J. Werden, Comments on Draft Merger Guidelines (2023), https://downloads.regulations.gov/FTC-2023-0043-0624/attachment_1.pdf.

[15] Eric J. Stock, "State Antitrust Enforcement in the National Economy: Promoting More Democratic and Effective Outcomes Through State Reliance on Federal Law," Antitrust Magazine, Vol. 39, Issue 2, Spring 2025, https://www.americanbar.org/content/dam/aba/publications/antitrust/magazine/2025/vol-39-issue-2/state-antitrust-enforcement.pdf.

demonstrate that the state already has the information and authority needed to identify and challenge potentially anticompetitive mergers.

We stand ready to work with the Commission to support responsible competition enforcement that protects consumers while ensuring that small business innovators can continue to compete and contribute to California's technological leadership.

Sincerely,

Graham Dufault
General Counsel
Association for Competitive Technology

Kedharnath (Kedhar) Sankararaman
Policy Counsel
Association for Competitive Technology

Connected Commerce Council

August 7, 2026

The Honorable Richard Simpson
Chairperson
California Law Revision Commission
c/o Legislative Counsel Bureau
925 L Street, Suite 275
Sacramento, CA 95814
VIA EMAIL: sreilly@clrc.ca.gov

Re: Comments on Memorandum 2026-29, Draft Language Options for Mergers and Acquisitions

Dear Chair Simpson and Members of the California Law Review Commission:

The Connected Commerce Council (3C) appreciates the opportunity to comment on the California Law Review Commission's (CLRC's) Memorandum 2026-29[1], which presents the draft language options on merger and acquisition enforcement reviewed by the commission during its May 22, 2026 meeting.

3C represents digitally empowered small businesses, many of which are likely to be impacted, directly or indirectly, by changes to existing M&A enforcement standards. We note that each option presented within the memorandum significantly exceeds existing federal M&A enforcement standards. As the CLRC considers whether to advance any of these options, 3C respectfully urges the Commission to carefully evaluate their potential effects on California entrepreneurs and small-business owners, and to strive to avoid inadvertently discouraging M&A activity that generates innovation and broad economic benefits.

Memorandum 2026-29 treats mergers and acquisitions exclusively as a big-business issue. But M&A activity is vitally important to small businesses — driving innovation, efficiencies, and cost-savings that help small businesses attract customers, boost sales, compete with larger rivals, and better serve their customers and communities. Microsoft's acquisition of LinkedIn, Google's acquisition of Android, and Facebook's acquisition of Instagram, for instance, made revolutionary new low-cost marketing and sales tools broadly accessible to small businesses. These tools — made possible by pairing startups' creative innovations with top tech companies'

[1] Cal. Law Revision Comm'n, Staff Memorandum 2026-29: Draft Language Options for Mergers and Acquisitions (July 24, 2026), https://clrc.ca.gov/pub/2026/MM26-29.pdf

scale and resources — helped spur a U.S. small-business renaissance[2], and have proven particularly empowering to minority[3] founders.

Indeed, acquisition is often the means by which innovation is not only commercialized, but also made accessible to small businesses. Offering innovative startups the financial and operational resources required to rapidly bring their new products to market, acquisition plays a key role in ensuring small and local businesses have access to cutting-edge new tools that help them save time and money, grow, and compete with much larger rivals. Amazon's acquisition of robotics company Kiva Systems, for example, helped the online retailer dramatically improve order-fulfillment efficiency — slashing shipping time and costs, and allowing millions of small Amazon sellers to compete on a level playing field with retail giants.

In addition, an established body of research[4][5][6] shows that much M&A activity — particularly vertical, minority, or conglomerate investments — raises few or no competitive concerns. Rather, such transactions typically generate critical efficiencies and capital infusions, making them largely pro-competitive and consumer-beneficial. Notably, former FTC chair Lina Khan stated in 2024 that in any given year, the FTC flags only 2%[7] of M&A transactions as even potentially problematic.

3C advocates for policies that foster small-business innovation, growth, and success. Accordingly, we support policies that promote market competition and caution against those that stifle or distort it. Overly stringent new M&A enforcement standards would likely suppress the innovation, efficiency, capital formation, and growth that often flow from competitively neutral or beneficial transactions — harming California's small businesses and startups, jeopardizing its status as a center of innovation and investment, and degrading its broader economy.

Those outcomes would run counter to 3C's desire to give California small businesses the best possible chance to grow, innovate, attract investment, and compete in an increasingly global market. More importantly, the outcomes would seriously undermine the CLRC's stated desire to ensure the "promotion and protection of free and fair competition, which is fundamental to a healthy marketplace that protects all trade participants, including workers and consumers, and to an environment that is conducive to the preservation of our democratic, political, and social institutions."

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2 "America Is in the Midst of an Extraordinary Startup Boom," *The Economist*, May 12, 2024, https://www.economist.com/finance-and-economics/2024/05/12/america-is-in-the-midst-of-an-extraordinary-startup-boom.

3 "Ethnic Minorities Are Driving America's Startup Boom," The Economist, Feb. 12, 2026, https://www.economist.com/finance-and-economics/2026/02/12/ethnic-minorities-are-driving-americas-startup-boom.

4 Carl Shapiro and Ali Yurukoglu, "Trends in Competition in the United States: What Does the Evidence Show?," NBER Working Paper 32762 (2024), https://doi.org/10.3386/w32762.

5 Kulick, Robert B. and Prince, Jeffrey and Ramirez Pierce, Elena, Integrating the Literature: Theory and Evidence from a Reassessment of the Empirical Research on Vertical Integration (October 10, 2025). Available at SSRN: https://ssrn.com/abstract=5588150 or http://dx.doi.org/10.2139/ssrn.5588150

6 Banerjee, S., Mukherjee, A. & Poddar, S. Pro-competitive horizontal merger with cost reducing investments and network externalities. *Econ Theory Bull* **13**, 145–162 (2025). https://doi.org/10.1007/s40505-024-00285-7

7 Rebecca Szkutak, "FTC Chair Lina Khan Says the Agency Is Going After the 'Mob Bosses' in Big Tech," TechCrunch, June 11, 2024, https://techcrunch.com/2024/06/11/ftc-chair-lina-khan-says-the-agency-is-going-after-the-mob-bosses-in-big-tech/

Given the rapid pace of change in today's digitally- and AI-driven economy, an unnecessarily restrictive M&A enforcement regime would act as a drag on competition and merger-driven competitive market activity — harming California's small businesses, broader economy, and residents. Moreover, most M&A activity is competitively beneficial or neutral, and problematic transactions are rare. Accordingly, as the CLRC weighs advancement of any changes to California's M&A enforcement standards, 3C urges the Commission to consider potential harms to California entrepreneurs and small-business owners, and to strive to avoid inadvertently discouraging M&A activity that helps California's small businesses grow, innovate, compete, and succeed.

Thank you again for giving us the opportunity to comment on this important issue.

Sincerely,

Rob Retzlaff
Executive Director
Connected Commerce Council

August 7, 2026

The Honorable Xochitl Carrion
Chair
California Law Revision Commission
925 L Street, Suite 275
Sacramento, CA 95814

Re: Memorandum 2026-29 - Draft Language Options for Mergers and Acquisitions

Dear Chair Carrion and Members of the Commission:

On behalf of Chamber of Progress, a center-left tech industry association supporting inclusive innovation, we respectfully urge the Commission not to recommend the merger framework presented in Memorandum 2026-29. California already has the authority and capacity to investigate and challenge anticompetitive transactions. The proposal does not fill an enforcement gap. It creates a second substantive regime that would expose transactions already reviewed under federal law to separate California litigation under different presumptions and an unprecedentedly low liability standard.

California has robust merger-enforcement tools to police harmful mergers

The Attorney General's Antitrust Law Section states that it enforces both California and federal antitrust law through merger reviews, investigations, and litigation.[1] In February 2026, California enacted SB 25, the California Uniform Antitrust Premerger Notification Act. Beginning January 1, 2027, qualifying parties must give the Attorney General a complete copy of their federal Hart-Scott-Rodino form within one business day; California-headquartered filers must also provide the federal additional documentary material, while other covered filers must provide it within seven business days of request.[2] California therefore will receive the same core information used by the DOJ and the FTC, at essentially the same time.

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[1] State of California Department of Justice. *Antitrust & Business Competition*. n.d. https://oag.ca.gov/antitrust

[2] California Legislative Information. *SB-25 Antitrust: Premerger Notification*. Feb. 10, 2026. https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202520260SB25

California is also actively using its existing authority. In July, Attorney General Bonta led twelve states in suing under Section 7 of the Clayton Act to block the $110 billion Warner Bros./Paramount merger and obtained a temporary restraining order.[3] California likewise joined the federal and multistate Live Nation/Ticketmaster case, rejected DOJ's proposed settlement, continued litigating, and obtained a jury verdict in April 2026.[4] Whatever one thinks of those cases on the merits, they foreclose the claim that California lacks meaningful tools or the ability to act independently when state officials believe competition is threatened.

There is no gap to fill, and the proposed language would add a second rulebook. A transaction could complete federal review and still face a California challenge applying different thresholds, burdens, and definitions of actionable risk. Nothing in the draft requires coordination with federal agencies, a California-specific competitive injury, a decision by a fixed deadline, or repose after federal review.

Rigid presumptions would replace fact-specific merger analysis and sweep in routine and procompetitive deals

The 2023 Merger Guidelines expressly describe themselves as a "non-binding statement" of agency practice. The proposed language would convert their lower concentration screens into statutory presumptions: a post-merger HHI above 1,800 with an increase above 100, or a share above 30 percent with an HHI increase above 100. By comparison, the 2010 Guidelines used 2,500 and 200.[5] This is not a technical adjustment. A firm with a 31 percent share acquiring a company with only a 1.7 percent share would generate an HHI increase of approximately 105 and trigger the proposed presumption. A market-definition choice would then shift the practical burden to the merging businesses, even when the transaction is complementary, efficiency-enhancing, or competitively insignificant.
That error is compounded by replacing the established substantial-lessening standard with an "appreciable risk of lessening competition more than a de minimis amount." It lowers both dimensions of liability: "appreciable risk" reduces the required probability, while "more than de minimis" reduces the required magnitude. The resulting rule could condemn a transaction based on a modest possibility of a slight competitive effect. The memorandum identifies no mature body of precedent applying that formulation, leaving California courts to define the boundary transaction by transaction.

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[3] State of California Department of Justice. "Attorney General Bonta Files Lawsuit to Block $110 Billion Warner Bros./Paramount Merger." Jul. 13, 2026.
https://oag.ca.gov/news/press-releases/attorney-general-bonta-files-lawsuit-block-110-billion-warner-brosparamount
[4] State of California Department of Justice. "Attorney General Bonta Celebrates Historic Verdict in Live Nation/Ticketmaster Trial." Apr. 15, 2026.
https://oag.ca.gov/news/press-releases/attorney-general-bonta-celebrates-historic-verdict-live-nationticketmaster-trial
[5] U.S. Department of Justice and Federal Trade Commission. *2023 Merger Guidelines*. Dec. 18, 2023.
https://www.justice.gov/atr/2023-merger-guidelines

The proposed purpose statement would intensify the uncertainty by instructing courts to treat federal precedent as nonbinding, construe California law liberally, and remain mindful of "maximizing" deterrence. The combined message is not merely to enforce Section 7 more vigorously; it is to develop a consciously divergent California law with fewer limiting principles. That invites inconsistent decisions and makes legal exposure harder to price, particularly for startups and midsized purchasers that cannot carry open-ended litigation risk.

Merger enforcement must account for the costs of false positives and blocking beneficial deals

The abandoned Amazon-iRobot transaction offers a caution against assuming that stopping an acquisition necessarily preserves an innovative independent competitor. The European Commission's preliminary theory was that Amazon might disadvantage competing robot vacuums on its marketplace. After the parties concluded that the transaction had no path to European approval, they terminated it in January 2024. That same day, iRobot announced a restructuring that eliminated approximately 350 jobs - 31 percent of its workforce - reduced R&D spending, and paused work on non-floor-care innovations. By the end of 2024, headcount was down approximately 51 percent. In December 2025, iRobot entered Chapter 11. Picea, its contract manufacturer and secured lender, acquired 100 percent of the company's equity through the restructuring in January 2026. Picea maintains research, development, and manufacturing facilities in China and Vietnam.[6]

This demonstrates the real cost of false positives. Blocking a transaction can mean lost investment, fewer engineers, narrower product development, and ultimately a weaker or differently controlled competitor, not the preservation of competition policymakers imagined.

[6] iRobot Corporation. "Amazon and iRobot Agree to Terminate Pending Acquisition." Jan. 29, 2024. https://media.irobot.com/2024-01-29-Amazon-and-iRobot-agree-to-terminate-pending-acquisition

California's innovation economy is especially exposed. California companies attracted $191.2 billion across 4,846 venture deals in 2025, roughly 60 percent of U.S. venture investment. M&A remained the dominant exit: 1,396 venture-backed companies exited through acquisition nationwide, compared with only 49 IPOs.[7] Peer-reviewed research covering 45 countries finds a positive relationship between M&A activity and later venture investment, with venture activity falling under stricter merger-control regimes; separate research finds that active acquisition markets strengthen R&D incentives, particularly for smaller firms.[8] When review costs and timelines cannot be bound, smaller and midsized buyers leave first. The proposal could therefore shrink the bidder pool while leaving only the largest companies able to absorb California-specific risk.

Recommendation

The Commission should decline to recommend the proposed framework and purpose statement. California does not need a novel liability standard to be active in merger enforcement. Its recently enacted notification law and its current cases prove the opposite. The better course is to use those robust tools carefully and preserve the predictable, evidence-based framework on which California investment and innovation depend.

Respectfully submitted,

Robert Singleton
Senior Director of Policy and Public Affairs, California and US West

[7] National Venture Capital Association. *NVCA 2026 Yearbook*. Apr. 13, 2026. https://nvca.org/wp-content/uploads/2026/04/NVCA-2026-Yearbook-4.9.26.pdf

[8] Gordon M. Phillips and Alexei Zhdanov. "R&D and the Incentives from Merger and Acquisition Activity." *The Review of Financial Studies*, Jan. 1, 2013. https://econpapers.repec.org/article/ouprfinst/v_3a26_3ay_3a2013_3ai_3a1_3ap_3a34-78.htm

August 7, 2026

California Law Review Commission
c/o Legislative Counsel Bureau
925 L Street, Suite 275
Sacramento, CA 95814

Re: Memorandum 2026-29, Draft Language Options for Mergers and Acquisitions

Dear Members of the Commission:

On behalf of the 13 million people who make things in America, the National Association of Manufacturers ("NAM") is writing to express our continuing concern about the Commission's consideration of a novel legal standard for evaluating mergers that would differ from the federal Clayton Act.[1] Such a policy change would increase costs for manufacturers that do business in California, impede pro-growth transactions that benefit consumers, and undermine U.S. competitiveness.

As the largest manufacturing association in the United States, the NAM's membership includes businesses of all sizes, across all industrial sectors, and in California and the 49 other states. Within California, manufacturers are global leaders in advanced technologies—from semiconductors and aerospace to biotech and advanced machinery—producing high-value products that drive economic growth and position the state as a hub for manufacturing excellence.

For manufacturers, mergers and acquisitions lead to more startups, more investment, and more innovation. A vibrant M&A environment helps manufacturers obtain the resources they need to compete vigorously with overseas competitors. M&A also enables founders of innovative startups and other small businesses to sell their firms to raise funds to start new ventures. Both federal and state policymakers should exercise care before imposing untested legal standards and additional costs on pro-competitive M&A transactions. Accordingly, the NAM urges the Commission not to impede beneficial business combinations by adopting a divergent state M&A review standard, such as the options outlined in Memorandum 2026-29 and Memorandum 2026-14, which would disincentivize early-stage innovation and slow down economic growth within California and across the country.

For years, California and other states have worked collaboratively with the Federal Trade Commission ("FTC") and the U.S. Department of Justice ("DOJ") to review the impact of proposed mergers under Section 7 of the Clayton Act, which prohibits transactions whose effect "may be substantially to lessen competition." If California were to adopt a more sweeping standard (such as "to create an appreciable risk of lessening competition more than a *de*

[1] The NAM previously joined with the U.S. Chamber of Commerce and more than 30 trade organizations from around the country in a November 2025 letter to the Commission on this topic. *See* Chamber of Commerce Coalition Letter on Memorandum 2025-42 (21 November 2025), *available at* https://www.clrc.ca.gov/pub/2025/MM25-42s3.pdf.

minimis amount" or "a reasonable probability" of anticompetitive effects)[2] and use that standard to block mergers routinely cleared by the FTC or DOJ, this overreach would chill M&A activity outside the state and unduly interfere with interstate commerce. Such an action, if followed by other states, would create a patchwork of differing legal standards and significantly drive up costs for manufacturers that seek to complete transactions that would result in enhanced product offerings and reduced prices for consumers.

Legislation to supersede the Clayton Act and establish a divergent antitrust standard in California also is not necessary to enable state officials to continue to review and challenge M&A transactions that impact state businesses and residents. Along with a growing number of states, California recently adopted a "mini-HSR" pre-merger notification law[3] to ensure that it receives detailed information on transactions involving in-state companies or non-California businesses with more than $26.78 million in annual in-state sales.[4] In addition, California's attorney general already has the authority under federal law to independently challenge transactions that are approved by federal authorities. Recent examples of such actions include the state's lawsuit to block Paramount Skydance's acquisition of Warner Bros. and California's suit to challenge Nexstar Media Group's purchase of Tegna.[5]

The NAM also encourages the Commission to consider the potential impact that new state merger standards may have on the ability of U.S. companies to compete with overseas competitors. Both the European Union and the United Kingdom have moved in recent years to relax their antitrust laws to reduce uncertainty for businesses and increase competitiveness. [6] In Mexico, antitrust enforcement has been consolidated into a single national agency, which plans to reduce waiting periods for mergers.[7] Given these trends, California should not adopt a novel legal standard that would result in additional compliance costs and potentially delay hundreds of transactions each year that pose no competitive concerns.

In conclusion, manufacturers urge the Commission not to recommend the adoption of the "appreciable risk" standard or another novel approach, which would create a fragmented regulatory climate and impose new costs on merging businesses with no apparent benefit over

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[2] The NAM also cautions against the codification of the 2023 federal Merger Guidelines into state law. It appears likely that the FTC and DOJ may seek to update the 2023 guidelines, which are based on outdated case law and downplay the efficiency benefits of mergers.

[3] *See* Senate Bill 25 (the California Uniform Antitrust Premerger Notification Act) (signed 10 February 2026), *available at* https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202520260SB25.

[4] *See, e.g.,* Paul, Weiss, "California Enacts Mini-HSR Law" (11 February 2026), *available at* https://www.paulweiss.com/insights/client-memos/california-enacts-mini-hsr-law.

[5] The recent lawsuits are part of a long history of active antitrust enforcement by the state of California. As Attorney General Rob Bonta's website explains: "In recent years, the office challenged the megamerger between T-Mobile and Sprint, stopped the acquisition of the Plains All American Pipeline petroleum terminal by Valero, sued Sutter Health for anticompetitive conduct in the healthcare market, recovered more than $26 million for price fixing of auto parts, and over $70 million for agreements among pharmaceutical companies to delay generic competition." *See* State of California, Department of Justice, Office of the Attorney General, "Antitrust Highlights," *available at* https://oag.ca.gov/antitrust/highlights.

[6] A&O Shearman, "Global trends in merger control enforcement" (February 2026), *available at* https://edge.sitecorecloud.io/allenoveryllp1-aoshearmanwe0db-production-ecf3/media/project/aoshearman/pdf-downloads/insights/2026/02/global-trends-in-merger-control-enforcement-2026.pdf.

[7] Greenberg Traurig LLP, "Outlook 2026: Mexico Antitrust and Competition" (26 January 2026), *available at* https://www.gtlaw.com/en/insights/2026/1/outlook-2026-mexico-antitrust-and-competition.

the current collaborative approach used by state and federal antitrust regulators. Instead, the NAM recommends that California continue to rely on the Clayton Act's well-established legal framework, which has provided greater certainty for merging parties while protecting competition for decades.

The NAM appreciates the Commission's consideration of our views on M&A. Continued state and federal coordination on M&A review based on uniform federal standards will help unlock transactions and critical investments that manufacturers depend on to compete, driving American prosperity and economic growth for years to come.

Sincerely,

C. Edward Allen

C. Edward Allen
Senior Director, Corporate Finance Policy

Jake Kuhns
Vice President, Domestic Policy

International Center for Law & Economics

VIA EMAIL (sreilly@clrc.ca.gov)

August 7, 2026

The Honorable Richard Simpson, Chairperson
and Honorable Commissioners
California Law Revision Commission
c/o Legislative Counsel Bureau
925 L Street, Suite 275
Sacramento, CA 95814

Re: Study B-750: Comments on Memorandum 2026-29, Draft Language Options for Mergers and Acquisitions

Dear Chairperson Simpson and Members of the Commission,

The International Center for Law & Economics ("ICLE") respectfully submits these comments on Memorandum 2026-29 ("the Memorandum") in advance of the Commission's August 17, 2026, meeting. ICLE is a nonprofit, nonpartisan global research and policy center founded to build the intellectual foundations for sensible, economically grounded policy. We have submitted comments earlier in this study on the Commission's single-firm-conduct proposals,[1] and we have commented on merger-enforcement policy and proposed merger guidelines before the U.S. federal antitrust agencies and before competition authorities in Europe, Canada, and elsewhere.[2]

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[1] Geoffrey A. Manne, Dirk Auer, Brian Albrecht & Lazar Radic, *ICLE Comments to California Law Revision Commission on Single-Firm Conduct*, Int'l Ctr. for L. & Econ. (2025), https://laweconcenter.org/resources/icle-comments-to-california-law-revision-commission-on-single-firm-conduct/ [hereinafter ICLE SFC Comments].

[2] *See*, *e.g.*, Geoffrey A. Manne et al., *Comments of the International Center for Law & Economics on the FTC & DOJ Draft Merger Guidelines*, Docket No. FTC-2023-0043-0001, (Int'l Ctr. for L. & Econ., Sept. 18, 2023), https://laweconcenter.org/wp-content/uploads/2023/09/ICLE-Draft-Merger-Guidelines-Comments-1.pdf [hereinafter ICLE Merger Guidelines Comments]; Ian Adams et al., *Comments of the International Center for Law & Economics to the Competition Bureau Canada: Proposed Merger Enforcement Guidelines* (Int'l Ctr. for L. & Econ., Feb. 10, 2026), https://laweconcenter.org/wp-content/uploads/2026/02/Competition-Bureau-Canada-Merger-Comments-2026.pdf; Dirk Auer, Selcukhan Ünekbas & Mario A. Zúñiga, *Comments of the International Center for Law & Economics: UK Competition and Markets Authority Call for Evidence for Merger Efficiencies Review* (Int'l Ctr. for L. & Econ., Feb. 25, 2026), https://laweconcenter.org/wp-content/uploads/2026/02/UK-CMA-Merger-Review-Comments.pdf; Geoffrey A. Manne et al., *Comments of the International Center for Law & Economics: EU Draft Merger Guidelines–Public Consultation* (Int'l Ctr. for L. & Econ., June 22, 2026), https://laweconcenter.org/wp-content/uploads/2026/06/EU-merger-guidelines-edited.pdf.

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Our comments here address the operative text of the draft options. We will not relitigate the Memorandum's account of the past half-century of federal enforcement, although we disagree with much of it. But whatever one's view of that history, the draft language would not produce the results the Memorandum attributes to it.

The draft options share five features, each of which would make California a national outlier in merger law: (1) a codified structural presumption bearing a rebuttal standard federal courts abandoned decades ago; (2) statutory concentration thresholds that convert an enforcement-screening device into a decision rule; (3) a liability standard ("appreciable risk") that deletes the substantiality element present in every version of the Clayton Act since 1914; (4) a command that courts treat a revisable federal enforcement-policy document as persuasive authority, even as federal case law is demoted to nonbinding status; and (5) a freestanding "tend to create a monopoly or monopsony" prohibition with no limiting principle. And the Commission would adopt all of this just months before SB 25 begins producing the first systematic data on the transactions a California merger statute would govern.

The Memorandum's own account does not support the case for "restoration"

The draft options rest on a shared premise: that federal courts have subverted the Clayton Act's "may be substantially to lessen competition" standard with a more demanding one, and that California should legislate its way back to the original. The Memorandum's own materials undercut that premise, however. As the Memorandum recounts, the 1950 Senate Report explained that the words "may be" mean the statute "would not apply to the mere possibility but only to the reasonable probability" of the proscribed effect.[3] *Brown Shoe* used the same formulation.[4] And so do the federal courts today—including the Ninth Circuit, whose decisions would most inform California courts. The Memorandum itself cites the Ninth Circuit's 2025 decision in *FTC v. Microsoft* applying "reasonable probability,"[5] and *Saint Alphonsus*, under which no proof of actual anticompetitive effects is required at all, but under which it is still required that "the merger create an appreciable danger of such consequences in the future."[6] The standard the Memorandum describes as the original one is the standard the governing case law imposes. There is nothing to "restore."

The enforcement record also cuts against the idea that there is a problem that needs fixing. The Memorandum suggests that the 2023 Merger Guidelines' enforcement "reset" has not materialized in practice, citing recent state challenges to federally approved transactions.[7] Those cases show states challenging mergers in federal court under the existing federal standard—and in *Live Nation*,

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[3] Memorandum 2026-29 at 4 (quoting S. Rep. No. 81-1775 at 4298 (1950)) (emphasis omitted).

[4] *Brown Shoe Co. v. United States*, 370 U.S. 294, 325 (1962); Memorandum 2026-29 at 4–5.

[5] *FTC v. Microsoft Corp.*, 136 F.4th 954, 964 (9th Cir. 2025); Memorandum 2026-29 at 5 n.25.

[6] *Saint Alphonsus Med. Ctr.-Nampa Inc. v. St. Luke's Health Sys., Ltd.*, 778 F.3d 775, 788 (9th Cir. 2015) (quoting *Hospital Corp. of Am. v. FTC*, 807 F.2d 1381, 1389 (7th Cir. 1986)); Memorandum 2026-29 at 5 n.26 (citing this passage).

[7] Memorandum 2026-29 at 9 & n.48.

the enforcers, California among them, won the verdict the Attorney General celebrated. Last month, California led a twelve-state coalition in filing suit under Section 7 to block Paramount Skydance's acquisition of Warner Bros. Discovery and secured a temporary restraining order in record time.[8] Indeed, the combined shares alleged in that case—roughly 27 to 30 percent of the pleaded markets—track the share *Philadelphia National Bank* (*PNB*) itself found sufficient. In other words, whatever constrains California merger enforcement, on this record it is not the substantive standard. A new statute along the proposed lines will not add enforcement resources or better information about transactions. Rather, it will add uncertainty, and the costs of uncertainty fall on every transaction—including the overwhelming majority that are competitively benign or beneficial.

Codifying *Philadelphia National Bank* would freeze the doctrine at the point federal courts found unworkable

Subsection (c) of every option deems a merger that produces "an undue percentage share" and "a significant increase in . . . concentration" to lessen competition substantially "in the absence of evidence clearly showing" the contrary, and states that it "is intended to codify the holding in *United States v. Philadelphia National Bank*."[9]

PNB remains good law, and structural evidence retains an established role in merger litigation. But the Memorandum treats the six decades of subsequent doctrine as an *erosion* of *PNB*. Those cases didn't reject the structural presumption. What they actually did was relax the demanding "clearly showing" formulation for *rebutting* the presumption.

In *United States v. Baker Hughes*, the government argued that a Section 7 defendant can rebut a prima facie case only by a "clear showing." The D.C. Circuit—in an opinion by then-Judge Thomas, joined by then-Judge Ruth Bader Ginsburg—rejected that standard as "devoid of support in the statute, in the case law, and in the government's own Merger Guidelines."[10] A defendant required to produce evidence "clearly" disproving future anticompetitive effects, the court explained, "must essentially persuade the trier of fact on the ultimate issue in the case," collapsing the distinction between the burden of production, which shifts, and the burden of persuasion, which remains with the plaintiff throughout.[11] "Requiring a 'clear showing' in this setting would move far toward forcing a defendant to rebut a probability with a certainty."[12] Yet that is the formulation subsection (c) would enact as California statutory text.

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[8] *See* Press Release, Off. of the Cal. Att'y Gen., *Attorney General Bonta Files Lawsuit to Block $110 Billion Warner Bros./Paramount Merger* (July 2026), https://oag.ca.gov/news/press-releases/attorney-general-bonta-files-lawsuit-block-110-billion-warner-brosparamount; Press Release, Off. of the Cal. Att'y Gen., *Quiet on the Set! Attorney General Bonta Secures Critical, Early Win in Lawsuit to Block Warner Bros./Paramount Merger* (July 2026), https://oag.ca.gov/news/press-releases/quiet-set-attorney-general-bonta-secures-critical-early-win-lawsuit-block-warner.

[9] Memorandum 2026-29 at 10; *id.* at EX 2 (Option Two, subd. (c)). *See also United States v. Philadelphia National Bank*, 374 U.S. 321 (1963).

[10] *United States v. Baker Hughes Inc.*, 908 F.2d 981, 983 (D.C. Cir. 1990) (Thomas, J., joined by Ginsburg, J.).

[11] *Id.* at 991.

[12] *Id.* at 992.

A judicially administered presumption can be adjusted as evidence accumulates. A statutory one cannot. The federal presumption has been reworked over six decades as courts learned when market shares predict anticompetitive effects and when they mislead.[13] But fixed in statutory text—and expressly tied to a 1963 holding—no California court could learn from experience and reweight the presumption, whatever the evidence in a given case showed, leaving only the meaning of "undue" and "significant" open to construction.

And the economic learning gives no reason for confidence in the 1963 formulation. The premise the *PNB* Court drew from the economics of its day—that concentration reliably predicts competitive harm—has not survived the subsequent half-century of empirical work. The staff's own cited authority on the HHI notes that the measure's "link to market power is equivocal."[14] And when the federal agencies considered lowering their concentration thresholds in 2022, a group of economists including Aviv Nevo—who then became director of the FTC's Bureau of Economics under Chair Lina Khan and helped produce the 2023 Guidelines—warned that the empirical literature couldn't support such a move:

> *The existing body of research on this question is, today, thin and mostly based on individual case studies in a handful of industries. Our reading of the literature is that it is not clear and persuasive enough, at this point in time, to support a substantially different threshold that will be applied across the board to all industries and market conditions.*[15]

A statute codifying a strong structural presumption in 2026 would erroneously enshrine an outdated economic premise that the economics profession has spent over half a century studying and finding wanting.

Statutory HHI thresholds would convert a screening device into a merits rule, and put market definition in place of competitive effects

The option presented as "Basic Merger Framework and Federal Merger Guidelines" goes further, presuming unlawful any merger that produces an HHI above 1,800 with a change greater than 100 points, or a 30 percent share with a change greater than 100 points.[16]

Concentration thresholds in enforcement guidelines are *screening devices*; they tell the agencies which of the thousands of transactions notified each year warrant a closer look. In contrast, a

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[13] *See United States v. General Dynamics Corp.*, 415 U.S. 486, 503–04 (1974); *Baker Hughes*, 908 F.2d at 991 (a defendant rebuts by showing "that the prima facie case inaccurately predicts the relevant transaction's probable effect on future competition").

[14] Paolo M. Adajar, Ernst R. Berndt & Rena M. Conti, *The Surprising Hybrid Pedigree of Measures of Diversity and Economic Concentration* (Nat'l Bureau of Econ. Rsch., Working Paper No. 26512, 2019) (abstract); Memorandum 2026-29 at 15 n.78 (quoting the same passage).

[15] John Asker et al., *Comments on the January 2022 DOJ and FTC RFI on Merger Enforcement*, *available at* https://www.regulations.gov/comment/FTC-2022-0003-1847, at 15-16.

[16] Memorandum 2026-29 at 14, *id.* at EX 3–4.

statutory presumption of illegality is a *decision rule*. The draft converts one into the other, and it does so at threshold levels that are themselves outliers.

The 2010 Horizontal Merger Guidelines placed the presumption at an HHI of 2,500 with a change of 200;[17] the 2023 Guidelines lowered both numbers and added the 30-percent trigger, without new empirical support—exactly the change the Nevo comments cautioned against. Nor is the 30-percent trigger grounded in *PNB*: as the Congressional Research Service observed, the merger in that case involved an HHI increase of roughly 600—six times the Guidelines' trigger—prompting doubts "whether the Guidelines' approach is firmly rooted in existing doctrine."[18]

The proposed lower thresholds would apply the presumption to ordinary transactions in markets that still have five or six real competitors. A merger between a firm with a 10-percent share and a firm with 6 percent produces a change in HHI of 120, and an HHI of 1,800 corresponds roughly to a market shared among five or six significant competitors. In any such market, then, the acquisition of a 6-percent rival by a 10-percent firm—a transaction no empirical literature identifies as systematically harmful—would be presumptively unlawful, with the burden on the parties to prove otherwise.

Moreover, because the HHI is computed within a defined relevant market, a low statutory threshold makes market definition outcome-determinative. The narrower the market a plaintiff alleges, the higher the shares and the more readily the presumption attaches. Litigation then turns on market boundaries rather than competitive effects, and market definition is the most manipulable stage of any antitrust case, as the divergent recent treatments of "accessible luxury handbags" and "premium mattresses" illustrate.[19] As *Baker Hughes* put the point: "The Herfindahl-Hirschman Index cannot guarantee litigation victories."[20]

Further compounding the problem, the proposed rebuttal provision then makes the presumption virtually conclusive. Subdivision (e) permits rebuttal only by a preponderance showing "no likely anticompetitive effects"—proof of a negative—or a showing that harmful effects are de minimis *and* "clearly outweighed by the cognizable procompetitive benefits of the transaction in the same relevant market."[21] Federal law has never required so much.

Subdivision (e) further enshrines the most constrained reading of *PNB* by recognizing only procompetitive benefits arising "in the same relevant market" in which harm is alleged.[22] That

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[17] U.S. Dep't of Justice & Fed. Trade Comm'n, Horizontal Merger Guidelines § 5.3 (2010).

[18] Jay B. Sykes, *2023 Merger Guidelines: Analysis and Issues for Congress*, CONG. RSCH. SERV. at 2–3 (Mar. 28, 2024) (quoted in Memorandum 2026-14 at 8–9). *See also* Carl Shapiro, *Evolution of the Merger Guidelines: Is This Fox Too Clever by Half?*, 65 REV. INDUS. ORG. 147 (2024).

[19] *Compare FTC v. Tapestry, Inc.*, 755 F. Supp. 3d 386 (S.D.N.Y. 2024) (accepting a market for "accessible luxury handbags"), *with FTC v. Tempur Sealy Int'l, Inc.*, 768 F. Supp. 3d 787 (S.D. Tex. 2025) (rejecting a proposed "premium mattresses" market as resting on inconsistent industry usage).

[20] *Baker Hughes*, 908 F.2d at 992.

[21] Memorandum 2026-29 at EX 3 (Option Three, subd. (e)).

[22] *Id.*

limitation would exclude real competitive benefits merely because they occur outside the market as pleaded by the plaintiff. It also gives market definition a further importance it shouldn't have: the narrower the alleged market, the more benefits the defendant is forbidden to offer in response.

The limitation also claims more authority than its source provides. The in-market rule traces to *PNB*'s response to the banks' "final contention"—that Philadelphia needed a larger bank to attract business and stimulate the region's economic development. The Court refused to weigh that kind of claim: a merger is not saved "because, on some ultimate reckoning of social or economic debits and credits, it may be deemed beneficial," a "value choice" the Court considered "beyond the ordinary limits of judicial competence."[23] What the Court declined to entertain, in other words, was a *non-competition-related* justification—civic betterment offered as an offset to lost competition. It did not hold that evidence of a transaction's competitive benefits ceases to count the moment those benefits cross a hypothetical market boundary. Subdivision (e) would enact that further step by statute, and in its most rigid available form.

Many mergers create benefits that don't fit within a single product-market box. A transaction may accelerate commercialization, improve a platform or ecosystem, combine complementary technologies, place assets under better management, support follow-on investment, or make entry more attractive to other firms. Acquisitions of nascent or adjacent firms often entail acquisitions of firms that operate in different market from their acquirers, so the transaction's benefits and its alleged harms almost by definition don't arise in the same place.[24] Excluding such benefits by statute would require courts to assess only part of a transaction's competitive effect and to ignore the rest even when it bears directly on whether the transaction, taken as a whole, promotes or harms competition.

To be sure, federal courts generally decline to offset harm in one market with benefits in another. But the general rule has never been the absolute one that subdivision (e) would make of it. The federal agencies' own guidelines have long reserved discretion to credit out-of-market efficiencies "inextricably linked" to the relevant market.[25] Courts reach benefits spread across distinct customer groups through market definition itself—*Ohio v. American Express* requires both sides of a two-sided platform to be weighed within a single market—and nothing prevents a court from defining a market broadly enough that the efficiencies fall within it.[26] Recently, the court in the FTC's monopolization case against Meta canvassed this "unsettled question" and permitted the defendant to present evidence of procompetitive effects outside the alleged market.[27] Daniel Crane

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[23] *PNB*, 374 U.S. at 370–71.

[24] *See FTC v. Meta Platforms, Inc.*, 775 F. Supp. 3d 16, 69 (D.D.C. 2024).

[25] 2010 Horizontal Merger Guidelines § 10 n.14.

[26] *Ohio v. Am. Express Co.*, 585 U.S. 529 (2018).

[27] *Meta Platforms* 775 F. Supp 3d at 69.

argues that the rule "is best operationalized as a presumption . . . that can be rebutted based on compelling evidence in particular cases."[28]

Whatever the right resolution, this is a question federal courts and commentators are actively working out. A statute answering it in the most restrictive available form would foreclose that development for California—codifying, once again, the 1963 high-water mark as if the ensuing sixty years had nothing to teach.

"Appreciable risk of lessening competition more than a de minimis amount" is an expansion, not a restoration, of the Section 7 standard

Supporters present the "appreciable risk" option as recapturing Clayton Act Section 7's original meaning. The Memorandum's own history refutes that characterization, however. Substantiality has been an element of Section 7 continuously since 1914; the 1950 Celler-Kefauver amendments, as the Memorandum notes, merely unsplit an infinitive—"may be to substantially lessen" became "may be substantially to lessen."[29] As the Celler-Kefauver legislative history makes clear, Congress was concerned that Section 7 not reach every acquisition between competitors,[30] and the resulting language required a reasonable probability of a substantial lessening of competition in a line of commerce. A standard that deletes "substantially" and substitutes "more than a de minimis amount" has no antecedent in any version of the Clayton Act.[31] Its actual source is Senator Klobuchar's CALERA bill, which Congress has had before it since 2021 and has declined to enact.[32]

Substantiality is what separates Section 7 from an outright prohibition on horizontal acquisitions. As Judge Posner observed of the statutory "may be," the term "should not be taken literally, for if it were, every acquisition would be unlawful."[33] Every acquisition of one competitor by another eliminates some rivalry between the parties; that is what makes them competitors. A prohibition on transactions carrying an "appreciable risk" of a more-than-trivial lessening of competition therefore covers, on its face, nearly every horizontal transaction of any size—leaving the actual scope

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[28] Daniel Crane, *Balancing Effects Across Markets*, 80 ANTITRUST L.J. 397, 397 (2015).

[29] Memorandum 2026-29 at 3–4 & n.19.

[30] *See* S. REP. No. 81-1775 at 4 (1950) ("[I]t was not desired that the bill go to the extreme of prohibiting all acquisitions between competing companies."). As former Assistant Attorney General William Baer put it (also cited in the Memorandum), "[w]ith this revision, Congress declared that lessening competition between the combined firms was not quite the issue. . . ." William J. Baer, Assistant Att'y Gen., Antitrust Div., Dept. of Just., *Origins of the Species: The 100 Year Evolution of the Clayton Act*, Address at American Bar Association Clayton Act 100th Anniversary Symposium 5 (Dec. 4, 2014) (transcript available at https://www.justice.gov/atr/file/517721/dl).

[31] *See* Geoffrey A. Manne & Justin (Gus) Hurwitz, *Build, Buy, or Both?: On the Antitrust Laws' Supposed Preference for "Internal Growth" over Acquisitions*, 26 NEV. L.J. 53, 69–77 (2025).

[32] S. 225, 117th Cong. (2021), reintroduced as S. 130, 119th Cong. (2025); *see* Memorandum 2026-29 at 17 n.89.

[33] *FTC v. Elders Grain, Inc.*, 868 F.2d 901, 906 (7th Cir. 1989) (Posner, J.), quoted in Memorandum 2026-29 at 5.

of liability to be set by enforcement discretion and by the settlement calculus of private treble-damages plaintiffs.[34]

The costs of such a standard would be real yet largely unobservable. A liability standard's most significant effect is on transactions that are abandoned or never proposed. For the startups and early-stage firms that populate California's technology and life-sciences sectors, acquisition is a principal channel through which investment is recouped and redeployed. Between 2004 and 2020, 92 percent of United States venture-backed exits were mergers or acquisitions.[35] A merger regime that deters acquisitions also deters the investment that precedes them.[36] The Commission has heard exactly this from California's own life-sciences industry.[37]

And the cases cited in the Memorandum—*Saint Alphonsus* and *Hospital Corp.*—applied "appreciable danger" to particular facts; they did not turn that phrase into a general burden of proof, much less use it to dispense with substantiality.[38] Option Four simply lifts the adjective, "appreciable," from those cases, while dropping the discussion of the specific and substantial harms the word was used to describe.

Revised subdivision (c) of Option Four deems a qualifying merger to create "an appreciable risk of lessening competition more than a de minimis amount" unless the defendant clearly shows that anticompetitive effects are unlikely. The defendant must therefore disprove a risk—that is, prove a negative about a probability. If (and when) courts are unable to give that burden a workable meaning, the purportedly rebuttable presumption becomes effectively conclusive.

If the Commission concludes that Section 7's "may be" language needs clarification, the proposed alternative of a "reasonable probability" provision is the only option presented that clarifies the standard rather than changing it.[39] But still, we would urge two conditions. First, the provision should govern the court's assessment of the record as a whole—including entry, efficiencies, and dynamic competition—rather than operating asymmetrically on the plaintiff's showing alone. Second, it should not be paired with subsection (c): a codified presumption rebuttable only by "evidence clearly showing" would reinstate, in presumption form, the heightened-certainty regime the clarification is meant to disavow.

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[34] *See* Cal. Bus. & Prof. Code § 16750(a).

[35] NAT'L VENTURE CAPITAL ASS'N, *NVCA 2021 Yearbook* 39-40 (2021), https://nvca.org/wp-content/uploads/2021/03/NVCA-2021-Yearbook.pdf.

[36] *See* Manne & Hurwitz, *supra* note 31.

[37] *See* Memorandum 2025-42 at 6–7 (summarizing the comment of California Life Sciences).

[38] *Saint Alphonsus*, 778 F.3d at 788; *Hospital Corp.*, 807 F.2d at 1389.

[39] Memorandum 2026-29 at 18.

The draft's treatment of federal authority is selective, and the Guidelines provision is unsound by design

The proposed purpose statement provides that federal case law "is not binding on California state courts" and may be considered persuasive only "to the extent [courts] find it consistent with California law."[40] The revised version pending in AB 1776 goes further, describing federal interpretations as "at most instructive, not conclusive."[41] The proposed text simultaneously commands that the 2023 Merger Guidelines "shall be considered persuasive authority and understood to complement and be harmonized with this section."[42]

The combination is difficult to explain on any neutral principle. Decisions of Article III courts construing the very statutory language California proposes to borrow are demoted, while a policy statement of two federal executive agencies—one that binds no court, federal or state—is elevated. So far as we can discern, the discrepancy in treatment between these two bodies of federal authority is based on the direction in which each cuts and not on their respective legal persuasiveness.

The provision is also unsound on its own terms. Merger guidelines are enforcement-policy documents; they carry weight in litigation only insofar as they persuade courts that they accurately describe the law, and the agencies revise them—1968, 1982, 1992, 2010, 2023—in ways the Memorandum itself describes as reversals of enforcement philosophy.[43] A California statute tied inexorably to the 2023 edition guarantees divergence: When the federal agencies next revise their guidelines, California courts will be statutorily directed to a superseded document—recreating, in permanent form, the federal-state divergence the Memorandum elsewhere counts as a cost.[44]

And the instruction that the Guidelines be "harmonized with this section"[45] supplies no direction to a court confronting a conflict between the two. If the Commission's aim is a California merger law that stands on its own foundations, incorporating by reference a revisable document produced by federal officials whom California neither appoints nor supervises is a strange way to achieve it.

We also note our continuing objection to the purpose statement itself, which directs courts to interpret the statute "liberally" in service of "maximizing" deterrence and of goals extending to "democratic, political, and social institutions." We explained in our single-firm-conduct comments why it would be unwise "to untether California antitrust law from U.S. antitrust law's error-cost

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[40] *Id.* at 19–20.

[41] *Id.* at EX 1 (revised purpose statement, subd. (d)).

[42] *Id.* at 10–11; *id.* at EX 2–4 (Basic Framework subd. (d); Options Three and Four subd. (f)).

[43] *See id*. at 7–8 (recounting the 1982 guidelines' break with the 1968 guidelines); *id.* at 13–14 (summarizing the California Chamber of Commerce's objection that earlier editions staked out "dramatically different policy positions").

[44] *Id*. at 11(noting "concerns that significant differences in federal and state merger review standards would cause confusion and uncertainty.")

[45] *See, e.g.,* Memorandum 2026-29 at EX 2 (Option Two, subd. (d)).

framework, effects-based analysis, and consumer welfare standard."[46] The provision does more damage in merger review than in conduct cases, because merger enforcement is predictive. A conduct case examines what a firm did. A merger case forecasts what a combination might do, and an instruction to resolve that uncertainty in one direction also affects every transaction that is never proposed.

The freestanding "monopoly or monopsony" prong has no limiting principle

Subsection (b) of every option restates, as a freestanding prohibition, the "may be to tend to create a monopoly or monopsony" clause drawn from Section 7 and that subsection (a) already contains. Courts presume that statutory language is not redundant, so subsection (b) will be read to do independent work: to condemn acquisitions that could not be shown to lessen competition substantially, on the ground that they "tend" toward monopoly or monopsony "in any section of the state." The provision contains no substantiality element, no threshold of any kind, and no definition of the markets—including local labor markets—in which the "tendency" is to be assessed.

Monopsony analysis is an area in which basic questions of market definition and measurement remain unsettled in the economic literature, as we detailed in our earlier comments.[47] A tendency-toward-monopsony prohibition of unbounded geographic granularity, uncertain composition, and enforceable in treble-damages actions, would place at legal risk routine acquisitions by any employer of local significance—hospitals, grocers, processors—without any showing of harm to competition.

The Commission should let SB 25 produce a record before California adopts a liability standard

California has only just enacted the legislative instrument that would tell the Commission what problem, if any, a California merger statute needs to solve. SB 25, the California Uniform Antitrust Premerger Notification Act, was signed on February 10, 2026, and requires qualifying HSR filers to provide their federal filings to the Attorney General beginning January 1, 2027.[48] No one today—including the Attorney General—knows how many California-affecting transactions that regime will surface, how many federal clearances California would wish to contest, or what that residual set of transactions looks like. Enacting a liability standard first and discovering the caseload afterward inverts the sensible order of operations, and it forfeits the opportunity to align the statute's scope with SB 25's thresholds. Indeed, the current draft attempts no alignment at all: it contains no size-of-transaction threshold, reaching acquisitions of "any part of the stock . . . or

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[46] ICLE SFC Comments, *supra* note 1, at 2–3.

[47] *See id.* (discussing unsettled questions of market definition and measurement in monopsony analysis, particularly in labor markets).

[48] S.B. 25, 2025–2026 Reg. Sess. (Cal. 2026) (California Uniform Antitrust Premerger Notification Act; signed Feb. 10, 2026; operative Jan. 1, 2027).

assets" of another person, of any size.[49] And the Memorandum does not address whether private treble-damages actions under Section 16750 would attach to the new provisions.

Recommendations

In order of priority, we respectfully recommend that the Commission:

- Decline to adopt the "appreciable risk . . . more than a de minimis amount" formulation. If the Commission wishes to clarify "may be," the staff's "reasonable probability" alternative is a defensible route, provided it is drafted to govern the assessment of the record as a whole and not paired with codified presumptions.
- Decline to codify the *PNB* presumption in statutory text, leaving structural inference to case law. At a minimum, replace "evidence clearly showing" with a burden-of-production standard consistent with *Baker Hughes*, and resolve the conflict between subsections (c) and (e).
- Strike the statutory HHI and market-share thresholds or recast them as triggers for closer scrutiny rather than presumptions of illegality.
- Strike the 2023 Merger Guidelines provision. At most, permit courts to consider contemporaneous federal merger guidelines as nonbinding interpretive aids to the extent consistent with California law.
- Return the "tend to create a monopoly or monopsony" clause to subsection (a) where it operates alongside the substantiality requirement or add a substantiality element to subsection (b).
- Add a size-of-transaction threshold harmonized with SB 25 and the federal HSR thresholds, and specify the remedies and private rights of action, if any, that attach.
- Defer adoption of a substantive merger standard until the Commission has at least one filing cycle of data under SB 25.

Should the Commission nonetheless wish to proceed now, a restrained statute—one tracking Section 7's operative text, retaining substantiality, keeping both prongs within a single competitive-effects analysis, and leaving market definition, concentration, entry, and efficiencies to case law—would give California courts ample room to reach anticompetitive mergers without the difficulties described above.

[49] Memorandum 2026-29 at EX 2 (Option Two, subd. (a)).

We appreciate this opportunity to comment on the draft language, and we would welcome the opportunity to provide further analysis on any of these points.

Respectfully submitted,

Geoffrey A. Manne
President and Founder,
International Center for Law & Economics

Brian Albrecht
Chief Economist,
International Center for Law & Economics

Eric Fruits
Director of Economic Research,
International Center for Law & Economics

NATIONAL ACE
NATIONAL ASIAN / PACIFIC ISLANDER AMERICAN CHAMBER OF COMMERCE & ENTREPRENEURSHIP

August 7, 2026

California Law Revision Commission
Attn: Sharon Reilly, Executive Director
c/o Legislative Counsel Bureau
925 L Street, Suite 275
Sacramento, CA 95814

RE: Study B-750 (Antitrust Law) – Public Comment on Memorandum 2026-29

On behalf of the National Asian/Pacific Islander American Chamber of Commerce & Entrepreneurship (National ACE), we welcome the opportunity to submit comments on the California Law Revision Commission's Memorandum 2026-29 regarding proposed draft language for a state-level mergers and acquisitions statute. National ACE represents a network of over 150 affiliate chambers and 30,000 entrepreneurs nationwide, with a substantial share of our constituency operating small and early-stage businesses across California. Mergers and acquisitions activity is a routine and significant part of how small businesses in our network grow, attract capital, and scale—which is the basis for our interest in this proceeding and its systemic implications. Our position is rooted in the systemic implications this framework holds for the small business ecosystem.

Role of Mergers & Acquisitions in Small Business Growth
For founders and early-stage investors, acquisition is one of the most important and viable paths to realizing value from a business. This is particularly true for smaller companies that lack the scale and resources to pursue a public offering or sustain long-term independent growth. Acquisition pathways allow small business owners to pass on a business they have built, provide liquidity to early investors, and free up capital that is frequently reinvested in new ventures. This cycle supports the continued formation of new small businesses.

In an environment where smaller transactions are already struggling to gain traction, the added friction of a separate state-level regulatory review imposes a disproportionate burden for small business owners. Investors and acquirers weigh legal predictability—the likelihood that a transaction, once agreed to, will proceed without extended delay or unexpected legal challenge—when allocating capital. Reduced predictability often raises the costs and risks of a transaction for all parties involved, with a disproportionate effect on smaller and less-resourced parties. They are generally less able to absorb added legal costs, delays, or the risk of a deal falling through than larger, better-capitalized counterparts. Therefore, a regulatory environment that introduces additional uncertainty into the merger process carries a disproportionate cost for the businesses our network represents, even where that uncertainty is not directed at small businesses specifically.

Effects of a Separate State Standard
The draft options presented in Memorandum 2026-29 depart from established federal practice, effectively creating a "dual-track" regulatory environment. The proposed "appreciable risk" standard, which lowers the evidentiary burden to challenge a merger, introduces a subjective element lacking a developed body of

state caselaw. Similarly, the codification of Herfindahl-Hirschman Index (HHI) thresholds that draw from the 2023 Federal Merger Guidelines, imposes a structural presumption of illegality that shifts the burden of proof to the merging parties.

As the draft options are not bound by federal precedent, a transaction that satisfies federal antitrust review could nonetheless be subject to a separate challenge under California law, applying a different standard and allocation of the burden of proof. This creates the possibility of parallel, and potentially inconsistent, outcomes for the same transaction. For businesses evaluating a transaction with any nexus to California, this adds a layer of legal and timeline uncertainty beyond what is already required under current federal law. As with the general effect of reduced predictability described above, this additional uncertainty is unlikely to be distributed evenly: businesses with fewer resources to manage extended review timelines or parallel legal proceedings bear a proportionally greater burden than larger, better-resourced parties. California would also be the first state to adopt a standalone general merger statute of this kind, which raises a related consideration for businesses operating across state lines and the prospect of materially different legal standards applying in California than in the rest of the country.

Recommendations
National ACE recommends that the Commission prioritize regulatory harmonization and refrain from adopting the “appreciable risk” standard, the Herfindahl-Hirschman Index-based presumption of illegality, or any other options that could significantly increase regulatory burdens and uncertainty for California’s small businesses. We urge the Commission to weigh the systemic impact of increased legal uncertainty on the small business ecosystem, as duplicative merger review processes disproportionately burden the early-stage firms we represent, while threatening the cycle of innovation and reinvestment in California.

National ACE appreciates the Commission’s consideration of the interests of small and early-stage businesses in this proceeding. The over 150 affiliate chambers and 30,000 entrepreneurs in our network include a substantial California constituency for whom mergers and acquisitions are a routine part of how businesses grow, attract capital, and change hands. A stable and predictable legal environment for these transactions is an important factor in the continued growth of that community. We ask that the Commission consider this reality as it evaluates the draft options. We welcome the opportunity to provide additional information or testimony as its work proceeds

Sincerely,

Chiling Tong
President & CEO
National ACE

GEORGETOWN UNIVERSITY
McDonough SCHOOL of BUSINESS

The Honorable Richard Simpson, Chair
and Honorable Commissioners
California Law Revision Commission
c/o Legislative Counsel Bureau
925 L Street, Suite 275
Sacramento, CA 95814

August 7, 2026

Dear Chair Simpson and Honorable Commissioners,

My name is John Mayo. I am the Elsa Carlson McDonough Chair of Business Administration in Georgetown University's McDonough School of Business. I am also the Executive Director of the Georgetown Center for Business and Public Policy. My fields of specialization include industrial organization economics, regulation and antitrust. I have served as an economic expert in antitrust matters for the U.S. Department of Justice on numerous occasions. My vita is available HERE.

As a regular observer of evolving antitrust proposals, I recently became aware of your efforts to enhance state-level antitrust tools in California. I also understand that you are receiving comments on various options that would alter California's legal approach to mergers. The opinons I offer here my own, and I have received no compensation for offering them.

I applaud you on your intent to ensure that California has a well-written and efficacious antitrust toolkit to promote competition in the state. I am happy to be of assistance at any time as this process unfolds.

As I read your "Draft Language Options for Mergers and Acquisitions" (Memorandum 2026-29, July 24, 2026), several thoughts occurred to me. While the "Evolution of the Federal Merger Standard" section is clear and an accurate enuciation of the origins of the Clayton Act and its 1950 amendments, I am concerned that other parts of the document are less accurate and risk advancing policy changes based on incomplete or inaccurate information. In particular -

- The section entitled "The Presumption Weakens" describes what the authors see as a weakening in antitrust enforcement after 1974. This narrative, however, has recently been subjected to a data-driven, peer-reviewed examination.[1] In that analysis, Professor Jeffrey Macher and I examine the ratio of federal merger challenges from 1981-2017 normalized by the total number of reported mergers. We refer to this ratio as Merger Enforcement Intensity (MEI). We find that **MEI more than doubles over the sample period.** (p. 717) Notably, the increase in MEI has occurred over both Democratic and Republican administrations. Thus, in contrast to the narrative of weakening antitrust enforcement, the 36 years for which merger data and their challenges were reliably available indicate that merger enforcement was strengthening rather than weakening.

- We also find that federal enforcement agencies budgets, rather than conscientious decisions to relax antitrust enforcement, have proven to limit antitrust enforcement in merger cases. In particular, we find that a ten percent increase in Agencies' funding levels would generate roughly an eight percent increase in the number of merger challenges at the federal level. See p. 725.

- Another element of "The Presumption Weakens" section is the implication that the federal judiciary has grown increasingly lax, in part by imposing "an increased burden on the plaintiff." (p. 8) This proposition – that federal judicial standards for evaluating mergers have grown increasingly lax – has recently been subjected to both legal scrutiny and empirical testing. In particular, Macher, et al (2026) assesses whether enforcement standards embodied in the FTC/DOJ Merger Guidelines as well as in court opinions have "gone soft."[2] We find they have not. See, especially, the discussion on pp. 6-10.

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[1] See Jeffrey T. Macher and John W. Mayo "The Evolution of Merger Enforcement Intensity: What do the Data Show?" Journal of Competition Law and Economics, Volume 17, 2021, pp. 708-727.

[2] See Jeffrey T. Macher, John W. Mayo, David E.M. Sappington, and Mark Whitener "The Evolution of Judicial Standards: Evidence from Litigated Merger Trials," Journal of Law, Economics, and Organization, Volume 42, March 2026, pp. 1-33.

- Additionally, this study undertakes an empirical investigation of *all* mergers, challenges, and litigated outcomes in the United States over 1982–2021 to test for the presence of shifting judicial standards. Contrary to the narrative, we find evidence that judicial standards have become increasingly pro-enforcement over the past four decades.

- Collectively these studies provoke the question of whether state-level efforts to re-write California's merger laws are the most efficacious way to promote and protect competition in the state. Evidence from federal merger enforcement data fail to reveal an ideologically-driven or legal softening in antitrust enforcement. At a minimum, these findings suggest that the most immediate and effective policy change to heighten antitrust scrutiny of mergers may lie not with wholesale changes to California's merger statutes, but rather through budget appropriations.

Thank you very much for your consideration.

Sincerely,

John W. Mayo
Professor of Economics, Business and Public Policy, and
Executive Director, Georgetown Center for Business and Public Policy

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THE EVOLUTION OF MERGER ENFORCEMENT INTENSITY: WHAT DO THE DATA SHOW?

Jeffrey T. Macher & John W. Mayo[*]

ABSTRACT

A growing narrative has arisen that antitrust regulators have systematically relaxed enforcement over time. This narrative has led to calls for reinvigorated enforcement and the passage of new tougher antitrust legislation. In this paper, we employ data drawn directly from the antitrust agencies to examine this claim. Data collected from 1979 to 2017 indicate that, contrary to the popular narrative, regulators have become more likely to challenge proposed mergers over time. Controlling for the number of merger proposals submitted to the agencies, the likelihood of a merger challenge has more than doubled over this period. After remaining relatively constant over previous administrations, merger enforcement intensity (MEI) rose in the G.W. Bush and even more so in the Obama administrations. The data also reveal that MEI is positively influenced by the agency budget size. Were historical enforcement tendencies to continue, a ten percent increase in the agencies' budgets would yield an eight percent increase in merger challenges. This finding suggests that, independent of any statutory changes to existing antitrust laws, variation in agency budgets provides a viable pathway to enhanced merger enforcement.

I. INTRODUCTION

A growing narrative in the popular press and among some academics has been that antitrust regulators—influenced by the Chicago School—have systematically relaxed existing antitrust law enforcement.[1] This narrative has led to calls

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[1] See, for example, Jerrold Nadler opening remarks, Subcommittee on Regulatory Reform, Commercial and Antitrust Law hearing on "Oversight of the Antitrust Agencies," stating that "[o]ver the past several decades, waves of anticompetitive consolidation in industry after industry—which has largely been the result of lax antitrust enforcement—have threatened the economic well-being and financial security of American families." See also, Joshua D. Wright "Toward a Better Understanding of Concentration: Measuring Merger Policy Effectiveness," Directorate for Financial and Enterprise Affairs Competition Committee, OECD, June 6, 2018, noting a widespread belief that corporate concentration is increasing both in the Unites States and abroad and that "[l]ax antitrust policy, and lenient merger enforcement in particular, is understood to be the root cause of these and other problems."

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for reinvigorated enforcement and even the passage of new tougher antitrust legislation. The merits of this narrative and the corollary calls for antitrust reforms depend, in part, on whether the claim that antitrust regulators have become more relaxed in their enforcement efforts over time is correct. In this paper, we employ data from the U.S. antitrust agencies to examine one element of this claim. Specifically, we examine whether the antitrust regulators have become less likely to challenge proposed mergers over time.[2]

Our data are drawn from annual reports filed by the Federal Trade Commission (FTC) and the Department of Justice (DoJ)—hereafter, the Agencies—over 1979–2017. Our results indicate that, contrary to the popular narrative, the Agencies have become more likely to challenge the proposed mergers over 1979–2017. Controlling for the number of merger proposals submitted under Hart-Scott-Rodino Antitrust Improvement Act of 1976 (HSR), we find that the likelihood of a merger challenge has more than doubled over this period. We also find that merger challenges and MEI are positively influenced by the Agencies' budget size. Were historical enforcement tendencies to continue, a ten percent increase in the Agencies' budgets from the FY 2017 levels would yield an eight percent increase in merger challenges. This latter finding—independent of any statutory changes to existing antitrust laws—suggests that variation in Agency budgets provides a viable pathway to enhanced merger enforcement.

The next section provides the background analysis and a literature review. Section III analyzes the data, and Section IV presents the main analysis. Section V offers caveats to the analysis and examines possible explanations for the findings. Section VI provides a conclusion.

II. BACKGROUND AND RELATED LITERATURE

The introduction to a recent *Yale Law Journal* symposium on antitrust policy observes that "[c]oncerns about the potential for under-enforcement are growing."[3] While the volume of these concerns is growing, they are not altogether new.[4] Indeed, under-enforcement concerns have shadowed the Agencies for many years, and they often arise from casual impressions that antitrust regulators have "gone soft" because a particular merger (or set of mergers) that an observer believes should have been challenged was not. This arm-chair quarterbacking will inevitably continue to exist going forward, with some pundits arguing that regulators have been too easy on mergers and with other pundits arguing the exact opposite.

2 For a parallel examination of the evolution of cartel enforcement, see, for example, Vivek Goshel & D. Daniel Sokol, *The Evolution of Cartel Enforcement*, 57 J.L. & Econ. S51 (2014).

3 Jonathan B. Baker, Jonathan Sallet & Fiona Scott Morton, *Unlocking Antitrust Enforcement*, 127 Yale L.J. 1916, 1919 (2018) (footnote omitted).

4 See, for example, https://www.crowell.com/NewsEvents/AlertsNewsletters/all/Senators-Grill-Antitrust-Officials-over-Lax-Merger-Enforcement.

In contrast to those offering casual opinions, a small literature has sought to provide an empirical and data-driven approach to shedding light on the evolution of merger enforcement efforts over time. Coate (2000) assesses the extent of MEI across three presidential terms: Reagan II, H. W. Bush, and Clinton I,[5] drawing upon the FTC enforcement activity data around horizontal mergers over the fiscal years 1983–1996. He reports on several indicators of FTC merger investigations and enforcement over time, but proffers "a general measure of total effects of enforcement"—one which sums the number of lawsuits voted by the Commission and the mergers abandoned after the issuance of a second request divided by the total number of merger filings.[6] Based on this measure, he concludes that "[a]fter an increase from the low levels of the mid-1980s, FTC enforcement, as a share of reportable transactions, has remained relatively constant from the late 1980s through 1996."[7]

Leary (2002) also seeks to avoid casual narratives regarding the evolution of merger enforcement, stating "[o]ne way to test whether the agencies are really doing what they say they will do is to look at the overall statistical record. In other words, if it is really true that mergers were much more aggressively prosecuted in the 1990s than they were in the 1980s, you would expect to see clear statistical evidence of it. [footnote omitted] What does this evidence show?"[8] In this spirit, he assembles an array of merger enforcement activity data from the DOJ and FTC over 1981–2000 that includes not only formal challenges but also enforcement indicators, such as consent decrees filed as a consequence of merger restructurings following an agency declaration of an intent to challenge. Leary finds "[t]he history of merger policy in the United States does not reveal steady state or a wildly oscillating universe,"[9] but rather reflects an essential stability of merger enforcement efforts over time.

Baker and Shapiro (2008) provide a continuity of approach toward the assessment of MEI. In particular, and consistent with Leary (2002), they suggest that "[t]he key statistic is agency enforcement as a fraction of Hart-Scott-Rodino filings."[10] Moreover, they extend the window of analysis to include the first term of G.W. Bush as well as the first two years of his second term. Based on both the reported data and a complementary survey of the impressions of antitrust practitioners regarding MEI, they conclude

5 Malcolm B. Coate, *Merger Enforcement at the Federal Trade Commission*, 45 Antitrust Bulletin. 323 (2000).

6 *Id.* at 329.

7 *Id.* at 347.

8 Thomas B. Leary, *The Essential Stability of Merger Policy in the United States*, 70 Antitrust L.J. 105, 121–122 (2002).

9 *Id*. at 107 and 126 stating that "The claim that merger enforcement in the 1990s differed dramatically from enforcement in the 1980s is not supported by statistical evidence."

10 Jonathan B. Baker & Carl Shapiro, Reinvigorating Horizontal Merger Enforcement, *in How the Chicago School Overshot the Mark: The Effect of Conservative Economic Analysis on U. S. Antitrust* (Robert Pitofsky ed., Oxford University Press, New York, 2008, at p. 244.) (footnote omitted).

that "the decline in antitrust enforcement is ongoing, especially at the current Department of Justice."[11]

Kwoka (2013) provides another assessment of MEI over time. As part of a larger meta-analysis of merger retrospective studies, he identifies 23 mergers over 1976–2006, which were both subject to retrospective study and produced evidence of the associated Agency action.[12] He first categorizes these cases by decade: identifying five from the 1980s, ten from the 1990s, and eight from the 1990s. He then examines the ratios of challenges to each of these respective merger categories, identifies a decreasing decadal rate over time, and thus suggests an apparent drift toward a more permissive merger enforcement posture.[13] The validity of these results has been the subject of controversy, with alternative statistical tests indicating either a decreasing intensity within the sample or no statistically significant trend over time.[14] Independent of the specifics of this controversy, it is worth observing that the merger pool over which Kwoka observes Agency behavior is exceedingly small, with a sample not exceeding ten in any given decade. This small sample undoubtedly creates challenges in making any inferences regarding trends in MEI over time.

Coate (2018) draws upon FTC data to examine MEI over 1989–2016.[15] Among other data, he examines the annual ratio of FTC merger challenges relative to the number of horizontal merger investigations conducted.[16] From this examination, he indicates that "[a]n obvious increase in challenge rate appears in the data, although substantial variation in the rate remains."[17] His broader assessment of other dimensions of FTC activity leads him to conclude that "[t]his review of FTC policy highlights broad stability in the merger analysis."[18]

A recent paper by Wollmann (2019) examines the evolution of merger enforcement activities over time that stem from a set of HSR amendments in 2000.[19] Specifically, in December 2000, Congress passed and President Clinton signed into law amendments to the HSR Act.[20] Among other changes,

[11] *Id*. at 235.

[12] John E. Kwoka, Jr, *Does Merger Control Work? A Retrospective on U.S. Enforcement Actions and Merger Outcomes*, 78 Antitrust L.J. (2013).

[13] *Id*. at 638.

[14] See Michael Vita and F. David Osinski, *John Kwoka's Mergers, Merger Control, and Remedies: A Critical Review* 82 Antitrust L.J. Vol. 361 (2018); and John Kwoka, *Mergers, Merger Control, and Remedies: A Response to the Vita-Osinski Critique*, 82 Antitrust L.J. 741 (2019).

[15] Coate, Malcolm B., The Merger Review Process at the Federal Trade Commission from 1989 to 2016 (February 28, 2018). Available at SSRN: https://ssrn.com/abstract=2955987 or http://dx.doi.org/10.2139/ssrn.2955987.

[16] *Id*. at Table 2 and accompanying text, 8–9.

[17] *Id*. at 8–9

[18] *Id*. at 28.

[19] Thomas G. Wollmann, *Stealth Consolidation: Evidence from an Amendment to the Hart-Scott Rodino Act*, 1 AM. ECON. REV. INSIGHTS 77 (2019).

[20] These changes are embedded in appropriations legislation for the DoJ. For the complete text, see https://kb.osu.edu/bitstream/handle/1811/71043/1/OSLJ_V67N2_0433.pdf.

the amendments raised the size thresholds by which an acquisition triggers an HSR filing requirement with the Agencies.[21] The consequence of these amendments was that the number of HSR filings made to the Agencies fell sharply in 2001. This change logically had two potential effects: first, by limiting the number of HSR filing to now larger applications, the Agencies' resources were freed to more thoroughly scrutinize those larger merger applications in which anticompetitive issues may be more likely to arise; and second, by removing the filing requirements of a significant number of smaller merger applications, anticompetitive aspects of these now-exempt mergers may be less likely to be detected. It is unclear *a priori* whether and how these two effects collectively have influenced the Agencies' merger enforcement activities.[22]

Drawing on Agency data before and after the 2000 HSR amendments, Wollmann (2019) identifies two types of mergers: (1) never-exempt—the set of larger mergers (that is, > \$50MM in total transaction value) that were not exempt pre- or post-HSR amendments and (2) newly exempt—the set of smaller mergers (that is, < \$50MM in total transaction value) that became exempt post-HSR amendments. He then implements difference-in-differences estimation, and finds that in the wake of the HSR amendments, Agency investigations of newly exempt mergers fell significantly.

In sum, the previous empirical and data-driven literature has examined merger enforcement over different timeframes and has alternatively pointed to: a "relatively constant" merger policy [23]; "an essential stability" in merger

[21] While the motivation for this change is not part of the legislation (which is part of an appropriations bill), the most likely explanation behind this change is that it reflects the Act's original design to promote "a careful balancing of the need to detect and prevent illegal mergers and acquisitions prior to consummation without unduly burdening business with unnecessary paperwork or delays." S. REP. No. 94–803, pt. 1, at 65 (1976). See, also, Marian R. Bruno, "Prepared Remarks before the American Bar Association's 'Merger and Acquisitions: Getting Your Deal Through the New Antitrust Climate'" June 13, 2002, stating that "[i]n response to complaints that the \$15 million size of transaction threshold was too low, Congress increased the size-of-transaction threshold to \$50 million." Available at: https://www.ftc.gov/public-statements/2002/06/hart-scott-rodino-25. In addition, the legislative history of the original Act indicates that "[i]f these premerger reporting requirements were imposed on every merger, the resulting added reporting burdens might more than offset the decrease in burdensome divestiture trials." (Report No. 94–1373, House of Representatives, 94th Congress 2d Session, Committee on the Judiciary, July 28, 1976). See also the Senate Report, which observes that in drafting the threshold values, "the Committee sought to include within the ambit of the premerger notification provision primarily those mergers or acquisitions that were most likely to have a substantial effect on competition. That is not to say that smaller mergers may not run afoul of the Clayton Act. To include the bulk of the approximately 3,000 mergers that have occurred annually in the course of the past several years would, however, in the Committee's judgment impose an undue and unnecessary burden on business." S. Report. No. 94–803, at 65 (1976). For a critique of the 2000 reform measures, see Andrew G. Howell, *Why Premerger Review Needed Reform—And Still Does*, 43 WM. & MARY L. REV. 1703 (2002).

[22] We address this issue empirically in Section IV, *infra*.

[23] COATE, *supra* note 5 at 347.

enforcement[24]; an ongoing "decline in antitrust enforcement"[25]; a "drift" toward a more permissive enforcement policy[26]; "a broad stability" in merger analysis[27]; and a more nuanced assessment that while merger activity and enforcement "track closely with one another,"[28] the Agencies' focus on HSR-exempt mergers has all but evaporated over time. In what follows, we seek to provide continuity with, extensions to, and perspective on these earlier analyses.

III. THE DATA

In the spirit of prior data-driven analyses of merger enforcement efforts, we turn to available data on antitrust challenges to mergers over 1979–2017. The passage of the HSR requires that the DOJ and FTC provide annual HSR-related reports.[29] Beginning in 1979, the reports include data not only on the number of HSR filings but also on associated merger enforcement activity.[30] Data are provided on the most direct manifestation of merger enforcement activity—viz., formal complaints—as well as more indirect manifestations of merger enforcement. Using each Annual Report over 1979–2017, we develop a merger enforcement measure that includes preliminary injunctions; agencies' declarations of intentions to challenge mergers; and agencies' filings of consent decrees that reflect adjustments designed to remove anticompetitive concerns regarding as-proposed mergers.[31]

[24] Leary, *supra* note 8 at 105.
[25] Baker & Shapiro, *supra* note 10 at 235.
[26] Kwoka, *supra* note 12 at 638.
[27] Coate, *supra* note 15 at 28.
[28] Wollmann, *supra* note 19 at 79.
[29] These reports (hereafter, Annual Reports) are available at: https://www.ftc.gov/policy/reports/policy-reports/annual-competition-reports
[30] The 1977–1978 Annual Reports analyze the developments associated with the implementation of HSR rather than reporting merger enforcement data.
[31] Our measure is consistent with the Baker and Shapiro (2008) measure, who include "court cases, consent settlements, and transactions abandoned or restructured prior to filing a complaint as a result of an announced challenge." Baker & Shapiro, *supra*, note 10 at 245. Our measure is also akin to the Leary (2002) MEI measure, although his narrative description indicates that post-second request merger abandonments are included as an indicator of merger challenges. We more conservatively exclude post-second request merger challenge abandonments in our measure for two reasons. First, such abandonments can occur for reasons independent of merger challenges. See, for example, Coate (2018), who indicates that "[n]ot all matters withdrawn from review due to antitrust concerns, as any other impediment to the transaction can force the withdrawal decision. Examples include an inability to obtain other regulatory approvals, losing a bidding war for the target, or failure to obtain financing. Antitrust concerns appear to be the most likely reason for abandonment, although non-antitrust concerns regularly lead to the abandonment of the merger." Coate, *supra* note 15 at 4. Second, as a practical matter, the Annual Reports do not consistently provide data on the number of mergers abandoned in the wake of second requests by the Agencies.

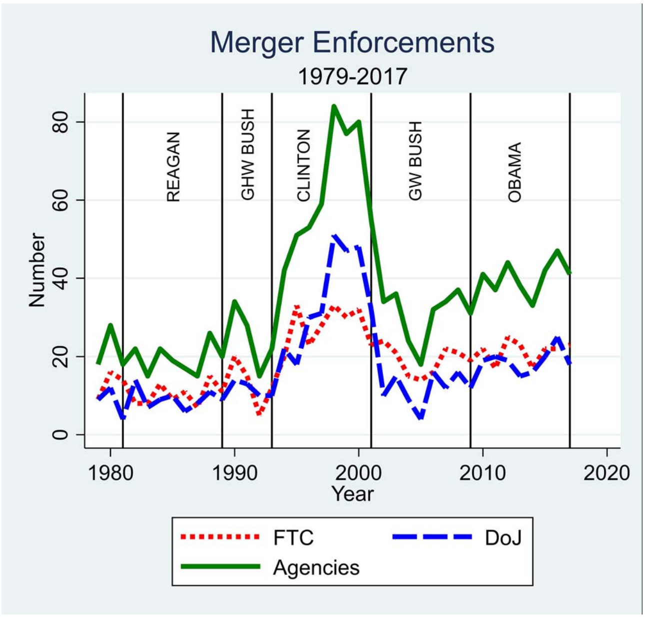

Figure 1. Merger enforcements (1979–2017).

Figure 1 aggregates these data into an annual count of merger enforcements over 1979–2017 and by political administration. Three features are worth highlighting. First, the absolute number of merger enforcements grew sharply in 1994, peaked in 1998, and then fell substantially before stabilizing after 2003. Second, the peak in merger enforcements coincides with the Clinton administration. Third, both DOJ and FTC merger enforcement follow the same pattern over time, with the DOJ effects somewhat larger during the Clinton Administration in comparison with those of the FTC.

To gauge the intensity of merger enforcement, we draw upon merger transactions that are required to be reported by the Agencies under HSR. We focus on the number of "reportable" HSR transactions.[32] Figure 2 provides the evolution of these reported merger transactions. Similar to merger enforcements, the most notable feature of HSR reportable mergers is their rapid increase and decline over 1994–2003.

[32] We define "reportable" mergers as those for which the agencies are authorized to issue a Second Request. We exclude mergers for which the Agencies are not authorized to request additional information or mergers with separate regulatory agency approval processes [for example, Section 7(a) 6/8 reasons], incomplete filings, unnecessary filings, and so forth. For more details, see the Tenth Annual Report to Congress Pursuant to Section 201 of the Hart-Scott-Rodino Antitrust Improvement Act of 1976, Appendix C, footnote 2.

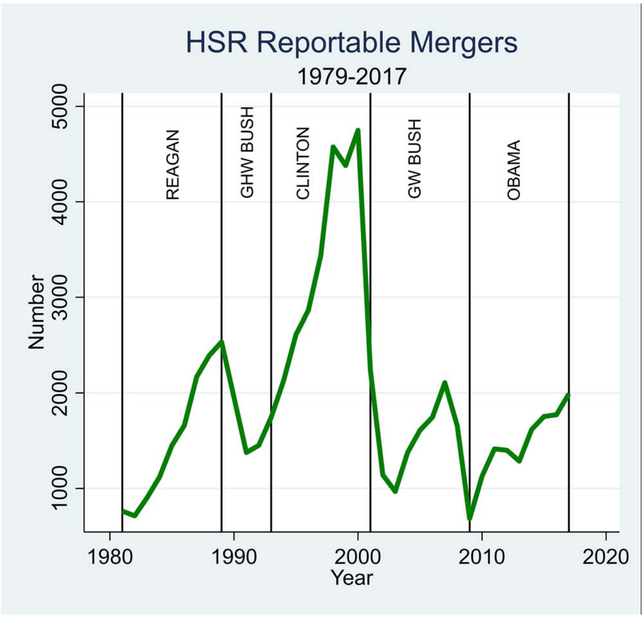

Figure 2. HSR reportable mergers (1979–2017).

To gauge the Agencies' MEI we create a ratio of annual merger enforcements to annual HSR reportable mergers.[33] Figure 3 indicates that Agencies have challenged between 1.0 and 4.5 percent of HSR-eligible mergers over 1981–2017.[34,35] The notable spikes in MEI appear mainly due to economic

[33] While the total number of HSR transactions is reported for 1979 and 1980, the number of reportable transactions is not available for these years. Our MEI measure thus necessarily begins in 1981. Both as a robustness check and to include the 1979 and 1980 data, the analysis in Section IV is replicated using total HSR transactions as the denominator in our MEI measure. The results are substantively unchanged to this alternative measure.

[34] As noted in Section II, the use of this ratio as a gauge of merger enforcement activity began with Coate *supra*, note 5, and is the basis for the analysis presented in Leary *supra* note 8, Baker & Shapiro, *supra* note 10, and Coate *supra* note 15. Our measure continues the tradition of including enforcement actions undertaken by the Agencies that are both reported under HSR and not reported under HSR in the numerator, with only transactions that are reported under HSR in the denominator. An ideal calibration of the numerator to the base of HSR reported transactions would require backing the Agencies' challenges to non-HSR-reported mergers out of the numerator. Unfortunately, the Annual Competition reports do not indicate whether a given challenge is to an HSR-reported transaction or to a non-HSR reported transaction. Consequently, we retain the unadjusted measure.

[35] Our MEI measure reflects the combined activities across both Agencies. We aggregate DoJ and FTC activities for two reasons. First, while some "inside baseball" curiosity will exist about agency-specific MEIs, our view is that inter-agency variations are most likely the result of varying case mixes rather than systematic enforcement propensity differences. Second, our combined MEI measure is most directly responsive to the debate which motivates our paper; namely, whether MEI (in total) has increased or decreased over time.

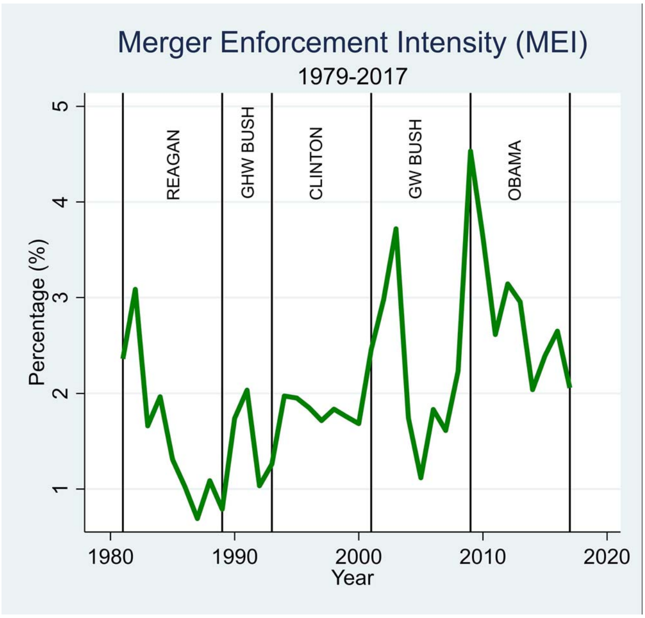

Figure 3. MEI (1979–2017).

recessions, which subsequently reduced the number of mergers (HSR-eligible or otherwise). In 1982, a severe global economic recession and stagflation in much of the developed world was due to the 1973 oil crisis and 1979 energy crisis. A shallow recession emerged in 2003 from the collapse of the dot-com bubble, falling investments, and 09/11. In 2009, the subprime mortgage crisis led to a global financial crisis. In each instance, the number of HSR-eligible mergers was substantially lower than in the year prior or year after.

IV. ANALYSIS

A. Preliminaries

Our MEI measure is best thought of in probabilistic terms. In particular, there are n_t HSR filings over t time periods with challenges occurring in a subset (m_t) of these. The aggregated empirical probability of a challenge is therefore:

$$p_t = \frac{m_t}{n_t}, \tag{1}$$

which we can write as a linear probability function:

$$p_t^* = \beta x_t + \mu_t, \tag{2}$$

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where p_t^* is the predicted value of p_t from equation (2); x_t is a set of explanatory variables; β is a vector of estimated parameters; and $\mu_t = p_t^* - p_t$ is a random error term. The estimation of equation (2) is straightforward, but requires adjustment to account for nonconstant variance in the μ_t error term that would eliminate the minimum variance properties of ordinary least squares (OLS) regression and invalidate statistical tests on the realized parameter values. The variance of p_t^* is given by $\mathrm{Var}\left(p_t^*\right) = {p_t\left(1 - p_t\right)}\big/{n_t}$ and can be estimated by ${p_t^*\left(1 - p_t^*\right)}\big/{n_t}$. We accordingly employ weighted least square (WLS) regression using the weights, $\omega_t = \left[{n_t}\big/{p_t^*\left(1 - p_t^*\right)}\right]^{1/2}$. This weighting correction results in unbiased estimates with standard errors capable of providing reliable tests.[36] Our estimations also employ robust standard errors.

B. MEI over Time

Table 1 examines Agencies' MEI (MEI_t) and challenges over time. The year (YEAR) serves as the independent variable of interest. Column (1) examines MEI_t using the number of reportable mergers (ELIGIBLE MEI) available over 1981–2017; column (2) examines MEI_t using the total HSR filings (ALL MEI) available over 1979–2017. The results indicate that, independent of the specific measurement approach, YEAR is positive and statistically significant ($p < .01$). Contrary to the current narrative, MEI has increased over time.

We next examine the annual number of merger challenges (CHALLENGES) as the dependent variable. The year again serves as the main independent variable, but we also control for the number of eligible [column (3)] or total [column (4)] HSR filings. The results again indicate that YEAR is a positive and statistically significant ($p < .01$) determinant of merger enforcement. Controlling for the level of merger filings, the estimations indicate that the number of merger challenges increases by nearly 0.6 per year.

We develop predictions of MEI and challenges over time using the Table 1 estimates and marginal effects: MEI more than doubles from 1.33 to 2.77 percent over the sample period, while the predicted challenges increase from 24.1 to 46.9, holding enforceable merger filings at its mean.

We examine two tests of robustness to these main results. First, previous research efforts that interpret MEI as a measure of enforcement intensity have provoked the observation that the measure fails to make adjustments for the evolving mix of mergers that are presented to the Agencies over time. That

[36] See G.S. Maddala Limited-Dependent and Qualitative Variables in Econometrics, Cambridge University Press, Cambridge, UK, 28–29 (1983).

Table 1. Baseline MEI and challenges regressions

DEP VAR	**(1)** ELIGIBLE MEI	**(2)** ALL MEI	**(3)** CHALLENGES	**(4)** CHALLENGES
YEAR	0.037***	0.035***	0.600***	0.601***
	(0.012)	(0.012)	(0.131)	(0.130)
ELIG HSR			0.014***	
			(0.001)	
ALL HSR				0.013***
				(0.002)
Constant	−71.877***	−68.912***	−1,190.615***	−1,190.293***
	(24.615)	(23.127)	(262.382)	(259.359)
Predicted effect	2.073***	1.972***	36.297***	35.615***
	(0.125)	(0.121)	(1.480)	(1.544)
Estimation	WLS	WLS	OLS	OLS
Observations	37	39	37	39
Adj. *R*-squared	0.222	0.228	0.760	0.718

Note: (1) $^{*}p < .10$; $^{**}p < .05$; $^{***}p < .01$ CHALLENGES correspond to m_t in equation((1), which includes preliminary injunctions; agencies' declarations of intentions to challenge mergers; and agencies' filings of consent decrees that reflect adjustments designed to remove anticompetitive concerns regarding as-proposed mergers. Standard errors are reported in parentheses.

is, if the types of mergers change systematically over time, then the possibility arises that the changes in the observed MEI is the result of changes in the merger mix rather than the changes in merger enforcement. To address this argument, we consider the Agencies' enforcement directed to a single, and most problematic, merger type: horizontal mergers. To do so, we gather data on the number of "intra-industry" mergers over 2002–2017,[37] which include the set of all horizontal mergers reported to the Agencies in a given year.[38] We also identify the number of challenges to horizontal mergers by the Agencies over time.[39] The ratio of Agency enforcement actions taken against horizontal mergers (HORIZ CHALLENGES) to the total number of horizontal mergers reported (HORIZ HSR) serves as our measure of horizontal MEI (HORIZ MEI)–that is, the rate that Agencies challenge the most potentially problematic mergers over time.

[37] These data are found in Table XI of the Annual Reports. Agency data on intra-industry mergers before 2002 are inconsistent and incomplete.

[38] Our reliance on the count of "intra-industry" mergers as a measure of horizontal mergers sets aside a more precise accounting of horizontal mergers, which would require identifying whether each merger involves firms that compete in the same relevant geographic and product market. Nonetheless, relying on the Agencies' three-digit NAICS definition, "intra-industry" mergers capture all such horizontal mergers.

[39] To do so, we exclude all enforcement actions taken against vertical mergers. Enforcement actions directed to vertical mergers are identified in Steven C. Salop and Daniel P. Culley, "Vertical Merger Enforcement Actions: 1994-April 2020," Appendix to "*Revising the Vertical Merger Guidelines: Policy Issues and an Interim Guide for Practitioners.*" 4 J. Antitrust Enforc. 1 (2016).

Table 2. Robustness MEI and challenges regressions

DEP VAR	**(1)** HORIZ MEI	**(2)** HORIZ CHALLENGES	**(3)** LEARY MEI	**(4)** LEARY CHALLENGES
YEAR	0.352***	0.948**	0.030**	0.459***
	(0.101)	(0.333)	(0.012)	(0.140)
ELIG HSR		−0.003		0.014***
		(0.004)		(0.001)
ALL HSR			−57.361**	−906.838***
			(24.642)	(280.220)
Constant	−701.298***	−1867.017***	2.245***	38.514***
	(203.674)	(667.169)	(0.133)	(1.608)
Estimation	WLS	OLS	WLS	OLS
Observations	16	16	37	37
Adj. *R*-squared	0.291	0.418	0.141	0.720

Note: (1) $^{*}p < .10$; $^{**}p < .05$; ***I < .01. Standard errors are reported in parentheses.

The first two columns of Table 2 present the horizontal merger results: column (1) examines HORIZ MEI using the number of eligible horizontal mergers; column (2) examines the HORIZ CHALLENGES. The results indicate that, independent of the specific measurement approach, YEAR is positive and statistically significant ($p < 0.05$). Controlling for merger mix, the results again indicate that MEI has increased over time.

Second, we turn to Leary (2002), who examines the evolution of MEI but uses more limited data and slightly different measures than we employ. We make use of the longer data window available (that is, 1981–2017 versus 1981–2000), but employ his specific challenges data which differs at points from ours.[40]

The last two columns of Table 2 present the Leary results: column (3) examines the Leary MEI measure; column (4) examines the Leary merger challenges measure. The results are encouragingly consistent with our baseline results: MEI and merger challenges increase over time.

Baker and Shapiro (2008) similarly rely upon the Leary enforcement data, but attempt to account for the HSR filing threshold increase implemented in 2001. A notable consequence of the increased threshold is that the number of reported HSR filings fell. Using the historical relationships between all

[40] Leary (2002) indicates that data are drawn from FTC Mission Accomplishments and count as challenges the sum of authorized preliminary injunctions, administrative complaints, Part II consents accepted, and transactions withdrawn after issuance of a second request, while his DOJ challenge data are drawn from the HSR Annual Reports and include the sum of merger actions filed in the district court and transactions abandoned or restructured before filing a complaint as a result of an announced challenge. See his Table 1, Note 2. Our data are for both the DOJ and FTC, are drawn from the HSR Annual Reports, and do not include post-second-request merger abandonments as a challenge. Our measure of merger challenges differs from Leary in a number of years.

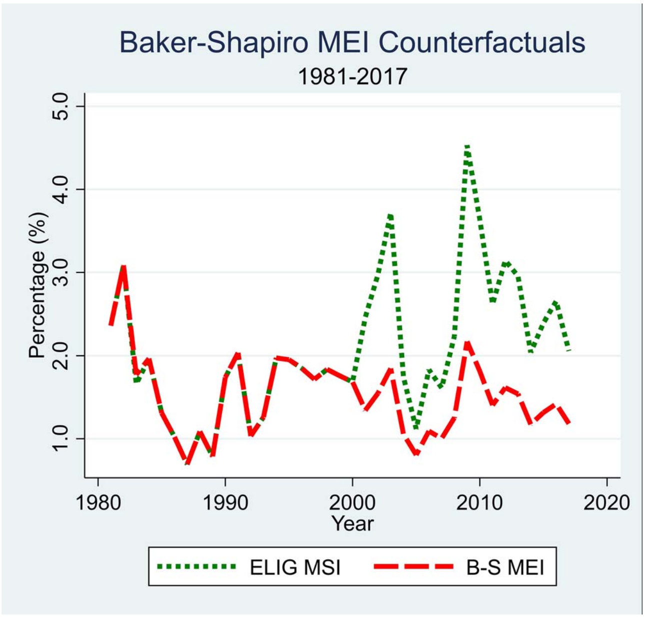

Figure 4. MEI counterfactuals (1981–2017).

mergers, reported HSR mergers, and challenges per reported merger, Baker and Shapiro (2008) project MEI levels under the counterfactual that Congress did not alter the HSR threshold.[41] Figure 4 displays both the actual MEI and the Baker–Shapiro MEI counterfactual, which show the 2000 HSR adjustments triggered an increase in MEI relative to the counterfactual of no HSR adjustments. Indeed, the Baker–Shapiro adjustment projects that MEI would have remained flat or even declined had the threshold adjustments not occurred.

Finally, Wollmann (2019) shows that in the wake of the 2000 HSR Amendments, the level of Agency investigations into smaller (that is, newly exempt) mergers fell precipitously.[42] Some of these investigations would have led to actual challenges but are no longer visible because they were not reported to the Agencies under HSR. Using Baker and Shapiro's counterfactual analysis of historical ratios of challenges per newly exempt mergers, however, it is possible to project the level of challenges that did not happen as a consequence of the

[41] For a complete description of their methodology, see Baker and Shapiro (2008), supra note 10 at 274, footnotes 81 and 82.

[42] See also the working paper by Thomas G. Wollmann, "How to Get Away with Merger: Stealth Consolidation and Its Real Effects on US Healthcare," NBER Working paper 27274, (May 2020). It indicates that merger challenges in the dialysis have been substantially reduced for mergers that are not reported under HSR.

reduction in HSR filings with the Agencies.[43] At the same time that investigations into newly exempt mergers were falling, the intensity of challenges to larger (that is, never-exempt) mergers was increasing. To calculate these increases, we compare the number of challenges predicted by the increasing MEI (applied to the ongoing filings of the larger, never-exempt mergers) with a benchmark of the number of challenges that would have occurred had the MEI remained at its 1990–2000 average value.

Figure 5 shows the net effect to merger challenges, taking into consideration both the decrease associated with the newly exempt mergers as a consequence of the HSR Amendments and the increase associated with increasing MEI over time. While the number of merger challenges fell in the aftermath of the 2000 HSR amendments, the increased propensity of the Agencies to challenge the never-exempt mergers largely eliminated the challenges reduction by 2009; since 2013, the net effect has been an increase in the number of merger challenges filed.[44]

C. MEI over Political Administrations

While the majority of economists and lawyers who investigate mergers are career employees, the fact that the heads of the FTC and the DOJ's Antitrust Division are political appointees has long fostered a curiosity about whether differing political administrations produce substantively different merger enforcement intensities.[45] In this vein, several research efforts have examined data on the merger enforcement across political administrations with varying results.[46] For example, Coate (2000) analyzes FTC merger enforcement data

[43] Baker and Shapiro (2008) show that the 2000 HSR amendments reduced HSR filings by 60 percent relative to the no HSR amendments' condition. The actual number of HSR filings reported following 2000 can then be inflated by 2.5 to produce a value of mergers that would have been reported but for the 2000 HSR amendments. The difference between this number and the number of HSR transactions reported represents the number of newly exempt mergers that were not filed with the Agencies as a consequence of the 2000 HSR amendments. BAKER AND SHAPIRO, *supra*, note 10, footnote 81, p. 274. They also show that for newly exempt mergers (that is, those valued at <\$50MM), the historical rate of second requests was 0.98 percent, and 61.6 percent of second requests over 1990–2000 resulted in enforcement challenges. Using these data, we can therefore calculate the number of newly exempted mergers over time as well as the number of challenges associated with the reduced number of HSR filings.

[44] Our calculation admittedly may mask several important considerations in the overall evolution of MEI. For instance, the calculation assumes that challenges for smaller (newly exempt) mergers are equivalent to challenges for larger (never-exempt) mergers. It is reasonable to consider, however, that challenges to larger mergers may entail more effort by the Agencies and therefore reflect larger "enforcement costs" per challenge than similar challenges to smaller mergers.

[45] For an early examination of the role of political pressure on FTC enforcement activity, see Malcolm B. Coate, R.S Higgins, Richard S. & Fred S. McChesney, *Bureaucracy and Politics in FTC Merger Challenges*, 33. J. L. & ECON. 463 (1990).

[46] See COATE *supra* note 5, COATE (2018) *supra* note 14, LEARY *supra* note 8, and Baker and Shapiro *supra* note 10.

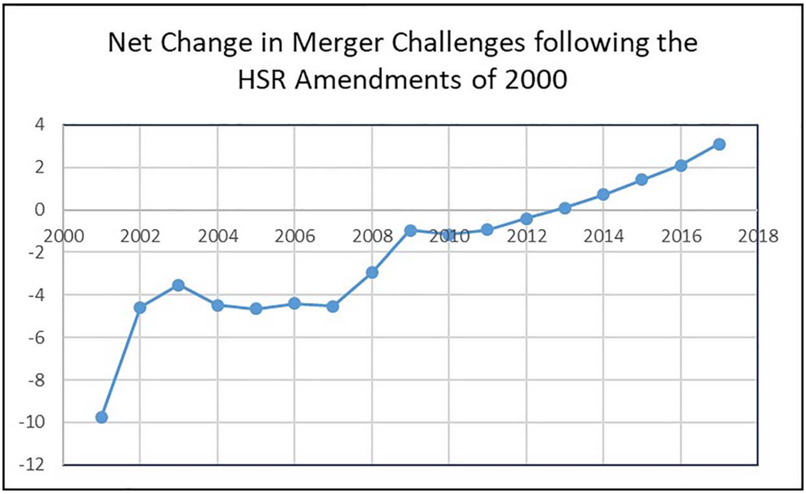

Figure 5. Merger challenges net change from HSR amendments (2001–2017).

across three presidential administrations: Reagan, Bush, and Clinton. The data suggest little indication of political influence on MEI.[47] Leary (2002) similarly concludes that there was mostly stability in MEI across political administrations. Baker and Shapiro (2008) extend the data employed in Coate (2000) to examine MEI in the first six years of the G.W. Bush administration; they observe that that "merger enforcement became much more lenient during the current administration,"[48] and suggest that "prospective merger enforcement has fallen into decline."[49] Coate (2016) analyzes FTC data on MEI over 1989–2014 and finds that "[s]tatistical analysis of the merger review process detects no evidence of political partisanship"[50] and "[t]his review of FTC policy highlights a broad stability in the merger enforcement process."[51]

Our data permit us to both replicate and extend these analyses, with the exception of Coate (2000, 2016) who employs in-house FTC data. Our key measure of MEI remains the ratio of all challenges to the set of reportable mergers under HSR. A set of administration dummy variables serve as the main variables of interest. Following Leary (2002, p. 122) and Baker and Shapiro (2008), we anticipate an expected time lag in a new administration putting its political leadership team into place in the Agencies and similarly

[47] See Coate *supra* note 5 at 347, who states "FTC enforcement, as a share of reportable transactions, has remained relatively constant from the late 1980s through 1996."

[48] Baker & Shapiro, *supra* note 10 at 247.

[49] *Id*. at 266.

[50] Coate, Malcolm B., "Merger Policy at the Federal Trade Commission: What, If Anything, Has Changed?" (March 31, 2016), p. 37. Available at SSRN: https://ssrn.com/abstract=2757301 or http://dx.doi.org/10.2139/ssrn.2757301.

[51] *Id*. at 36.

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Table 3. Robustness MEI and challenge regressions (by administration)

DEP VAR	(1) ELIG MEI	(2) ALL MEI	(3) CHALLENGES	(4) CHALLENGES
BUSH GHW	−0.036	−0.101	4.504	3.751
	(0.342)	(0.306)	(4.033)	(3.905)
CLINTON	0.351	0.322	27.829***	29.223***
	(0.283)	(0.261)	(4.923)	(5.269)
BUSH GW	0.918*	0.907*	12.346***	12.154***
	(0.496)	(0.466)	(3.553)	(3.490)
OBAMA	1.134***	1.143***	20.850***	20.897***
	(0.332)	(0.311)	(2.712)	(2.693)
ELIG HSR			0.008***	
			(0.002)	
ALL HSR				0.007***
				(0.002)
Constant	1.553***	1.468***	6.610*	8.313*
	(0.269)	(0.248)	(3.738)	(4.187)
Estimation	WLS	WLS	OLS	OLS
Observations	37	39	37	39
Adj. R-squared	0.403	0.425	0.876	0.858

Note: (1) $^{*}p < .10$; $^{**}p < .05$; $^{***}p < .01$; (2) Reagan serves as the baseline (omitted administration). Standard errors are reported in parentheses

introduce a one-year lag across administrations but still allow for the entire time in office for each administration.[52]

Table 3 presents these MEI and merger challenge results. While some variation across administrations exists, the most striking result is the clear and marked increases in both MEI and the challenges in later administrations relative to the base (omitted) Reagan administration. And this trend dominates any differences in MEI and the challenges that are associated with the political party of the administration in power. The estimates are generally consistent with earlier studies [Coate (2000, 2016) and Leary (2002)] which do not identify the changes in political administrations as an important driver of variations MEI. The estimates also indicate that the lull in merger enforcement activity during the first two years of G.W. Bush's second term identified by Baker and Shapiro (2008) did not turn into a longer-term downturn in MEI.

[52] Leary *supra* note 8 and Baker & Shapiro *supra* note 10 break out enforcement intensity into each four-year presidential term. To the extent that we seek to identify the role of political administrations on merger enforcement, we believe that any such influence is best assessed over the respective administration's full term in office. Variations in the observed MEI across the same president's two terms are not plausibly driven by differences in political influence.

V. CAVEATS AND CAUSALITY

We examine two additional considerations. First, while our analysis provides a data-driven alternative to casual impressions and anecdotal inferences regarding merger enforcement over time, it comes with certain caveats and qualifications.[53] For instance, the portfolio of observed mergers may, in part, be determined endogenously by merger policy. For instance, the evolution of the Merger Guidelines over 1968–2010 may have increased the number of proposed mergers—as firms are better able to understand problematic mergers—or reduced the number of proposed mergers—as Agencies better enunciate theories and tools by which to challenge mergers. It is also possible that harsher merger enforcement regimes may lead to fewer proposed mergers, while more lenient policies may lead to more proposed mergers. While such possibilities cannot be eliminated, a Granger causality test of whether current MEI causes subsequent movements in reported HSR-reported mergers is not supported.[54] It is thus not clear whether any policy variations fundamentally alter—and in which direction—our conclusions.

Additionally, our measure is not a comprehensive accounting of merger enforcement. A number of activities are omitted, including merger enforcement advocacy undertaken by the Agencies before other regulatory bodies, such as the Surface Transportation Board (STB) or the Federal Communications Commission (FCC). The Agencies' merger enforcement activities related to bank mergers are similarly omitted. Furthermore, some firms have historically chosen to halt the proposed mergers in response to Second Requests.[55] Similarly, some potential mergers may have never occurred as a consequence of an anticipated challenge from antitrust enforcers. It is simply not possible, however, to observe these nonmergers.

We also note that while the window of data we examine is as comprehensive as possible, our analysis and conclusions run the risk of not being fully responsive to those whose reference point for a narrative that "regulators have gone soft" is before 1979.[56] Systematic data from the pre-HSR period that would allow the comparison of this earlier period to more recent enforcement efforts are not available. There are, however, a number of historical examinations of

[53] Our analysis of these caveats and qualifications builds upon those first identified by BAKER & SHAPIRO *supra* note 10.

[54] Our test follows C.W.J Granger, *Investigating Causal Relations by Econometric Models and Cross-Spectral Methods*, 37 Econometrica 424–438 (1969) using a three-period lag. An F-test of the significance of the lagged values of MEI indicates that we cannot reject the hypothesis of no causation of merger enforcement on the HSR reported level of merger activity.

[55] See, for example, Annual Report 1980, footnote 17.

[56] See, for example, https://www.ftc.gov/system/files/documents/public_statements/1409925/opening_remarks_of_joe_simons_hearings1georgetown_sept2018_0.pdf. FTC Chairman Joe Simmons notes some recent literature concludes that there has been "a change to a less enforcement-oriented antitrust policy beginning in the 1980s."

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mergers and merger enforcement that provide a flavor of these efforts in this earlier era.[57]

Additionally, note that the 1979–1985 data reported by the Agencies were for calendar years, while fiscal year reporting began in 1986.[58] It does not appear possible to fully reconcile these two conventions, and we simply accept these data as reported.[59] Finally, there is necessarily some intertemporal slippage between the time when mergers are reported under HSR and the time that policy challenges are raised by the Agencies. This certainly results in some mergers reported in one year and challenges recorded in the following year.

Second, our analysis to this point indicates that the propensity of Agencies to challenge filed mergers has increased over time. While this finding is in itself informative to the current debate regarding the evolving intensity of merger enforcement, it provokes consideration of a more basic question: *why* has the enforcement policy evolved as it has? Although a complete exploration of this question lies beyond our scope, we nonetheless offer some limited insights. Table 1 indicates that the number of merger challenges is positively related to the level of merger activity as captured by HSR filings. Especially in light of the mercurial levels of mergers occurring over time (see Figure 2), the wherewithal to challenge mergers may be constrained by the Agency budget levels. We examine this possibility directly.

Figure 6 provides the combined FTC and DoJ inflation-adjusted (to 2017) budgets. There is a marked increase in the aggregate budget level since 1990. Accordingly, Table 4 replicates the Table 1 estimations, but substitutes YEARS with an annual AGENCY BUDGET measure. Columns (1) and (2), respectively, indicate AGENCY BUDGET is a positive and statistically significant determinant of MEI when using either eligible mergers or all HSR-reported mergers. Columns (3) and (4), respectively, indicate the inflation-adjusted measure of AGENCY BUDGET has a positive and statistically significant effect on merger challenges, controlling for either eligible mergers or total mergers. These results thus indicate that the observed increases in MEI over time have been driven, at least in part, by Agency budgets. For instance, the estimations indicate that a ten percent increase from 2017 Agencies' funding levels (that is, from \$478MM to \$526MM) would yield an increase in the eligible MEI from 2.8 to 2.9 percent and would generate roughly an eight percent increase in the number of merger challenges (from 45.7 to 49.2).

Aside from budget-driven changes in MEI, the data indicate a second potentially important explanation for the observed increases in MEI over

[57] Several detailed narrative accounts of early enforcement efforts provide insights into merger enforcement activities before the passage of HSR and the subsequent publication of annual reports. See, for instance, William E. Kovacic & Carl Shapiro, *Antitrust Policy: A Century of Economic and Legal Thinking*, 14 J. ECON. PERSPECTIVES 43 (2000).

[58] Annual Report 1985, p. 7.

[59] We do note, however, that the general conclusions reported in Section IV *infra* are invariant to omitting the early, calendar year data—only using the fiscal years data beginning in 1986.

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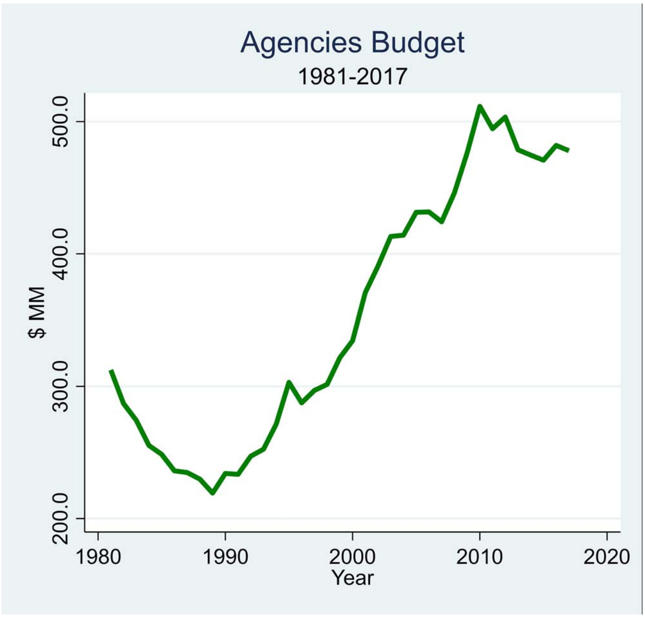

Figure 6. Competition agencies' real budgets, 1981–2017.
Note: (1) Inflation Index, FY 2017 = 100; (2) since FY 1990, total Agency appropriations include both direct appropriations and anticipated HSR filing fee revenues, with adjustments to the former to achieve a total level of annual permitted expenditures that reflect budget priorities. The total level of effective appropriations is determined as a matter of policy; HRS filing fees simply reduce the level of direct appropriations allocated to the agencies. Anticipated HSR filing fees do not directly affect the total budget figures for the Agencies reported here.

Table 4. Robustness MEI and challenge regressions (Agency budgets)

DEP VAR	(1) ELIG MEI	(2) ALL MEI	(3) CHALLENGES	(4) CHALLENGES
AGENCY BUDGET	0.006*** (0.001)	0.006*** (0.001)	0.075*** (0.014)	0.088*** (0.014)
ELIG HSR			0.016*** (0.001)	
TOT HSR				0.015*** (0.001)
Constant	0.065 (0.362)	−0.303 (0.323)	−20.900*** (5.901)	−26.325*** (6.084)
Estimation	WLS	WLS	OLS	OLS
Observations	37	39	37	39
Adj. *R*-squared	0.428	0.507	0.795	0.780

Note: (1) *$p < .10$; **$p < .05$; ***$p < .01$. Standard errors are in parentheses.

time. As seen in Figure 5, the amendments to the HSR Act in 2000 ushered in substantial differences in the pattern of enforcement. In particular, in the wake of the HSR amendments, the Agencies have shifted their focus to larger mergers that continue to be reported under HSR, while focusing less on smaller mergers that are no longer reported under HSR.[60] With limited financial and investigative resources, this shift to focus on large mergers has likely contributed to the increase in measured merger challenges as larger mergers are more likely, *ceteris paribus*, to provoke anticompetitive concerns than smaller mergers.

VI. CONCLUSIONS

Our analysis of the data on merger enforcement over 1979–2017 provides some high-level insights into the current narrative that antitrust regulators have "gone soft." In short, the data do not provide support to this argument. Indeed, the data indicate that the Agencies have become *more* likely to challenge mergers filed over time. While this increase may be due to numerous factors, we identify two likely drivers. First, we find that MEI is directly related to the antitrust Agencies' annual budgets. The data indicate that a ten percent increase in current Agency budgets increases both MEI and, for a given number of HSR-filed mergers, merger challenges. Second, Congress modified the HSR filing thresholds in 2000, with the result that the Agencies have focused more of their efforts on larger mergers. These larger mergers are, on average, more likely to be problematic and, as a consequence, increase the propensity to challenge the set of HSR-filed mergers in any given year.

We conclude with a cautionary note regarding the normative policy interpretation of our analysis. Specifically, and as a factual matter, we show that contrary to the current narrative suggesting antitrust regulators have become increasingly lax in their merger enforcement efforts, MEI has increased over time. Taken on its face, this finding suggests that antitrust policy reform advocates should not seek to advance such efforts on the prevailing narrative. But this finding does not rule out other possible reasons that may justify antitrust reform efforts. In this specific context, policy reform advocates have a burden for providing a clear rationale—rooted in facts and data and not based on speculation—regarding why proposed reforms are merited.

[60] See WOLLMANN, *supra* note 19.

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The evolution of contracting: evidence from the US freight rail industry

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ABSTRACT

Although they lie at the very foundation of economic exchange, the primal questions of whether and when economic actors employ contracts and how the propensity to contract evolves over time have received relatively little empirical attention. We address these lacunas using an extensive database of spot market and contract shipments in the US freight rail industry. We find that the evolution of contracting is driven by many factors, including legislative changes, contracting experience, the extent and nature of prevailing competition, transaction complexity, asset specificity, and technological change (*JEL* L22, L24, L51, L92).

> "I have come to the conclusion that the main obstacle faced by researchers in industrial organization is the lack of available data on contracts and the activities of firms."
>
> – Ronald Coase, Nobel Prize acceptance speech (1992).

1. INTRODUCTION

The economic literature on contracting is both old and venerable, with contracts often cast as one of several alternative means by which a transaction between two (or more) parties may be consummated. At one extreme, parties can complete a transaction in a spot market, whereby Party A provides a good or service to Party B, and B provides an agreed-upon amount of funds (or equivalent nonpecuniary remuneration) to A. At the other extreme, as first noted by Coase (1937), the transaction can be completed entirely outside the scope of a market by bringing it inside the firm.[1] Intermediate between these two extremes are various alternative governance approaches that can effectively consummate exchange.

[1] Coase (1937) associates a firm with the set of activities that are governed by fiat rather than by the market mechanism.

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Seminal contributions by Williamson (1973, 1975) and Klein et al. (1978) identify a variety of exchange characteristics that affect the relative merits of using alternative governance approaches. Williamson (1975: 7) argues that a combination of small numbers of bargaining, uncertainty, bounded rationality, and opportunism give rise to "exchange difficulties" which, in turn, shape governance decisions. Klein et al. (1978) emphasize the critical role that asset specificity and incomplete contracts play in creating appropriable quasi-rents that alter the propensity for *ex post* recontracting and opportunistic behavior, which also affect governance decisions. In this light, the relative merits of using spot markets, contracts, or vertical integration to govern a set of transactions depend on these various market and exchange features. A rich body of theoretical research has built upon these original insights.[2]

A correspondingly large body of empirical research—mainly set in transaction cost economics (TCE)—has subsequently developed that offers direct support to these seminal theoretical contributions.[3] New research continues to emerge that provides important insights into when and how transaction costs affect the structure of exchange. For instance, while the implications of transaction costs have been studied intensively, direct quantitative estimates of the levels of transaction costs are more nascent. MacKay (2022) develops a model and corresponding empirical analysis that directly quantifies the magnitude of buyer transaction costs. Krasnokutskaya and Seim (2011) separately identify seller procurement auction participation (i.e., transaction) costs and seller project completion costs. Similarly, Atalay et al. (2019) draw upon the "revealed preference" structure of firms to examine intrafirm and interfirm transactions, conditional upon the distance of the transaction, to determine the value of internalizing transactions. These benefits may arise, *inter alia*, from lower intrafirm vis-à-vis interfirm transaction costs. Other scholars consider new and under-explored settings in which to examine transaction costs. For example, Soliño and Gago-de Santos (2010), De Schepper et al. (2015), and Petersen et al. (2019) identify important differences in transaction costs that emerge when governments employ public–private partnerships rather than undertake purely public provision of infrastructure projects. In sum, recent TCE research—with its inquiries of under-explored dimensions, its development of novel theory, and its implementation of sophisticated empirical methods—has generated a modern and updated set of insights.

Despite these notable advances, the extant literature remains ripe for additional exploration, in part because it has focused on identifying the determinants of cross-industry variations in observed contracting patterns.[4] That is, studies typically identify observable cross-sectional differences in the nature of the transaction (e.g., whether the exchange involves asset-specific investments) and then relate this variation to observed differences in the choice of governance mechanism (e.g., spot markets, short- or long-term contracts, or vertical integration).[5] These studies do not examine how the choice of governance structure changes

[2] See Hart (1995) in particular and most notably. See Carlton (1979) for specific discussion of the interrelationships between transaction costs and contracts, and Carlton (1991) for general discussion of the costs associated with reliance on spot market pricing relative to contracts in the presence of demand uncertainty. See Halonen-Akatwijuka and Hart (2020) for a recent examination of the use of continuing contracts.

[3] For comprehensive literature reviews, see Shelanski and Klein (1995), Crocker and Masten (1996), Masten and Saussier (2000), Macher and Richman (2008), Tadelis and Williamson (2013), Lafontaine and Slade (2013), and Cuypers et al. (2021).

[4] Notable exceptions include Pittman (1991), Pirrong (1993, 2017), and Mayer and Argyres (2004) who conduct detailed case studies that examine the evolution of contracting in railroad sidetrack agreements, ocean bulk shipping, liquefied natural gas, and personal computers, respectively.

[5] See Joskow (1985), for example.

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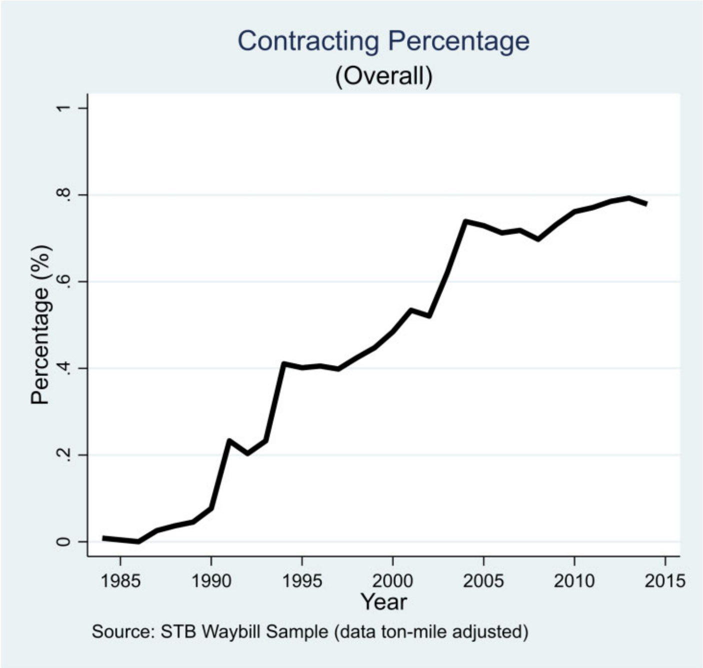

Figure 1. Contracting percentage (overall).
Notes: (1) Figure created using Carload Waybill Sample (CWS) data over 1984–2014. (2) Contracting percentage determined using ton-mile-adjusted shipments.

over time. Yet, these changes can be pronounced. To illustrate, consider Figure 1 which shows that the share of freight railroad shipments in the United States that occurs under contracts (rather than tariffs or price lists akin to spot markets) has increased dramatically over time. That is, the propensity to use one governance approach versus another evolves over time—even for similar transactions within the same industry. Explanations for this pattern might be found within the traditional TCE framework. However, explicit examination of such intertemporal variation can provide a fresh lens on an empirical test of extant theoretical research. Examinations of intertemporal variations in the use of alternative governance mechanisms may also reveal new theoretical drivers that do not arise in cross-sectional empirical settings.

Additional insights may also arise when the temporal evolution of contracting is combined with industry-specific data. For example, Figure 2 disaggregates Figure 1 into 14 broad commodity classifications.[6] Substantial differences in the use of contracts versus tariffs are clearly evident across these commodities. For instance, contracting in agriculture (viz., farm) is modest (around 25%). In contrast, contracting in coal, miscellaneous mixed, and container is substantial (nearing 100%). While all commodities exhibit some tariff-to-contract transition over time, markedly different levels, rates, and patterns are observed.

[6] The 14 commodity classifications are at the two-digit Standard Transportation Commodity Code (STCC) level: (1) Farm, (2) Coal, (3) Nonmetallic Minerals, (4) Food, (5) Wood, (6) Paper, (7) Chemicals, (8) Stone, (9) Metal, (10) Transportation, (11) Waste, (12) Containers, (13) Miscellaneous Mixed, and (14) Hazardous. Commodities not classified above are aggregated into an "Other" category and used as the omitted category in empirical estimations.

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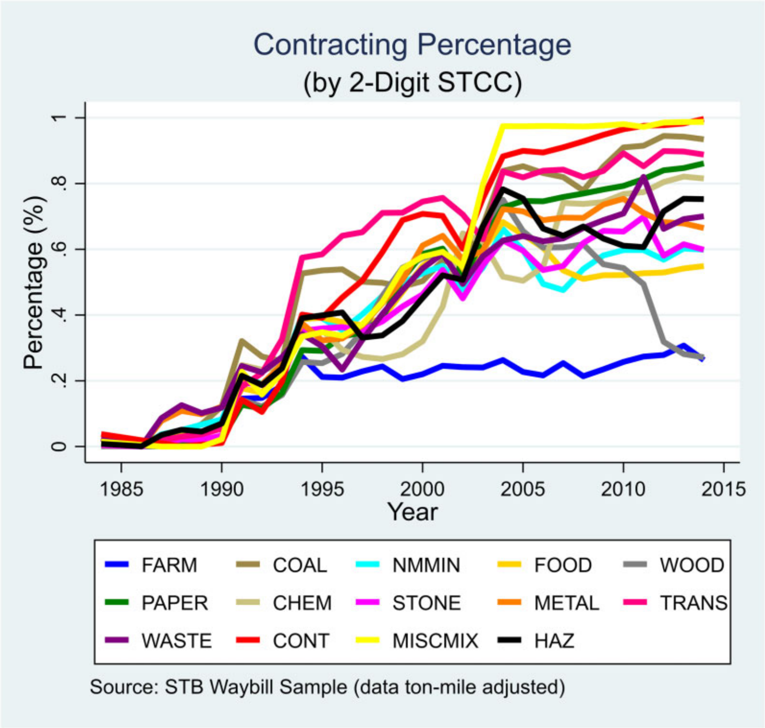

Figure 2. Contracting percentage (two-digit STCCs).

Notes: (1) Figure created using CWS data over 1984–2014. (2) Contracting percentage determined using ton-mile-adjusted shipments. (3) Commodities are defined at the two-digit STCC level and represent 93% (98) of all (ton-mile-adjusted) shipments.

Most empirical TCE research to date focuses on the canonical make-versus-buy decision, where "make" is considered vertical integration or insourcing, and "buy" is considered some type of contractual relationship or outsourcing.[7] In contrast, Figures 1 and 2 provide insights into an element of research that is much discussed but rarely investigated: namely, whether market participants rely on spot markets or contracts to govern exchange. While the extant literature has focused on various contractual features, including design, duration, and completeness, relatively little empirical work has considered the more primal questions of whether and when parties choose to use contracts at all.[8]

With these considerations in mind, this article seeks to advance the existing literature in two ways. First, we compare the use of contracts with the use of what is effectively a spot-market option. Second, we identify and quantify several time-varying determinants of exchange governance—determinants that are usually beyond the reach of standard cross-sectional analyses—including legislative changes, transaction complexity and asset specificity, contracting experience, intra- and inter-industry competition, and technological change. We do so by drawing on a database of millions of individual market transactions in the US freight rail industry that spans several decades.

7 See, for example, Klein (2005) and Bresnahan and Levin (2013) for extensive reviews.
8 See, for example, Lafontaine and Slade (2013) for an excellent taxonomy and review.

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Along with those factors identified in existing cross-sectional studies of exchange governance, our empirical results indicate that several time-varying factors shape firms' decisions to employ contracts versus spot market-like tariffs in the freight rail industry. For instance, we find (as expected) legislation that explicitly permits contracting facilitates its use, but (perhaps more surprisingly) does so in a heterogeneous fashion across commodities and over time. We also find that transaction complexity and asset specificity, as well as contracting experience, significantly affect the propensity for railroads and shippers to employ contracts rather than tariffs. We also find that the extent of competition affects freight rail contracting decisions in nuanced ways that depend upon origin (O) and destination (D) geographic area breadth, commodity and service characteristics, and potential transportation alternatives. The number of competitive alternatives available at a specific O or D or within an O–D pair jointly provided by multiple railroads (the so-called interline service) increases the use of contracting—over aggregated commodities and only within narrowly defined geographic areas. The number of competitors offering freight rail service within a particular commodity at a specific D also affects contracting propensities, while the extent of intra-industry competition at more broadly defined geographic areas does not. Viable (commodity-specific) and proximate (distance-dependent) inter-industry competition via water barge also increases the propensity to contract. Finally, technological change, as effectuated in the freight rail industry through innovations in intermodal shipping, is found to increase contracting propensity. These findings are robust to empirical tests that consider alternative estimation approaches, different measurement methods, and alternative sets of explanatory variables.

The remainder of this article is organized as follows. Section 2 reviews a set of important policy changes that motivated alterations in the choices of exchange governance made by freight rail carriers beginning in the late 1970s. Section 3 describes the data and provides the conceptual lens through which we explore the evolution of the choice of exchange governance mechanisms—contracts versus posted tariffs—in the freight rail industry. Section 4 provides descriptive and correlation statistics, specifies the empirical model, and presents baseline results and robustness tests. Section 5 concludes by providing a reflective discussion of the key findings, offering potential directions for future research, and identifying the limitations of our research.

2. BACKGROUND: THE LEGAL EVOLUTION OF RAIL CONTRACTING

In October 1980, President Carter signed the Staggers Rail Act into law. The Act provided a comprehensive recalibration of the policies that had governed the rail industry for decades. The Staggers Act is commonly viewed as one of the most successful deregulatory measures of the 20th century.[9] The Act contained several deregulatory features, including a shortened timeline for rail abandonment proceedings, an expedited merger review process, relaxed railroad entry conditions, expanded regulatory oversight exemptions of certain commodities or certain transport (via equipment type), and expanded pricing flexibility for rail carriers.

The Staggers Act also granted profound regulatory relief to rail carriers by legalizing contracting. To understand the gravitas of this change, consider that, beginning with the passage of the Interstate Commerce Act of 1887, the terms and conditions for freight rail shipments

[9] In the legislation authorizing the sunsetting of the Interstate Commerce Commission, the accompanying Senate Commerce Committee Report declared "[t]he Staggers Act is considered the most successful rail transportation legislation ever produced, resulting in the restoration of financial health to the rail industry." S. Report No. 104-176, at 3, 1995.

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in the United States were heavily prescribed by the Interstate Commerce Commission (ICC). Customers who wished to have goods shipped by rail could do so only at terms that were established by the ICC under common carriage tariffs. These tariffs—often detailed by commodity type and distance—were publicly available to all shippers. For example, in 1960, the tariffed rate for an 800-mile shipment of rugs and carpeting in rail carloads was set by the ICC to be "185 cents per 100 pounds for a minimum of 24,000 pounds, and, in the case of the rail rates, 148 cents on weight in excess thereof".[10] All rail traffic shipped in the United States was subject to these regulated tariffs with the terms overseen by the ICC; deviation from any tariff term was strictly prohibited (Palay 1985).

In 1961, New York Central Railroad and a shipper entered into a contract at a different (viz., lower) rate than the established ICC tariff, conditional upon the shipper committing no less than 80% of its annual volume between the O–D pair: Amsterdam, New York and Chicago, Illinois.[11] The ICC investigated this contract and found it to be illegal, providing two reasons why it would constitute a "destructive competitive practice" if allowed to stand. First, the contract would lead to "the destruction in large measure of what is in general a just, reasonable, and otherwise lawful rate structure necessary to maintain an adequate national transportation system."[12] Second, the contract would "destroy competition for the duration of the contract."[13]

The ICC ruling was not only a focused attack on the specific contract at issue but also a more broadside attack on the general use of contracts. In concurring opinions, two ICC Commissioners went so far as to opine that "[c]ontract rates could well mean the end of a national transportation system, either as we have known it (highly workable despite its imperfections), or, as many hope to see it, a truly coordinated system featuring the use of each mode of carriage under single billing."[14] Although challenged in federal court, the ICC ruling was upheld: the use of individually negotiated rail contracts for rail shipments in the United States was and remained illegal.[15]

With the further deterioration of the rail industry, the ICC changed direction 17 years later by acknowledging that contracts may be beneficial in some circumstances because "a shipper is guaranteed a certain rate for the period of the contract while the carrier knows what service that shipper will receive."[16] This policy change transitioned the use of contracts from a *per se* illegal basis to one in which contracts were judged on a case-by-case basis.

When Congress initiated further reform of the rail industry, it determined that the Commission had not gone far enough in permitting expanded use of contracts.[17] In what eventually became the Staggers Rail Act of 1980, legislation specified that railroads "may enter into a contract with one or more purchasers of rail services to provide specified services under specified rates and conditions."[18] The legislative history of Staggers reveals that the contract provisions were intended "to encourage carriers and purchasers of rail service to

10 See New York Central Railroad Company v. United States, 194 F. Supp. 947 (1961), available at https://www.leagle.com/decision/19611141194fsupp9471929.
11 See Contract Rates on Rugs and Carpeting from Amsterdam, N.Y., to Chicago, 313 I.C.C. 247, 254 (1961); Guaranteed Rates from Sault Ste. Marie, Ontario, Canada, to Chicago, 315 I.C.C. 311, 323 (1961).
12 Id.
13 Id.
14 Id.
15 Given the illegality of formal contracting, it is not surprising that some amount of informal or oral contracting arose during the pre-Staggers era. See Palay (1985) for a discussion.
16 Change of Policy Railroad Contract Rates, Ex Parte No. 358-F (ICC served Nov. 9, 1978).
17 See, e.g., H.R. Rep. No. 96-1035, 96th Cong., 2nd Sess. (May 16, 1980) at 57 (House Report).
18 Former 49 U.S.C. 10713(a) (1995) (now codified at 49 U.S.C. 10709(a))

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make widespread use of such agreements."[19] Collectively, the contract rate provisions of the Staggers Act were considered to be "among the most important in the bill."[20]

Several key features of contracting that were enabled by the Staggers Act appear critical to its growth. First, contracting authority was substantially broader than the original ICC case-by-case approach.[21] Second, all rail contract disputes were removed from ICC jurisdiction,[22] and instead relegated to the appropriate state or federal court.[23] Third, anticompetitive allegations regarding contracts were to be dealt with by the antitrust laws and agencies rather than by railroad regulators.[24] Fourth, contracts between rail carriers and shippers were largely to be held confidential (Stone 1991), which subsequently permitted differential rail carrier pricing and facilitated the crafting of individual contracts. Finally, and perhaps most importantly, constraints around price-quality tradeoffs were eased. Pre-Staggers regulatory proscriptions on parties negotiating prices and quality levels created constraints that led to standard tariffs for all shipments. These tariffs were predicated on unilateral rail carrier "best-efforts" in quality, rather than negotiated and mutually agreed upon levels of quality.[25] This restriction—more constraining for some than others—created governance disequilibria in the immediate wake of Staggers that would predictably be rectified once the constraint was lifted.

In summary, all freight rail traffic was subject to common carrier regulation prior to the Staggers Act. Under this regulatory regime, freight rail carriers posted a generally available price for shipments with particular characteristics. This price was subject to regulatory approval and, once published, was available to all customers (shippers) who wished to avail themselves of that price. With the passage of the Staggers Act, railroads were freed to establish prices that reflected prevailing market conditions,[26] and were granted the authority to negotiate and implement Pareto-improving contracts with shippers. These contracting changes permitted railroads and shippers to expand the dimensionality of the terms under which they could engage in business, including quality and other special service levels.[27]

The Staggers Act thus permitted a choice between two distinct exchange governance mechanisms: tariffs (akin to spot market prices) and contracts. Railroads continued to offer a menu of set prices that are still referred to as "tariffs" in the industry for shipments between specific origins and destinations. As with pre-Staggers Act tariffs, post-Staggers Act tariffs are not customer-specific, and service quality generally is determined by standard service provisions (so-called "best-efforts") of the rail carrier involved. Moreover, for certain commodities, regulations still require that railroads offer a tariffed rate of service: a common carrier obligation. In the wake of the Staggers Act, however, tariffs have evolved into a mechanism akin to a simple public pricing document that enunciates the terms under which service will be provided. Post-Staggers Act prices are, absent regulatory intervention, set by the rail carrier and can change as prevailing market conditions change. Price increases require 20-day notice; price reductions occur at the discretion of the rail carrier. Prices do not adjust

[19] See Staggers Rail Act of 1980, Report of the Committee on Conference on S.1946 to Reform the Economic Regulation of Railroads and for other Purposes, September 29, 1980, p. 98.

[20] See Railroad Transportation Policy Act of 1979, Report of the Committee on Commerce, Science, and Transportation on S.1946, Report No. 96-470, November 29, 1979, p. 9.

[21] The Staggers Act did not endow railroads with unfettered ability to undertake contracting. The Act states that "a rail carrier may not enter into a contract with purchasers of rail service except as provided in this section." Former 49 U.S.C. 10713(a) (1995). This limiting language was eliminated with the passage of the ICC Termination Act of 1995.

[22] See former 49 U.S.C. 10713(i) (1995) (now codified at 49 U.S.C. 10709(c)).

[23] See former 49 U.S.C. 10713(i)(2) (1995) (now codified at 49 U.S.C. 10709(c)(2)).

[24] House Report at 58.

[25] See Phillips (1991: 557) and Palay (1985: 162).

[26] For discussions of the residual price regulation in the wake of Staggers, see Mayo and Sappington (2016), Burton and Hitchcock (2019), and Mayo and Willig (2019).

[27] Malone (1980) provides several examples.

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instantaneously to equilibrate the supply of and the demand for transportation services, as would be the case in a perfect spot market. However, the prices are influenced by the same forces that shape spot market prices.[28] Railroads and shippers can enter into contracts for shipments between particular origins and destinations. Unlike tariffs, contracts are customized for particular shippers, reflecting mutually agreed-upon prices and levels of service quality.[29] The terms of these contracts can be kept confidential and are legally enforceable.

3. CONCEPTUAL FRAMEWORK

Masten and Saussier (2000) observe that the decision to contract is discrete, and is determined by whether the parties anticipate greater net benefit from contracting vis-à-vis an alternative exchange governance mechanism. In our industry setting, we observe two governance mechanisms under which exchange occurs: (1) shippers purchase "best-efforts" transportation services for specific commodities and O–D pairs under tariffs established by railroads; or (2) shippers and railroads negotiate contracts for transportation services for specific commodities and O–D pairs that represent mutually agreeable prices and associated terms of carriage. Accordingly, our empirical analysis seeks to provide insights into the determinants of whether shipments occur under contracts or tariffs.[30]

3.1 Data sources

The main data are drawn from annual versions of the Surface Transportation Board (STB) Carload Waybill Sample (CWS).[31] The CWS Program requires freight railroads that terminate 4,500 or more carloads annually to sample and report their waybills.[32] Freight waybills provide detailed railroad carrier- and shipment-specific information, including the commodities shipped, corresponding weights and revenues, and shipment origin(s) and destination(s).

Sampled waybills are submitted electronically to Railinc Corporation (a private contractor), which first processes and corrects any record errors and then provides this information to the STB and the Federal Railroad Administration. Processed carload waybill records provide information on railcars (e.g., number, type, and ownership), origin and destination locations, and freight (e.g., tons, miles, revenue, and commodity type). Origin and destination locations are available at different geographic units of observation, including the Federal Information Process System (FIPS), Standard Point Location Codes (SPLC), and Freight Station Accounting Codes (FSAC). FIPS is the broadest geographic unit of observation, defined at the state level and the county level. SPLC is a narrower geographic unit of observation, defined at the city or region level. FSAC is the narrowest geographic unit of observation, defined at the actual freight railroad station.[33] We use FSAC as our baseline, but

[28] In his seminal work on vertical integration and contracts in the electric utility industry, Joskow (1985) similarly relies on imperfect approximations to a perfect spot market. He employs the Department of Energy's definition of "spot" market purchases of coal as purchase orders or contracts with a duration of less than one year.

[29] Some contracts may be relatively straightforward, involving relatively simple movements of goods between two points. Other contracts may be quite complex, involving shipments from multiple origins to multiple destinations.

[30] The Appendix provides a simple theoretical framework that reflects several of the key elements that are likely at play in our empirical analysis.

[31] The Surface Transportation Board is the successor regulatory body to the ICC, which was terminated in 1995. Pub. L. No. 104–88, 109 Stat. 803, codified in relevant part at 49 U.S.C. §10706.

[32] Sampling rates vary depending upon the number of carloads per waybill shipped as follows: 2.5% for 1–2 carloads; 8.3% for 3–15 carloads; 25% for 16–60 carloads; 33.3% for 61–100 carloads; and 50% for 101 or more carloads.

[33] The FIPS codes have five digits: the first two digits identify the state; the remaining digits reflect the county. The SPLC codes have six digits: the first two digits identify the state, province or territory; the next two digits reflect the county; the last two digits reflect the city or region. The Railinc-assigned FSAC codes are carrier-specific and unique for every station that originates billing.

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consider SPLC and FIPS in empirical robustness tests. Commodities are categorized using the US Department of Commerce Standard Transportation Commodity Code (STCC) system. STCCs are seven digits: the first two digits represent major commodity groups; each additional digit adds commodity classification refinement.

As mentioned, the Staggers Act maintains confidentiality in contract reporting. The STB restricts access to waybill data according to federal regulation 49 CFR 1244.9 via a system of included and deleted data fields. Shipment information sent to Railinc is encrypted and marked with a flag indicating whether it occurs under contract or tariff. Three distinct CWS versions exist: (1) a "public" version that removes all confidential data fields and replaces actual contract revenue with public tariff-based revenue; (2) a "masked" version that provides some confidential non-revenue data fields but replaces contract revenues with tariff-based revenues; and (3) an "unmasked" version that provides all confidential data fields and actual contract and tariff-based revenue. By application to and approval from the STB, we use the unmasked CWS data over 1984–2014, but we drop the first three years because reliable CWS data for estimation purposes only begin in 1987.[34] Each year includes roughly 500,000 records (waybills), with a total sample of just over 15 million observations. Each waybill is referred to as a "shipment," which can range from one carload to an entire trainload (e.g., more than 100 carloads).

We supplement the CWS data with information from four additional sources. The supplementary data provide additional controls and allow for robustness testing, but slightly reduce the number of observations in empirical estimations. First, we include a measure from the Federal Reserve Bank of St Louis that reflects total US industry capacity utilization.[35] This is a percentage-based measure that varies monthly. Second, we include waterway facility- and location-specific information from the US Army Corp of Engineers (which is only available using FIPS codes). These data measure the distance (in miles) of each FIPS location to a navigable coal, dry bulk, general, or liquid-processing water barge facility. Third, we include water barge shipment information from annual versions of Informa Economics IEG's "Barge Commodity Profile" (Informa Economics IEG, 2004–2014). These data indicate the annual amount (in ton miles) that particular commodities are transported by water barge. Fourth, we adjust the CWS data for all mergers and exits over our sample to ensure that ownership is reflected accurately.[36] The freight railroad industry experienced substantial consolidation Post-Staggers Act: from 36 class I carriers in 1978 to 7 in 2014.

3.2 Transaction cost-related factors

Extant TCE theory posits that contracting decisions depend on the magnitude and type of associated transaction costs. In the freight rail industry, transaction costs vary over time and across contracting parties and are affected by factors that include the following.

3.2.1 Legislation

Given the pre-Staggers regulatory contracting restrictions, the transaction costs associated with railroad-shipper contracts were effectively infinite. As Section 2 notes, the binding nature of this constraint was especially salient as common carrier regulation first prohibited (until 1978) and then failed to fully embrace (over 1978–1980) contracting to implement

[34] The application, reported in the Federal Registrar: Surface Transportation Board. "Release of Waybill Data." 81 Federal Register 79 (25 April 2016), p. 24158. Our starting date, 1984, coincides with the first available unmasked waybill sample. Our ending year coincides with the last available yearly data at the time of our application.

[35] These data are available from the Federal Reserve Bank of St. Louis here.

[36] We employ several sources to do so, including the Association of American Railroads, Illinois Central, Laurent Aublette, and Wikipedia.

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shipper-specific service quality levels. To the extent that freight rail carriers and shippers valued quality heterogeneously, the inability to contract in this dimension created exchange governance disequilibria.[37] Counterfactually, had such contracting restrictions not existed, some pattern of exchange intermediate between "all contracts" and "all tariffs" would have been observed. However, with the existing legal hurdles in place, equilibrium levels of contracting could not be attained.

Once the Staggers Act removed contracting restrictions, the transaction costs associated with writing and implementing contracts declined precipitously. However, a new, unconstrained equilibrium did not occur instantaneously because freight rail carriers and shippers had configured their capital to reflect prevailing pre-Staggers Act restrictions. Given the long-lived nature of this capital, any contracting transition was thus likely to arise only after the capital had depreciated sufficiently.[38] To account for contracting behavior after the passage of the Staggers Act, we employ time (viz., year) fixed effects in our regression equation.

3.2.2 Complexity

The use of contracts vis-à-vis tariffs in the post-Staggers Act freight rail industry likely varied with the associated transaction complexity. We proxy for transaction complexity primarily by using the commodity of the freight shipment. For some commodities (e.g., coal, paper, etc.), both O and D locations and the volume shipped can be reasonably anticipated and contracted for in advance. Such predictability suggests that post-Staggers contracting for these commodities is less complex and therefore more likely to have increased considerably soon after the passage of the Staggers Act. For other commodities (e.g., agriculture), greater O and/or D uncertainty or volume variability exists due to variation in geographic-related supply (e.g., crop yields) or demand (e.g., exports) conditions.[39] This commodity uncertainty raises the transaction costs for freight railroad carriers and shippers, which could slow the post-Staggers Act adoption of contracting. We use a series of two-digit STCC indicator variables (*STCCs*) to capture commodity heterogeneity.

We also include a separate transaction complexity measure that captures persistence in shipment origins and destinations by commodity over time: PERSISTENCE_{it} is an indicator variable equal to one if commodity i appears in the same O–D pair in a consecutive year t, and zero otherwise.[40] This variable is defined at the FSAC geographic level in baseline estimations and at the SPLC and FIPS geographic levels in empirical robustness tests. We expect persistence in commodity-specific shipments will reduce complexity and result in more contracting relative to spot market transactions.

37 The notion that demand-side market heterogeneity may underlie differences in optimal governance structures arises in other industries. To illustrate, Lyon and Hackett (1993) examine the exchange governance implications of quality demand differences (as manifested in reliability) in the natural gas supply industry. The authors note that residential retail customers have a high demand for reliability relative to industrial customers, which creates a natural co-existence of long-term contracts (for residential customers) and spot markets (for industrial customers). The authors find that the aggregate empirical data on the percent of natural gas sales conducted as spot markets transactions and under long-term contracts in the industry is consistent with quality demand heterogeneity, with long-term contracts employed to reduce the transaction cost of supplying natural gas to customers who value reliability particularly highly.

38 Meyer and Tye (1988) observe that "[a] clean slate for negotiating a market-driven contract between the various participants—a contract that provides incentives for all participants to commit the needed capital under market rather than regulatory circumstances—will emerge only as the previously committed capital (sunk cost) is amortized."

39 Interviews with multiple railroad executives revealed that shipment origins vary due to changes in growing conditions, whereas shipment destinations vary due to changes in export markets. This heterogeneity can complicate contracting for freight rail transportation services.

40 This variable is set at one in the first year the two-digit STCC and O-D pair occur in the data. It remains equal to one or resets to zero, depending upon whether the two-digit STCC persists in that O-D pair the next year.

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3.2.3 Asset specificity

Economic exchange is often affected by the presence of relationship-specific investments. Such asset specificity occurs when parties to the transaction make relationship-specific asset investments that have lower values in alternative uses. In the context of the governance decision between vertical integration and contractual alternatives, empirical analysis has shown that the presence of asset specificity increases incentives to vertically integrate. However, as noted by Joskow (1985: 38), to the extent that vertical integration is not economical, "contractual arrangements to govern exchange between independent agents will emerge to economize on these transactions costs."

One form of asset specificity in the freight rail industry relates to the use of specialized railcar types. For illustration, Figure 3 compares the two-digit STCCs to the STB railcar types utilized. Several broad patterns are readily apparent: Containers and Miscellaneous Materials almost exclusively use Flat TOFC/COFC (intermodal) Cars; Hazardous Materials predominantly use Tank Cars; Paper uses Equipped Box Cars; Farm uses Covered Hopper Cars; Transportation uses Flat Other Cars; Chemicals and Stone use Covered Hopper Cars; Metals use Equipped Gondola Cars; and Nonmetallic Material and Coal use Open Top Hopper Cars.

Compared to "generic" railcars (e.g., Plain Box or Gondola Cars), more specialized railcars represent greater specificity in use within these commodities. For example, multi-level flatcars are designed nearly exclusively for transporting automobiles. Absent any contractual protections, one party making relationship-specific investments in multi-level flatcars might be subject to *ex post* opportunism.[41] We create a set of indicator variables for several specialized railcar types that proxy for asset specificity. Such specificity is likely to increase contracting propensity, to mitigate such opportunism. Specialized Railcars (SPEC RC) indicate whether shipment *i* for railroad *j* at shipment date *t* utilizes equipped box cars (EQB_{jt}), equipped gondola cars (EQG_{ijt}), open-top special hopper cars (OTH_{ijt}), refrigeration cars (REF_{ijt}), or the aforementioned multi-level flat cars (MLF_{ijt}). General (i.e., industry-termed "plain") and non-specialized railcars serve as the baseline.

A second form of asset specificity in the freight rail industry relates to car ownership. High-volume shippers (and third-party logistics firms) often utilize railcars that they own directly or lease from non-railroad entities.[42] Such private railcar ownership can create value for both freight rail carriers and shippers. For carriers, it frees capital that can be used for other purposes (e.g., track or yard maintenance). For shippers, it affords greater control, supply assurances, and economic efficiencies relative to those available with equipment owned by the rail carrier. To illustrate, shippers can store commodities in their own railcars and at locations of their choosing. Frequent shippers of the same commodity (e.g., chemicals) and O–D pair can utilize their own railcars without any post-shipment interior cleaning, whereas standard practice with railroad-owned equipment mandates costly interior cleanings. While creating potential benefits for both freight rail carriers and shippers, private railcar ownership can alter *ex ante* and *ex post* contracting incentives. Shipper railcar investment reduces freight railroad operating costs and can be employed to negotiate more favorable service terms. At the same time, shipper railcar ownership represents asset-specific investments that increase the potential for opportunism, which might be mitigated to some extent by contracting. The variable PRIV RC_{ijt} is an indicator of whether shipment *i* by railroad *j* at shipment date *t* occurs in privately owned railcars.

41 See Palay (1985) for a detailed case study of this asset specificity associated with rail transportation of automobiles using autoracks.

42 As the industry press indicates, "[r]ailroad freight is a volume business. Shippers and receivers are unlikely to turn to the nation's railroad carriers for those freight cars if their volumes are light. That is simple economics. However, if a company is a high-volume shipper, then its management will consider owning or renting its own railcars." https://www.freightwaves.com/news/commentary-the-complexity-of-owning-or-leasing-freight-cars.

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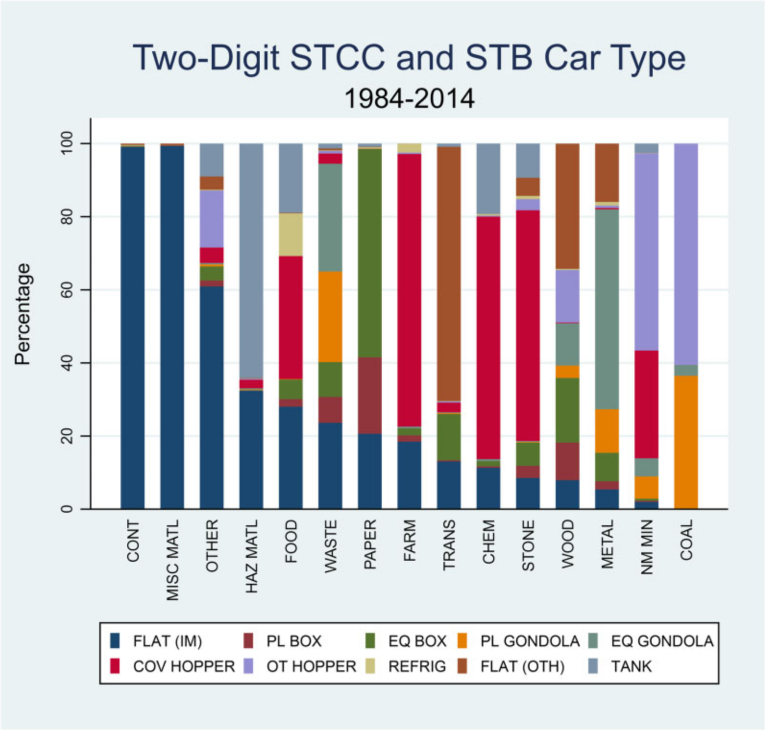

Figure 3. STB railcars and commodities.

Notes: (1) Figure created using CWS data over 1984–2014. (2) The commodities are defined at the STCC two-digit level. (3) The car types are categorized using STB definitions (with minor refinements where sensible): Trailer or Container on Flat Cars (FLAT (IM)); Plain Box Cars of any length (PL BOX); Equipped Box Cars (EQ BOX); Plain Gondola Cars (PL GONDOLA); Covered Hopper Cars (COV HOPPER); Open Top Hopper Cars (OT HOPPER) of any service class; Refrigerator Cars (REFRIG) of any type; Other Flat Cars (FLAT (OTH)); and Tank Cars (TANK) of any capacity.

3.2.4 Experience

The contracting permitted by the Staggers Act enhanced the ability of freight rail carriers and shippers to implement arrangements that increased the joint value of their interaction. Nevertheless, virtually every aspect of the contracting process was new: from design, to and, to administration. To realize the maximum potential joint value creation, railroads had to learn how to contract with shippers. Although the associated costs were relatively high initially, they likely fell with experience. Contract design and administration, in particular, became more routine over time and as the number of shipments increased. Prior contracting experience—via the consequent cost reductions realized—likely increased the propensity for shipments to move under contract rather than under tariff. We, therefore, include a measure of experience that represents the discounted, cumulative count of shipments made under contract (net of the focal O–D pair) by railroad j at time t defined as follows:

$$\text{EXPERIENCE}_{\text{it}} = \delta \cdot \text{EXPERIENCE}_{\text{it}-1} + \Big(\sum \text{ALL CONTRACT SHIPMENTS}_{\text{it}} - \sum \text{FOCAL O} - \text{D CONTRACT SHIPMENTS}_{\text{it}}\Big)$$

where δ represents the discount factor. Discounting allows for the possibility that current contracting propensity might be influenced particularly heavily by relatively recent contracting experience. A yearly discount factor of 20% is used as a baseline, but other discount factors and variable permutations are considered in empirical robustness tests.[43] EXPERIENCE is defined at the FSAC geographic level in baseline estimations and at the SPLC and FIPS geographic level in empirical robustness tests.

3.3 Competition-related factors

The extent of competition in the provision of transportation services may also affect the propensity to employ contracts. To illustrate, when shippers enjoy the presence of multiple carriers capable of supplying their desired O–D shipments, the resulting competition may promote individualized shipper contract offerings. With the leverage afforded by the presence of competitive alternatives, shippers may be able to extract more favorable terms from rail carriers than their posted tariffs offer. Furthermore, shipper-specific contracts might permit rail carriers to secure the patronage of shippers with relatively attractive competitive options by offering favorable carriage terms and conditions.

Measuring the extent of prevailing competition is challenging in part because the geographic market within which competition prevails can vary across commodities.[44] Because the CWS contains millions of heterogeneous shipments, our ability to capture precise variations in competitive alternatives for specific shipments is limited. However, we approximate these variations using the number and service-type combinations of railroads with the presence at either the shipment O and D or the shipment O–D pair and at varying commodity and geographic levels. We use two intra-industry competition measures in separate baseline estimations: (1) O RR COMP_{ijt} and D RR COMP_{ijt} measure the respective number of distinct freight rail competitors providing service at the shipment origin and destination and (2) OD SRR COMP_{ijt} and OD IRR COMP_{ijt} measure the respective number of the same railroad (single-line) and different railroad (inter-line) competitors providing service over the shipment O–D pair.[45] These variables are examined across all (i.e., aggregated) commodity levels and within specific (i.e., disaggregated) commodity levels. They are defined at the FSAC geographic level in baseline estimations and at the SPLC and FIPS geographic level in empirical robustness tests.

To illustrate the O and D competition measures, suppose that railroads R_1, R_2, R_3, and R_4 operate at the O and railroads R_2, R_3, and R_4 operate at the D. For shipment *i* from O to D, O RR COMP_{ijt} equals three and D RR COMP_{ijt} equals two for all railroads. To illustrate the O–D competition measures, suppose further that R_1 relies upon R_2 for D shipments while R_2, R_3, and R_4 each complete their own D shipments. For shipment *i* from O to D, OD SRR COMP_{ijt} equals three for R_1 and two for R_2, R_3, and R_4, while OD IRR COMP_{ijt} equals zero for R_1 and one for R_2, R_3, and R_4. The alternative intra-industry measures capture the potentially distinct competitive pressures brought to bear by commodity, service type, and geographic differences.

We also consider inter-industry competition from water barge transportation. To capture barge competition, we employ a measure of the distance from shipment origin and destination to the nearest navigable waterway terminal. Following Burton (1993), we employ the

[43] These variations do not materially affect the estimation results reported below.

[44] MacDonald (1987, 1989), Pittman (1990), and Kwoka and White (1999) suggest that source competition—at the origin and/or at the destination—may be as important as origin–destination competition in providing shippers with competitive alternatives, particularly for bulk commodities such as grain.

[45] These proxies for competition abstract from the indirect competitive pressures for contracting that other carriers without an origin or destination presence might bring to bear.

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variable BARGE $COMP_{it}$, which is defined as $1 - (M_{it}/G_t)$: M_{it} denotes the maximum distance (in miles) between the origin or the destination of shipment i and the closest water barge facility at time t; and G_t denotes the global maximum distance (in miles) of any origin or destination to its closest water barge facility at time t. This measure is adjusted to zero for commodities that never incur water barge transport in our sample. BARGE $COMP_{it}$ is thus distance-adjusted and commodity-specific: values close to zero reflect little or no viable barge competition, whereas values increasing toward one indicate more viable and more proximate barge competition.

3.4 Technological change

In cross-sectional analyses of contracting, it is not possible to test or control for the possibility that technological change in an industry affects the propensity of parties to use contracts rather than spot markets. In contrast, our decades-long data permit us to examine this possibility directly by considering a major change in the means by which railroads transport goods during the sample window. Specifically, railroad shipments for many years were transported using "break bulk" processes that relied on small, heterogeneous containers.[46] Under break bulk shipping, freight transfer from one transportation mode to another (e.g., loadings and unloadings) was expensive and risky (due to accidents and thefts, for example). Consequently, intermodal competition was *de minimis*: truck freight generally remained on trucks; rail freight typically remained on rail; and barge freight usually remained on barges.

With the advent of intermodal shipping containers and double-stack rail transport, freight transfer costs between modes fell dramatically and thereby encouraged intermodal traffic expansion. Given multi-party coordination and logistics requirements associated with intermodal traffic, however, the associated transaction costs are significantly higher than when working with a single trucking company or a single freight rail carrier. Intermodal transportation complexity thus gave rise to a cottage (and now large-scale) industry of "intermodal marketing companies" that act as intermediaries between shippers and transportation companies (e.g., trucks, railroads, and barges).[47] These third-party logistics providers purchase shipping capacity to reflect anticipated shipper needs, serve as a single point of contact, and significantly reduce freight transportation transaction costs.[48] Because these companies conduct a relatively large volume of business, they often negotiate with railroads rather than simply accept posted tariffs. In combination, the containerization cost reductions and intermodal marketing companies' abilities to mitigate shipper transaction costs that would have otherwise arisen from intermodal service have led to substantial intermodal transportation growth in the freight rail industry.[49] To capture the potential impact of this technological change, we use $INTERMODAL_{ijt}$, an indicator variable of whether shipment i for railroad j during shipment year t moves via a trailer or container on a flat car (TOFC/COFC). These railcars are specifically designed to enable intermodal transportation by facilitating multiple transportation modes, thereby reducing transportation costs. This variable also indicates the

[46] See, for example, https://www.morethanshipping.com/history-shipping-containers/.

[47] This is a particular instance of the more general phenomenon identified by Joskow (1985: 35): "[e]conomic institutions (or governance structures) emerge to minimize the costs of making transactions. These costs include both ordinary production costs (land, labor, capital, materials, and supplies) that make up the components of a neoclassical cost function and certain transaction costs associated with establishing and administering an ongoing business relationship. These transaction costs. . .are real economic costs that must be taken into account along with ordinary production costs in structuring cost-minimizing economic institutions."

[48] See for example, https://blog.intekfreight-logistics.com/what-is-intermodal-marketing-company-imc.

[49] With the proliferation of containers and trailers, intermodal traffic emerged as the most rapidly growing major rail segment. https://www.aar.org/issue/freight-rail-intermodal/

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increased likelihood that the transaction is administered by an intermodal marketing company under contract rather than tariff.

3.5 Controls

We include several additional control variables that might affect the propensity of rail carriers or shippers to employ contracts rather than tariffs. One such variable captures an element of prevailing macroeconomic activity. Contracts may be relatively beneficial during robust economic periods both to shippers (e.g., who can turn shipments into sales relatively rapidly) and to rail carriers (e.g., who particularly value expanded flexibility to manage constrained rolling rail stock). To account for this possibility, we employ the variable CAP $UTIL_t$, which is a continuous (i.e., 0–100) measure of aggregate US industry capacity utilization in month *t*.

The use of contracts might also depend upon particular freight shipment characteristics. We control for several shipment-level characteristics, including: (1) an indicator of whether the shipped commodity is exempt from STB regulation (EXEMPT)[50]; (2) the logged distance (in miles) of the shipment (SHIP DIST); and (3) the logged weight (in tons) of the shipment (SHIP WEIGHT). Table 1 provides definitions for the variables described.

4. EMPIRICAL ANALYSIS

4.1 Descriptive and correlation statistics

Table 2 provides descriptive statistics of the dependent and independent variables using the full sample and sub-samples disaggregated by contract and tariff. Over our entire sample, roughly 60 percent of shipments occur under contract. The 14 two-digit STCC indicator variables identified in Table 2 represent roughly 93% of the estimated sample, with six categories—miscellaneous materials (30%), transportation (9%), food (7%), hazardous materials (7%), coal (7%), and containers (6%)—accounting for roughly two-thirds. Commodity shipment persistence within FSAC O–D pairs and across successive years is substantial. Contracting experience (logged, measured net of FSAC O–D contracting experience, and discounted over time) is large in magnitude but exhibits substantial heterogeneity. Specialized railcar indicator variables are roughly 20% of the sample, while slightly more than half of the shipments utilize privately owned railcars. The average number of FSAC O or D competitor railroads is under one-half, while the average number of single-line and inter-line service alternatives at an FSAC O–D pair is notably smaller. Finally, slightly less than half of the shipments are intermodal.

The contract and tariff sub-samples exhibit several notable differences. Contracts are more prevalent than tariffs in transportation, container, and miscellaneous material commodities. In contrast, tariffs are more prevalent than contracts in farm, food, and wood commodities. Contracts are more prevalent with greater complexity as reflected in the FSAC O–D commodity persistence measure. Contracts are employed more commonly as contracting experience increases. Contracts and tariffs are employed similarly for many specialized railcar types, but differently for equipped box cars (more tariff-based) and multi-level flat cars (more contract-based). The use of private railcars is much more prevalent under contracts than under tariffs. Nearly all of the intra-industry competition averages, as well as the inter-industry (barge) competition averages, are smaller for shipments under contract than under tariff. Intramodal transport is more prevalent under contracts than tariffs.

[50] The STB has exempted certain commodities from regulation over time under Ex Parte 346. Commodity examples include primary metal products, waste and scrap materials, and lumber and wood products, among others.

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Table 1. Variable descriptions.

Variable	Definition
CONTRACT	Shipment-level indicator of under contract (1) or under tariff (0)
STCC	Shipment-level commodity indicators in following Department of Commerce two-digit STCC: farm (FARM), coal (COAL), non-metallic minerals (NMIN), food (FOOD), wood (WOOD), paper (PAPER), chemicals (CHEM), stone (STONE), metal (METAL), transport (TRANS), waste (WASTE), containers (CONT), miscellaneous materials (MISC), and hazardous materials (HAZ)
PERSISTENCE	Shipment-level indicator of commodity persistence between (O–D) FSAC (baseline), SPLC, and FIPS pairs in successive years
SPEC RC	Shipment-level indicators in following Specialized Rail Cars (SPEC RC): equipped box cars (EQB), equipped gondola cars (EQG), open-top special hopper cars (OTH), refrigeration cars (REF), and multi-level flat cars (MLF)
PRIV RC	Shipment-level indicator of private rail car use
EXPERIENCE	Discounted cumulative count of shipments under contract net of focal FSAC (baseline), SPLC, and FIPS O–D pair shipments under contract
O/D RR COMP	Count of unique railroads that serve same O or same D FSAC (baseline), SPLC, and FIPS as the focal shipment
O–D RR COMP	Count of railroad combinations (single-line [SRR] or inter-line [IRR]) that serve same O–D FSAC (baseline), SPLC, and FIPS pair as the focal shipment
BARGE COMP	Distance-adjusted and commodity-specific measure of O or D location to navigable coal-, dry-bulk, general-, or liquid-processing water barge facility for the focal shipment
INTERMODAL	Shipment-level indicator of standardized trailers or containers on flat car (COFC/TOFC)
CAP UTIL	Indexed measure of monthly US total capacity utilization
EXEMPT	Shipment-level indicator of whether commodity is exempt from STB regulation
SHIP DIST	Shipment-level measure of distance (in miles) [logged in estimation]
SHIP WEIGHT	Shipment-level measure of weight (in tons) [logged in estimation]

Table 3 provides pair-wise correlation statistics for the dependent and independent variables using the full sample. (STCCs are excluded due to space constraints.) Contracting is positively correlated with commodity shipment persistence, contract experience, specialized multi-level flat railcar use, private railcar use, and intermodal shipments. Contracting is negatively correlated with all other specialized railcar usage. Finally, contracting is negatively correlated with intra-industry and inter-industry competition.

The descriptive statistics in Table 2 and correlation statistics in Table 3 are informative but do not reveal the contracting heterogeneity that occurs over time and across commodities. Recall that Figure 1 shows considerable variation in the level of and change in contracting over time, and Figure 2 identifies stark differences in contracting propensity across commodities. These effects are largely driven by particular Class I freight rail carriers: (1) entering into contracting at different times and (2) varying their contracting usage across commodities and/or over time.[51] These freight rail carriers' use of contracting varies by intensity, by time interval, and by commodity. A few carriers began contracting relatively soon after

[51] Freight railroads are classified by revenue: Class I (largest), Class II, and Class III (smallest). The Class I carriers represent the majority (i.e., approximately 80%) of observations and an even larger percentage of ton-miles.

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Table 2. Descriptive statistics.

	Full sample				Contract sample		Tariff sample	
Variable	**Mean**	**SD**	**Min**	**Max**	**Mean**	**SD**	**Mean**	**SD**
CONTRACT	0.60	0.49	0.00	1.00	1.00	0.00	0.00	0.00
STCC FARM	0.04	0.19	0.00	1.00	0.02	0.13	0.06	0.24
STCC COAL	0.07	0.25	0.00	1.00	0.06	0.24	0.08	0.27
STCC NMIN	0.03	0.16	0.00	1.00	0.02	0.14	0.04	0.19
STCC FOOD	0.07	0.25	0.00	1.00	0.06	0.23	0.09	0.28
STCC WOOD	0.04	0.19	0.00	1.00	0.03	0.16	0.06	0.23
STCC PAPER	0.04	0.20	0.00	1.00	0.04	0.18	0.05	0.22
STCC CHEM	0.05	0.23	0.00	1.00	0.05	0.21	0.07	0.25
STCC STONE	0.02	0.16	0.00	1.00	0.02	0.14	0.03	0.18
STCC METAL	0.03	0.17	0.00	1.00	0.03	0.16	0.03	0.17
STCC TRANS	0.09	0.29	0.00	1.00	0.10	0.31	0.07	0.26
STCC WASTE	0.03	0.16	0.00	1.00	0.02	0.15	0.03	0.18
STCC CONT	0.06	0.23	0.00	1.00	0.07	0.26	0.04	0.18
STCC MISC	0.30	0.46	0.00	1.00	0.37	0.48	0.20	0.40
STCC HAZ	0.07	0.25	0.00	1.00	0.06	0.24	0.08	0.27
STCC OTHER	0.07	0.25	0.00	1.00	0.06	0.24	0.08	0.27
PERSISTENCE	0.83	0.37	0.00	1.00	0.88	0.32	0.76	0.42
SPEC RC EQB	0.06	0.23	0.00	1.00	0.05	0.21	0.07	0.25
SPEC RC EQG	0.03	0.18	0.00	1.00	0.03	0.17	0.04	0.19
SPEC RC OTH	0.03	0.17	0.00	1.00	0.03	0.17	0.03	0.18
SPEC RC REF	0.01	0.10	0.00	1.00	0.01	0.08	0.01	0.12
SPEC RC MLF	0.06	0.24	0.00	1.00	0.08	0.27	0.04	0.20
PRIV RC	0.52	0.50	0.00	1.00	0.63	0.48	0.36	0.48
EXPERIENCE	9.87	4.94	0.00	13.38	12.50	1.14	5.93	5.77
O RR COMP	0.47	1.77	0.00	27.00	0.33	1.28	0.68	2.30
D RR COMP	0.33	1.11	0.00	17.00	0.29	0.91	0.38	1.36
O–D SRR COMP	0.00	0.07	0.00	4.00	0.00	0.04	0.01	0.09
O–D IRR COMP	0.01	0.11	0.00	7.00	0.01	0.10	0.01	0.14
BARGE COMP	0.29	0.40	0.00	1.00	0.24	0.38	0.38	0.42
INTERMODAL	0.48	0.50	0.00	1.00	0.57	0.50	0.36	0.48
OBSERVATIONS	15,085,231				9,056,278		6,028,953	

Notes: (1) Descriptive statistics determined using number of observations in Tables 4 and 5 estimations. (2) PERSISTENCE is defined at the FSAC geographic level. (3) EXPERIENCE is reported log-transformed and defined at the FSAC geographic level. (4) The intra-industry competition variables are defined at the FSAC geographic level and aggregated over all STCCs.

the Staggers Act passage and expanded contracting rapidly and across all commodities. Other carriers entered into contracting either later, more gradually, or only for particular commodities. Substantial heterogeneity in contracting thus prevails across and within freight rail carriers, over time, and by commodity.

The data reveal at least four general patterns. First, contracting increases across all Class I freight rail carriers over the sample period. Second, contracting accelerates in two "waves"—one beginning in 1995 and another beginning in 2000. Third, certain commodities (e.g., coal and miscellaneous materials) are almost exclusively transported via contract, while other commodities (e.g., food and farm) exhibit greater variation. Fourth, contracting heterogeneity prevails within and across carriers, within and across commodities, and over time.

Table 3. Correlation statistics (full sample).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1) CONTRACT	1.00														
(2) PERSISTENCE	0.16	1.00													
(3) SPEC RC EQB	−0.05	−0.08	1.00												
(4) SPEC RC EQG	−0.02	−0.04	−0.04	1.00											
(5) SPEC RC OTH	−0.01	0.03	−0.04	−0.03	1.00										
(6) SPEC RC REF	−0.04	−0.04	−0.02	−0.02	−0.02	1.00									
(7) SPEC RC MLF	0.07	0.05	−0.06	−0.05	−0.05	−0.03	1.00								
(8) PRIV RC	0.26	0.07	−0.23	−0.15	−0.02	−0.08	−0.17	1.00							
(9) EXPERIENCE	0.65	0.10	−0.02	0.00	−0.02	−0.03	0.04	0.29	1.00						
(10) O RR COMP	−0.10	0.00	0.04	0.00	−0.01	0.01	0.00	−0.09	−0.16	1.00					
(11) D RR COMP	−0.04	0.01	−0.01	0.00	0.02	0.00	−0.03	−0.05	−0.13	0.07	1.00				
(12) O–D SRR COMP	−0.05	0.01	0.00	0.00	0.00	0.00	−0.01	0.00	−0.05	0.11	0.10	1.00			
(13) O–D IRR COMP	−0.03	0.02	0.01	0.00	−0.01	0.00	0.00	−0.03	−0.06	0.31	0.13	0.08	1.00		
(14) BARGE COMP	−0.17	−0.17	−0.05	0.23	0.23	0.04	−0.19	−0.11	−0.10	−0.02	0.01	−0.01	−0.02	1.00	
(15) INTERMODAL	0.21	0.24	−0.23	−0.18	−0.17	−0.10	−0.25	0.21	0.12	−0.01	0.03	0.01	0.02	−0.58	1.00

Notes: (1) Correlation statistics determined using number of observations in Tables 4 and 5 estimations. (2) STCC indicator variables dropped due to space constraints. (3) PERSISTENCE is defined at the FSAC geographic level. (4) EXPERIENCE is reported log-transformed and defined at the FSAC geographic level and aggregated over all STCCs. (5) The intra-industry competition variables are defined at the FSAC geographic level.

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We now turn to an empirical model to estimate how variations and shifts in legislative and regulatory factors, transaction cost factors, competition, and technological change in the industry affect the choice between contracts and tariffs and help explain these patterns.[52]

4.2 Empirical model

The primary objective of our empirical analysis is to identify the determinants of contracting that have evolved in the freight railroad industry after the passage of the Staggers Act. Our dependent variable ($\text{CONTRACT}_{\text{ijt}}$) is dichotomous—equal to one if shipment i occurs under contract for railroad j at shipment date t and zero otherwise. The combined CWS and supplemental data offer millions of observations that are available from 1984 to 2014. However, reliable CWS data for estimation purposes begin in 1987.

Given the binary nature of the dependent variable, we employ probit estimation:

$$\text{PR}\ (Y = 1 \mid X) = \Phi\left(X^T \beta\right)$$

where Y represents the dependent variable ($\text{CONTRACT}_{\text{ijt}}$) and X represents a matrix of independent and control variables.[53] $\Phi(\cdot)$ denotes the cumulative standard normal distribution function. The β parameters are determined by maximum likelihood estimation.

4.3 Empirical results

Tables 4 and 5 present the baseline estimation results at the FSAC geographic level. Table 4 reports the year and commodity (STCC) fixed effect coefficients. Table 5 reports the independent variable coefficients and their corresponding marginal effects.[54] Standard errors are robust, clustered (by freight railroad carrier), and reported below the coefficients. The models in the tables capture intra-industry competition at different STCC levels: Models 1 and 2 aggregate over all two-digit STCCs; Models 3 and 4 disaggregate within two-digit STCCs. In each model pair, the first estimation considers O and D competition and the second estimation considers O–D (single-line and inter-line service) competition.

The Table 4 results suggest that time since the Staggers Act passage is an important determinant of contracting. Nearly all of the year fixed effect coefficients are positive in sign, and many are statistically significant, relative to the 1987 baseline. Year fixed effect coefficients are relatively large in magnitude during the 1994–1995, 1999, and 2004–2014 periods. These findings suggest that the legislative endorsement of the Staggers Act initially enabled, and subsequently facilitated, the use of contracting in the industry.

The findings in Table 4 also indicate that post-Staggers contracting propensities vary by commodity shipped, suggesting that transaction complexity can affect contracting decisions. For instance, STCC-PAPER ($p < 0.05$) and STCC-MISCM ($p < 0.05$) are positive and significant. Pulp and paper products typically are shipped from specific production locations to specific, unchanging consumption locations. In contrast, STCC-FARM is negative and significant ($p < 0.05$). Farm product origin and destination locations vary considerably over time as prevailing supply (e.g., crop yield, weather) and demand (e.g., export) conditions change. The identified findings thus suggest that origin or destination uncertainty can increase

[52] Our use of the STB CWS entails a confidentiality agreement that precludes reporting on individual railroad's contracting approaches in general, by specific commodities, or over time.

[53] We adopt this single-equation specification in lieu of a more complex multi-equation specification capable of capturing the potential for variations in contracting to affect observed levels of our independent variables. Thus, our findings are necessarily caveated by the potential for endogeneity in our specification.

[54] Due to space constraints, the coefficients on the control variables discussed at the end of Section 3 above are not reported in Table 5. None of these coefficients are statistically significant.

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Table 4. Baseline results (fixed effects).

Variable	Mod 1 β (SE)	Mod 2 β (SE)	Mod 3 β (SE)	Mod 4 β (SE)
YR 1988	0.117***	0.116***	0.117***	0.117***
	(0.032)	(0.031)	(0.031)	(0.031)
YR 1989	0.046	0.052	0.050	0.053
	(0.037)	(0.033)	(0.035)	(0.033)
YR 1990	−0.032	−0.050	−0.051	−0.049
	(0.070)	(0.080)	(0.080)	(0.080)
YR 1991	0.788**	0.771**	0.778**	0.773**
	(0.298)	(0.295)	(0.294)	(0.296)
YR 1992	0.599+	0.594+	0.600+	0.597+
	(0.325)	(0.326)	(0.326)	(0.327)
YR 1993	0.528+	0.527+	0.529+	0.530+
	(0.279)	(0.278)	(0.277)	(0.278)
YR 1994	0.982***	0.982***	0.985***	0.985***
	(0.274)	(0.271)	(0.267)	(0.271)
YR 1995	0.997***	0.993***	0.996***	0.997***
	(0.290)	(0.285)	(0.282)	(0.285)
YR 1996	0.683**	0.721**	0.675**	0.750**
	(0.262)	(0.268)	(0.257)	(0.277)
YR 1997	0.563*	0.557*	0.558*	0.561*
	(0.252)	(0.250)	(0.247)	(0.251)
YR 1998	0.692*	0.684*	0.688**	0.689**
	(0.269)	(0.266)	(0.262)	(0.267)
YR 1999	0.875***	0.859***	0.864***	0.863***
	(0.194)	(0.196)	(0.191)	(0.196)
YR 2000	0.588+	0.570+	0.573+	0.573+
	(0.326)	(0.341)	(0.336)	(0.341)
YR 2001	0.544	0.546	0.528	0.558
	(0.332)	(0.354)	(0.342)	(0.357)
YR 2002	0.312	0.300	0.301	0.305
	(0.270)	(0.281)	(0.279)	(0.282)
YR 2003	0.617+	0.612+	0.611+	0.618+
	(0.363)	(0.357)	(0.362)	(0.361)
YR 2004	1.017***	1.012***	1.010***	1.020***
	(0.145)	(0.145)	(0.147)	(0.147)
YR 2005	0.989***	0.987***	0.984***	0.992***
	(0.165)	(0.167)	(0.168)	(0.169)
YR 2006	0.959***	0.955***	0.952***	0.960***
	(0.168)	(0.171)	(0.172)	(0.173)
YR 2007	0.962***	0.966***	0.962***	0.970***
	(0.155)	(0.159)	(0.160)	(0.161)
YR 2008	0.943***	0.943***	0.939***	0.949***
	(0.164)	(0.169)	(0.169)	(0.172)
YR 2009	0.883***	0.887***	0.883***	0.893***
	(0.190)	(0.194)	(0.195)	(0.197)
YR 2010	0.985***	0.986***	0.983***	0.992***
	(0.180)	(0.184)	(0.185)	(0.187)
YR 2011	0.989***	0.991***	0.986***	0.994***
	(0.176)	(0.177)	(0.180)	(0.179)
YR 2012	1.087***	1.088***	1.084***	1.092***
	(0.196)	(0.197)	(0.200)	(0.200)
YR 2013	1.103***	1.103***	1.100***	1.107***
	(0.198)	(0.200)	(0.203)	(0.202)

(continued)

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Table 4. (continued)

Variable	Mod 1 β (SE)	Mod 2 β (SE)	Mod 3 β (SE)	Mod 4 β (SE)
YR 2014	1.088***	1.088***	1.086***	1.092***
	(0.193)	(0.195)	(0.197)	(0.197)
STCC FARM	−0.479*	−0.477*	−0.488*	−0.478*
	(0.201)	(0.202)	(0.204)	(0.202)
STCC COAL	0.424	0.422	0.419	0.418
	(0.278)	(0.276)	(0.279)	(0.276)
STCC MIN	−0.054	−0.056	−0.058	−0.056
	(0.155)	(0.157)	(0.159)	(0.157)
STCC FOOD	−0.229	−0.214	−0.231	−0.212
	(0.218)	(0.215)	(0.218)	(0.215)
STCC WOOD	0.029	0.040	0.018	0.041
	(0.118)	(0.117)	(0.120)	(0.117)
STCC PAPER	0.345*	0.355*	0.332*	0.357*
	(0.160)	(0.156)	(0.163)	(0.156)
STCC CHEM	−0.157	−0.151	−0.166	−0.150
	(0.270)	(0.271)	(0.271)	(0.271)
STCC STONE	−0.075	−0.074	−0.082	−0.073
	(0.145)	(0.145)	(0.148)	(0.145)
STCC METAL	0.258	0.254	0.249	0.255
	(0.168)	(0.169)	(0.170)	(0.169)
STCC TRANS	0.184	0.177	0.171	0.179
	(0.158)	(0.159)	(0.160)	(0.158)
STCC WASTE	−0.028	−0.030	−0.040	−0.029
	(0.188)	(0.189)	(0.189)	(0.188)
STCC CONT	0.383	0.394	0.391	0.395
	(0.270)	(0.268)	(0.270)	(0.268)
STCC MISCM	0.422*	0.424*	0.419*	0.425*
	(0.193)	(0.191)	(0.193)	(0.192)
STCC HAZ	0.134	0.128	0.115	0.127
	(0.151)	(0.149)	(0.155)	(0.149)
Controls	Y	Y	Y	Y
Independent Vars	Y	Y	Y	Y
Observations	15,085,231	15,085,231	15,085,231	15,085,231
Adj. R^2	0.452	0.450	0.450	0.450

Notes: (1) + $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. (2) The dependent variable is an indicator that the shipment occurred under contract (rather than tariff). (3) Standard errors (in parentheses) are robust, clustered by railroad carrier, and presented below the coefficients. (4) Additional unreported controls include a macroeconomic condition measure (US industry capacity utilization) and shipment-specific measures (commodity STB exempt, logged weight, and logged distance), as indicated in Table 1.

contracting transaction costs and thus reduce contracting propensities. This finding is consistent with extant cross-sectional empirical research that suggests "the costs and limitations of contracting grow with the complexity and uncertainty of the transaction" (Masten 2000: 35).

Table 5 provides further evidence that transaction complexity affects contracting decisions. The variable PERSISTENCE is an indicator of whether a commodity persists in the same FSAC O–D pair over consecutive years. Its coefficient is positive and significant ($p < 0.05$) across all models, suggesting commodities that demonstrate persistence within an O–D pair over time are thus more likely to be shipped using contracts than tariffs.

The Table 5 results provide support for the well-known proposition that asset specificity is an important determinant of contracting propensity. First, the use of some specialized rail

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Table 5. Baseline results (independent variables).

	Mod 1		Mod 2		Mod 3		Mod 4	
	β (SE)	MARG EFF	β (SE)	MARG EFF	β (SE)	MARG EFF	β (SE)	MARG EFF
PERSISTENCE	0.207***	0.042***	0.207***	0.043***	0.207***	0.043***	0.209***	0.043***
	(0.038)	(0.008)	(0.037)	(0.008)	(0.037)	(0.008)	(0.037)	(0.008)
SPEC RC EQB	0.190*	0.037*	0.184*	0.036*	0.188*	0.036*	0.184*	0.036*
	(0.084)	(0.016)	(0.084)	(0.016)	(0.084)	(0.016)	(0.084)	(0.016)
SPEC RC EQG	0.071	0.014	0.073	0.015	0.076	0.015	0.072	0.014
	(0.067)	(0.013)	(0.066)	(0.013)	(0.066)	(0.013)	(0.067)	(0.013)
SPEC RC OTH	0.161+	0.031+	0.161+	0.032+	0.158+	0.032+	0.161+	0.032+
	(0.095)	(0.017)	(0.095)	(0.017)	(0.094)	(0.017)	(0.095)	(0.017)
SPEC RC REF	0.321+	0.060+	0.313	0.059+	0.313	0.059+	0.314	0.059+
	(0.195)	(0.032)	(0.196)	(0.033)	(0.195)	(0.033)	(0.197)	(0.033)
SPEC RC MLF	0.780*	0.132**	0.777*	0.132**	0.781*	0.132**	0.778*	0.132**
	(0.322)	(0.046)	(0.321)	(0.046)	(0.323)	(0.046)	(0.322)	(0.046)
PRIV RC	0.254*	0.053+	0.248*	0.052+	0.249*	0.052+	0.248*	0.052+
	(0.122)	(0.027)	(0.122)	(0.028)	(0.122)	(0.028)	(0.123)	(0.028)
EXPERIENCE	0.264***	0.054***	0.253***	0.052***	0.257***	0.052***	0.252***	0.052***
	(0.032)	(0.006)	(0.032)	(0.006)	(0.032)	(0.006)	(0.032)	(0.006)
O RR COMP	0.024*	0.005*			0.048	−0.107		
	(0.010)	(0.002)			(0.045)	(0.113)		
D RR COMP	0.114***	0.023***			0.179*	0.067*		
	(0.026)	(0.005)			(0.083)	(0.033)		
O–D SRR COMP			−0.524	−0.107			−0.913	−0.187
			(0.560)	(0.113)			(0.712)	(0.143)

(continued)

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Table 5. (continued)

	Mod 1		Mod 2		Mod 3		Mod 4	
	β (SE)	MARG EFF	β (SE)	MARG EFF	β (SE)	MARG EFF	β (SE)	MARG EFF
O–D IRR COMP			0.325* (0.156)	0.067* (0.033)			0.129 (0.261)	0.027 (0.054)
BARGE COMP	0.341*** (0.073)	0.070*** (0.017)	0.328*** (0.074)	0.067*** (0.017)	0.330*** (0.072)	0.067*** (0.017)	0.327*** (0.073)	0.067*** (0.017)
INTERMODAL	0.463* (0.228)	0.097* (0.047)	0.474* (0.229)	0.099* (0.047)	0.472* (0.227)	0.099* (0.047)	0.478* (0.230)	0.100* (0.047)
CONSTANT	−3.017*** (0.576)		−2.827*** (0.558)		−2.901*** (0.575)		−2.834*** (0.536)	
Controls	Y		Y		Y		Y	
Year FE	Y		Y		Y		Y	
STCC FE	Y		Y		Y		Y	
Observations	15,085,231		15,085,231		15,085,231		15,085,231	
Adj. R^2	0.452		0.450		0.450		0.450	

Notes: (1) $^{+}$ $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. (2) The dependent variable is an indicator that the shipment occurred under contract (rather than tariff). (3) Standard errors (in parentheses) are robust, clustered by railroad carrier, and presented below the coefficients. (4) Average marginal effects (e.g., $\delta y/\delta x$ for continuous variables and discrete difference from the base category for factor variables) are reported next to each covariate. (5) Shipment persistence (PERSISTENCE) is defined at the FSAC geographic level. (6) Contracting experience (EXPERIENCE) is defined at the FSAC geographic level and logged. (7) Competition variables are defined at the FSAC geographic level and aggregated over two-digit STCCs (Models 1 and 2) and disaggregated at two-digit STCCs (Models 3 and 4). (8) Additional unreported controls include a macroeconomic condition measure (US industry capacity utilization) and shipment-specific measures (commodity STB exempt, logged weight, and logged distance) as indicated in Table 1.

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equipment has a positive and significant impact on the propensity to contract: equipped box cars (SPEC RC EQB: $p < 0.05$)—employed extensively for paper shipments—and multi-level flatcars (SPEC RC ML FLAT: $p < 0.05$)—employed predominantly for miscellaneous material and automobile shipments—are more likely to be conducted under contract than tariff. Second, the use of private railcars (PRIV RC: $p < 0.05$) significantly increases the observed contracting propensity.

The findings in Table 5 identify prior contracting experience as a driver of contracting. EXPERIENCE is positive and significant ($p < 0.001$), providing support for the general hypothesis that, as parties gain contracting experience, the incremental transaction costs associated with this governance mechanism fall, thereby increasing its use.

The Table 5 results provide insights into how intra-industry competition affects contracting decisions. The first two models examine freight rail competition at aggregated STCCs (i.e., the number of freight rail competitors providing service to the same O and D or the same O–D pair across all commodities): Model 1 indicates O RR COMP ($p < 0.05$) and D RR COMP ($p < 0.001$) are positive and significant; Model 2 indicates OD SRR COMP is negative but not significant, and OD IRR COMP is positive and significant ($p < 0.05$). The next two models examine freight rail competition at disaggregated STCCs (i.e., the number of freight rail competitors providing service to the same O and D or the same O–D pair and in the same commodity as the focal shipment): Model 3 indicates O RR COMP is positive but not significant, and D RR COMP is positive and significant ($p < 0.05$); Model 4 indicates OD SRR COMP and OD IRR COMP are positive but not significant. These findings suggest that the impact of intra-industry competition on freight-rail contracting varies not only with commodity characteristics but also with available competitive service alternatives at the origin and destination and O–D pair. We explore other permutations of intra-industry competition in empirical robustness tests below.

The findings in Table 5 indicate that *BARGE COMP* is positive and significant ($p < 0.001$), indicating that the prospect of inter-industry competition increases the propensity for freight rail contracting. Recall that this variable is both distance-adjusted and commodity-specific, where a value close to zero indicates little, if any, viable water barge competition, whereas values closer to one represent more viable and more proximate water barge competition. The baseline findings indicate that for commodities that can be shipped by water barge, the proximity of the shipment's origin and destination to a water barge transport facility increases the likelihood that freight railroads and shippers employ contracts rather than tariffs.

Finally, the Table 5 results indicate that technological changes within the freight rail industry—captured here by intermodal shipments that utilize standardized containers—significantly altered the use of contracts relative to spot market tariffs. INTERMODAL is positive and significant ($p < 0.05$) in all model estimations. This significant increase in the use of contracts for intermodal shipping was, in turn, precipitated by the emergence of transaction-cost-reducing intermodal marketing companies that employ contracts to aggregate shipping across transportation modes.

4.4 Economic impact

Table 5 also reports the economic impact of the main variables of interest on contracting propensities via average marginal effects: specifically, differences from the base category for discrete variables and rates of change $(\frac{\partial y}{\partial x})$ for continuous variables. Among the discrete variables, PERSISTENCE has a relatively large impact, increasing the probability that a shipment moves by contract by more than 4%. Some asset specificity measures also have relatively pronounced effects on contracting: Equipped Box Car (SPEC RC EQB) use increases the probability that the freight rail shipment is under contract by nearly 4%; Multi-Level Flat Car (SPEC RC MLF) use increases the contracting probability by over 13%; and Private Railcar (PRIV RC) use increases the contracting probability by more than 5%. Intermodal freight rail shipments increase the likelihood of contracting by nearly 10%.

Among the continuous variables, EXPERIENCE has a relatively large impact on the probability of employing contracts rather than tariffs: a one-unit increase in (logged) contracting experience increases the probability of contracting by more than 5%. The extent of intra-industry competition also has sizable effects on contracting propensities. A one-unit increase in freight rail competitors operating at the O (D) increases the contracting probability by 0.5% (2.3), and a one-unit increase in interline service competitors operating over an O–D pair increases the contracting probability by 6.7%. Finally, inter-industry competition from water barges increases the probability of contracting by roughly 7%.

4.5 Robustness results

We briefly review some of the empirical robustness tests undertaken to better establish the integrity of our findings. Our findings are robust to other estimation methodologies, including logit and linear probability model estimation. The empirical findings are also robust to a "growth rate" formulation, whereby a duration measure (viz., the time since Staggers Act passage) interacted with each commodity (viz., the two-digit STCCs), creating a series of time trend-by-commodity interaction terms. The findings derived from this estimation approach are very similar to the findings from the baseline estimation reported in Tables 4 and 5 in terms of signs, magnitudes, and significance of the independent variables of interest.

We also examine the robustness of our findings to different permutations of the independent variables. First, the baseline estimations use FSAC as the geographic unit of observation for commodity shipment persistence and contracting experience. Table 6 demonstrates that replacing FSAC with SPLC (Models 1 and 2) or FIPS (Models 3 and 4) as the geographic unit of observation has little impact on the baseline findings—that is, coefficients on these respective variables remain positive and significant. Second, one of our baseline findings is that experience with the contracting process is an important determinant of the subsequent use of contracts. Our baseline measure of contracting experience is a summation of the number of annual and discounted shipments (net of the O–D pair) that occur via contract, which allows the benefits of contracting experience to depreciate over time. We considered three permutations to examine the robustness of this finding: (1) varying discount factors (e.g., from ten to 50%); (2) employing a simple count of contract shipments made that precede shipment *i* by railroad carrier *j* over the one year prior to shipment date *t*; and (3) employing the percentage of contract shipments to total shipments that occur in a year. Contracting experience remained positive and significant in each permutation.

We also examine alternative measures of intra-industry competition. Our baseline estimations use two freight railroad competition measures at the FSAC geographic unit of observation: (1) the number of competitor railroads at the same O and same D as the focal shipment; and (2) the number of competitive alternatives providing single-line or inter-line service over the same O–D pair as the focal shipment. Table 6 considers these competition measures at more aggregated geographic units of observation: Models 1 and 2 at the SPLC (city-region) level; and Models 3 and 4 at the FIPS (state-county) level. The findings in Table 6 indicate that no competition measure achieves statistical significance, suggesting that intra-industry competition defined over broad geographic areas (e.g., SPLC and FIPS) is not a significant driver of contracting relative to such competition defined over narrow geographic areas (viz., FSAC).

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Table 6. Robustness results.

Variable	Mod 1	Mod 2	Mod 3	Mod 4
PERSISTENCE	0.241***	0.255***	0.286***	0.274***
	(0.038)	(0.034)	(0.049)	(0.039)
SPEC RC EQB	0.189*	0.181*	0.182*	0.174*
	(0.077)	(0.082)	(0.085)	(0.087)
SPEC RC EQG	0.079	0.070	0.074	0.077
	(0.062)	(0.067)	(0.072)	(0.068)
SPEC RC OTH	0.181+	0.161+	0.167+	0.172+
	(0.093)	(0.093)	(0.101)	(0.094)
SPEC RC REF	0.350*	0.314	0.319	0.311
	(0.172)	(0.192)	(0.199)	(0.195)
SPEC RC MLF	0.751*	0.770*	0.774*	0.764*
	(0.324)	(0.318)	(0.326)	(0.322)
PRIV RC	0.245*	0.246*	0.244*	0.237*
	(0.118)	(0.122)	(0.121)	(0.117)
EXPERIENCE	0.257***	0.254***	0.254***	0.257***
	(0.032)	(0.031)	(0.033)	(0.032)
O RR COMP	0.017		−0.001	
	(0.024)		(0.010)	
D RR COMP	0.032		0.012	
	(0.020)		(0.010)	
O–D SRR COMP		0.053		0.052
		(0.113)		(0.052)
O–D IRR COMP		0.060		0.010
		(0.044)		(0.015)
BARGE COMP	0.296***	0.322***	0.315***	0.303***
	(0.062)	(0.070)	(0.094)	(0.064)
INTERMODAL	0.434+	0.455+	0.459*	0.445+
	(0.255)	(0.242)	(0.223)	(0.239)
CONSTANT	−2.957***	−2.880***	−2.944***	−2.899***
	(0.543)	(0.542)	(0.557)	(0.553)
Controls	Y	Y	Y	Y
Year FE	Y	Y	Y	Y
STCC FE	Y	Y	Y	Y
Observations	15,085,231	15,085,231	15,085,231	15,085,231
Adj. R^2	0.452	0.450	0.450	0.450

Notes: (1) $^{+}$ $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. (2) The dependent variable is an indicator that the shipment occurred under contract (rather than tariff). (3) Standard errors (in parentheses) are robust, clustered by railroad carrier, and presented below the coefficients. (4) Shipment persistence (PERSISTENCE) is defined at the SPLC geographic level (Models 1 and 2) and FIPS geographic level (Models 3 and 4). (5) Contracting experience (EXPERIENCE) is defined at the SPLC geographic level (Models 1 and 2) and FIPS geographic level (Models 3 and 4) and logged. (6) Competition variables are defined at the SPLC geographic level (Models 1 and 2) and FIPS geographic level (Models 3 and 4) and aggregated over two-digit STCCs (Models 1–4). (7) Additional unreported controls include a macroeconomic condition measure (US industry capacity utilization) and shipment-specific measures (commodity STB exempt, logged weight, and logged distance), as indicated in Table 1.

Finally, we examine whether our results are confounded by omitted or included variable bias. As noted above, we supplement the CWS data with other data sources, including economy-, industry-, and railroad carrier-specific information. To probe the sensitivity of the estimation to these data, we estimate the model without these control variables. We find that our principal findings remain unchanged.

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5. DISCUSSION AND CONCLUSION

Despite the substantial body of research on contracts as an exchange governance mechanism, empirical studies to date have not focused on the primal issue of when transacting parties employ contracts rather than spot markets. Furthermore, most empirical contracting research is cross-sectional in nature, and so does not examine the evolution of contracting choices over time. This study addresses both of these lacunas.

We believe that the industry setting we consider, the rich proprietary data we employ, and our focus on the evolution of the choice between contracts and spot markets allow us to make meaningful contributions to the empirical literature on contracts as an exchange governance mechanism. Our analysis of the freight rail industry allows us to examine several institutional-, industry- and firm-level determinants of exchange governance in an inherently important industry. The granularity of the CWS data captures millions of transactions over an extensive time window, which provides a rare opportunity to examine in detail and with precision the choice between contracts and (spot market) tariffs over time. We find that several factors influence this choice, including legislative changes, transaction complexity and asset specificity, contracting experience, intra- and inter-industry competition, and technological change. We also find that both time-invariant and time-varying factors influence contracting decisions.

Some of our findings support conclusions in earlier, predominantly cross-sectional, analyses. For instance, transaction complexity increases the use of contracting. Our empirical findings document how contracting in freight rail varies with shipment complexity: certain commodities exhibit relatively stable O and D locations that facilitate the use of contracts, while other commodities exhibit relatively uncertain or variable O and D shipment locations that advantage the use of (spot-market) tariffs. Similarly, the presence of asset specificity drives the adoption of more contracting relative to spot markets. While these factors are certainly important for organizing economic exchange, these findings are not particularly surprising when considered within the broader empirical TCE literature. Nonetheless, our examination of these factors in the context of the freight rail industry provides a fresh validation of findings in the extant contracting research.

We also identify factors that influence how contracting evolves temporally and varies across products. For instance, the post-Staggers Act contracting evolution (from relatively modest beginnings to slow but punctuated increases in subsequent years and to a leveling-off in the latter years) appears to reflect a pre-Staggers Act disequilibrium in the use of contracts and spot markets. The post-Staggers growth of contracting is consistent with the removal of exogenous constraints on contracting, and the movement toward an equilibrium in the use of alternative exchange governance mechanisms. Our decades-long transaction-level data have also allowed us to examine the important role that parties' experience with particular exchange governance mechanisms can play in the use of contracting. We find a temporal growth in contracting that is consistent with experience-based reductions in the marginal transaction costs of employing contracts over time. Our rich data have also allowed us to consider the potential for technological change within an industry to alter the choice between contracts and spot markets. We find that the introduction of standardized intermodal shipping containers and double-stack rail transport—along with the corresponding growth of intermodal marketing companies—promoted increased contracting. The identification and validation of these time-varying drivers of contracting add to our understanding of the determinants of contracting.

Other factors indicate how contracting decisions are affected in ways that are less well-understood and relatively under-researched. In particular, we document how contracting

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decisions are affected by the extent of competition. Intra-industry competition affects contracting decisions in three dimensions: (1) service type; (2) geographic breadth; and (3) commodity breadth. We find that a larger number of competitors providing service at specific O and D locations or inter-line service across O and D locations, in narrowly defined geographic areas, and in aggregated commodity classifications increases contracting. Inter-industry competition that is proximate (i.e., to the O and D location) and viable (i.e., able to be shipped by a transportation alternative) is also found to increase contracting propensities.

Our research suggests at least three potential directions for further study. First, the determinants of the choice between contract and spot market might be examined in other industries where these organizational arrangements both prevail, e.g., trucking, refining, and natural gas. Second, future research might investigate how competition affects not only the contracting decision, but also relevant contract features (e.g., clauses, terms, and duration). Third, future research might examine how variations in the observed exchange governance (i.e., contracts versus tariffs) affect the firms' economic activities: for instance, shipping volume and frequency and the level and composition of investment activity.

Our analysis is not without its limitations. Our examination of the use of contracts versus tariffs in a single industry potentially limits the generalizability of our findings. Our institutional setting also limits our ability to investigate other important considerations identified in the extant contracting literature. For instance, Lafontaine and Slade (2013) observe that empirical contracting studies consider settings where the alternative to contracting is vertical integration. Vertical integration is exceedingly rare in the US freight railroad industry.

As with any empirical analysis, our insights are also constrained by the nature of the data employed. The CWS data impose three primary constraints. First, the contract indicator in the CWS data may reflect a single shipment, or it may cover many shipments that occur over time. Accordingly, the data do not allow for investigations of contract duration, such as those in the seminal studies by Joskow (1985, 1987). Second, the CWS data do not offer access to the underlying contracts themselves. We are thus unable to advance the extant literature that explores the determinants of contract features, such as the extent of contractual completeness (e.g., Crocker and Reynolds, 1993) or whether contracts include price adjustments or other flexibility clauses (e.g., Crocker and Masten, 1991; Murrell and Păun, 2017). Third, although data in the immediate wake of the Staggers Act would be ideal, reliable CWS data only began in 1987.

Despite these limitations, we believe our analysis extends the empirical TCE literature by employing a rich data set to examine the evolution of the choice between contracts and spot market transactions in an important industry. We also hope that our work will encourage related investigations in other industries and other countries.

APPENDIX: A SIMPLE CONCEPTUAL FRAMEWORK

The following streamlined model is designed to provide a simple framework that reflects some of the key elements that are likely at play in the empirical analysis. Consider a setting where a single railroad (R) interacts with two potential shippers (S1 and S2). Let q_i denote the volume of Si's shipments and let $\underline{v}_i$ denote the maximum amount Si is willing to pay for each unit (i.e., one shipment) of the tariffed rail transport service ($i \in \{1, 2\}$). We assume $\underline{v}_2 \geq \underline{v}_1$, so the tariffed service is at least as valuable to S2 as it is to S1.

In addition to supplying the tariffed rail service to S1 and/or S2, R can offer a contracted rail service to S2. v_2 is the maximum amount S2 is willing to pay for each unit of the contracted rail service. This service can entail features that differ from those of the tariffed service (e.g., special

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handling or expedited transport). For simplicity, we assume it is prohibitively costly for R to supply a contracted rail service to S1.

For expositional ease, we normalize R's cost of providing the tariffed rail service to 0. c_2 is R's unit cost of supplying the contracted rail service to S2. The transaction costs of providing the tariffed service are normalized to 0 for all parties. We further abstract from any shipper transaction costs associated with contracted rail transport. K_2 is R's transaction cost of contracting with S2.

R knows the values of $\underline{v}_1$, $\underline{v}_2$, and v_2. Furthermore, R can make take-it-or-leave-it offers to S1 and S2. We assume it is more profitable for R to supply the tariffed service to both shippers at unit price $\underline{v}_1$ than to supply the service only to S2 at unit price $\underline{v}_2$, so $\underline{v}_1 \; [q_1 + q_2] > \underline{v}_2 \; q_2$. This inequality will hold if, for example, $\underline{v}_2 - \underline{v}_1$ and $|q_2 - q_1|$ are sufficiently small.

Our main finding in this simple setting where R acts to maximize its profit is the following.

Conclusion. R will serve S2 under contract rather than via tariff if and only if

$$v_2 - c_2 - \underline{v}_2 \; > \; \frac{K_2}{q_2}. \tag{A1}$$

Proof. The maintained assumption that $\underline{v}_1 \; [q_1 + q_2] > \underline{v}_2 \; q_2$ ensures that if R only offers the tariffed service, it will set the unit price $p_T = \underline{v}_1$. R's corresponding profit is:

$$\pi_T \; = \; \underline{v}_1 \; [q_1 + q_2]. \tag{A2}$$

To induce S2 to choose the contracted service at unit price p_2 rather than the tariffed service at unit price $p_T = \underline{v}_1$, R must set p_2 to ensure:

$$v_2 - p_2 \; \geq \; \underline{v}_2 - p_T \Leftrightarrow p_2 \; \leq \; v_2 - \underline{v}_2 + \underline{v}_1. \tag{A3}$$

Equation (A3) implies that if R serves S2 under contract and S1 via tariff, the maximum profit that R can secure is:

$$\pi_C \; = \; \underline{v}_1 \; q_1 + [\; v_2 - \underline{v}_2 + \underline{v}_1 - c_2 \;] \; q_2 - \; K_2 \; . \tag{A4}$$

Equations (A2) and (A4) imply that R will serve S2 under contract rather than via tariff if:

$$\begin{aligned} \pi_C \; > \; \pi_T \Leftrightarrow \underline{v}_1 \; q_1 + [\; v_2 - \underline{v}_2 + \underline{v}_1 - c_2 \;] \; q_2 - \; K_2 \; > \; \underline{v}_1 \; [q_1 + q_2] \\ \Leftrightarrow [\; v_2 - c_2 - \underline{v}_2 \;] q_2 \; > \; K_2 \Leftrightarrow v_2 - c_2 - \underline{v}_2 \; > \; \frac{K_2}{q_2}. \qquad \blacksquare \end{aligned}$$

The Conclusion identifies three factors that render R more likely to provide the contracted service to S2 rather than the tariffed service (in the sense that inequality (A1) is more likely to hold). The first factor is a relatively small transaction cost, K_2. K_2 can be small when, for example, R has relatively extensive experience in contracting with S2, or the complexity and the uncertainty regarding the transaction between S2 and R is relatively limited.

The second factor is a relatively large q_2, reflecting a relatively high volume of shipments by S2. When q_2 is large, R can spread the transaction cost associated with the contracted service over many units, thereby reducing the effective per-unit transaction cost.

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The third factor is a relatively large value of $v_2 - c_2 - \underline{v}_2$, which represents the incremental joint surplus that the customization associated with contract transport can generate for S2 and R (relative to the joint surplus they secure under the tariffed service). In practice, this incremental surplus might be relatively large when, for example, contracting helps to protect non-fungible investment in (specialized) rail transport.

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Biocom
California's Advocate for Life Science

The Senator Office Building
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August 7, 2026

California Law Revision Commission
Richard Simpson, Chairperson
Sharon Reilly, Executive Director
c/o Legislative Counsel Bureau
925 L Street, Suite 275
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Re: (Memorandum 2026-21) Public Comment Analysis and Draft Language Options for Mergers and Acquisitions

Dear Chairperson Simpson and Members of the Commission:

Thank you for the opportunity to provide comments on the Commission's Staff Memorandum 2026-21 regarding California's Mergers and Acquisitions (M&A) laws. Biocom is the world's largest life science organization, representing biotechnology, pharmaceutical, medical device, genomics and diagnostics companies of all sizes, research universities and institutes, clinical research organizations, investors and service providers. In 2025, California's 15,730 life science establishments directly employed 406,565 workers and generated $394 billion in total economic output for the state—making us the second largest industry in the state.

California's life science industry is built on the willingness of entrepreneurs and investors to take extraordinary risks—backing scientific innovation with long development timelines, significant regulatory uncertainty, and capital commitments that often span a decade or more before any return is realized. Mergers and acquisitions are a critical part of this ecosystem, providing a pathway to translate those highrisk investments into life-saving therapies. The frameworks under consideration would fundamentally disrupt that pathway—and, in doing so, threaten the innovation pipeline on which California patients depend.

We are writing to address Memorandum 2026-21 and the Commission's directive to develop "combined" legislative models that move significantly beyond federal law. Following the Commission's decision to abandon the Clayton Act standard (Option 1), we urge you to consider the specific impacts the remaining frameworks will have on the life science ecosystem.

Analysis of Revised Regulatory Models (Basic Merger Framework and Variations)

Basic Merger Framework: The Commission is exploring a model that splits the two prongs of the Clayton Act into separate prohibitions to reinvigorate the "tend to create a monopoly" standard. This is coupled with a structural presumption, now explicitly codifying the holding in United States v. Philadelphia National Bank, where a merger that produces a firm with an "undue percentage share" of a market is deemed illegal.

- Life Science Impact: Because the life science ecosystem is naturally concentrated due to scientific specialization, acquisitions in these segments will be automatically treated as presumptively harmful. This ignores the reality that these deals are often pro-competitive, combining complementary factors to accelerate development.

Basic Merger Framework and Federal Merger Guidelines: This framework codifies mathematical triggers into state law, presuming a merger is illegal if it results in a market HHI over 1,800 or a firm with over 30% market share, with a 100-point change in HHI.

- Life Science Impact: These rules rely on sales-based calculations that do not fit the majority of life science startups. A development-stage company typically earns no product revenue for a decade or more, since it cannot sell a therapy or device until the FDA approves it. For these pre-revenue firms, applying market-share and HHI metrics would trigger automatic legal presumptions of harm against the standard exit pathways they depend on to secure the capital required for clinical trials and FDA approval.

Basic Merger Framework, Federal Merger Guidelines, and "Appreciable Risk": This model replaces the federal "substantial" harm standard with a prohibition on mergers creating an "appreciable risk" of lessening competition by "more than a de minimis amount". We also note the Commission's introduction of an alternative legislative option that would replace "appreciable risk" with a requirement that courts only look for a "reasonable probability" of anticompetitive effects.

- Life Science Impact: Supporters of this option suggest this allows the state to "brake" concentration in its "incipiency". However, for biotech, this allows a regulator to block an acquisition based on a "guess" about a product's future market impact before it has even cleared Phase III trials. **Furthermore, lowering the burden of proof to a mere "reasonable probability" remains far too speculative and will invite unwarranted legal challenges against early-stage biotech mergers. This subjective legal risk will deter investors from funding early-stage research in California.**

Rebuttal to the Proposed "Purpose Statement" and Standalone Statutory Directive The Commission is also considering a "Purpose Statement" that would explicitly instruct state judges that federal case law is not binding. Additionally, following advice from Legislative Counsel, the directive that the statute should be "liberally interpreted" to maximize deterrence has been moved into its own separate section of the Business and Professions Code.

- Sector Risk: This directive creates a "legal black hole" where businesses cannot rely on established precedents to evaluate the legality of a transaction. The resulting uncertainty adds a "legal tax" to every deal and further pushes investment to other states with predictable, aligned federal standards.

As the Commission's own reports have noted, "dual enforcement layers" and "inconsistent analytical standards" impose "excessive burdens" on companies. Abandoning federal uniformity in favor of these combined frameworks will disrupt the capital flow essential for medical innovation.

The procompetitive benefits of life science M&A are not theoretical. A peer-reviewed study published in Concurrences Law & Economics by Cornerstone Research, analyzing over 33,000 drug projects

between 1995 and 2024, found that drugs in development that undergo M&A are nearly twice as likely to reach patients as non-acquired ones (7.7% vs. 3.9%). For novel drugs, those recognized by the FDA as filling an unmet medical need or demonstrating substantial improvement over available therapy, the effect is even
more pronounced: acquired novel drugs are over three times more likely to launch than non-acquired ones (3.2% vs. 0.94%). When a small firm is acquired by a large firm with drug-launch experience, the acquired drug is three times more likely to reach patients, five times more likely to launch as a novel drug, and approximately 24 times more likely to launch with an entirely new mechanism of action. These findings demonstrate that M&A is not a threat to pharmaceutical innovation, it is one of its primary drivers. Any merger framework that presumes these transactions are anticompetitive without accounting for this evidence risks restricting the very activity that has made California the world leader in biotechnology, bringing innovative new treatments to patients all over the world.

Life science M&A is not a symptom of market failure, it is the very system that has created the state's second largest industry which has consistently added jobs to California's economy, year-over-year. As the empirical record demonstrates, M&A is a proven driver of innovation that brings new therapies to patients who need them most.

Biocom urges the Commission to reject these combined frameworks and maintain alignment with established federal antitrust standards. California's patients, workers, and research institutions deserve a merger standard that reflects the realities of the industry that serves them. Please feel free to contact our lobbyist Moira Topp at Moira@ToppStrategies.com or (916) 206-4459 with any questions.

Sincerely,

Gilbert Lara
Government Affairs Manager