

A Look at Railroad Costs, Scale Economies, and Differential Pricing

USDA REPORT

Executive Summary

Recent recommendations in the way U.S. Railroad Rates are regulated have been advocated by the National Academy of Sciences (TRB, 2015) and the Surface Transportation Board's Rate Reform Task Force (2019). These proposed changes are the result of concerns over rising rail rates, an increasingly revenue adequate railroad industry, poor railroad service, and a concern that the costs of pursuing rate cases are too high (especially for smaller shippers).

In assessing the desirability of various recommended changes, it is important to consider the degree of scale (density) economies realized in the industry, and consequently the need for differential pricing. This study finds that while economies of scale (density) have declined slightly over time, there are still substantial economies of scale (density) in the U.S. railroad industry.

An estimation of "Modified Polar Ramsey Markups" shows that while scale economies have not changed much over time, the average markup that railroads would need to charge relatively captive traffic to continue to attract investment has declined in recent years. Due to an increase in the average markup on traffic with revenue-to-URCS variable cost ratios below 1.8 and an increase in the proportion of traffic moving at revenue-to-variable cost ratios of 1.8 or greater, the average revenue burden needed from relatively captive traffic to guarantee revenue adequacy has declined. This has corresponded with more railroads achieving revenue adequacy in recent years.

Nonetheless, the persistence of scale (density) economies in the industry suggests that extensive differential pricing is still necessary. Moreover, as shown by a variety of other studies (e.g. Gallamore, 1999, Bitzan and Keeler, 2007 and 2011, Morrison and Winston, 1999), the increased pricing flexibility afforded railroads as a result of deregulation has resulted in innovation and cost savings that have benefited shippers.

This suggests that policymakers should be cautious in implementing policies that limit differential pricing in the industry. Certainly, there is room to improve rate relief processes for relatively captive shippers, including making it easier to contest rates that might be unreasonably high.

However, policies that attempt to make broad changes in the extent of differential pricing have the potential to limit industry investment, and the cost saving innovations and improved service quality that comes with it. In the context of the significant scale economies that exist in the railroad industry, as long as the prices charged to shippers with many transportation alternatives are above the incremental costs of providing services to those shippers, “captive shippers” benefit through higher quality service and increased capacity enabled through the ability of railroads to attract investment.

In summary, scale (density) economies in U.S. railroad industry persist, though they have declined slightly over time. The large scale economies that exist suggest that marginal cost pricing would not come close to recovering railroad costs and that differential pricing is needed to ensure continued industry investment and innovation. The recent realization of revenue adequacy by many of the nation’s railroads (along with the smaller average markup needed from “relatively captive shippers” to achieve revenue adequacy as demonstrated by the “Modified Polar Ramsey Markups”), is one manifestation of the benefits that differential pricing has had for the industry.

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Read the USDA report “A Look at Railroad Costs, Scale Economies, and Differential Pricing” for our complete findings.