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STB Docket No. EP 711 (Sub-No 1)

To whom it may concern:

Thank you for the opportunity to submit comment in this proceeding. I am an American researcher based in one of the world's leading engineering universities[1] and share my knowledge for the benefit of the proceeding and my fellow Americans. My department is housed within Aalborg University's Technical Faculty of IT and Design (TECH) which focuses on technology and knowledge for sustainability and incorporates the 17 UN Sustainable Development Goals in its research, education, and cooperation.[2] Directly relevant for this hearing is Goal 9 on Industry, Innovation and Infrastructure: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.[3]

With this hearing, the Surface Transportation Board (STB) contemplates an "open access" policy for various privately-owned freight railroads. My comments are informed by my doctoral study of open access policies in networks across around the world and the resulting impact on innovation. While most of my investigations have focused on telecommunications networks, the results are meaningful for the freight rail sector. For one, US telecom law derives from the Interstate Commerce Act. Moreover, the economics of networks, whether freight rail, telecommunications, or utilities, have common regulatory concepts: market definition, competition, barriers to entry, economies of scale, multisided markets, technology, innovation, interconnection, switching, terminal pricing, licensing, and so on.

This comment highlights US leadership and the importance of deregulatory market-based policy, how the STB's proposed regulation amount to open access price controls, peer-review literature from network economics with investigating rail deregulation and price controls which the STB now contemplates, that the STB does not conduct this proceeding to remedy a market failure but rather to justify its existence, that the Notice of Proposed Rule Making (NPRM) does not adequately reflect the problems of reciprocal switching nor the salient stakeholders, why the STB exceeding its authority is harmful, why investment incentives for freight railroads are important, and how freight rail serves the public interest through investment. Please feel free to contact me with any questions.

Sincerely,

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[1] "Ranking of AAU," accessed February 9, 2022, https://www.en.aau.dk/research/ranking/.
[2] "THE 17 GOALS | Sustainable Development," accessed February 9, 2022, https://sdgs.un.org/goals.
[3] "Goal 9 | Department of Economic and Social Affairs," accessed February 9, 2022, https://sdgs.un.org/goals/goal9.

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US vs. Europe comparisons on freight rail demonstrate the historical wisdom of the deregulatory, market-based approach.

The US is recognized as a global leader in freight rail, not only for the scale of the networks, but for amount and type of goods transported, innovation, commitment to climate goals, safety, and market-based regulatory policy. By contrast, the European Union (EU) believes its freight rail policy is far from optimal and has proposed reforms to improve outcomes.[4] It has long been the goal of EU policymakers to harmonize the legal and technical frameworks for freight rail a create a Single European Rail Area, a goal which has remained unrealized for decades.[5] The EU Agency for Railways describes the many problems for freight rail including logistical challenges, lack of coordination across countries, lack of information, and limited integration with other modes of transport. As a result, shippers choose other modes of transport, and the share of freight rail in all shipping has stagnated. [6] This failure to transition more shipping to freight rail is, in part, holding EU back from achieving its climate goals.[7] The European Commission reports that the need to improve freight policy is further exacerbated by rising traffic demand, road congestion, security of energy supply and climate change.[8]

US policymakers may take for granted that its accomplishments are owed in part to the economies of scale achievable in large country, the competition that emerges with multiple networks and modal technologies, and the Constitutional framework for interstate commerce. Moreover, the US freight rail industry has long overcome many of the problems that plague Europe because private companies have invested heavily in information

[4] Raphaelle Chapuis et al. McKinsey. "Bold Moves to Boost European Freight". January 21, 2022. https://www.mckinsey.com/industries/travel-logistics-and-infrastructure/our-insights/bold-moves-to-boost-european-rail-freight

[5] "Building the Single European Railway Area," accessed February 9, 2022, https://www.consilium.europa.eu/en/policies/single-eu-railway-area/.

[6] "Rail Freight in the European Union" (European Union Agency for Raulways, 2018), https://www.era.europa.eu/sites/default/files/library/docs/leaflets/rail_freight_in_the_european_union_en.pdf.

[7] "2030 Climate & Energy Framework," accessed February 9, 2022, https://ec.europa.eu/clima/eu-action/climate-strategies-targets/2030-climate-energy-framework_en.

[8] "Rail Research and Shift2Rail," accessed February 9, 2022, https://transport.ec.europa.eu/transport-modes/rail/rail-research-and-shift2rail_en.

technology, rail innovation, and safety measures. Importantly US policy has to a large degree created and preserved incentives for investment. Notably European freight rail suffers from a lack of investment and scale, which reflects in part government ownership of freight rail networks and inability to consolidate.

Reciprocal switching is "open access" in disguise.

The NPRM posits a definition of "reciprocal switching."[9] Notably what can be termed as a conventional definition of reciprocal switching occurs in freight rail networks today and is analogous to the practice in which third party actors use, if not resell, incumbents' telecom and utility networks. In general, actors participate in voluntary arrangements because they are efficiency-enhancing and profit-maximizing. When there is unused capacity in networks, it makes sense to make it available at a price equal or above the network owner's marginal cost. Naturally, there can be different prices under different circumstances. This makes the STB's interest to set price problematic.

The essence of the conventional reciprocal switching relationship is that it is voluntary. The notion of a reciprocal relationship implies *reciprocity*, an exchange for mutual benefit.

STB contemplates proposing a set of rules to intervene in existing, voluntary relationships and to force an incumbent network to accept traffic on terms it would not otherwise accept. The regulations which STB proposes are neither voluntary nor mutually beneficial. As such, they cannot be called "reciprocal." Correctly stated, the STB promotes "forced switching."

This is not to say that rail regulators should never intervene in the marketplace. Indeed the STB descends from what probably was the world's first network regulator, the Interstate Commerce Commission. Notably a regulator is established to complete a process, for example to transition a market from typically state-owned monopoly to full competition. Because the ICC achieved its goal of a competitive rail market, Congress decommissioned the agency and created the STB to police the marketplace as needed. The STB has a set of tools to intervene when it finds anticompetitive activity.

There are different meanings of "open access" which should be clarified. Open access in academia refers to libraries and copyright and a set of principles and practices to distribute research free to end user while another party covers the cost. Here the model is designed to facilitate education. The goal is neither efficiency nor investment, which are ostensible goals of the STB.

Open access is also the practice and theory that the infrastructure of a network and the business model of services are kept functionally separate. The STB does not appear to desire to separate these functions, though that could be a goal. Notably open access has a history in freight rail abroad with mixed results.[10]

What the STB appears to desire in this proceeding is to control and price the flow of rail traffic in the way and to the degree it believes is preferable to the shipper or the STB's preferred competitor, with little or no regard to the needs of the incumbent network. In the same way that network regulators proffer "open access" as a nice way to say "price control," STB proffers that its regulation for "reciprocal" switching is voluntary and mutually beneficial, when in reality it is not.

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[9] "Under reciprocal switching, an incumbent carrier transports a shipper's traffic to an interchange point, where it switches the rail cars over to the competing carrier. The competing carrier pays the incumbent carrier a switching fee for bringing or taking the cars from the shipper's facility to the interchange point, or vice versa. The switching fee is incorporated in some manner into the competing carrier's total rate to the shipper. Reciprocal switching thus enables a competing carrier to offer its own single-line rate to compete with the incumbent carrier's single-line rate, even if the competing carrier's lines do not physically reach a shipper's facility."

[10] Kurosaki, Fumio, and Manoj Singh. "Comparison of three models for introducing competition in rail freight transport." *Transportation Research Procedia* 14 (2016): 2820-2829.

There is little to no academic evidence that this policy will achieve the STB's goal of competition. In fact, it is likely to deliver the opposite outcome, which is reduced efficiency, lowered investment, and ultimately, lowered output.

Definitive academic evidence demonstrates that "open access" policies harm private investment.

The STB can learn by looking at empirical studies of open access policies in telecommunications. The most recent and comprehensive study was performed by Briglauer et al in 2021[11] whihc investigates open access policies on fiber optic networks using a panel set of data from 32 countries in the OECD for the period 2003 to 2019. The network is assumed to be a monopolist or duopolist in a two-sided framework. The results demonstrate that open access regulations directly and negatively impact investment and indirectly negatively impact subscriptions. The study also summarizes the 8 most important and peer-reviewed empirical studies of the impact of open access of investment, innovation and total welfare.[12] Overall the studies find that the impact of open access policies are either negative or inconclusive. The one instance in which a positive outcome is observed favors Amazon's Twitch.tv in 2014.

Multiple, definitive studies about the benefits of deregulatory freight rail policy, the opposite of price controls and open access, include but are not limited to Cunningham,[13] Winston,[14] Vachal,[15] Bitzen,[16] Ellig,[17] and Schmalensee.[18]

The proposed regulations enable reflect perverse incentives and capture.

The conclusions of the economic evidence will likely not surprise to the STB. However the agency engages in the misguided rule making because the proceeding communicates meaning to preferred stakeholders, even if others (e.g., labor, passenger trains) oppose the regulation. While there is pecuniary benefit to lobbyists and lawyers to pursue this regulation, the costs are borne by Americans, citizens, and taxpayers who suffer from dysfunctional, performative government.

The preferred shipper stakeholders, predominately in the chemical sector, are not satisfied with the outcomes of bilateral negotiations with railroads. While most could avail themselves to other modes of delivery, they instead coordinate their efforts and lobby the STB to mandate the switching terms.

By statute, the STB is chartered to regulate in the case of harmful market power. It must first establish a market failure before it regulates. The STB declines to do that here. When it issued the notice of proposed rulemaking

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[11] Briglauer, Wolfgang, et al. "Net Neutrality and High Speed Broadband Networks: Evidence from OECD Countries." (2021). https://www.econstor.eu/bitstream/10419/238012/1/Briglauer-et-al.pdf
[12] Ibid p. 6
[13] Cunningham, Paul A., and Robert M. Jenkins III. "Railing at Open Access: Proposals in the Rail Industry." *Regulation* 20 (1997): 42.
[14] Winston, Clifford, et al. *The economic effects of surface freight deregulation*. Brookings Institution Press, 2010.
[15] Kimberly Vachal, John Bitzan, Tamara Vanwechel & Dan Vinje (2006) Differential Effects of Rail Deregulation on US Grain Producers, The Journal of Policy Reform, 9:2, 145-155, DOI: 10.1080/13841280600771939
[16] Bitzan, John D., and Theodore E. Keeler. "The evolution of US rail freight pricing in the post-deregulation era: revenues versus marginal costs for five commodity types." *Transportation* 41.2 (2014): 305-324.
[17] Ellig, Jerry. *Infrastructure Policy: Four Lessons from Freight Rail Deregulation*. No. 07713. George Mason University, Mercatus Center, 2017.
[18] Schmalensee, R.L., Wilson, W.W. Modernizing U.S. Freight Rail Regulation. *Rev Ind Organ* **49,** 133–159 (2016). https://doi.org/10.1007/s11151-016-9515-2

in 2016, it sought a workaround with another euphemism, "competitive switching," an opaque standard of how and when it decides to impose regulation.

Because of its sector-specific nature, the STB is subject to capture from discrete constituencies that become fluent in arcane, sector-specific regulation. Nobel economist George Stigler's idea of "regulatory capture," the observation that regulation is acquired by industry and operated for its benefit, has been documented across a range of industries: telecommunications, airlines, oil and gas, etc.[19] Stigler describes how the regulated party colludes with the regulator to create a mutually reinforcing regime. Capture allows regulators to exert authority to retain support and maintain power even though the industry has become obsolete. Samuel P. Huntington explored this further,[20] and Marver H. Bernstein extended Huntington's analysis and capture perspective to six additional agencies: the FTC, the Federal Power Commission, the Civil Aeronautics Board, the FCC, the National Labor Relations Board, and the SEC.[21]

Mancur Olson described the "collective action" that can succeed to win favorable outcomes in policy.[22] Olson notes that special interests tend to be overrepresented, as the diffuse majority is costly to organize.[23] This is particularly the case in transportation policy, a topic that are sufficiently arcane to a general audience, making it even more susceptible to abuse by special interests. Although the public can benefit from transportation policy, the technical nature of these policies means they attract only a minority of interest from scholars, advocates, and policymakers.

Stanford economists Roger Noll and Bruce Owen described the predictable opposition to regulatory reform in *The Political Economy of Deregulation* (1983).[24] Noll and Owen observe that regulation is not neutral; it benefits certain firms at the expense of others and helps and hinders different interest groups. Importantly, they observe that consumers and taxpayers are the parties least likely to be represented by special interest groups. Noll and Owen observe that many law firms and consumer groups claim to operate in the public interest, but regulatory process gives them a source of power they do not have otherwise. As such, they are biased in favor of regulation over market solutions, a typical response of the policy entrepreneur whom James Q. Wilson described as seizing an opportunity to "serve as a vicarious representative of groups not directly part of the legislative process."[25]

Macey describes how regulatory agencies will seek new constituencies to replace old ones that have disappeared and will look for constituencies that have powerful congressional allies.[26] Indeed, Macey observes that these allies evolve "in such a way that their survival depends on the continued success of that agency."[27] In fact, law firms and consultancies build their practice around a particular agency. He notes:

> The ability of administrative agencies, their allies, and their constituents to generate and control information relevant to that agency makes it difficult to design systems that can reliably identify obsolete agencies and respond to that obsolescence in a constructive way.[28]

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[19] George Stigler, "The Theory of Economic Regulation," *Bell Journal of Economics and Management Science* 2, no. 1 (Spring 1971): 3–21, https://www.jstor.org/stable/3003160?seq=1#metadata_info_tab_contents.
[20] Samuel P. Huntington, "The Marasmus of the ICC: The Commission, the Railroads, and the Public Interest," *Yale Law Journal* 61, no. 4 (1952).
[21] Marver H. Bernstein, "Regulating Business by Independent Commission," *Indiana Law Journal* 31, no. 1 (Fall 1955); and Marver H. Bernstein, "Independent Regulatory Agencies: A Perspective on Their Reform," *Annals of the American Academy of Political and Social Science* 400, no. 1 (March 1972).
[22] Mancur Olson, *The Logic of Collective Action: Public Goods and the Theory of Groups* (Cambridge, MA: Harvard University Press, 1971).
[23] Olson, *The Logic of Collective Action*.
[24] Roger G. Noll and Bruce M. Owen, *The Political Economy of Deregulation: Interest Groups in the Regulatory Process* (Washington, DC: AEI Press, 1983).
[25] James Q. Wilson, *The Politics of Regulation* (New York: Basic Books, 1980).
[26] Macey, "Administrative Agency Obsolescence and Interest Group Formation," 919.
[27] Ibid
[28] Ibid

Indeed, the STB believes that deregulation was a success and that the rail industry today is more safe, solvent, and attractive to investors. But, as Macey describes, the agency seeks a new constituency. In the case of the STB, this new constituency is reportedly "aggrieved" shippers. Tellingly, the STB notes:

> Many shippers find railroads largely uninterested in their business; many shippers feel that they have little bargaining power with respect to the contracts they are offered; and while intermodal and intramodal competition for much traffic remains vibrant, many captive shippers have no realistic avenue for relief from what they view, as their ancestors did in 1887, as abusive practices by powerful, dominant railroads.[29]

Yet so-called captive shippers are hardly small companies, at least not uniformly. After the board reformed its simplified rate cases in 2007, the first shipper to file cases under the new rules was chemical giant DuPont. While the STB often cites small farmers as well, the reality is that large firms and trade associations consume much of the board's time and attention. To characterize these actors as helpless, small rail shippers is misleading at best.

The chemical sector, which spearheads the Rail Customer Coalition, is vocal. Yet as Cal Dooley, former CEO of the American Chemistry Council, said, "The US remains the most attractive place in the world to invest in chemical manufacturing."[30] If this is the case, then the shipping conditions are such that they do not distract from the US being the most attractive place to invest.

When the STB formally adopted a rule making process to begin the reciprocal switching exercise, it was at the NITL's request, not by STB's own independent assessment that there was such a need.[31] NITL waged a political information campaign preceding the rulemaking, and the Rail Customer Coalition has loudly occupied the space since.[32]

The NPRM does not adequately reflect the many problems with reciprocal switching nor the salient stakeholders which filed.

In the NPRM, the STB details in five paragraphs the arguments of shippers in favor of reciprocal shipping. However it devotes just two paragraphs to the arguments against the regulation. The oversimplification of the

[29] Rate Reform Task Force, "Report to the Surface Transportation Board," April 2019. https://www.stb.gov/news-communications/latest-news/pr-19-06/

[30] ICIS News, "US Shale-Related Chem Industry Investments Hit $200bn—ACC," September 11, 2018, https://www.icis.com/explore/resources/news/2018/09/11/10258678/us-shale-related-chem-industry-investments-hit-200bn-acc/.

[31] Surface Transportation Board, "Surface Transportation Board Proposes New Reciprocal Switching Regulations, Seeks Public Comment," press release, July 27, 2016, https://www.stb.gov/newsrels.nsf/be6a5808fba140978525788400651532/d34fd3a82f219e8f85257ffd0054a358?OpenDocument; Federal Register, "Petition for Rulemaking to Adopt Revised Competitive Switching Rules; Reciprocal Switching," August 3, 2016, https://www.federalregister.gov/documents/2016/08/03/2016-17980/petition-for-rulemaking-to-adopt-revised-competitive-switching-rules-reciprocal-switching; and Surface Transportation Board, "Petition for Rulemaking to Adopt Revised Competitive Switching Rules," July 27, 2016, https://www.stb.gov/decisions/readingroom.nsf/UNID/11DFF4D3703B81A885257FFD00475D63/$file/44871.pdf.

[32] Jennifer Hedrick, "Guest Op-Ed: STB Proposal Makes the Right Switch Toward Rail Competition," Eno Transportation Weekly, September 12, 2016, https://www.enotrans.org/article/guest-op-ed-stb-proposal-makes-right-switch-toward-rail-competition/. See Fright Rail Reform, Resources, https://www.freightrailreform.com/resources/. The organization describes itself as "a large collection of trade associations representing a broad cross section of manufacturing, agricultural, and energy industries with operations and employees throughout the United States."

arguments against the regulation obscures that many diverse stakeholders filed, including intermodal competitors UPS[33] and HubGroup[34], labor unions,[35] and Amtrak.[36]

Moreover, more arguments were supplied against the regulation than the STB admits. This short shrift to opponents' argument gives the NPRM an air of being pre-determined in favor of forced switching, not a rational, scientific, linear process which has identified market failure which attempts to remedy. As such, the STB proceeding is contrived and should be disbanded.

The STB exceeding its authority disrespects Congress, the Constitution, and citizens.

The NPRM recognizes the review that its regulations exceed its authority. While this may sound banal on the surface, it's valuable to restate why it's is a serious problem. This conduct of unauthorized regulatory proceedings and regulation is a waste and misdirection of scarce resources. It promulgates misguided policy and ensures regulatory employees and associated stakeholders. Had regulation been held at the 1980 level, America's economy today would have $4 trillion more in gross domestic product today.[37] This means that America's economy suffers from less growth, and its people have less money.

America is a rule of law country. When regulatory agencies exceed their authority, it is an affront to citizen and consumers. Americans are angry with runaway budgets and bureaucracy, problems of persistent federal deficits and growing federal debt. As a major shift in views, perhaps a product of the covid pandemic, a majority of Americans now favor that the federal government do less, not more.[38] The push back of against government overreach is on display with the recent class action lawsuit against SEC for exceeding its authority. The SEC attempted to regulate cryptocurrency when Congress has not given it permission to do so. Investors have lost billions of dollars.[39]

Presently the statute enables shippers to petition for switching. They must show anticompetitive conduct. STB itself notes that there are few complaints and that it hasn't found the market competitive. Further, it declines to conduct such an inquiry. This should be the stopping point for STB, but it presses on nonetheless. It appears that STB wants to regulate when Congress prohibited it. The agency was reauthorized in 2015 and that law did not recommend substantive action related to switching.

If new regulations are truly necessary, STB should go to Congress and ask for the statue updated statue. In fact, this has been done in security in telecommunications with near unanimous Congressional support in the Secure Equipment Act (Public Law 117-55).

[33] UPS, October 26, 2016, https://dcms-external.s3.amazonaws.com/MPD/17248/01BE8797636DD2EC852580580075F943/241904.pdf.

[34] Hub Group, October 26, 2016, https://dcms-external.s3.amazonaws.com/MPD/17248/6810F0F0D6DA4186852580580058949F/241879.pdf.

[35] Transportation Division of the International Association, October 26, 2016, https://dcms-external.s3.amazonaws.com/MPD/17248/986FF055AAF79B82852580580076EC00/241907.pdf.
Brotherhood Of Maintenance, August 3, 2016, https://dcms-external.s3.amazonaws.com/MPD/17248/C079532569E6B32785258058005D3427/241881.pdf.

[36] Amtrak. November 22, 2016 https://dcms-external.s3.amazonaws.com/MPD/17248/B236D0E131985DDE85258088005DA0F1/242242.pdf

[37] Bentley Coffey, Patrick McLaughlin, and Pietro Peretto, "The Cumulative Cost of Regulations," *Review of Economic Dynamics* 38 (2020): 1–21.

[38] Jeffrey M. Jones, "Americans Revert to Favoring Reduced Government Role," Gallup.com, October 14, 2021, https://news.gallup.com/poll/355838/americans-revert-favoring-reduced-government-role.aspx.

[39] Roslyn Layton, "In The Ripple Case, The SEC Is Now On Trial – And Knows It," Forbes, April 8, 2021, https://www.forbes.com/sites/roslynlayton/2021/04/08/in-the-ripple-case-the-sec-is-now-on-trial--and-knows-it/.

Preserving investment incentives are critical to protecting retirees and achieving climate goals.

The NPRM recognizes the view that the regulations violation freight rail carrier rights. It is worth restating why this matters. The law was established to allow railroad carriers to manage their networks efficiently. When STB violates that, it is a breach of contract. From the carrier's point of view, it reduces shareholder returns and profit for investment. Ensuring a high level of investment means that railroads are not only up to date, but advanced with state-of-the art technology to maximize output, reduce emissions, and protect safety. The freight rail industry has invested on average $25 billion annually in recent years.[40]

More largely, if the STB wrests control of the network from the owner it is equivalent to a regulatory taking of property without just compensation. As such the value of the property—the rail network—is thus reduced. In such situations, the network operator is discouraged from further investment because it cannot exercise ownership and management of the network.

Importantly, the ability of freight rail to raise capital has to do with delivering on commitments. Freight rail stocks are important part of retirement funds held by ordinary Americans in their retirement fund. It's a reliable category for long term predictable investment. For example the 60 Plus Association which advocates for America's seniors over age 60 notes, "The proposed regulatory changes will hurt rail revenues, reducing fund returns for almost all U.S. senior citizens invested in market-based retirement accounts and jeopardizing the pensions of retired rail workers. As of January 24th, 2022, U.S. Class I Railroads totaled $456.5 billion in market capitalization, much of which is owned by U.S. retirement accounts."[41]

More largely, the freight rail industry has attracted a diversity of investors, including activist investors, because of its commitment to climate goals.[42] Green investment in clean transportation like freight rail among other industries is more than a trend. Globally "the proportion of green revenues generated by those companies is equivalent to a market capitalization of US$4.3 trillion, or 5.4% of the total value of global listed equities. This makes the green economy materially larger than the oil and gas sector, which represents around 3% of the market," notes FTSE Russel.[43]

Freight rail performed during the pandemic, demonstrating legitimate and authentic public interest.

The STB in interested to promote the public interest, which is the general welfare of the public that warrants recognition and protection and which justifies government policy. Congress' deregulatory approach to freight rail reflects the public interest and the will of the American people that there is a facilities-based, light touch, pro-market approach to freight rail which preserves private investment.

For evidence of the public interest served, the STB should look no further than the exemplary performance of the freight rail industry during the pandemic. The COVID-19 pandemic offers important policy lessons about investment incentives. During the pandemic, freight rail has provided consistent service without significantly

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[40] Steve Pociask and Liam Sigaud, "Veering Off the Rails: How the Recent Push to Reregulate Railroads Threatens Consumer Welfare" (ACI, October 20, 2021), https://www.theamericanconsumer.org/wp-content/uploads/2021/10/Final-Reciprocal-Switching.pdf.

[41] American Association Of Senior Citizens, January 27, 2022, https://dcms-external.s3.amazonaws.com/DCMS_External_PROD/1643316307308/303598.pdf.

[42] "Rail Insider-Who's Buying Shares in North America's Freight Railroads — Why It Matters. Information For Rail Career Professionals From Progressive Railroading Magazine," Progressive Railroading, February 2008, https://www.progressiverailroading.com/rail_industry_trends/article/Whos-buying-shares-in-North-Americas-freight-railroads-mdash-why-it-matters--15028.

[43] Lee Clements, "Putting Numbers to the Global Green Economy | FTSE Russell," FTSE Russell, February 11, 2021, https://www.ftserussell.com/blogs/putting-numbers-global-green-economy.

increases in price or decreases in quality of service.[44] Such observed experience contradicts the pro-regulatory assertion that network service and performance will suffer without extensive government controls. Instead the COVID experience has shown that deregulatory policy and investment incentives have delivered socially valuable outcomes.

Following the conventional view, the pandemic would be the opportune time for network owners to show their ostensibly true colors by behaving in anticompetitive ways. Indeed, the desired “reciprocal switching” regulations was not in place—and yet freight rail networks delivered essential products and industrial inputs without reported complaints from shippers.

Surface transportation networks continued making deliveries despite immense challenges posed by the virus and an economic downturn. The goods shipped included essential industrial inputs and critical products such as chemicals for medicines and food packaging, chlorine-based disinfectants for treating water, crop fertilizer, animal feed, municipal waste, energy supplies, and essential household products.

What might this network behavior under crisis tell about regulation during normal times? Freight rail has enjoyed record-setting levels of private investment, $740 billion since 1980. Indeed, network owners pursuing private investment incentives have yielded socially valuable results, notably the continued investment, maintenance, and upgrading of networks so that service can continue even during a crisis.

This observation is not a repudiation of all regulation. It merely suggests that freight rail did the socially responsible thing without the STB telling it to.

Going forward, freight network owners are positioned to help the U.S. economy green its way out of the crisis without the need for additional regulation. Energy efficiency makes environmental and business sense.. Under current network conditions, moving the same amount of freight by rail is three times more energy efficient than by truck.

This experience should inform the evaluation of new policy proposals. For example, the U.S. House of Representatives reportedly proposed a $600 billion dip into deficit spending to help subsidize infrastructure for wireline networks and highways.[45] These proposals reward traditional political stakeholders whose business models are disrupted by better and greener technologies. [46] Rather than use taxpayers’ money during a financial crisis, digitally connected freight rail prefer to use their shareholders’ money and most have opted to forgo government bailouts. [47]

That networks are secure, available, and operational is critical to the economy and itself fulfills important social goals. Private network providers—by investing for the future—ended up prepared for the unexpected. No regulator told network providers in advance to be ready for the pandemic, but following their investment incentives, network providers have continued to deliver service through the crisis and to maintain quality even with increased constraints.

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[44] Schofer, Joseph L., Hani S. Mahmassani, and Max TM Ng. "Resilience of US Rail Intermodal Freight during the Covid-19 Pandemic." *Research in Transportation Business & Management* (2022): 100791.
[45] Roslyn Layton, “House Proposes $600 Billion In Infrastructure Spending For Networks That Private Providers Would Otherwise Deliver,” Forbes, July 7, 2020, https://www.forbes.com/sites/roslynlayton/2020/07/07/house-proposes-600-billion-in-infrastructure-spending-for--networks-that-private-providers-would-otherwise-deliver/.
[46] Roslyn Layton, “House Proposes $600 Billion In Infrastructure Spending For Networks That Private Providers Would Otherwise Deliver,” Forbes, July 7, 2020, https://www.forbes.com/sites/roslynlayton/2020/07/07/house-proposes-600-billion-in-infrastructure-spending-for--networks-that-private-providers-would-otherwise-deliver/.
[47] Marc Scribner, “Partial Deregulation Keeps Freight Rail on Strong Footing During the Coronavirus Outbreak,” Reason Foundation, May 11, 2020, https://reason.org/commentary/partial-deregulation-keeps-freight-rail-on-strong-footing-during-the-coronavirus-outbreak/.

Other scholars have also recognized this exemplary performance during the pandemic, including Northwestern transportation and infrastructure experts Joseph Schofer, Hani Mahmassani, Max Ng and Breton Johnson.[48]

Freight rail achieves the best rating of US infrastructure because of policy which preserves and promotes investment incentives.

In the American Society of Civil Engineers (ASCE) most recent quadrennial Report Card for America's Infrastructure freight rail earned the highest score of all.[49] Freight rail is essentially private owned and operated, and owners invest a whopping $260,000 per mile annually. From 2019, Class I capital expenditures — including track, structures, and equipment — totaled $38.3 billion over 198,554 operating track miles. In 2018 there were 1.7 million ton-miles per day transported across America's freight rail network, an increase of over 100,000 ton-miles from the previous year and an increase of nearly 400,000 over the past 20 years. Goods moved on the nation's freight network are projected to grow from 1.40 billion tons in 2018 to 1.58 billion tons in 2045.

[48] "U.S. Freight Railroads Bolstered Supply Chain Resilience during Pandemic," July 6, 2021, https://news.northwestern.edu/stories/2021/07/u-s-freight-railroads-bolstered-supply-chain-resilience-during-pandemic/.

[49] Roslyn Layton, "Almost Failing: U.S. Improved To C- On Infrastructure Report Card, But Too Many D's Remain," Forbes, March 9, 2021, https://www.forbes.com/sites/roslynlayton/2021/03/09/almost-failing-us-improved-to-con-infrastructure-report-card-but-too-many-ds-remain/.