

***Surface Transportation Board
Washington, D.C. 20423-0001***

Decision ID No. 51639

Office of Economics

March 14, 2023

Pedro Degiovanni
Department of Economics
Harvard University
7 Putnam St, Apt L3,
Somerville, MA 02143

Re: Waybill Request WB23-12

Dear Mr. Degiovanni:

The Surface Transportation Board (STB) has received your request under 49 C.F.R. § 1244.9(c) of February 17th, 2023 for permission to access the 2019-2022 along with continued access to the 1998-2018 confidential Carload Waybill Sample (CCWS). Your request explained that the requested data would be used for academic research purposes. The objectives of your research are to explore how the effects of infrastructure improvements spill across multiple modes of transportation. Also, you are interested in examining how market power among shippers and carriers affects these spillovers. Specifically, you made a request for all data from the CCWS for the years 2019-2022 and for continued access to 1998-2018 which is already in your possession. Your request explained that your economic questions of interest couldn't be answered with any other dataset. Notice of your request was published in the Federal Register on February 24, 2023, and no objections were received.

Based on the complete and sufficiently detailed explanations and justifications contained in your request, you will be authorized to access the requested data. Specifically, you will have access to the 2019-2021 unmasked waybills. This letter also grants continued access to the 1998-2018 datasets. The 2022 CCWS is not available yet. A request for such data should be made, if necessary, when the data becomes available. Although, it is the Board's practice to generally limit disclosure to masked revenue data, unmasked revenues are being released because your request explains with particularity how revenue data will be used and the need to conduct your academic research with actual revenue data. This data may only be used for the purpose detailed in your request. ***This approval becomes effective when signed agreements from the individuals listed below are received by the STB:***

- a) *Pedro Degiovanni – Harvard University*
- b) *Ron Yang – Stanford University*

The expiration date for this agreement is March 31, 2024. Unless you seek and obtain a renewal from the STB, this agreement upon expiration obligates you to return or destroy all copies of the data (see item 6 of the agreement). Any request for renewal will need to provide a detailed explanation for why continued access to the data is necessary and demonstrate that you are continuing to actively use the data for the originally requested purpose.

Several aspects of the CCWS limit the conclusions that may be drawn from analysis of the CCWS: 1) the CCWS is a sample, and 2) the CCWS is based on terminating shipments from relatively large carriers. Only those railroads with more than 4,500 annual terminating carloads are included in the sample. The limited sampling of small railroads may have a substantial effect on studies covering areas served predominately by non-sampled railroads. For additional information on the CCWS, see *Reference Guide* @ <https://www.stb.gov/reports-data/waybill/> on the Board's website.

The rules for release of waybill data are codified at 49 C.F.R. § 1244.9. The CCWS contains confidential shipper and railroad data. As a result, the CCWS is commercially sensitive and has the potential to cause competitive harm to shippers and railroads if disclosed. Therefore, the following agreement must be signed, and a copy of the signature pages returned to the STB, before any waybill data can be used.

Your signature acknowledges your agreement to comply with the following:

1. You will use the CCWS data released to you solely for the purpose requested.
2. Absent permission from the STB, you shall make the information contained in the CCWS (including work product and analyses derived from the CCWS) available only to the individuals identified above. The STB may approve access for additional individuals within your entity working on the particular project or study requiring the waybill data. Each such additional individual must review and sign this agreement, and return a copy of the signature page to the STB.
3. You will not release any CCWS data (including work product and analyses derived from the CCWS) to anyone who has not signed this agreement and been approved for access by the STB until the STB has had the opportunity to review the materials proposed for disclosure to ensure confidentiality.
4. You acknowledge that, in addition to the restrictions described in paragraphs 1 and 2 above, you are bound by the STB's rules governing use and disclosure of CCWS data. These include the confidentiality provisions of 49 C.F.R. §§ 1244.9(f)(1)-(3), which require that "[a]ny shipper data obtained from the Waybill Sample shall not be publicly released unless the data are aggregated to include at least three shippers." In addition, you agree not to disclose CCWS data that permits identification of an individual railroad.
5. You will refer any requests for CCWS data in your possession (including work product and analyses derived from the CCWS) to the STB for processing and will inform the requesting party of such referral to the STB. If you are compelled by law or order of a governmental or judicial body to release CCWS data, you shall

Waybill Agreement WB23-12

notify the Board in writing within three days of any determination that CCWS data must be released, and in no event later than five days before the CCWS data is scheduled to be released.

6. In order to retain access to the CCWS beyond the expiration date specified above, you must submit a written request for an annual extension of the agreement no later than thirty days prior to the expiration date and the renewal request must be approved by the Office of Economics. **If an annual agreement is not signed and approved, you must certify by no later than the expiration date that all CCWS data (including all work product and analyses derived from the CCWS) obtained under this agreement has been destroyed or returned to the STB.**
7. Failure to request an extension (if necessary), or destroy or return CCWS data when required, may prevent any future release of CCWS data to you. Violations of this agreement may subject you to sanctions by the Board.

After all parties have signed and returned this agreement, please contact Mr. Dusenberry (202) 245-0319 to make the necessary arrangements to have a copy of the data sent to you. The STB will provide the data by email through file transfer protocol. Prior payment of processing and mailing cost of **\$120 (\$60 per confidentiality agreement)** is required. Payment can be made through the Board's electronic payment system, Pay.gov. Your payment through Pay.gov will generate a unique Pay.gov transaction number, which you will need to provide with your signed agreement. Pay.gov accepts payment through bank accounts, credit cards, debit cards with a MasterCard or Visa logo, and digital wallet.

Sincerely,

William Brennan

William Brennan, PhD
Chief Economist & Director
Office of Economics

Waybill Agreement WB23-12

I have read and understand the conditions for release of the CCWS data. I agree to comply fully with these conditions and the provisions of this confidentiality agreement. No later than thirty days before the agreement expires, I will request an extension of this agreement, if necessary. If no extension is requested, I will return or destroy all CCWS data and certify that I have done so. I have the authority to sign this agreement.

By: Pedro Degiovanni

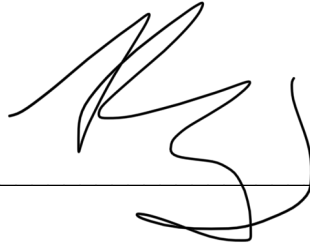
A handwritten signature in black ink, appearing to be 'Pedro Degiovanni', written over a horizontal line.

Signature

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By: Ron Yang

A handwritten signature in black ink, appearing to be 'R. Yang', written over a horizontal line.

Signature

Confidential Waybill

Sample Application

Ron Yang

Lazear Liang Postdoctoral Scholar

Stanford Graduate School of Business

Pedro Degiovanni

PhD Candidate, Economics

Department of Economics

Harvard University

Project Objectives

Our general research question is: in a transportation network with multiple modes (i.e. rail, truck, etc.) and multiple carriers, how do the effects of infrastructure improvements spill across modes and lanes? How do demand shocks spread through space? How does market power among shippers and carriers affect these spillovers?

Applied questions which we seek to answer include:

- Can we use carriers choices to better estimate their marginal costs?

- How do demand shocks to specific locations (say, the port of Los Angeles) affect rail costs and prices across the entire rail network?

- Do the benefits from local infrastructure decisions come from increased efficiency, or "business stealing" from other localities?

The expected outcomes of our research project will include:

- One or more papers for submission & publication in a top Economics journal

- Presentations at academic economics conferences and seminar series

This research project will contribute to the economics literature in several ways:

- We will contribute to the international trade literature by measuring the contribution of within country infrastructure to international trade costs.

- We will contribute to the spatial economics literature by investigating the varying role of

market power across transportation modes.

We will contribute to the industrial organization literature by estimating the cost function of a multiproduct transportation firm.

We request additional data for the period 2019-2022 to improve the precision of our estimates.

Scope of Work

Our research will have three components:

Data Construction & Reduced Form Analysis

We begin by recovering the railroads' routing choices from the data present in the CWS. In particular, we use the origin, destination, distance traveled, and states visited variables to infer the route taken by each trip in the sample.

We then use this data to characterize how firms choose their routing. For the 1998-2018 period, we find that firms usually use multiple routes to fulfill each city pair, that low levels of traffic are served by a single "preferred" route, that additional routes are used when the preferred route has high capacity utilization, and that prices in the spot market for rail have a U-shaped relationship with capacity utilization.

Structural Estimation

We develop a methodology to infer the relative costs of alternative routes by looking at the routing choices. We model a railroads' routing department as receiving quantities that need to be shipped, and then choosing the optimal routing to minimize costs while keeping capacity constraints in mind.

We rely on the assumption that the observed routes minimize costs, and therefore any alternative choice would lead to higher costs and lower profits. This allows us to estimate the cost function of the railroad by using the Generalized Method of Moments. With this cost function, we can observe how freight costs have evolved over time and across space since 1998. We find that they have increased by around 15% due to increased congestion in the network, with high heterogeneity across space.

The additional years of data would serve two purposes in this stage: they would improve our estimates by offering us with additional observations, and they would allow us to analyze how the Covid-19 pandemic affected rail traffic and rail costs.

Counterfactual Analysis

The last stage of our project consists on performing counterfactual analysis in which we predict what would have happened to rail costs under different scenarios. In particular, we want to analyze how the increased trade with China following its accession to the World Trade Organization affected rail costs. Imports from and exports to China increased sharply since 2001; moreover, its industrial composition changed, and the ports of origin and destination shifted from the East to the West Coast.

Many papers, starting with Autor, Dorn and Hanson (2016) have documented how increase trade with China (“the China Shock”) profoundly altered the lives of millions of Americans through reductions in prices of imports and increased competition with domestic industrial jobs, leading to job gains, job losses, increased deaths of despair and unemployment.

Most studies of the China Shock focus on the effects of Chinese products in their destinations (e.g. how the availability of cheap computers affects consumers and workers in a city) while ignoring how these products made it to that point. We want to redress this deficiency, by explicitly focusing on how Chinese products travel through the transportation network to their final destination. In particular, we want to see how the increased influx of imports to the US West Coast increased rail traffic, rail congestion, and potentially rail costs. We then will trace these effects across space, as firms optimally alter their routing to account for the extra traffic.

Detailed Data Requested

As an extension to our current data request (from year 1996 to year 2018), we request all data from 2019 (inclusive) to 2022.

Our project is fundamentally about the spillovers across diverse regions and markets across the United States. As a result, we could not answer our economic question of interest with a dataset which is limited in geography or commodity. In addition, we are interested in the long-run effects of the “China Shock” as well as the effect of the Covid shock in demand, both of which require the most recent Waybill data

Data Management Plan

We will adhere to the full confidentiality and data privacy standards of the waybill data. We have access to the Faculty of Arts and Sciences Secure Environment at Harvard University which is equipped to store, handle, and protect Confidential and/or Personally-Identifiable level data. We also have access to legal resources at Harvard for signing and/or enforcing our confidentiality contract.

The waybill data will be used only for the academic research project described above, and only by the two principal investigators: Ron Yang and Pedro Degiovanni.