

NORPC Truck Model Overview



Motivation

- Dated methods and data
- Substantial number of truck trips
- Key factors:
 - 17 percent of employment in manufacturing and distribution
 - Ports of South Louisiana and New Orleans
 - Through truck trips
- Integration with regional travel model

Overview

1. Freight modeling concepts
2. NORPC model development
3. Model outputs
4. Forecasting considerations

1

Freight modeling concepts

Modeling context

Understanding

Economic linkages

Truck→rail diversion

Economic competitiveness

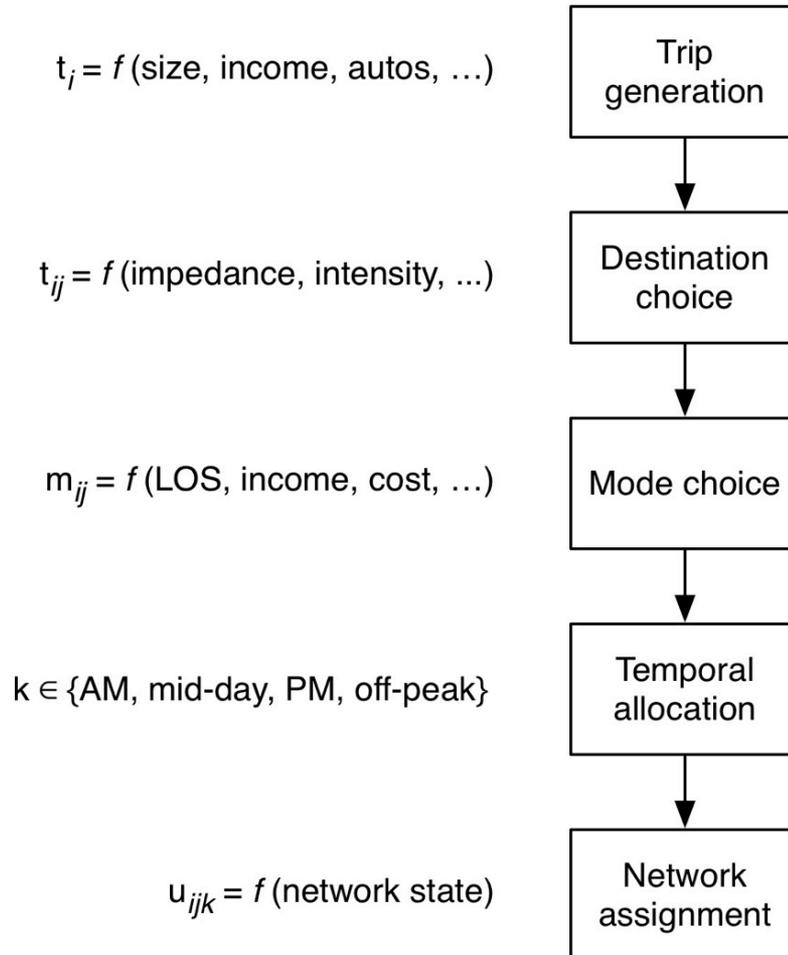
Taxation

Quantify externalities

Forecasting

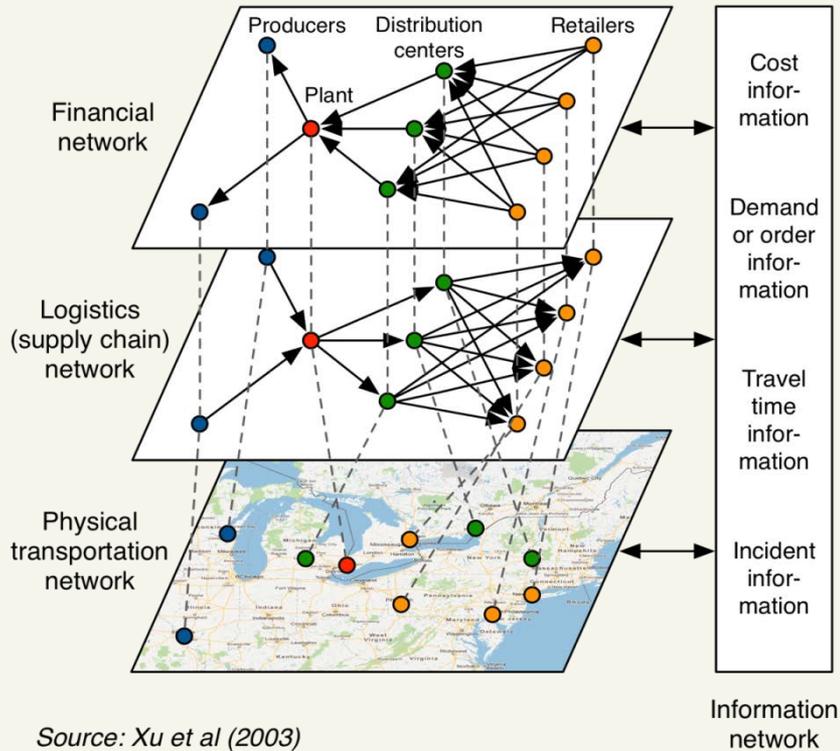
Travel demand models

Person travel models

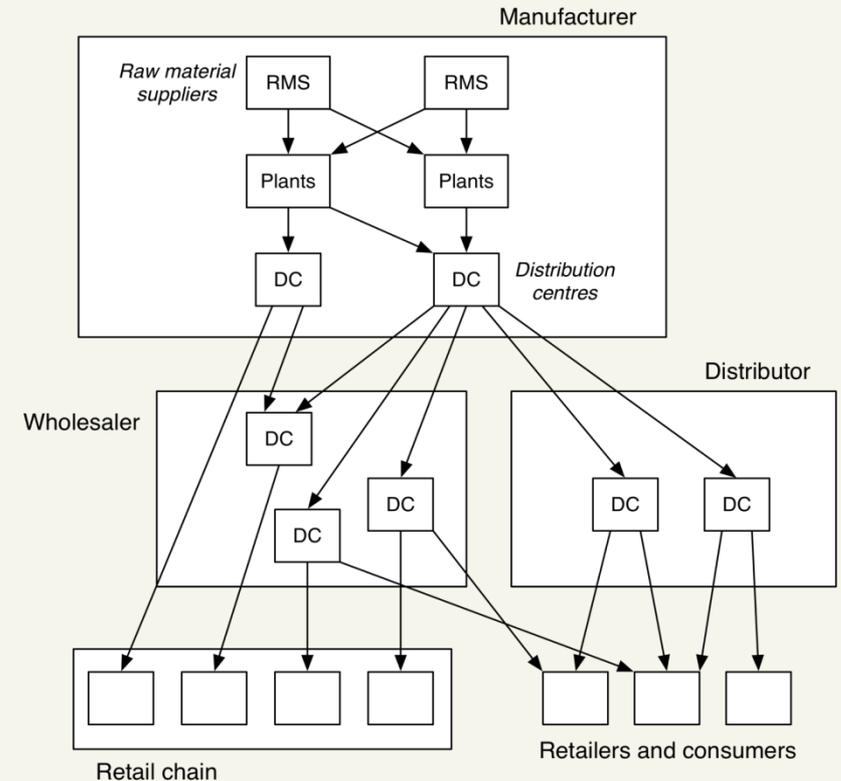


Why freight is hard

1. Multi-level problem



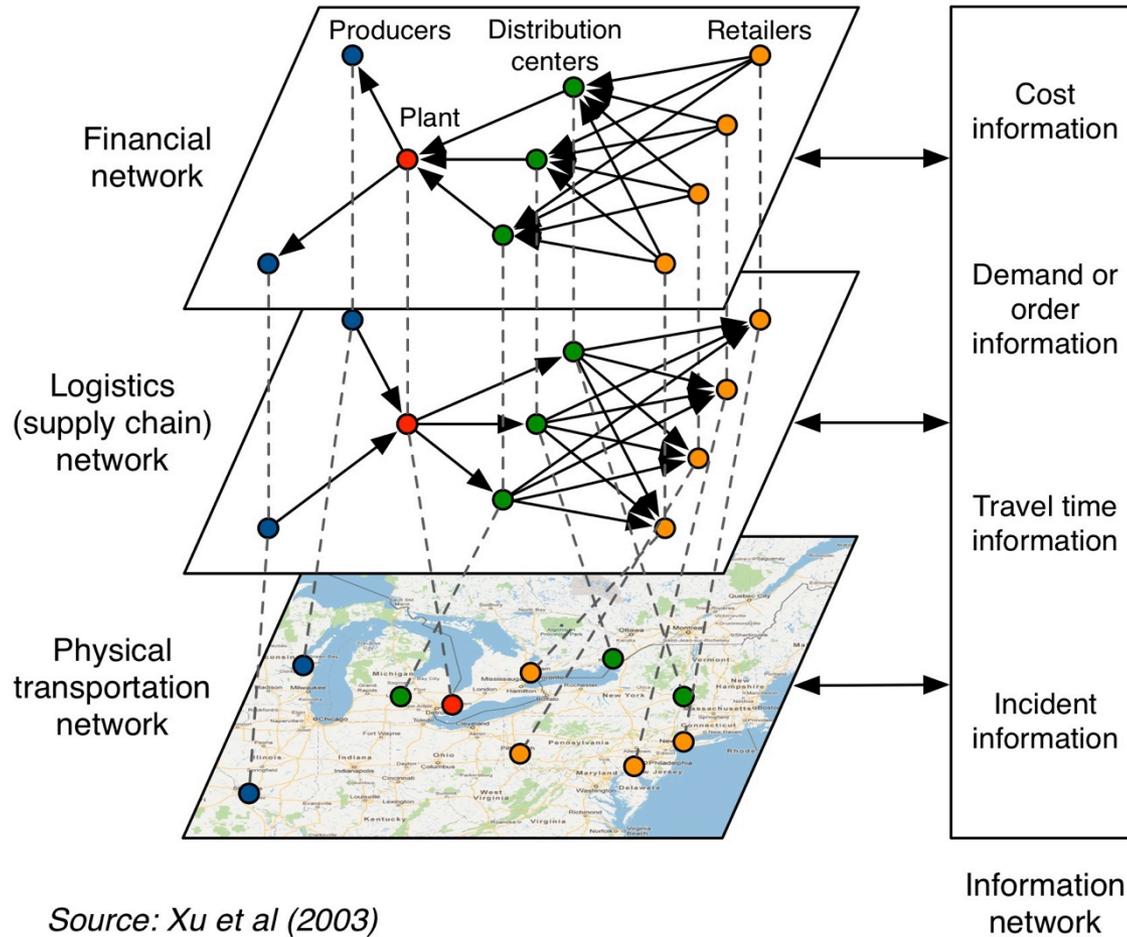
2. Supply chain context



3. Complex truck trips

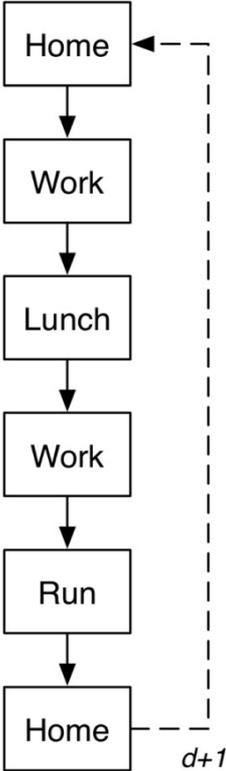
4. Variability

Multi-level problem

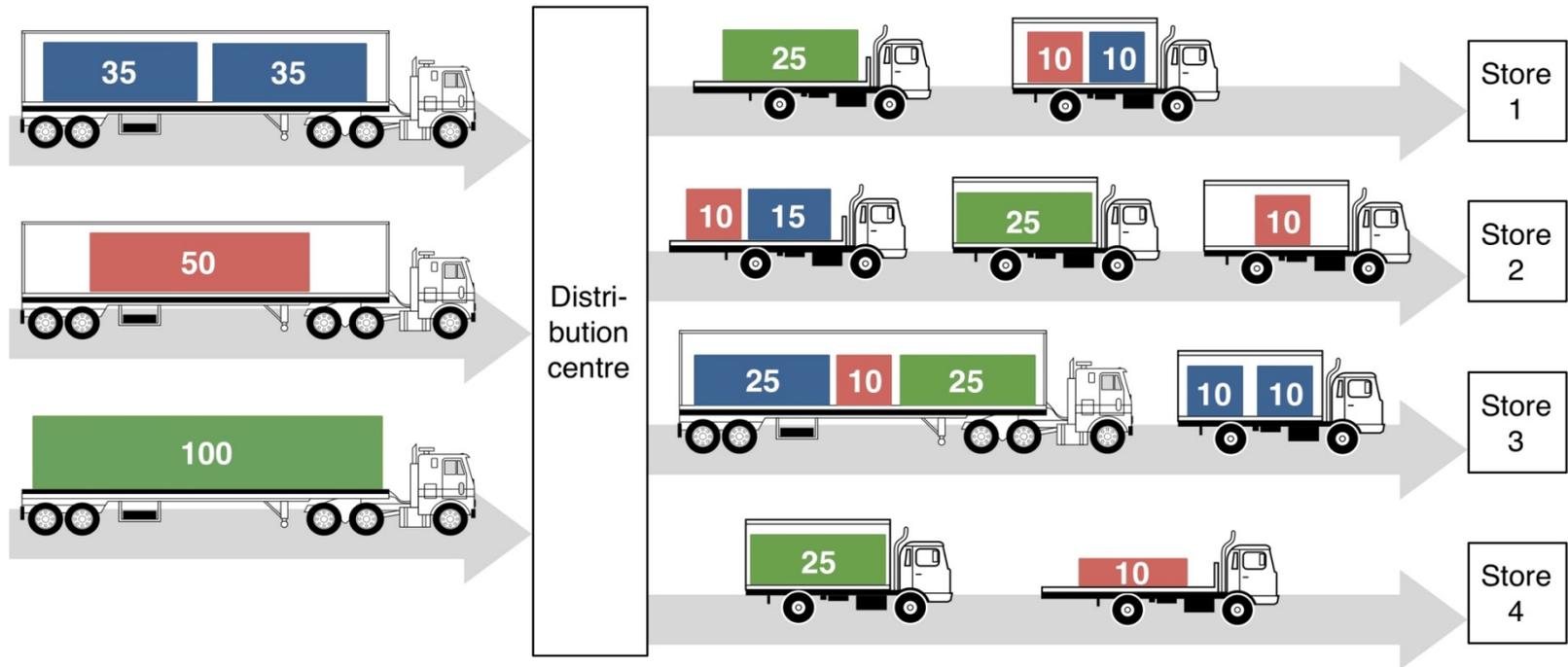


Supply chain context

Person



Distribution centers



2

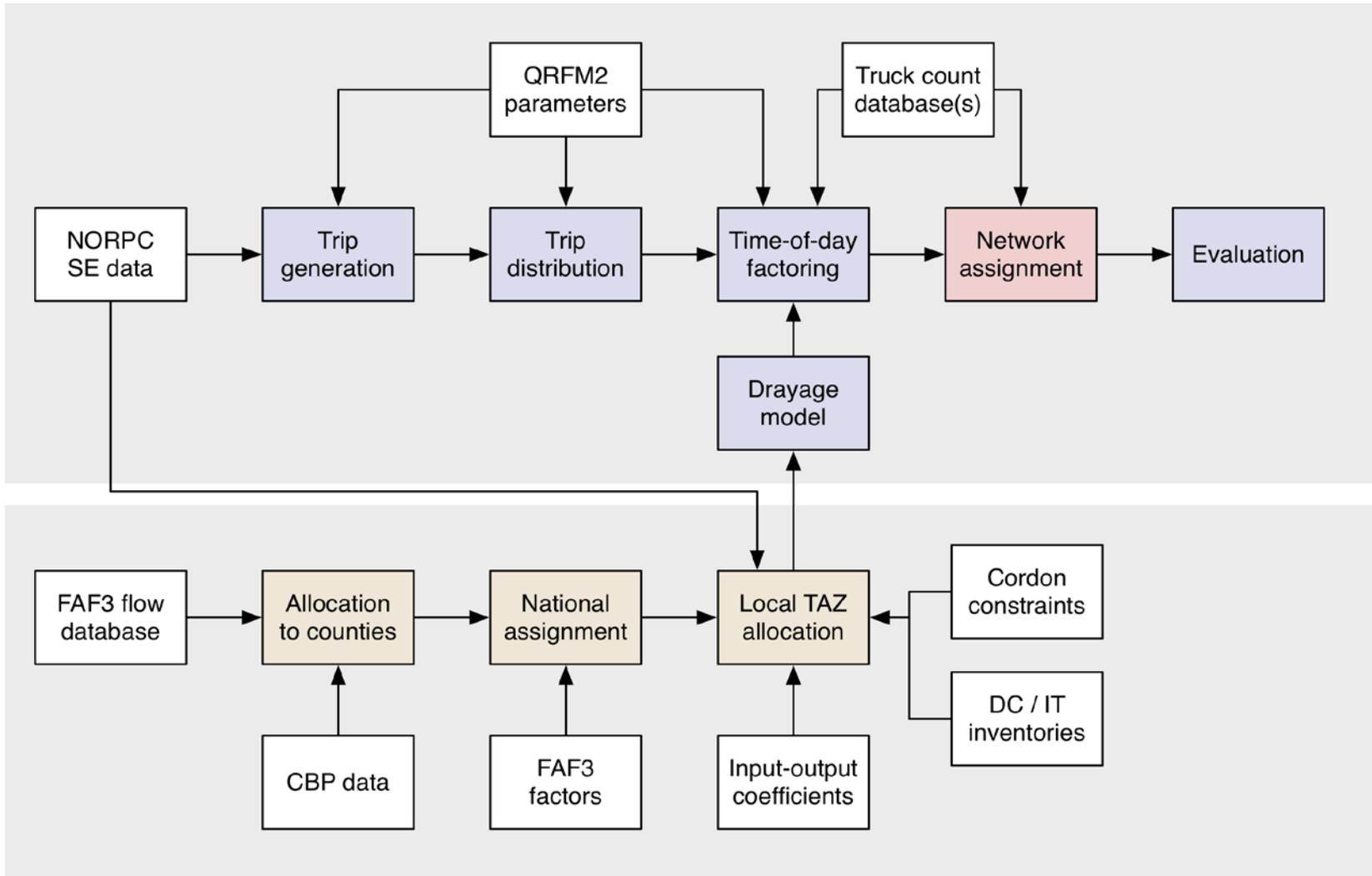
NORPC model development

Model development in a nutshell

1. Truck count data collection
2. Develop and implement national commodity flow model
3. Develop and test local truck model
4. Calibrate and validate the combined model
5. Deliver model, documentation, and training

NORPC truck model

Local model

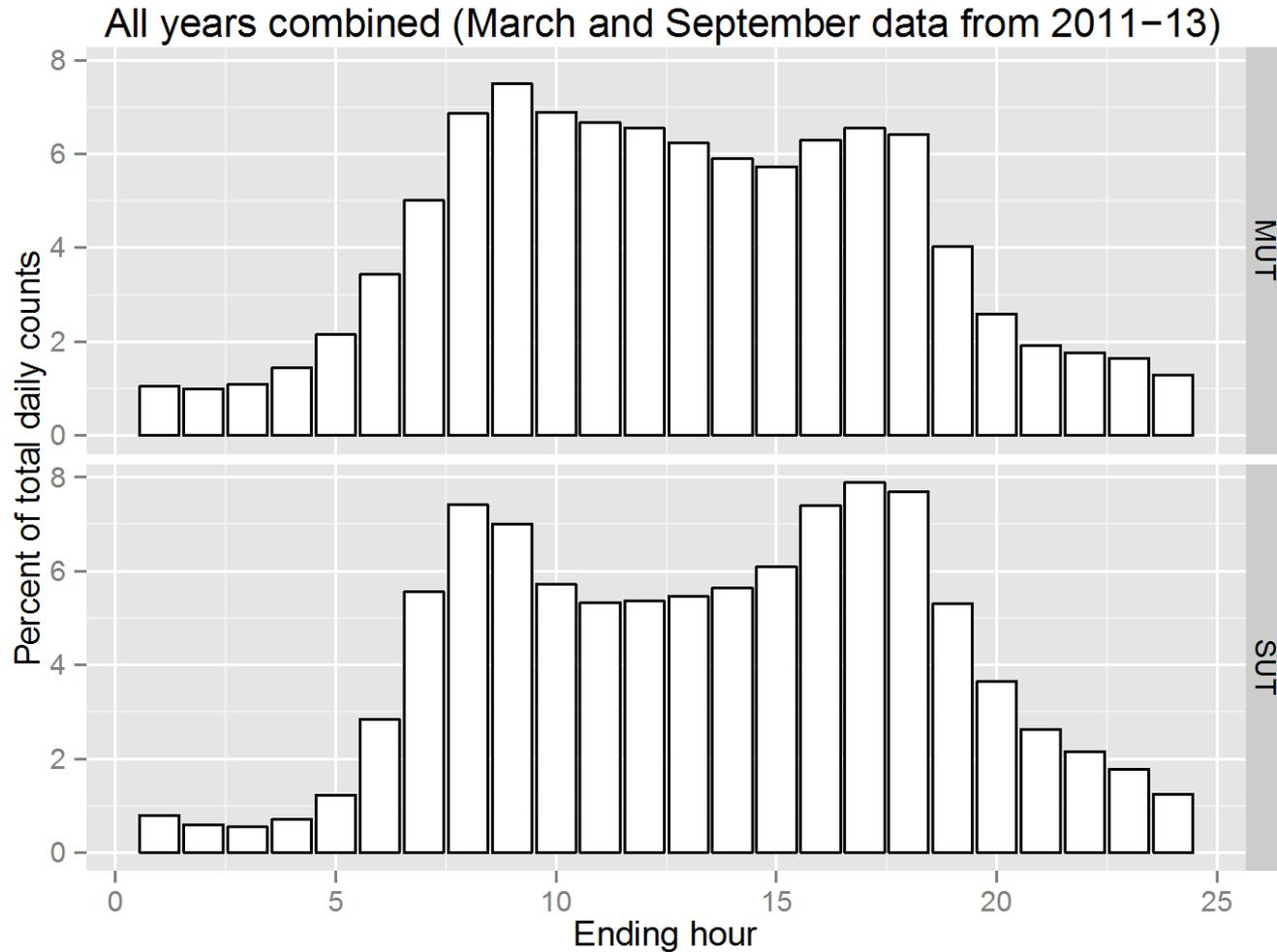


National model

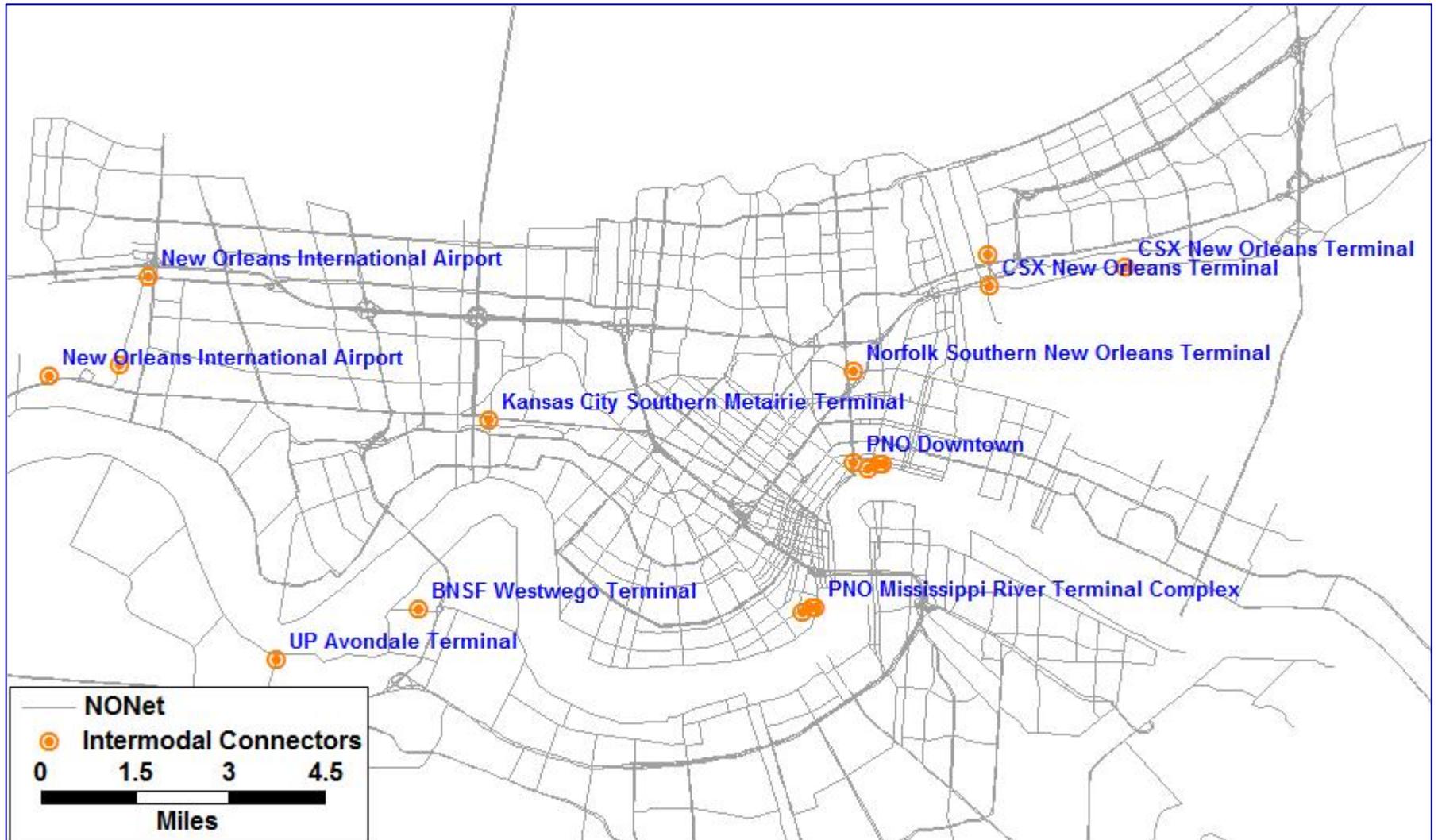
Data sources

- Economic data
- Foreign trade statistics
- Commodity flow data
- Truck counts
- Establishment surveys
- Carrier surveys
- Passive data (GPS, shipment tracking, ...)
- Industry data
- Literature
- ...

Time of day distributions



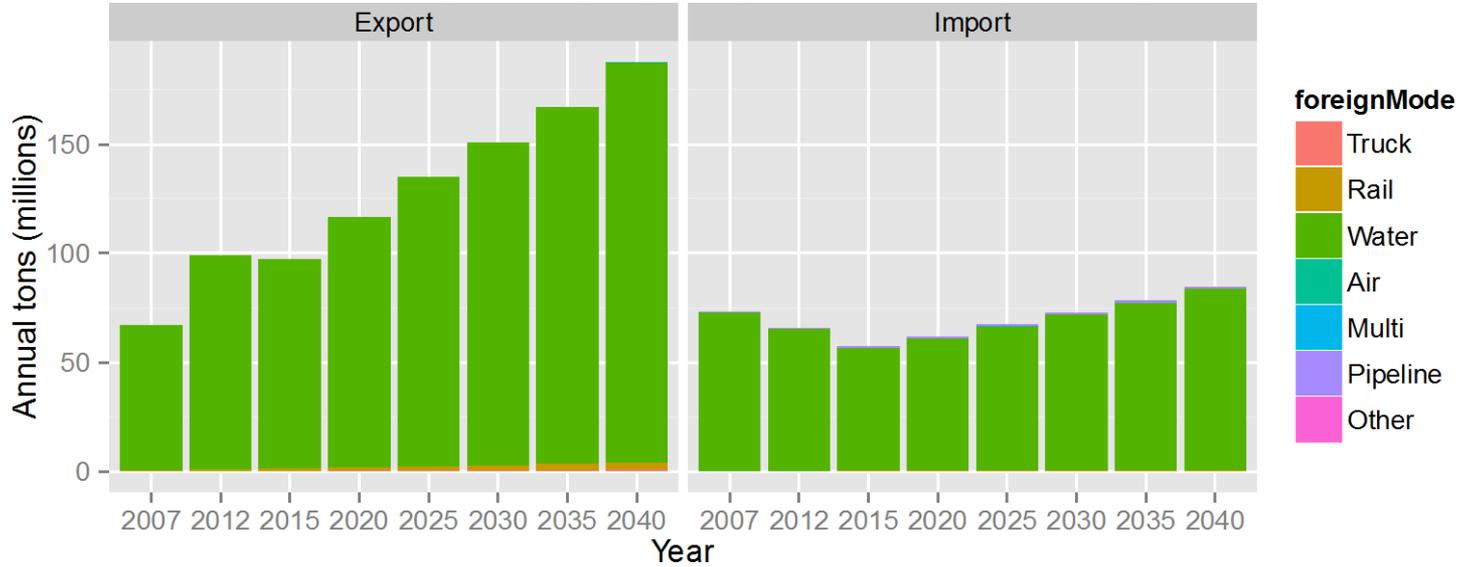
Intermodal facilities



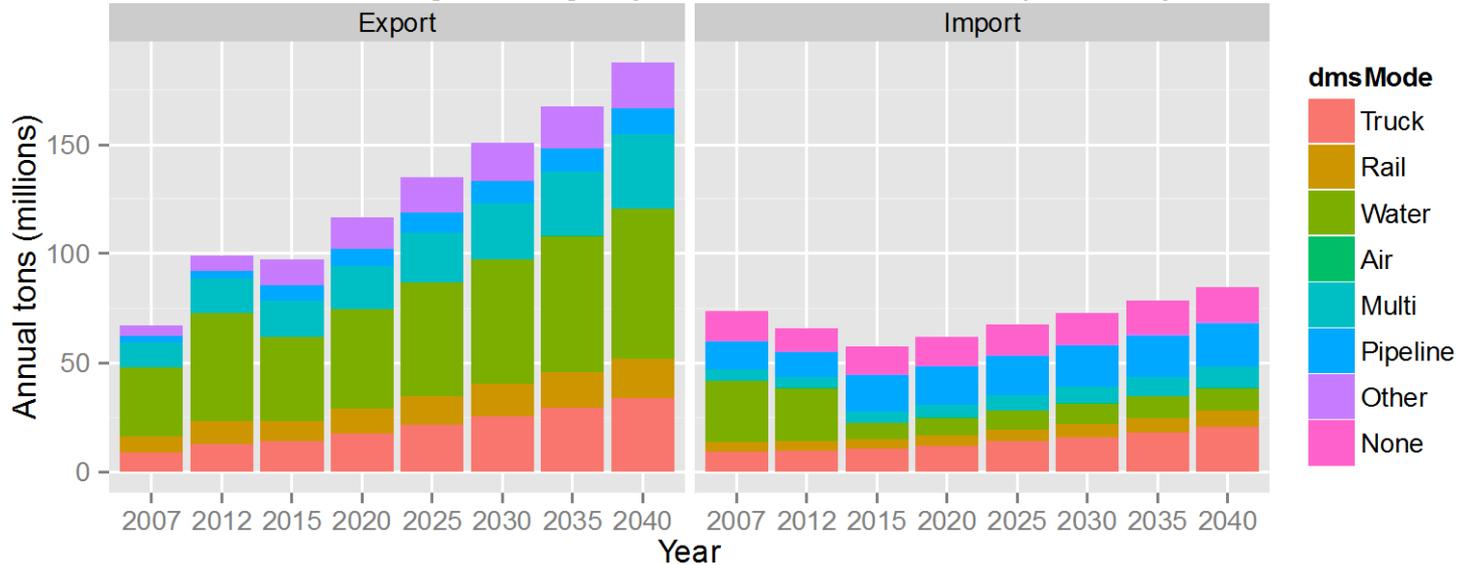
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Model outputs

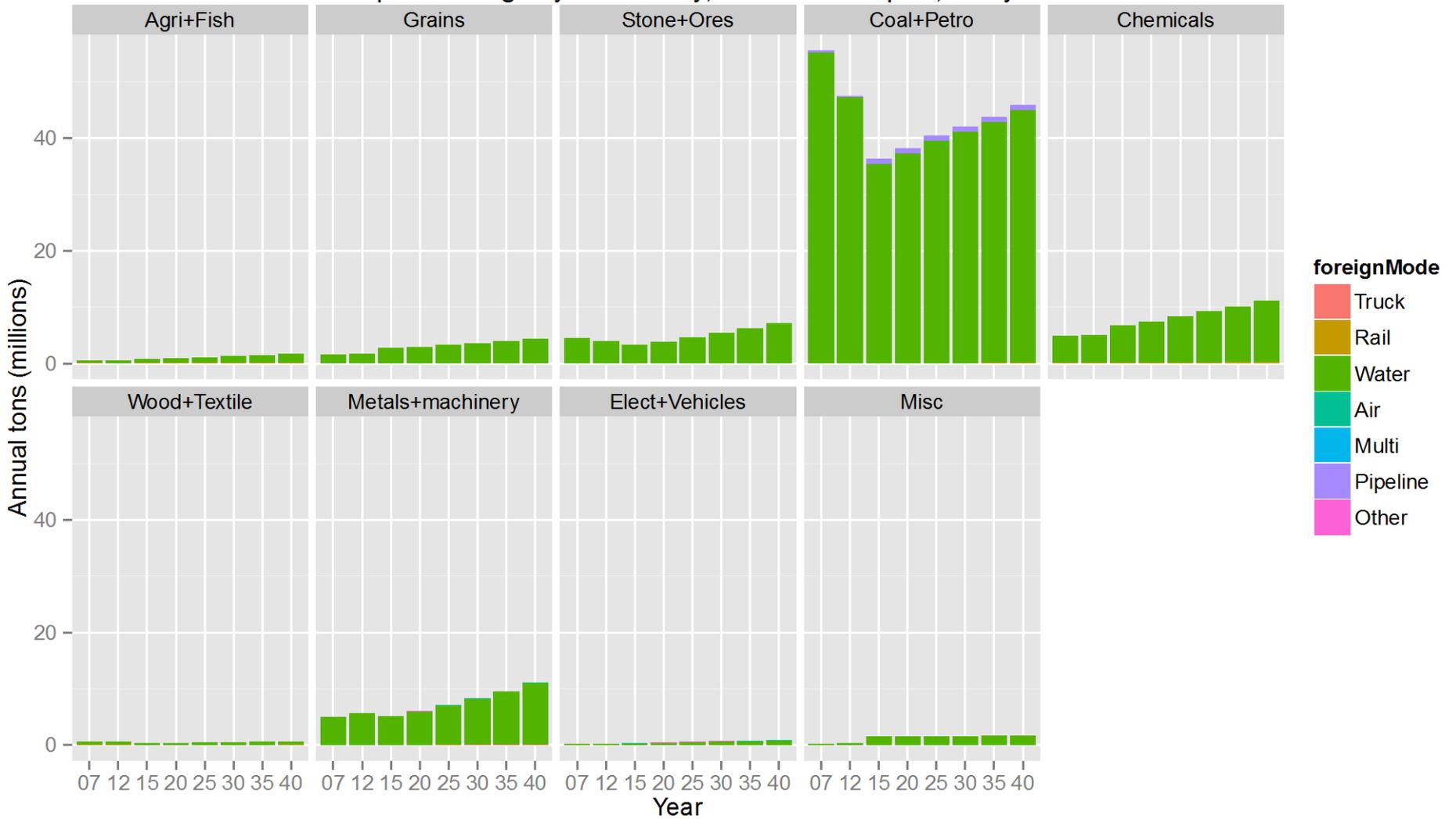
New Orleans foreign tonnage by foreign mode of transport and year



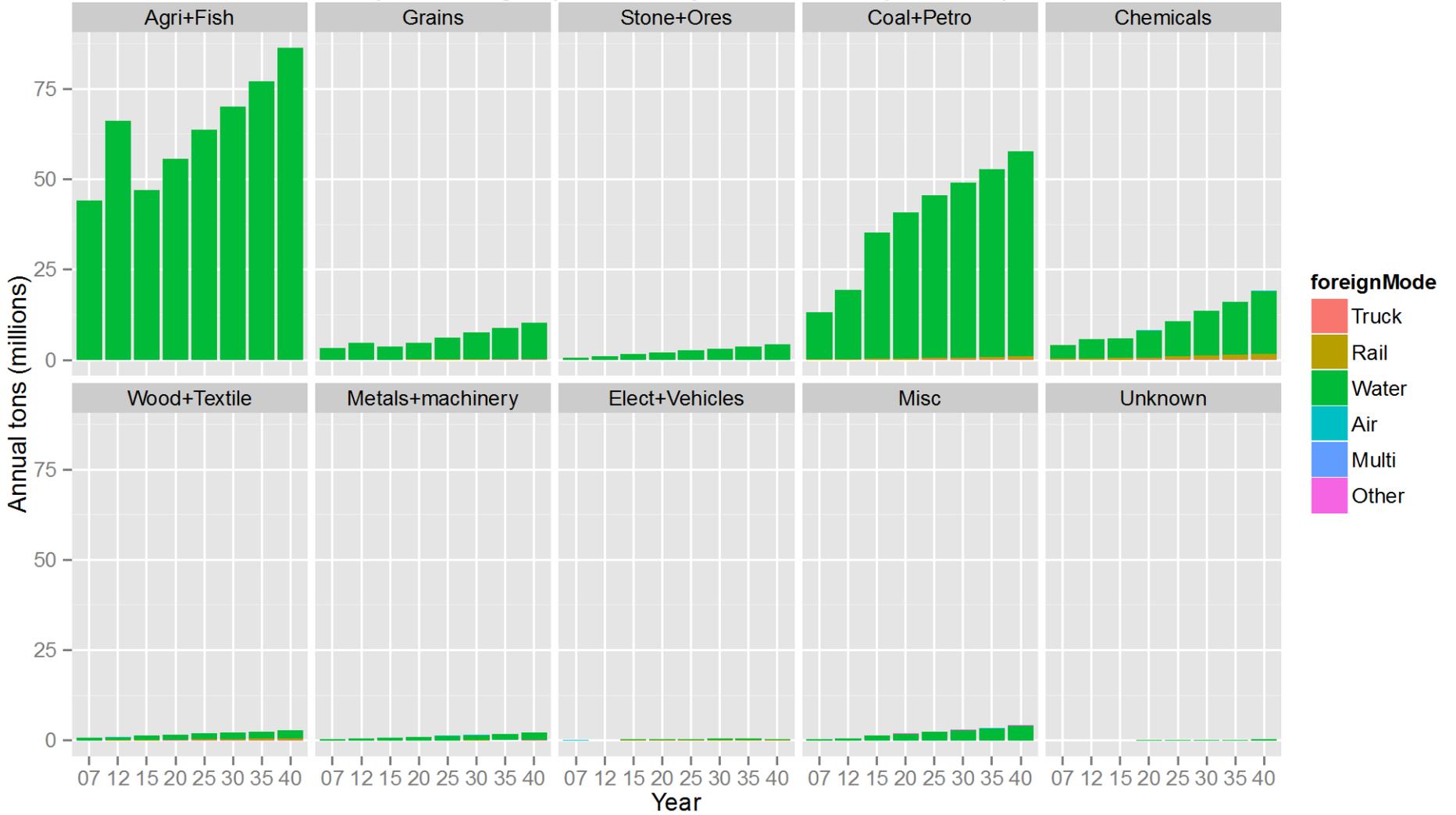
New Orleans foreign tonnage by domestic mode of transport and year



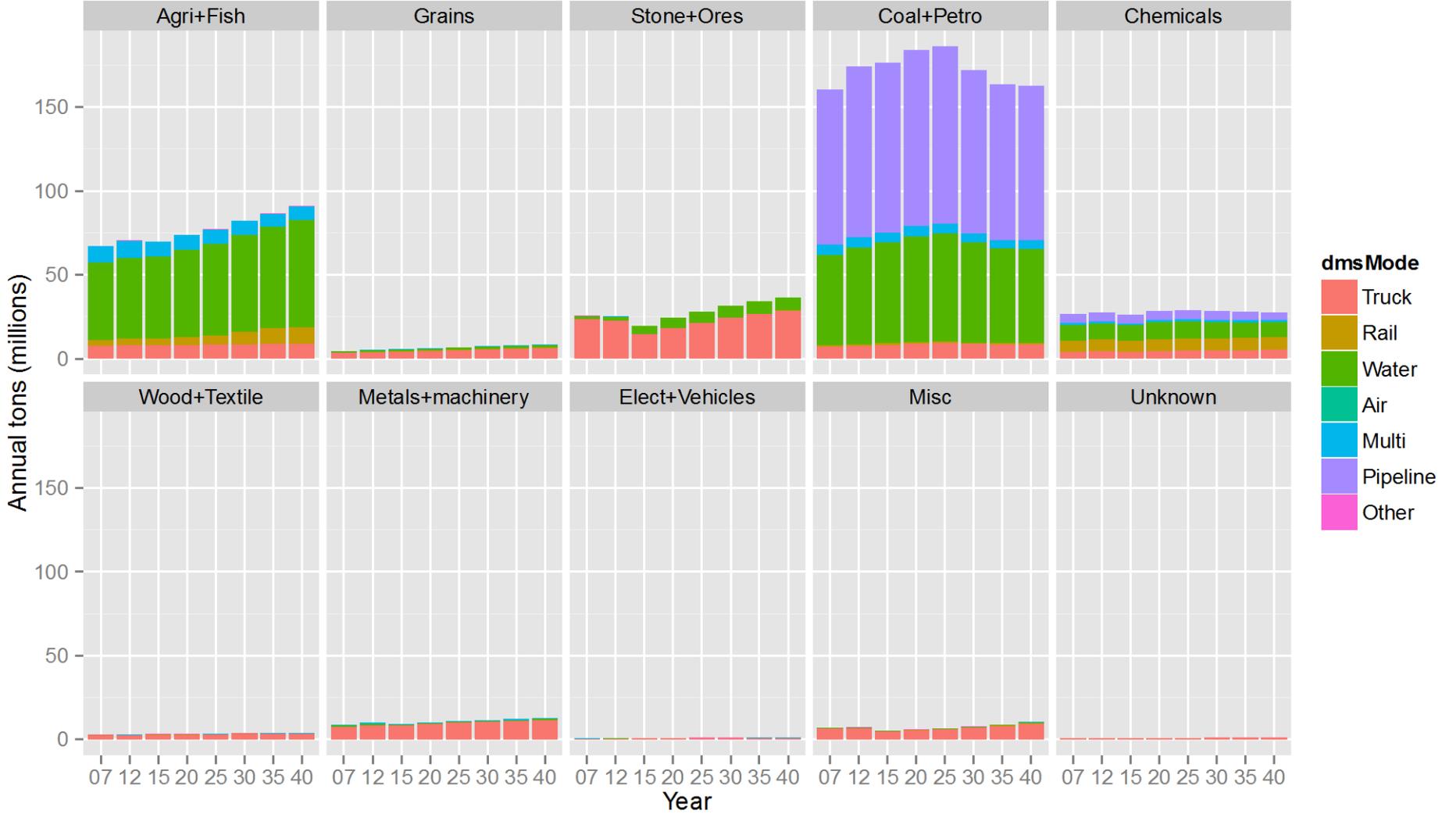
NO import tonnage by commodity, mode of transport, and year



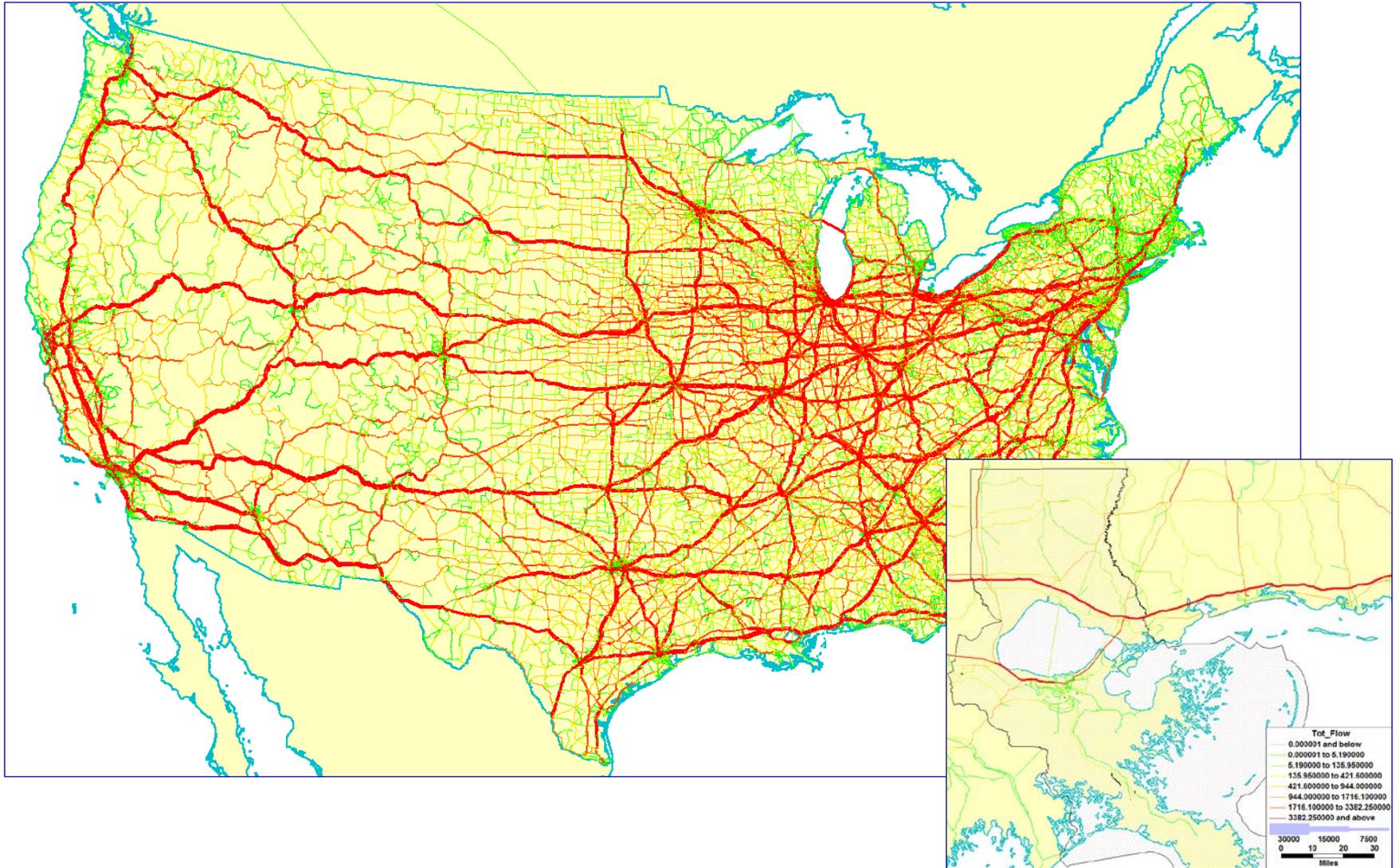
NO export tonnage by commodity, mode of transport, and year



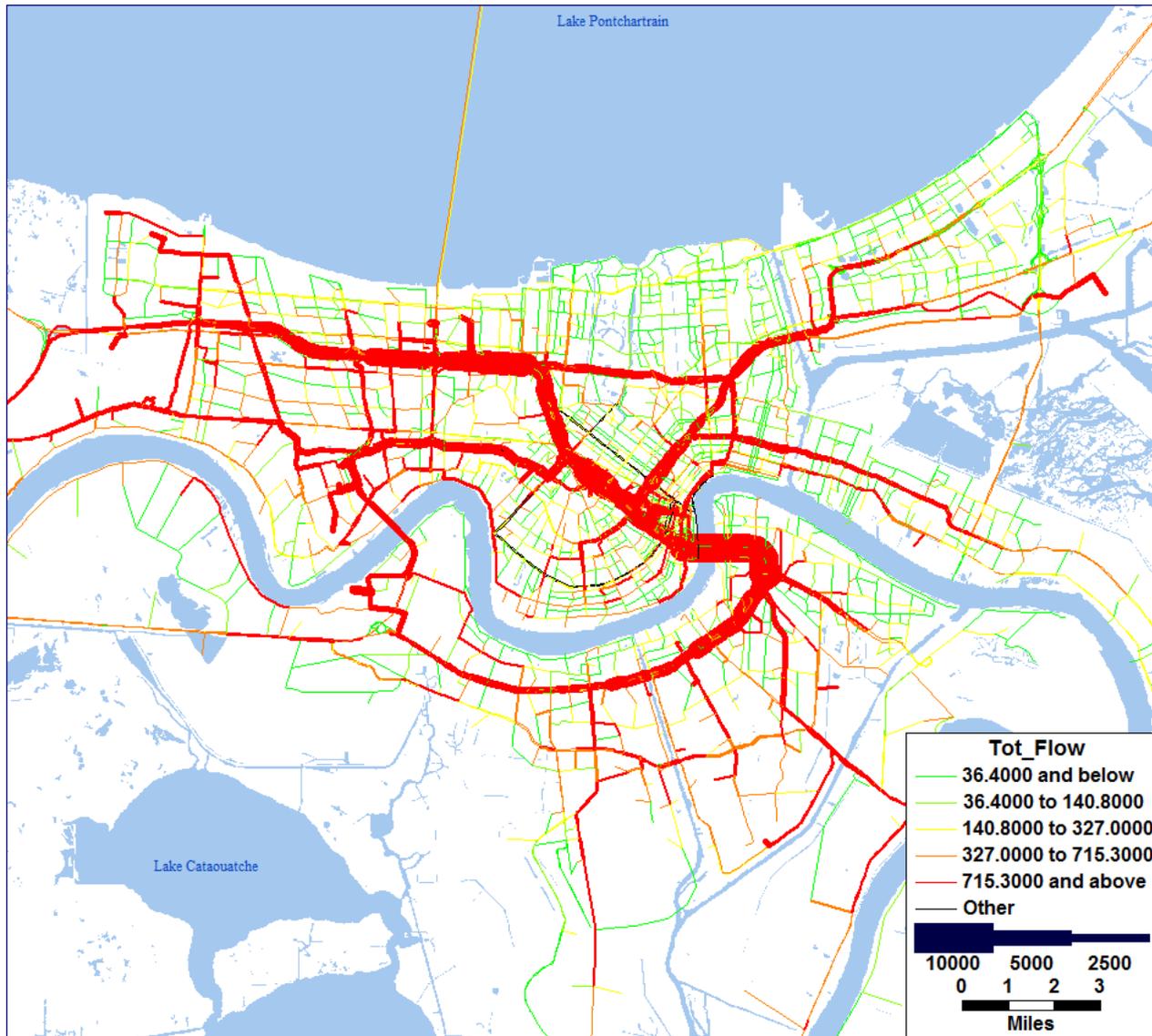
NO domestic tonnage by commodity, mode of transport, and year



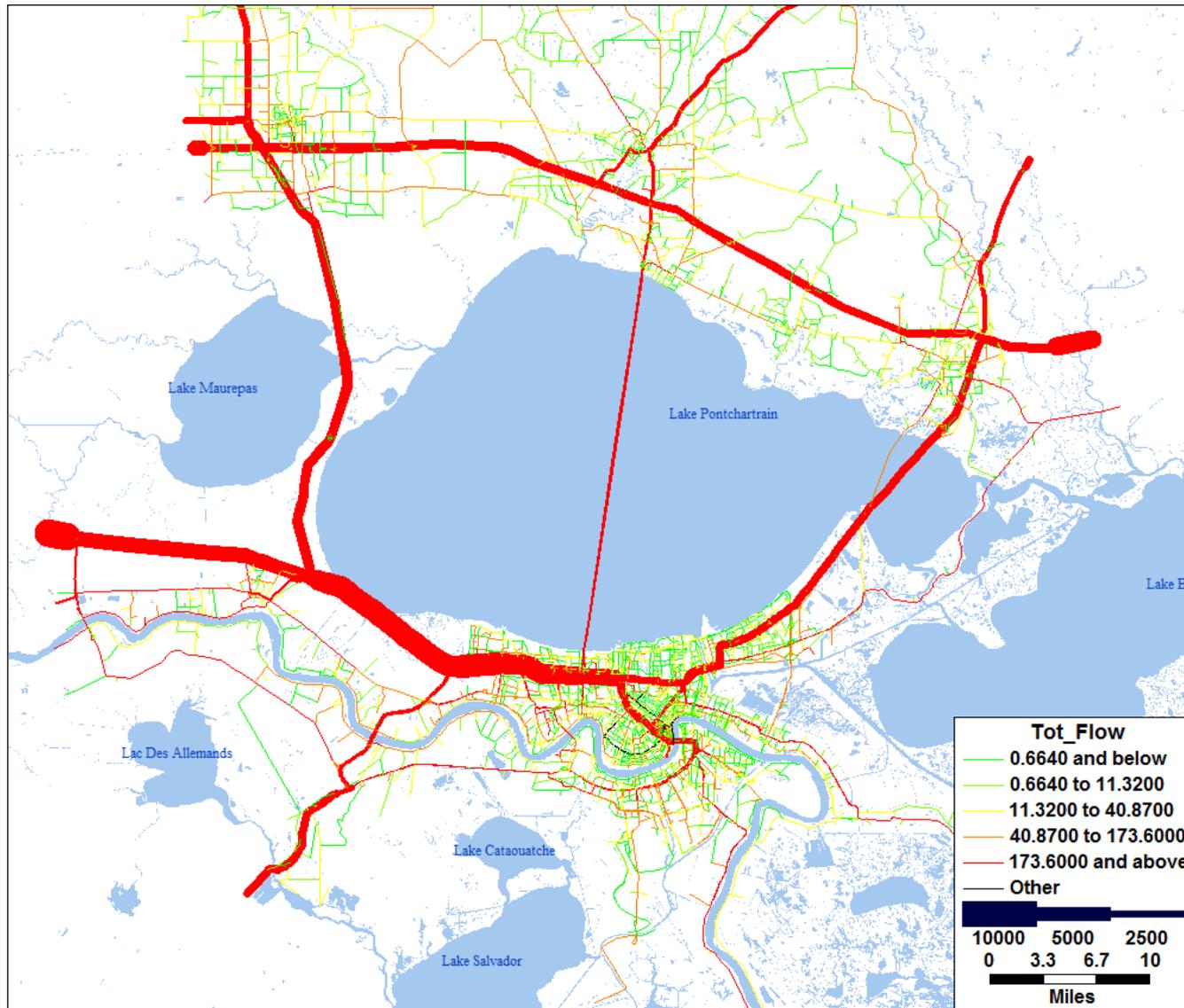
National flows



Daily local truck assignment



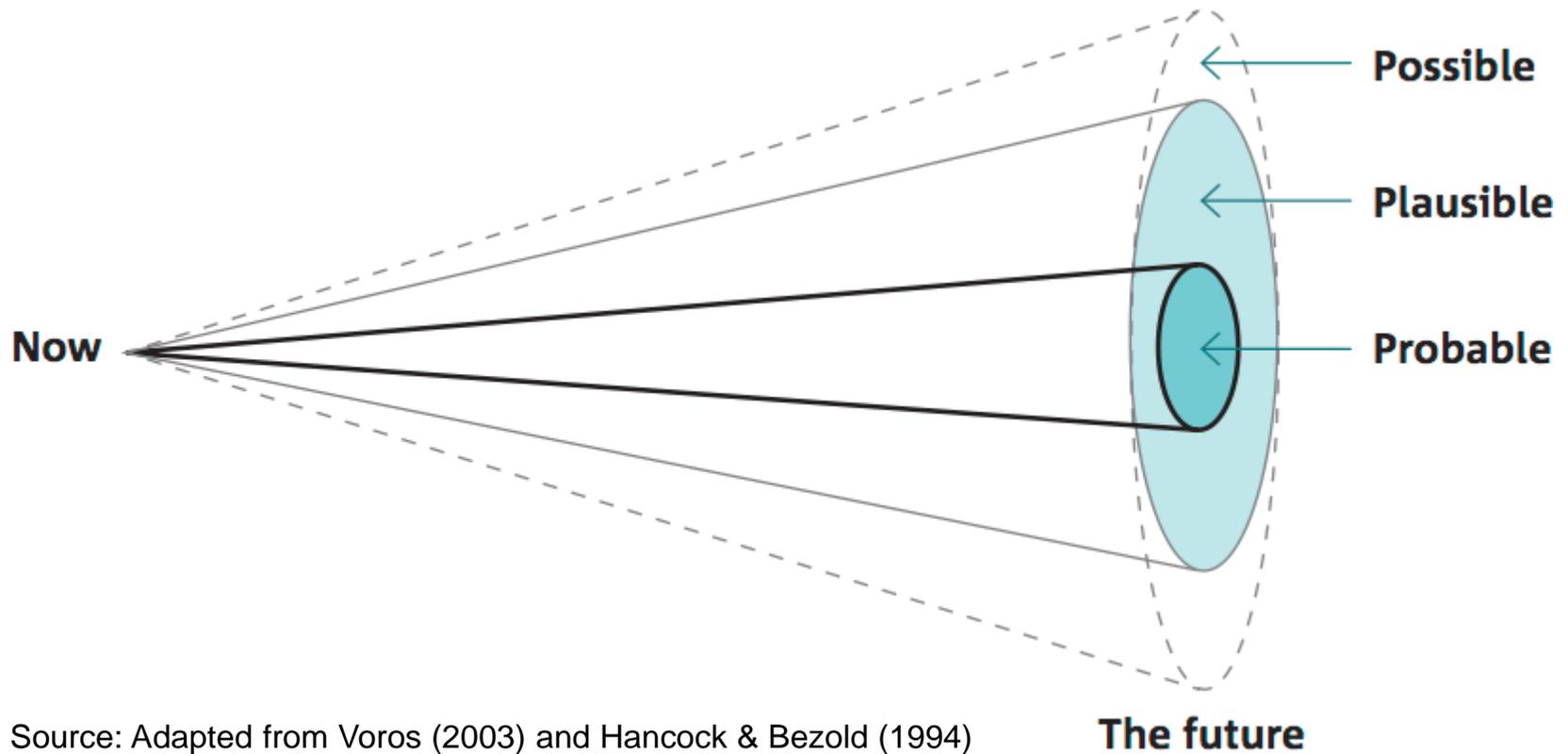
Daily external trips



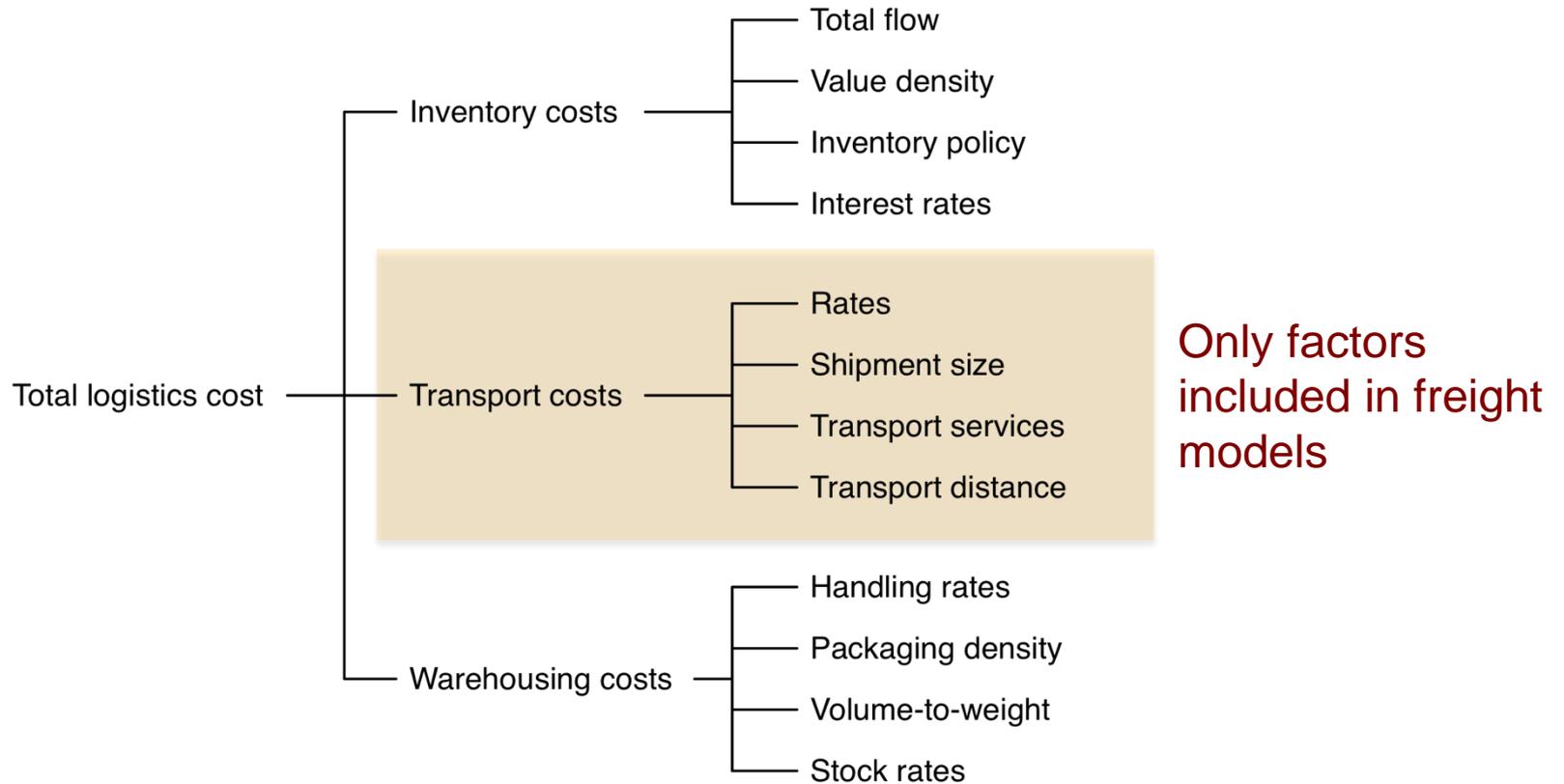
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Forecasting considerations

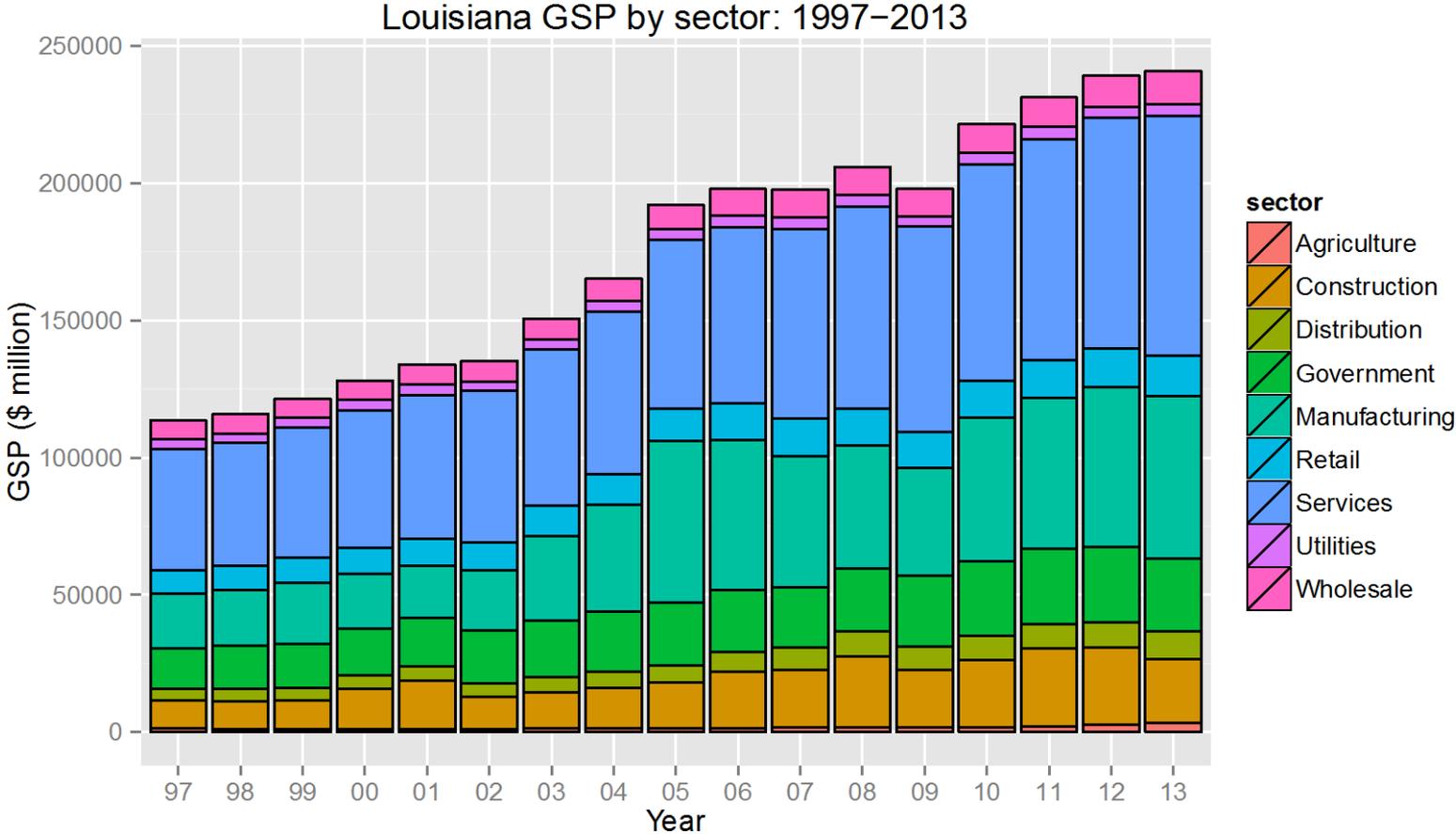
The forecasting conundrum



Limitations



Tied to economic growth



Questions?
