

U.S.-Canada and U.S.-Mexico Border Crossing for Trucks: 20 Years After NAFTA



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Presentation Outline

- The Problem
- The Context
- NAFTA borders:
 - U.S.-Canada
 - U.S.-Mexico
- Security after 9/11
- Evidence of border delay costs
- Modeling institutional and security border frictions

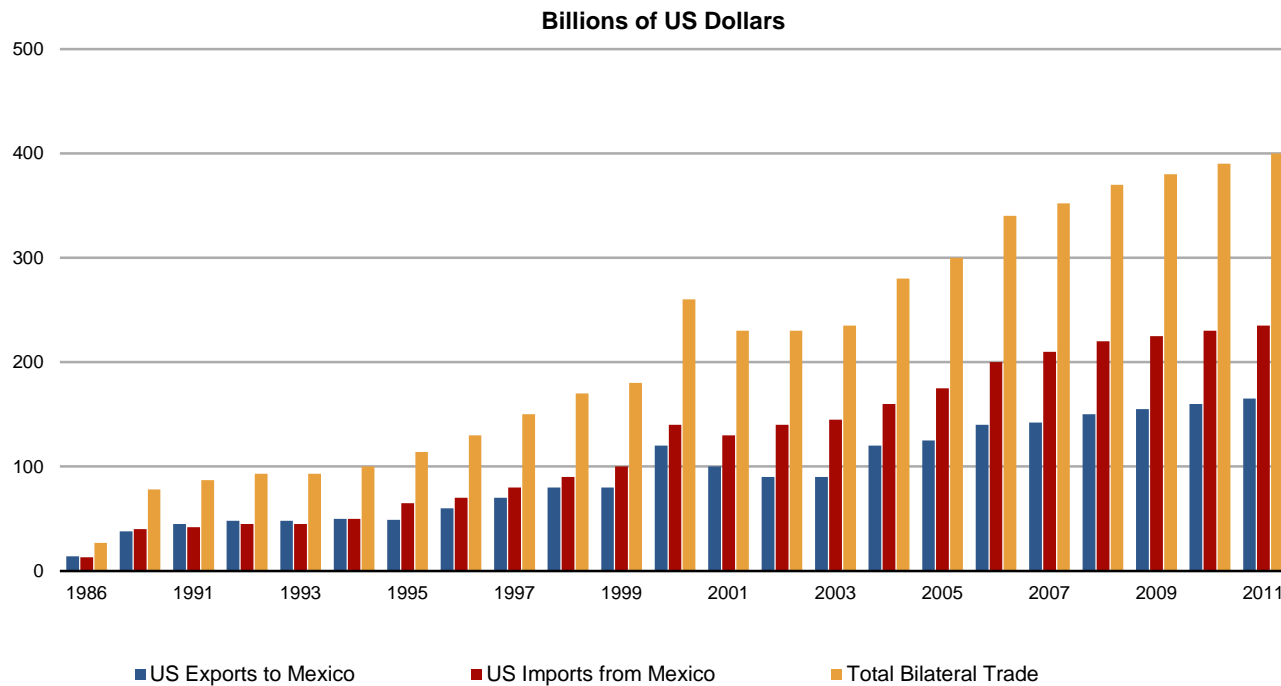
Practical Effects of Non Tariff Barriers



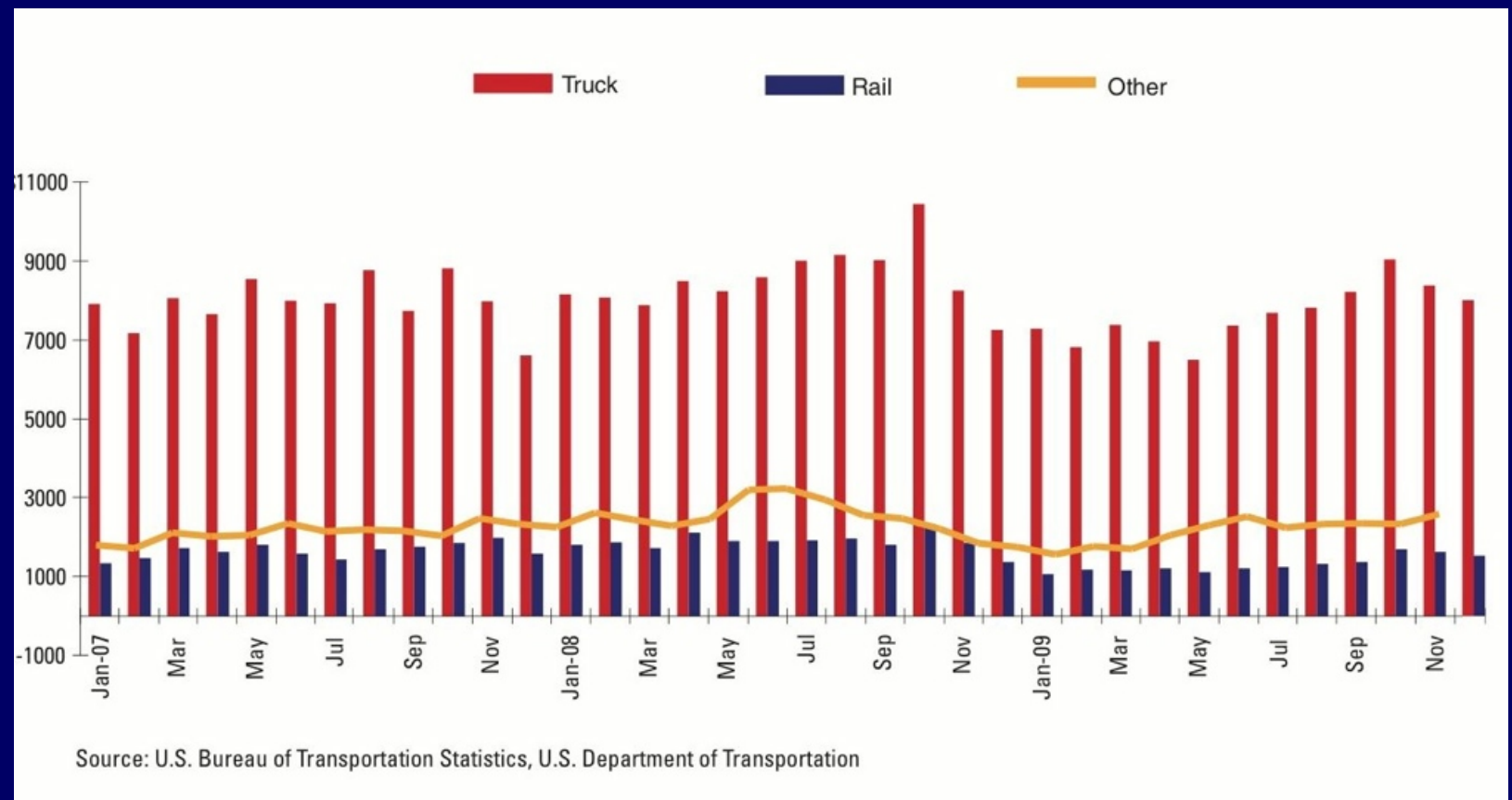
NAFTA



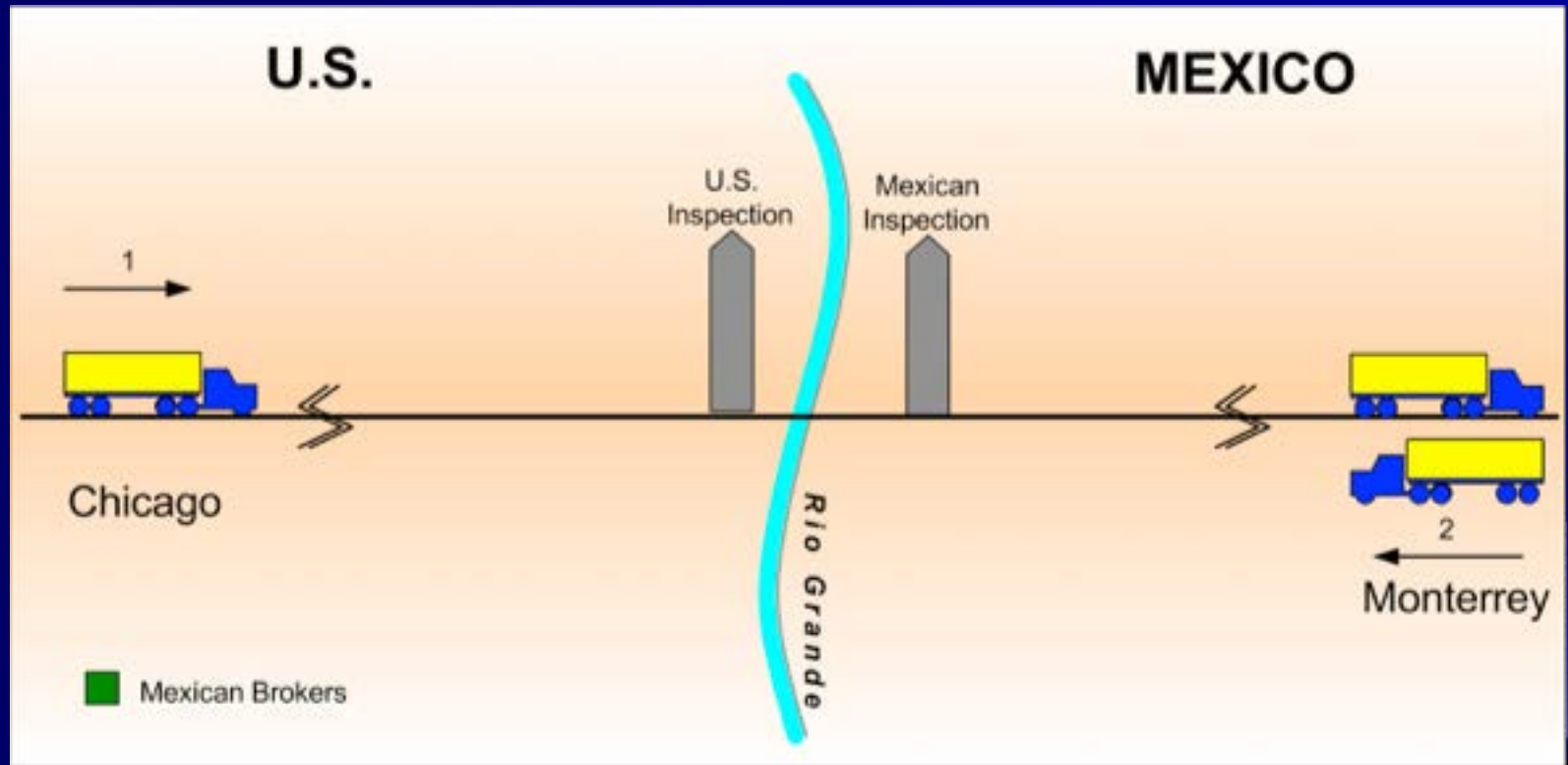
Bilateral Trade U.S.-Mexico



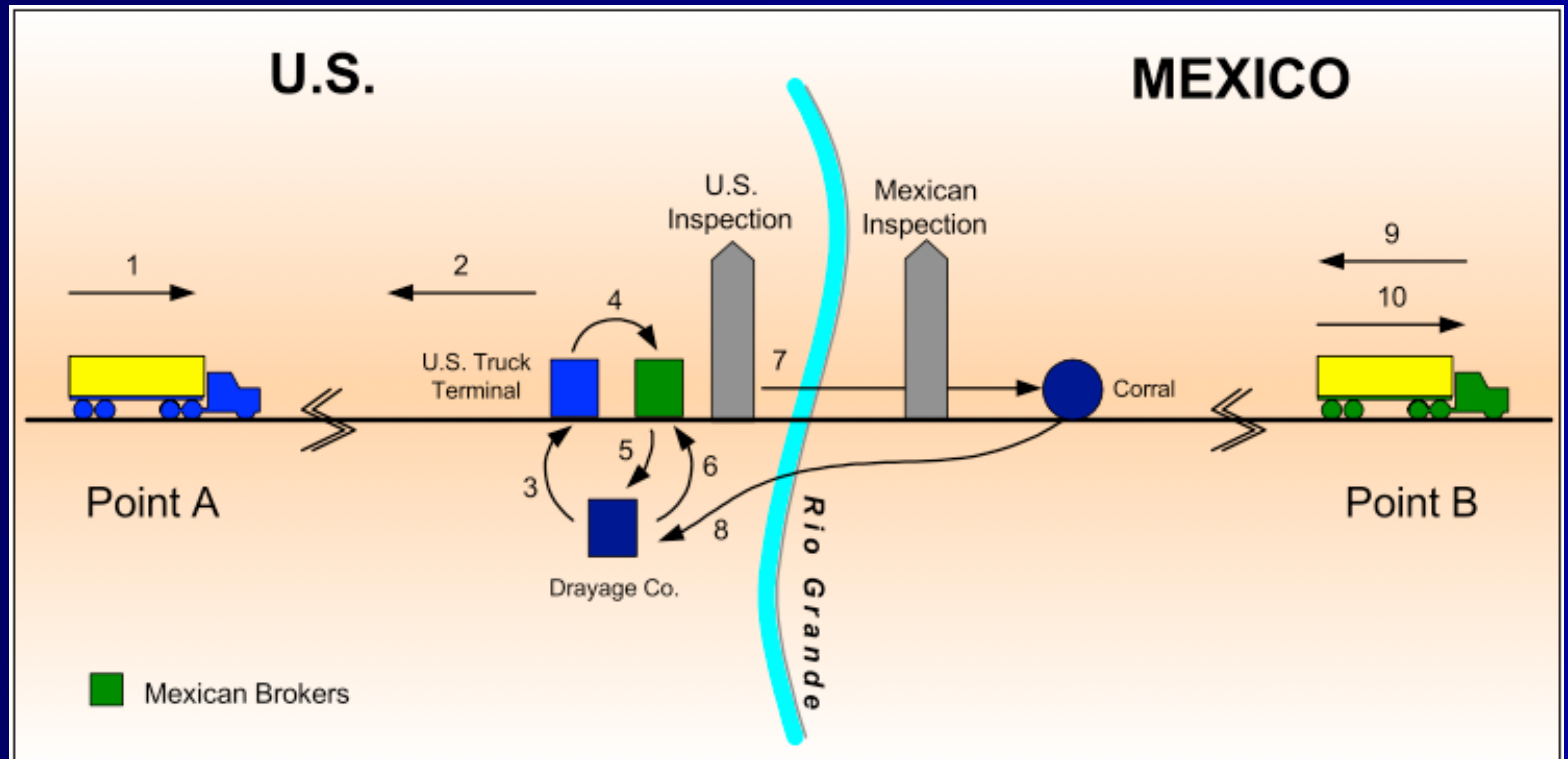
Surface Exports to Mexico 2007-2009 (Shipment Value in U.S. \$ Millions)



NAFTA Border Crossing



Current Situation



Trusted Traveler Shipper Programs

- Customs-Trade Partnership Against Terrorism (C-TPAT)
- FAST
- Global Entry

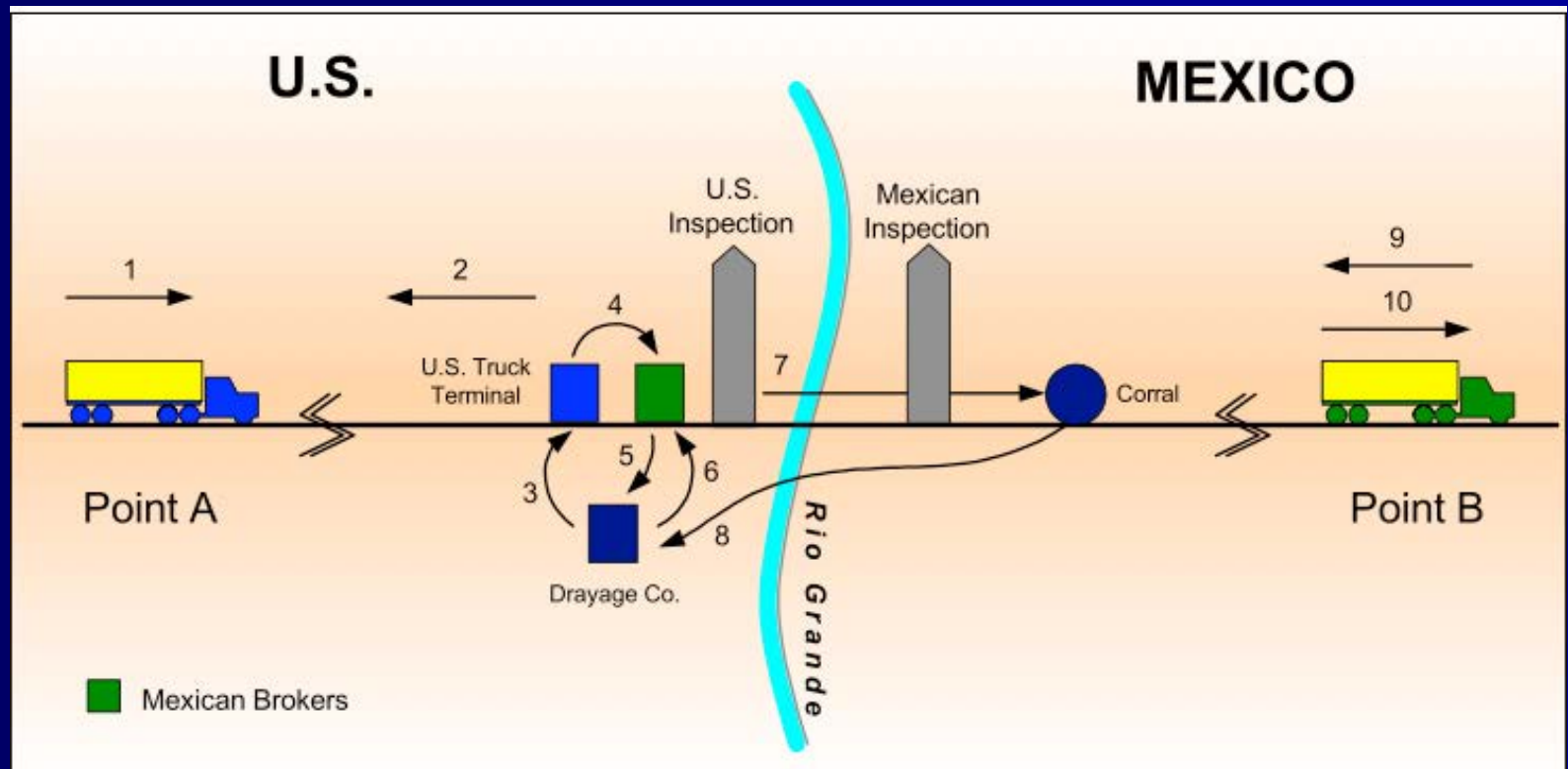
The U.S.-Canada Border

- Share language, cultural heritage, legal and political systems, economic development
- Trade agreements existed before NAFTA
- Before 9-11 events the U.S-Canada border was a good example of seamless BC
- Shipper cover by a bond or insurance
- After 9-11, evidence of border delays from 30 min to 4 h and 1-3 percent extra costs, Grady (2009) concluded the costs have been underestimated, as high as 26.8 for the high tech and 14,9 for the transport sectors.

The Context U.S. - Mexican Border



Current Situation Southbound



Laredo, Texas





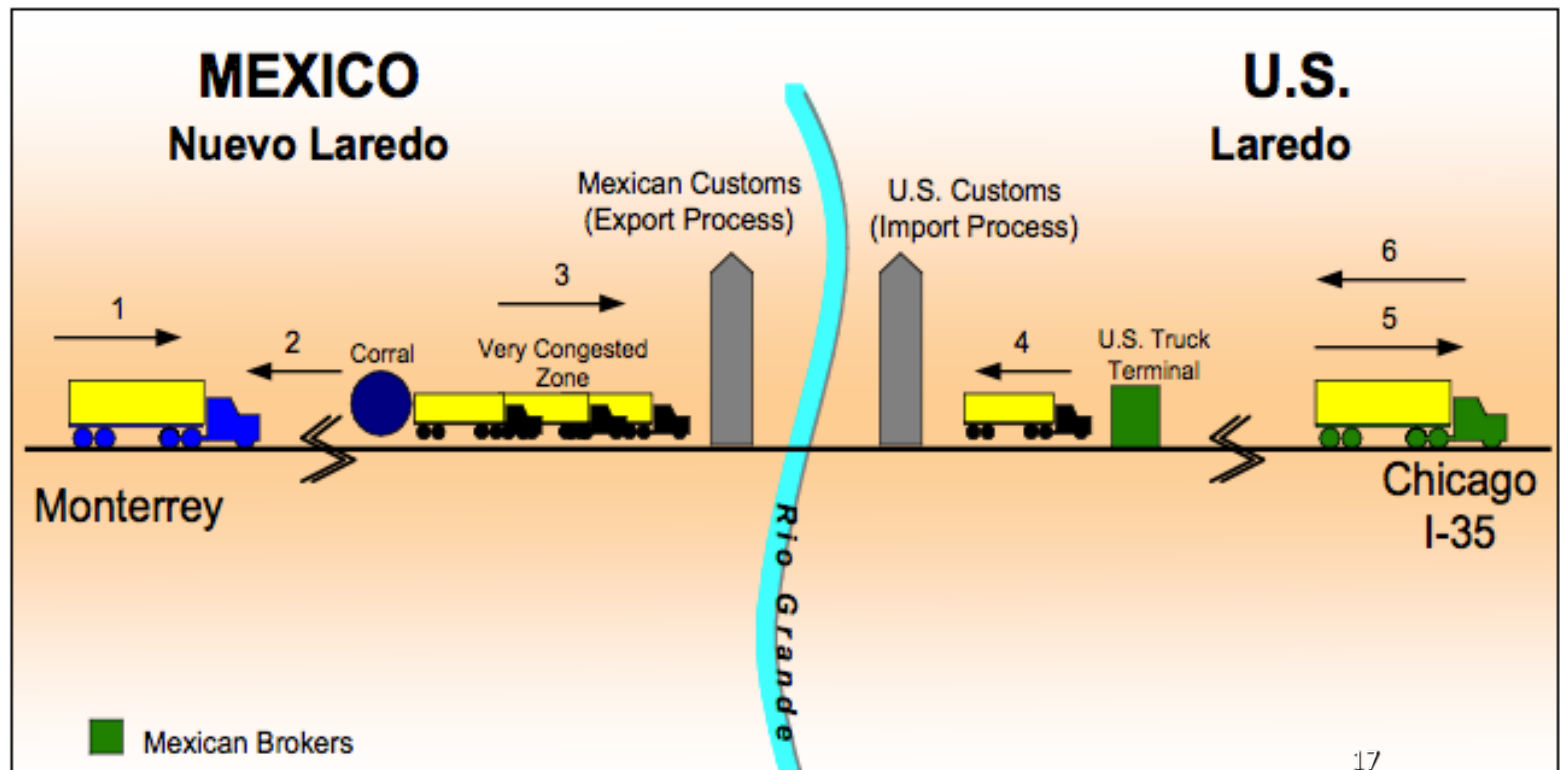
World Trade Bridge



Current Situation Northbound

Crossing Costs and Times

Source: Figure and Table by Haralambides, Londoño-Kent



Institutions that Benefit from Border Crossing Inefficiencies

- Mexican brokers
- The Laredo - Nuevo Laredo drayage industry
- U.S. banks that finance the construction of warehouses
- State and municipal governments on both sides who receive toll payments
- The Mexican states that receive a share of Customs tax collections
- The entire regional economy that provides jobs, goods and services

Geographic Distance vs. Economic Distance

- What drives economic distance?
 - Geographic distance (~\$1.33/mile)
 - Payments at the border (\$300—\$650 per truckload)
 - Delays at the border (2—5 days)
- Result: border frictions add thousands of miles of economic distance

Modeling Border Frictions

- Frictions induced by Mexican brokerage system
 - Time lost from overly-complicated system
 - Additional fees and costs
- Frictions induced by heightened security (both borders)
 - Time lost waiting to cross
 - Increased unpredictability → increased warehousing, move from just-in-time to just-in case.

Estimating the Costs of Border Security and Delays

- Walkenhorst and Dihel (2006)
 - Additional security measures treated as frictional costs reducing productivity of traded goods (but not services) by 1 percent on average (country/sector incidence varies between 0.5-1.6% across scenarios).
 - Global trade contracts by about 0.9 percent, annual welfare declines by \$75-77 billion.

Border Security and Delays between Canada and the United States

- Nguyen and Wigle (2011):
 - Canada-only regional model (SOE)
 - Costs imposed by increasing requirements for transportation and storage services
 - Scenarios:
 - 1 percent cost goods and services
 - 2 percent cost goods, 1, percent services
 - Delays cost Canada 1.0-1.8% of welfare, reduce international trade by 3.6-6.8%

Macroeconomic Effect of Border Crossing Inefficiencies

- GTAP model appropriate framework for analysis. Version 9 pre-release database is used for 2011 baseline.
- Micro effect of Laredo border inefficiencies apparently minimal: 1-2 percent money to brokers
- Time is a more important factor: Hummels and Schaur (2013) estimate that each day saved in shipping is worth 0.6-2% ad valorem, with substantial variation across end-use group. We use an estimate of 0.8% per day.

Measuring the Mexican broker effect

- Time lost at the border is a deadweight loss
- Costs of Mexican brokers treated as a tariff (tms) or export tax (txs) on Mexican trade
- Policy applied to sectors where trucking dominates

	<i>Variable shocked*</i>	
<i>Barrier</i>	<i>Southbound</i>	<i>Northbound</i>
Lost time	$\Delta \text{ams}(T, \text{US}, \text{Mex}) = +3\%$	$\Delta \text{ams}(T, \text{Mex}, \text{US}) = +0.25\%$
Brokerage frictions	$\Delta \text{tms}(T, \text{US}, \text{Mex}) = -2\%$	$\Delta \text{txs}(T, \text{Mex}, \text{US}) = -0.75\%$
<p>*<i>T</i> is the set of goods shipped predominantly by truck: pdr, wht, gro, v_f, osd, c_b, pfb, ocr, ctl, oap, rmk, wol, frs, fsh, cmt, omt, vol, mil, pcr, sgr, ofd, b_t, tex, wap, lea, lum, ppp, crp, fmp, mvh, otn, ele, ome, omf</p> <p>Excluded goods: coa, oil, gas, omn, p_c, nmm, i_s, nfm</p>		

Measuring the security effect

- Baseline security cost
 - Following Falkenhorst and Dihel (2006) and Nguyen and Wigle (2011), security costs represent a 1 percent ad valorem cost.
 - Applied to most goods and services trade among all NAFTA partners, excluding coal, oil, gas, electricity, and gas distribution (coa, oil, gas, ely, gdt).
- High security cost
 - Non-fossil-fuel goods barrier increased to 2 percent.
- Simulations measure the *removal* of these costs, consistent with an integrated North American security framework.

Welfare (million \$2011)

Sim	Description	USA	Mexico	Canada	Non-NAFTA	World
1	Broker effect, no security	2,764	4,513	-272	-2,310	4,695
2	Broker effect, baseline security	8,066	7,956	4,177	-5,663	14,537
3	Broker effect, high security	12,999	11,312	8,251	-8,837	23,725

Change in imports (percent)

Sim	Description	USA	Mexico	Canada
1	Broker effect, no security	0.2	0.6	-0.1
2	Broker effect, baseline security	0.5	1.6	1.0
3	Broker effect, high security	0.8	2.6	2.0

Results and Conclusions

- Mexican brokers cost Mexico \$4.5 billion, US \$2.8 billion (2011 dollars). 2003 study found \$1.8 billion and \$1.3 billion, respectively (1997 dollars).
- Security frictions can be costly. We estimate NAFTA-wide cost \$13 billion - \$25 billion per year, excluding direct security costs.
- Reducing border frictions promotes leaner inventory management, better utilization of transport equipment, savings in capital investment, infrastructure, maintenance, and reductions in border pollution.