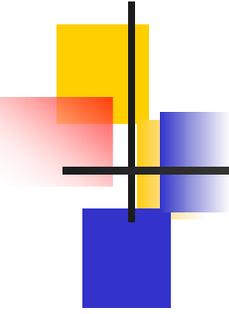


# Data on Truck Flows Across the US- Canada Border

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NATMEC 02  
Orlando, Florida  
14 May 2002

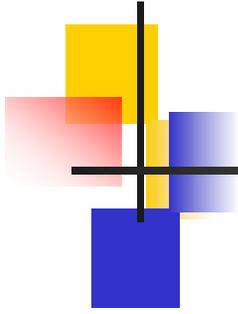
Rick Donnelly, *Parsons Brinckerhoff, Inc.*



# Canada-U.S. trade

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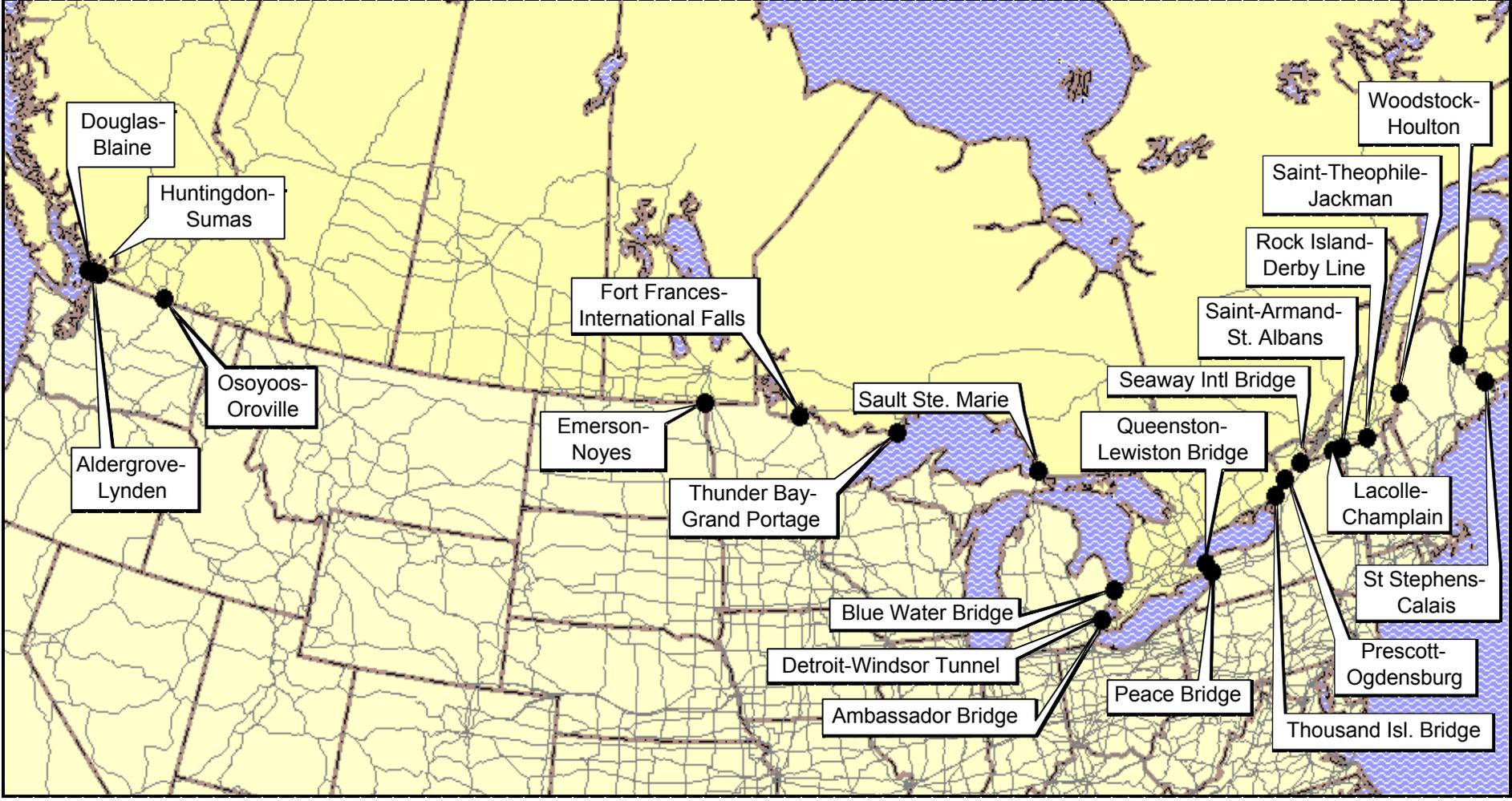
- Largest trading relationship in the world
  - Over US\$1 billion per day
  - 23-34 percent of U.S. exports
  - 80-84 percent of Canadian exports
- Highly integrated binational economy
  - 50 percent of non-border U.S. states
  - Ontario, Québec & British Columbia major Canadian provinces
  - Western provinces have large energy exports



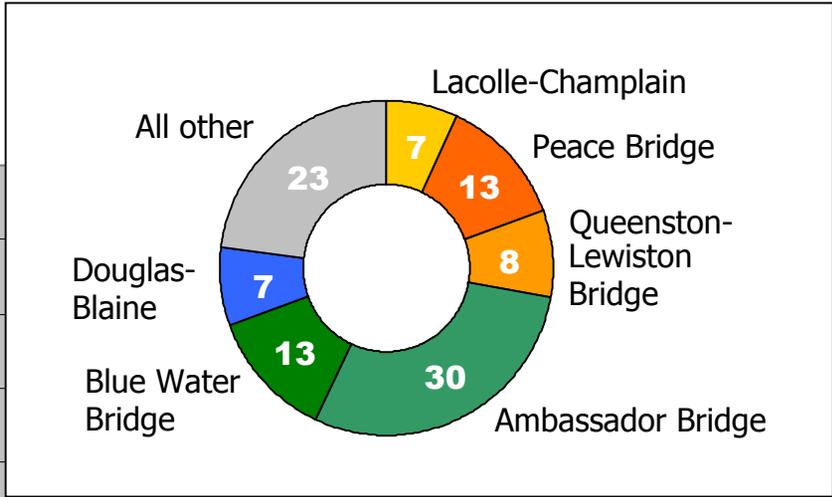
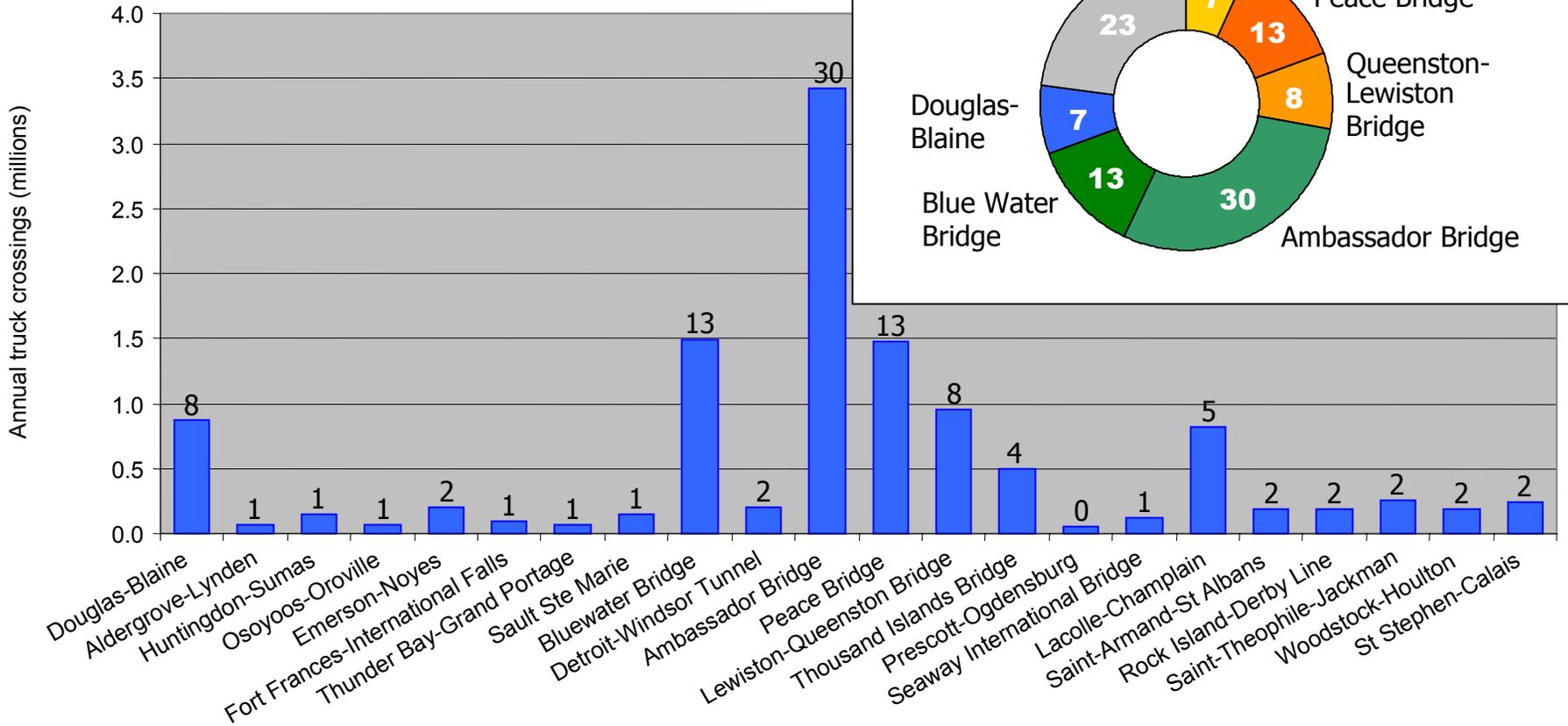
# Foreign Trade Data

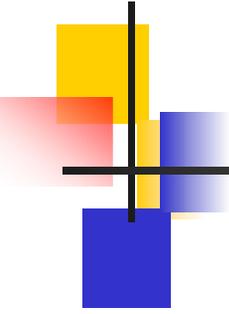
- State or province of origin (exports) or destination (imports)
- Port of entry
- Commodity classification
- Mode of transport
- Month and year
- Value
- Weight

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



# Annual truck crossings

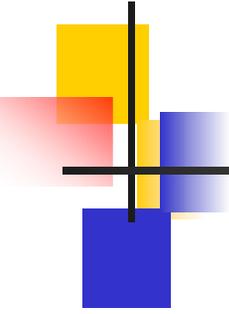




# EBTC Goals for the NRS

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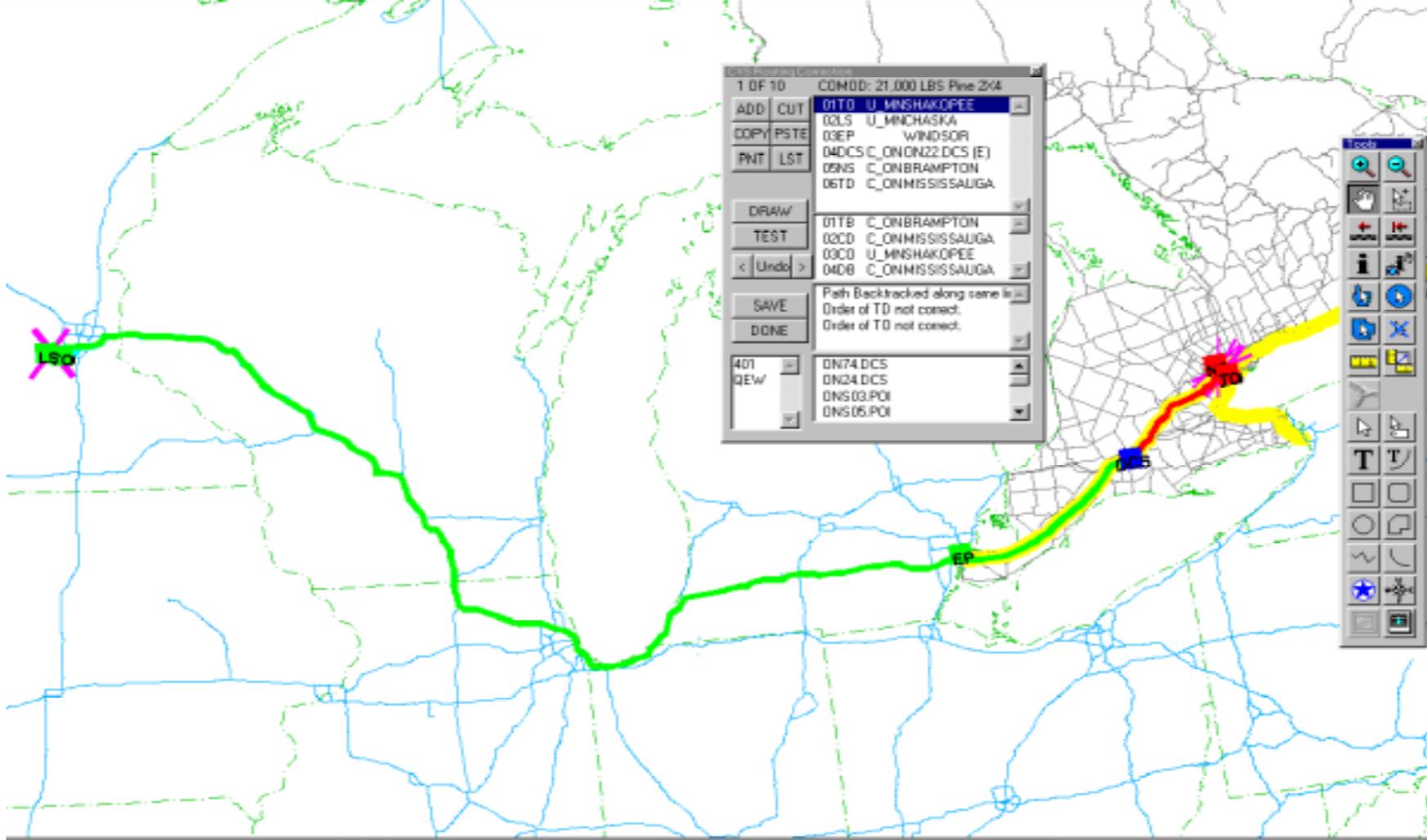
- Need for better data (Toronto, May 1998)
  - End traditional reliance on trade statistics
  - Distinguish between commodity and dollar flows
  - Capture unrecorded flows
  - Better understanding of geographic dimension
  - Weight as important as value
- Collaboration with CCMTA on 1999 NRS
  - Pooled funds from State DOTs
  - FHWA administrative support
  - Inclusion of border crossings
  - Data access and dissemination



# 1999/2000 National Roadside Study

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- Intercept survey of trucks across Canada
  - 238 sites across Canada
  - 40 at or near the Canada-U.S. border
- Surveyed traffic in both directions
  - Access to the raw data
  - Both trade and traffic information
- Portrays a typical Fall, 1999 week
- Captures some flows missing in FTD data
  - In-bond shipments
  - Re-exported or otherwise exempt shipments
  - Deliberate under-reporting of value and/or weight



1 OF 10 COMOD: 21,000 LBS Pine 2x4

ADD	CUT	D1T0	U_MNISHAKOPEE
COPY	PASTE	D2LS	U_MNCHASKA
PNT	LST	D3EP	WINDSOR
		D4DCS	C_ONON22.DCS (E)
		D5NS	C_ONBRAMPTON
		D6TD	C_ONMISSISSAUGA

DRAW

TEST

< Undo >

SAVE

DONE

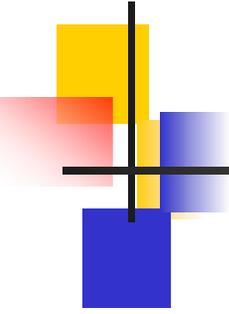
401  
QEW

D1T0	C_ONBRAMPTON
D2CD	C_ONMISSISSAUGA
D3CO	U_MNISHAKOPEE
D4DB	C_ONMISSISSAUGA

Path Backtracked along same li  
Order of TD not correct.  
Order of TD not correct.

D1T0	C_ONBRAMPTON
D2CD	C_ONMISSISSAUGA
D3CO	U_MNISHAKOPEE
D4DB	C_ONMISSISSAUGA

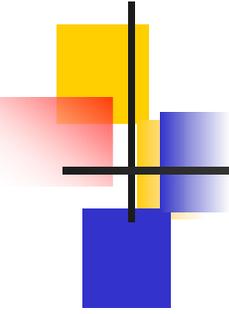




# Useful Data Attributes

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- Survey site
- Survey date and time
- Expansion factors
- Distance traveled
- Vehicle classification
- Commodity (2-digit SCTG)
- Vehicle and payload weight
- Vehicle home base
- Origin and destination
  - Commodity origin
  - Trip origin
  - Last stop
  - Next stop
  - Trip destination
  - Commodity destination
  - Enter/leave Canada
- Facility type at origin and destination

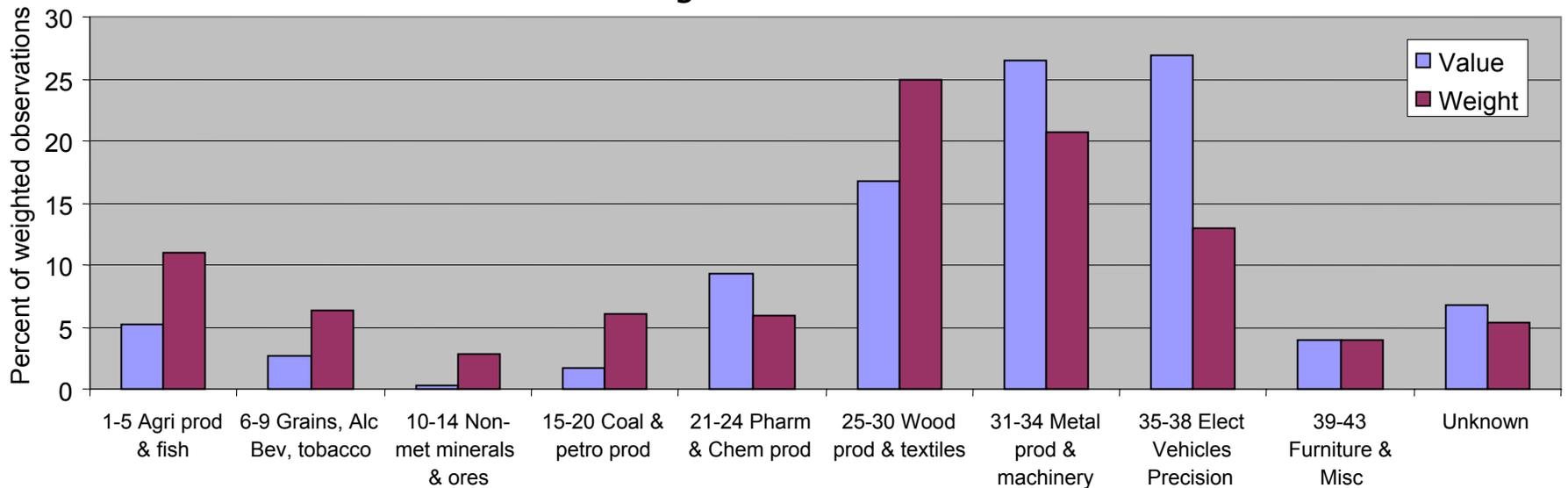


# Comparison of FTD and NRS data

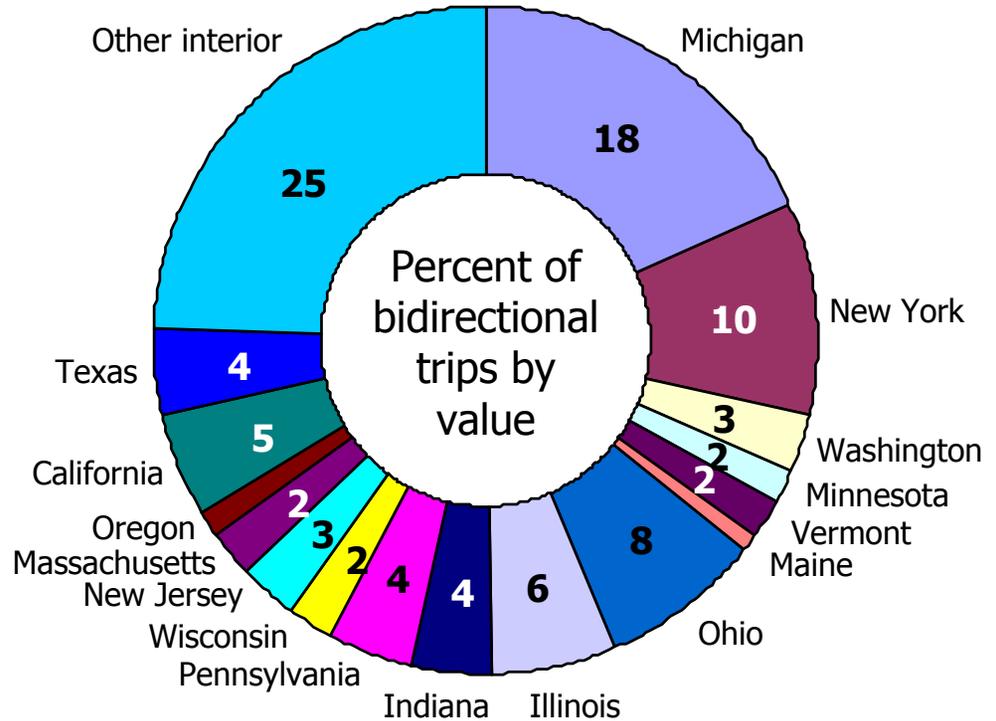
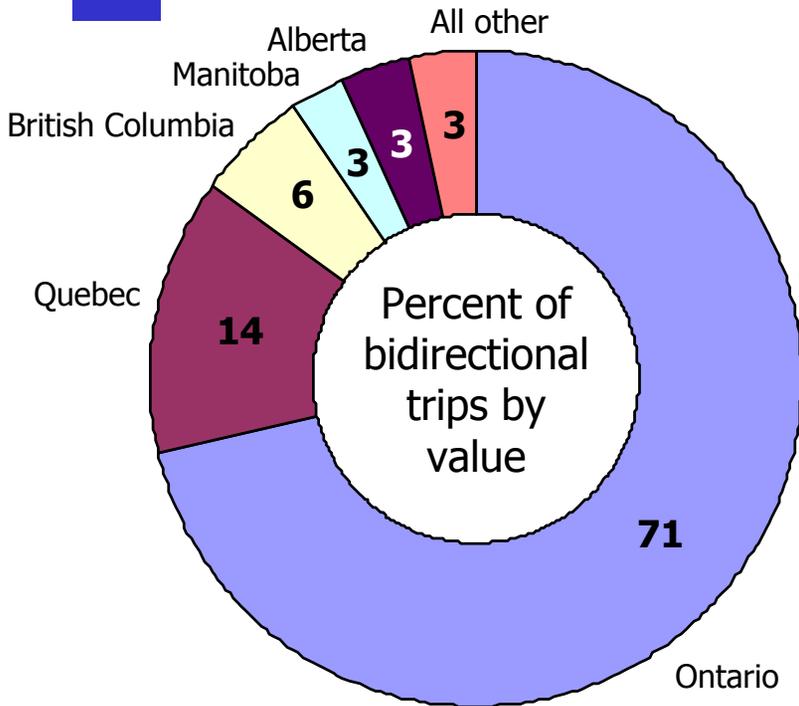
<b>Attribute</b>	<b>FTD</b>	<b>NRS</b>
Geography	State	County/CCD
Commodity	HS	SCTG
Port	Clearance?	Actual entry
Value	Declared	Not available
Weight	Suspect	Static scales
Mode	All	Trucks only

# Value vs. Weight

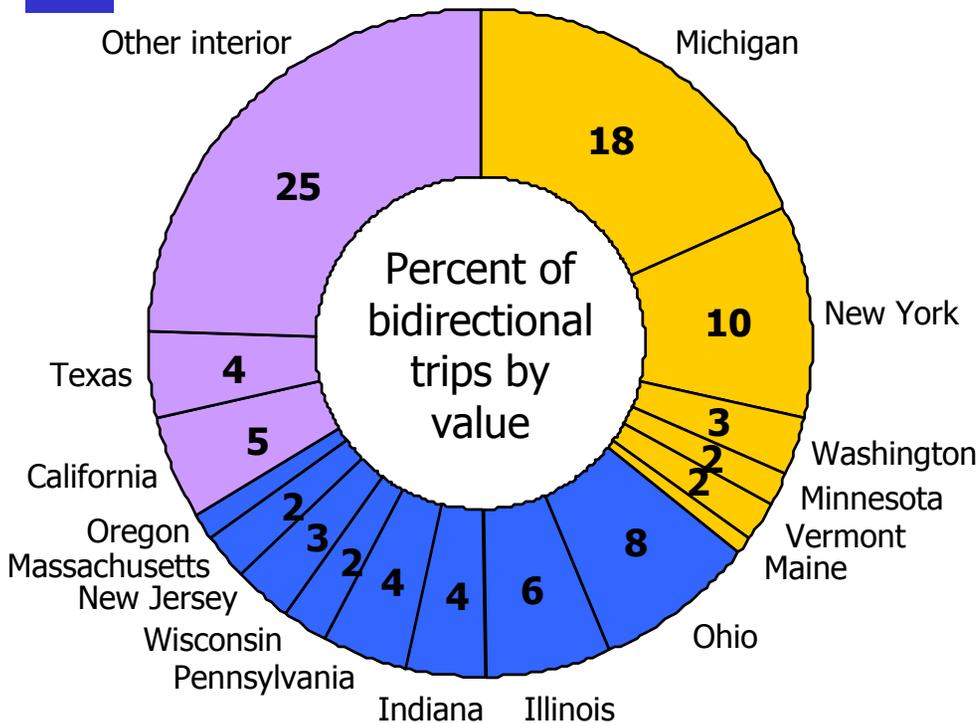
All U.S.-Canada border crossings



# Geographic distributions

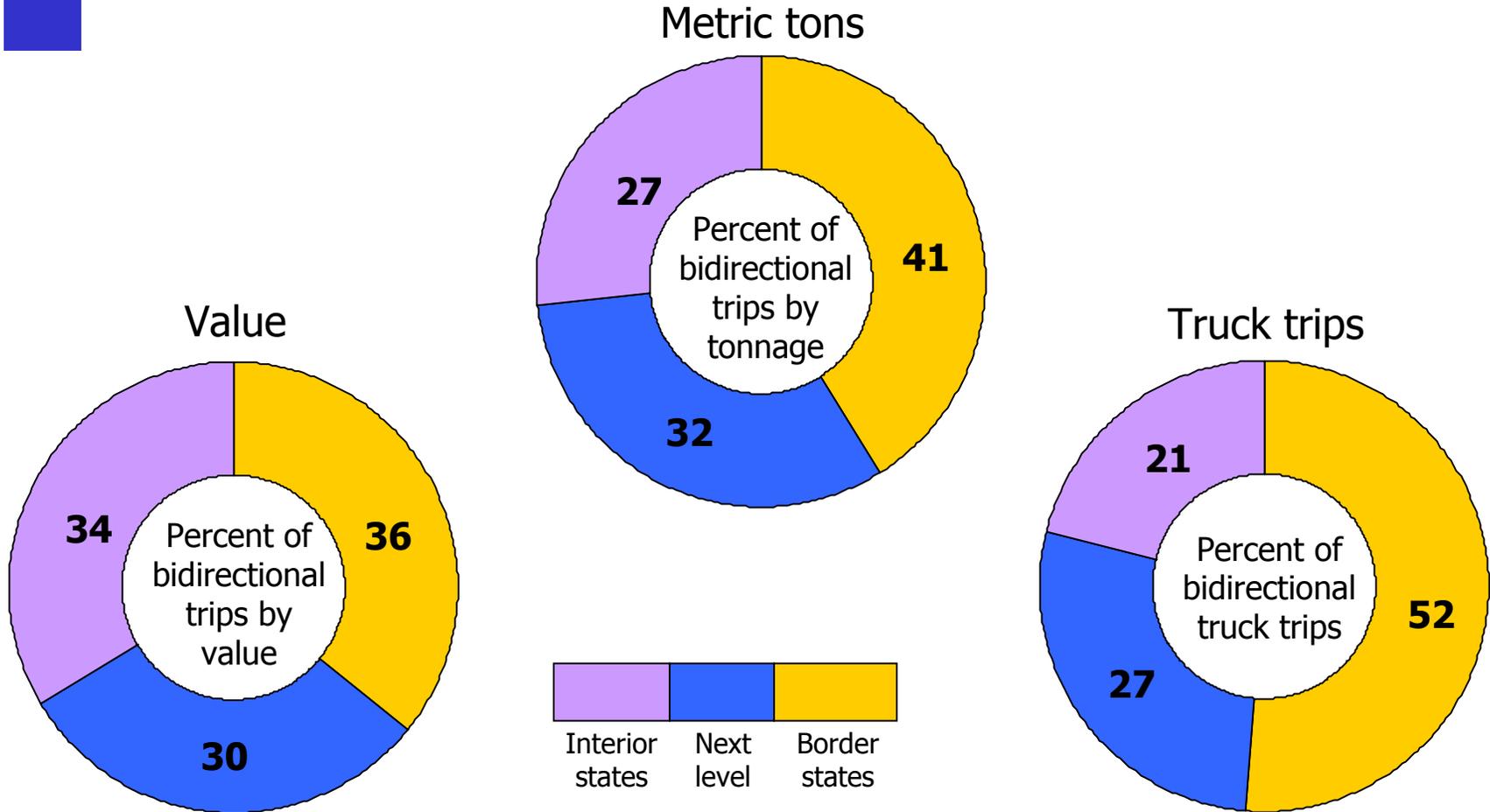


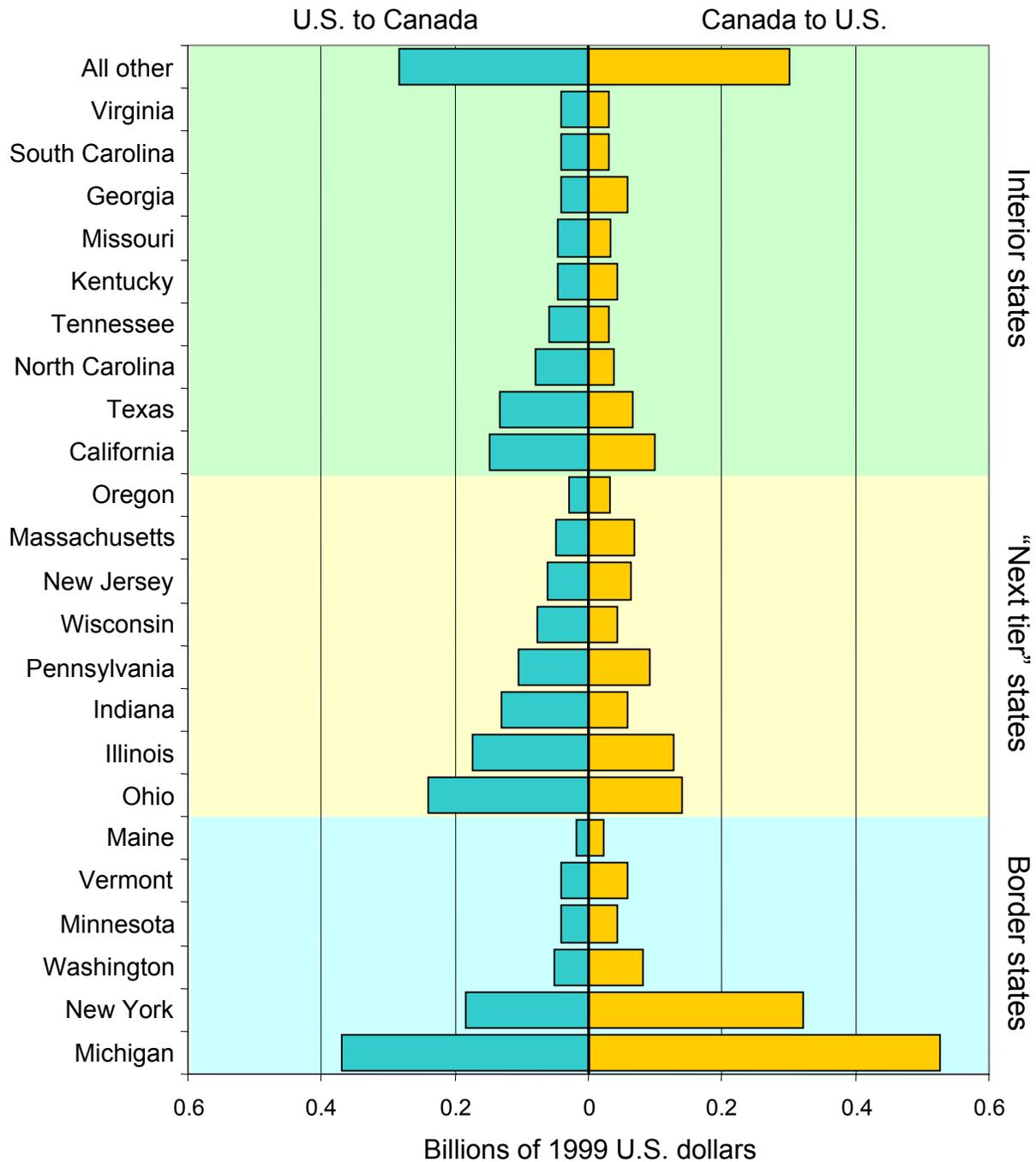
# Geographic distributions



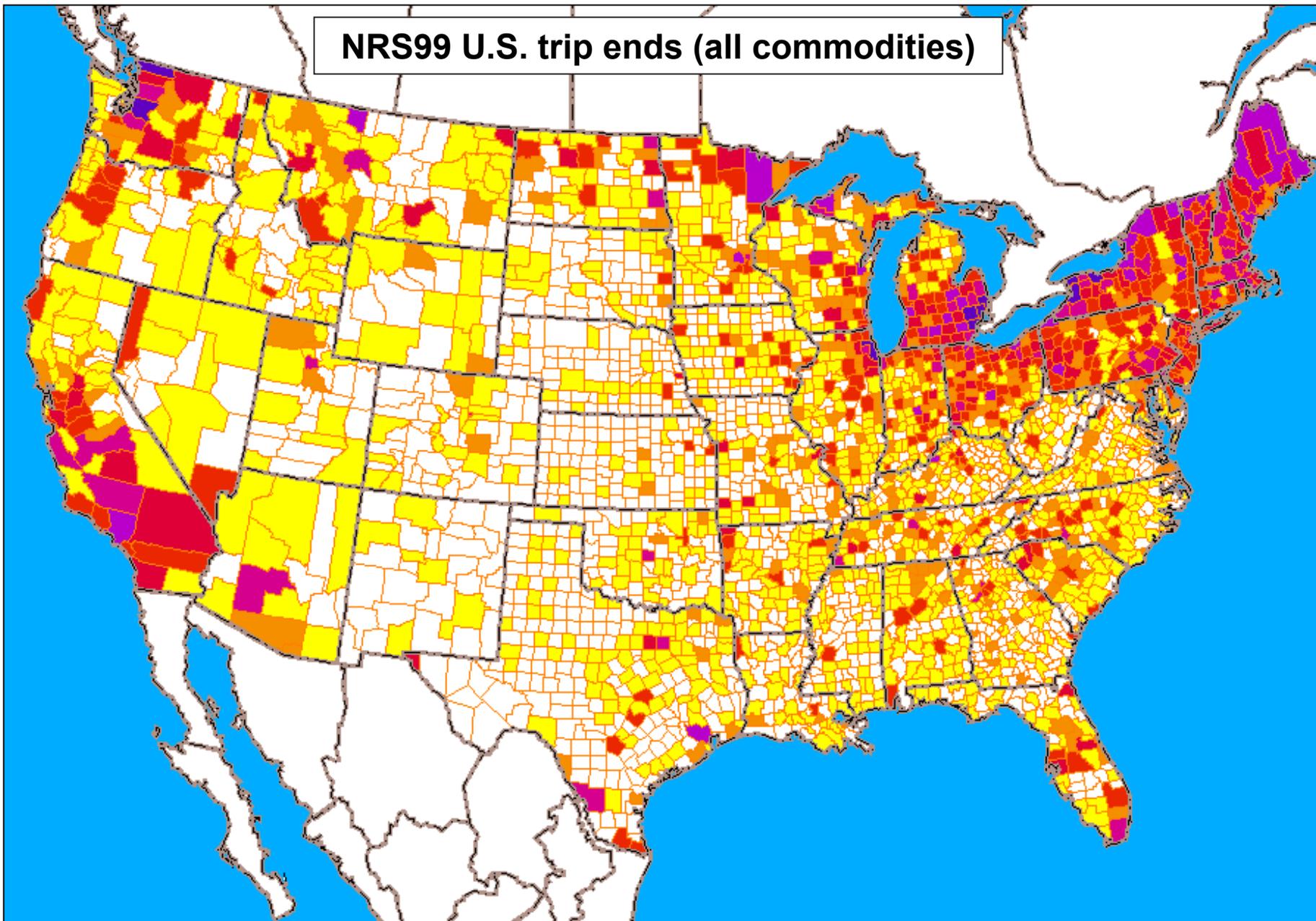
- Two-thirds of all trips go beyond border states
- Almost evenly split:
  - Border states
  - Adjacent to border states
  - Interior states
- Michigan and New York account for about one-third of all trips
- Ohio is third largest trading state
- Agricultural and energy imports from Western Canada not shown

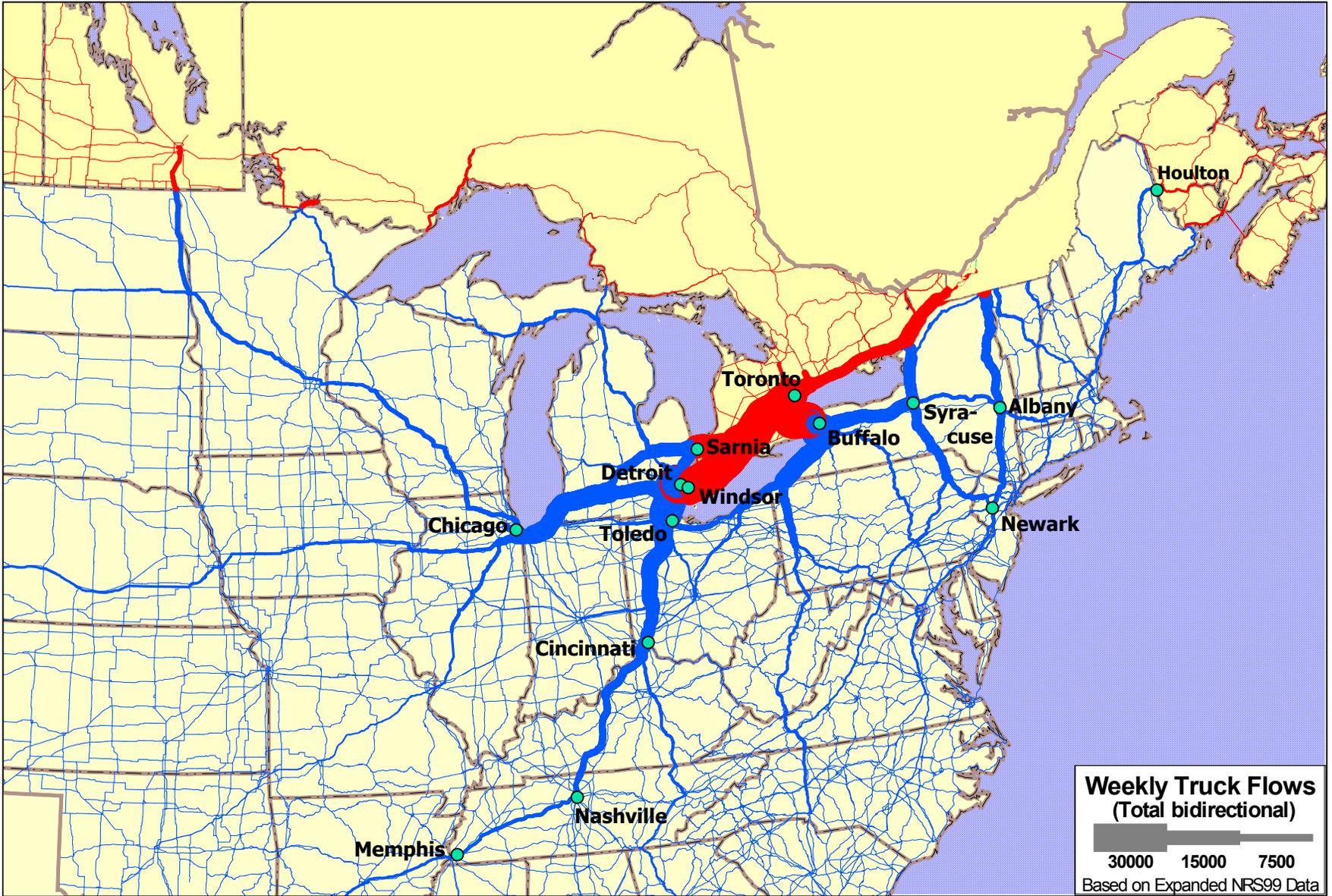
# Geographic Distributions

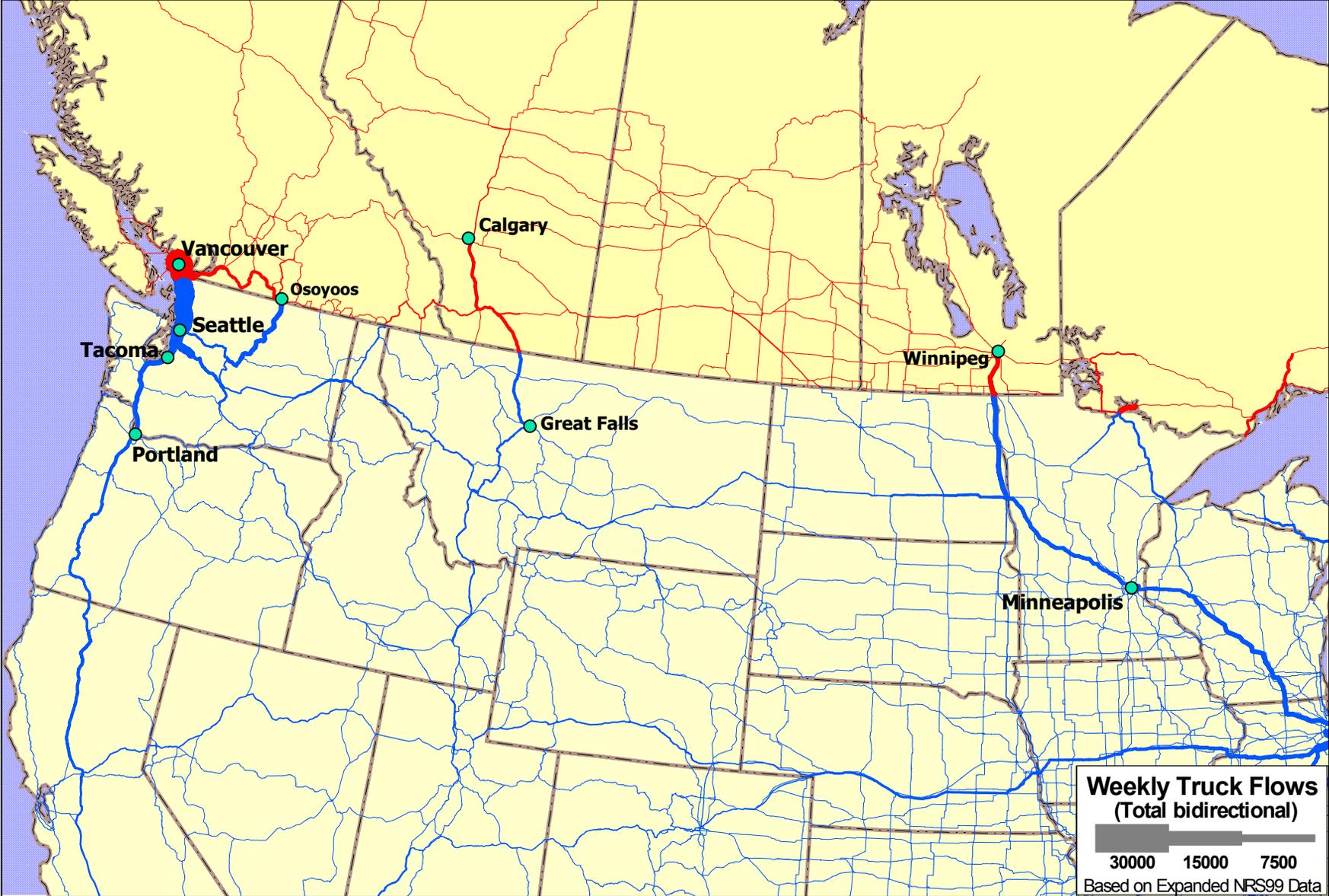




**NRS99 U.S. trip ends (all commodities)**



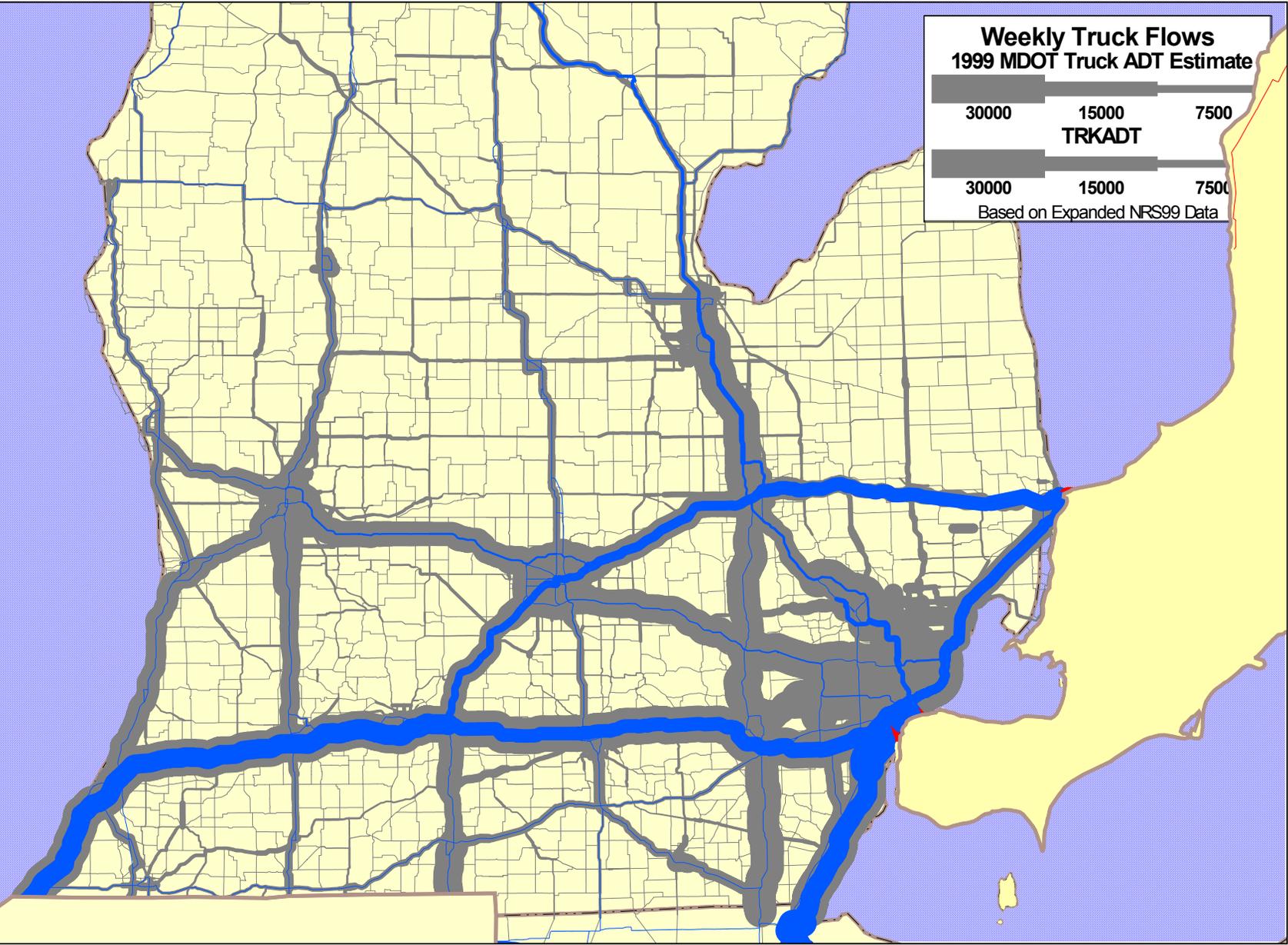




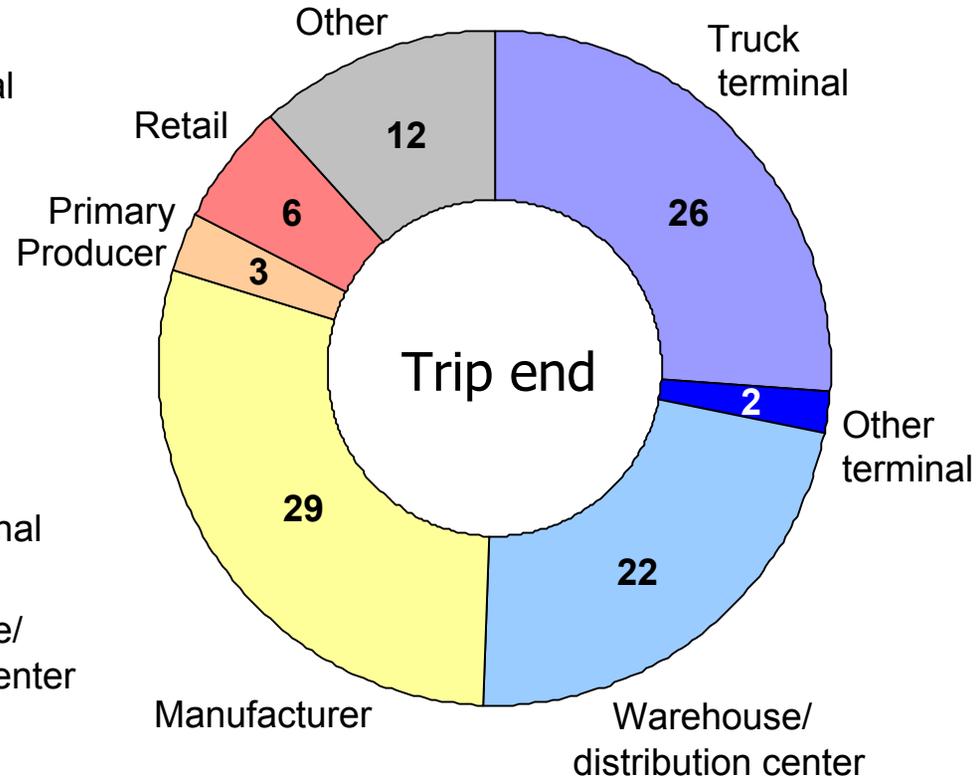
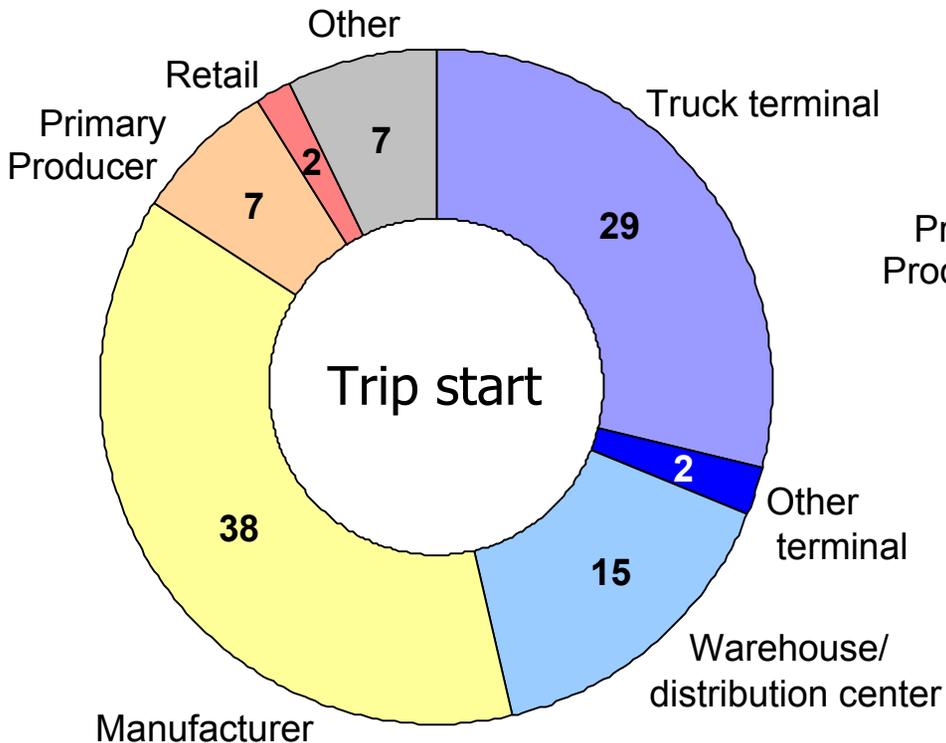
**Weekly Truck Flows**  
1999 MDOT Truck ADT Estimate

30000      15000      7500  
**TRKADT**

30000      15000      7500  
Based on Expanded NRS99 Data



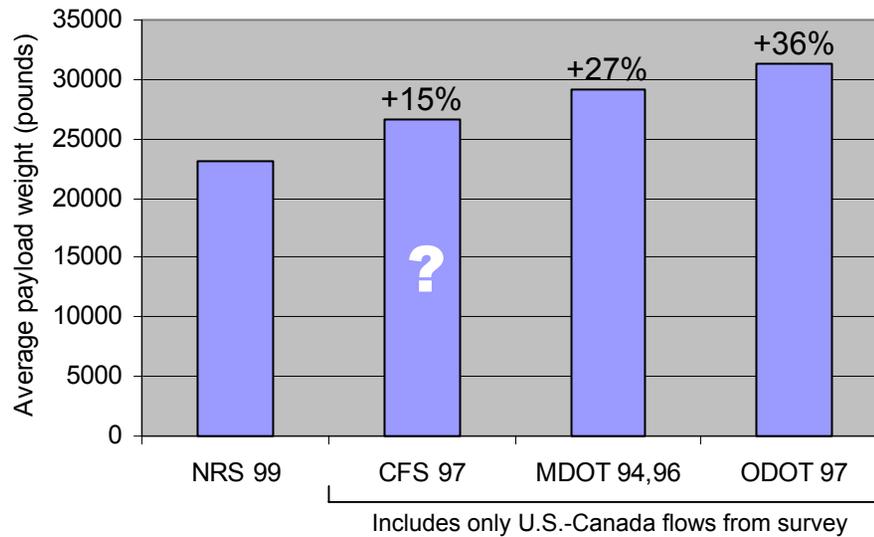
# Facility type at trip start and end

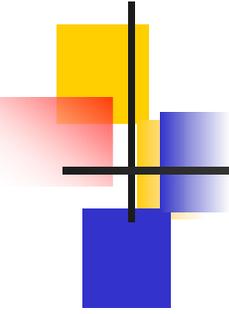


Values shown are percentages of weekly truck trips

# Average cargo weights

Tractor-trailer combinations

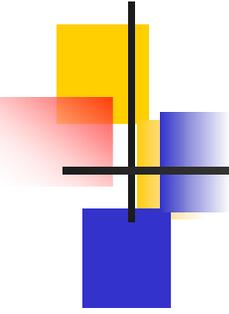




# Important Insights

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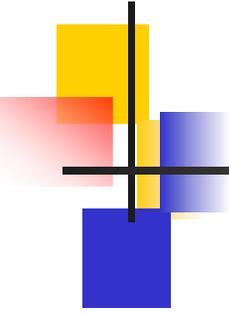
- Intercept surveys depict true logistical patterns better than foreign trade data
- Half of trucks but only a third of value bound to and from border states
  - Ohio and Pennsylvania next largest trip ends
  - Surprisingly small Texas contribution
- Many destinations are distribution hubs
  - Connect to intermodal domestic distribution system
  - Masks true ultimate commodity destination



# Important Insights (Continued)

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- Paradoxical patterns at major entry ports
  - Most crossings in Detroit destined for local area
  - Most crossings in Buffalo headed elsewhere
  - Reinforces the need for finer geographical detail
- No evidence of in-bond shipments between Canada and Mexico
  - Possible shift to other modes?
- Reliance on traditional trade statistics probably understates true value of trade



# Contact Information

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- Data and report availability:

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Executive Director, EBTC

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