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BEFORE THE SURFACE TRANSPORTATION BOARD

Docket No. EP 334 (Sub-No. 8A)

Joint Petition for Exemption of Arbitration Rule
from Application of 49 U.S.C. § 10706 and Motion to Dismiss

Petition to Reopen and Condition or Revoke Approval

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Jeffrey O. Moreno
Jason D. Tutrone
Thompson Hine LLP
1919 M Street, NW Suite 700
Washington, DC 20036
(202) 331-8800

Jeff.Moreno@ThompsonHine.com
Jason.Tutrone@ThompsonHine.com

Counsel for the Railway Supply Institute

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The Railway Supply Institute (RSI) submits this petition under 49 U.S.C. §§ 1322(c) and 10706(c), and 49 C.F.R. § 1115.4, seeking reopening of this proceeding, review of Rule 25 of the AAR Code of Car Hire (the Arbitration Rule or Rule), and termination of the Board's approval of the Arbitration Rule under 49 U.S.C. § 10706(a) absent appropriate conditions that address the Arbitration Rule's failure to provide an incentive to invest in an adequate boxcar¹ fleet and its fostering of TTX's dominance of the boxcar market. This petition is supported by the attached verified statement of Dr. Nicholas Powers.

I. Identity and Interest of the RSI

The RSI advocates on behalf of the railway supply industry, from communications and signaling suppliers to railcar owners and lessors. Its Equipment Leasing Committee (ELC) comprises several railcar lessors that privately invest in the national railcar fleet. Private investment in railcars plays a critical role in ensuring an adequate supply of railcars to meet the nation's freight transportation needs.

II. Summary

The Arbitration Rule establishes the process for setting car-hire rates governing railroad use of railcars registered to other railroads. The Interstate Commerce Commission approved the Arbitration Rule under 49 U.S.C. § 10706(a) after its prescription formula for setting car-hire rates "failed to adjust rationally to changes in the supply and demand for cars" and the rail industry began experiencing "significant freight car surpluses" while car hire rates "continued to rise." *Car Hire Regulation*, No. EP 334 (Sub-No. 6) et al., 1992 ICC LEXIS 34, at *3 (ICC Feb. 18, 1992). Today, however, the rail industry faces the opposite problem: car-hire rates for

¹ This petition focuses on non-refrigerated boxcars due to the imminent shortage of these cars and challenges gathering data about other car types. But the factors underlying the Arbitration Rule's failure to encourage adequate investment would affect all railcar types subject to the Rule.

boxcars have remained stagnant under the Arbitration Rule despite a severe impending boxcar shortage as 22% of the boxcar fleet will reach its regulatory life before 2030. Powers V.S. 44. Additionally, while stagnant car-hire rates have discouraged investment in railroad-registered boxcars, boxcar investment by TTX, Inc, which is a railroad-owned entity that operates a pool of boxcars under antitrust immunity and is not subject to the Arbitration Rule, has far-outpaced investment by others, and TTX holds a dominant share of the boxcar market.

The passage of time has shown that several of the ICC's fundamental assumptions and conclusions leading to its approval of the Arbitration Rule were wrong and that the Arbitration Rule, in its current form, does not comply with the public interest or further the Rail Transportation Policy (49 U.S.C. § 10101; RTP). Thus, the Arbitration Rule does not meet the requirements for approval under 49 U.S.C. § 10706(a), which requires that the Rule further the RTP, and may be conditioned or terminated under § 10706(c), which allows the Board to condition or terminate approvals that do not comply with the public interest or further the RTP.

First, the ICC incorrectly assumed that the Arbitration Rule would produce rates that approximate an effective market. *Car Hire Regulation*, No. EP 334 (Sub-No. 6) et al., 1992 ICC LEXIS 34, at *15 (ICC Feb. 18, 1992). But it failed to recognize that the car-hire market is a regulated market that lacks normal pricing signals. This is evident in the following facts:

- Contrary to expectations in an effective market, railcar users do not gain improved access to railcars by agreeing to a greater car-hire rate.
- The Arbitration Rule provides for rate arbitration as a backstop when parties cannot agree on a rate, but arbitration is financially viable in few circumstances.
- Because the car-hire market lacks demand-based pricing signals, arbitration is not likely to produce a rate that reflects a normal market rate.

Ultimately, the Arbitration Rule has led to stagnant car-hire rates that do not encourage adequate investment in new boxcars to avoid the impending boxcar shortage. These rates are well below the rates that TTX, which is not subject to the Arbitration Rule and has been actively investing in new boxcars, charges for its boxcars.

Second, the ICC's concerns in 1992 about the risk of rate manipulation under the Arbitration Rule have materialized. The Arbitration Rule's default-rate standard, which automatically applies to each car a default rate equal to the lowest negotiated rate in effect for the car type in the quarter before the car was registered, entices users to induce exceptionally low negotiated rates. Over time, default rates have dropped to suspiciously low levels for several boxcar types.

Third, railroad consolidation has undermined the ICC's attempt to ensure that any two railroads cannot block needed reforms to the Arbitration Rule. Today, two railroads hold a high enough voting share to block changes that would address the Arbitration Rule's problems.

Fourth, by effectively suppressing boxcar car-hire rates, the Arbitration Rule has allowed TTX to establish a dominant share of the boxcar market. This is inconsistent with the RTP, which promotes competition, and the public interest in an adequate boxcar supply.

At bottom, the Arbitration Rule has not lived up to the ICC's expectation that "it will carry out the [RTP] which emphasizes allowing competition to set rates to the maximum extent possible so as to minimize federal regulatory control." *Car Hire Compensation (Car Hire)*, 9 I.C.C.2d 80, 92 (1992). Board intervention is now necessary to address the impending boxcar supply crisis and TTX's dominant market position.

III. Background

A. The Car-Hire System

Car hire is the compensation that one railroad pays another railroad for use of its railcars. *Car Hire*, 8 I.C.C.2d 222, 223 (1991). It typically involves both an hourly rate and mileage rate. Powers V.S. 9. The hourly rate produces the vast majority of car-hire revenue. *Id.* at 10 n.16.

Car hire arises from the interchange of railcars between railroads, which is necessary to facilitate efficient movement of freight across the rail network without having to transfer freight from one carrier's railcar to another's. Railroads have a mandatory interchange requirement under which they must interchange railcars to and from other carriers as necessary, regardless of railcar ownership, to facilitate through movements of rail traffic between origins and destinations served by different carriers. *Car Hire Regulation*, EP 334 (Sub-No. 6) et al., 1992 ICC LEXIS 34, at *13 (ICC Feb. 18, 1992). Under this operational design, railroads routinely use others' railcars, and it is common for a railcar to travel far off its home network for long periods.

The system for establishing and paying car hire is set out in the Code of Car Hire (Code), which is an agreement between dozens of railroad subscribers.² Rule 25 of the Code, known as the Arbitration Rule, establishes the process for setting car hire rates.³ The ICC approved the Arbitration Rule pursuant to 49 U.S.C. § 10706, which grants antitrust immunity to participants.

In addition to railroads, railcar lessors participate in the car-hire system. The Code applies to railcars that are registered in Railinc's Umler system under a railroad's mark, whether those cars are owned or leased by the railroad. A common leasing practice is for a lessor to obtain rights from a railroad to register the lessor's cars in Umler as carrying the railroad's mark.

² AAR publishes the Code in AAR Circular OT-10.

³ The Code also contains several rules that implement Rule 25, including Rule 1.H governing the administration of default rates.

This facilitates a “per diem” leasing arrangement where the lessor receives all the car hire earned by the leased cars and assumes the role as the railroad lessee’s agent for negotiating and arbitrating car hire under the Arbitration Rule. These leases promote car supply by transferring the financial risk of a railcar from a railroad to the lessor. While other leasing arrangements exist whereby the railroad assumes more financial risk and control over establishing car hire for other car types, RSI estimates that most lessor-supplied boxcars fall under per diem leases.

Some railroads, however, have sidestepped the car-hire system concerning a large number of boxcars. The six Class I railroads and Ferromex have established and wholly own TTX, which is a noncarrier that effectively supplies the rail network with a large pool of boxcars that bear TTX’s mark, not a railroad mark.⁴ TTX establishes car-hire rates for using these railcars outside the framework of the Arbitration Rule. The ICC has afforded TTX, TTX’s railroad principals, and other railroads antitrust immunity pursuant to 49 U.S.C. § 10706 for participation in this pool. *Am. Rail Box Car Co.—Pooling*, 347 I.C.C. 862 (1974). The Board has jurisdiction over TTX pursuant to 49 U.S.C. § 1321(b).

B. The Arbitration Rule

Throughout the history of the railroad industry, the government and industry have struggled to establish a system for establishing car hire rates that encourage investment in an adequate supply of railcars. *See, Chicago B. & Q. R.R. v. New York, S. & W. R.R.*, 332 I.C.C. 176, 184 (1968). In the 1970s, facing a persistent shortage of railcars, the ICC established a formula for prescribing rates. But this formula wound up responding inversely to demand, increasing car-hire rates in response to a railcar surplus, which is the opposite of how a free

⁴ TTX also manages pools of railroad-supplied boxcars, which bear railroad marks and are not TTX equipment. These boxcars are subject to the Arbitration Rule.

market for railcars should function. *Car Hire Regulation*, EP 334 (Sub-No. 6) et al., 1992 ICC LEXIS 34, at *3 (ICC Feb. 18, 1992); *Car Service*, 1 I.C.C. 2d 742, 747 (1985). By the mid-1980s, a large car surplus had developed, and the Board began shifting away from prescription. It allowed railroads to negotiate boxcar rates, suspended rate updates under the formula, and began looking for a new approach to car hire. *Boxcar Car Hire*, 3 I.C.C. 2d 1, 20 (1986); *Car Service*, 1 I.C.C. 2d at 746, 753-55.

In 1992, the ICC settled on a new approach to car hire, deciding to deprescribe it broadly and approve the Arbitration Rule pursuant to 49 U.S.C. § 10706(a). *Car Hire*, 9 I.C.C. 2d 80 (1992). This decision adhered closely to a 1990 proposal by a large group of railroads and railcar leasing companies to eliminate the prescription formula and establish a rule in the Code that would facilitate bilateral agreements on car hire, with arbitration as a backstop for when parties could not agree. *Car Hire*, 56 Fed. Reg. 1781, 1781 (Jan. 17, 1991). This group believed that reliance on market forces would result in car-hire rates that encourage appropriate levels of investment in railcars. Joint Pet. 15-16, Oct 19, 1990, *Car Hire*, EP 334 (Sub-No. 8); Joint Pet. 20, Oct. 19, 1990, *Joint Pet. for Exemption of Arbitration Rule*, EP 334 (Sub-No. 8A). The ICC agreed, hypothesizing that “[t]o the extent that bilateral agreements eventually become the norm, and arbitrated or adjudicated rates the exception, . . . this program will carry out the Rail Transportation Policy which emphasizes allowing competition to set rates to the maximum extent possible so as to minimize federal regulatory control.” *Car Hire*, 9 I.C.C.2d at 92.

Establishing car-hire rates under the Arbitration Rule, and implementing rules in the Code, starts by assigning each car upon registration in Umler a “default rate” that is equal to the lowest negotiated positive rate in effect for that equipment type at the end of the previous quarter, even if that negotiated rate is for a decades-old car. Code R. 1.H.1, .3. This default rate

applies for the life of the newly registered railcar (*id.* at R. 1.H.3). For car use by a specific user, if the car owner or user do not want to apply the default rate, the Arbitration Rule provides a rate-proposal process for establishing a negotiated rate, which will supersede the default rate. *Id.* at R. 25.B. If the owner and a user are unable to agree on a negotiated rate, either may trigger a two-step resolution process. First, the parties must submit best and final offers, and for new cars, the best and final offer of the party that does not trigger the process will become the effective rate pending an arbitration award. *Id.* at R. 25.C.1, .2.a., .2.b. Second, if the final offers do not produce an agreed-upon rate, a party may initiate arbitration based on the final offers. *Id.* at R. 25.C.3. The arbitrator must select the best and final offer that is closer to the fair market rental value of the cars at issue as determined on the basis of evidence of comparable arm's-length transactions involving any combination of railroads, shippers, or other parties. *Id.* at R. 25.C.7.d. The car hire rate established through arbitration will apply until the car's mark changes or until a new rate is established through negotiation or a subsequent arbitration. *Id.* at R. 25.C.7.h.

C. Legal Standard for Approvals under 49 U.S.C. § 10706(a)

Under 49 U.S.C. § 10706(a)(2)(A), a rail carrier subject to the Board's jurisdiction must apply to the Board for approval of any agreement between it and at least one other rail carrier that relates to rates, classifications, divisions, or rules related to them, or procedures for joint consideration, initiation, publication, or establishment of them. The Board must approve an agreement only if it finds that the agreement will further the RTP. 49 U.S.C. § 10706(a)(2)(A). Additionally, the Board may condition an approval if necessary to make the agreement further the RTP. *Id.* An approval affords antitrust immunity to the agreement's parties and others in connection with making or carrying out the agreement. *Id.*

IV. The Board should reopen this proceeding and review the Arbitration Rule because the Arbitration Rule jeopardizes the adequate supply of boxcars and gives TTX a competitive advantage.

The ICC approved the Arbitration Rule as part of a “market-oriented approach to setting car hire rates” that addressed “a serious problem” with its existing approach, which was that “it failed to adjust rationally to changes in the supply and demand for cars.” *Car Hire Regulation*, EP 334 (Sub-No. 6) et al., 1992 ICC LEXIS 34, at *1, 3 (ICC Feb. 18, 1992). The ICC believed that “[t]o the extent that [this approach] results in reliance on bilateral agreements (rather than primarily on arbitration or complaint to the Commission), the [approach] should succeed in approximating an effective market” (*id.* at *15) and “carry out the Rail Transportation Policy which emphasizes allowing competition to set rates to the maximum extent possible so as to minimize federal regulatory control” (*Car Hire*, 9 I.C.C.2d 80, 92 (1992)). But the passage of time has proven the ICC wrong. The design of the Arbitration Rule suppresses rates at low levels that have essentially no relation to the supply and demand for boxcars. This strongly discourages investment in new and existing boxcars, which in turn threatens a boxcar supply crisis and enables TTX to dominate the boxcar market.

As explained in this Part IV, these circumstances warrant reopening this proceeding. Under 49 U.S.C. § 1322(c), the Board can reopen a proceeding, reconsider an action of the Board, or change an action of the Board because of material error, new evidence, or substantially changed circumstances. The grounds for reopening must be sufficient, if accepted, to lead the Board to materially alter its position. *Can. Nat’l Ry.—Control—EJ&E West Co.*, FD 35087 (Sub-No. 8), slip op. at 4 (STB served Aug. 30, 2019); *Entergy Ark., Inc. v. Union Pac. R.R.*, NOR 42104, slip op. at 4 (STB served Nov. 26, 2012). Further, new evidence must be something that was not reasonably available when the record was previously developed. *Can. Nat’l Ry.—Control—EJ&E West Co.*, FD 35087 (Sub-No. 8), slip op. at 5 (STB served Aug. 30, 2019). In

the case of substantially changed circumstances, the Board has reopened a proceeding where the passage of time revealed that the Board's prior assumptions were incorrect. *Ariz. Pub. Serv. Co. v. Burlington N. & Santa Fe Ry.*, NOR 41185 et al., slip op. at 4 (STB served May 9, 2003).

These circumstances also warrant review of the Arbitration Rule under 49 U.S.C. § 10706(c). Section 10706(c) allows the Board to review an agreement that it has approved under 49 U.S.C. § 10706(a) and change the conditions of or terminate its approval when necessary to comply with the public interest and further the Rail Transportation Policy.

A. The Arbitration Rule has failed to produce car-hire rates that are sensitive to demand.

Time has shown that the Arbitration Rule suppresses rates due to a confluence of problems surrounding its default-rate standard. First, the default-rate standard disadvantages car owners from the outset of car-hire negotiations because the characteristics of the car-hire market provide car users with little reason, if any, to agree on a car-hire rate that exceeds the default rate. Second, arbitration under the Arbitration Rule is a credible option for owners only in the limited instances where a user's use of a car will be high. Even then, arbitration encourages below-market negotiated rates. Third, the standard is susceptible to manipulation that skews default rates lower and, by extension, negotiated rates, resulting in suspiciously low default rates. These issues have suppressed rates so significantly that rates paid for boxcars under the Arbitration Rule are substantially lower than TTX rates for the same car types, except for a few of TTX's deepest discount rates that apply only when the TTX pool achieves ultra-high utilization.

1. Car users have almost no market-based incentive to agree on a car-hire rate that exceeds the default rate.

The key problem with the default-rate standard is that railcar users have little to no market-based incentive to agree to a car-hire rate that exceeds the default rate. Under the

mandatory interchange requirement, railroad car owners have limited ability to direct their railcars based upon a railroad users' willingness to pay car hire. *See Car Hire Regulation*, No. EP 334 (Sub-No. 6) et al., 1992 ICC LEXIS 34, at *14 (ICC Feb. 18, 1992) (stating that mandatory interchange limits car owners' control of assets when off home property). Railcar users thus receive essentially no benefit, in terms of car access, from agreeing to a car-hire rate that exceeds a car's default rate.

This is consistent with standard economic theory about commercial bargaining. As Dr. Powers explains, the main economic principle behind commercial bargaining is that parties have an incentive to enter an agreement if they will jointly realize some economic benefit. Powers V.S. 25. In a well-functioning market, the benefit to the purchaser from paying a higher price for output generally is more favorable access to the output. *Id.* at 26. But in the car-hire market, paying a higher car-hire rate does not materially improve access to a railcar because mandatory interchange substantially eliminates the ability to direct a rail car to the highest bidder.

The ICC identified this problem when approving the Arbitration Rule. But it underestimated the impact when it concluded that bilateral agreements alleviated concerns that the mandatory interchange requirement would preclude a competitive market because car owners could agree with users on how the owners' cars will be used and users could arrange the location and ownership of cars they receive. *Car Hire Regulation*, 1992 ICC LEXIS 33, at *14-15. Time has proven this fundamental ICC assumption about bilateral agreements wrong. The system for limiting use of a railcar under a bilateral agreement merely allows owners to require that the user send cars back to the home railroad. AAR OT-10, Car Service Directive 145 & Circular TD-5 (Mar. 1, 2024). If a car is in a pool, the pool operator could direct the car to a particular railroad, but this is to provide the pool participant with its share of the railcars it commits to the pool, not

to provide additional access to cars. Further, attempting to agree upon detailed use and allocation requirements is impractical, especially considering that a railroad may have rate agreements with dozens of railcar owners and users, let alone dozens of rate agreements with each car owner and user for different railcars. According to RSI members, railcar usage and allocation requirements in rate agreements are rare.

2. The Rule’s arbitration mechanism is ineffective at inducing agreement on, or producing, a market rate.

The arbitration mechanism under the Arbitration Rule has not proven to be an effective backstop to negotiation by inducing parties to agree on car-hire rates that approximate “market” rates, as the ICC envisioned. *See Car Hire*, 9 I.C.C.2d 80, 88, 90 (1992) (explaining that arbitration is a last resort when negotiation is unsuccessful and produces an approximate market rate). As explained above, the ICC incorrectly assumed that bilateral agreements would create an effective car-hire market. Thus, the ICC’s belief that an arbitrator would select a rate offer “that most closely approximates a market rate” (*id.* at 88) was misplaced. Since the car-hire market lacks normal demand-pricing signals, it is unclear how an arbitrator could reliably fulfill their mandate to select an offer that is closer to fair market rental value, which the Arbitration Rule defines as “intended to reflect value to both car owners and car users.” Code R. 25.C.7.d.

Perversely, arbitration ultimately does play a role in setting car hire, just for different reasons and in fewer situations than the ICC anticipated. As explained by Dr. Powers, economic theory suggests that arbitration will induce car owners and users to agree on a car-hire rate only when there is a credible threat of arbitration. Powers V.S. 29. But a credible threat rarely arises because, in many cases, the anticipated use of the railcar by the user is insufficient to generate enough revenue, even at a market rate, to overcome arbitration costs. Most boxcars have multiple users, with the largest user making up less than half of the use. *Id.* at 30. Further, the largest user

of a boxcar can change unpredictably from year to year since the owner effectively lacks control over car allocation.

Even where arbitration is a realistic possibility, arbitration does not encourage settlement approximating a market rate. As explained, poor market signals prevent arbitrators from reliably selecting rate offers that best reflect a market rate. Also, a car owner has an incentive to agree to a negotiated rate that is lower than the anticipated arbitration award to reflect the cost savings from avoiding arbitration. The result can be negotiated rates that are lower than market rates. *Id.* at 49-50. Further, these negotiated rates become evidence of market rates in future negotiations, creating downward pressure on potential arbitration outcomes. *Id.* at 33-34.

Car-hire data available to RSI confirms that arbitration has been ineffective. These data show no rates awarded in arbitration for boxcars in at least a decade. *Id.* at 31. The absence of arbitration despite an impending boxcar shortage, as explained below, and broad concerns among RSI members that boxcar car hire is at levels that cannot sustain investment confirm that arbitration is a realistic option in few cases and, even in those cases, it does not encourage users to accept a car-hire rate that approximates an effective market and provides an incentive to invest in an adequate boxcar fleet.

3. The default-rate standard is highly susceptible to manipulation that skews car-hire downward.

RSI has discovered suspiciously low default rates for several boxcar types, indicating potential abuse and manipulation of the default-rate standard to further suppress car-hire rates. Although the ICC dismissed concerns that this would occur, it nevertheless assured stakeholders that it would “remain open to address claims of abuse or manipulation.” *Car Hire*, 9 I.C.C.2d 1090, 1107 (1993). The Board thus has sufficient grounds to reopen this proceeding to examine and address abuse and manipulation of default rates.

Users have a strong incentive to manipulate default rates by inducing a single ultra-low negotiated rate for common car types. As explained, the Arbitration Rule encourages users to agree to higher rates only in narrow circumstances. Further, as default rates drop, owners looking at those rates might find negotiated rates at the lower end of the spectrum of negotiated rates more appealing. For example, if a railroad relies heavily on using other railroads' A606 boxcars but owns a 40-year-old A606 boxcar, it has a strong incentive to agree with another user on a bargain-basement car-hire rate for that car. That in turn will set an ultra-low default rate for the life of new A606 boxcars in the following quarter. For those new A606 cars that the railroad is unlikely to use heavily, the railroad will likely pay car hire at the default rate for the life of those cars. For those cars over which the railroad believes rate arbitration is a possibility, the low default rate might convince the car owner to agree to lower negotiated rate than it would have agreed to if the default rate were higher. While the railroad might experience a loss on the car it owns, this practice will more than offset the loss by further suppressing car hire for the 50-year regulatory life⁵ of the far more numerous new A606 railcars.

As Dr. Powers explains, several boxcar types have default rates that are far below the negotiated rates that RSI members pay. *Id.* at 18. For example, in the second quarter of 2023, the default hourly rate for A606 cars was less than one quarter of the median A606 negotiated hourly rate in data from RSI members and less than half of the lowest negotiated hourly rate in RSI-member data. *Id.* at 19. Moreover, this default rate has been in effect since 1998, with the exception of a single quarter when the mileage rate increased by three cents. *Id.* at 21.

Data for A405 boxcars presents a similar picture. The default rate declined from \$1.00 per hour and \$0.08 per mile in 1994 to \$0.05 per hour and \$0.07 per mile in 2012, where it

⁵ 49 C.F.R. § 213(a)(1). A railroad can petition to extend the service period of a railcar.

remains today. *Id.* at 22. Over the same time, costs across the economy have risen. Additionally, negotiated rates of RSI members from the second quarter of 2023 are an order of magnitude higher than current default rates. *Id.* at 21-22.

4. TTX’s boxcar pool rates demonstrate that the Arbitration Rule severely suppresses car hire for railroad boxcars.

A comparison of car-hire rates for railroad boxcars against TTX’s published boxcar-pool rates⁶ illustrates the severe constraints that the Arbitration Rule places on car-hire for railroad boxcars.

For A406 boxcars, TTX charges \$0.09 per mile and a base hourly rate of \$1.35 at 50% monthly utilization, which falls to \$0.69 at 100% utilization. TTX Co., Dec. 29, 2023, *Am. Rail Box Car Co.—Pooling*, FD 27590. In contrast, A406 negotiated rates paid to members of RSI’s ELC fell within \${{█}}⁷ to \${{█}} per mile and \${{█}} to \${{█}} per hour. Powers V.S. at 35. For A606 boxcars, TTX charges \$0.09 per mile and a base hourly rate of \$1.12 at 75% monthly utilization, which falls to \$0.87 per hour at 100% utilization. In contrast, the majority of A606 negotiated rates paid to ELC members fell within {{█}} to {{█}} per mile and {{█}} to {{█}} per hour. *Id.*

There is little, if any, difference between TTX boxcars and non-TTX boxcars of the same types that explains the premium that TTX’s boxcars command. Further, because TTX operates a

⁶ TTX provides an “adjustment refund” under which revenues exceeding expenses paid and net earnings to be retained are refunded to participants. *Am. Rail Box Car Co.—Pooling*, 347 I.C.C. 862, 870, 872-73. RSI is not aware of the amount of this refund and its effect on TTX’s rates. As explained in Part V.B, RSI needs access to this information to evaluate appropriate conditions that address the rate suppression by the Arbitration Rule.

⁷ Highly Confidential information in this document is enclosed in double braces (e.g., {{ . . . }}). RSI is submitting a motion for protective order simultaneously with this filing. If the Board denies the motion, RSI requests that the Board return the highly confidential portions of this filing.

standardized boxcar pool involving few car types, *see Am. Rail*, 347 I.C.C. at 898, it should benefit from economies of scale that enable it to offer lower rates than might otherwise exist for boxcars subject to the Arbitration Rule. The ICC even recognized this when approving the TTX boxcar pool, observing that the economies of scale and increased overall utilization from the pool “will allow basic car-hire charges to be kept at a low level.” *Id.* at 903.

B. The Arbitration Rule’s failure to produce market-based car-hire rates threatens a boxcar supply crisis.

The national rail system is on the brink of a severe boxcar shortage. In recent years, thousands of boxcars have retired from the aging boxcar fleet. Over the next five years, approximately 22% of the current non-refrigerated boxcar fleet will reach their service life; over ten years, approximately 30%. *Powers V.S.* at 44. Yet the Arbitration Rule is not producing rates that encourage investment in boxcars to replace retiring cars at adequate levels to avert a severe shortage.

Railcar lessors and other investors have little incentive to invest in new boxcars in current conditions. Economic principles indicate that a rational firm will invest in a boxcar only if it expects the revenues generated by the boxcar will exceed operating costs by an amount that will enable the firm to earn a competitive return on its investment. *Id.* at 15. An analysis of A606 boxcars, which makes up the vast majority of new boxcars in the last decade alongside identical B637 cars, shows that current car hire rates will not generate this level of revenue even if a car generates car hire at current rates *in every hour of the next 45 years*, which would require near-constant utilization. *Id.* at 50. Consistent with this showing, investment in new cars subject to the Arbitration Rule has been modest at best.

Similarly, car owners have little incentive to invest in the continued use of existing railcars under the current car-hire system. Even though an investment in a railcar may have been

justified based on car-hire rates at the time of the initial investment, a need for repair or refurbishment may arise decades later to maintain or extend a car's useful life. But because a car's default rate is fixed at the time its mark was first registered and the Arbitration Rule has kept negotiated rates flat, a car owner is unlikely to secure new car hire rates for the car that will offset investment in refurbishment or repair necessary to keep the car in service.

This situation is unlikely to improve without significant changes to the Arbitration Rule. As explained in Part IV.A, the design of the Arbitration Rule prevents car hire from adjusting appropriately to changes in supply and demand. In fact, in 2014 and 2015, when the rail industry experienced foreshocks of the impending shortage, car hire did not adjust. *Id.* at 56-57; see Bob Tita, *Why Railroads Can't Keep Enough Boxcars in Service*, Wall St. J., June 21, 2015, <https://www.wsj.com/articles/why-railroads-cant-keep-enough-boxcars-in-service-1434879182> (identifying a boxcar shortage in 2015). Further, paid car-hire rates have been flat for at least a decade. Powers V.S. at 56-57.

While there was a short-lived increase in investment in new boxcars in 2022, investors experienced uniquely advantageous purchasing conditions during this period. Specifically, generationally low borrowing costs and depressed steel prices resulting from the Covid-19 pandemic enabled lessors to purchase boxcars at exceptionally low costs. *Id.* at 54. Still, average paid car-hire rates remained stagnant.

C. The Arbitration Rule's failure to produce demand-sensitive car-hire rates allows TTX to dominate the boxcar market.

TTX has become the dominant boxcar owner, owning over 30% of the boxcar fleet. *Id.* at 63. Its share of the boxcar fleet will likely grow to 50% or more in the next ten years. *Id.* at 66. Several aspects of the Arbitration Rule have enabled TTX to dominate the boxcar market, which is inconsistent with the Rail Transportation Policy and public interest.

1. The Arbitration Rule discourages competition against TTX in the boxcar market.

The Arbitration Rule's suppression of car-hire rates benefits TTX by squeezing TTX's competitors, including railcar lessors, out of the boxcar market. This has allowed TTX, which is not subject to the Arbitration Rule and has antitrust immunity, to increase its dominance over boxcar supply. As explained in Part IV.A and B, the Arbitration Rule constrains car-hire for railroad boxcars well below levels necessary to encourage adequate investment in boxcars. Negotiated rates under the Arbitration Rule have been substantially below TTX's base rates for the same boxcar types, merely reaching the levels of TTX's deepest discounted rates. *Id.* at 35-39. Consistent with this, TTX has built 57% of new boxcars constructed over the past decade. *Id.* at 64.

2. The process for amending the Arbitration Rule strongly favors TTX.

Although the Arbitration Rule includes a provision allowing amendments upon a vote of the AAR's Equipment Assets Committee (EAC), the EAC has no incentive to revise the Arbitration Rule to eliminate its distortion of paid car-hire rates and, thus, allow investors in railroad boxcars to compete on relatively equal footing with TTX.⁸

Amendments to the Arbitration Rule can be adopted only upon the affirmative vote of EAC members owning no less than 67% of the revenue freight cars that EAC members own. Code R. 25.D.1. But the same railroads that own TTX hold 76% of the EAC vote. App. A at 6 (showing the most current voting percentages as understood by RSI members). Also, just two TTX owners—BNSF Railway and Union Pacific Railroad—now have voting shares that are

⁸ Because TTX benefits from antitrust immunity concerning its boxcar pool, TTX would still retain some advantage over its competitors, although nothing like the advantage arising from the Arbitration Rule.

large enough to jointly block any amendment. This alone warrants reopening because it is inconsistent with the sole change that the ICC made to the Arbitration Rule when approving it, which was to lower the minimum vote necessary for an amendment so no two carriers could block it. *Car Hire*, 9 I.C.C.2d 80, 88-89 (1992).

For these reasons, RSI's 2019 attempt to amend the Arbitration Rule to reduce its suppressive impact on car hire was dead on arrival. In February 2019, RSI proposed an amendment to change default rate from the lowest negotiated rate to the average rate paid for the car type. App. B. Less than three months later, the EAC voted it down, with the railroads owning TTX being the sole opposition. App. C; App. D at 9.

3. By facilitating TTX's dominance of the boxcar market, the Arbitration Rule is inconsistent with the public interest and RTP.

By enabling TTX to increase its dominance of the boxcar market, the Arbitration Rule poses serious public interest and RTP concerns. Increased dominance over the boxcar market gives TTX's owners, which include North America's largest railroads, substantial collective control over the boxcar market and, by extension, boxcar transportation. Through TTX, and the antitrust immunity afforded it and participants in TTX's boxcar pool, these railroads can coordinate to restrict boxcar supply and, thus, increase transportation rates for boxcar traffic or discourage it, without interference from other boxcar suppliers.

Scarce or costly rail-transportation options for boxcar traffic will harm the public. For example, forestry products make up approximately half of all boxcar traffic. These products include essential consumer goods and hygiene products, packaging materials that facilitate commerce, and raw materials for furniture, electronic, and other goods. These products also provide renewable and sustainable alternatives to other materials. Higher rail-transportation rates

or a lack of rail transportation options for these products place a considerable cost burden on the industries that rely on these products and consumers.

Further, the prospect of boxcar supply restrictions is inconsistent with the public interest in adequate car service. In 49 U.S.C. § 11121(a), Congress enshrined this interest and appointed the Board as its guardian.

Additionally, by facilitating TTX dominance of boxcar supply, the Arbitration Rule is inconsistent with several aspects of the RTP. It enables collective control over the boxcar market and, by extension, rates for boxcar traffic, which is inconsistent with allowing, to the maximum extent possible competition and the demand for services to establish rates (49 U.S.C. § 10101(1)), ensuring a sound rail transportation system, with effective competition among rail carriers and other modes, to meet the needs of the public (§ 10101(4)), and fostering sound economic conditions in transportation and ensuring effective competition and coordination between rail carriers and other modes (§ 10101(5)). Further, pushing boxcar traffic to other modes will typically mean this traffic will shift to truck, which lacks the fuel efficiency of rail, and, thus, is inconsistent with encouraging and promoting energy conservation (§ 10101(14)). Pushing traffic to truck also is inconsistent with the public interest in safe transportation, since even AAR acknowledges that trucking is not as safe as rail transportation. AAR, *Why Freight Rail Is the Safest Mode for Hazmat*, <https://www.aar.org/article/freight-rail-safest-mode-hazmat/> (last visited March 8, 2024) (“[F]reight rail is the safest way to move goods over land.”).

The Arbitration Rule is also inconsistent with the RTP by enabling TTX to exercise considerable control over the types of available boxcars. Although the current fleet of boxcars contains 88 AAR Car Types, TTX is pursuing a standardized boxcar fleet comprising two high-capacity boxcar types. App. E at 9, 10. While TTX assumes that these will provide for

“maximized customer acceptance” (*Id.* at 10), many customers rely on the boxcar variety available under the current fleet. For example, some customer loading facilities are built based on the door locations of certain car types, making use of TTX’s fleet either impossible or highly inefficient. Additionally, TTX’s high-capacity cars may be excessive for many customers’ needs. But in a TTX dominated environment, these customers will be forced to use these cars and incur the premium associated with them through their freight rates. This control over boxcar supply is inconsistent with the policy of avoiding undue concentrations of market power (§ 10101(12)).

Further, by enabling TTX to hold an increasingly dominant position in the boxcar market, the Arbitration Rule can lead to higher costs for Class II and Class III carriers. As TTX’s market share increases, these carriers will need to increasingly turn to TTX for boxcar supply and will increasingly handle TTX boxcars. At the same time, TTX’s increased market dominance will allow it more flexibility to raise its car-hire rates.

In sum, a TTX-dominated boxcar market harms the rail transportation system and, thus, is inconsistent with the public interest and the RTP.

V. If railroads and railcar lessors cannot mutually agree on modifications to the Arbitration Rule within 120 days, the Board should condition or revoke its approval of the Arbitration Rule.

To facilitate an appropriate resolution of the issues with the Arbitration Rule, the Board should: (1) reopen this proceeding; (2) order AAR, Railinc, and TTX to make available to requesting parties, beginning one week after reopening and subject to a protective order sought by RSI, certain data about the boxcar market that is necessary to facilitate a meaningful negotiation between AAR and RSI and to develop meaningful comments regarding proposed conditions or termination of the Arbitration Rule; (3) provide AAR and RSI 120 days to return to the Board with any mutually agreed modifications to the Arbitration Rule to address the issues RSI has identified in this petition and a request to condition approval of the Arbitration Rule on

those modifications; and (4) if AAR and RSI are unable to agree on a modification to the Arbitration Rule within the 120-day negotiation period, allow RSI to propose a condition to or request termination of the Arbitration Rule's approval at the end of the period.

A. The Board should provide a 120-day negotiation period for AAR and RSI to mutually agree on a condition to the Board's approval of the Arbitration Rule.

As explained in Part IV, reopening this proceeding and reviewing the Arbitration Rule are necessary to avert an impending boxcar supply crisis and allow a competitive boxcar market, consistent with the public interest and RTP. RSI recognizes, however, that the Arbitration Rule arose from a compromise proposal by a large group of railroads and railcar lessors. The Board thus should provide railroads and railcar lessors, through AAR and RSI, an opportunity to revisit this compromise with the benefit of hindsight before the Board receives proposed conditions addressing issues stemming from the Arbitration Rule's default-rate standard. Further, expeditious resolution of the issues with the default-rate standard is necessary to address the urgent threat to boxcar supply, and key stakeholder groups may be able to reach and implement a negotiated solution via the Arbitration Rule's amendment procedures more expeditiously than the Board can evaluate and adopt proposed conditions.

To encourage this negotiation, the Board should specifically provide AAR and RSI with 120 days to return to the Board with a mutually agreed condition to the Arbitration Rule's ongoing approval. As explained in Part IV.C.2, RSI's past attempt to negotiate changes to the Arbitration Rule with AAR was unsuccessful because the voting railroads on AAR's EAC lack an incentive to address the Arbitration Rule's default-rate standard. The threat of conditioning or terminating the Arbitration Rule absent agreement of AAR and RSI on a condition is necessary to encourage serious negotiations by AAR.

Should AAR and RSI not reach an agreed solution within the negotiation period, RSI will need an opportunity to submit a proposed condition or request for termination of the Board's approval of the Arbitration Rule. The Board thus should allow RSI to submit a proposed condition or a request for termination at the end of the 120-day AAR/RSI negotiation period.

B. The Board should order AAR, Railinc, and TTX to make boxcar-market data available subject to a protective order.

Access to data regarding the boxcar market will be necessary to facilitate meaningful discussions between AAR and RSI and meaningful participation in this proceeding. For example, historical data regarding car-hire rates, railcar use, railcar type, and railcar ownership are all necessary to fully assess the impact of the Arbitration Rule on car hire, the impending boxcar crisis, and TTX's dominance of the boxcar market. AAR and RSI will need this data to meaningfully negotiate a condition to the Arbitration Rule, interested persons will need it to meaningfully assess conditions to the Arbitration Rule, and the Board will need it to assess proposed conditions or requests for termination of the Arbitration Rule's approval. In his verified statement, Dr. Powers identifies the data access that would be necessary to support meaningful participation in this proceeding and reasons why the data is necessary. *See Powers V.S. Ex. B.*

Much of the boxcar market data necessary to meaningfully participate in this proceeding resides with Railinc, which is owned by AAR, and TTX, but is not publicly available. The Railinc data are centrally located in Railinc's Car Hire Accounting Rate Master (CHARM) database, its Car Hire Data Exchange, and its Umler system. Although RSI has obtained Umler data through its members, it understands that Umler access is not public. Further, RSI understands that CHARM data is not public, and Railinc has rejected a request from RSI's expert, Dr. Powers, for access to this data. App. F. RSI expects that TTX maintains the TTX data that Dr. Powers has identified as necessary for participating in this proceeding but is not aware

that TTX makes this data available.

Accordingly to ensure that participants in this proceeding have access to data necessary to meaningfully participate in this proceeding, RSI urges the Board to require AAR, Railinc, and TTX to make the data identified in Exhibit B of Dr. Powers's verified statement available to parties to this proceeding upon request, subject to the protective order RSI is requesting in this proceeding and, to allow sufficient time to gather the data, beginning one week after reopening. The Board has extensive authority to require AAR, Railinc, and TTX to submit records regarding boxcars in this proceeding. Under 49 U.S.C. § 1321(b), the Board may obtain from railroads and businesses controlled by or under common control with railroads information that the Board decides is necessary to carry out 49 U.S.C. Subtitle IV, which governs approval of the Arbitration Rule and directs the Board to oversee car service. Also, 49 U.S.C. § 11145(a)(2) allows the Board to require persons that furnish railcars to a railroad to provide data regarding those cars. Additionally, should AAR, Railinc, and TTX refuse to provide data necessary for parties to meaningfully participate in this proceeding, the Board would be fully justified to terminate its approval of the Arbitration Rule because this would interfere with establishing that the Arbitration Rule is consistent with the public interest and RTP.

VI. Conclusion

The Arbitration Rule has not lived up to its promise of producing market-based car hire rates that incentivize investment in an adequate supply of railcars. Instead, it has led the rail network to the brink of a boxcar supply crisis and market dominance by TTX. For the reasons in this petition, the Board should determine that material error, new evidence, and substantially changed circumstances warrant reopening of this proceeding, reopen this proceeding, review the Arbitration Rule pursuant to the procedures in Part V, and grant such other relief as it may deem appropriate.

Respectfully submitted,

/s/ Jason D. Tutrone

Jeffrey O. Moreno

Jason D. Tutrone

Thompson Hine LLP

1919 M Street, NW Suite 700

Washington, DC 20036

(202) 331-8800

Jeff.Moreno@ThompsonHine.com

Jason.Tutrone@ThompsonHine.com

Counsel for the Railway Supply Institute

Dated: March 25, 2024



**ASSOCIATION
OF AMERICAN
RAILROADS**

Jeffrey J. Usher
Assistant Vice President-Business Services

EQUIPMENT ASSETS COMMITTEE (EAC)

RULES OF ORDER

Effective: November 1, 2016

ARTICLE I

MISSION STATEMENT

To encourage the effective management of railcars in the industry by the periodic review and amendment of the Code of Car Service Rules with the review and approval of the Safety and Operations Management Committee (SOMC).

To provide the necessary framework to efficiently and accurately account for car hire by the periodic review and amendment of the Code of Car Hire Rules with the review and approval of the Safety and Operations Management Committee.

To facilitate the establishment of negotiated car hire rates by the period review and amendment of the depreciation process with the review and approval of the Safety and Operations Management Committee.

ARTICLE II

KEY OBJECTIVES

Create Car Service Rules that encourage the effective handling of empty railcars through AAR Car Service Orders and Directives.

Identify and address inefficiencies and problems in the existing car service practices.

Automate the calculation and processing of car hire to the greatest extent practical.

Encourage accurate, consistent and timely report of car hire due car owners.

Maintain a car hire negotiation process that encourages the establishment of market-based car hire rates.

Achieve all objectives in a way that is consistent with the framework provided in the Industry 10706 Agreement.

Business Services Division, RAILINC
Highwoods Center, 7001 Weston Parkway, Suite 200, Cary, NC 27513
Phone: 919-651-5028, Fax: 919-651-5406

ARTICLE III

REPRESENTATION

- a) Carriers who are full members of the Association of American Railroads (AAR) may be members of the Equipment Assets Committee (EAC). (Members of the AAR may choose not to exercise their right to EAC membership.)
- b) Short lines and regional railroads who are not member of the EAC will be represented by a member selected by the AAR Affiliate Members.
- c) Two voting EAC members will be chosen from the AAR Gold Level Associate Membership. Each AAR Gold Level Associate Member will serve a two year term. The terms will expire in alternating years to provide greater consistency in the committee membership.
- d) Each voting member may designate an alternate to vote in the absence of the member.

ARTICLE IV

VOTING – MOTIONS PRESENTED AT MEETINGS

- a) Motions before the Committee shall be passed if the motion is supported by a simple majority of the total votes of the members present.
- b) A Committee member may request a roll call vote of a motion before the Committee. When a roll call vote is requested, the motion shall pass the roll call vote if:
 - 1) The motion is supported by a simple majority of the total votes of the members present, and
 - 2) The motion is supported by members with weighted votes representing a simple majority of those members present.
- c) The weighted vote shall be calculated by each member's total ownership of revenue freight cars owned or leased as of January 1 of the current calendar year that are subject to the Code of Car Hire Rules. The AAR Affiliate member weighted vote will consist of all railroad marked and controlled cars not included in the ownership of other EAC members companies.
- d) Members whose percentage would be less than one percent (1%) will be assigned a minimum of one percent (1%).
- e) In any year that the weight assigned to the AAR Affiliate member exceeds the ownership of the largest ownership of any Class I Committee member, the weight assigned to the AAR Affiliate member will be reduced to the same weight as that Class I.
- f) No weighted vote will be assigned to the members representing the AAR Gold Level Associate Membership.

ARTICLE V

VOTING – MOTIONS PRESENTED ELECTRONICALLY

- a) Motions may be presented to the Committee via e-mail or other electronic means if:
 - 1. The TAG or Task Force Chairman assigned to review an issue recommends to the Committee chairman that an electronic ballot be used; and
 - 2. The Committee chairman agrees that an electronic ballot is appropriate.
- b) Motions made via electronic ballot will pass if a simple majority of all committee members votes in favor of the motion within the prescribed voting timeframe
- c) At least twenty business days will be allowed for voting.
- d) A committee member may request a roll call vote of a motion made via electronic ballot. When a roll call vote is requested, the motion shall pass the roll call vote if:
 - 1) The motion is supported by a simple majority of the votes of all committee members and
 - 2) The motion is supported by members with weighted votes representing a simple majority of all committee members.
- e) The weighted vote shall be calculated by each member's total ownership of revenue freight cars owned or leased as of January 1 of the current calendar year that are subject to the Code of Car hire Rules. The AAR Affiliate member weighted vote will consist of all railroad marked and controlled cars not included in the ownership of other EAC member companies.
- f) In any year that the weight assigned to the AAR Affiliate member exceeds the ownership of the largest ownership of any Class I Committee member, the weight assigned to the AAR Affiliate member will be reduced to the same ownership as that Class I.
- g) No weighted vote will be assigned to the members representing the AAR Gold Level Associate Membership.

ARTICLE VI

OFFICERS

- a) The officers of the Committee shall consist of a Chairman and a Vice Chairman. The Chairman and Vice Chairman will be elected from the members and their alternates.
- b) The Chairman will be elected by a majority of the Committee members present at the meeting at which elections are conducted and will serve for a two-year period.
- c) The Vice Chairman will be elected by a majority of the Committee members present at the meeting at which elections are conducted and will serve for a two-year period.

- d) Task Forces and Technical Advisory Groups (TAG) will be created by EAC as needed in accordance with the AAR Committee Guidelines. The Task Force and TAG Chairs will be appointed and serve at the discretion of the Chairman of the EAC.

ARTICLE VII

DUTIES OF OFFICERS

- a) The Chairman shall have general supervision over the affairs of the Committee and shall preside at meetings of the Committee, and shall appoint task force and technical advisory groups as required or sunset them if no longer needed. The Chairman will also represent EAC on the Business Services Working Committee (BSWC).
- b) The Chairman shall appoint Task Force and TAG Chairmen.
- c) The Vice-Chairman, in the absence of the Chairman, shall perform the duties of the Chairman, and such other duties as may be assigned.

ARTICLE VIII

MEETINGS

- a) At least two meetings per year of the Committee shall be scheduled. The Chairman as necessary may call special meetings of the Committee.
- b) Quorum – In order for the committee to conduct business participation of a majority of 50% plus 1 of the membership shall be required.
- c) Order of Business -- The order of business shall, unless otherwise directed by a majority of the members present, be as follows:
 - i. Approval of Minutes of Last Meeting.
 - ii. Unfinished Business.
 - iii. New Business.
- d) Meeting Attendance - Members or their designated alternates missing two (2) consecutive meetings will be considered delinquent. Upon written notice to the member, non-response or failure to attend the next meeting will constitute grounds for a request for a replacement.

ARTICLE IX

PROCEDURES

Robert's Rules of Order as modified by these Rules of Order shall govern all proceedings, including amendments of these Rules of Order.

Equipment Assets Committee Reference Document
Project Ideas
May 2023

Past project ideas

- Market Report Update
- RAMP-ED Re-write
- Training Process
- Mark Management

Future

- Legacy Applications – enhancements, updates, etc.
- SCO 90 – under review by the Car Service Task Force
- Original Cost TAG – Potential standardization of original cost data reporting.
- OT-57 Loading Authority

Equipment Assets Committee

Voting Percentages April 1, 2022

AAR Affiliate Short Line Representative	17.99%**
Burlington Northern Santa Fe	17.99%
Canadian National	08.48%
Canadian Pacific	05.62%
CSX Transportation	10.90%
Ferrocarril Mexicano	02.86%
Florida East Coast	01.00%*
Genesee & Wyoming	03.80%
Kansas City Southern	03.91%
Norfolk Southern	10.60%
Union Pacific	16.01%
Watco	01.00%*
Total	100%

*: Percentage adjusted up to the minimum 1%

**.: Percentage adjusted down to the largest Class I carrier

Appendix B



Support, Connection, Advocacy

425 Third Street, SW | Suite 920 | Washington, DC 20024 | phone (202) 347-4664 | fax (202) 347-0047 | www.rsiweb.org

February 25, 2019

Association of American Railroads
Business Services Division- Equipment Assets Committee
ATTN: Mr. Gary Nelson-CHAIR
425 Third St SW
Suite 1000
Washington, DC 20024

RE: Request for Adjustment of Car Hire Default Rate Method

The Railway Supply Institute¹ (RSI) represents over 200 companies that supply products and services to North American freight and passenger railroads. RSI's Equipment Leasing Committee (ELC), composed of representatives from prominent freight car leasing companies, is projecting that the freight rail industry is facing a severe shortage of general service type cars, particularly boxcars and standard mill gondolas. The looming car shortage is a result of limited investment in general service type cars over the past 30 years. The current method used to establish the car hire default rate has been a significant contributor to limited investment. If decisive action to address the car hire default rate methodology is not taken soon, freight railroads risk a dramatic reduction in general service freight traffic and its associated profits.

Currently, car hire default rates are established using the lowest negotiated rate from the previous quarter. This methodology fails to provide car owners a reasonable return on investment.

We propose that AAR Circular No. OT-10 **Code of Car Hire Rules and Interpretations-Freight Rule1. H. 1** be modified from **"lowest negotiated positive rate..."** to **"a default rate equal to the average actual rates paid for that equipment type during the previous quarter, excluding zero rated movements."**

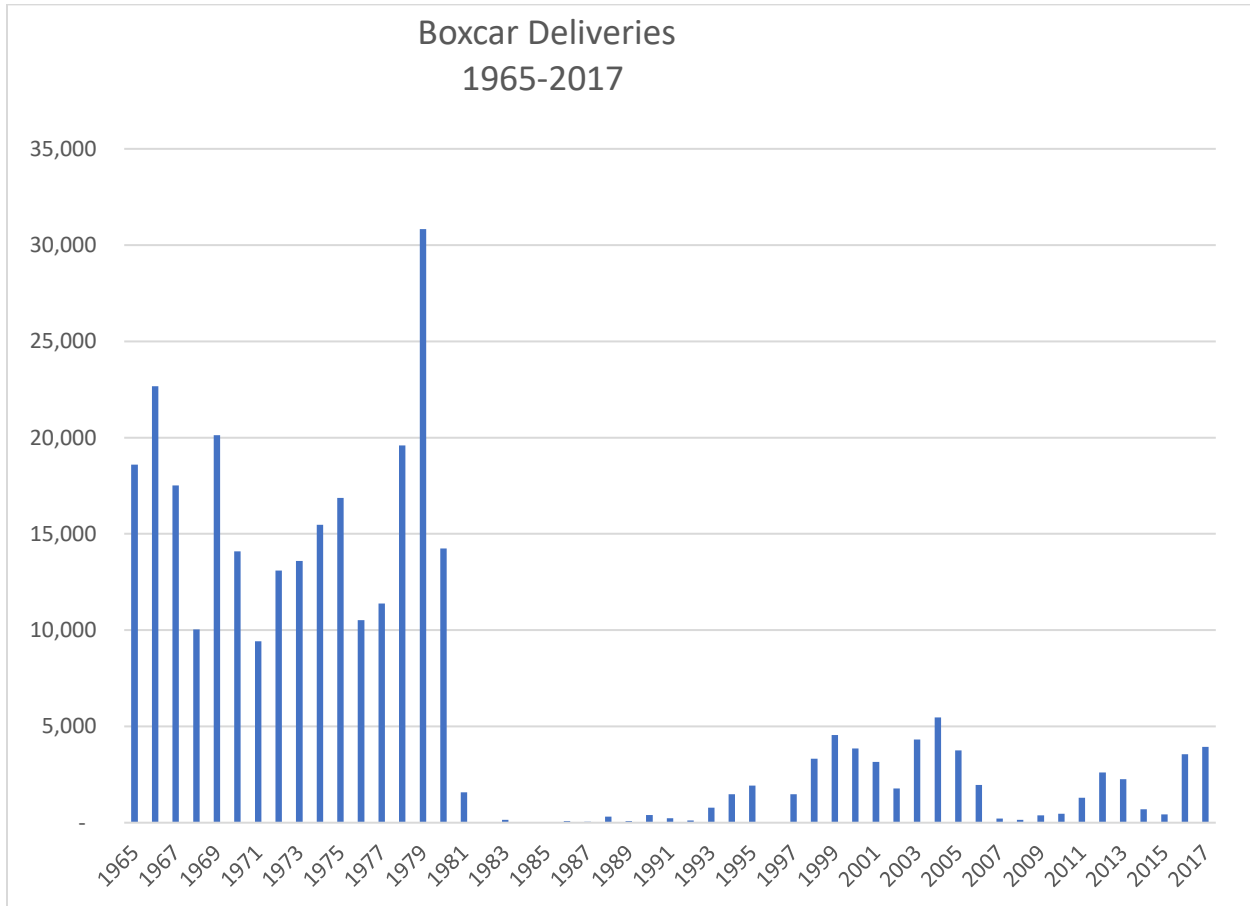
We have attached several charts and background information in support of this proposal.

¹ RSI is the international trade association of the railway supply industry. Its members provide all types of goods and services to freight and passenger railroads, rail shippers, and railcar manufacturers and owners. Collectively, the members of the RSI Equipment Leasing Committee own or provide for lease more than 1 million freight cars – over 62% of our nation's rail car fleet. These comments are submitted on behalf of the following RSI Equipment Leasing Committee members: American Railcar Industries, Inc.; Chicago Freight Car Leasing Co.; CIT Rail; GATX Corporation; The Greenbrier Companies; Mitsui Rail Capital; Progress Rail; The Andersons; Trinity Rail Group, LLC; VTG North America, Inc. and Wells Fargo Rail.

This is a very serious issue that needs the immediate attention of the Equipment Asset Committee. The RSI-ELC stands ready to work with the EAC and to provide additional information that the EAC may require to address this pending crisis.

Charts and Background

There has been very little investment in new boxcars since the late 1970's. The chart below entitled Boxcar Deliveries 1965-2017 demonstrates the reduced investment in boxcars, even though there has been overall fleet growth during the same period.

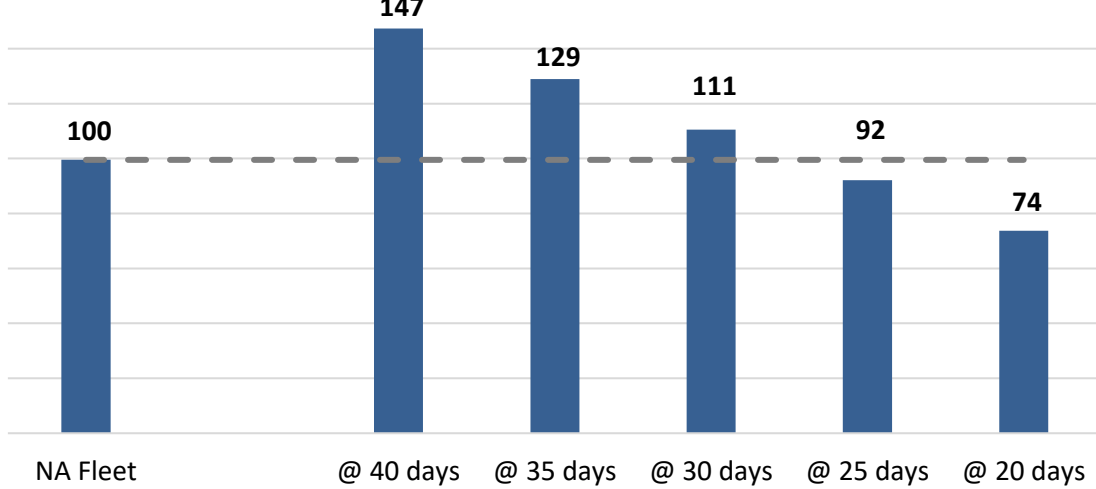


Source: ARCI Data 1965 - 2017

The build-up of the boxcar fleet in the 1970's will soon disappear. Many economic forecasters foresee a shortage of boxcars within just a few years.

The following chart is a forecast of the potential boxcar shortage based on cycle time. Cycle time is a measure in days of the time for a freight car to complete a load – unload and return for reloading. There are many factors to consider in cycle time including average train speed, switching, road congestion and unloading time. The dashed line represents the estimated number of boxcars available for loading.

2022 Fleet & Demand Forecast (000's)



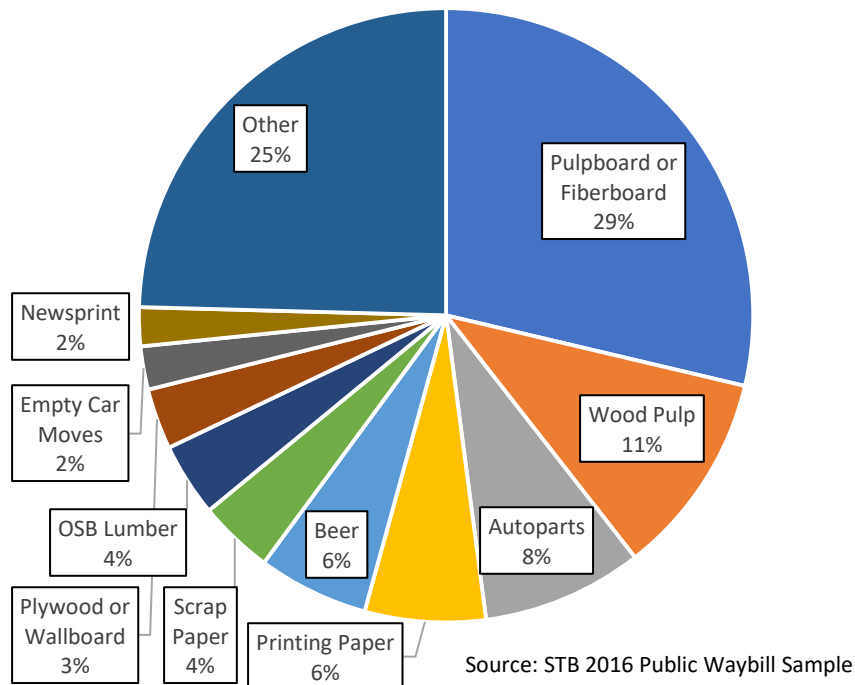
*Assumes 1,344,931 annual boxcar loads

Source: UMLER, FTR (box load forecasts: 2018 – 2022)

Note: Excludes refrigerated boxcars

Shippers most heavily impacted by the lack of boxcars include the forest products industry including finished lumber, paper, pulpwood and various commodities. According to the AAR, in 2016 Class I railroads terminated 808,000 carloads of paper and pulp products or 38.4 million tons.

Boxcar Traffic By Commodity



Background

There are several factors underlying the lack of investment in boxcars, but from the perspective of car owners, one of the key reasons is the significant change to the method by which car owners are compensated for the use of their cars.

In an effort to encourage investments in freight car types, the Interstate Commerce Commission (ICC) established per diem rate formulas to cover the cost of capital, maintenance, and overhead for new equipment. Following enactment of the Railroad Revitalization and Regulatory Reform Act of 1976 (4-R Act), the ICC modified the formulas, resulting in a surge of car builds in the late 1970's. Unfortunately, the economic downturn in the 1980's, along with an increasing shift to trucking, resulted in a significant oversupply of certain car types, particularly boxcars.

Enactment of the Staggers Rail Act of 1980 resulted in significant changes to the car hire system, and abandonment of the ICC formula and a move to a "market rate" method which was intended to allow car owners to negotiate with carriers for a car hire rate commensurate with the value of the car. In the case of a railcar which did not have an existing rate in place between a car owner and car user, and was on that user's road, a "default rate" was automatically assigned to each railcar until the establishment of a negotiated rate.

The concept of a default rate prior to establishing a negotiated market rate was a significant departure from the car hire rate regime which had ensured a reasonable return on investment for car owners. Due to the large surplus of equipment resulting from the investments made pursuant to the ICC's post 4-R Act passage, car owners were in a very weak position to negotiate a market rate that would compensate for their costs. This problem was further exacerbated by the method used to calculate the default rate, e.g., the lowest negotiated rate from the previous quarter for each Equipment Type Code [ETC].

Looking Ahead

Without the opportunity to earn a reasonable rate of return, lessors will continue to avoid investing in general service freight cars. As a consequence, when the anticipated boxcar shortage arrives (around 2022) shippers would be forced to switch to truck or other modes of transportation to move their products. This would likely result in higher costs to consumers, increased damage to infrastructure (highways and bridges), and increased congestion on the roads along with the environmental issues associated with more fuel consumption.

Representatives of the various shipper organizations have already expressed their concerns about the availability of boxcars. In a June 21, 2015 *Wall Street Journal* article entitled "Why Railroads Can't Keep Enough Boxcars in Service" Georgia-Pacific LLC noted that it has periodically slowed production at some paper mills and idled one mill for a short period of time when it could not obtain enough boxcars to move its products. George Courtwright, director of strategic operation for Georgia-Pacific stated "I can't get more cars. . . The boxcar supply is less than demand."

Fixing the Problem

The use of the lowest negotiated rate is not an adequate floor for determining default rates and does not provide car owners a return sufficient to incentivize needed investment in boxcars. Furthermore, the current method does not consider the number of cars earning the rate or actual

earnings of cars in active service. The lowest rate could be assigned to cars not currently in service or in use; which would then unjustly penalize cars in active service.

We propose that AAR Circular No. OT-10 **Code of Car Hire Rules and Interpretations-Freight Rule1. H. 1** be modified from **“lowest negotiated positive rate...”** to **“a default rate equal to the average actual rates paid for that equipment type during the previous quarter, excluding zero rated movements.”**

The averages in the proposed rule modification would be calculated for each AAR Car Type² as follows:

Hour Rate – The total amount paid for hourly charges for all cars during the previous quarter will be divided by the total number of hours for which car hire rates were paid for those cars. (zero rated movements excluded)

Total Payments for Hourly Charges/Total Hours Paid = Average Hour Rate (in dollars)

Mileage Rate - The total amount paid for mileage charges for all cars during the previous quarter will be divided by the total number of miles which were paid for those cars. (zero rated movements excluded)

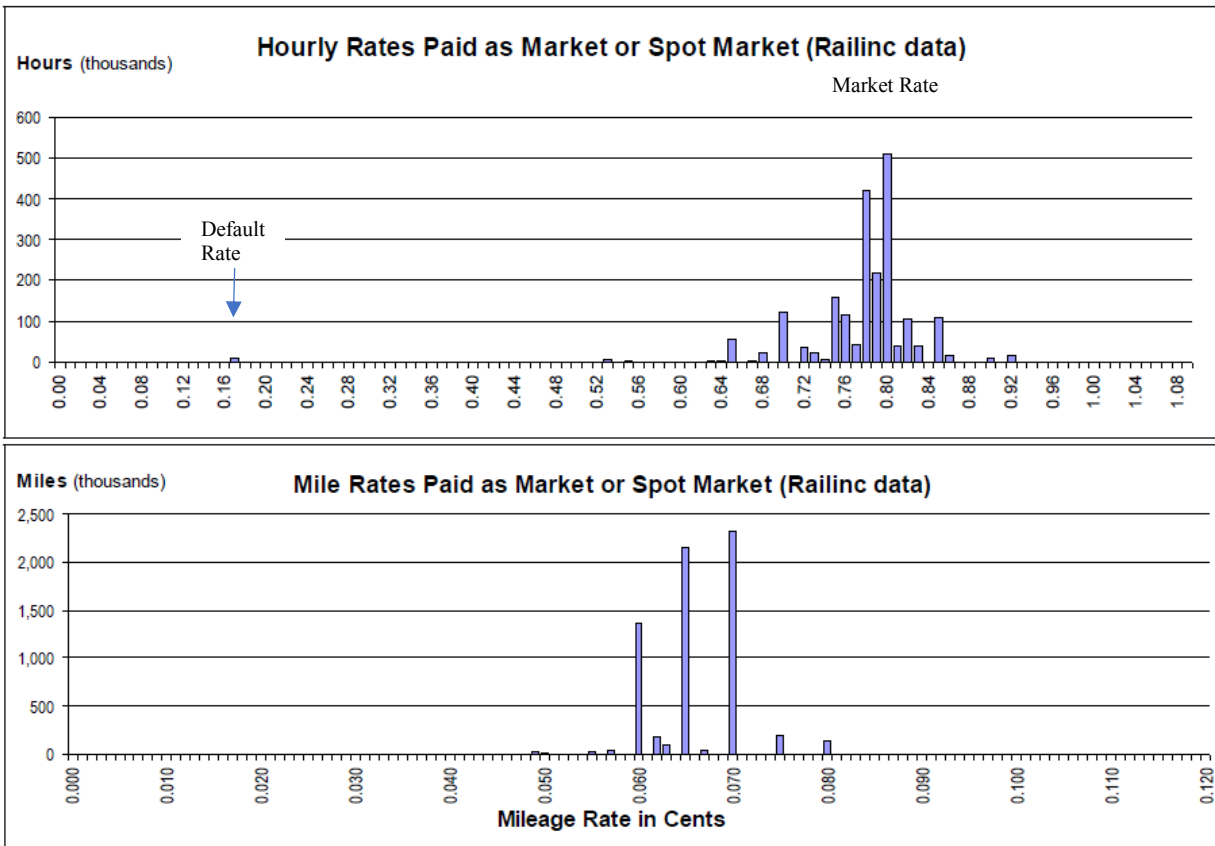
Total Payments for Mileage Charges/Total Miles Paid = Average Mileage Rate (in dollars)

Actual Hourly and Mileage Charts

The following charts provide actual car hire data for 50' A406 boxcars during July 2018 and demonstrate the need to provide investors with a more equitable method of determining the default rate.

² The average rate formula for hour/miles includes car hire activity for any railroad or private marked car (including TTX owned railcars).

Rate Distribution for the month of 201807



Again, this is a very serious issue that needs the immediate attention of the Equipment Asset Committee. The RSI-ELC stands ready to work with the EAC and to provide additional information that the EAC may require to address this pending crisis.

Sincerely

Randall Thomure
Director of Safety and Regulatory Affairs

Cc via email

J. J. Usher - AVP Business Services. & Regional & Short Line Railroad Liaison -

jusher@aar.org

D. Sapphire - Assistant General Counsel, Law Department- dsapphire@aar.org

J. L. Pinson - Manager Car Hire Audits- james.pinson@railinc.com

RSI – Equipment Leasing Committee

Appendix C



ASSOCIATION OF AMERICAN RAILROADS
425 3rd Street, SW, Suite 1000
Washington, D.C. 20024

Jeffrey J. Usher
AVP Business Service & Regional and
Short Line Railroad Liaison

Phone: (202) 639-2370
E-mail: jusher@aar.org

May 13, 2019

RANDY,
Mr. ~~Randall~~ Thomure
Director of Safety & Regulatory Affairs
Railway Supply Institute
425 Third Street, SW
Suite 920
Washington, DC 20024

RE: Request for Adjustment of Car Hire Default Method

Dear Mr. Thomure:

Your February 25, 2019 letter proposed that the method of determining the default car hire rate for rail cars be changed from the lowest, positive, negotiated rate to the average negotiated rate in effect during the prior quarter. Your proposal was referred to the Equipment Assets Committee (EAC) and the Car Hire Rates Processes & Procedures Task Force. There were spirited discussions among members of the task force as well as the full committee. During the May 8, 2019 EAC meeting, the committee voted not to make a change to the current method for determining the default car hire rates.

The committee remains open to consider means of improving the Code of Car Hire proposed by interested parties.

Sincerely,

Jeffrey J. Usher
AVP Business Services & Regional and Short
Line Railroad Liaison

Cy: Dan Saphire
Jim Pinson
Gary Nelson
Equipment Asset Committee Members

Appendix D

ASSOCIATION OF AMERICAN RAILROADS

Business Services Division

Equipment Assets Committee

MINUTES

Meeting No. 217

Chicago, Illinois

May 8, 2019



**ASSOCIATION
OF AMERICAN
RAILROADS**

Gary Nelson, Chairman
Equipment Assets Committee

EQUIPMENT ASSETS COMMITTEE

MEETING NO 217

Chicago, Illinois
May 8, 2018

COMMITTEE MEMBERS PRESENT

Mr. Gary Nelson	SLGG Chair
Ms. Kalisha Holland	BNSF
Mr. Sangtae Woo	CN
Mr. Roger Denault	CPRS
Mr. Kyle Campbell	CSXT
Mr. Chauncey Fallen	GATX (AAB)
Ms. Elan Neal	GNWR
Mr. J. D. Pavek	Greenbrier (AAB)
Ms. Karina Peralta	KCS
Mr. Jose Cantu	KCSM
Mr. Walter Jones	NS
Mr. Adam Simeon	UP
Ms. Lisa Butts	Watco

ALSO PRESENT

Ms. Jessie Pickrell	BNSF
Ms. Alison Alexander	CIT
Mr. Phil Brownlee	CN
Mr. Jack Vierling	CSXT

Mr. Scott Churchill	CSXT
Ms. Jennifer Klenk	CSXT
Mr. Greg Taylor	GATX
Ms. Rachel Boyd	GATX
Ms. Renee Lindsey	GE
Mr. Brett Wilson	GE
Mr. Michele Bullard	GNWR
Mr. Doug Driscoll	GNWR
Mr. Brad Ashton	Greenbrier
Ms. Karla Hilton	KCS
Ms. Julie Devlin	MRL
Ms. Kellie Bates	NS
Mr. Will Santangelo	NS
Mr. Robert Sanford	NS
Ms. Kim Hackett	TTX
Ms. Jenny Batko	UP
Ms. Joan O'Brien	Wells Fargo
Mr. Jeff Boggs	Wells Fargo
Ms. Karen Isdell	Wells Fargo

AAR REPRESENTATIVES

Mr. Dan Saphire
Mr. Jeff Usher

RAILINC REPRESENTATIVES:

Mr. Jim Pinson
Mr. Mark Aldenderfer
Ms. Doni Reece
Mr. Antwan Dozier

MINUTES of EAC Meeting 217 May 8, 2019

Dan Saphire, AAR counsel, gave the committee a brief overview on antitrust compliance.

PART A

MINUTES – EAC Meeting 215

(INDEX 1)

The minutes from Meeting 216 held via conference call on March 6, 2109 were reviewed and unanimously approved.

SECRETARY’S REPORT

(INDEX 2)

Jim Pinson reported on the following topics.

Future Meetings

October 29, 2019 Chicago, IL TTX will host

2019 Projects

The EOT Automation TAG is working with Railinc on the 2019 EOT Automation project that will provide a research tools, exception handling process and the ability to enter a tracking number when devices are returned to the owner via common carrier.

2020 Projects

The 2020 project selection process is underway. The following projects were sponsored by EAC.

- Loading Authority (OT-57) Phase 1 of 3 – User Interface and data collection
- Loading Authority (OT-57) Phase 2 of 3 – Facilitate communication
- Loading Authority (OT-57) Phase 3 of 3 – Car management tools
- Automated EOT Settlement through the Railroad Clearinghouse Phase 3 of 3
- Study for an Industry Educational System

The RPSWC met April 11 and approved Phase 1 and Phase 2 of the Loading Authority Project. Phase I was approved for accelerated development in 2019. Phase II was approved for development in 2020. Additional information will be provided when the OT-5 TAG provides its report to the EAC.

Appurtenance Review

In the January 2016 meeting, it was noted that some appurtenance costs in Umler seemed to be inconsistent with historical information. The reported costs are utilized in calculating rack hire rates. Railinc was instructed by EAC to review the appurtenance costs in Umler, identify those that exceeded \$100,000 and review the costs with the equipment owner. (The \$100,000 threshold was later increased to \$120,000.) This review would give the equipment owner an opportunity to correct erroneous cost entries.

In the first quarter of 2019 Railinc ran the review of appurtenance costs. The review identified 540 appurtenances that were newly registered in Umler with costs in in excess of \$120,000 since the last review were identified. The audit staff is contacting the owners of these appurtenances to confirm that the original cost entered in Umler is correct.

Car Hire Audits

At the October 10, 2018 meeting, the committee voted unanimously to amend AAR Circular TD-5 so that that the verbiage for blank and U transportation codes is the same in the last two columns of the circular. This change will be published in the July 1, 2019 version of AAR Circular OT-01. Committee

members should assure that the necessary changes are made to their internal systems by the July 1 publication date.

Update AAR Circular TD-5

At the October 10, 2018 meeting, the committee voted unanimously to amend AAR Circular TD-5 so that that the verbiage for blank and U transportation codes is the same in the last two columns of the circular. This change will be published in the July 1, 2019 version of AAR Circular OT-01. Committee members should assure that the necessary changes are made to their internal systems by the July 1 publication date.

SUBJECTS OF INTEREST

(INDEX 3)

Jeff Usher reported on the following topics

Surface Transportation Board (STB)

Patrick Fuchs and Martin Overman were confirmed as STB Commissioners. STB currently has three of its five authorized members seated.

Additional action is anticipated with three commissioners in place.

Federal Railroad Administration (FRA)

The FRA is in the process of reviewing existing regulations and prioritizing regulations that may be sunset.

Positive Train Control (PTC)

Significant progress has been made by the Class I railroads in implementing PTC. Short lines and commuter lines continue to work to meet the congressional deadline.

Infrastructure Spending

President Trump and Democratic congressional leaders met and announced a general agreement that \$2 trillion should be spent on infrastructure. The degree of railroad participation in any infrastructure spending by the Federal government is unknown.

CAR SERVICE TASK FORCE UPDATE

(INDEX 4)

Streamline RAMP-ED

GATX proposed that RAMP-ED be reviewed and streamlined.

Instances of Class I railroads advising RAMP-ED users to contact the railroads directly and not use RAMP-ED have been reported. The Class I members of the task force report that the railroads continue to use and support RAMP-ED. Members of the task force that represent railroads agreed to review the internal

RAMP-ED processing and usage by car management staffs. The task force asked that all railroad representatives on the EAC undertake a similar review.

Two potential issues with the application were identified by the task force.

- Instructions that involve short lines (or other non-participants in the process) will not be approved because short lines do not use the application.
- Tank cars being moved from Canada to the US cannot be handled by the application.

At the request of the task force, Railinc reviewed the application to determine the Class I involvement. Communication between RAMP-ED and Railinc is via EDI messaging. Any action taken by a railroad must be via messaging – not via the user interface.

The committee instructed Railinc to provide Class I representatives with a list of the contact information used by RAMP-ED to verify that communication is going to the correct people.

The item will be maintained on the docket for future reports.

EDUCATIONAL TASK FORCE UPDATE

(INDEX 5)

The 2020 project sponsored by the committee at its February 13 meeting is still being reviewed by the Railinc Project Support Working Committee (RPSWC). The task force will assist Railinc with the preparation of the business case.

The task force met via conference call to work on the assigned tasks.

CIRCULAR OT-5 TAG

Proposal

The National Freight Car Association (NAFCA) contacted AAR and advised of multiple issues with the current OT-5 loading authority process.

Status

The OT-5 TAG, composed of Representative from NAFCA and EAC, has continued to meet.

The EAC agreed at its February 13, 2019 meeting to request accelerated development of Phase 1 (collection of controlling entity contact information and storage information for each private car in use) of a process to replace the existing Loading Authority (OT-5) application. The committee also voted to sponsor a 2020 project to develop Phase 2 (facilitate the communication between railroads, controlling entities and car mark owners when alternative disposition for a car is needed) of the replacement process. Both phases were approved by RPSWC at its April 11, 2019 meeting.

A development team has been created to work with Railinc on the development and implementation of a replacement process. The development team will advise the OT-5 TAG of the progress being made.

The TAG drafted changes to remove the loading authority language from AAR Circular OT-5 and to draft a new AAR Circular OT-57 to describe how the new process will work. CSXT made a motion that the changes to AAR Circular OT-5 and the current draft of AAR Circular OT-57 be approved for review with the Safety & Operations Management Committee. NS provided a second for the motion. The motion passed unanimously.

The issue will be maintained on the docket for future reports.

PART B

(Part B of the docket was sound recorded under the industry's Section 10706 Agreement.)

CAR HIRE CALCULATION TASK FORCE UPDATE

(INDEX 1)

The Car Hire Calculation Task Force is reviewing several issues that may require changes to Car Hire Rules or to business practices. At the present time, the task force is not prepared to recommend a specific action by EAC. A recap of the issues being reviewed follows.

Changes to Car Hire Rule 8: GATX proposed that the committee consider changes to Car Hire Rule 8.C.3 and 8.E.2 to address issues related to the handling of defective cars destined for shop.

Under Car Hire Rule 8, when handling lines report defective cars to the car mark owner, car hire liability is transferred to the car mark owner. Instances of cars being loaded after car hire was transferred to the car mark owner were reported. This practice, in effect, allowed the handling line to use cars in revenue service without incurring car hire liability. Conversely, instances were identified where loaded event reporting caused the system to end the Car Hire Rule 8 (CHR8) relief. Destination railroads were held liable for car hire due to the erroneous reporting. The task force is reviewing ways to deal with both scenarios.

Proper Use of Umler Pool Assignment in Rule 22 Reclaims: Greenbrier proposed that Rule 22 be clarified so that the pool assignment in effect on the first of the month would apply to all car accounting transactions for the month.

The task force agreed with the assertion that the pool assignment in effect on the first of the month should govern for the month. The task force is working to prepare verbiage to reflect the clarification and present it to the EAC at a future meeting.

CSXT asked that the task force consider changes to the car hire rules that would make TTX-owned flat cars equipped with railroad-owned appurtenances subject to reclaim without regard to the pool assignment. CSXT voiced the opinion that these cars were built solely for use in national, customer pools and should always be subject to reclaim. The task force agreed to take this opinion into consideration.

Inclusion of Additional Detail in Counter Reclaims: NS proposed that Car Hire Rule 22 (CHR 22) be amended to require an explanation of the reason that a counter reclaim is issued.

The task force is reviewing the issue and will recommend any necessary rule changes at a future EAC meeting.

Proper Calculation of Rule 22 Reclaims in Connection with a Switch TOL: NS proposed that CHR 22 be clarified to reflect that a line haul railroad is entitled to CHR 22 reclaim for time transferred under the provisions of Car Hire Rule 5.

The task force is reviewing the issue and will recommend any necessary rule changes at a future EAC meeting.

Additional Edits for the Rule 15 TOL Process: GE proposed that edits be added to the Rule 15 TOL process to prevent transactions from occurring at locations where physical interchange is not possible.

This topic has been tabled pending a review with Railinc on the current logic of the TOL 15 process.

These items will be continued on the docket for future reports.

CAR HIRE RATES PROCESSES & PROCEDURES UPDATE (INDEX 2)

Arbitrated Rates on Re-Stenciled Cars

Proposal

Wells Fargo identified a group of cars that was leased to a Class I railroad and stenciled with the Class I marks. While under lease, a car hire rate was established through Car Hire Rule 25 arbitration. When the lease expired, the cars were re-stenciled to a mark controlled by Wells Fargo. The car hire rate established via arbitration remained with the cars.

The task force reviewed the issue and recommended that arbitrated rates be treated the same as negotiated rates. If a car is re-stenciled and the mark owner does not change (for example, if a car were re-stenciled from SBD to CSXT the mark owner would be unchanged), arbitrated car hire rates would remain on the car. If a car is re-stenciled and the mark owner changes (for example, if a car were re-stenciled from SBD to NOKL the mark owner would change), arbitrated car hire rates would be removed from the car.

Status

The task force recommendation was accepted at the February 13, 2019 EAC meeting.

The change is pending testing by Railinc.

This item will be maintained on the docket for future reports.

Allow Concurrence for all Roads in a Single Bid/Offer Number

Proposal

GNWR asked the task force to consider a change that will allow a car hire rate negotiator to approve an offer that involves multiple roads owned/controlled by a single company. Railinc was of the opinion that

this change may be significant because the CHRNSS process does not currently deal with these relationships.

Status

Railinc will review the process and determine the resource requirements to change the system so that transactions can be handled across mark owners. (The change may require a significant development and testing effort.)

This item will be maintained on the docket for future reports.

RSI Discussions

Proposal

The Rail Supply Institute (RSI) approached AAR with concerns that current default rates will not support investment in new cars, with particular concern expressed about future boxcar supply. As a solution, RSI proposed that the average rate in effect in the prior quarter be used to set future default rates.

Status

The Car Hire Rates Processes & Procedure Task Force has continued to consider the proposal, including by reviewing data developed by RSI and by Railinc. Prior to the EAC meeting, the task force was not prepared to recommend a course of action.

At the last task force meeting, it was suggested that a study be performed to evaluate the equity and impact of the current methodology versus the proposed methodology. Because it was unclear what would be studied and what relevant information would be derived from the proposed study, the task force voted not to request the suggested study.

Following a review of the RSI proposal and data, CSXT moved that AAR be instructed to reply to RSI on behalf of the EAC and advise that the methodology for establishing default car hire rates will not be changed. The motion passed with eight in favor (BNSF, CN, CPRS, CSXT, KCS, KCSM, NS, UP) and five opposed (GATX, GNWR, Greenbrier, SLGG, Watco).

This item will be dropped from the docket.

EOT AUTOMATION TAG UPDATE

(INDEX 3)

EOT Centralization Project – Development work has started on the 2019 project to provide research tools, exception processing process, entry of tracking numbers and the creation of railroad relationship tables for EOTs. The TAG is working with Railinc on the development and implementation of the 2019 project.

This item will be maintained on the docket for future updates.

MULTI-LEVEL SHOP TAG

(INDEX 4)

Proposal

At the October 10, 2018 EAC meeting CSXT raised an issue about the administration of car hire while multi-level equipment is in a shop at the appurtenance owner's instructions. The cars are removed from the national multi-level pools so Car Hire Rule 22 does not protect the railroad that serves the shop from car hire expenses. A TAG was formed to review the issue and recommend a course of action to EAC.

Status

The TAG determined that the best course of action is to utilize the Damaged & Defective Car Tracking (DDCT) system to identify the cars and allocate car hire liability accurately. On behalf of the TAG, Railinc contacted the DDCT TAG to determine if using the system to identify the cars moving to shop at the appurtenance owner's request is feasible and reasonable approach.

TAG members Kyle Campbell and Kellie Bates were invited to the next DDCT TAG call to discuss the possibility of modifying DDCT to handle cars directed to shop by the car/appurtenance owner.

A specific recommendation is anticipated based on the discussions with the DDCT TAG.

This item will be maintained on the docket for future reports.

ADJOURN

All business docketed for consideration was completed. The meeting was adjourned.

Jim Pinson
EAC Manager

Appendix E



Western Railway Club

Thomas F. Wells – President & CEO

A Very Cold January 16, 2024

What is TTX?

- » TTX is not a railroad, and not a leasing company. TTX is a railcar *pooling* company.
- » The Surface Transportation Board grants TTX's owner railroads the authority to pool railcars.
- » \$1.7 billion company owned by/serves North America's leading railroads.



- » Provides a right-sized, efficient, reliable fleet of 273,000 units
 - » Intermodal
 - » Automotive
 - » General Equipment



- » Provides Financial and Operational Benefits to the rail industry and its customers
 - » Empty Mile Reduction
 - » Risk Mitigation
 - » Capital Outlay Elimination
 - » Operating Cost Control
- » Shippers benefit from a consistent fleet of free-running cars



North American Boxcar Fleet Outlook

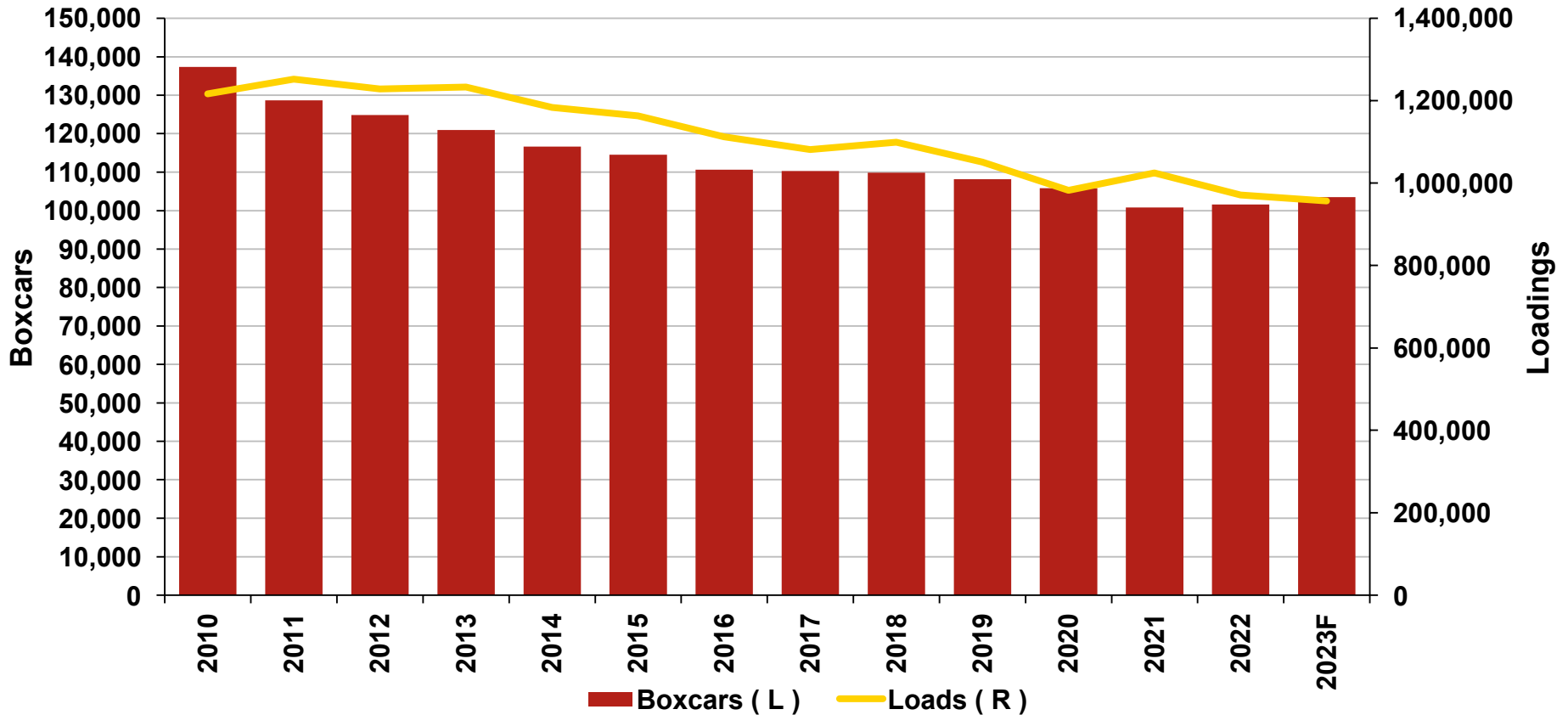


TTX's Boxcar Outlook

- » Today's boxcar fleet, on average, is inefficient with under ten loads per year
- » About one-third of North America's plain (A & B car types) boxcars are scheduled to fallout through 2030
- » However, new homogenous, high-capacity boxcars allow the boxcar fleet to operate more efficiently than the standard capacity boxcars that are retiring
- » Therefore, replacement capacity is needed at a less than 1:1 ratio to fleet fallout
- » Boxcar loadings are expected to be flat moving forward and therefore new builds only need to replace fallout capacity
- » The industry has been building boxcars at a rate to keep up with anticipated fallouts
- » TTX is doing its part by investing in new boxcars and those cars are being utilized on TTX's owning roads as well as on short-lines

The North American plain boxcar fleet is just over 100,000 railcars to carry about a million loads per year

North American Boxcar Fleet Size & Annual Loads



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023F
Loads/Car	8.9	9.7	9.8	10.2	10.1	10.2	10.1	9.8	10.0	9.7	9.3	10.2	9.6	9.2

Source: Umler, AAR, Railinc, TTX Forecast

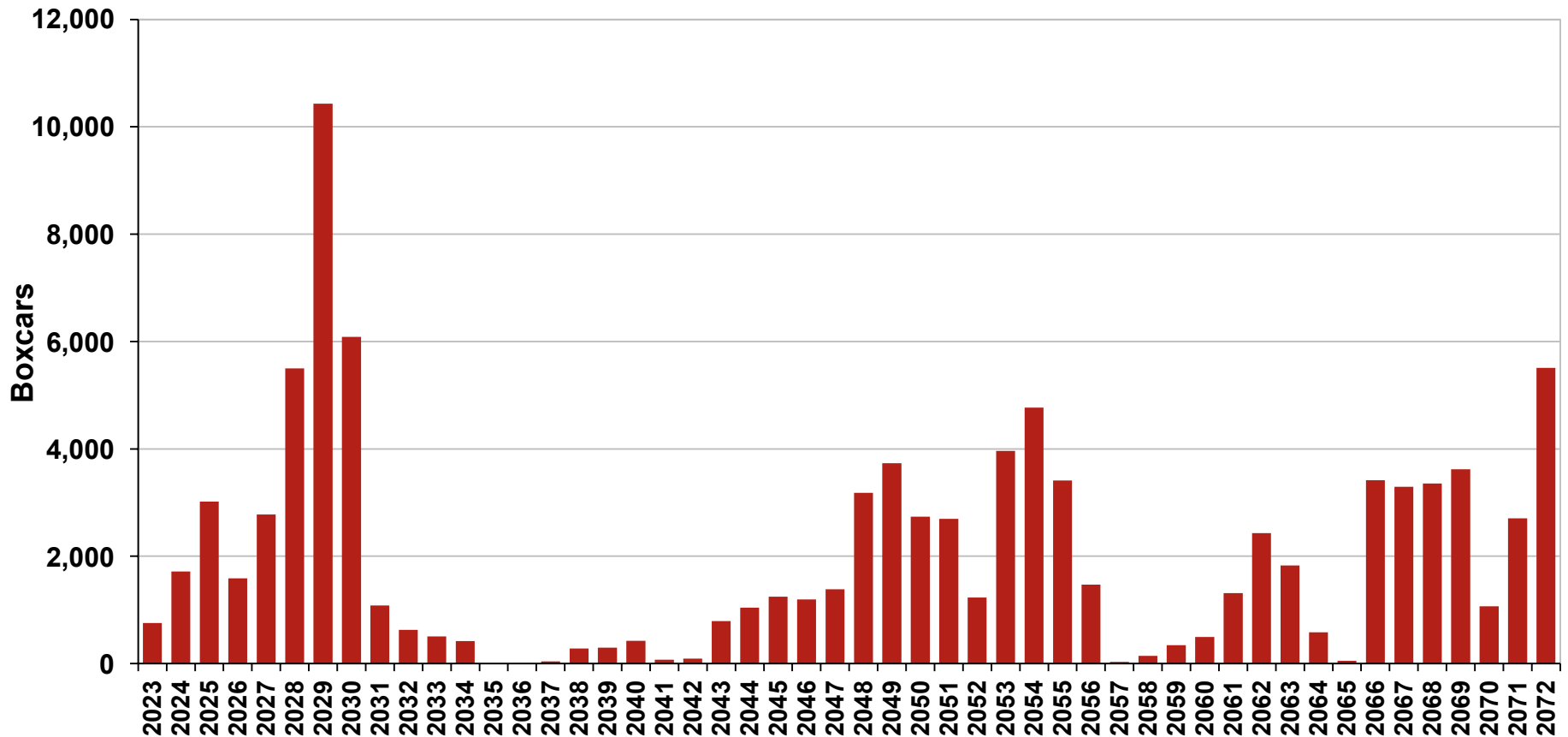


RAILCAR POOLING EXPERTS

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About 30% of the N.A. boxcar fleet will reach 50 years of age (statutory retirement) between 2023 and 2030

North American Boxcar 50-Year Feet Age Outs



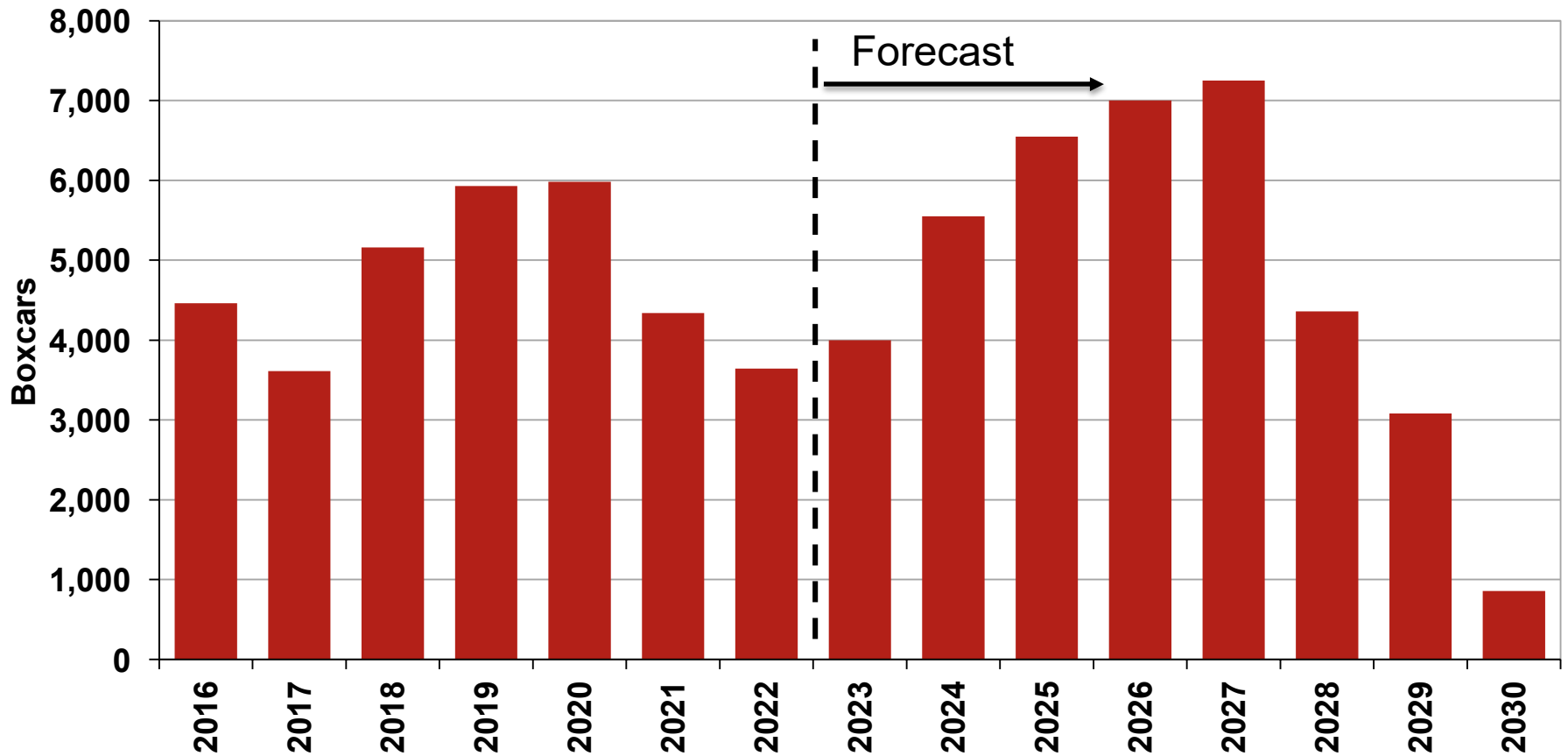
Source: Umler

*Note: 6,054 boxcars have incomplete data and are not included in graph



Anticipated early scrapping pulls the fall-out issue forward, but also smooths the replacement gap

North American Boxcar Fleet Fallout Forecast



Source: Umler, AAR, TTX

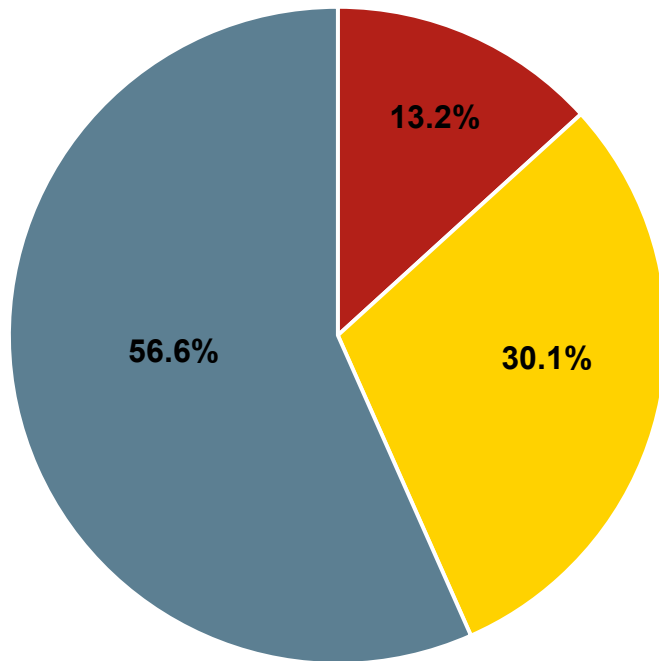


RAILCAR POOLING EXPERTS™

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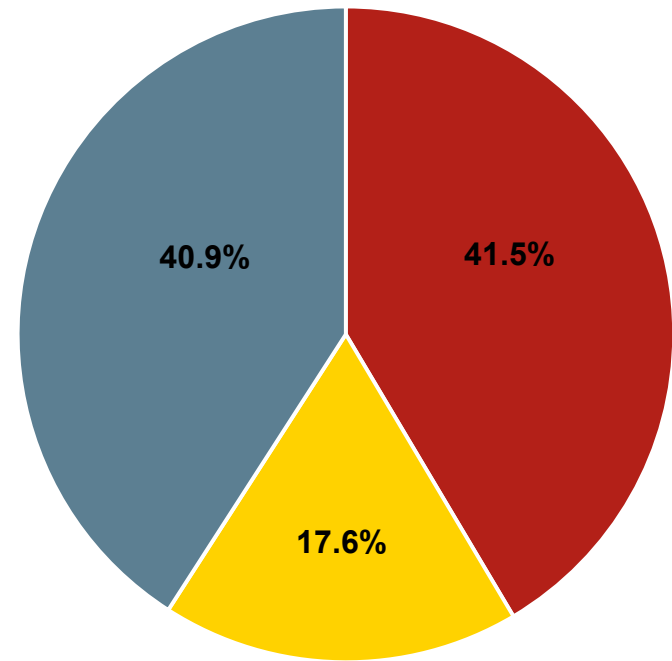
Boxcar fleet ownership is diverse; each fleet owner will need to make their own decision on scrapping

Standard Capacity Boxcars



■ TTX ■ Class I ■ Other

High Capacity Boxcars

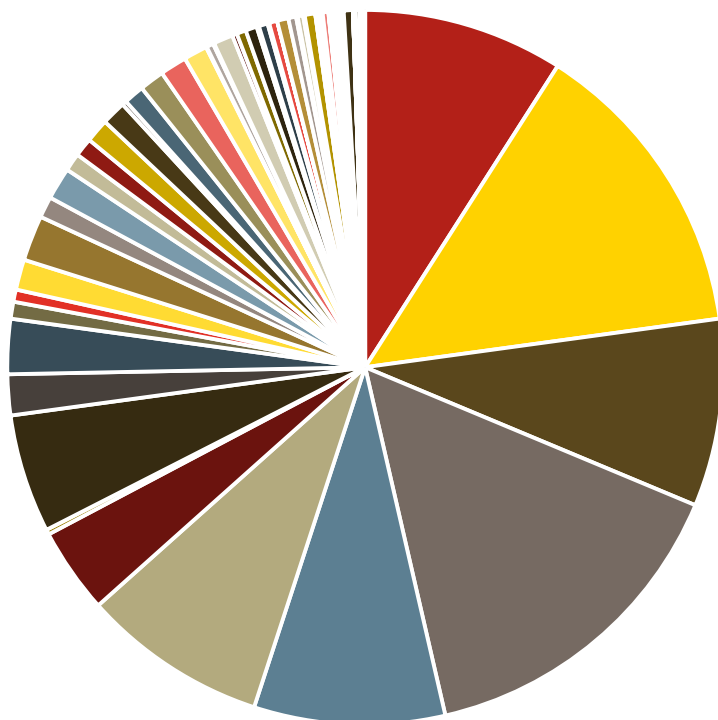


■ TTX ■ Class I ■ Other

Source: Umler

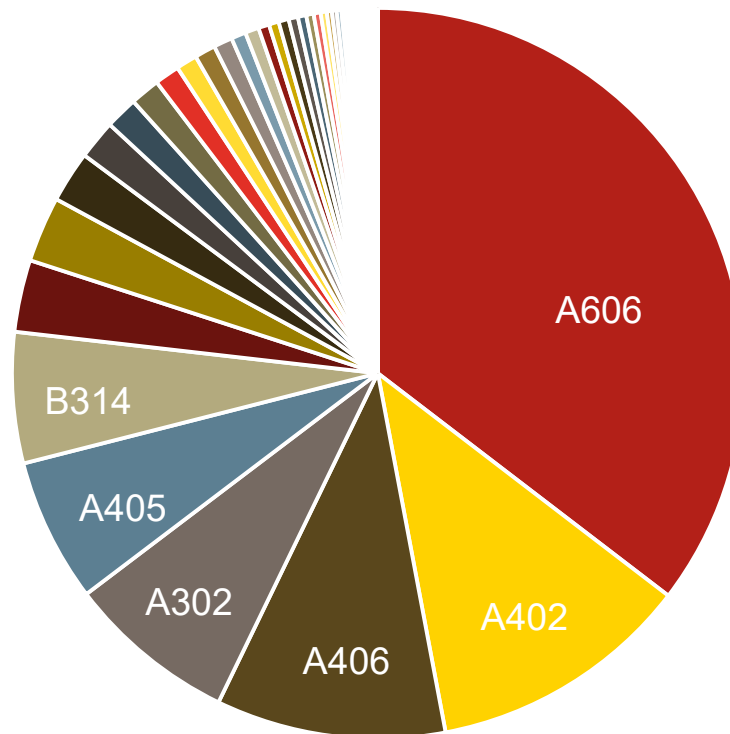
As the fleet size drops, and as new-builds arrive, the fleet is becoming more homogenous

**2009 Boxcar Fleet
155,535 Cars**



AAR Car Types: 135

**2023 Boxcar Fleet
101,600 Cars**



AAR Car Types: 88

Source: Umler

For replacement capacity, TTX has led with two standard boxcar types for maximized customer acceptance and minimized empty miles

TBOX

60-ft 100-ton Plate-F
Double 8-ft plug doors
Wall and floor anchors
Nailable steel floors
A606



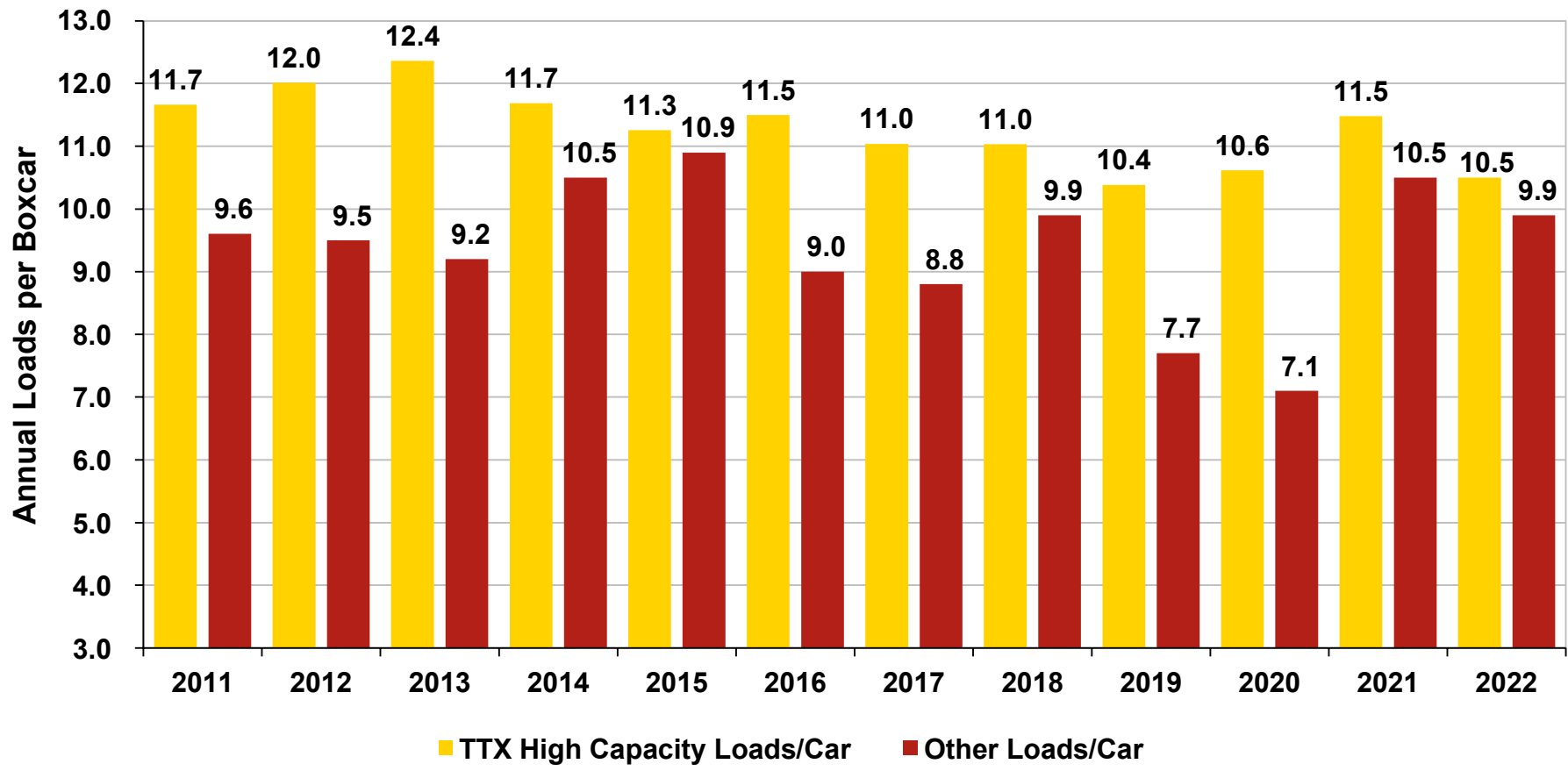
FBOX

50-ft 100-ton Plate-F
Single 12-ft plug doors
Wall and floor anchors
Nailable steel floors
A406



Pooled, standardized, high-capacity cars perform better: 10.8 loads/year over the past 5 years, vs. 9.0 for all other boxcars

TTX High Capacity Boxcars - Annual Loads per Boxcar



Source: TTX

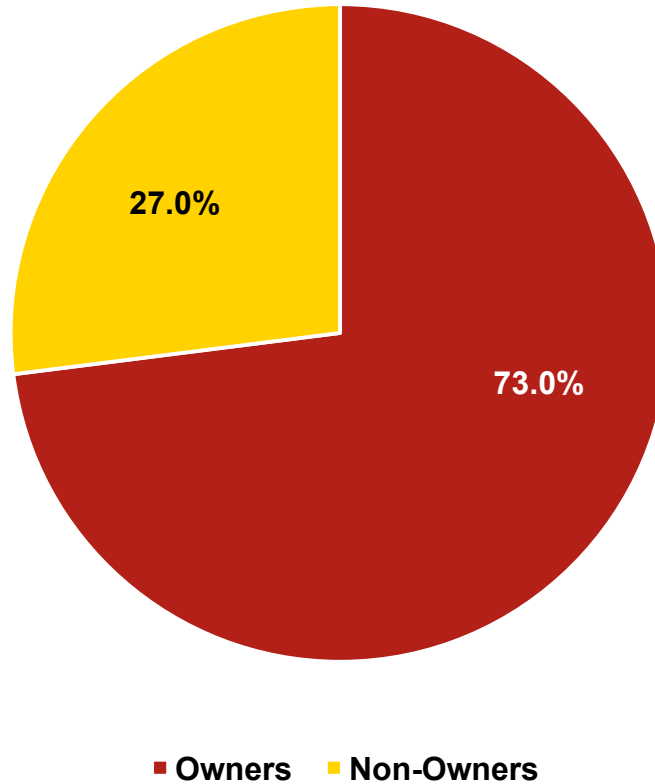


RAILCAR POOLING EXPERTS

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TTX boxcars are utilized by both owners and non-owner railroads to benefit shippers everywhere

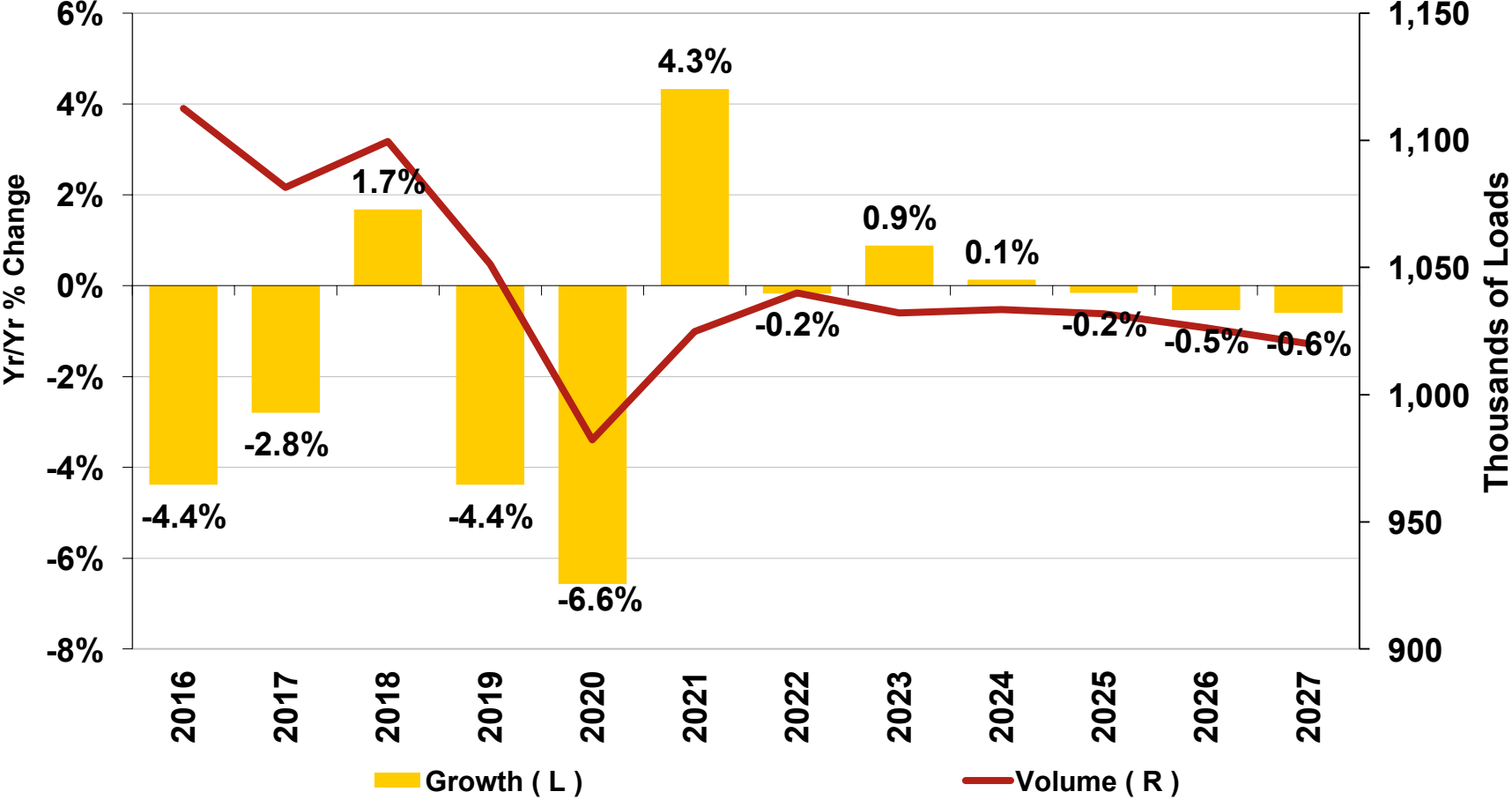
2022 TTX Boxcar Loadings



Source: TTX

Total North American boxcar loadings should stay flat on low commodity growth and more high-cap boxcars

North American Boxcar Loads Forecast

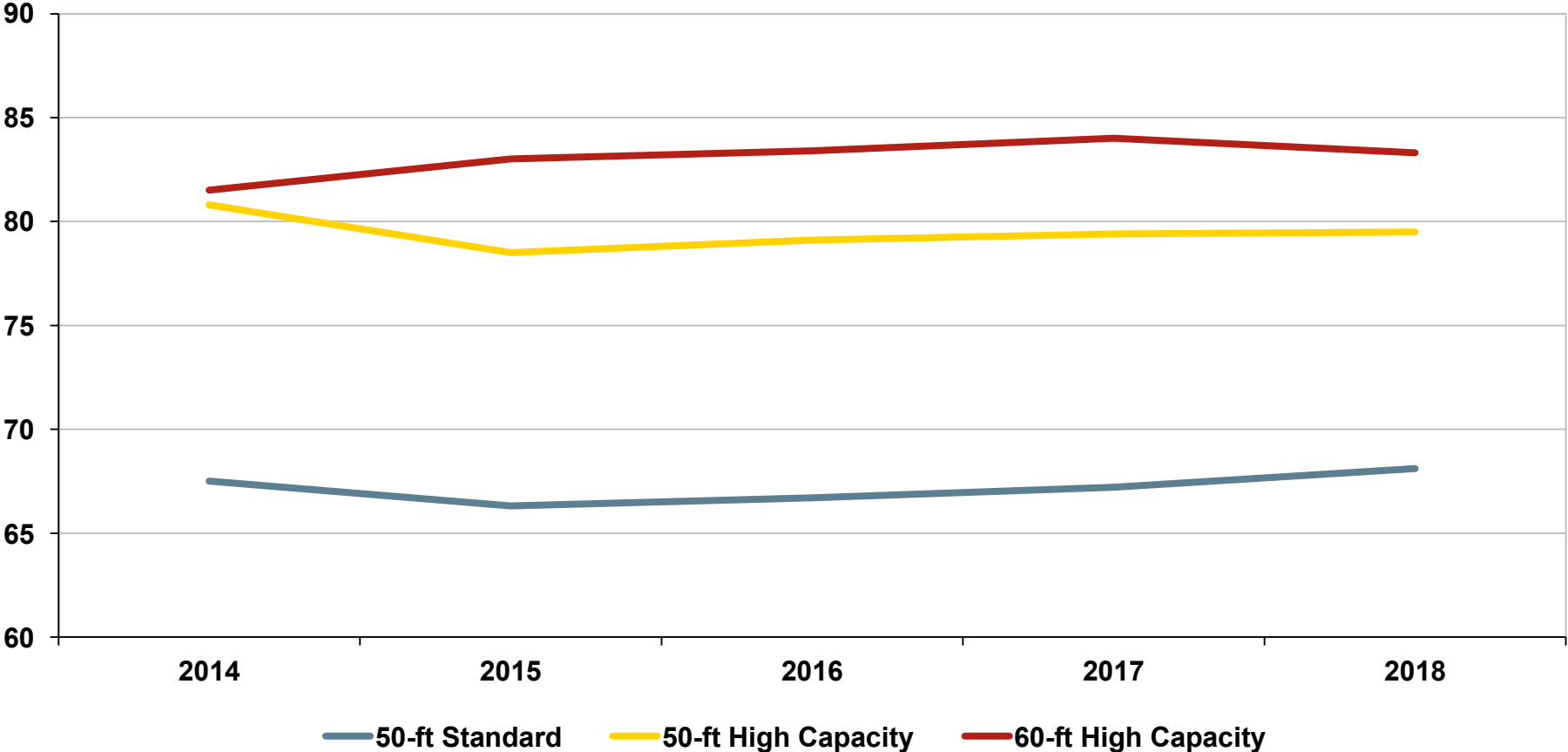


Source: TTX, Association of American Railroads, Licensed Materials, RailInc



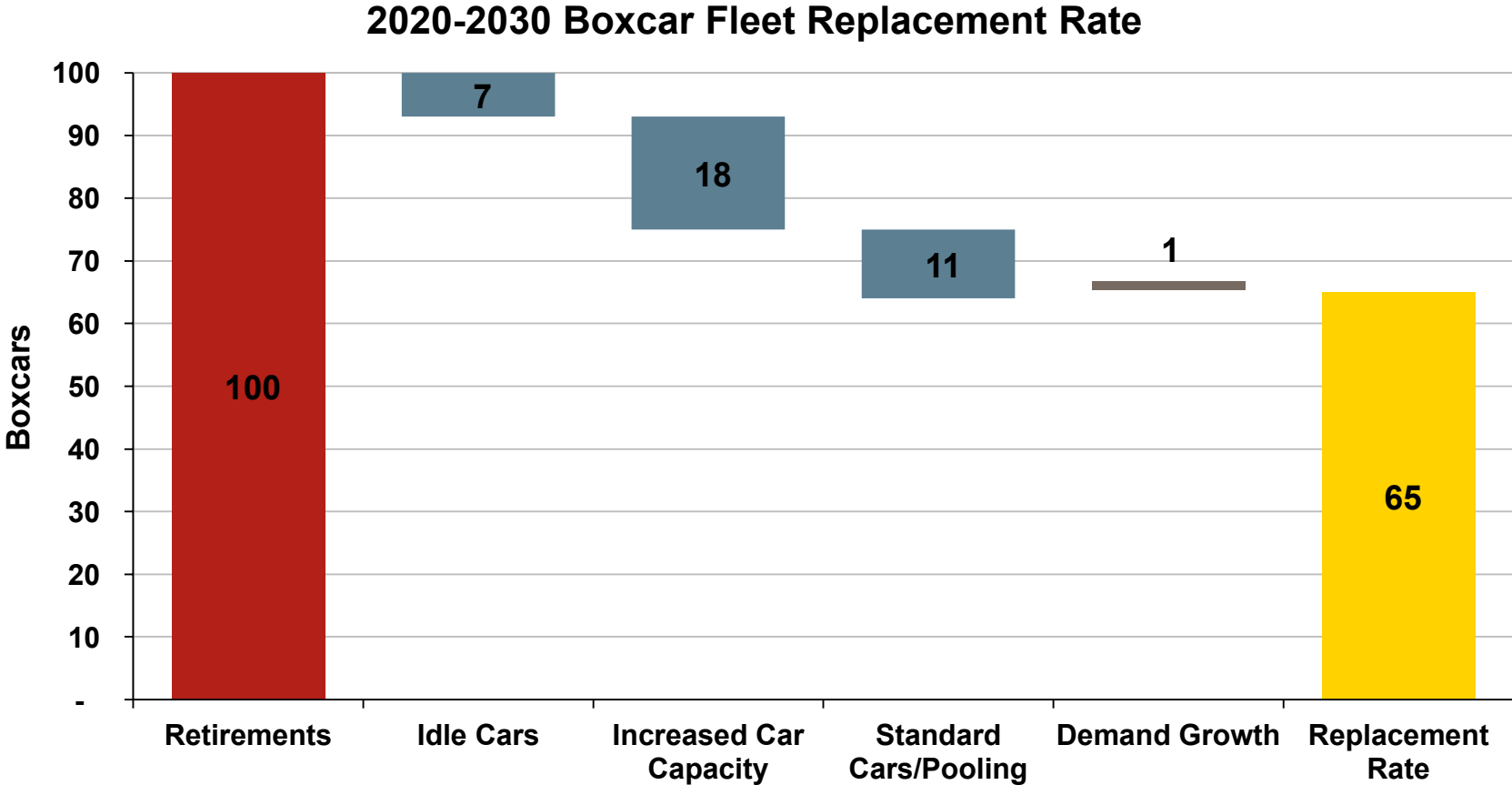
The older 50-ft fleet averaged 66.6 tons/load while high cap. 60-ft boxcars carried 83.6 tons/load, gaining over 25%

Boxcar Fleet Average Tons/Load



Source: RR Reporting, TTX

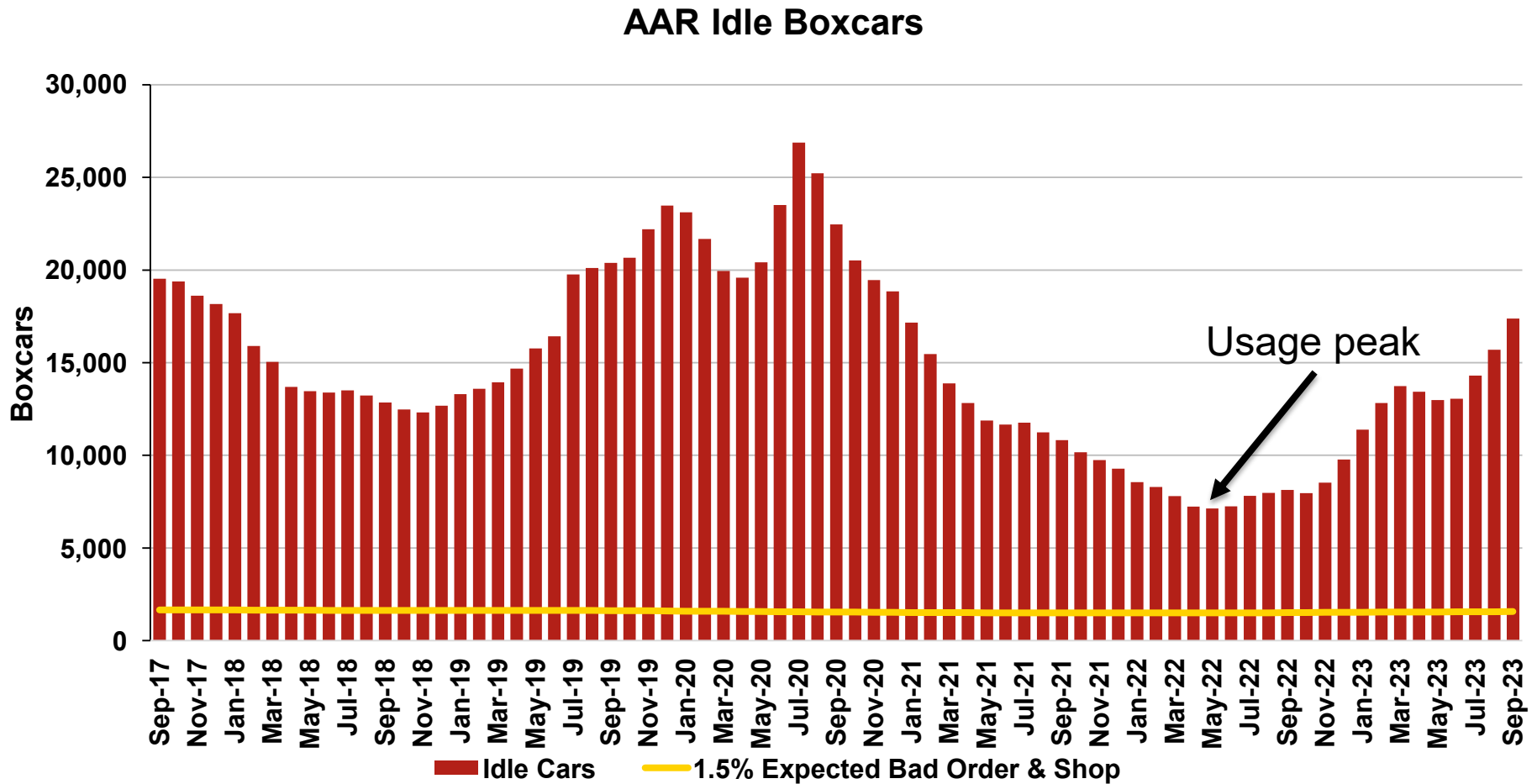
High-capacity cars, and fleet efficiencies, allow the retiring cars to be replaced at a less than 1:1 ratio



Source: TTX

Note: Calculations are for expected retirements and not total fleet

At peak, 7,128 boxcars were idle (~2,400 had not been loaded in a year), these are likely functionally obsolete



Source: AAR, TTX

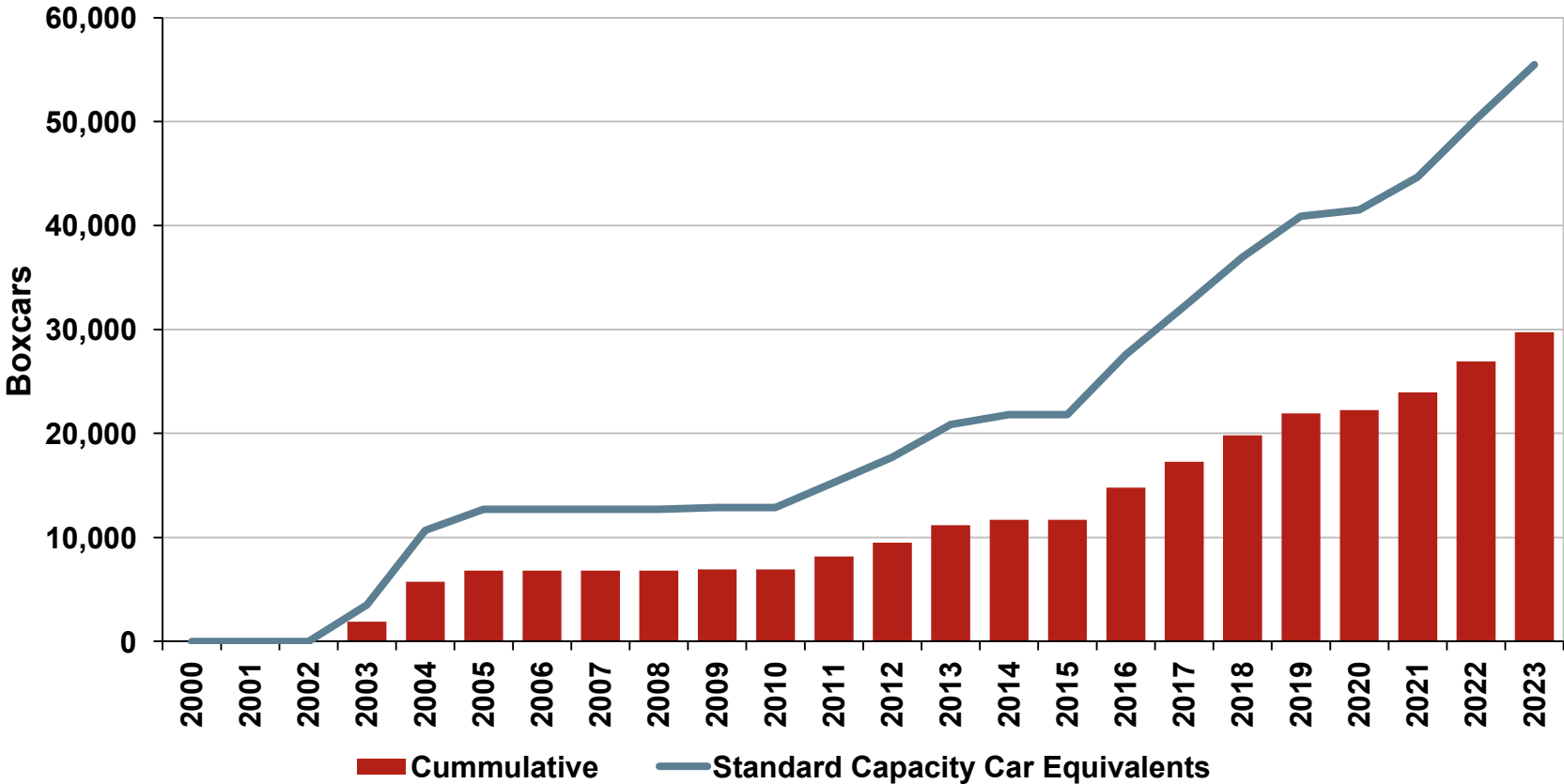


RAILCAR POOLING EXPERTS

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Since 2003, TTX has added ~30,000 new high-capacity boxcars, equivalent to +55,000 50-ft 70-ton boxcars

Cumulative TTX Boxcar Additions

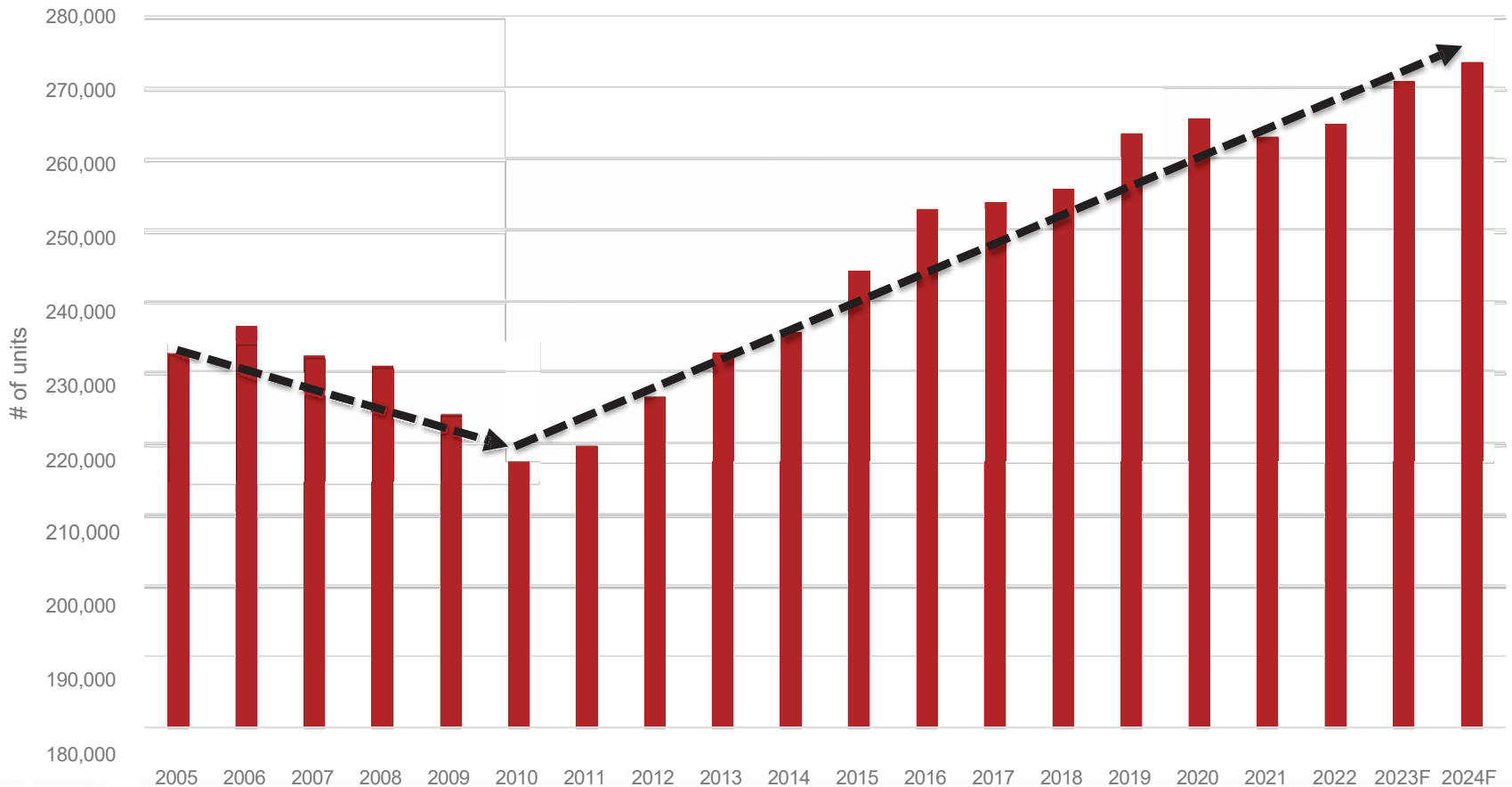


Source: TTX



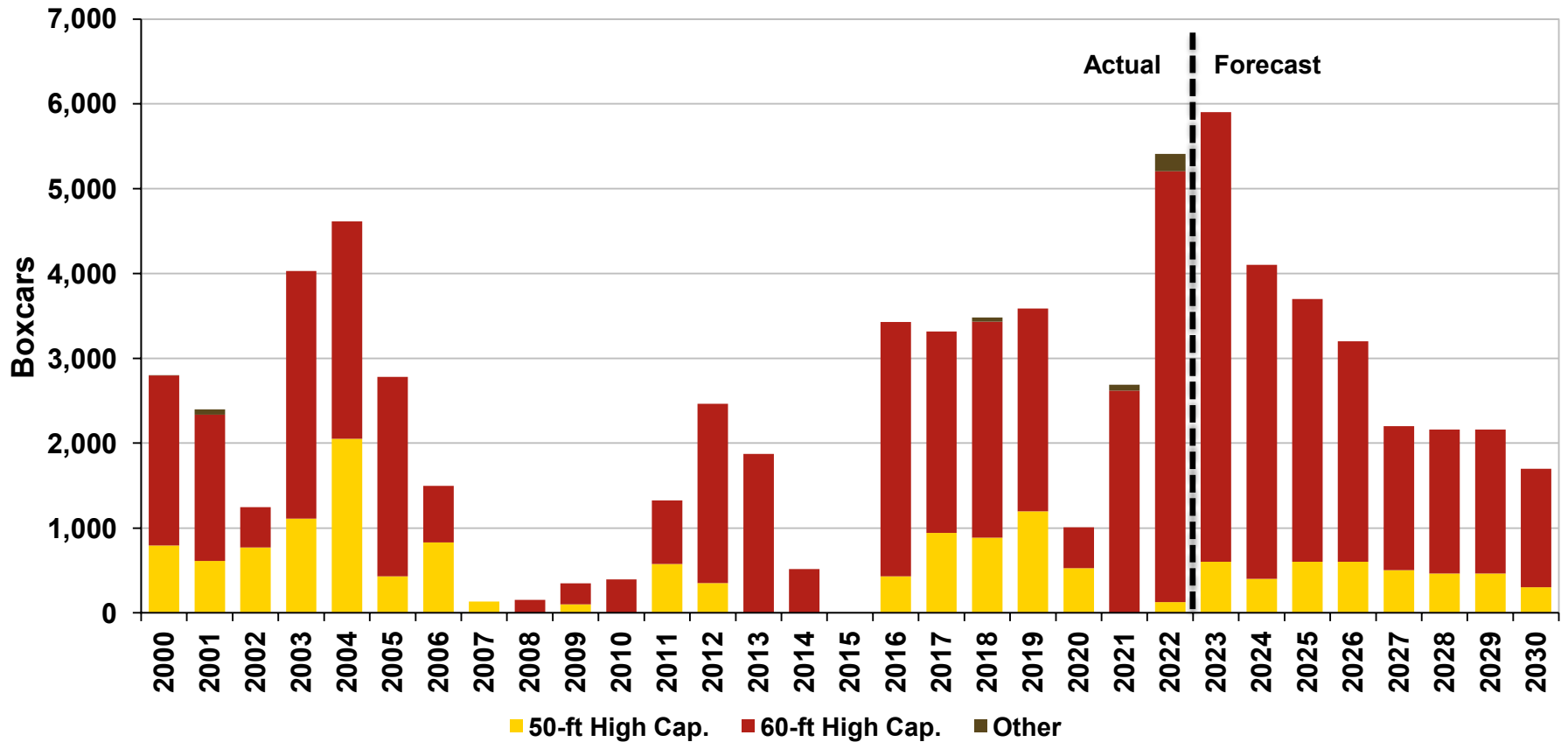
TTX Continues to Make Significant Fleet Investments

- » Between 2010 and 2022, the TTX fleet grew 20% to an average of 264,880 units with purchases focused on high capacity boxcars and double-stacks.



To maintain capacity, an annual average of 3,140 boxcars need to be produced – an achievable rate

North American New Boxcar Build Forecast



Source: Umler, TTX

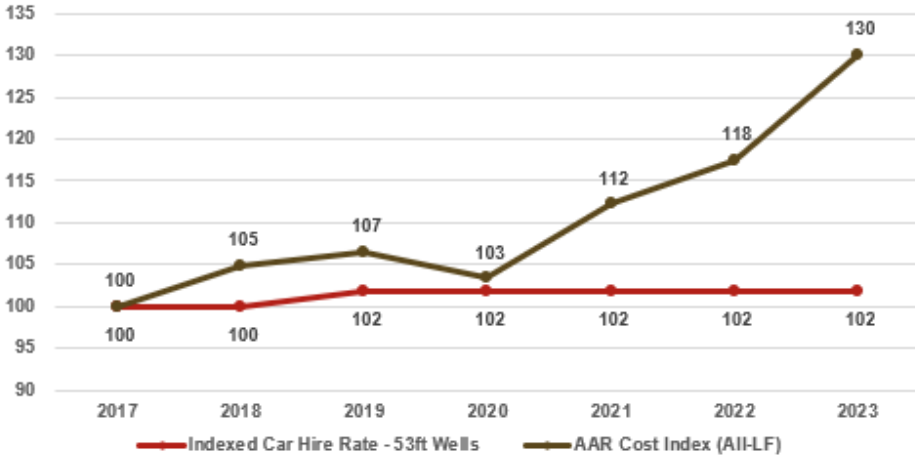


RAILCAR POOLING EXPERTS

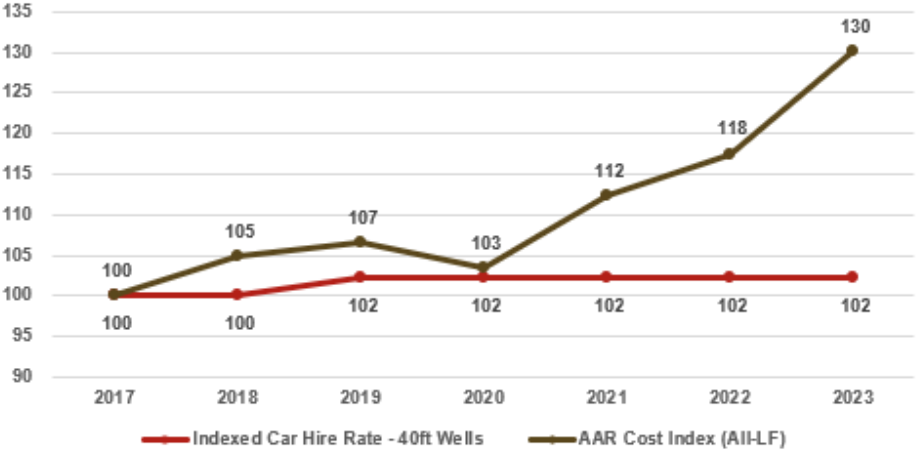
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Indexed Car Hire Rate for Select TTX Car Types vs. AAR Cost Index (All-LF)

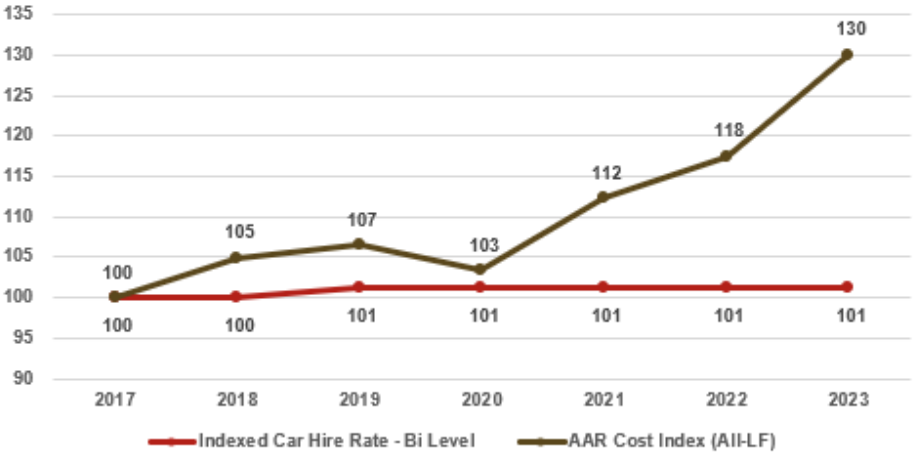
53ft Well Rate Index (2017=100) vs. AAR Cost Index (All-LF)



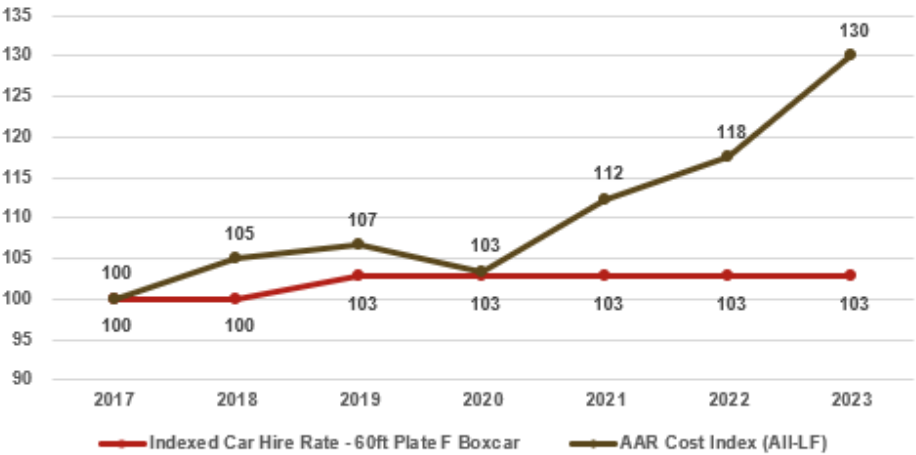
40ft Well Rate Index (2017=100) vs. AAR Cost Index (All-LF)



Bi-level Rate Index (2017=100) vs. AAR Cost Index (All-LF)



60ft Plate F Boxcar Rate Index (2017=100) vs. AAR Cost Index (All-LF)



North American Boxcar Fleet Conclusion

- » Boxcar loadings declined over the long-term and fleets were culled as a result, but fleet size/load remains the same
- » Today's boxcar fleet remains poorly utilized with less than one load per month per boxcar
- » Fallouts of old equipment take place over the next eight years
- » Boxcar loadings are likely to stay relatively flat
- » Pooled, high-capacity, homogenous boxcars will turn far more efficiently than today's fleet
- » One-for-one replacement is not required
- » Building ~3,140 cars per year maintains capacity and is easily within the industry's normal build capability
- » No rule or structural changes are required to maintain capacity

Appendix F

Powers, Nicholas

From: Reece, Donielle <Donielle.Reece@railinc.com>
Sent: Tuesday, November 14, 2023 3:25 PM
To: Powers, Nicholas
Cc: Aldenderfer, Mark; Fitzgerald, Drew; Reece, Donielle
Subject: RE: Inquiry regarding car-hire data

EXTERNAL EMAIL from: Donielle.Reece@railinc.com

Good Afternoon Nicholas,

Thank you for your email. Due to confidentiality rules most of the requested data is not publicly available and Railinc is not able to provide the information.

If you have any questions or follow up comments, please let me know.

Thank you,

Greg L#Uhhfh#vkh2khu,#
Product Manager - Business Services
e: donielle.reece@railinc.com



From: Powers, Nicholas <Nicholas.Powers@brattle.com>
Sent: Wednesday, November 8, 2023 9:23 PM
To: Reece, Donielle <Donielle.Reece@railinc.com>; Aldenderfer, Mark <Mark.Aldenderfer@railinc.com>; CSC Mailbox <csc@railinc.com>
Subject: Inquiry regarding car-hire data

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Hello:

I am writing to inquire about the possibility (and price) of purchasing historical data on car hire rates ("CHARM") file. I am hoping that one of you can help me with this request, or direct me to the right person if not.

In particular, I am interested in the following, covering the last 10 years:

1. Historical rate data, with monthly detail.
 - a. Covering all "A", "B", and "R" type box cars.
 - b. Covering all rate types: M, S, O, Z, W, L, U, V
2. For each car-rate-rate_type-month, I would like the following fields: car type code, loaded hourly rate, empty hourly rate, loaded mileage rate, empty mileage rate, loaded hours, empty hours, loaded miles, empty miles, plus car characteristics: built year, rebuilt year, inside length, inside height, inside width, tank lining material, plate length, plate width, floor type, load limit, gross weight on rails, capacity (cubic ft).
3. We understand that each rate type will need to be pulled separately, so that the various rate types aren't combined into a single observation. Please append each record line item with the respective Rate Type Code or advise if output of the respective Rate Code Type has to be delivered via separate files.

If helpful in determining a price quote, I'd be happy to set up a call to clarify any aspects of this request.

Thank you,

Nicholas E. Powers, PhD (he/him/his)

PRINCIPAL



The Brattle Group

1800 M Street NW, Suite 700 North
Washington, DC 20036

MOBILE +1.202.297.0191

DIRECT +1.202.419.3369

OFFICE +1.202.955.5050

FAX +1.202.330.5220

EMAIL Nicholas.Powers@brattle.com

WEBSITE brattle.com

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**BEFORE THE
SURFACE TRANSPORTATION BOARD**

Docket No. EP 334 (Sub-No. 8A)

**Joint Petition for Exemption of Arbitration Rule
from Application of 49 U.S.C. § 10706 and Motion to Dismiss**

Verified Statement of

Dr. Nicholas E. Powers

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I. INTRODUCTION

A. EXPERIENCE AND QUALIFICATIONS

I am a Principal in the Washington, DC office of The Brattle Group, which is an international economic consulting firm that addresses complex economic, regulatory, and financial issues for corporations, law firm, and governments, in a variety of litigation and non-litigation contexts. My business address is 1800 M Street, NW, Suite 700 North, Washington, DC 20036.

I hold a Ph.D. in Business Economics from the University of Michigan and a Bachelor of Science in Applied Economics and Management from Cornell University. I have taught economics courses at the University of Michigan. My research has been published in academic journals, including *Review of Industrial Organization*, *Environmental & Resource Economics*, and *Energy Policy*.

I have worked as an economic consultant for more than a decade. I have expertise in applied econometrics, the economics of regulation, and industrial organization, which is the field of economics concerned with the competitive analysis of firms and economic markets. My work has covered a broad array of industries with a significant focus on the transportation sector, including rail freight, air freight, trucking, automobile and truck manufacturing, airports, airlines, and the postal industry.

I frequently provide economic analysis of cartel behavior, and assessment of liability and damages in matters concerning alleged collusion and other alleged anticompetitive behavior. I have filed and presented reports in the Court of Amsterdam, where I was subjected to court examination, in a matter related to an alleged cartel agreement. I have worked closely with

Daniel McFadden, winner of the 2000 Nobel Prize in Economic Sciences, managing the econometric and economic analysis underlying his expert testimony in multiple consulting engagements. I also have experience analyzing the competitive effects of proposed mergers in a variety of industries.

I have broad experience conducting analysis for and submitting expert reports in regulatory proceedings, including the extensive analysis of regression-based costing models in the postal industry, analysis of the default service procurement plans of electric utilities, and analysis of load impacts of alternative rate structures in the electric industry.

My rail-specific experience includes analysis of nationwide rail disruptions in support of an electric utility's cost reconciliation filings, support of expert testimony in a trackage rights proceeding before the Surface Transportation Board, advising the owner of a shortline railroad in its fair market valuation in support of negotiations with a Class I Railroad; analysis of confidential waybill sample data to identify potential competitive concerns from a proposed merger; and support of expert testimony quantifying damages from alleged collusion over fuel surcharges.

My resume is attached as Exhibit A.

B. ASSIGNMENT

Counsel for the Equipment Leasing Committee ("ELC") of the Railway Supply Institute ("RSI") has asked me to consider, from an economic perspective, whether the current system for determining car hire rates under Rule 25 of the Code of Car Hire (the "Arbitration Rule") fosters an economically appropriate long-term supply of boxcars in response to marketplace supply and demand factors.

In undertaking my analysis, I, and those working at my direction, have reviewed data and documents received from ELC members and other related public documents. I also have had multiple conversations with ELC members.

I reserve the right to modify the opinions expressed in this statement as more information becomes available. My compensation is not dependent on the opinions provided or the outcome of this or any other proceeding.

C. SUMMARY OF OPINIONS

- 1. Under the current Arbitration Rule, including the related default rate standard, there is generally an absence of several key mechanisms necessary for a well-functioning rail car market.**

Unlike in most well-functioning markets, the purchasers of car hire services—the railroads—do not benefit operationally from agreeing to a higher rate. Specifically, a railroad does not increase the quantity of boxcars available for its use by agreeing to a rate higher than the default rate. Instead, the primary driver of negotiated rates is to avoid the risks and costs of arbitration, which means that prices reflect those risks rather than the market forces of supply and demand.

- 2. The default rate standard is prone to gaming, and a comparison of default rates with a large sample of negotiated rates indicates gaming has in fact occurred.**

Railroads have incentives to keep default rates low as a means of reducing their costs. Due to the way default rates are determined, the standard encourages gaming by railroads, and the resulting default rates may be pinned to past transactions made under atypical circumstances.

3. With default rates assigned automatically, negotiating new rates is difficult.

The artificial dynamics described above lead to lower negotiated rates. User railroads' bargaining position is strengthened by low default rates. The risk of arbitration is the only counterweight, but because arbitration is costly, it is only a meaningful counterweight under certain conditions. Negotiated rates in the car hire system are generally lower than the ostensibly cost-based rates TTX charges for the same cars.

4. There is a significant risk of a boxcar shortage by the end of the decade.

Nearly 30% of the boxcar fleet is approaching the end of its useful life and expected to retire within the next 10 years. Current car hire rates are insufficient to incentivize private investment in new boxcars.¹ In order to maintain an efficient rail car fleet that includes private investment, rates must be high enough to allow owners to recover a boxcar's lifetime costs. Current car hire rates are insufficient to incentivize private investment. Railcar costs, and the balance between supply and demand, have both fluctuated substantially over the past decade, but the response in terms of negotiated rates has been minimal. Based on the limited responsiveness of rates to market conditions, it is unlikely as these boxcar retirements occur that rates will adjust sufficiently to incentivize private investment in new car supply under the current system.

¹ Here and throughout the report, I use the term "private investment" to refer to investment in boxcars by leasing entities.

5. Increased concentration of boxcar ownership creates competitive concerns.

TTX, whose share of the boxcar fleet has increased in recent decades, and which operates under a different rate setting system, may be able to make up for the lack of private investment, thereby increasing its ownership share of the North American boxcar fleet. In the absence of private investment, TTX will increasingly control the capacity of boxcars. This would in turn allow it to constrain capacity of the rail system to transport those goods that move in boxcars. In the absence of robust alternatives for supplying boxcars, coordination among the railroads that own TTX with respect to the number of boxcars offered by TTX could be used to exercise joint market power that would produce supra-competitive rail freight rates, reduce rail freight traffic, and allow railroads to earn supra-normal profits.

D. DATA SOURCES RELIED UPON

In forming the opinions presented in this verified statement, I relied on the following data sources, many of which were provided by ELC members.

- Seven ELC members' proprietary car hire payment data as contained in the RailInc Car Hire Data Exchange system ("CHDX"). CHDX is a "monthly exchange of time and mileage payment information."² Below, I provide additional detail on the members' CHDX datasets received and how I processed and cleaned those datasets before proceeding with my analysis.
- Railinc Umler data on the boxcar fleet.³ From one ELC member, I received a recent snapshot of Umler data, which provided insight into the age, owner type,

² Railinc also maintains a related system known as the Car Hire Accounting Rate Master ("CHARM"), which is the official source of time and mileage rates on freight cars. These rates appear in the CHDX data for those periods when there are time or mileage payments made pursuant to those rates.

See <https://public.railinc.com/products-services/car-hire> for more information on RailInc's CHDX and CHARM systems.

³ Umler data are described further at <https://public.railinc.com/products-services/umler-system>.

and other details of individual cars in the North American boxcar fleet.⁴ From that same ELC member, I also received summaries of historical Umler snapshots of the North American boxcar fleet, which provided some insight into the historical fleet size over the last 16 years.

- Freight Car Statistics distributed by RSI’s American Railway Car Institute, on railcar orders, deliveries, and backlogs.⁵
- AAR data on the number and share of freight cars in storage, covering February 2016 through January 2024.
- Historical data on the “Job Code 4450” AAR Labor Rate, which is the rate railroads can charge each other for railcar repairs.⁶
- Quarterly default rates for new boxcars, covering all “A” (equipped) and “B” (unequipped) boxcar types A and B. The data provide historical time and mile default rates by car type and empty/loaded status.⁷
- A February 2024 “Economic & Railcar Forecast Database” as published by FTR Transportation Intelligence.
- Public Use Waybill Sample data for 2013 through 2022, as provided on the Board’s website.⁸
- Data on the after-tax weighted average cost of capital (ATWACC) of ELC members as of January 1, 2024 and July 1, 2020, sourced from Bloomberg L.P.
- I also relied at times on information from ELC members regarding the anticipated purchase prices of new boxcars, the anticipated salvage value of existing boxcars, and maintenance costs associated with boxcars.
- Any other third-party sources I relied upon are noted in the relevant sections throughout this verified statement.

⁴ This January 2024 snapshot of Umler data contained a “Derived Built Date” field which was based on a mix of proprietary information (the Umler “Built Date” field) for boxcars owned by that member, and certain non-proprietary fields visible to all subscribers for other cars. Specifically, {{ [REDACTED] }}.

Throughout this verified statement, highly confidential information is enclosed in double braces (*e.g.*, {{...}}).

⁵ These data are proprietary and thus treated as highly confidential.

⁶ These data were provided via e-mail by one ELC member.

⁷ These data were also provided via e-mail by one ELC member.

⁸ <https://www.stb.gov/reports-data/waybill/>

I relied most heavily on seven members' proprietary car hire payment data as contained in the RailInc CHDX system. The datasets provided by members differ in their time coverage, and in the ways in which various data owners maintain and shared their data. Generally speaking, the boxcar owners were only able to provide data for those boxcars and time periods for which the owners were the recipients of the car-hire payments.⁹

Based on my understanding of the car hire data and discussions with the data owners, I have processed and cleaned the data to the best of my ability, correcting or removing erroneous observations when appropriate. The processing and cleaning steps included:

- dropping observations where both the reported time and reported mileage are equal to 0;
- dropping observations where both the hourly rate and the mile rate are equal to 0;
- dropping observations where key variables (such as reported time, reported miles, the hourly rate, the mileage rate, or the empty/loaded indicator) are missing;
- dropping observations corresponding to refrigerated boxcars (those for whom the AAR car type equipment code begins with R rather than A or B);¹⁰
- dropping observations with other obvious errors;¹¹
- aggregating observations that have the same car identifier, AAR car type, rate type, year, month, rates, empty/loaded indicator, and paying railroad; and
- when the number of reported paid hours for a car exceeds the number of hours in the month, proportionally adjusting the hours paid for each entry such that any single car's total paid hours in the month do not exceed the actual number of hours in that month.

⁹ For example, under fixed-term fixed-rate leases, the car hire payments are retained by the lessee railroad and not the car owner-lessor. For boxcars under this type of lease, the car owner-lessor would not generally be able to share the car hire payment data without the consent of the lessee.

¹⁰ More generally, unless otherwise noted, I exclude refrigerated boxcars from any analysis referred to in this verified statement.

¹¹ For example, one lessor's data erroneously classified all observations with two distinct marks as having CHARM rate type "M," which was at odds with the CHARM file for those boxcars. For these cars, it appears likely that the Umler rate code was pulled instead of the CHARM rate code.

Throughout the remainder of this verified statement, I refer to the resulting processed car-hire payment data as the “ELC CHDX Dataset.”¹² The data generally cover January 2013 through August 2023. Some but not all members’ data extends through September 2023. In many analyses below, I focus on the “last 12 months” of the ELC CHDX dataset. In such cases I am referring to the period from September 2022 to August 2023, which is the last 12 months for which I have data for all 7 ELC members who provided CHDX data.

II. BACKGROUND

Car hire refers to rental paid by railroads to railcar owners. Car hire for railroad-marked cars, including boxcars, is typically charged on a per-hour and per-mile basis. Before I discuss my analysis, I present a high-level overview of the car hire system for railroad-marked cars and how it took shape. In this section, I also provide some basic economic insights into the car hire system as it pertains to private owners of cars.

A. EVOLUTION OF THE SYSTEM

The current car hire system evolved to facilitate the interchange of railcars between railroads by providing a mechanism whereby railcar owners could be compensated when their railcars were being used by other railroads. Since the enactment of the Interstate Commerce Act, railroads have had a mandatory interchange obligation under which they must interchange railcars to and from other carriers as necessary, regardless of who owns the railcars, to facilitate

¹² The data sources and work papers I relied on as supporting materials have been submitted with the Board, using the designation “HC” to denote highly confidential materials. The ELC CHDX dataset is provided as POWERS-HC-0021.csv. An index of the workpapers and supporting materials provided is contained in POWERS-0001.xlsx.

through movements of rail traffic between origins and destinations served by different carriers.¹³ The car hire system provides a mechanism whereby the car user compensates the car owner for the use of its rolling stock.

In 1970, the ICC began prescribing car-hire rates using a formula.¹⁴ These prescribed rates, as revised in 1977, were intended to provide the car owner with enough revenue to cover operating costs, and to provide an adequate return on the acquisition cost of the car.

In 1992, the ICC decided to deprecise car hire and approve a new system under the Arbitration Rule in which car hire rates would be set through direct negotiations between car owners and railroads.¹⁵ The ICC phased out the prescription system over the ten-year period ending in 2003.

B. THE CURRENT SYSTEM

The current system for establishing car hire rates between railroads is governed by the Arbitration Rule and the supporting rules under the Code of Car Hire. The current system provides for a “per diem” rate structure, under which separate per hour and per mile usage rates apply. These rates may vary based on whether a railcar is loaded or empty. In practice, however, loaded and empty per hour and loaded and empty per mile rates are almost always identical. On average, based on typical 2023 paid miles and hours and the corresponding rates, the per hour

¹³ *Review of Car Hire Regulation*, Ex Parte No. 334 (Sub-No. 6) et al., 1992 ICC LEXIS 34, at *13 (ICC Feb. 18, 1992); *Chicago, B. & Q. R.R. v. New York, S. & W. R.R.*, 332 I.C.C. 176, 183 (1968).

¹⁴ *Car Service* 358 ICC at 721.

¹⁵ For the most recent car hire rules, see Association of American Railroads, *Circular No. OT-10* (“Code of Car Hire Rules”), In Effect as of March 1, 2024 (hereafter, AAR Circular No. OT-10). Available at <https://public.railinc.com/sites/default/files/documents/OT-10.pdf>. Rule 25 of Circular No. OT-10 is referred to as “The Arbitration Rule.”

and mile rates account, respectively, for about three quarters and one quarter of total car hire payments.¹⁶

1. Negotiated Rates and Default Rates

Broadly speaking, under the Arbitration Rule and the supporting rules of the Code of Car Hire, there are two types of car hire rates: default rates and negotiated rates. The Arbitration Rule automatically assigns each car a default rate, which is a set of per diem rates. It also provides a process for a car owner and any railroad to establish for a car (or several cars) a negotiated rate, which is a set of agreed upon rates that will apply in lieu of default rates.

Under the current car hire system, the *default* rates assigned to a car remain unchanged for the duration of that car’s useful life – a period measured in decades.¹⁷ When a new car is added to the fleet, current rules provide that the default rate for that car is set to the lowest negotiated rate for cars of that type in effect in the quarter before the new car is first registered as a railroad-marked car.¹⁸ This concept of a default rate is unique to the car hire system. TTX-

¹⁶ This estimate is based on my review of car hire data provided to me by various ELC members. Those data and the steps I took to clean and process those data are described in more detail in Section I.D.

Specifically, focusing on the last 12 months for which the data are most complete, I find that hourly rates account for 76% of total payments and mileage rates account for 24% of total payments. *See* POWERS-HC-0032.R.

¹⁷ The prevailing rates that govern payments for the movement of an individual car on a “foreign” railroad’s system are tracked in a database maintained by Railinc, known as the Car Hire Accounting Rate Master (“CHARM”). In this system, default rates are designated with the rate type “O.” Base rates that apply to grandfathered boxcars (short line-marked boxcars that predate the depreservation process and continue to bear the marks they bore at the time of depreservation) in the absence of an overriding bilateral agreement are known as “U” rates.

¹⁸ More precisely, the default rate for *loaded* movements for a given car type is set to the lowest *loaded* hourly market rate in effect in the previous quarter, and its associated mileage rate. Similarly, the default rate for *empty* movements for a given car type is set to the lowest *empty* hourly market rate in effect in the previous quarter, along with its associated mileage rate. These rates are not necessarily set by the same car. *See* RailInc., “Car Hire Depreservation RAIL-CARDS Business Rules”, April 2020 (hereafter, “Car Hire Depreservation Business Rules”), at 1.8. Available at https://public.railinc.com/sites/default/files/documents/Depreservation_Business_Rules.pdf, last accessed March 18, 2024.

marked cars supplied by the railroad-owned railcar pooling company TTX, a major provider of boxcar capacity, are not subject to the Arbitration Rule and, thus, not assigned a default rate.

Regarding negotiated rates, the Arbitration Rule allows parties to set the duration of a negotiated rate, although most negotiated rates have no specified expiration date and remain in effect until the agreement setting them is terminated or superseded.¹⁹

Because negotiated rates are railroad specific, the rates paid at a given point of time for use of a specific car can differ across railroads, with some railroads paying higher negotiated rates, others perhaps paying lower negotiated rates, and some potentially paying the default rates.

While many lessors have negotiated rates with multiple railroads for many of their boxcars, payment at default rates remains prevalent. In the last 12 months of the ELC CHDX dataset, default rates account for 27% of paid hours and 22% of paid miles.²⁰ Therefore, even if default rates had no influence on other paid rates, the magnitude of default rates has implications for the revenues a boxcar owner can expect to earn in a given time period.

The widespread use of default rates as a basis for payment is in large part a reflection of the large number of participants in the system, coupled with a limited ability for a boxcar owner to control where its boxcars move.²¹ The rate negotiation process requires time and effort, and

¹⁹ Circular No. OT-10, Rule 25 at B.2.

²⁰ These statistics are based on “O” rates, which are default rates paid on boxcars subject to the Arbitration Rule. “U” rates, which are prescribed rates that are “grandfathered” on older railroad-marked boxcars, account for 12% of the paid hours and 13% of the paid miles in the last 12 months of the ELC CHDX dataset. These are sometimes also referred to as default rates, but are not subject to the default rate setting rules previously described.

The statistics provided in this paragraph focus on paid hours and paid miles (essentially weighting rate types by the amount of activity). If I instead focus on the relative prevalence of the types of distinct rates (which I define as a combination of car identifier, paying railroad, and empty/loaded status) that appear at least once in the ELC CHDX dataset over the last 12 months, I find that 38% of rates are default (“O”) rates, 47% are negotiated rates on market equipment (CHARM rate types “M”, “S”, or “Z”), and approximately 12% of rates are “U” rates, with other less commonly used rate types making up the remainder. *See* POWERS-HC-0032.R.

²¹ The ICC recognized that “[m]andatory interchange limits car owners' control of assets when off home property.” *Car Hire Regulation*, No. EP 334 (Sub-No. 6) et al., 1992 ICC LEXIS 34, at *14 (ICC Feb. 18, 1992).

there is a long tail of railroads on which an owner's boxcar(s) could plausibly appear.²² For example, in the last 12 months of the ELC CHDX dataset, I observe 201 unique paying railroads. Across the seven ELC members for whom I have data, the median number of unique paying railroads appearing over the past 12 months is 119. The number of unique paying railroads for a single boxcar ranged from 1 to 16; the median was 6. Over the full ten-year-plus period covered by the ELC CHDX dataset, a single boxcar may generate car hire revenue from as many as 46 different paying railroads.²³ These factors all but guarantee that a substantial amount of railcar use will occur under the default rate.

In the remainder of this verified statement, I occasionally refer to "paid rates," which is a general term I use to encompass negotiated rates, default rates, and any other less commonly used rate types at which car hire is actually paid by railroads to the owner of the boxcar (or, under certain types of arrangements, to a lessee).²⁴

²² There are several hundred railroad marks participating in the car hire system. *See, e.g.*, Circular OT-10, pp. 2-8. When making the initial leasing and therefore marking decision, a boxcar owner will likely have a good sense of the using roads from whom its boxcar is most likely to earn revenue. However, there are at least two institutional features that introduce unpredictability into the process. First, the set of shippers initiating moves from a given railroad, and the set of destinations to which those shippers send freight, may well evolve over time. Second, in many cases, after receiving a shipment on foreign boxcars, a receiving railroad may subsequently use those cars in subsequent moves. *See* Circular OT-10, Code of Car Service Rules, Rule 1, p. 22: "...foreign cars may be loaded without regard to route or destination." This means that an owner's boxcars could wind up spending time and miles on railroads with whom the lessor has not previously contemplated negotiating a higher rate.

Unsurprisingly, the use of default rates varies based on whether the paying railroad is a Class I or a smaller railroad. In the ELC CHDX dataset, Class I railroads account for 88% of paid hours and 96% of paid miles. When the paying railroad is other than a Class I, 68% of the paid hours and 61% of the paid miles are at default rates (CHARM rate type equals "O"). However, even when the paying railroad is a Class I, 21% of the hours and 21% of the miles are paid at default rates. For the sake of this tabulation, I counted the following marks as Class I railroads: BNSF, CN, CPRS, CSXT, KCS, KCSM, NS, and UP. *See* POWERS-HC-0032.R

²³ *See* POWERS-HC-0032.R

²⁴ These less commonly used rates include "Y" (which I understand to be a CHARM override code), "N" (described as the post-BFO period rate on market cars), and "D" (described as the post-arbitration period rate on market cars). Together, these rate types account for approximately 1% of the observations in the ELC CHDX dataset. *See* POWERS-HC-0032.R

2. Owners of Boxcars

Umler, which provides data about the cars in the boxcar fleet, recognizes four types of boxcar owners:

- **Railroads**, including both Class I's and short lines, continue to own approximately 27% of the current boxcar fleet. Their cars generally bear railroad reporting marks,²⁵ indicating that they are registered in Umler to a railroad, and thus are subject to the Arbitration Rule.
- **Shippers** or similar entities who have invested in cars to meet their own railcar capacity needs own approximately 2% of the current boxcar fleet. These cars generally are registered in Umler to the shipper and, thus, are not subject to the Arbitration Rule.
- **TTX**, the railcar pooling company owned by the Class I Railroads, which operates under a grant of partial antitrust immunity, owns approximately 32% of boxcars.²⁶ TTX also generally charges per hour and per mile rates to the railroads using its boxcars, which includes both TTX owners and other railroads. Boxcars registered in Umler to TTX are not subject to the Arbitration Rule because TTX is not a railroad.
- **Lessors**, including members of the ELC, own approximately 39% of the North American boxcar fleet.²⁷ Lessors are typically private investors in boxcars who lease most of their boxcars to railroads, with the remainder being leased to shippers. The leases to railroads take different formats, but the boxcars that are the subject of this verified statement all are registered to a railroad and, thus, subject to the Arbitration Rule.

²⁵ A reporting mark is an identification mark comprising alpha characters that is assigned to an equipment owner. It is stenciled on the side of each railcar to identify the owner. Non-railroad marks for railcars contain four alpha characters ending in X.

²⁶ TTX is jointly owned by the six Class I railroads and Ferromex. See "About TTX." <https://www.ttx.com/about/why-ttx/>. Last accessed February 9, 2024.

²⁷ See POWERS-HC-0032.R for calculation of the numbers in this section.

Later in this verified statement, I will provide additional background on how car owners and car users negotiate rates.

C. THE ARBITRATION PROCESS

If a car owner and a railroad are unable to agree on a car hire rate, Rule 25 provides a process for them to resolve the dispute through arbitration. It specifies that if either party requests, the dispute will be resolved through the exchange of best and final offers in “baseball-style” arbitration.

Rule 25 lays out a timetable for the arbitration, stating that within 30 days of receipt of notice of the arbitration each party must file a confidential statement setting forth any evidence and argument in support of its position. Each party then has 30 days in which to submit a reply to the opposing party’s submission. The arbitrator is required to issue a decision within 90 days of the receipt by the American Arbitration Association of the Demand for Arbitration, or 60 days after the arbitrator’s appointment, whichever is later.

Rule 25 instructs the arbiter to select the best and final offer that is closest to the “fair market rental value of the cars at issue.” The arbiter’s determination is supposed to be based on evidence of comparable arms-length transactions involving any combination of railroads, shippers, or other parties.²⁸

²⁸ AAR Circular OT-10, at Rule 25, Section C.7 (d), page 63.

D. THE ECONOMICS OF CAR HIRE

Boxcars, which can have a useful service life of 50 years or longer,²⁹ are classic examples of long-lived capital assets. To understand how the current car hire system affects incentives for investment in boxcars, it is helpful to review the economics of such capital assets.

An economically rational firm will invest in a long-lived capital asset only if the firm expects the lifetime revenues generated by the asset to exceed its lifetime operating costs (including depreciation) by an amount that will enable the firm to earn a competitive return on its investment. This calculation is necessarily forward-looking. For a capital asset, the acquisition cost is incurred upfront, and the revenues required to amortize the investments are earned over time in the future.

Because the future is never known with certainty, there is always the possibility that market conditions may fail to evolve in the manner anticipated at the time of the investment. This possibility adds an element of uncertainty, and therefore also of risk, to the investment calculation. For this reason, a rational investor will demand a higher rate of return on an investment to compensate for this risk.

Fluctuations in market conditions over the lifetime of a boxcar will cause the value of that asset to fluctuate. Shifts in market conditions can alter both the level of boxcar utilization, as well as the revenue it can expect to earn over the course of its remaining lifetime. When this happens, the value of the asset varies accordingly. A rational buyer will be willing to pay no more than the net present value of the expected future earnings of that asset. Thus, during slack periods when utilization and revenue per unit of output are low, the value of the asset will also be

²⁹ Under 49 C.F.R. § 215.203, boxcars are generally limited to a 50-year service life.

low. When demand picks up, raising utilization and revenue per unit, values will rise accordingly.

The market value of a long-lived capital asset will generally be bounded from below by its scrap value, and from above by the cost of replacing the asset with a new asset.

When such an asset reaches the point where the revenue it can earn is less than the cost of operating it, the rational response will be to scrap it.³⁰ Reaching this point is often a sign that the asset has reached a state of functional and/or economic obsolescence. An old asset may have deteriorated to the point where its ongoing repair and maintenance costs exceed the revenue it can earn. It might also be the case that the asset no longer meets current quality or compatibility standards.

On the other hand, when demand for the asset grows to the point where the discounted present value of its expected future earnings exceeds the cost of purchasing a new unit, it will be rational for the asset owner (or his competitors) to acquire new assets, until the additional supply lowers utilization and expected revenue per unit to the point when further investment is no longer warranted.

III. THE CURRENT DEFAULT RATE RULES ARE PRONE TO GAMING

An important shortcoming of the current system is that the default rate setting rules are prone to strategic behavior, or gaming. The Arbitration Rule and Rule 1.H of the Code of Car Hire assign each car “a default rate equal to the **lowest** negotiated positive rate in effect for that

³⁰ It is important to remember that asset owners will make this determination on a forward-looking basis. For example, it could be the case that although there is no current demand for the use of the asset, that situation could be expected to change in the future. In that case the asset owner might elect to retain the asset for future use, even though in the current period the owner must pay to store and maintain a non-revenue generating asset.

equipment type at the end of the previous quarter” (emphasis added).³¹ As a result, the default rate is not set by reference to anything that might be called a typical negotiated rate, but by reference to the **lowest possible outlier**.³² Furthermore, the low rate that sets the default rate merely has to be “in effect;” it does not have to be a rate on a car that has moved, nor does it have to have been paid in the prior quarter.³³ Additionally, the rate that sets the default rate could be the result of a negotiation that is decades old.

This default rate standard provides incentives for certain actors to agree to atypically low car hire rates that are not reflective of market conditions, but potentially increase their profits as net purchasers of car hire services. All things equal, railroads benefit from having lower default rates when their use of cars at default rates is likely to exceed use of their own cars by other railroads at default rates.³⁴ Railroads that are net purchasers of car hire rental services would therefore have an incentive to agree to a low negotiated rate on at least one of their own cars, if—as under the current system—doing so has the potential benefit of lowering future default rates.³⁵

³¹ Association of American Railroads, Circular No. OT-10: Code of Car Service Rules/Code of Car Hire Rules. *See* Section H of Rule 1; Rule 25.B.3. The “lowest rate” is determined primarily by the hourly rate, with the default rate for mileage simply being the mileage rate associated with the lowest hourly rate. *See also* Car Hire Deprescription Business Rules at Section 1.8.

³² As the rest of this section explains, default rates are typically well below the sample of negotiated paid rates provided by ELC members.

³³ In practice, this requirement means that the default rate is set by reference to the lowest current rate in the CHARM database at the end of the quarter. *See* Car Hire Deprescription Business Rules at 1.8: “Rates are considered to be in effect at the end of the previous quarter if they are in the CHARM file that was created for the last month of the previous quarter.”

³⁴ Many of the large railroads appear to be net purchasers within the car hire system. But I would need access to further data to confirm whether an individual railroad paid out at default rates more often than it received car hire at default rates. Specifically, CHDX data covering all boxcars and paying railroads would be needed to answer this question definitively.

³⁵ As I explain in more detail in a later section of this statement, lowering the default rate for future boxcars has the additional effect of making investment in new boxcars less attractive for non-TTX parties, as low default rates suppress the lifetime car hire earnings of boxcars not owned by TTX. This might provide an additional incentive for TTX owner railroads to agree to an atypically low rate.

In short, the default rate standard is such that a car owner who is a net purchaser of car hire could negotiate a rate on a car that it does not intend to use, and in so doing drag down the default rate, which would have the effect of making future investment in new boxcars by participants in the car hire system substantially less attractive.

Moreover, the ELC CHDX and default rate data I have reviewed suggest that some car owners may be agreeing to excessively low negotiated rates, with the effect (and perhaps the intent) of depressing default rates. For several important car types, the default rate is set at uneconomically low levels that are divorced from anything that might be called a representative rate for that equipment type.

As an example, consider the loaded rates for the A606 car, which is the most popular car type in terms of new boxcar additions over the last several years.³⁶ The most recent quarter for which I have access to a relatively complete sample of car-hire payment data from ELC members is the second quarter of 2023.³⁷ In that quarter, the median negotiated rate across the

³⁶ The experience of empty A606 rates is very similar to the example presented here.

³⁷ The data used in this section to establish the disconnect between negotiated rates and the resulting default rates is incomplete in a few ways. In my opinion, these limitations are very unlikely to affect either the validity or the economic relevance of my conclusions.

First, CHDX data for a given time frame does not capture all rates in effect, which would only be observable from CHARM data. CHARM (the “Car Hire Accounting Rate Master”) is the official source of time and mileage rates on freight cars. However, those rates that are contained in CHARM data but not CHDX data in a given period are not directly relevant to boxcar compensation.

Second, the data do not reflect the most current information, as two full quarters have elapsed since the close of the second quarter of 2023. However, given the high degree of persistence in both negotiated rates and default rates, it would be extremely surprising if the disconnect demonstrated in this section has changed demonstrably in the past two quarters.

Finally, ELC member data only represent a sample of actual car hire payment activity. It is possible that negotiated rates in the ELC CHDX dataset are biased in some way, such that the distribution of negotiated rates paid in the full sample of CHDX data would be substantially closer to the default-rate setting lowest negotiated rate. In my opinion, such a finding using the full CHDX data is extremely unlikely, as the ELC CHDX dataset represents a non-trivial share (about 19%) of the boxcar fleet, and I am not aware of any factors that would lead ELC negotiated rates to differ from the paid negotiated rates the rest of the industry.

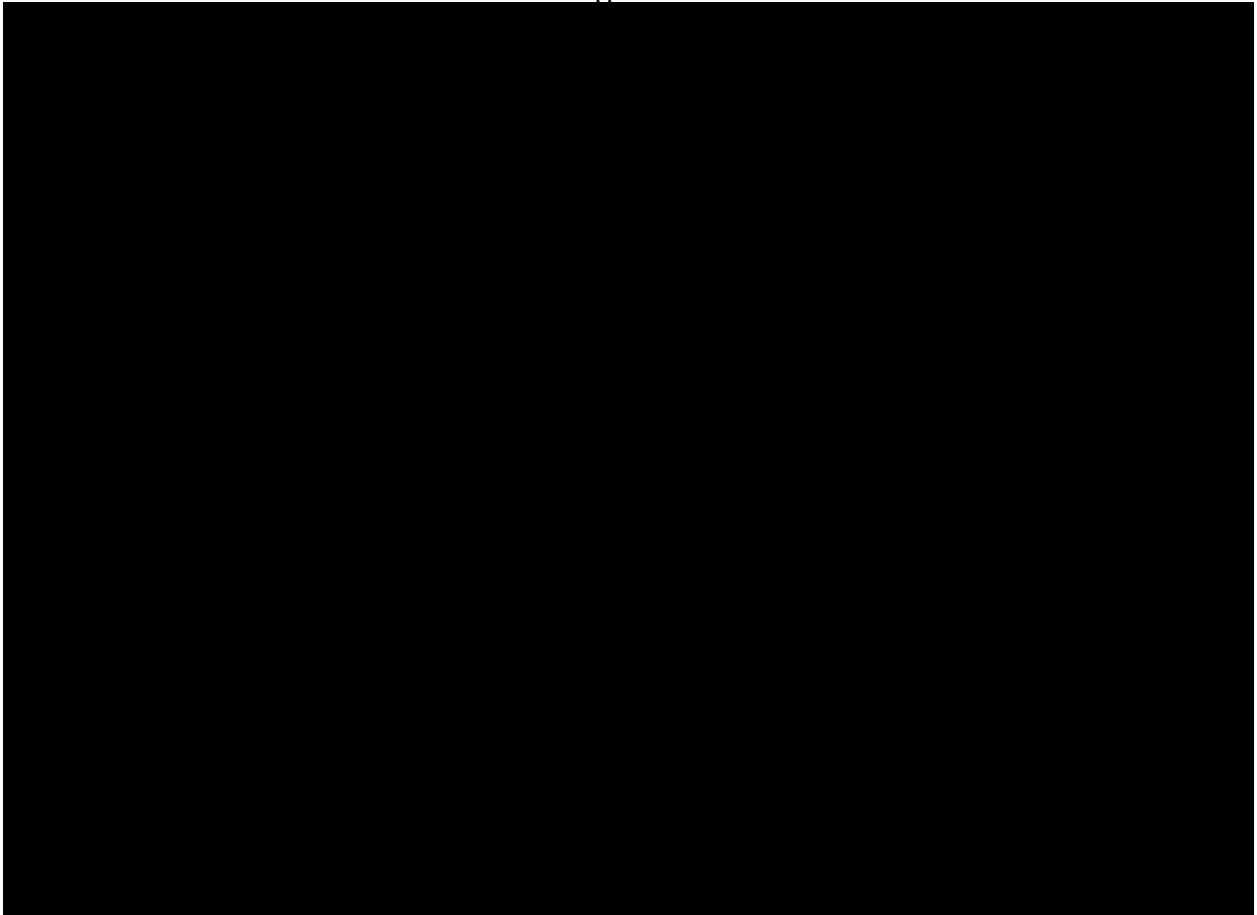
Nevertheless, in order to definitively assess the extent to which the negotiated rate that sets the default rate for a given car type is an outlier (and to understand how that relationship has evolved in recent years), I would need access to exhaustive CHDX data and CHARM data for boxcars.

hours paid within the ELC CHDX dataset was \${{█}}/hour, while the vast majority of loaded hours paid at negotiated rates within the ELC CHDX dataset were paid at rates between \${{█}} per hour and \${{█}} per hour; most miles were paid at \${{█}} to \${{█}} per mile. The lowest negotiated rate paid for A606 loaded cars in the second quarter of 2023 was \${{█}} per hour and \${{█}} per mile.³⁸ Yet the default rate for new A606 cars was set at \$0.17 per hour and \$0.049 per mile. In other words, the default hourly rate was less than one quarter that of the *median* negotiated rate. Figure 1 presents the distribution, and includes for reference the default rate, with a vertical red line. It is clear from this figure that the effective negotiated rate that set the default rate in Q3 of 2023 is very much an outlier.

³⁸ See POWERS-HC-0032.R for calculation of the numbers in this paragraph. The calculations are limited to “M” and “S” type rates, as I understand that only these rate types can set the default rate. See Car Hire Deprescription Business Rules at 1.8: “Rates are considered negotiated if they are market rates or spot market rates.”

FIGURE 1: DISTRIBUTION OF LOADED HOURS PAID IN ELC CHDX DATASET FOR A606 CARS IN Q2 2023, NEGOTIATED RATES ONLY

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Sources and Notes:

POWERS-HC-0002.xlsx.

Data from POWERS-HC-0021.csv and POWERS-HC-0026.xlsx.

Rates are weighted by the number of hours paid at each negotiated rate. Limited to rates with CHARM rate type “M” or “S.”

Reviewing the default rate history of individual car types reveals that in many cases the default rates assigned to new cars have steadily eroded since depreservation, in a manner that is consistent with “gaming” of the system. Table 1 presents a condensed history of the loaded default rates for A606 boxcars since depreservation. The default rate started, in 1994, at \$0.58 per hour and \$0.07 per mile. There were several changes to the default rate over the first few years of

deprescription, before the default rates eventually settled at \$0.17 per hour and \$0.049 per mile, where they have stayed for all but one quarter of the last 25 years.

TABLE 1: HISTORY OF LOADED DEFAULT RATES ASSIGNED TO NEW A606 BOXCARS

Rate Begins	Rate Ends	# of Quarters	Loaded Hourly Rate	Loaded Mileage Rate
1994 Q3	1995 Q1	3	\$0.58	\$0.070
1995 Q2	1996 Q2	5	\$0.55	\$0.055
1996 Q3	1997 Q2	4	\$0.46	\$0.069
1997 Q3	1997 Q3	1	\$0.54	\$0.066
1997 Q4	1998 Q1	2	\$0.39	\$0.260
1998 Q2	2015 Q1	68	\$0.17	\$0.049
2015 Q2	2015 Q2	1	\$0.17	\$0.078
2015 Q3	Present	34	\$0.17	\$0.049

Sources and Notes:

POWERS-HC-0003.xlsx.

Data from POWERS-HC-0026.xlsx.

Table 2 presents a similar story for the A405. Coming out of deprescription, the default rate assigned to new cars has steadily eroded over a period of nearly two decades, from \$1.00 per hour and \$0.075 per mile, to its current level of \$0.05 per hour and \$0.067 per mile. With the exception of one quarter (where the default rate was even further reduced), the default rate has sat at that lower level for the last 12 years. As Figure 2 indicates, the vast majority of loaded hours paid at negotiated rates on A405 cars in the ELC CHDX dataset in Q2 of 2023 were paid at negotiated rates between \${{█}} and \${{█}} per hour.³⁹ Yet the hourly default rate for new cars that results from the set of negotiated rates that were in effect is, at \$0.05 per hour, an *order of magnitude* lower. This erosion of default rates is highly suggestive of gaming a small number of negotiated rates to keep default rates artificially low.

³⁹ See POWERS-HC-0004.xlsx in tab “Table 3”.

TABLE 2: HISTORY OF LOADED DEFAULT RATES ASSIGNED TO NEW A405 BOXCARS

Rate Begins	Rate Ends	# of Quarters	Loaded Hourly Rate	Loaded Mileage Rate
1994 Q1	1994 Q1	1	\$1.00	\$0.075
1994 Q2	1994 Q2	1	\$0.65	\$0.107
1994 Q3	1994 Q4	2	\$0.54	\$0.066
1995 Q1	1995 Q3	3	\$0.50	\$0.060
1995 Q4	1996 Q2	3	\$0.48	\$0.060
1996 Q3	1997 Q2	4	\$0.42	\$0.069
1997 Q3	1998 Q1	3	\$0.48	\$0.050
1998 Q2	2002 Q4	19	\$0.34	\$0.059
2003 Q1	2003 Q1	1	\$0.33	\$0.065
2003 Q2	2003 Q2	1	\$0.30	\$0.060
2003 Q3	2004 Q2	4	\$0.20	\$0.058
2004 Q3	2004 Q3	1	\$0.30	\$0.060
2004 Q4	2005 Q2	3	\$0.33	\$0.065
2005 Q3	2006 Q2	4	\$0.34	\$0.059
2006 Q3	2007 Q4	6	\$0.30	\$0.052
2008 Q1	2008 Q2	2	\$0.30	\$0.059
2008 Q3	2011 Q4	14	\$0.30	\$0.045
2012 Q1	2015 Q1	13	\$0.05	\$0.067
2015 Q2	2015 Q2	1	\$0.05	\$0.060
2015 Q3	Present	34	\$0.05	\$0.067

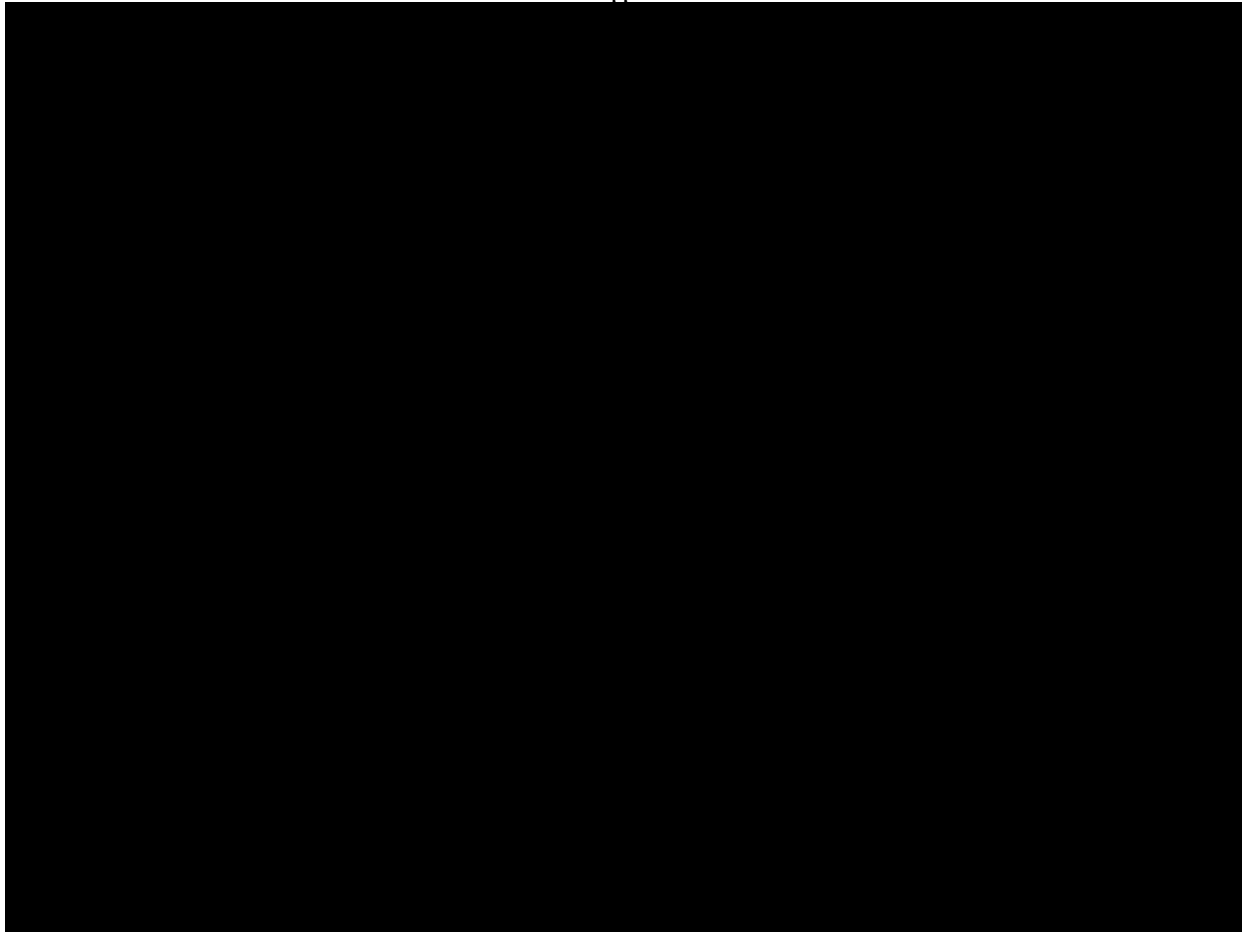
Sources and Notes:

POWERS-HC-0003.xlsx.

Data from POWERS-HC-0026.xlsx.

FIGURE 2: DISTRIBUTION OF LOADED NEGOTIATED RATES IN ELC CHDX DATA FOR A405 CARS IN Q2 2023

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Sources and Notes:

POWERS-HC-0002.xlsx.

Data from POWERS-HC-0021.csv and POWERS-0026.xlsx. Rates are weighted by the number of hours paid at each negotiated rate. Limited to rates with CHARM rate type “M” or “S.”

These two car types are among the most egregious examples of a default rate being set at levels far below those observed in the ELC CHDX dataset. However, there are many others as well, some of which are summarized in the table below. In all seven of the car types presented in Table 3, the default loaded time rate is anywhere from \$0.20 to \$0.70 per hour less than the 10th

percentile—already a very low point on the distribution—of negotiated paid rates in the ELC CHDX dataset.⁴⁰

TABLE 3: DISTRIBUTION OF LOADED NEGOTIATED RATES FOR SELECTED CAR TYPES IN Q2 2023

Negotiated Rates		Car Type						
		A302	A402	A403	A405	A606	B635	B637
90th Percentile	[1]	{{[REDACTED]}}	{{[REDACTED]}}	{{[REDACTED]}}	{{[REDACTED]}}	{{[REDACTED]}}	{{[REDACTED]}}	{{[REDACTED]}}
50th Percentile	[2]	{{[REDACTED]}}	{{[REDACTED]}}	{{[REDACTED]}}	{{[REDACTED]}}	{{[REDACTED]}}	{{[REDACTED]}}	{{[REDACTED]}}
10th Percentile	[3]	{{[REDACTED]}}	{{[REDACTED]}}	{{[REDACTED]}}	{{[REDACTED]}}	{{[REDACTED]}}	{{[REDACTED]}}	{{[REDACTED]}}
Minimum	[4]	{{[REDACTED]}}	{{[REDACTED]}}	{{[REDACTED]}}	{{[REDACTED]}}	{{[REDACTED]}}	{{[REDACTED]}}	{{[REDACTED]}}
2023 Q3 Default Rate for New Cars	[5]	\$0.28	\$0.28	\$0.33	\$0.05	\$0.17	\$0.55	\$0.60

Sources and Notes:

POWERS-HC-0004.xlsx.

[1] – [4]: POWERS-HC-0021.csv..

[5]: POWERS-HC-0026.xlsx.

Rates are weighted by the number of hours paid at each negotiated rate. Limited to rates with CHARM rate type “M” or “S.”

Because I do not have access to the full sample of CHARM rates or CHDX data, I do not have complete insight into the prevalence of negotiated rates that are commensurate with the default rates that result in the next quarter. But the basic patterns described here, wherein the current rules set default rates that are *substantially* lower than the distribution of negotiated rates actually paid in a large sample that represents a meaningful share of the overall car hire system

⁴⁰ The default loaded time rate is also below the *minimum* rates observed in the ELC CHDX dataset during the relevant period. Those values are not reported in Table 3 in order to avoid sharing competitively sensitive information.

activity,⁴¹ provides a strong indication that the default rates are based on outlier negotiated rates that are significantly below the typical range of negotiated rates. They also illustrate the potential for (and may in fact be consistent with) manipulation, where two or more stakeholders who stand to benefit negotiate a rate that pulls down the default rate.

IV. DEFAULT RATES SUPPRESS PAID AND NEGOTIATED RATES

In this section of my statement, I explain, using economic principles from bargaining theory, how default rates suppress negotiated rates for boxcars. I begin with an overview of the economics of rate negotiation and arbitration.

A. ECONOMICS OF RATE NEGOTIATION AND ARBITRATION

A well-developed body of economic theory exists that analyzes the conduct and outcome of a bargaining process between two parties contemplating entry into a commercial agreement.⁴² The standard economic analysis framework assumes that if the two parties can jointly realize some economic benefit that could not otherwise be achieved, both parties have an incentive to enter into an agreement. This benefit creates the leverage needed to bring the two parties to a mutually beneficial outcome. The parties bargain over how to divide up that benefit, with each party preferring to appropriate a majority if not all the benefit created through the agreement.⁴³ If

⁴¹ In the last 12 months, there are 12,645 unique cars in the ELC CHDX dataset while there are 62,407 railroad-marked cars in the Umler Fleet Profile (dated January 3, 2024).

See POWERS-HC-0032.R

⁴² *See*, for example, Abhinay Muthoo, *Bargaining Theory with Applications*, Cambridge University Press (1999).

⁴³ In most negotiations there will be a range of possible rates that would leave both parties better off than failing to reach an agreement. This range is typically defined at one end by the lowest rate that would leave the seller indifferent between entering and not entering into an agreement, and on the other by the highest rate that would leave the buyer indifferent between entering and not entering into an agreement. Much of the work that has gone into the development of bargaining theory has been directed at determining which outcome within this range will ultimately result from the negotiation. I will not delve into these issues here.

they fail to reach an agreement, each party will instead realize some payoff—frequently referred to as the outside option—whose value depends on the party’s circumstances. If, after taking account of the costs of negotiation, each party can realize a benefit exceeding its outside option, rational actors should be able to reach an agreement. If, on the other hand, one or both parties do not stand to benefit on net, successful negotiation of an agreement is unlikely to occur.

In the context of the current car hire rules, for parties negotiating in the absence of a negotiated rate, the default rate is the rate that will prevail under the outside option. Under those rules, when a new car enters service it is automatically assigned a default car hire rate equal to the lowest negotiated rate in effect in the previous quarter for any car of this type. Thus, when that car’s owner initiates negotiations with a railroad over rates for that car, it will *necessarily* be the case that any new rate agreed to by the railroad will be higher than the rate it would otherwise have to pay.⁴⁴ All things equal, the railroad would prefer the outside option of the lower default rate to a higher negotiated rate. This fact raises the obvious question of what offsetting benefit the railroad will realize if it agrees to the higher rate.

In the car hire context, railcar users do not appear to receive an obvious benefit, aside from avoiding arbitration costs, by agreeing to a higher rate than the default rate or the negotiated rate currently in place. In most functioning markets a buyer willing to pay a higher price will be more likely than other potential buyers to obtain the good in question. Consider, for

⁴⁴ Here, I am assuming that the car owner would only initiate rate negotiations with the goal of increasing rates. As discussed above, some car owners who are net purchasers of car hire face incentives to agree on a rate that is lower than the default rate, which would drive down future default rates. But a car owner could accomplish this with a rate with a single railroad for a single car and would still have an incentive to increase rates for nearly all other railroad users. It is also possible that under some alternative rule to set default rates at higher levels that parties would agree to negotiated rates that are lower than default rates.

I also note that it is possible under the car hire system for a car owner to negotiate with railroads over rates for a new car before consummating the car’s purchase and registration. Nevertheless, the principle that the new rate will be higher than the rate the railroad would otherwise have to pay still holds.

example, the case of a set of potential buyers bidding on the purchase of a house that is for sale. The buyer offering the highest price will pay more but will also be far more likely to wind up with the house, a benefit that will leave the buyer better off despite paying more. But the car hire market does not appear to function in this manner.

Railcar owners do not appear to have meaningful control over the allocation of their cars that are subject to the Arbitration Rule. Under the mandatory interchange rule, railroads are required to interchange cars, regardless of ownership, to facilitate through transportation.⁴⁵ Also, unless cars are covered by a Car Service Order or Directive, the Code of Car Service generally gives railroads discretion to load foreign railcars without regard to route or destination or return them empty to the owner, unless the owner restricts loading, in which case the railcar must be returned to the owner.⁴⁶ These market constraints, which either allow cars to move across the network without owner control or push cars back to the owner empty, would make it unlikely that a railroad offering a higher price would enjoy more favorable access to cars and would be better able to obtain the cars it needed in times of shortage. In fact, multiple ELC members have informed me that the rates being paid have no meaningful effect on car movement and allocation. To put it more concretely, one railroad agreeing to pay a negotiated rate of \$0.90 per hour and \$0.07 per mile would be no more likely to have access to the car than a neighboring railroad that would pay the default rate of \$0.17 per hour and \$0.049 per mile for the same car.

This feature of the car hire system is understandable considering the history behind the current car hire system. That system was designed to facilitate the seamless movement of cars

⁴⁵ *Review of Car Hire Regulation*, EP 334 (Sub-No. 6) et al., 1992 ICC LEXIS 34 *13 (ICC Feb. 18, 1992).

⁴⁶ Code of Car Service Rule 1; AAR Circular TD-5. Pooled cars may move at the direction of the pool operator once unloaded. My understanding of the main boxcar pool, the North American Boxcar Pool, is that the pool operator will attempt to shift cars to ensure each pool participant has enough cars on its network to match its contribution of railcars to the pool. Accordingly, even with pooled cars, the level of the car hire charge does not influence railcar access.

across multiple railroads, and to handle automatically and efficiently payments for the use of cars. Enforcing provisions to assure that cars are consistently allocated to the highest bidder would, at best, have complicated this process.

While higher car hire rates could encourage investment in a larger fleet, which increases car availability, this does not have a direct impact on car allocation to specific railroads in response to the car hire rates they pay. For brand new cars whose purchase and registration depends on the owner's expectation of lifetime revenues, each railroad agreeing to pay a negotiated rate that exceeds the default rate increases the chance that the owner proceeds with the purchase. Each railroad who agrees to a higher rate thus marginally increases the likelihood that a car will be added to the system, which could benefit the railroad. However, in part because of the inability of the system to direct cars in response to rate differences, any benefits from this channel would be extremely diffuse and susceptible to free-riding problems.

The most compelling benefit that a railcar user would obtain by agreeing to a car hire rate exceeding the default rate or the prevailing negotiated rate—and, based on my current understanding, the only plausibly compelling answer to the question of why railroads agree to new negotiated rates that exceed default rates or the prevailing negotiated rate between that railroad and car owner—is that doing so avoids the costs associated with arbitration, including the direct legal costs and the costs arising from the expected outcome of the arbitration (*i.e.*, the increase in the car hire rate if the car owner wins the arbitration, multiplied by the probability that the car owner wins the arbitration).

The current rules for setting default rates assure that the default rate for a car will be below, and perhaps well below, other rates currently being paid for the type of car at issue. If a railroad finds itself in arbitration over a rate, it will face an arbiter who has been instructed to

select the final rate offer that is closer to “fair market rental value.” Since the default rate will almost always be the lowest found anywhere for the car in question, a railroad forced into arbitration over its refusal to pay more than the default rate can expect almost certainly to wind up being required to pay a higher rate. Thus, a railroad might rationally agree to pay something higher than the default rate to avoid the expense and likely less favorable outcome of arbitration.⁴⁷

To assess properly the role that the threat of arbitration plays in shaping car hire rate negotiations, one must determine just how credible and meaningful this threat is. While a railroad dragged into arbitration will be forced to incur the costs of the process, it also knows that the car owner threatening arbitration will also have to incur costs.⁴⁸ Both parties incur costs in addition to legal costs, as the arbitration process can consume a large amount of staff time for the organizations involved. The likelihood of a counter-party owner following through with a threat to initiate arbitration will be more credible where the car owner’s risk-adjusted expected recovery exceeds its projected arbitration costs.

Depending on the costs and the outcome of arbitration, it can often be the case that the gains to the car owner from increased rates fail to cover the costs it incurs in pursuing arbitration. The value of a favorable arbitration or negotiation outcome to a car owner depends upon the magnitude of the rate increase, and the number of paid hours and miles to which the rate increase

⁴⁷ In principle it is also possible, though perhaps even less likely, for car owners or railroads to initiate arbitration when a negotiated rate is already in place but where one or both parties feel that the prevailing negotiated rate is no longer in sync with industry conditions.

⁴⁸ The losing party to the arbitration bears the larger share of the arbitrator’s fees. *See* Circular OT-10 at Rule 25 C.7.i: “The parties shall share equally the first \$3,000 incurred for the administrative fees and expenses of the American Arbitration Association. The party whose rate is not selected by the arbitrator shall bear such fees and expenses in excess of \$3,000 and any fees assessed by or on behalf of the arbitrator.”

applies.⁴⁹ The possibility that forcing arbitration can leave a car owner worse off economically reduces the credibility of the threat of arbitration. Since car use is broadly dispersed among many users and the median boxcar's most significant paying railroad user is responsible for just 48% of the hours paid for the car, it may frequently be the case that the car owner is stuck with receiving default rates or negotiated rates that are below "fair market rental value" until the expected rate outcome in arbitration rises to a level that at least covers the associated arbitration cost. For instance, depending on the costs of arbitration and the expected number of paid hours and miles, moving from a default rate of \$0.17/hour and \$0.049/mile to a rate of \$0.60/hour and \$0.06/mile—well below what anyone in the industry would consider to be a compensatory rate—may leave the car owner better off than incurring the cost of arbitration and winning a rate of \$0.85/hour and \$0.07/mile.⁵⁰

Even if it were the case, however, that an individual arbitration has a very high probability of leaving a car owner worse off economically, it is conceivable that the owner could pursue an aggressive arbitration strategy to cultivate a reputation as an aggressive lessor unwilling to accept lowball offers, even if accepting the lowball offer would leave the car owner

⁴⁹ In the case of a car owner seeking to negotiate an increase above a prevailing negotiated rate, a very successful outcome could hypothetically increase rates by \$0.05/hour and \$0.01/mile. As I explain below, a boxcar might on average experience 75% paid utilization for a year, in which case it would get paid for 6,570 hours and 22,516 miles. However, the payments that come from a single railroad would be far lower. Based on my review of ELC CHDX dataset from the last 12 months, the importance of the median boxcar's most significant paying railroad, in terms of the paying railroad's share of the hours paid to that boxcar over that period, is 47.6%. Therefore, even if the hypothetical rate increase applied to rates with that boxcar's most important railroad, the payment increase would amount to roughly \$264 per boxcar-year. $47.6\% * (6,570 * \$0.05 + 22,516 * 0.01) \approx \263.54 . Naturally, the potential gains from re-negotiation or arbitration with each additional "less significant" paying railroad would be significantly lower.

Rate increases from a depressed negotiated rate, or an extremely low default rate, could of course be more valuable. But they are likely only sufficient to offset the costs of negotiation or arbitration in cases when the results of the negotiation or arbitration apply to a large number of boxcars that are heavily used by the railroad with whom the car owner is negotiating.

⁵⁰ This rate pair is not necessarily compensatory, but is within the range of negotiated rates and, as I explain later, and therefore falls in the range of likely outcomes from arbitration.

better off than pursuing arbitration. Such a strategy would be costly but could over time pay off by encouraging railroads to agree to more favorable terms during ordinary negotiations.

The attractiveness and viability of such a reputation-building strategy, however, depends upon how frequently a party finds itself in negotiations. In this regard, the fact that railroads are generally larger than car owners would make adoption of a reputation-building strategy more attractive to the parties on the railroad side of the negotiation.

Furthermore, as I will explain in further detail later in this statement, there do not appear to be robust mechanisms allowing car hire rates to change in response to changing market conditions. While the rules governing arbitrations call for rates to be set at “fair market” levels, those levels in practice are defined based on other car hire rates that do not themselves appear to respond meaningfully to shifts in supply and demand.

Ultimately, the data I have reviewed in preparing this statement indicate that neither car owners nor using railroads perceive arbitration to be a reliable, meaningful, or cost-effective means of setting rates. I was unable to identify a single ELC member who had been involved in an arbitration in the last decade. Similarly, the ELC car hire payment data I received contained no records of payments using the CHARM rate type “R,” which is the code used to denote rates set through the arbitration process.

B. A SUBSTANTIAL SHARE OF CAR HIRE IS PAID AT DEFAULT RATES

As previously discussed, negotiating a new rate takes time and effort, and doing so requires that there be some payoff to both parties. From the boxcar owner’s perspective, the payoff from attempting to negotiate a higher rate is a function of the number of hours and miles the owner expects the subject boxcar(s) to travel on the railroad with which the owner is considering negotiating. The long tail of potential paying railroads, coupled with the costly effort

required to engage in negotiations, essentially guarantees that default rates will continue to apply to large fractions of the paid miles and hours. As I previously noted, in the last 12 months of the ELC CHDX dataset, default rates⁵¹ account for 27% of paid hours and 22% of paid miles.⁵²

Thus, even if default rates had no effect on negotiated rates, the magnitudes of default rates are economically important in a direct and tangible sense.

C. LOW DEFAULT RATES SUPPRESS NEGOTIATED RATES

Due to the institutional details of the car hire system and the economics of rate negotiations as just described, low default rates put downward pressure on negotiated rates. A simple example can demonstrate the intuition behind this conclusion.

In the case where a seller of a good can deny the potential buyer the use of the good in question, the seller has leverage, in that if the buyer is unwilling to increase its offer, it runs the risk of not being able to use that good. But in the car hire system, the only leverage the owner has is the threat of arbitration.⁵³ Consider the case of an owner who does not have a negotiated rate in place on its A606 boxcars with a railroad where those boxcars are now spending an increased share of hours and miles. Further suppose that due to the vintage of the boxcars in question, the railroad pays the default rate of \$0.17 per hour and \$0.049 per mile, whether loaded or empty. Finally assume, based on demand and supply factors that the boxcars need to on

⁵¹ As indicated by CHARM Code “O.”

⁵² See POWERS-HC-0032.R

⁵³ A private investor could potentially exercise leverage by choosing not to build the car at all. However, this would only exacerbate concerns about the concentration of supply in TTX, which I discuss at greater length in Section VI.

average earn \$0.99 per hour and \$0.09 per mile in order to yield a satisfactory return for their owner.⁵⁴

Unless and until the parties agree to a negotiated rate, the railroad will continue to pay the low default rate. The boxcar owner can threaten arbitration, which is the only leverage the boxcar owner has over the railroad. The railroad would like to avoid the costs of arbitration, but also knows that arbitration is costly for the boxcar owner, and that the owner would, all things equal, also prefer to avoid those costs.

Furthermore, time will elapse while the arbitration unfolds, and the parties face some degree of uncertainty over where an arbitrator might set the rate. Given the arbitrator's directive to "select the best and final offer that is closer to the fair market rental value of the cars at issue as determined on the basis of evidence of comparable arm's-length transactions,"⁵⁵ the arbitrated rate might be expected to fall in the range of negotiated rates currently in effect for that car type, which based on the ELC CHDX dataset generally falls between \${{█}} per hour and \${{█}} per mile and \${{█}} per hour and \${{█}} per mile.⁵⁶

It's not hard to imagine a risk-averse owner deciding to accept a negotiated rate towards the bottom end (or even slightly below) that range in order to finally earn something better than \$0.17 per hour, and to avoid the cost (and to a lesser extent, the uncertainty) of arbitration. The resulting negotiated rate, depressed as it may be, then forms part of the "basis of evidence of

⁵⁴ For reference, the most recent TTX rate filing indicates that effective January 1, 2024, the TTX base rate on 60-foot, 100-ton "TBOX" (A606) boxcars is \$1.12 per hour and \$0.09 per mile. The potential for discounts on the hourly portion of the rate means that hourly rates paid could range from \$0.87 per hour to \$1.12 per hour. The hypothetical rate used in the example is therefore well in line with TTX rates for A606 cars. *See* Amendment No. 32, TTX Company Finance Docket No. 27589, December 29, 2023, at Exhibits A and C.

⁵⁵ Circular OT-10, Rule 25, Section C.7.d.

⁵⁶ The range provided encompasses the 10th and 90th weighted percentiles of both the per-hour and per-mile rates for empty and loaded rates in the last 12 months. *See* POWERS-HC-0032.R.

comparable arm's-length transactions" that serve as a reference for future negotiations and potential arbitrations, reinforcing the downward pull of low default rates and generally contributing to the stagnation of car hire rates.

As this example illustrates, negotiated rates may never achieve levels consistent with market conditions when the default rate is uneconomically low and the arbitration process is both costly and uncertain.

D. NEGOTIATED RATES ARE SUBSTANTIALLY LOWER THAN THE RATES SET BY TTX

Comparison of the negotiated rates paid to ELC members with information about TTX rates suggests that the default-rate standard and the arbitration mechanism under the Arbitration Rule suppress negotiated rates to levels below those needed to generate a reasonable rate of return.

As previously discussed, TTX owns a significant share of the boxcar fleet and charges per hour and per mile rates to the railroads using its boxcars, which include both TTX's owners and other railroads. Unlike the rates paid for boxcars subject to the Arbitration Rule, TTX rates are not subject to default rate rules and are instead set unilaterally by TTX. TTX sets these rates pursuant to a rate policy in its pooling agreement, which specifies that rates are to be maintained at the lowest level possible while allowing TTX to meet all necessary expenses and establish a financial position providing for the financing of car acquisitions on the best possible terms and maintenance of fleet in proper condition for efficient operation.⁵⁷

⁵⁷ *Am. Rail Box Car Co.--Pooling*, 347 I.C.C. at 874-75.

The base rates charged by TTX are well above the range of negotiated rates we see in the ELC CHDX dataset for the corresponding boxcar type. Specifically, the majority of the negotiated rates paid to ELC members for the use of their A406 boxcars fall in the range of \${{█}} to \${{█}} per hour, and \${{█}} to \${{█}} per mile, while the latest TTX base rates for A406 cars are \$1.35 per hour and \$0.09 per mile.⁵⁸ Similarly, the majority of the negotiated rates for ELC members' A606 cars fall in the range of \${{█}} to \${{█}} per hour, and \${{█}} to \${{█}} per mile, while the latest TTX base rates for A606 cars are \$1.12 per hour and \$0.09 per mile.⁵⁹

Comparison of ELC rates with TTX rates is complicated somewhat by the fact that TTX grants discounts that grow with utilization of the TTX boxcar(s) in question. Beyond seeing the range of discounts, I have no clear visibility into how these discounts influence the rates actually charged by TTX; there are no public data that I am aware of that would indicate, for example, how often TTX charges \$1.12 per hour for an A606 boxcar, as opposed to its deepest discount of \$0.87 per hour. It is nevertheless instructive to compare negotiated rates for each car type with the range of rates charged by TTX, as I do in the figures below.

Figure 3 and Figure 4 provide visual comparisons of the negotiated rates paid to ELC members with the range of new rates set by TTX. In each figure, the x-axis measures the mileage rate while the y-axis measure the hourly rate. Thus, rates are higher the closer we move to the

⁵⁸ The range mentioned with respect to the ELC CHDX dataset reflects the 12 months between September 2022 and August 2023, and takes into account the number of hours and miles paid at various rates.

The latest TTX rates were provided to the Board in late December of 2023, and took effect on January 1, 2024. *See* Amendment No. 32, TTX Company Finance Docket No. 27589, December 29, 2023, at Exhibits A and C. I have not been able to locate the utilization-based TTX discount off of the hourly rate for the September 2022 to August 2023 period, but I do not expect it to differ substantially from the discount schedule published in this December 2023 filing.

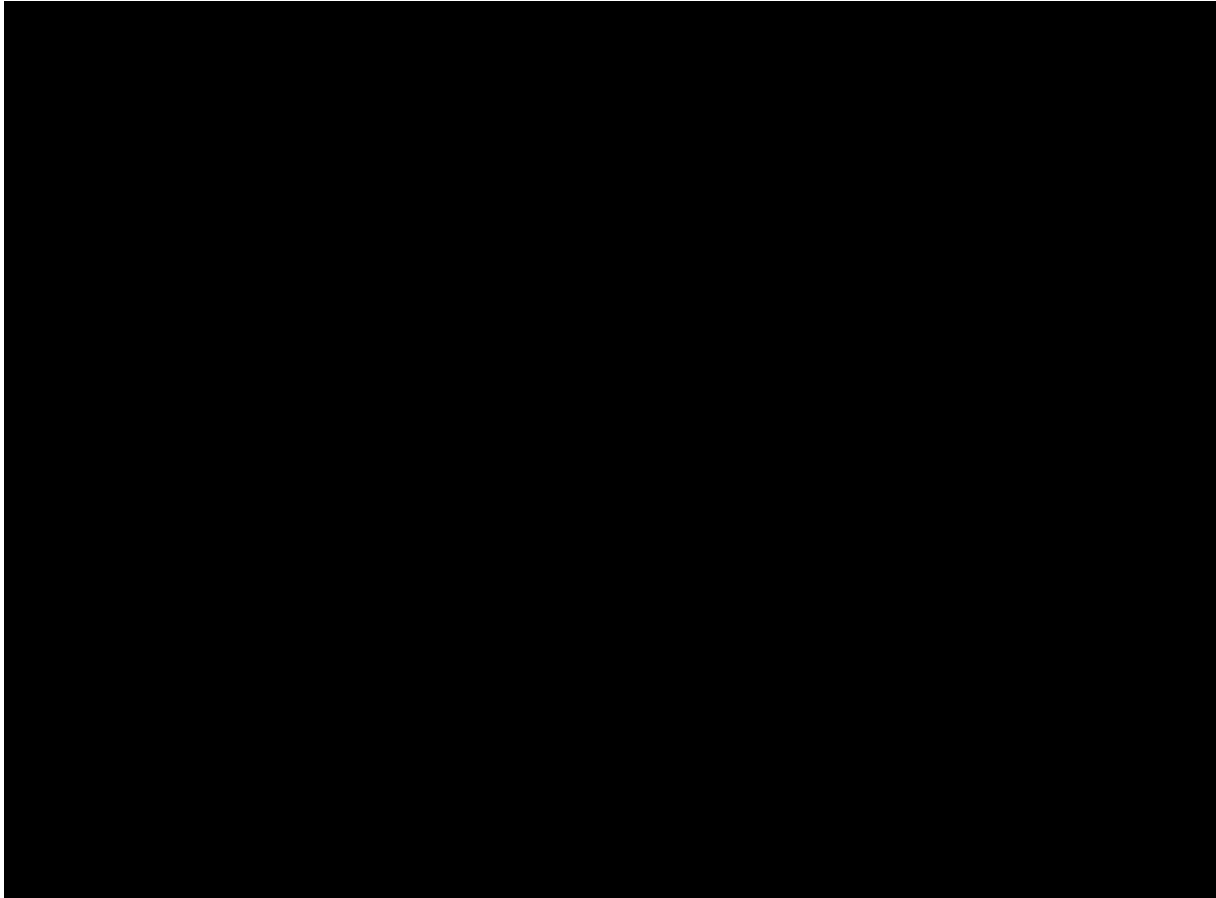
⁵⁹ The base TTX rates in the September 2022 to August 2023 window were very similar: \$1.35 per hour and \$0.10 to \$0.101 per mile for A406 cars, and \$1.11 per hour and \$0.10 to \$0.101 per mile for A606 cars.

upper right section of each chart. The blue bubbles represent a negotiated rate received by one or more ELC members in the 12 months between September 2022 and August 2023.⁶⁰ The size of each bubble corresponds to the number of hours paid at that rate. For example, the most commonly paid negotiated rate on A406 cars is \${{█}} per hour and \${{█}} per mile, and there is a large bubble at that corresponding point.⁶¹ The red bubbles represent possible mile and hour rate pairs charged by TTX. Since I only observe the range of TTX rates rather than the frequency that each possible rate is paid, each TTX bubble has the same size.

⁶⁰ I constructed this figure by identifying the most common negotiated rates for each car type in the ELC CHDX dataset during the period analyzed, and including the most common rates until 95% of the hours paid were included.

⁶¹ See POWERS-HC-0005.xlsx in tab “A406 – ELC”.

FIGURE 3: A406 TIME AND MILE RATES: NEGOTIATED RATES AND TTX RATES
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Sources and Notes:

POWERS-HC-0005.xlsx.

Data from POWERS-HC-0021.csv and F.D. 27589 TTX Form BX Car Contract: Amendment No. 32, December 29, 2023.

ELC data points reflect the most recent data on paid negotiated rates (September 2022 to August 2023). The size of each ELC dot corresponds to the total reported time for a given mile-hourly rate combination.

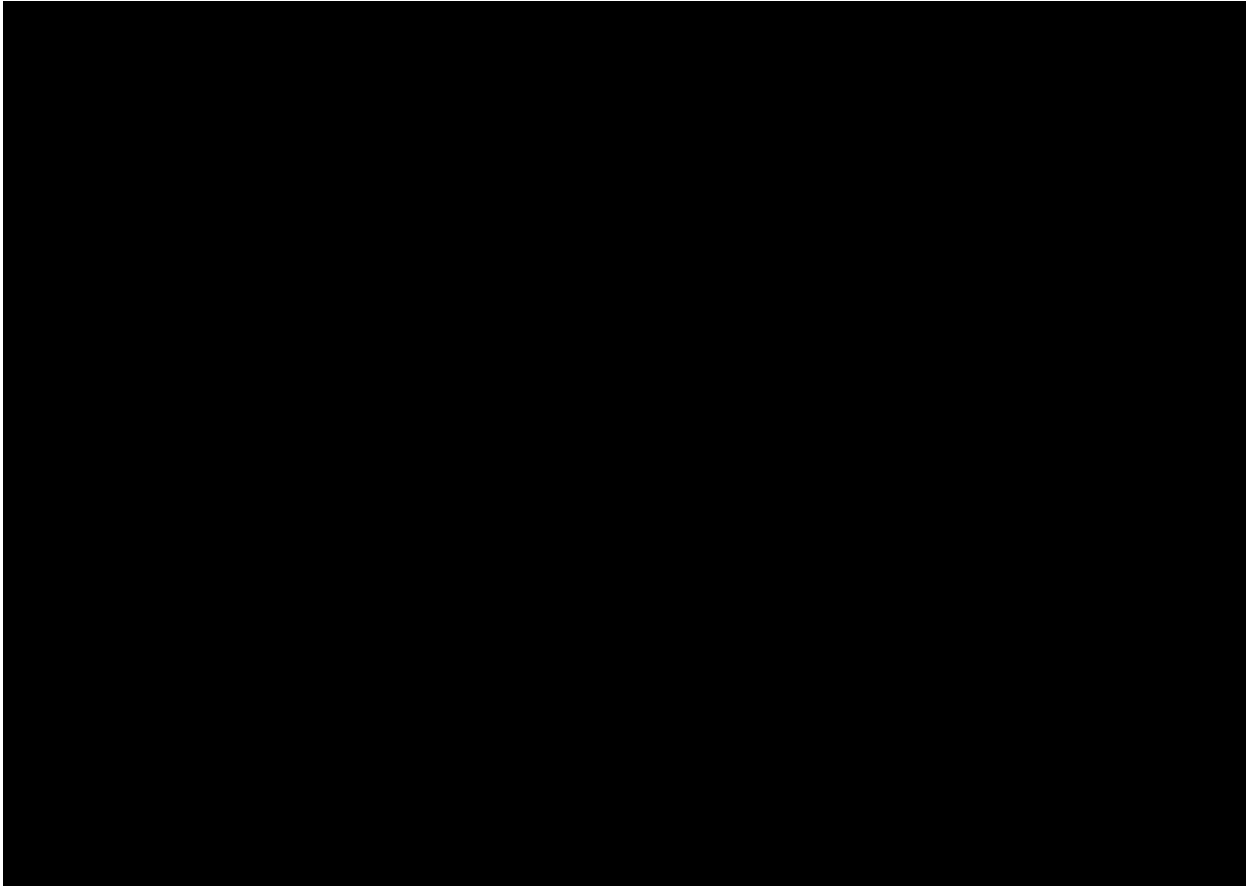
Figure 3 illustrates the gulf between negotiated rates and the range of rates charged by TTX. The hourly component of the TTX A406 rate only becomes comparable to that in the range of rates negotiated by ELC members as TTX discounts approach their deepest level. For example, the highest negotiated hourly rate depicted on the chart (\${{█}} per hour)

corresponds to the {{█}}% utilization level; the most common negotiated hourly rate (\${{█}} per hour) corresponds to an {{█}}% utilization level. Meanwhile, the negotiated mile rates paid to ELC members are {{█}} cents ({{█}}%) lower than those charged by TTX.

The A606 comparison illustrated in Figure 4 is even starker. The most common time rates negotiated by ELC members fall in the range of \${{█}} to \${{█}} an hour.⁶² The deepest TTX discount—achievable only with 100% utilization—is \$0.87 per hour. With one exception, A606 negotiated mile rates are {{█}} cents lower than the 9 cents charged by TTX.

⁶² There are also two points at \${{█}} per hour and \${{█}} per hour, which correspond to 0.9% and 0.8% of the paid hours, respectively.

FIGURE 4: A606 TIME AND MILE RATES: NEGOTIATED RATES AND TTX RATES
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Sources and Notes:

POWERS-HC-0005.xlsx.

Data from POWERS-HC-0021.csv and F.D. 27589 TTX Form BX Car Contract: Amendment No. 32, December 29, 2023.

Only rates from September 2022 to August 2023 were considered for ELC members.

Finally, I offer a simple calculation that combines the time and mile components of these rates to provide a sense of the revenue differences resulting from these rates. Specifically, in Table 4, I calculate the per-hour revenue from the average negotiated rate for each car type with that of the midpoint of the corresponding TTX range of rates, assuming that on average an A406 boxcar is paid for {{ [REDACTED] }} miles and an A606 boxcar is paid for {{ [REDACTED] }} miles for every hour

it is paid.⁶³ I calculate that negotiated rates yield expected revenues that are on average 27% to 28% lower than the median TTX rates. Moreover, this result does not consider that approximately one quarter of all paid hours and miles for cars subject to the Arbitration Rule are at default rates that are typically much lower, whereas all paid hours and miles for TTX cars appear to be at rates that TTX sets.

TABLE 4: EXPECTED PAYMENT PER HOUR UNDER NEGOTIATED RATES AND TTX RATES

		Car Type	
		A406	A606
Inputs			
Paid Miles Per Hour	[1]	{{[REDACTED]}}	{{[REDACTED]}}
TTX			
Hourly Rate (Midpoint)	[2]	\$0.96	\$0.99
Mile Rate	[3]	\$0.09	\$0.09
ELC			
Average Hourly Rate	[4]	{{[REDACTED]}}	{{[REDACTED]}}
Average Mile Rate	[5]	{{[REDACTED]}}	{{[REDACTED]}}
TTX Payment Per Hour	[6]	\$1.29	\$1.31
ELC Payment Per Hour	[7]	{{[REDACTED]}}	{{[REDACTED]}}
Percent Difference	[8]	28%	27%

Sources and Notes:

POWERS-HC-0005.xlsx.

[1], [4], [5]: Calculated from POWERS-HC-0021.csv. Average rates were calculated across September 2022 to August 2023, weighted by reported time and miles respectively.

[2], [3]: As provided in F.D. 27589 TTX Form BX Car Contract: Amendment No. 32, December 29, 2023.

[6]: [2] + [1] * [3]

[7]: [4] + [1] * [5]

⁶³ In the ELC CHDX dataset during the September 2022 to August 2023 period, the average paid miles per time for A406 and A606 cars is 3.61 and 3.53, respectively. See POWERS-HC-0032.R

[8]: $([6] - [7]) / [7]$

Minor differences due to rounding.

Together the figures and table in this section make clear, even without specific data on the relative frequency of the rates actually charged by TTX, that negotiated rates are well below those charged by TTX, which are ostensibly cost-based. This simple analysis provides further evidence that the arbitration and default rate rule suppress negotiated rates. It also provides an indication as to why TTX is continuing to invest in boxcars while the pace of private investment has slowed, a point I further explore in the next section of this document.

V. THERE IS A SERIOUS RISK OF A BOXCAR SUPPLY SHORTAGE IN THE NEAR-TERM

A. A LARGE SHARE OF THE CURRENT BOXCAR FLEET IS NEARING RETIREMENT

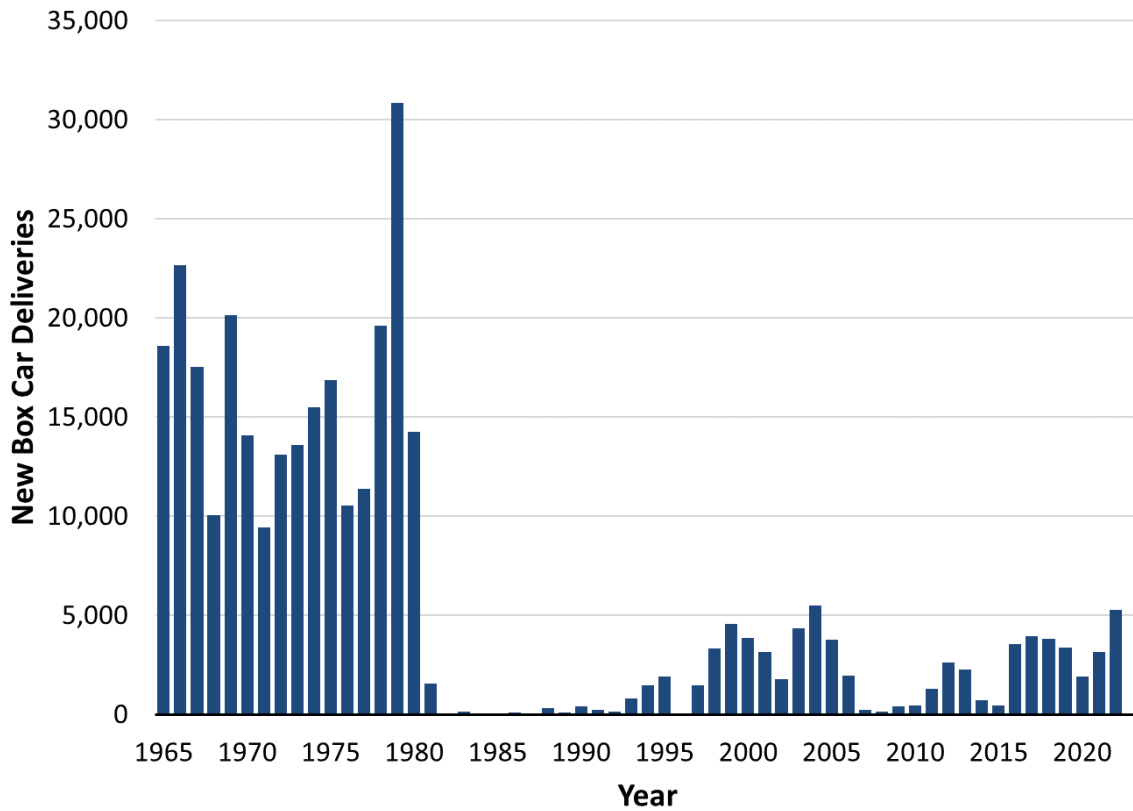
In the late 1970s a significant number of units were added to the boxcar fleet.

Specifically, according to ARCI data provided by RSI, more than 89,000 new boxcars were added to the fleet in the 5-year period from 1975 to 1979. In contrast, in the 5-year period from 2018-2022, fewer than 18,000 boxcars were added to the fleet.⁶⁴

The surge in new boxcar acquisitions that occurred in the late 1970s is visible in Figure 5. As a result of this surge, the railroad industry entered the post-Staggers era with an ample supply of general service boxcars. Further additions to the fleet have occurred in the late 1990s, and again in recent years. However, new boxcar acquisitions have never returned to the levels seen in the late 1970s.

⁶⁴ See data contained in POWERS-HC-0023.xlsx, in tab "Summary."

FIGURE 5: NEW BOXCAR DELIVERIES BY YEAR, 1965 - 2022



Sources and Notes:

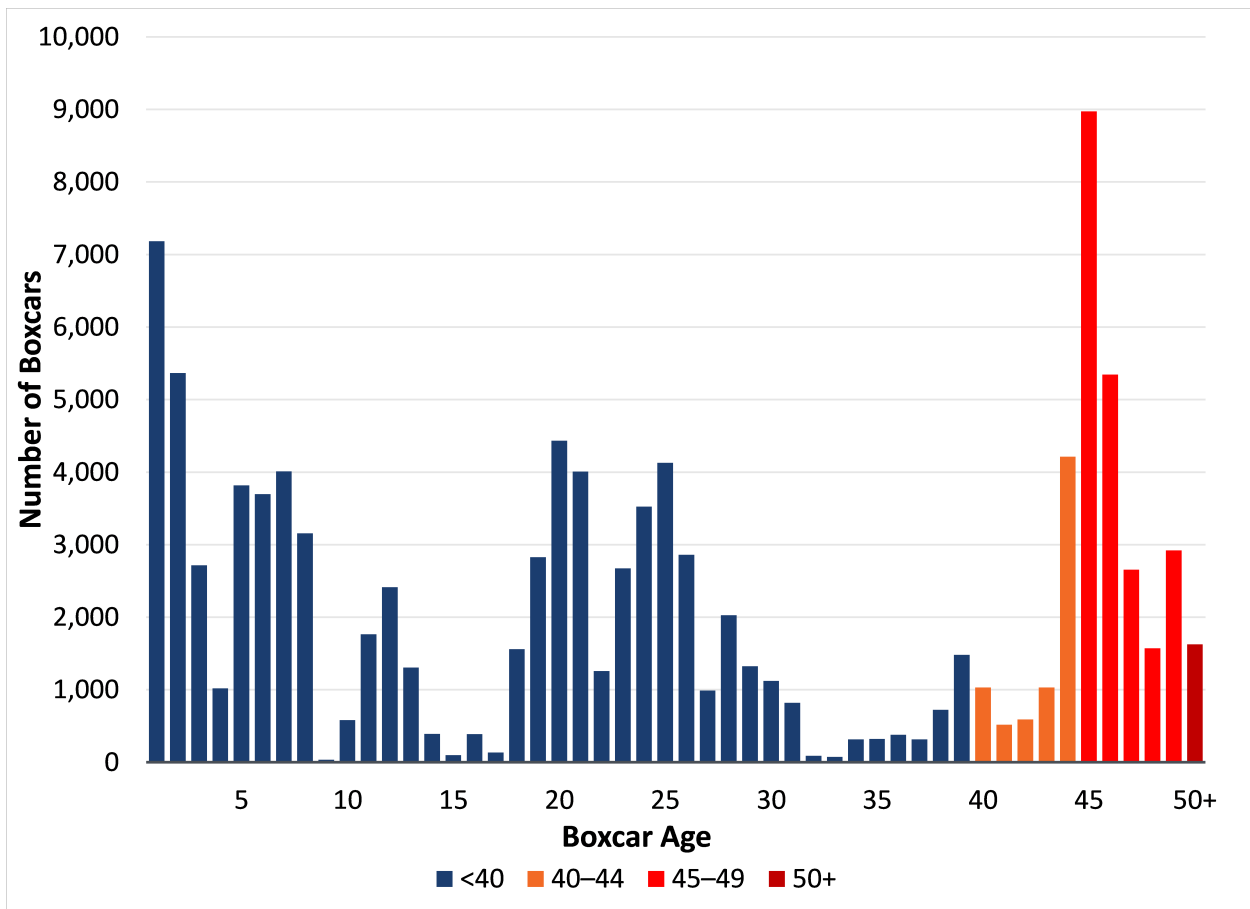
POWERS-HC-0006.xlsx.

Data from POWERS-HC-0023.xlsx.

Figure 6 shows a breakdown of the 2023 boxcar fleet by the age of the boxcar. Because these cars have a useful life of 40 to 50 years,⁶⁵ many of these late 1970s additions to the fleet are still in service, although they are now nearing retirement age.

⁶⁵ Boxcars have a standard service life of 50 years. 49 C.F.R. § 215.203. Some carriers may have a general policy to not accept boxcars over 40 years old. Union Pacific, Over Age Car Policy, <https://www.up.com/customers/all/equipment/over-age/index.htm> (last accessed Mar. 1, 2024). AAR Interchange Rule 88, however, provides a mechanism for extending the use of a car beyond 50 years of age.

FIGURE 6: BOXCAR FLEET BY AGE, AS OF JANUARY 2024



Source and Notes:

POWERS-HC-0007.xlsx.

Data from POWERS-HC-0022.xlsx.

Each age bin is inclusive at the upper end and exclusive at the lower end.

For the purposes of this chart, “age” reflects the calendar year in which the car was built. For example, all boxcars built in 2023 are assigned an age of 1.

The prevalence of aging boxcars in the current fleet is widely understood within the rail industry.⁶⁶ The information I have reviewed indicates that there are more than 30,000 boxcars,

⁶⁶ See, e.g., TTX Presentation to Western Railway Club, January 16, 2024 (provided as POWERS-0024.pptx), at Slide 20. See also Richard Kloster, “Rail-car outlook: Richard Kloster’s 2023 delivery projection.” Progressive Railroading, December 2022.

representing 29% of the non-refrigerated boxcar fleet that are 40 years or older (*i.e.*, built in 1984 or earlier). Of these, more than 23,000 boxcars (or 22% of the non-refrigerated boxcar fleet) are 45 years or older (built in 1979 or earlier).⁶⁷

New builds will likely fall far short of retirements. In recent years, boxcar additions have averaged approximately 3,000 per year.⁶⁸ At least one forecast of North American boxcar deliveries indicates that between 2024 and 2028, average annual deliveries will be below 2,000 cars per year.⁶⁹ This is roughly commensurate with the average level of investment by TTX in recent years: TTX has averaged roughly 1,800 new boxcar additions per year over the last decade.⁷⁰ Thus, the scale of anticipated additions is less than half the scale of anticipated retirements in the coming years, as discussed above. TTX also forecasts retirements of 30,708 cars in the same five-year period.⁷¹

Representatives of TTX and at least one of its Class I owners have contended that fewer new cars will be required to replace those being retired from service. For example, a January 2024 presentation by TTX asserted that the needed replacement rate is 65%, due to a combination of some retiring cars being idle, increased capacity of newer cars, and more

⁶⁷ See POWERS-HC-0007.xlsx.

⁶⁸ For example, RSI's ARCI data indicate that on average, 2,833 new boxcars were added each year from 2013 to 2022 (rebuilt were non-existent). See POWERS-HC-0023.xlsx. Umler data as of January 2024 are very similar, indicating that 31,585 of the current fleet of boxcars have built dates (or inferred built dates) between January 2014 and December 2023, or about 3,159 per year. See POWERS-HC-0022.xlsx.

⁶⁹ See FTR Transportation Intelligence, "Rail Equipment Outlook: North American Railcar Markets." February 5, 2024, provided as POWERS-HC-0030.xlsx; see tab "NAdeliveries-A_F". Specifically, annual forecasted deliveries for boxcars over the next 5 years range from 1,575 to 2,250, averaging 1,935 per year.

⁷⁰ According to Umler data, as of January 3, 2024, there were 18,146 TTX-marked boxcars with inferred built dates between January 2014 and December 2023. See POWERS-HC-0022.xlsx.

⁷¹ See, e.g., POWERS-0024.pptx, at Slide 21. The "North American Boxcar Fleet Fallout Forecast" values for 2024 through 2028 total 30,708.

efficient utilization of standardized pool cars.⁷² The assumptions, data and calculations underlying TTX’s assertions are unclear.

B. OUTLOOK FOR DEMAND FOR BOXCARS

While demand for boxcar traffic has fallen over the last several decades as many commodities that traditionally used boxcars shifted towards truck transport, more recent data suggest that boxcar demand has stabilized or may even be growing. To measure boxcar traffic levels, I plot, in Figure 7, a rolling annual total of boxcar car-miles as measured by the Public Use Waybill Sample.⁷³ These data indicate that boxcar car-miles bottomed out during the pandemic, but have recovered robustly since then. In fact, in the last four quarters for which I have complete data, boxcar car-miles are 10% higher than they were in the calendar year *before* the pandemic.⁷⁴ This general trend of flat demand or modest positive demand growth is also corroborated by other industry sources, such as TTX and FTR Transportation Intelligence.⁷⁵

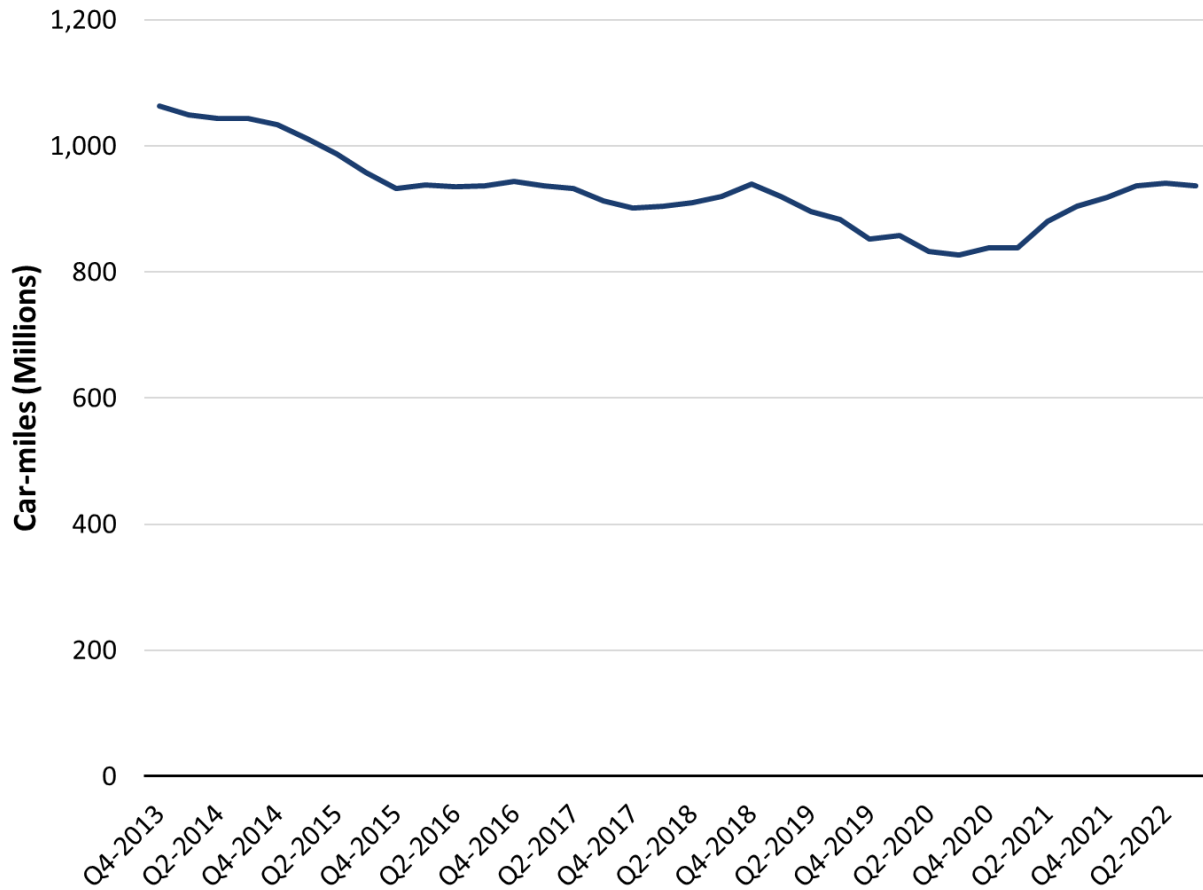
⁷² See POWERS-0024.pptx, at Slide 29. See also Trains.com, “Railroad official: Boxcars won’t go over ‘retirement cliff’”, September 22, 2020. Available at <https://www.trains.com/trn/news-reviews/news-wire/railroad-official-boxcars-wont-go-over-retirement-cliff/>, last accessed March 22, 2024. The article summarizes a conference presentation by a Norfolk Southern official.

⁷³ Data are available at <https://www.stb.gov/reports-data/waybill/>. Specifically, I measure demand using the waybill date, which corresponds to the start of a move. Because some share of moves with Q4 2022 waybill dates will not have terminated until 2023 (and thus could not have appeared in the 2022 Public Use Waybill Sample), the corresponding volume measure for Q4 2022 would be biased downwards. Therefore, I exclude Q4 2022 from this analysis.

⁷⁴ The PUWS data indicate that there were 936 million boxcar car-miles in the year from Q4 2021 through Q3 2022, compared to 851 million boxcar car-miles in the four quarters in 2019. $(936 \text{ million} - 851 \text{ million})/851 \text{ million} \times 100\% \approx 10\%$. See POWERS-HC-0011.xlsx.

⁷⁵ See, e.g., POWERS-0024.pptx, January 16, 2024 at Slide 27: “Boxcar loadings should stay flat.” Another slide indicates nominal demand growth. Similarly, the Q1 2024 Rail Equipment Outlook published by FTR Transportation Intelligence projects that 2028 boxcar demand will be 5% larger than those in 2023, whether measured in car loadings or tons, implying a cumulative annual growth rate of 0.9%. See POWERS-HC-0030.xlsx at tab “NAcarloadingsBOX-A.”

FIGURE 7: ROLLING FOUR-QUARTER TOTAL CAR-MILES FOR BOXCARS IN MILLIONS OF CAR-MILES (2013-2022)



Sources and Notes:

POWERS-HC-0011.xlsx.

STB Public Use Waybill Sample, 2013-2022. Each data point is the sum of car-miles for the four most recent quarters, e.g., Q4-2013 is the sum of car miles for Q1-2013 through Q4-2013.

Furthermore, in light of growing demand for carbon emissions reductions, there is significant potential for additional future growth in boxcar loadings. The positive environmental and climate impacts of shifting truck freight traffic to rail have been widely discussed.⁷⁶ A

⁷⁶ See, e.g., Association of American Railroads (AAR), “The Positive Environmental Effects of Increased Freight by Rail Movements in America: How moving freight from roads to rail would reduce carbon emissions in the United States.” June 2020.

See also, Jonathan English and Uday Schultz, “The Lowly Boxcar Can Make Your City a Better Place to Live.” November 28, 2022. Bloomberg.com. Available at <https://www.bloomberg.com/news/articles/2022-11-28/railroads-help-cities-reduce-highway-truck-traffic-and-cut-air-pollution>. Last accessed February 7, 2024.

headline finding recently publicized by the AAR explains that “Moving freight by rail instead of truck lowers greenhouse gas emissions by up to 75%, on average.”⁷⁷ Benefits of this shift would not be limited to carbon emissions reductions, but would also include reduced air pollution in cities and less wear-and-tear on roadways and bridges that also need to serve the light vehicles of commuters and residents. For example, English and Schulz (2022) explain that trucks generate particulate emissions from exhaust, tires, and brakes.⁷⁸ Particulate emissions are linked to a variety of health problems. The AAR notes that trucks underpay for the damage they cause to roads and highways, which distorts intermodal competition.⁷⁹

To the extent that consumer preferences, corporate responsibility goals or even state or federal legislation induces shippers to reduce their emissions and environmental footprint, demand for moving freight by boxcar could increase in the coming years.

C. CURRENT CAR-HIRE RATES ARE INSUFFICIENT TO INCENTIVIZE ADEQUATE PRIVATE INVESTMENT IN THE BOXCAR FLEET

As we have discussed above, there is a general consensus that large numbers of boxcars are certain to retire over the next decade. There are benefits from private investment in boxcar capacity, both in terms of the overall size of the future fleet, as well as diversity of supply. Yet under current conditions, there is evidence that current car-hire rates are insufficient to incentivize adequate private investment in the boxcar fleet.

To illustrate this fact I calculate the net present value of the earnings a boxcar can be expected to earn, given present market conditions, and compare this calculation to the cost of a

⁷⁷ Association of American Railroads (2020).

⁷⁸ English and Schulz (2020).

⁷⁹ Association of American Railroads (2020).

newly built car.⁸⁰ As the up-front cost, paid rates, and (to a lesser extent) maintenance costs vary by car type, this illustrative calculation is based on the A606/B637 car type, which is one of a few car types making up the majority of new fleet additions over the last decade.⁸¹ Thus, we use inputs that are specific to this car type whenever possible. The results of this calculation are presented in Table 5, below.

Based on input from ELC members, I assume a lifetime average utilization level of {{█}}%, meaning that a lessor-owned boxcar will on average receive car hire payments in {{█}}% of the hours in each year of its lifetime.⁸² I assume that cars are paid for {{█}} miles per paid hour, after confirming the approximate relationship between paid hours and paid miles in the ELC CHDX data.⁸³ This means that I assume that the average boxcar will receive payment for {{█}} hours and {{█}} miles per year. I also calculate the median paid rates for A606/B637 boxcars in the last 12 months for which we have full ELC CHDX dataset, finding that they are \${{█}}/hour and \${{█}}/mile, and adopt them for purposes of this calculation.⁸⁴ These figures would result in annual revenue of \$6,875.

⁸⁰ For purposes of these calculations we assume initially that potential investors in new boxcars assume that current market conditions will persist into the future.

⁸¹ A606 and B637 cars (which I understand are essentially identical) accounted for 77% of the boxcars added to the fleet since the beginning of 2013, and 48% of the non-TTX boxcars added to the fleet in the same period. *See* POWERS-HC-0032.R.

⁸² In any individual year, boxcar utilization can certainly surpass this level. However, most boxcars will spend some portion of their lifetimes being repaired or in storage. This level of average utilization is generally supported by the ELC payment data available to me.

⁸³ This ratio is calculated using the ELC CHDX dataset from September 2022 to August 2023. *See* POWERS-HC-0032.R.

⁸⁴ Note that due in part to the prevalence of hours paid at extremely low default rates, *mean* hourly rates are somewhat lower, at \${{█}}/hour and \${{█}}/mile for empty moves and \${{█}}/hour and \${{█}}/mile for loaded moves. As a general matter, most negotiated rates and default rates have the same per-hour and per-mile rates whether the boxcar is loaded or empty. This is corroborated by the mean statistics cited in this footnote, as well as the fact that empty and loaded *median* rates are both \${{█}}/hour and \${{█}}/mile. For simplicity, I assume that loaded and empty rates are the same. *See* POWERS-HC-0032.R.

My net present value calculation also takes account of operating costs, including maintenance, repairs, storage, and repositioning costs. Maintenance costs tend to vary over the lifetime of a boxcar, with lower costs in early years and periodically higher costs associated with maintenance cycles and the general proposition that older cars are on average more costly to maintain. I requested and received operating cost information from ELC members; the responses I received suggests that there is significant heterogeneity in annual operating costs (or perhaps in the way those costs are accounted for). For the purposes of this calculation, I calculate the average annual operating costs in 2023 dollars for each responding member, and adopt the time path of operating costs of the response with the median value.

Using standard assumptions regarding the economic life of the boxcar (45 years), the median after-tax weighted average cost of capital (“WACC”) of ELC members (as of January 2024), inflation,⁸⁵ the depreciation schedule,⁸⁶ and salvage value,⁸⁷ I calculate the net present value of the boxcar’s cash flows (including the value of the depreciation tax shield) to be \$96,334. This NPV result implies that at this time, future cash flows are sufficient to cover the boxcar’s expected operating costs, but fall far short of the cash flows needed to recoup the investment cost of purchasing a new A606/B637 boxcar, which for the sake of this calculation I

⁸⁵ For simplicity I adopt the Federal Open Market Committee’s long-run inflation projection of 2.0%. See Federal Open Market Committee Projections, September 20, 2023, available at <https://www.federalreserve.gov/monetarypolicy/fomcproptabl20230920.htm>.

I assume that both operating costs and paid rates will increase at this rate over the car’s lifetime. In fact, paid rates have been largely flat and have not generally kept pace with inflation.

⁸⁶ ELC members have informed me that industry standard is to use the 7-year MACRS accelerated depreciation schedule.

⁸⁷ I also asked ELC members about salvage value for A606 cars, which they provided in 2023 dollars. The median value among those provided was \${{█}}. I adjust for inflation, calculate the net present value, and include the result as an input in my analysis.

assume to be \$155,000.⁸⁸ In other words, in this calculation, under current conditions and paid rates—even if they grow with inflation (which has not been achieved with recent experience), net cash flows over the lifetime of the car can only cover approximately 62% of the purchase price of a new A606 boxcar.

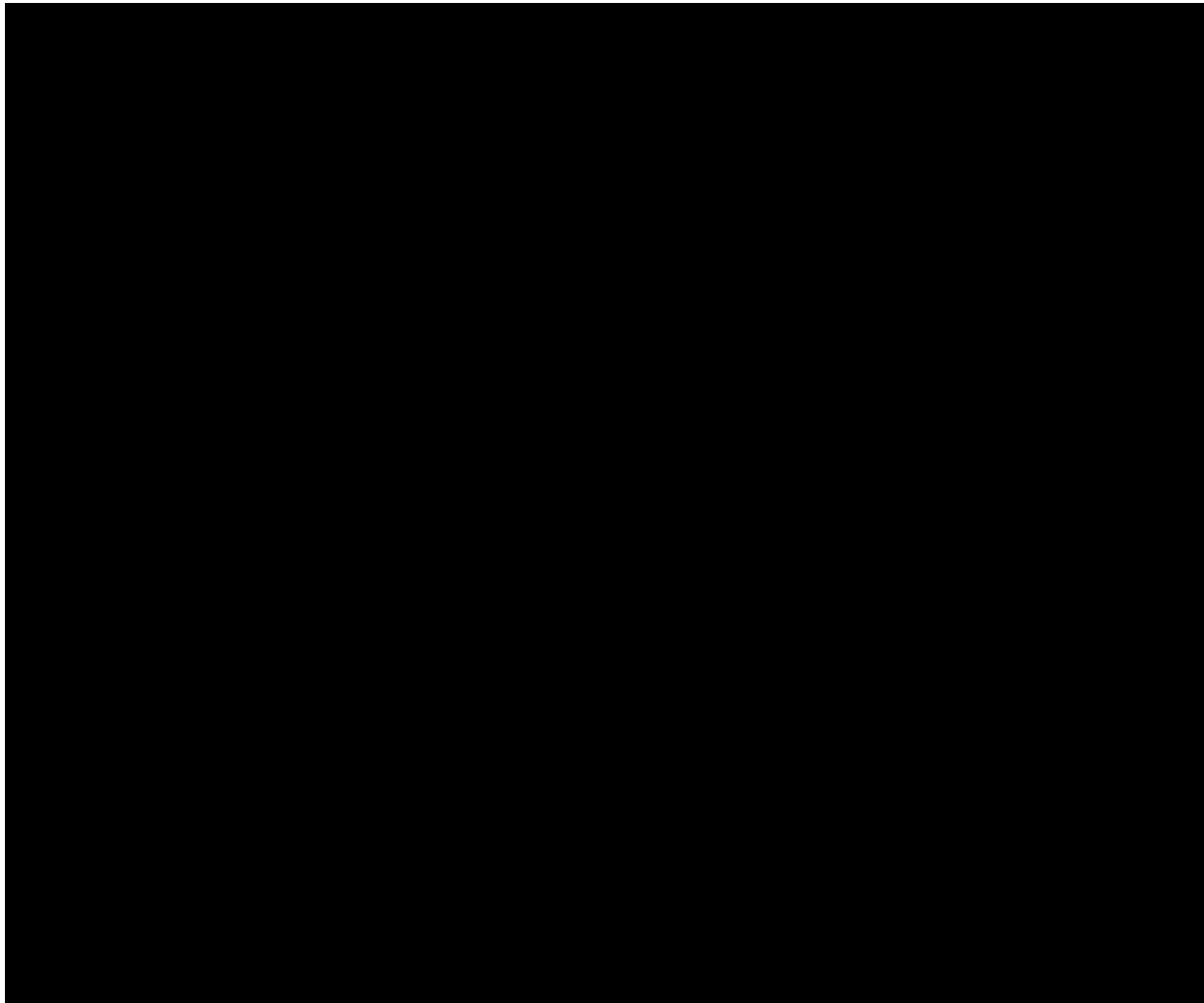
While our result is sensitive to certain inputs, including utilization, it is worth noting that even if a car received revenue at current rates, grown with inflation, *in every hour of the next 45 years* (an implausible level of utilization), the net present value of those revenues would be insufficient to cover the new purchase price of an A606 boxcar.⁸⁹ This result also clearly demonstrates that market conditions, or pricing forces under the Arbitration Rule, will need to change to incentivize investment in new boxcars.

⁸⁸ In December 2023, I asked ELC members about the expected purchase price for a new A606. The median of the six responses I received was \${{█}}. Data provided by two sellers of boxcars indicate that in 2023, the sale price of 60 foot boxcars (excluding specialty cars) ranged from \${{█}} to \${{█}}.

⁸⁹ Specifically, a car that receives inflation-adjusted payments at current median rates in 8,760 hours a year and 75 miles a day would see cash flows with a net present value of \$125,986 over its 45-year useful life. This calculation assumes that operating costs do not increase in response to the higher usage, which is also unrealistic. However, the intent of this calculation is to show that even under an unreasonably optimistic scenario, current market rates do not generate enough revenues to incentivize new investment.

TABLE 5: COMPARISON OF PROJECTED LIFETIME OPERATING CASH FLOWS WITH CAPITAL COST, USING CURRENT UTILIZATION LEVELS AND MEDIAN PAID RATES FOR THE A606/B637 BOXCAR

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}

Sources and Notes:

POWERS-HC-0009.xlsx.

[1], [6]: By assumption, informed by input from ELC members.

[2], [5]: Median useful life and salvage value, as reported by ELC members.

[3]: From POWERS-HC-0029.xlsx, last accessed January 5, 2024. Median across ELC members as of EOD January 1, 2024.

[4]: Representative (median) annual average operating costs, based on information provided by ELC members.

[7]: Calculated from POWERS-HC-0021.csv, using data from September 2022 to August 2023.

[8]: [6] * 8,760.

[9]: [7] * [8].

[10], [11]: Median A606/B637 rates in POWERS-HC-0021.csv, covering September 2022 to August 2023.

[12]: [8] * [10] + [9] * [11].

[13]: Assumes utilization stays constant and rates grow with inflation.

[14]: Assumes operating costs grow with inflation.

[15]: Value of depreciation tax shield, based on 7-year MACRS.

[16]: Discounted inflation-adjusted after-tax salvage value.

[13], [15]: We assume a federal tax rate of 21% and a representative state tax rate of 7.5%.

[17]: Sum of rows [13] to [16].

Using the same basic net present value approach, I also calculate the rates that would be required to adequately compensate a car owner for the purchase today of a new A606 boxcar costing \$155,000. In this alternative calculation I used the same assumptions described above, other than rates.

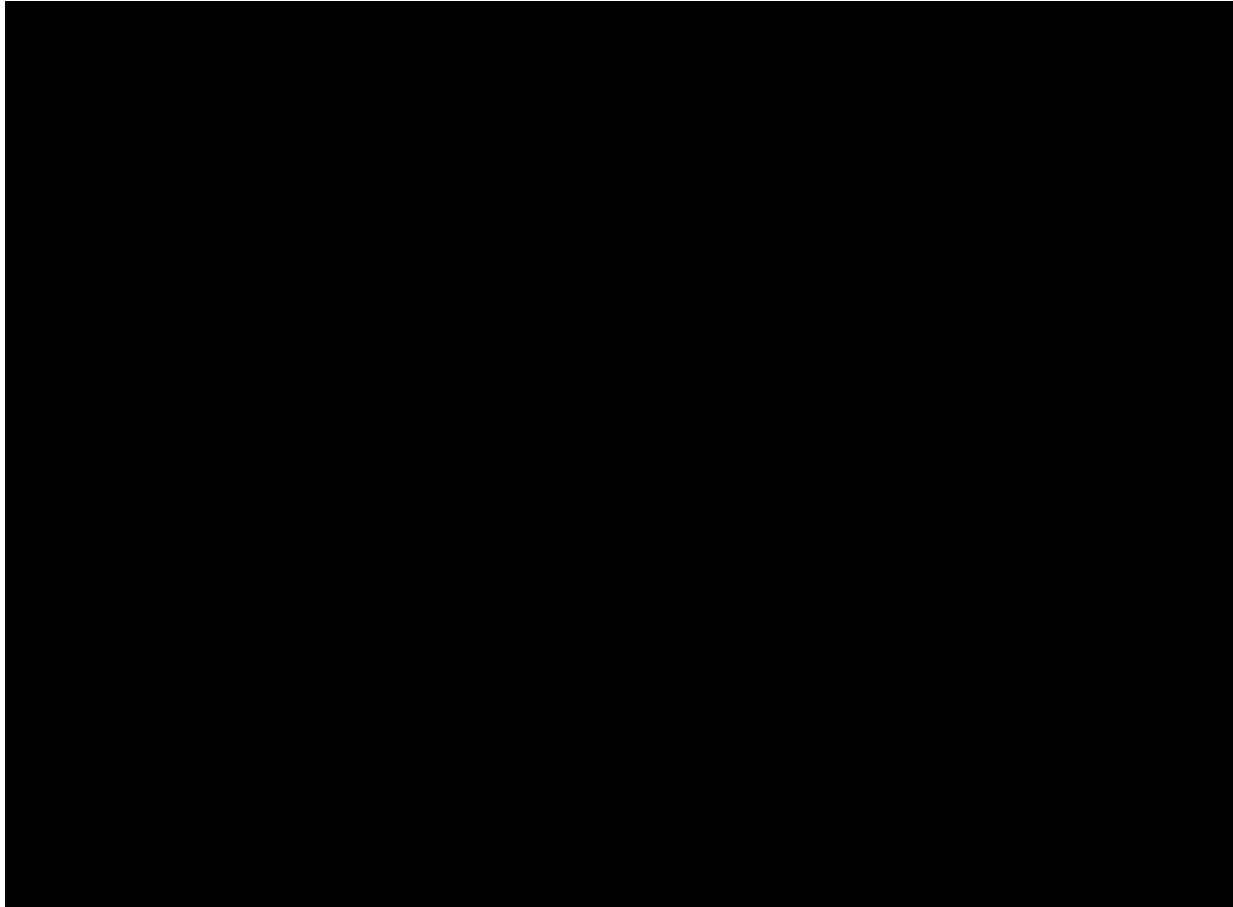
If the {█}% utilization levels described above could be maintained for the full life of the boxcar (assumed to be 45 years), and assuming that operating costs do not increase in response to the higher usage, rates of \$1.31 per hour and \$0.131 per mile, growing with inflation over the boxcar's lifetime would be just sufficient to compensate the car owner for the assumed upfront investment cost of \$155,000.⁹⁰ These calculations are summarized below in Table 6. To provide a point of reference, the base TTX rates for A606 cars are currently set at levels that are substantially lower - \$1.12 per hour and \$0.09 per mile for A606 cars.⁹¹

⁹⁰ In fact, there are an infinite number of rate pairs that could exactly compensate the boxcar owner, due to the tradeoffs between the rate per hour and the rate per mile. For simplicity, we assume that the per mile rate is one-tenth of the per hour rate.

⁹¹ Amendment No. 32, TTX Company Finance Docket No. 27589, December 29, 2023, at Exhibits A and C. I understand that the hourly rates actually charged by TTX for A606 boxcars ("Plate F Pool Boxcars") are in practice discounted as the utilization level of the cars used by a railroad in a given month increases. However, I do not have data that would allow me to observe the rates actually charged by TTX.

TABLE 6: CALCULATION OF COMPENSATORY RATES

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}

Sources and Notes:

POWERS-HC-0009.xlsx.

[1], [6], [7]: By assumption, informed by input from ELC members.

[2], [5]: Median useful life and salvage value, as reported by ELC members.

[3]: From Bloomberg, pulled January 5, 2024. Median across ELC members as of EOD January 1, 2024.

[4]: Representative (median) annual average operating costs, based on information provided by ELC members.

[8]: [6] * 8760.

[9]: [7] * [8].

[10], [11]: Calculated with a standard NPV model, based on input from ELC members regarding lifetime operating costs of boxcars. We assume a federal tax rate of 21% and representative state tax rate of 7.5%.

[12]: [10] + [11].

[13], [14]: Calculated such that [8] * [13] + [9] * [14] = [12].

[15]: [8] * [13] + [9] * [14].

While paid rates have proven to be very stable, many of the key inputs into the calculations above can fluctuate from year to year. In particular, much of the recent private investment in boxcars took place during particularly advantageous conditions coming out of the global COVID-19 pandemic, when steel prices and therefore boxcar purchase costs were depressed and borrowing costs were particularly low. In Table 7, I summarize some variations on the NPV calculations above and their implications for the level of rates needed to incentivize private investment.

TABLE 7: COMPENSATORY RATES BASED ON DIFFERENT SCENARIOS

		Base	Optimistic	COVID Conditions
		[1]	[2]	[3]
Purchase Cost	[A]	\$155,000	\$140,000	\$140,000
WACC	[B]	7.31%	6.31%	3.56%
Operating Costs	[C]	Median	Lowest	Median
Compensatory Hourly Rate		\$1.31	\$0.99	\$0.73
Compensatory Mile Rate		\$0.13	\$0.10	\$0.07

Sources and Notes:

POWERS-HC-0009.xlsx.

[1]: “Base” uses the same assumptions as those used in Table 6.

[2]: “Optimistic” is defined as the scenario in which the three inputs are changed to the lowest values among the ELC members.

[3]: “COVID Conditions” is defined as the scenario in which conditions are more in line with values experienced during the COVID-19 pandemic (*i.e.*, lower purchase cost, lower WACC). The WACC number for [3] is the median WACC among ELC members as of July 1, 2020.

As column [3] of Table 7 indicates, with alternate inputs, the model above can explain how the extraordinary conditions experienced during COVID resulted in private investment in new boxcars. Comparing column [1] with column [3] also indicates the extent to which conditions have changed.

In a well-functioning market, scarcity sends price signals that can induce a supply response. Thus, if the car hire system was a well-functioning market, I would expect rates to rise in the coming years, as aging boxcars retire and supply becomes tighter, eventually achieving levels needed to encourage additional private investment. However, as I have described at length above, the institutional features of the car hire system mute scarcity-based price signals, leaving no reason to expect that car hire rates will increase meaningfully in response to the impending boxcar shortage. Similarly, there is no evidence that boxcar rates have responded meaningfully in the face of substantial fluctuation in demand conditions over the past decade, as I show in the next section.

D. THE RESPONSE OF PAID RATES TO INDUSTRY CONDITIONS IS MUTED

Given the description of the main features of the car hire system described above, it is not surprising to see that the rates paid for car hire have been stagnant. Figure 8 provides one indication of just how static, on average. Specifically, Figure 8 depicts three price indices, which measure the average change in prices over time. Because the ELC CHDX dataset I rely on has several compositional changes over the ten plus years for which I have data, average prices can be noisy and apparent changes over time are potentially misleading.⁹² Instead, I construct a price

⁹² Calculation of average paid rates and other indicators based on market-wide CHDX data should largely avoid any such “noise.”

index that controls for compositional changes. I first identify all average paid rates which appear in the data in consecutive quarters, and then calculate the average price change from one quarter to the next.⁹³ Then, I “chain” these quarter-to-quarter changes together in order to present a picture of how prices have evolved over time.⁹⁴ This general approach is the same used to measure changes in price over time in widely-used inflation indices.

The result, presented in Figure 8, illustrates how flat both time rates and mile rates have been over the last decade. Specifically, after correcting for compositional differences, time rates in the third quarter of 2023 were on average only 1% higher than they were in the first quarter of 2013, with very little variation over that 10 year period. Mile rates exhibited similarly little change over that time period, and actually decreased, by approximately 2%.⁹⁵ During the same ten-year period, CPI-U, a general price index, rose by more than 30%.⁹⁶

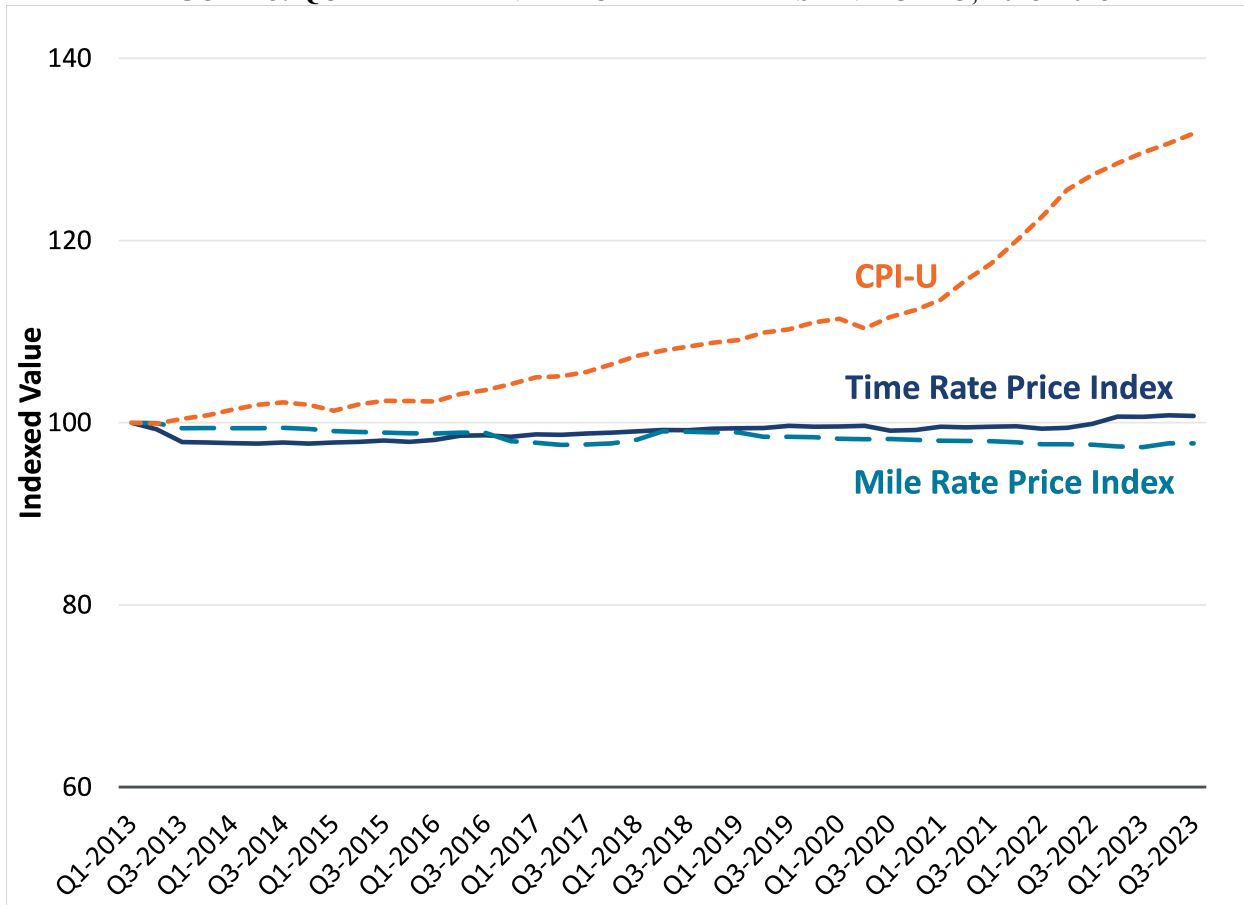
⁹³ Specifically, I calculate the percentage price change in the rate for each combination of car, paying railroad, and empty/loaded status) in each pair of consecutive quarters being analyzed. I then calculate a weighted average percentage price change from each “base” quarter to the next, taking into account the amount of activity in each cell, in both the base period and the period for which the index value is being calculated. In the relatively rare cases where more than one rate is observed within a quarter for a given combination of car, paying railroad, and empty/loaded status, I first calculate the average rate for that cell in that quarter. The specific index I calculate is known as the Fisher Index, which is sometime called the “ideal” index, in that it takes into account quantity weights in both the base period and the subsequent period.

⁹⁴ “Chaining” simply involves taking the cumulative product of the relative price change in each period.

⁹⁵ See POWERS-HC-0010.xlsx in tab “Quarterly Fisher Price Index.”

⁹⁶ See POWERS-HC-0010.xlsx in tab “CPI-U Quarterly.”

FIGURE 8: QUARTERLY INDEX OF PAID RATES AND CPI-U, 2013-2023



Sources and Notes:

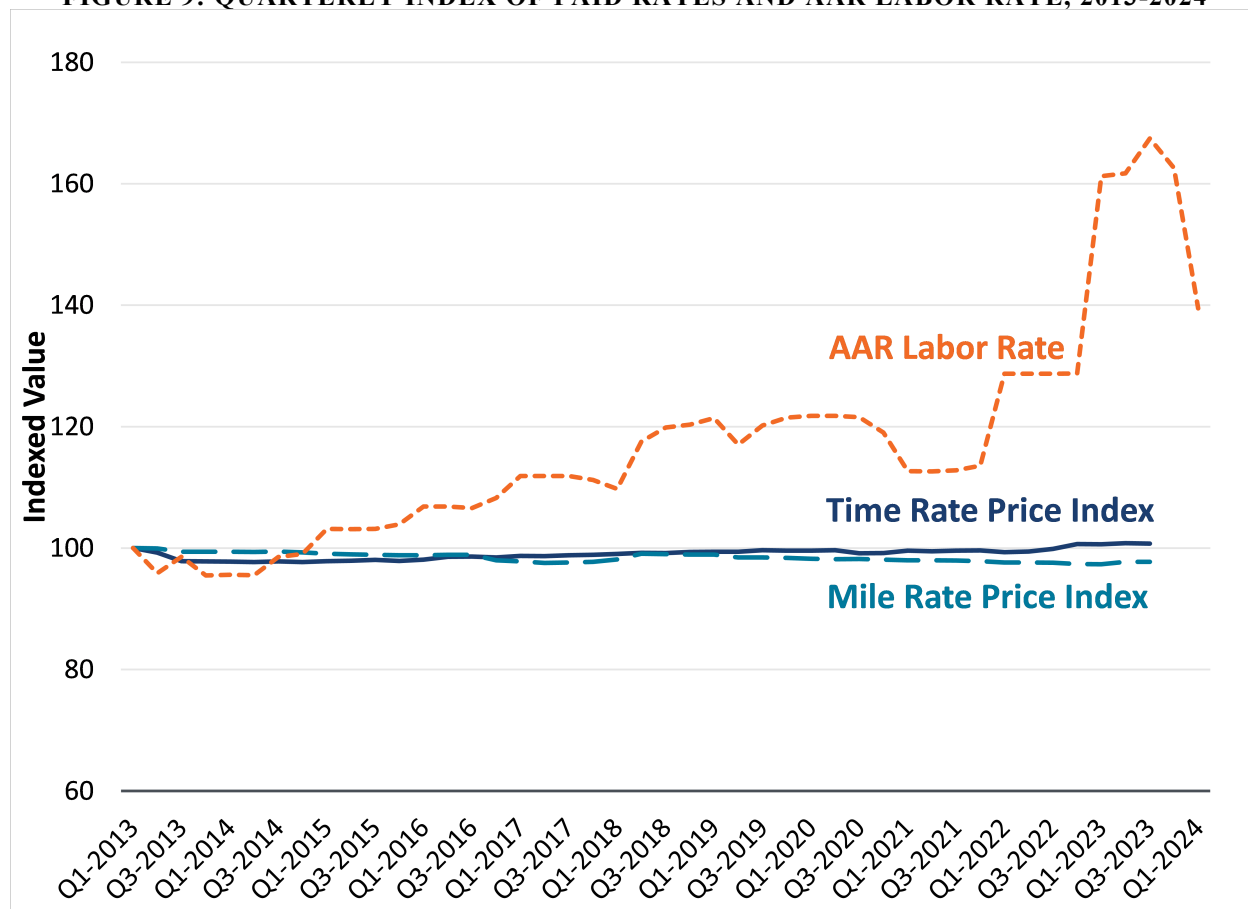
POWERS-HC-0010.xlsx.

Data from POWERS-HC-0021.csv; Federal Reserve Bank of St. Louis (FRED) Consumer Price Index for All Urban Consumers, quarterly data from Q1 2013 to Q3 2023. The price index is calculated using the Fisher price index method.

While this comparison with CPI-U provides an indication of how changes over the last decade in car hire rates compare to general economy-wide changes in prices, it is possible that CPI-U is too general a measure to serve as a meaningful yardstick for the demand and supply factors that are most relevant to the car hire system. However, similar patterns emerge if we compare the stagnation in paid car hire rates to a cost measure that is more closely related to the economics of car hire.

One cost measure that is particularly relevant to the cost of existing cars (*i.e.*, those already in the car hire system) is the labor rate railroads charge each other to perform repairs and maintenance on cars that need it. If a car requires a repair that the mark owner is responsible for, but that must be performed by a foreign road, the foreign road is entitled to charge the mark owner for that repair, at the “Job Code 4450” AAR Labor Rate. That rate gradually rose from a level of \$115.98/hour in the first quarter of 2013, spiked to \$194.23 in the third quarter of 2023, before falling back to its current rate of \$161.76/hour—an increase of 39% over the Q1 2013 rate.⁹⁷

FIGURE 9: QUARTERLY INDEX OF PAID RATES AND AAR LABOR RATE, 2013-2024



Sources and Notes:

⁹⁷ See POWERS-HC-0027.xlsx.

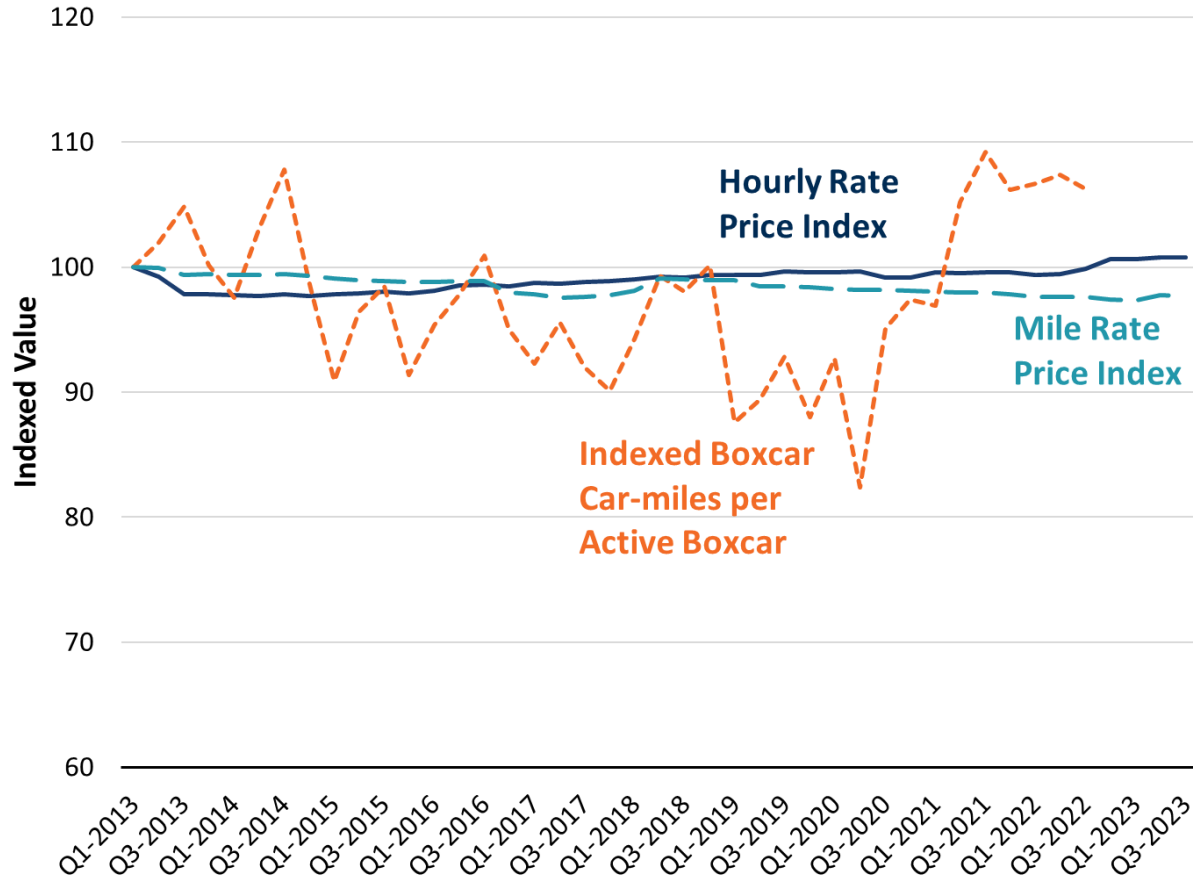
POWERS-HC-0010.xlsx.

Data from POWERS-HC-0021.csv and POWERS-HC-0027.xlsx.

Similarly, recent shifts in the demand-supply balance have not been accompanied by meaningful shifts in paid rates. In Figure 10, I present one example. Specifically, I use the Board’s Public Use Waybill Sample to calculate total boxcar car-miles in each quarter (using the waybill date), then divide by the number of active boxcars in that quarter.⁹⁸ This measure combines both demand and supply factors into a single metric that provides one indication of the “tightness” in the system. The resulting series displays significant variation, but generally is characterized by a downward trend from 2013 through 2020, followed by a sharp uptick during the post-pandemic recovery.

⁹⁸ The number of boxcars in service is assembled from two different sources: monthly data collected by the AAR (“Cars in Storage by Major Car Type”), which includes a monthly count of the number of cars in service; and summaries of Umler snapshots from various points in time as provided by ELC members. While the two sources cover different time periods with different frequency, the boxcars in service are largely consistent. I interpolate linearly when necessary, and take quarterly averages of monthly values.

FIGURE 10: QUARTERLY INDEX OF PAID RATES AND INDEXED BOXCAR CAR-MILES PER ACTIVE BOXCAR, 2013-2023



Sources and Notes:

POWERS-HC-0011.xlsx.

Data from POWERS-HC-0021.csv; STB Public Use Waybill Sample (PUWS) data, 2013-2022; POWERS-HC-0025.xlsx.; POWERS-HC-0028.xlsx. All measures have been indexed to the first quarter of 2013.

As a second indicator of the supply-demand balance, I turn to information periodically reported by the AAR, which reports the percentage of the boxcars in service that are “in storage”, an approximate measure of the share of the fleet that is not being used at any given point in time.⁹⁹ I have access to these data beginning in February 2016. In Figure 11, I chart the inverse

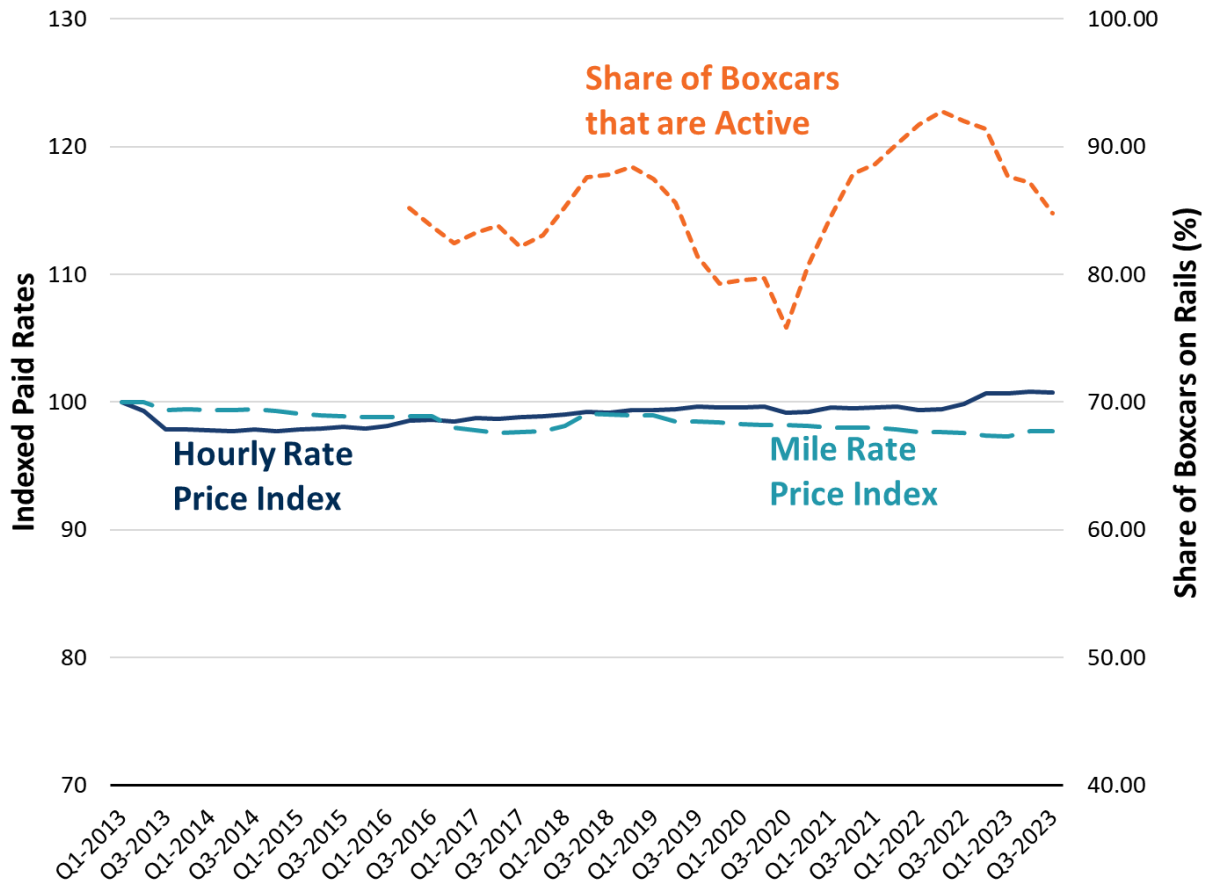
⁹⁹ More precisely, the methodology the AAR uses to measure cars “in storage” is those cars that have not moved while loaded in the previous 60 days. See, e.g., Association of American Railroads, Rail Time Indicators,

of the percentage of boxcars in storage, calling it “share of boxcars that are active.” It shows that during the COVID lowpoint (Q3 2020), only about 76% of the boxcars in service were active, but that figure rose steeply in the coming quarters, peaking at 93% in the second quarter of 2022.¹⁰⁰

November 5, 2021, at 13. Cars “in storage” thus include, in addition to truly idle cars, cars needing repairs and cars used as short range shuttles on captive shortline service, for example.

¹⁰⁰ See POWERS-HC-0011.xlsx in tab “QuarterlyStats.”

FIGURE 11: QUARTERLY INDEX OF PAID RATES AND PERCENTAGE OF BOXCARS THAT ARE ACTIVE, 2013-2023



Sources and Notes:

POWERS-HC-0011.xlsx.

Data from POWERS-HC-0021.csv; Share of boxcars that are active is calculated using data from POWERS-HC-0025.xlsx on the share of freight cars in storage between 2016 – 2024.

The price indices have been indexed to the first quarter of 2013. The share of boxcars that are active is simply the inverse of the share of boxcars in storage, which fluctuates as demand and supply conditions change.

Despite this variation in the supply-demand balance, paid rates have barely moved. As I have already observed, rates barely moved in the seven years from 2013 to 2020. But even when market conditions fluctuated due to the economic shocks tied to the COVID pandemic and subsequent recovery, rates barely moved. Hourly rates did appear to increase slightly in the post-COVID period, but by modest amounts at best. Specifically, if we compare the highest time rate

index value in the post-COVID recovery period, which occurred in the third quarter of 2023, to the time rate index value in the third quarter of 2020 (the low point in COVID), we find that paid per-hour rates grew by 2% (nominal) over that three-year span. During the same time period, paid per-mile rates decreased by 0.5%, and general prices (as measured by CPI-U) grew by 18%.¹⁰¹

In short, despite historically meaningful changes in supply and demand conditions over the past 10 years, we have little to no evidence that rates are capable of responding. These findings are consistent with the observations made above: the Arbitration Rule fails to provide almost any incentive or ability for actors in the car hire system to react to changes in market conditions.

VI. INCREASED CONCENTRATION OF BOXCAR OWNERSHIP RAISES SUBSTANTIAL COMPETITIVE CONCERNS

One potential outcome in the face of a looming boxcar shortage is the prospect that TTX will continue to invest in boxcars, in effect becoming the only meaningful provider of new boxcar supply. In this section, I explain why the Board should hesitate to rely on that outcome as a potential solution.

A. SUMMARY OF CURRENT OWNERSHIP MIX

As of January 3, 2024, approximately 32% of the North American boxcar fleet was owned by TTX.¹⁰² This overall figure belies substantial variation in the TTX share by vintage. TTX owns very few of the oldest boxcars (those that are 40 years or older and thus likely to be

¹⁰¹ See POWERS-HC-0010.xlsx in tab “CPI-U Quarterly.”

¹⁰² See POWERS-HC-0012.xlsx in tab “Table 8.”

retired in the next 10 years). TTX’s share of new boxcars (those built since 2014) is substantially higher at 57%, and illustrates the major role TTX occupies in driving investment in new boxcar stock.¹⁰³ Table 8, below, provides a summary of the TTX share by boxcar vintage.

TABLE 8: TTX SHARE OF BOXCAR FLEET BY BOXCAR VINTAGE

Year	Lessor	Railroad	Shipper/Other	TTX	TTX Share
	[1]	[2]	[3]	[4]	[5]
1973 or Earlier	56	331	76	0	0%
1974–1983	13,321	14,171	558	936	3%
1984–1993	861	1,519	3	3,171	57%
1994–2003	15,433	5,424	382	2,680	11%
2004–2013	2,726	3,614	6	8,977	59%
2014–2023	8,937	2,962	1,540	18,146	57%
Total	41,334	28,021	2,565	33,910	32%

Sources and Notes:

POWERS-HC-0012.xlsx.

Data from POWERS-HC-0022.xlsx.

[5]: [4] / (sum [1]–[4]).

The paucity of retiring TTX boxcars, coupled with the surge of TTX investment in recent years, has implications for the size and composition of the boxcar fleet in the future. By looking at the ownership share of the current boxcar fleet and making some simple assumptions regarding the number of retiring cars, the share of those cars that will be replaced (the “replacement rate”), and TTX’s share of the resulting replacements, we can make some simple projections as to TTX’s share of the fleet in ten years’ time. In Table 9, I present the results of several such projections. In all cases, I assume that all cars built before 1984 (and only those

¹⁰³ See POWERS-HC-0012.xlsx in tab “Table 8.”

cars) will have retired by 2034. I present results under a variety of assumed values for the replacement rate and TTX's share of the replacements.

In the first scenario, I assume that the replacement rate is 100% and that all replacements are supplied by TTX, where this latter assumption is consistent with the concern that current rates do not provide adequate incentives for private investment. This leads to the highest level of concentration, at 59%. In Scenario 2, I continue to assume a 100% replacement rate, but assume that TTX's share of the new additions to the fleet is the same over the next 10 years as it was over the last ten years, at 57%. In this case, the TTX share of the fleet in 2034 would be 47%. In Scenario 3, I adopt a lower replacement rate, using a value (65%) that TTX has recently argued is sufficient.¹⁰⁴ I continue to assume that TTX will have a 57% share of the replacements. Under these assumptions, I conclude that TTX's share would be 46% in 2034, which might represent a lower bound in some sense. Finally, in Scenario 4, I adopt assumptions that are roughly at the midpoint of the range of the two parameters considered. This yields a predicted TTX share of 52%.

¹⁰⁴ See POWERS-0024.pptx at Slide 29. My use of this replacement rate is not an endorsement of that assumption, but rather meant to test the sensitivity of these results to differing assumptions regarding the replacement rate.

TABLE 9: SIMULATIONS OF TTX BOXCAR SHARE IN 2034

		Scenario 1	Scenario 2	Scenario 3	Scenario 4
Assumed Replacement Rate	[1]	100%	100%	65%	85%
Assumed TTX Share of Replacements	[2]	100%	57%	57%	80%
Boxcars Retired by TTX	[3]	936	936	936	936
Boxcars Retired by Other Owners	[4]	28,513	28,513	28,513	28,513
Remaining Fleet (TTX)	[5]	32,974	32,974	32,974	32,974
Remaining Fleet (Other Owners)	[6]	43,407	43,407	43,407	43,407
New Boxcars Owned by TTX	[7]	29,449	16,786	10,911	20,025
New Boxcars Owned by Other Owners	[8]	0	12,663	8,231	5,006
Total Boxcars Owned by TTX in 2034	[9]	62,423	49,760	43,885	52,999
Total Boxcars Owned by Other Owners in 2034	[10]	43,407	56,070	51,638	48,413
TTX Share (in 2034)	[11]	59.0%	47.0%	45.9%	52.3%

Sources and Notes:

POWERS-HC-0012.xlsx.

Data from POWERS-HC-0022.xlsx; calculations by The Brattle Group.

[1], [2]: Assumptions, as described in text.

[3]: Boxcars built before 1984 owned by TTX.

[4]: Boxcars built before 1984 owned by other owners.

[5]: Boxcars built from 1984-2023 owned by TTX.

[6]: Boxcars built from 1984-2023 owned by other owners.

[7]: $([3] + [4]) * [1] * [2]$.

[8]: $([3] + [4]) * [1] * (1 - [2])$.

[9]: $[5] + [7]$.

[10]: $[6] + [8]$.

[11]: $[9] / ([9] + [10])$.

These simulations demonstrate that, under a variety of assumptions concerning the retirement of old boxcars and reinvestment in new boxcars driven primarily by TTX, the share of

the boxcar fleet owned and operated by TTX will approach and potentially surpass 50% within the next decade.

B. INCREASED TTX CONCENTRATION WILL INCREASE THE ABILITY OF ITS OWNER RAILROADS TO EXERCISE MARKET POWER

The factors discussed above provide strong indications that the boxcar fleet is poised to move in the direction of increasing TTX concentration. This poses potential problems that should concern the Board, and indeed anyone who is interested in the robustness of competition in the rail freight industry, particularly as it pertains to boxcar traffic and reasonable rail freight rates for shippers.

In order for boxcar-based freight volumes to satisfy shippers' needs, a certain amount of capacity is needed. However, the concerns raised above point to a reduction in the ability of non-TTX options to provide boxcar capacity in the future. Having fewer non-TTX options gives TTX an increasing amount of control over the size of the boxcar fleet.

TTX differs from private investors in boxcars in many ways. Most importantly for this discussion, TTX is jointly owned by North America's largest railroads, who operate it under a partial grant of antitrust immunity. TTX's governance structure means that it generally faces different incentives than private investors in boxcars, and guarantees that TTX will generally respond to the collective interests of its railroad owners.

The key concern is that, in the absence of robust alternatives for boxcar supply, having fewer non-TTX options allows TTX (and by extension the largest North American railroads) to act more like a monopolist. TTX's antitrust immunity means that the largest railroads are allowed to coordinate with respect to the number of boxcars offered by TTX. A reduction in non-TTX options for boxcar supply gives the large railroads greater influence over the size of the

boxcar fleet. This in turn would increase the ability of Class I's to restrict output (*i.e.*, reduce rail freight traffic and impose freight rate increases) by restricting boxcar capacity.

VII. DATA REQUEST

The data underlying the analysis presented in this statement are more than sufficient to illustrate several shortcomings with the current car hire system as it pertains to boxcars. Most importantly, the status quo threatens the adequacy of future boxcar supply and is likely, in the near future, to increase the ability of TTX's owner railroads to exercise market power.

However, in order to more fully explore potential solutions, additional data from AAR, Railinc, and TTX is necessary. These data will provide further insight into the relationship between default and negotiated rates, market conditions, the rates charged by TTX, and the negotiation and arbitration process. Specifically:

- Historical market-wide CHDX data will be needed in developing a more complete understanding of the economics of the car hire system.
- Historical Umler data will provide additional insight into how the boxcar fleet has evolved in recent years. Systematic Umler data will also allow for further investigation into whether rate trends differ by car age. It will also allow for reliable exclusion of grandfathered cars from the analysis.
- Historical market-wide CHARM data will provide a more complete view of the frequency and outcomes of rate negotiations and re-negotiations.
- Data on rates charged and car-hire received by TTX for its boxcars will provide much-needed visibility into the rates that TTX owners charge in order to ensure themselves an economic return.

In Exhibit B, I provide additional detail on the specific datasets that will be important to conducting the analysis needed to identify and assess potential solutions.

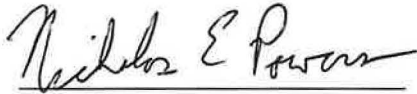
VIII. CONCLUSION

This concludes my verified statement. I reserve the right to supplement or modify my opinion, if needed, as additional information becomes available in this proceeding.

VERIFICATION

I, Nicholas E. Powers, declare under penalty of perjury that the foregoing is true and correct. Further, I certify that I am qualified and authorized to file this Verified Statement.

Executed on March 25, 2024.

A handwritten signature in black ink that reads "Nicholas E. Powers". The signature is written in a cursive style and is positioned above a horizontal line.

Nicholas E. Powers

EXHIBIT A – RESUME

Nicholas Powers

PRINCIPAL

Washington, DC

+1.202.419.3369

Nicholas.Powers@brattle.com

Dr. Powers specializes in conducting econometric and economic analysis and applying concepts from industrial organization and regulatory economics in competition, regulatory, and other litigation matters, with a focus on the transportation sector.

Dr. Powers frequently provides economic analysis of cartel behavior, and assessment of liability and damages in matters concerning alleged collusion. He also has experience analyzing the competitive effects of proposed mergers and exclusionary practices. Additionally, he conducts similar econometric work in antitrust and regulatory matters in the electric, postal, transportation, and other industries.

In regulatory proceedings, Dr. Powers has extensive experience conducting analysis for and submitting expert reports that often involve regulatory costing or rate-making issues. This includes extensive analysis of regression-based costing models and other economic issues in the postal industry, econometric analysis of the load impacts of innovative pricing programs in the electric industry, and rate of return analysis in the telecommunications industry. He has also acted as both an independent evaluator and an advisor to several procurement processes in the electricity sector, involving renewable energy, transmission capacity, and other energy products.

Dr. Powers also has varied experience in the electricity industry. This includes conducting damages assessments in litigation matters and analyses of price effects, market power, and anticompetitive behavior in several litigation proceedings arising from the California electricity crisis of 2000–2001. He has also analyzed the cost and feasibility of renewables-only energy portfolios.

AREAS OF EXPERTISE

- Antitrust & Competition
- Collaborations & Cartels

- Electricity Litigation & Regulatory Disputes
 - Regulatory Economics, Finance & Rates
 - Transportation
-

EDUCATION

- **University of Michigan, Ross School of Business**
PhD in Business Economics
 - **Cornell University**
BS in Applied Economics and Management
-

PROFESSIONAL EXPERIENCE

- **The Brattle Group (2010–Present)**
Principal (2021–Present)
Senior Associate (2013–2020)
Associate (2010–2013)
-

TESTIMONY

- Before the Pennsylvania Public Utility Commission | Docket Nos. R-2021-3030012, R-2021-3030013, R-2021-3030014, R-2021-3030021. | Direct and Rebuttal Testimony of James D. Reitzes and Nicholas E. Powers (December 2021 – March 2022)
- ***Turo Inc. v. City of Los Angeles*** | The United States District Court, Central District of California Western Division | *Case 2:18-cv06055-CAS-GJS, Document 1* (January 2022)
- Three Expert Reports submitted to the District Court of Amsterdam (Case No. C/13/486440: C/13/561169 Equilib), 2019 and 2020, on behalf of claimants, related to the estimation of the volume of commerce and the overcharge methodology involving an alleged cartel agreement among major international airlines pertaining to fuel surcharges.

SELECTED CONSULTING EXPERIENCE

ANTITRUST

- In a large civil case concerning alleged collusion in the corrugated packaging industry, executed the econometric analysis forming the basis of a report critiquing plaintiff's damages estimates. Supported the expert testimony of Nobel laureate Daniel McFadden.
- On behalf of purchasers of air cargo (plaintiffs) in a class action civil suit, conducted econometric and other statistical analyses in order to estimate economic damages from alleged price-fixing. Supported the expert testimony of Nobel laureate Daniel McFadden.
- Advise counsel representing a large multinational industrial firm by estimating overcharges stemming from a series of price-fixing conspiracies covering several input commodities.
- In European air cargo price-fixing matter, co-authored expert reports on volume of commerce and overcharge methodology issues. Presented results of volume of commerce analysis and opinion on overcharge methodology to Court of Amsterdam.
- Supported expert report quantifying damages in rail freight fuel surcharge antitrust litigation.
- Analysis of confidential waybill sample data to identify potential competitive concerns from a proposed railroad merger.
- Assessed and advised counsel on potential competitive concerns in mergers and transactions in a variety of industries, including music data, hospital beds, venue management, and specialized B2B software.
- Analyzed the anti-competitive impacts resulting from a proposed merger in the television broadcast industry.
- Performed econometric estimates of the price effects resulting from competitor entry and exit in geographic product markets to support expert testimony that assessed anti-competitive effects from a proposed joint venture in the airline industry.
- Conducted econometric analysis in evaluation of expert testimony that sought to quantify network effects in the payment card industry.
- Identified flaws in the econometric analysis of opposing experts in the context of settlement negotiations arising from price-fixing allegations in the plastics manufacturing industry.
- Oversaw preparation of expert report and quantification of damages, on behalf of plaintiffs, stemming from exclusionary conduct in the cotton industry.

- Supported testifying expert, on behalf of plaintiffs, in a competition matter related to vertical restraints in the carpet industry.

REGULATORY

- On behalf of United Parcel Service, manage analysis and provide expert services in several regulatory dockets before the Postal Regulatory Commission. Apply regulatory economic principles and econometric expertise to detailed knowledge of USPS costing models; provide input on economic arguments and regulatory strategy. Conducted econometric analyses and assisted in the preparation of reports and filings in a number of Dockets before the Postal Regulatory Commission, including Dockets No. ACR2014, RM2015-7, RM2016-2, RM2017-1, RM2020-9, RM2022-2, and RM2022-3. Co-authored expert report critiquing a proposed change to costing principles in the Purchased Highway Transportation cost segment, in Docket No. RM2016-12.
- On behalf of a coalition of mailer associations, submitted expert declaration critiquing aspects of changes to the system for regulating Postal Service rates for market dominant products as proposed by the Postal Regulatory Commission in Docket No. RM2017-3.
- Managed the analysis in support of multiple verified statements filed in a railroad trackage rights proceeding before the Surface Transportation Board, leveraging the Brattle Rail Network Model.
- For FirstEnergy's Pennsylvania utilities, sponsored witness testimony before the Pennsylvania Public Utility Commission, analyzing the cost and risk associated with the Companies' proposed default service supply plans. Analysis included estimates of the implied price premium for covering volumetric and pricing risk that was associated with past procurements of full-requirements power supplies, showing that this premium was relatively modest in size.
- For multiple regulated utilities in Pennsylvania, on multiple occasions, designed and managed the procurement of solar photovoltaic alternative energy credits (SPAECs). Responsibilities included: (i) designing the auction rules and bid forms; (ii) building a financial model to determine the likely value of the solar energy credits; (iii) providing a benchmarking study to determine if the bids were reflective of market fundamentals; and (iv) drafting a report to the Pennsylvania Public Utility Commission to secure approval of the procurements.
- For multiple transmission developers, on multiple occasions, served as independent manager of open solicitation processes. Responsibilities include filing a short report with the Federal Energy Regulatory Commission.

- In conjunction with a Maryland Public Service Commission-mandated time-of-use (“TOU”) pricing pilot, analyzed the impacts of TOU prices on peak load and conservation in three Maryland electric utilities. Designed and implemented a matching-based regression methodology.
- For an express package delivery carrier, managed the construction of an integrated Excel-based cost and demand financial forecasting model of the United States Postal Service (USPS), based on public USPS data and filings in previous Postal Regulatory Commission dockets.
- For an expert report submitted as part of a revenue requirements proceeding, benchmarked BC Hydro’s non-fuel operations and maintenance costs against those of US investor-owned utilities.
- Submitted an expert report analyzing the rate of return of a land-based telecommunications network in Alaska for a proceeding before the Federal Communications Commission.
- On behalf of Growth Energy, coauthored a report analyzing the role that higher ethanol blends of gasoline (E85) could play in meeting the proposed 2017 renewable volume obligations (RVOs) under the Renewable Fuel Standards (RFS) program. The report was filed with Growth Energy’s comments in the Environmental Protection Agency’s rulemaking docket regarding proposed renewable fuel standards.
- Researched alternative rate plans and presented results to senior management of a mid-sized electric utility as part of a regulatory strategy consulting engagement.
- For a mid-Atlantic utility, estimated economic benefits to ratepayers from natural gas service, as portion of eventual PUC filing justifying investments related to storm resilience of distribution system.

OTHER SELECTED LITIGATION AND TRANSPORTATION EXPERIENCE

- For an American passenger airline, conducted damages analysis in support of expert testimony for litigation related to breach of lease agreements.
- For a European passenger airline, conducted damages analysis in support of expert testimony for litigation related to the grounding of the Boeing 737-MAX.
- For the City of Los Angeles, submitted expert testimony analyzing the economic arguments for airport rental car regulations, and assessing potential economic harms from uneven application of those regulations.
- Advised the Cincinnati Southern Railway Board of Trustees regarding the railroad’s fair market valuation in support of its negotiations with Norfolk Southern.

- In a lawsuit brought by the City of Ontario, CA against Los Angeles World Airports, evaluated the reliability of plaintiff's claim for damages in excess of \$3 billion for alleged mismanagement of the Ontario airport.
- For a class of Australian owners of Volkswagen vehicles, analyzed the impact of the diesel emissions issue on resale prices for VW vehicles affected by non-compliant emissions "defeat devices."
- Managed analysis for life cycle assessment of greenhouse gas emissions associated with a proposed railroad.
- Co-authored white paper analyzing the effectiveness of the current rail car hire system, and identifying alternative default rate-setting rules that would incentivize and support investment in the nation's car hire fleet.
- Manage the development and maintenance of the Brattle Rail Network Model, a geocoded database of all rail lines in the United States. Information contained in the database identifies for each rail segment in the database which railroad or railroads own the facility, and which railroads, if any, possess trackage rights allowing them to operate over that facility.

OTHER ENERGY AND ENVIRONMENTAL

- For the California parties, conducted several key pieces of analysis evaluating effects of tariff violations in the summer of 2000 on CAISO market prices and drafted portions of expert testimony, in a litigation matter before the FERC arising from the California electricity crisis.
- For the California parties, conducted econometric analyses detecting the exercise of market power and price discrimination in the 2001 "CERS" period of the California electricity crisis. This analysis formed the basis of key parts of the testimony of two expert witnesses.
- Supervised the analysis for four cases in support of testimony relating to alleged New Source Review (NSR) violations at coal-fired power plants. For a Southeastern power cooperative, analysis of government's claims included examination of alternative baseline emission calculations, analysis of changes in fuel quality, and evaluation of long-run patterns in utilization, generation, and emissions, as well as econometric analysis of the determinants of emissions. For a Midwestern utility, analysis consisted of identifying long-term trends in pricing strategy, market dispatch outcomes, and emissions prices to inform PROMOD runs in order to generate emissions projections that are consistent with NSR regulations. For a Mid-Atlantic utility, the analysis focused on long-run variation in coal

plant operations, including analysis of changing market conditions that influenced that variation.

- For a valuation matter concerning a back-office IT services provider to retail energy suppliers, supervised the analysis for and supported industry witness in a report assessing the status and prospects of the retail energy service business in restructured states.
- For the Department of Energy and Pacific Northwest National Laboratory, coauthored a baseline report on electric transmission, distribution, and storage infrastructure in the United States as part of the inaugural Quadrennial Energy Review process.
- For the Department of Energy and Pacific Northwest National Laboratory, coauthored a report on the valuation of electric power systems and technologies as part of the Quadrennial Energy Review process.
- Coauthored a report analyzing the economics and reliability of alternative energy portfolios (approaching 100% renewable power) for the City of Memphis.
- For a Southeastern generation and transmission electric cooperative, oversaw preparation of expert damages report and advised counsel on same in the context of an arbitration proceeding stemming from an alleged breach of contract.
- Advised a large nonprofit energy buying consortium in a procurement of retail electric service for their members, assessing offers over a variety of products, services, and geographic areas, and assisting in negotiations with several large retail electric suppliers.
- For a utility in the Southeastern United States, conducted a review of NERC region load forecasts. This consisted of econometric analysis to weather-normalize actual loads and evaluate the portion of the forecast error that could be attributed to variations in weather.

EXPERT REPORTS AND REGULATORY FILINGS

- “PC44 Time of Use Pilots: End-of-Pilot Evaluation,” with Sanem Sergici, Ahmad Faruqui, Sai Shetty, and Ziyi Tang, prepared for Maryland Joint Utilities and Filed with the Maryland Public Utility Commission (October 4, 2021)
- “PC44 Time of Use Pilots: Year 1 Evaluation,” with Sanem Sergici, Ahmad Faruqui, Sai Shetty, and Jingcheng Jiang, prepared for Maryland Joint Utilities and filed with the Maryland Public Utility Commission (September 15, 2020)

- “Expert Declaration of Kevin Neels and Nicholas Powers,” before the Postal Regulatory Commission and related to the Statutory Review of the System for Regulating Rates and Classes for Market Dominant Products, in Docket No. RM2017-3 (February 2020)
- “Evaluation, Measurement and Verification Plan for the PC44 Time-of-Use Rate Pilots,” with Sanem Sergici and Ahmad Faruqui, prepared for Maryland Public Service Commission PC44 Rate Design Work Group (June 2018)
- “Rate of Return Analysis of GCI’s TERRA Network,” with William P. Zarakas and Agustin J. Ros, prepared for GCI Communication Corp. (March 2018)
- “Report of Dr. Kevin Neels and Dr. Nicholas Powers to Accompany UPS Comments in Docket No. RM2016-12,” before the Postal Regulatory Commission, related to costing principles in the highway transportation segment; reply report also submitted (October 2016)
- “Peeking Over the Blendwall: An Analysis of the Proposed 2017 Renewable Volume Obligations,” with Marc Chupka, J. Michael Hagerty, and Sarah Germain, prepared for Growth Energy; filed with comments in Docket EPA-HQ-OAR-2016-0004 (July 2016)

ACADEMIC PUBLICATIONS

- “Competitive Effects of Exchanges or Sales of Airport Landing Slots,” with James D. Reitzes, Brendan McVeigh, and Samuel Moy, *Review of Industrial Organization* (August 2014)
- “Measuring the Impact of the Toxics Release Inventory: Evidence from Manufacturing Plant Births,” US Census Bureau Center for Economic Studies Working Paper Series (March 2013)
- “Does Disclosure Reduce Pollution? Evidence from India's Green Rating Project,” with Allen Blackman, Thomas P. Lyon, and Urvashi Narain, *Environmental and Resource Economics* (March 2011)
- “Do State Renewable Portfolio Standards Promote In-state Renewable Generation?” with Haitao Yin, *Energy Policy* (February 2010)

OTHER REPORTS AND ARTICLES

- “Will Merger Improve the Financial Performance of CP and KCS?” with Kevin Neels and Ivy Young. *Journal of Transportation Law, Logistics and Policy* (December 2022)
- “Differing Proof Requirements for Global Class Actions: Using Economic Analysis to Guide Future Policymakers,” with John Roberti and Kelse Moen. *Antitrust Magazine* (August 2021)

- “Power to Memphis: Options for a Reliable, Affordable, and Greener Future,” with Jürgen Weiss, Judy Chang, and Kai Van Horn, prepared for Friends of the Earth (January 2019)
- “Valuation of Electric Power System Services and Technologies,” with Ira H. Shavel, Michael Hagerty, Yingxia Yang, and Roger Lueken, prepared for the US Department of Energy, Office of Electricity Delivery and Energy Reliability (August 2016)
- “Electricity Baseline Report for the US Power System,” with Ira Shavel, J. Michael Hagerty, and Yingxia Yang, prepared for Pacific Northwest National Laboratory and the US Department of Energy (April 2015)
- “Developing a Market Vision for MISO – Supporting a Reliable and Efficient Electricity System in the Midcontinent,” with Samuel A. Newell and Kathleen Spees, prepared for the Midcontinent Independent System Operator, Inc. (MISO) (January 2014)

SELECTED PRESENTATIONS

- “The Incremental Cost Test When Technology Choice is Endogenous” at the Center for Research in Regulated Industries Eastern Conference (2018)
- “Analyzing the Competitive Effects of Exchanges or Sales of Airport Landing Slots” at the International Industrial Organization Conference (2012)
- “The Toxics Release Inventory and Manufacturing Plant Births” at Penn State University (2010), University of Maryland (2010), US Census Center for Economic Studies (2009)
- “Does Disclosure Reduce Pollution? Evidence from India's Green Rating Project”, at Association for Public Policy Analysis and Management Fall Conference (2009), Allied Social Sciences Association Annual Meetings (2008), Southern Economics Association Annual Meetings (2007)

SELECTED HONORS & AWARDS

2022	<i>Concurrences</i> Antitrust Writing Awards: Best Article in the Business, Private Enforcement Category, for the article “Differing Proof Requirements for Global Class Actions: Using Economic Analysis to Guide Future Policymakers,” with John Roberti and Kelse Moen. <i>Antitrust</i> Magazine (August 2021)
2005–2009	Fred and Barbara Erb Fellowship, University of Michigan
2007	Thomas W. Leabo Memorial Award, University of Michigan

PROFESSIONAL ASSOCIATIONS & MEMBERSHIPS

American Economic Association

American Bar Association – Antitrust Section

EXHIBIT B – DETAILS OF DATA REQUEST

This exhibit identifies data necessary for analyses to develop solutions to the issues with the Arbitration Rule. For each category of data, I identify the entity that holds the data and the data needed.

1 HISTORICAL CAR HIRE DATA EXCHANGE (“CHDX”) DATA, COVERING THE ENTIRE BOXCAR MARKET FROM JANUARY 2013 TO PRESENT.

Data Holder: Railinc

Data Needed: All fields in the CHDX dataset for all observations of “A”, “B”, “L” and “R” type box cars, for all payee and payor railroads, for the period from January 2013 to the present. The dataset should not be limited by rate type or account type. The fields should include, but not be limited to:

- a. EIN (a permanent car identifier)
- b. Car Mark and Number
- c. Earned Year and Month
- d. Reporting Year and Month
- e. Paying Railroad
- f. Paid Hours
- g. Paid Miles
- h. Time Rate
- i. Mile Rate
- j. CHARM Rate Type
- k. Empty/Loaded Indicator

2 HISTORICAL UMLER DATA, COVERING JANUARY 2013 TO PRESENT.

Data Holder: Railinc

Data Needed: Snapshots of the entire active type “A,” “B,” “L,” and “R” boxcar fleet in Umler, as of the first of every calendar month since January 2013 to the present. Each snapshot should include:

- a. pre-registered boxcars.
- b. the retirement date for each car that retires during the sample period.
- c. all fields included in the UMLER profile for each car in this fleet.

3 HISTORICAL CHARM DATA, COVERING JANUARY 2013 TO PRESENT.

The specific details of the requested dataset are outlined below.

Data Holder: Railinc

Data Needed: Monthly CHARM files for every month since January 2013, covering all “A”, “B”, “L” and “R” type box cars. The files should include each field in the database for each of these cars, including:

- a. Car Mark and Number
- b. User Mark
- c. Car Type Code
- d. Dataset Date
- e. CHARM Rate Type
- f. Umler Rate Type
- g. Loaded Time Rate
- h. Loaded Mile Rate
- i. Empty Time Rate
- j. Empty Mile Rate
- k. Rate Effective Date
- l. Rate Expiration Date

4 HISTORICAL TTX PAYMENT DATA, COVERING JANUARY 2013 TO PRESENT.

Data Holder: TTX

Data Needed: Monthly car hire activity and payment data since January 2013 for all ABOX, CBOX, RBOX, FBOX and TBOX cars, including the following fields:

- a. Year and Month
- b. Paying Railroad
- c. Utilization applied
- d. Effective Time Rate
- e. Effective Mile Rate
- f. Paid Hours
- g. Paid Miles
- h. Empty/Loaded Indicator

5 HISTORICAL ARBITRATION DATA, COVERING JANUARY 2013 TO PRESENT

Data Holder: Association of American Railroads¹⁰⁵

Data Needed: Best and final offers submitted to AAR, and associated arbitrator awards, pursuant to Arbitration Rule paragraph C.2.a and Code of Car Hire Appendix F since January 2013, including:

- a. The date of the notification;
- b. The identity of the notifying party;
- c. The identity of the counterparty;
- d. The mark, number, and AAR car type of the boxcar(s) involved;
- e. The date certain by which both parties were to file best and final offers with the AAR;
- f. The best and final offer submitted by each party;
- g. An indicator as to whether the parties pursued final and binding arbitration;

¹⁰⁵ Under paragraph C.2.a. of the Arbitration Rule, when a party seeks arbitration, best and final offers are submitted to AAR using the form at Appendix F of the Code of Car Hire.

- h. The best and final offers submitted by each party during final and binding arbitration (if different than those filed during the notification phase);
- i. If resolved prior to the arbitration making a final selection, an indication of that outcome;
- j. An indicator as to whether a hearing was held;
- k. The time and mile rates ultimately selected by the arbitrator; and
- l. The fee charged by the arbitrator.