

Mitigating Truckload Routing Guide Failures

Student: Alex Miller, SCM 2021

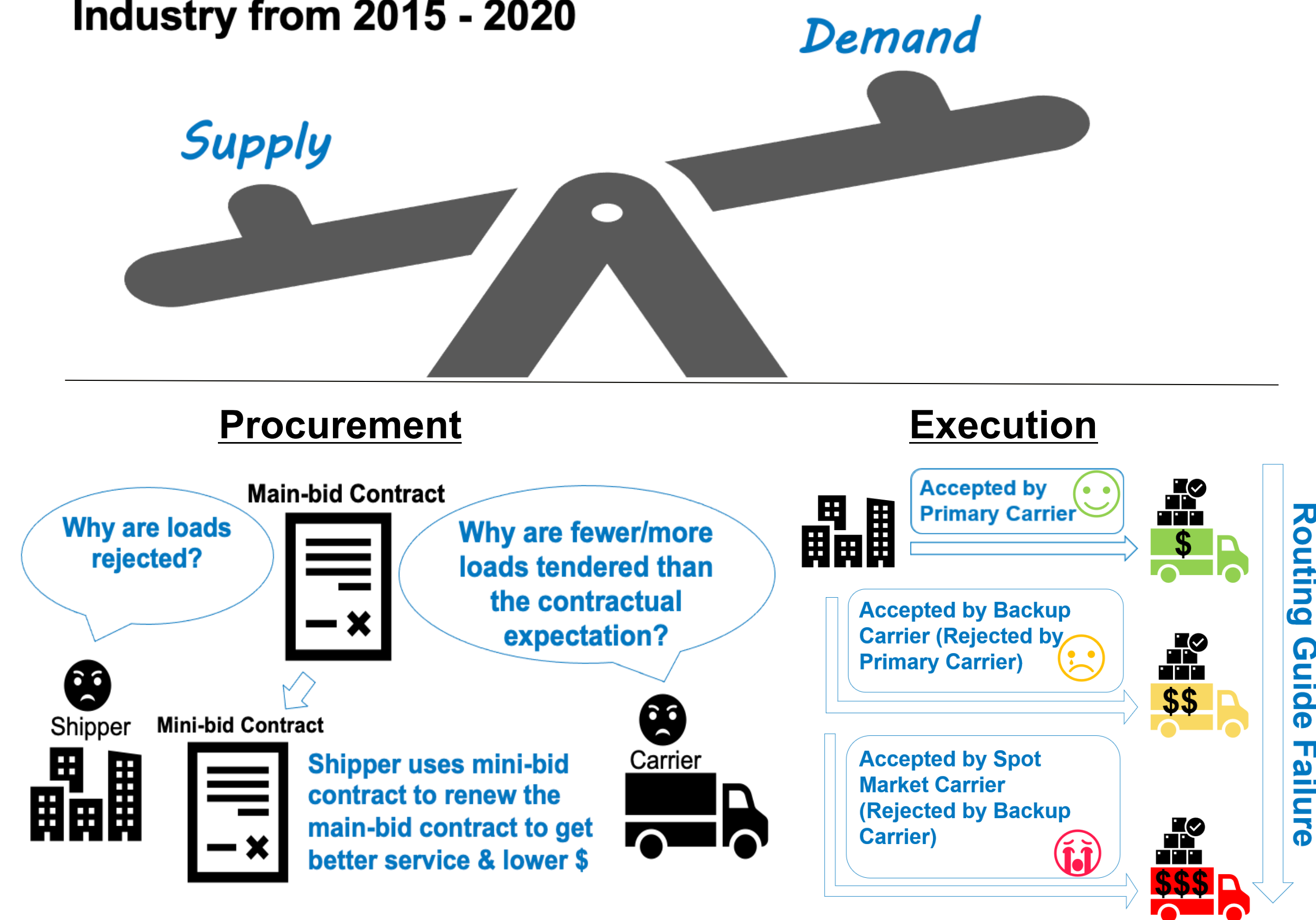
Student: Sherry Liu, SCM 2021

Advisor: Dr. Chris Caplice, Angela Acocella

Sponsor: TMC| A division of C.H. Robinson

Motivation / Background

Severe Market Volatility in Trucking Industry from 2015 - 2020



Key Question / Hypothesis

- 1) How frequently do shippers experience routing guide failures and unplanned / ghost freight?
- 2) What is the subsequent impact on their transportation plan and budget?
- 3) Why do these patterns occur and how can they be minimized?

Relevant Literature

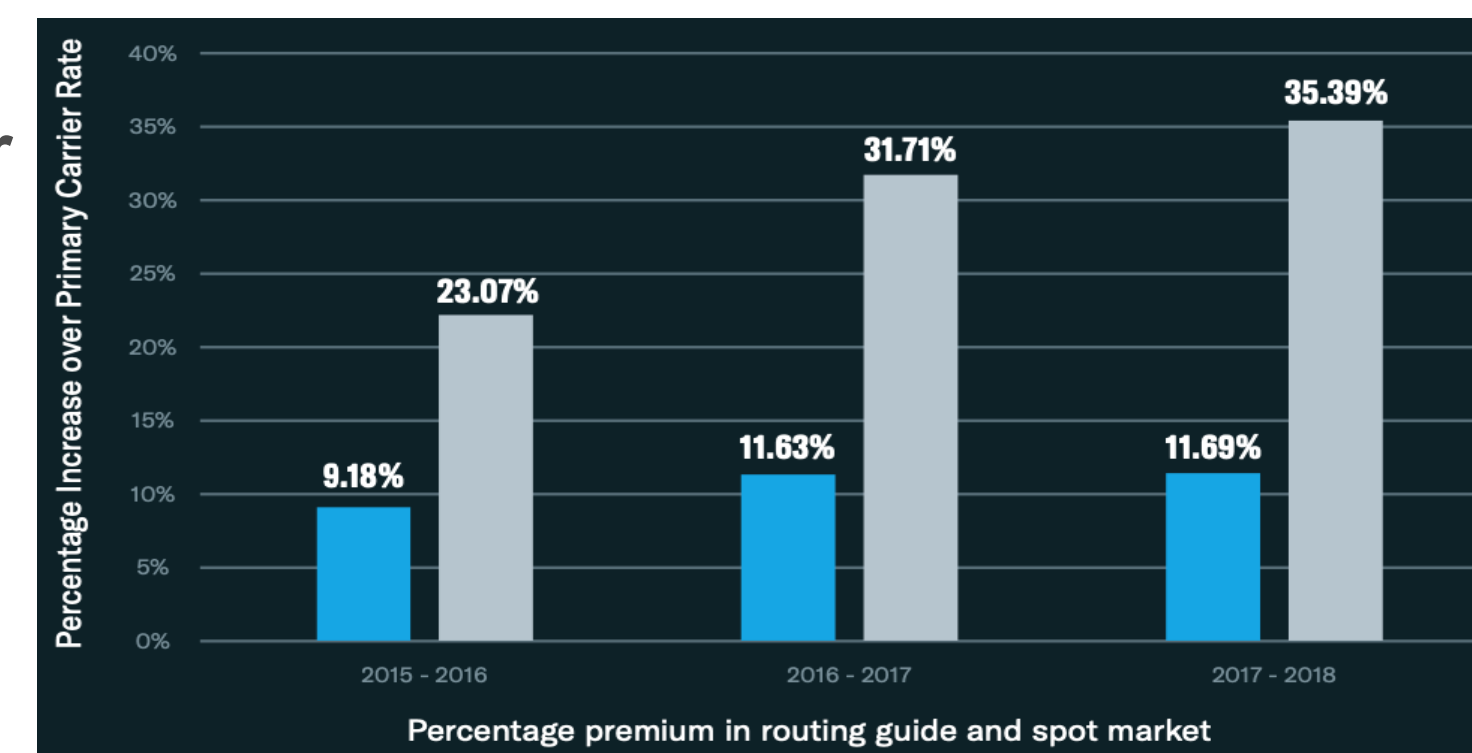
- *Electronic Markets for Truckload Transportation* (Caplice, 2007)
- *Traditional Routing Guide Performance and Segmentation to Improve Compliance with Contracted Budget* (Alnajdawi & Jimenez, 2020)
- *Elephants or Goldfish?: An Empirical Analysis of Carrier Reciprocity in Dynamic Freight Markets* (Acocella et al, 2020)



The Problem

Because freight volumes are not contractually binding, it's vital for shippers to understand what drives market volatility and subsequent cost overruns.

Spot market prices can be up to 35% higher than freight accepted via a routing guide. (CH Robinson, 2020)

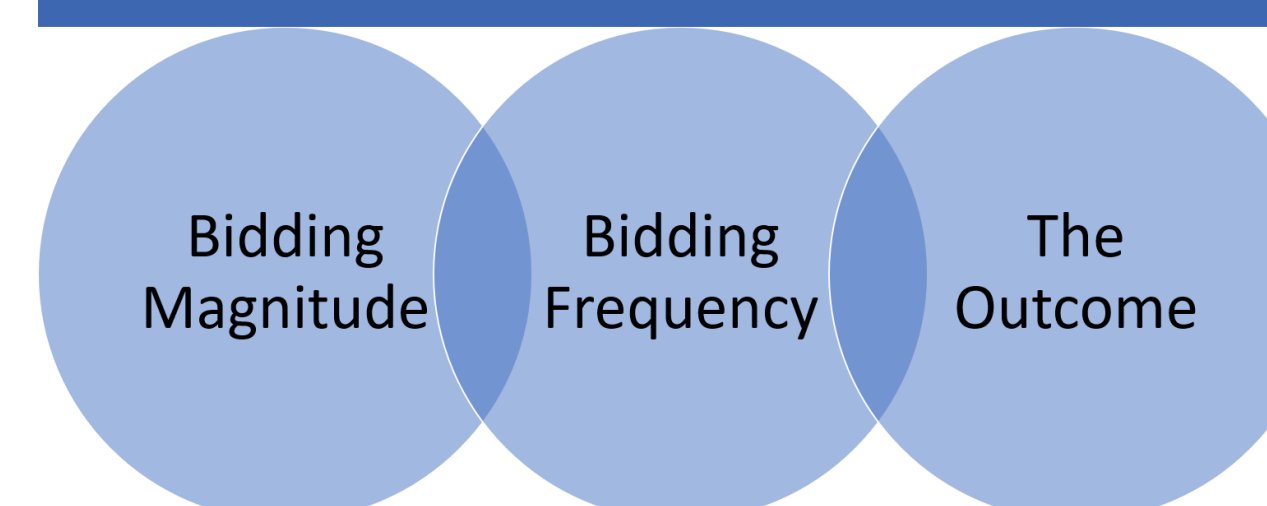


Methodology

Shipper Procurement Strategy	Number of Shippers
Annual bidding	15
Continuous bidding	5
Various bidding (Semi-annual bidding, Quarter bidding, etc)	58
Total	78

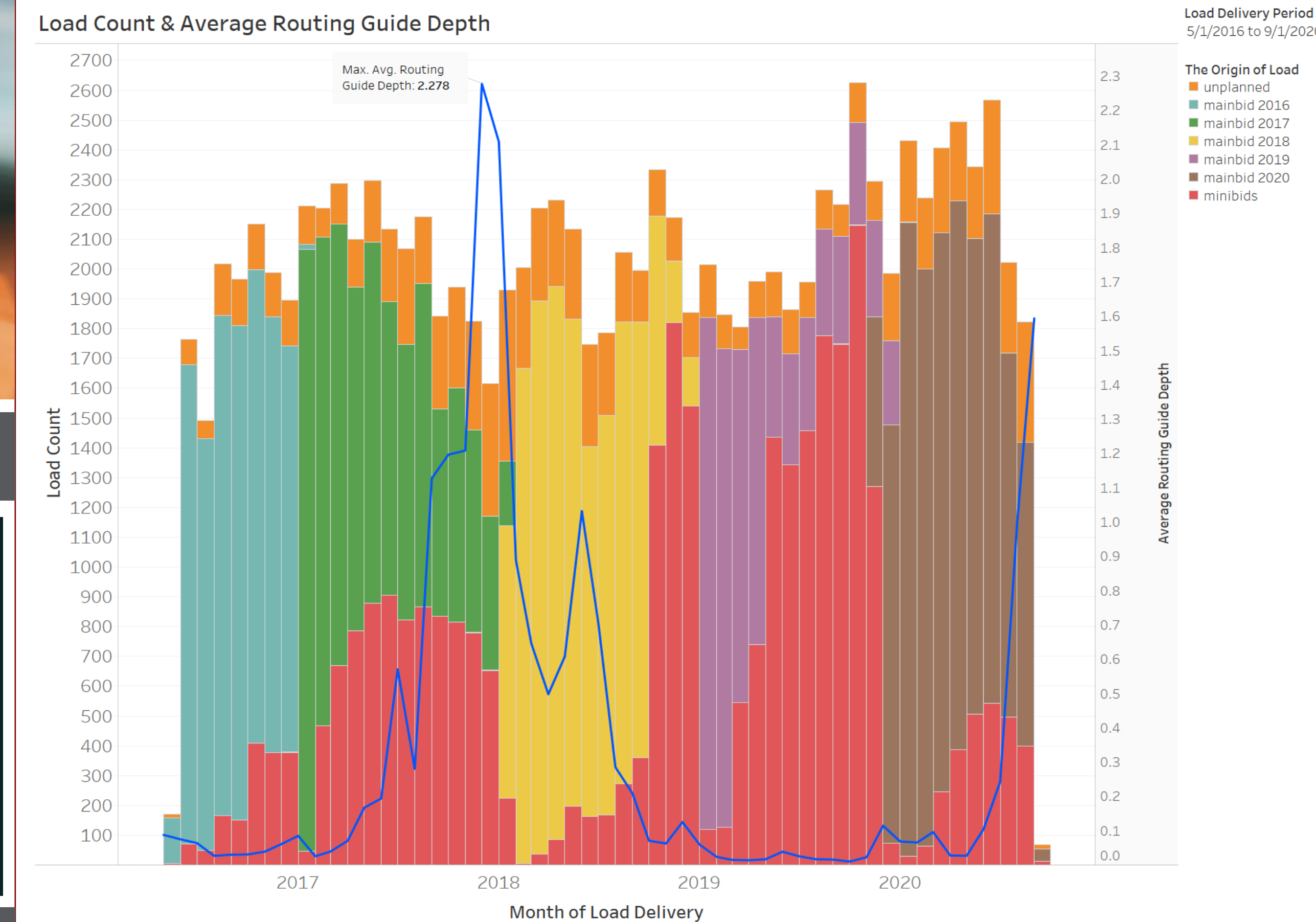
Leverage logistic regression & machine learning to analyze what does and doesn't work and in what context.

Categorize Trucking Procurement Strategy By



Initial Results

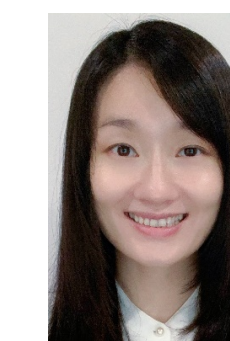
Freight volume categorized by the bidding events and the average routing guide depth over time of a shipper who utilizes annual bidding strategy. The shipper launches “main-bids” each year and “mini-bids (red bars)” later that year. Some freight is not planned through main or mini-bids (orange bars).



Expected Contribution

- Build upon previous truckload industry research
- Analyze a dataset with unprecedented size and scope
- Provide industry-wide insights to assist shipper strategies

Sherry Liu



Alex Miller

