

Data for Modeling Cross-Border Trade and Traffic

Rick Donnelly
Parsons Brinckerhoff, Inc.
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Overview

- ⇒ What's out there
- ⇒ Uses and limitations
- ⇒ Stretching the existing data
- ⇒ New data collection
- ⇒ The future?

What's Out There

⇒ Trade data

- Foreign Trade Division (FTD) statistics
- Transborder Surface Freight Data
- Statistics Canada data
- Special studies data
 - TRANSNET data (FHWA)
 - Latin American Trade Study (MsDOT)

What's Out There (Continued)

- ⇒ Traffic data
 - U.S. Customs counts by border crossing
 - BTOA data for the Canadian border

Typical Attributes

- ⇒ Origin (exports) or destination (imports)
- ⇒ Port of entry
- ⇒ Commodity classification
- ⇒ Mode of transport
- ⇒ Month and year
- ⇒ Value
- ⇒ Weight

HS	port	mode	state	province	value
101	211	1	MA	13	5998
101	211	1	ME	13	5685
101	212	1	CT	13	28119
101	212	1	FL	13	7992
101	212	1	IL	13	8393
101	212	1	IN	13	7178
101	212	1	KY	13	2604
101	212	1	MA	13	69432
101	212	1	MD	13	4334
101	212	1	ME	13	154357
101	212	1	NJ	13	30023
101	212	1	NY	13	37160
101	212	1	OH	13	16843
101	212	1	PA	13	7049
101	212	1	RI	13	7705
101	212	1	VA	13	19125
101	314	1	CT	24	1347776
101	314	1	MA	24	17604
101	314	1	NY	24	2672
101	314	1	VT	24	2941
101	328	1	CT	24	236848
101	328	1	FL	24	35149
101	328	1	IL	24	13690
101	328	1	KY	24	27621
101	328	1	MA	24	42625

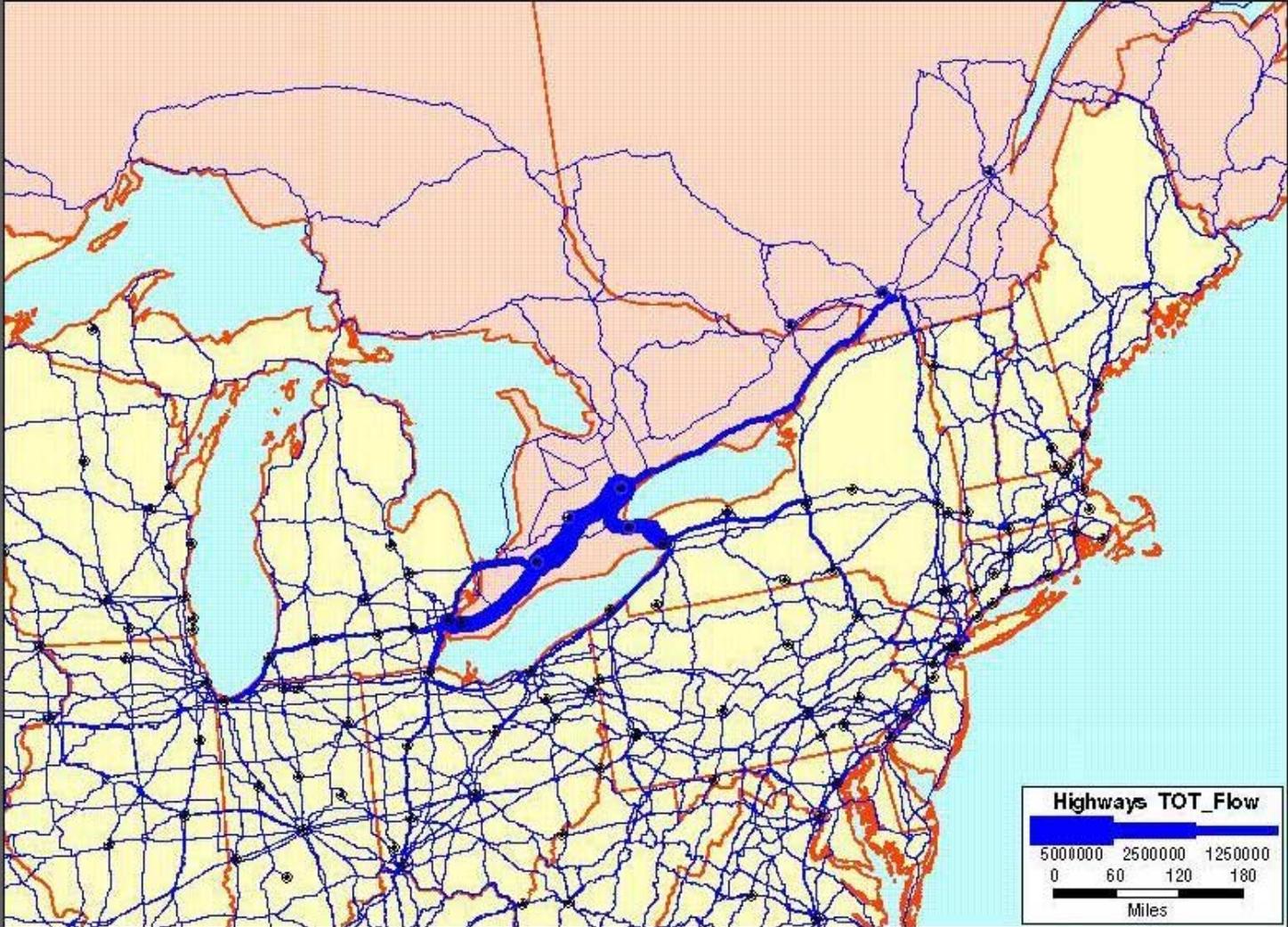
Typical Uses

Intended Uses

- ⇒ Assess balance-of-trade
- ⇒ Tariff policy
- ⇒ Tracking long-term trends in national economy
- ⇒ Tracking our trading partners
- ⇒ National trade models

Transportation Planning

- ⇒ NAFTA trade corridor identification
- ⇒ Highway traffic forecasting
- ⇒ Major investment studies
- ⇒ Corridor studies
- ⇒ Bridge design
- ⇒ Intermodal feasibility



Some Limitations

- ⇒ Data oriented towards economic analyses
 - Mode of transport sometimes ambiguous
 - Traces the flow of money better than flow of goods
 - Origin/destination detail too coarse for most analyses

Some Limitations (Continued)

- ⇒ Trade data not designed for transport planning
 - Cannot obtain all dimensions from U.S. data
 - Origin/destination, port (no mode or commodity)
 - Origin/destination, port, commodity (no mode)
 - Origin/destination, port, mode (no commodity)
 - Commodity, mode, port (no origin/destination)
 - Weight data appear questionable
 - GAO study found significant problems with weight data
 - Canadian data partially help overcome limitations

Stretching the Existing Data

- ⇒ Synthesizing the total picture
 - Entropy maximization
 - Doesn't work
- ⇒ Allocating origins/destination to sub-state entities
 - Based on input-output model relationships
 - County Business Pattern data (2-digit SIC)
 - Data from Detroit suggests this doesn't work well either

Stretching the Existing Data (Continued)

- ⇒ Augmenting the weight data
 - Use truck intercept survey data from ports of entry
 - WIM verification

New Data Collection

⇒ Border MPO surveys

- Ad hoc efforts sporadic and not well coordinated
- Differing definitions make systemic analysis difficult
- Hindered by U.S. Customs

⇒ 1999/2000 National Roadside Survey

- Intercept survey of trucks across Canada
- Expansion to Canadian side of border crossings
- Access to fully disaggregate data
- Both trade and traffic information

NRS Methodology

- ⇒ 221 survey sites across Canada
 - 23 directly upstream from border crossings
- ⇒ Intercept survey
 - 218 data items coded
 - Roughly 87,000 observations
 - Low refusal rate
- ⇒ Intermodal sites currently being surveyed
- ⇒ Data roughly analogous to the VIUS

Comparison of NRS and FTD data

Attribute	FTD	NRS
Geography	State	5-digit zip code
Commodity	HS	SCTG
Port	Clearance?	Actual entry
Value	Declared	Not available
Weight	Suspect	Static scales
Mode	All	Trucks only

NRS Methodology (Continued)

- ⇒ Survey analysis on-going
 - Joint U.S.-Canadian effort
 - EBTC responsible for commodity classification and U.S. address resolution
 - Working on survey expansion methodology
- ⇒ Report and data available in December 2000

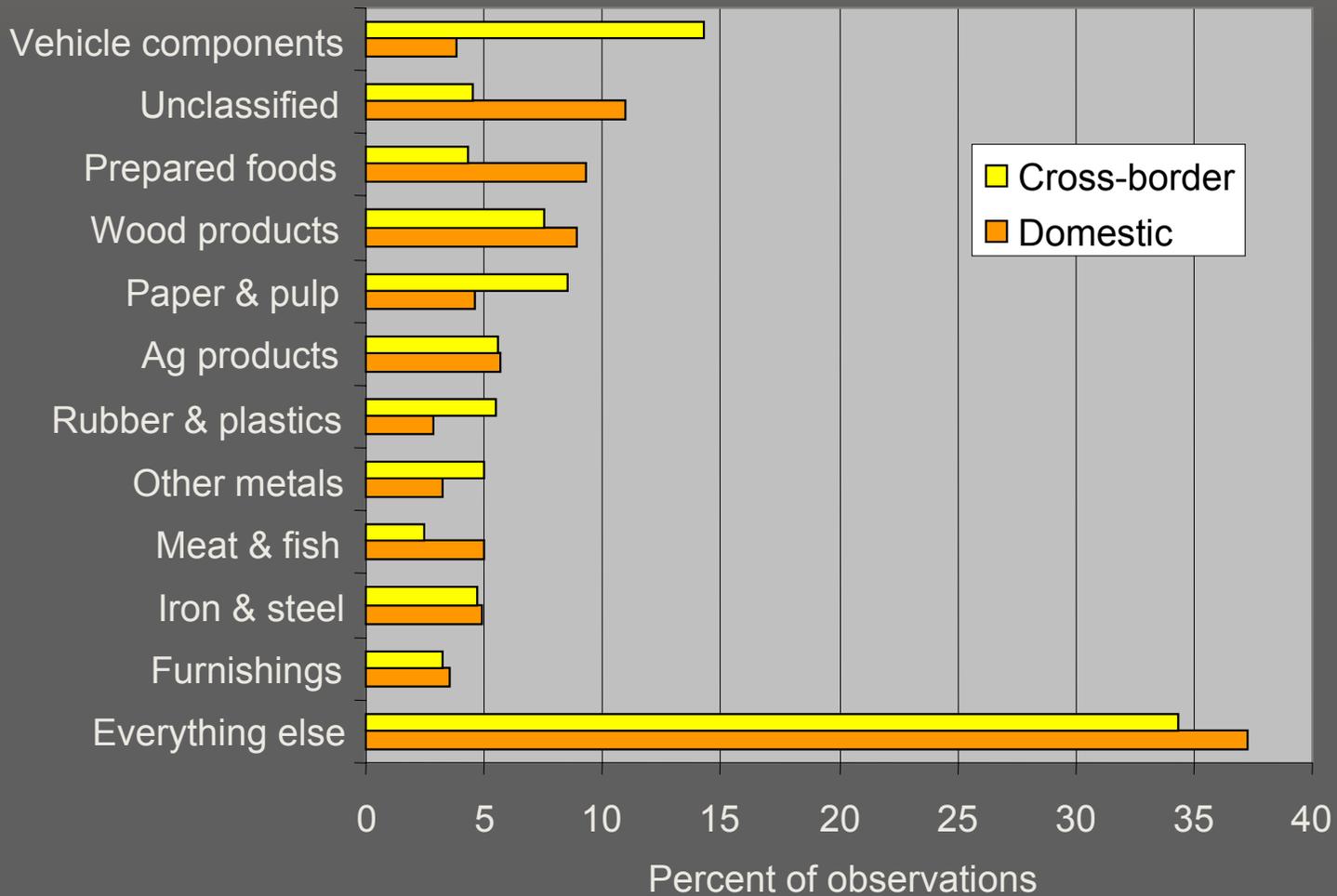
NRS Preliminary Findings

- ⇒ Intercept surveys depict truck better than commodity movements
- ⇒ Paradoxical patterns at major entry points
 - Most crossings in Detroit destined for local area
 - Most crossings in Buffalo headed elsewhere
 - Reinforces the need for finer geographical detail
- ⇒ Many destinations are distribution hubs
 - Connect to domestic distribution system
 - Masks true destination

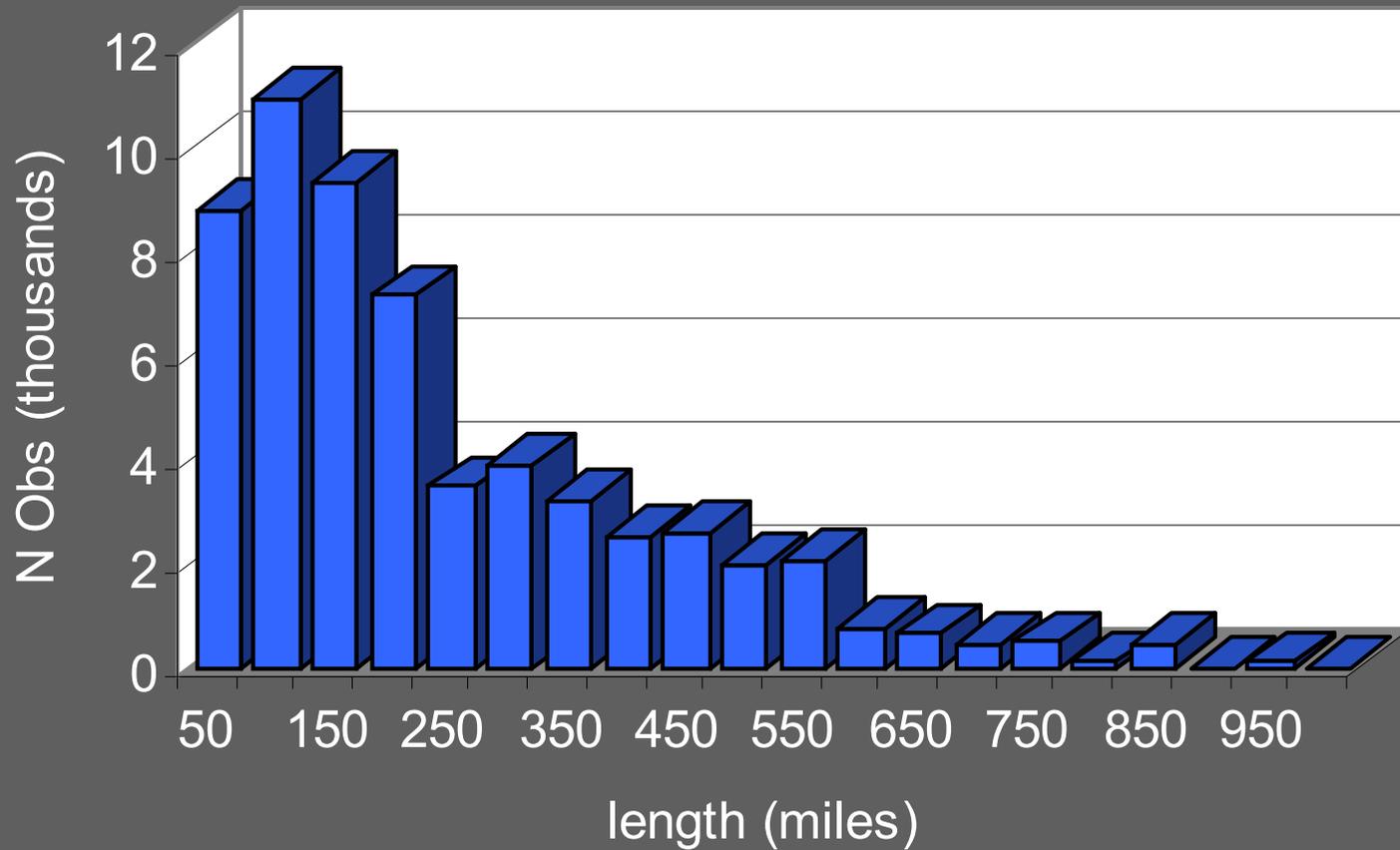
NRS Preliminary Findings (Continued)

- ⇒ Probably need to summarize destinations at the 3-digit zip code level

Commodities



Average trip length



The Future?

- ⇒ Continue to rely upon national statistics for broad view
- ⇒ Truck intercept surveys add considerably more geographic detail
 - Follows the truck, not necessarily the commodity
 - Misses other important modes
 - Small sample
 - Specific to survey season

The Future? (Continued)

- ⇒ Survey customs brokers
 - Knows true shipper, cosignee, and carrier
 - Also concerned about privacy
 - Plausible on the U.S.-Canadian border, but not on U.S.-Mexican border
- ⇒ ITS possibilities
 - M. Mannheim EDI initiative
 - Blizzard of conflicting standards and formats
 - Long-term solution

Further Information

- ⇒ FTD data and reports:
<http://www.census.gov/foreign-trade/www>
<ftp://ftp.census.gov/foreign-trade/guide/index.html>
- ⇒ Statistics Canada data:
<http://www.statcan.ca/english/services/>
- ⇒ Transborder Surface Freight Data:
<http://www.bts.gov/transborder>
- ⇒ EBTC reports:
ftp://ftp.pbtfdc.com/pub/rick/ebtc_reports
- ⇒ National Roadside Survey:
Send email to rdonnelly@pbtfdc.com