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Economics of Regulation

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Crew Size Regulation on Freight Trains

Transport policies arise given the vital role of efficient transportation in the economic prosperity of a nation. Transportation has been traditionally linked to economic development, and it has always been a critical component in developing and shaping a nation's economy. The creation and expansion of railways have allowed for performance improvements, as it reduces the time and cost for products to get to their destination, has increased productivity and has enabled access to wider markets. However, the expansion of railways also led to the development of transport policies, many of which are regarding safety concerns. In the United States, the Department of Transportation, DOT, was established by an act of Congress in 1966 with the aim of "ensuring a fast, safe, efficient, accessible, and convenient transportation system that meets our vital national interests and enhances the quality of life of the American people, today and into the future".¹ The DOT has been tasked with regulatory responsibilities to ensure efficiency and safety. Recently, the Federal Railroad Administration, FRA, an agency within the Department of Transportation, proposed a regulation "establishing minimum requirements for the size of train crew staffs depending on the type of operation".² The FRA is requiring a minimum of two crew members for all freight trains, except those operations deemed to pose no safety risk to the employees, the public, or the environment. This paper will address whether or

¹ "Mission." US Department of Transportation. 28 Sept. 2015. Web. 26 July 2016.

² "Train Crew Staffing A Proposed Rule by the Federal Railroad Administration." Federal Register. N.p., 15 Mar. 2016. Web. 26 July 2016.

not the FRA should implement this proposed rule by analyzing the impact that it would have on the railway industry as well as the economy as whole.

Background

The driving force behind the FRA's proposed regulation was an accident that occurred in Lac-Mégantic, Quebec, Canada on July 2013. The train was carrying "7.7 million liters of petroleum crude oil"³ and resulted in the death of forty-seven individuals. The Transportation Safety Board of Canada, TSB, conducted an investigation report of the accident and found that the engineer had applied hand brakes on five locomotives in conjunction with air brakes. The conductor had experienced technical difficulties during the trip, and shortly after the brakes were applied, it was reported that there was a fire on the train. When the firefighters arrived, they turned off the electrical breakers, which eventually cut air supply to the air brakes, causing the train to roll towards the city.⁴ The TSB report concluded that there was no evidence that having a second crew member would have prevented the accident, but the FRA believes that "it is distinctly possible that a train crew with a minimum of two-persons would have had more options available to secure the train safely, thereby potentially posing less of a risk of a runaway train"⁵

A second accident in Casselton, North Dakota involved the collision of train with a car from another train that had just recently derailed. The FRA uses this accident as an example of how additional crew members can help improve safety as the train was being operated by a three person crew. The FRA argues that "the crew helped each other through the emergency by issuing

³ "Lac-Mégantic Runaway Train and Derailment Investigation Summary." Government of Canada, Transportation Safety Board of Canada. 28 Oct. 2014. Web. 26 July 2016.

⁴ "Lac-Mégantic Runaway Train and Derailment Investigation Summary." Government of Canada, Transportation Safety Board of Canada. 28 Oct. 2014. Web. 26 July 2016.

⁵ "Train Crew Staffing A Proposed Rule by the Federal Railroad Administration." Federal Register. N.p., 15 Mar. 2016. Web. 26 July 2016.

appropriate warnings and sharing tasks”.⁶ According to the FRA, the engineer and the conductor were able to work quickly together by dividing the tasks and were also able to provide additional needed help when the response team arrived on site. In response to these two accidents, the FRA announced on April 2014 its intention to require a two-person crew on freight trains in order to increase safety, especially with trains carrying crude oil.

The current industry practice uses a two person crew when operating large freight trains. However, with the development of new technology, such as Positive Train Control (PTC), railway companies argue that these trains could be operated by a single person. PTC is a “collision avoidance technology that monitors and controls train movements”.⁷ The FRA announced in a congressional testimony that “the years 2012 and 2013 were among the railroads’ safest on record, while the relatively few train crashes were mostly the result of human error and track defects”.⁸ Implementing this type of technology can help further reduce the number of accidents by removing the opportunity for human error and would no longer require two individuals operating a train. PTC was supposed to be implemented by January 2016 but Congress pushed back the deadline to December 2018.⁹ However, the “AAR has assured the FRA that the freight railroad industry will not reduce train-crew size prior to implementation of PTC”.¹⁰ The FRA continues to be concerned with safety, arguing “that as railroads implement positive train control and other technologies, they may expand use of less than two-person crews

⁶ "Train Crew Staffing A Proposed Rule by the Federal Railroad Administration." Federal Register. N.p., 15 Mar. 2016. Web. 26 July 2016.

⁷ Wilner, Frank N. "Data Drought Haunts FRA Crew-Size Mandate." RailwayAge. N.p., 11 Apr. 2014. Web. 26 July 2016.

⁸ Wilner, Frank N. "Data Drought Haunts FRA Crew-Size Mandate." RailwayAge. N.p., 11 Apr. 2014. Web. 26 July 2016.

⁹ "Positive Train Control (PTC) Overview (Railroad Safety)." Federal Railroad Administration. Web. 26 July 2016.

¹⁰ Wilner, Frank N. "Data Drought Haunts FRA Crew-Size Mandate." RailwayAge. N.p., 11 Apr. 2014. Web. 26 July 2016.

on operations without considering safety risks or implementing risk mitigating actions that FRA believes are necessary".¹¹ Therefore, on March 15, 2016 the FRA released a Notice of Proposed Rulemaking (NPRM) on a two-person crew mandate and now the regulation is currently pending.

Analysis

Randy T. Simmons, author of the book *Beyond Politics: The Roots of Government Failure*, is an advocate of a free market economy. Simmons argues that government intervention in the economy, most often than not, has perverse effects. A government should a legal framework for markets to operate, but their role has surpassed that of protecting rights and enforcing contracts and has escalated to attempting to correct market failures. Edward Hamberger, president of the Association of American Railroads (AAR), stated that "while perhaps well-intentioned, the proposed rule is actually misguided and will undermine the very goal of both the FRA and the freight rail industry- making a safe rail network even safer".¹² The FRA wants to establish more safety policies to an already highly regulated industry, which can ultimately have undesirable effects. The railway industry provides a great example of how government regulation can lead to inefficient outcomes. For example, when compared to the automobile industry, which has not been protected against competition, the railroad industry has lagged behind in terms of innovation and efficiency. Further regulating this industry would not be beneficial, especially when the proposed rule is not backed up by concrete evidence.

¹¹ "Train Crew Staffing A Proposed Rule by the Federal Railroad Administration." *Federal Register*. N.p., 15 Mar. 2016. Web. 26 July 2016.

¹² Vantuono, William C. "Two Arguments on Two-Person Crews." *RailwayAge*. N.p., 15 July 2016. Web. 26 July 2016.

According to economics professor Matt Mitchell, “the only valid reason to regulate the transportation service industry is to ensure public safety”.¹³ However, the FRA does not have evidence to support the claim that two-person crew is safer than a single conductor.¹⁴ The FRA does not have any data regarding crew size in its own accident database. Like John D. Graham, Dean of Indiana School of Public and Environmental Affairs, said, given the fact that the FRA does not collect such data, “it is hard to fathom why the agency would consider this issued to be important enough to craft a narrow, prescriptive regulation”.¹⁵ The FRA also fails to take into consideration that many “non-Class I railroads have operated with just one person in the locomotive cab” and many passenger trains operate daily, carrying thousands of passengers, with a single conductor.¹⁶ There are a number of trains that travel short distances and only operate with a single crew member. The FRA carried out a Regulatory Impact Analysis (RIA) on one-person operations around the world. Through their analysis, they concluded that European railroads are not comparable to the US, that there is no safety data available on a one-person crew in Europe and that a second person can be extremely useful in reducing damage in the case of an accident.¹⁷ On the other hand, the consulting firm, Oliver Wyman, carried out an assessment of these same European railways, and concluded that “one-person crew operations

¹³ Matthew Mitchell and Michael Farren. “Attempt to Level Taxi, Ride-Share Playing Field.” *Philadelphia Inquirer*, Dec. 09, 2015.

¹⁴ Wilner, Frank N. "Data Drought Haunts FRA Crew-Size Mandate." *RailwayAge*. N.p., 11 Apr. 2014. Web. 26 July 2016.

¹⁵ Vantuono, William C. "Two Arguments on Two-Person Crews." *RailwayAge*. N.p., 15 July 2016. Web. 26 July 2016.

¹⁶ "Crew Size Regulations." Association of American Railroads. N.p., n.d. Web. 26 July 2016.

¹⁷ Oliver Wyman. "Assessment of European Railways: Characteristics and Crew-Related Safety." (2016): 15 June 2016. Web. 26 July 2016.

typically experience lower levels of significant accidents than two-person crews in Europe”.¹⁸ They also found that the European train network is longer than that of the United States, in terms of route-kilometers, operates at higher speeds and shorter blocks, and has a higher train activity, making it a good comparable network for the US.¹⁹ The data that the FRA failed to find was publicly available and was included in Oliver Wyman’s report. Analysis of this statistical data suggests that there is no additional benefit to having a second person, and that having a single conductor can be equally as safe. Railroad companies have publicly denounced the rule as being unnecessary regulation and are asking the FRA to reconsider, given that there are no safety benefits, but the FRA continues to support the proposed rule. Furthermore, railroad industries have been reducing their crew size throughout the years, and evidence shows that “during the period of time that the industry’s injury and accidents rates have declined to record lows, crew sizes have been reduced”.²⁰ This provides further evidence that crew-size reduction can be implemented in a safe way and there should not be a regulation that mandates a specific number of individuals operating a train.

Moreover, the FRA administrator at the time the rule was proposed was Joe Szabo, whom had previously served as legislative director for the United Transportation Union.²¹ As it may come to no surprise, labor unions, such as the United Transportation Union, which represents conductors have a lot to benefit with this proposed rule. According to economist George Stigler, a government’s basic resource is the power to coerce. Interest groups, such as labor unions,

¹⁸ Oliver Wyman. "Assessment of European Railways: Characteristics and Crew-Related Safety." (2016): 15 June 2016. Web. 26 July 2016.

¹⁹ Oliver Wyman. "Assessment of European Railways: Characteristics and Crew-Related Safety." (2016): 15 June 2016. Web. 26 July 2016.

²⁰ Vantuono, William C. "Two Arguments on Two-Person Crews." *RailwayAge*. N.p., 15 July 2016. Web. 26 July 2016.

²¹ Wilner, Frank N. "Data Drought Haunts FRA Crew-Size Mandate." *RailwayAge*. N.p., 11 Apr. 2014. Web. 26 July 2016.

attempt to convince the government to use its coercive power to improve the group's well-being.²² Interest groups act as rational individuals to maximize their own utility by offering political support in exchange for favorable regulation. In this case, labor unions are trying to use the coercive power of government to implement a regulation that would benefit them at the expense of others. The proposed rule will have a negative economic impact on small business involved in the railroad industry. The American Short Line and Regional Railroad Association (ASLRRA) has railroads that operate "with fewer than four operations employees on as little as two miles of track".²³ Requiring them to adopt a two-person crew would be an economic burden on them, and it would have a negative impact on the industry. If this proposed rule is enacted by Congress, then the benefits will be concentrated among the few, mainly the labor unions that support this legislation, and the costs would be diffused, especially among the small railroad industries.

Labor vs. Automation

Advances in technology are leading to innovation and are impacting the way producers and consumers interact. As new technology evolves, producers are able to develop better, and even cheaper, products that are more beneficial to consumers. Technological advances have led to a more efficient and productive economy. However, critics have always been fearful of the negative effects that can accompany technological innovation. Adam Thierer, author of the book *Permissionless Innovation*, is an advocate for allowing entrepreneurs to innovate without government intervention. He defines permissionless innovation as an ideology in which individuals should be encouraged to experiment with new technology and that government

²² Stigler, George J. "The Theory of Economic Regulation." *The Bell Journal of Economics and Management Science* 2, no. 1 (April 1, 1971): 3–21.

²³ Vantuono, William C. "Two Arguments on Two-Person Crews." *RailwayAge*. N.p., 15 July 2016. Web. 26 July 2016.

should allow it. Thierer argues that precautionary principles prevent entrepreneurs from creating innovating technologies that would help advance society and make our economy prosper.

One of the main concerns with the rise of technology is the loss of jobs. The technologies associated with positive train control are capable of preventing train collisions, no longer requiring a second crew member. If the proposed rule goes through, many laborers would ensure that they have a job, even with the implementation of PTC. Again, they would stand to benefit, even at the expense of others. Moreover, companies like Google and Tesla are creating driverless cars that would no longer require a human being to drive the car. Hamberger, president and CEO of AAR, argues that “while the Department of Transportation is throwing its full support behind development of autonomous vehicles as a way to improve safety on our roadways, it is backing a rulemaking for the rail industry that goes in the opposite direction and would freeze rail productivity and chill innovation”.²⁴ This goes back to the difference between the railway and the automobile industry, the former being heavily regulated while the latter not. The DOT is supporting the innovation of driverless cars but is also supporting this proposed rule that would thwart innovation in the railroad industry and would discourage investment. Why should one industry be regulated and the other not?

Conclusion

The Federal Railroad Administration proposed this regulation in response to two train accidents that, according to the administration, provide evidence for the vital importance of requiring a two-person crew when operating freight trains. Following their proposed rule in March 2016, the FRA carried out a Regulatory Impact Analysis to support the regulation.

Through their analysis on foreign trains, they concluded that a two-person crew was safer than a

²⁴ Vantuono, William C. "Two Arguments on Two-Person Crews." *RailwayAge*. N.p., 15 July 2016. Web. 26 July 2016.

single-person crew. However, the FRA failed to analyze data regarding safety of a one-person crew in Europe with the excuse that there was no data available but, according to Oliver Wyman, the data was indeed available to the public. After performing an analysis on this data, the consulting firm found that the significant accidents involving one-person crew were lower than those involving two crew members. This suggests that the FRA is proposing this regulation but they did not validate it with scientific analysis. Moreover, railroad companies have been reducing their crew size in the past several years and are still able to operate in a safely manner.

Railroad companies agree that a regulation may be appropriate if a safety risk is identified. Associations like the AAR and the ASLRRA maintain that the proposed rule does not ensure any safety benefits and therefore should not be passed. In fact, enacting this law could actually have perverse effects. A regulation should never be judged by its intentions, but rather by its consequences, intended or unintended. Given that this regulation is still pending, we cannot firmly state that this would result in negative consequences. However, this regulation could potentially hurt small railroad companies that operate with a single crew member on less than two miles of track. Imposing this regulation upon them, would create a financial strain, especially because these small railroads already operate on a small budget.

If this regulation gets passed, the benefits will be concentrated among the few and the costs will be diffused. The unions made up of conductors stand to benefit the most as they get to keep their jobs, but as mentioned above, the burden will fall upon the railroad companies. Many workers are afraid to lose their jobs, especially with the creation of innovative technology, such as the positive train technology. The railroad industries have said that they will wait until after the implementation of PTC to reduce crew size, but the FRA does not agree. It seems a little contradicting that the FRA supports the development of driverless cars but is still trying to

regulate the railway industry. Given the analysis provided above, the FRA should reconsider this proposed rule as it is not backed by evidence, it has no safety benefits, and the implementation of PTC will allow for a safe way to reduce crew size.

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The United States Department of Transportation (USDOT or DOT) is a federal Cabinet department of the U.S. government concerned with transportation. It was established by the Department of Transportation Act of Congress on October 15, 1966, and began operation on April 1, 1967. The Secretary of Transportation is the head of DOT. The department's mission is "to develop and coordinate policies that will provide an efficient and economical national transportation system, with due regard for need, the U.S. Department of Transportation Inspector General Calvin L. Scovel III Announces Retirement. 09.12.2019.Â Letter to Senator Grassley Regarding Information in Support of the OIG's Mission. 04.09.2014.Â Office of the Secretary of Transportation. Pipeline and Hazardous Materials Safety Administration. Research and Innovative Technology Administration. A Proposed Rule by the Federal Railroad Administration on 03/15/2016. Document Details. Information about this document as published in the Federal Register.Â Joseph D. Riley, Railroad Safety Specialist (OP)-Operating Crew Certification, U.S. Department of Transportation, Federal Railroad Administration, Mail Stop-25, Room W33-412, 1200 New Jersey Avenue SE., Washington, DC 20590, (202) 493-6318, or Alan H. Nagler, Senior Trial Attorney, U.S. Department of Transportation, Federal Railroad Administration, Office of Chief Counsel, RCC-10, Mail Stop 10, West Building.