

How Texas Benefits from Trade with Mexico

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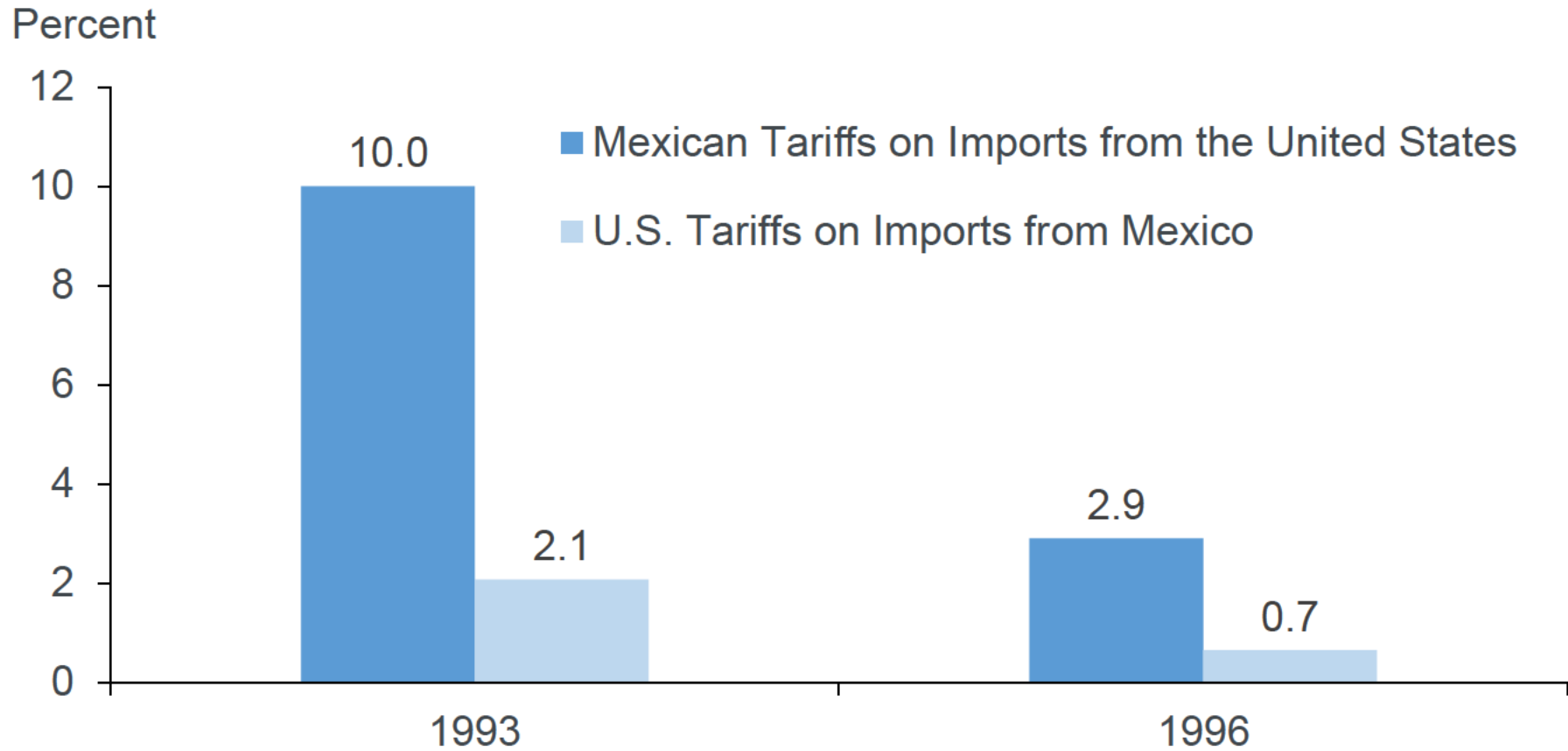
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The views expressed in this presentation
are strictly those of the author.

Outline

- Brief NAFTA recap
- US-Mexico manufacturing integration
- Texas exports after NAFTA
- How Texas benefits from trade
 - Lessons from the Texas border
- Challenges
- Conclusion

Average tariffs fell most in Mexico following NAFTA



SOURCE: Executive Office of the President, Study on the Operation and Effects of the North American Free Trade Agreement, July 1997, p. 7.

A Historic Agreement

- Canada and U.S. already had an agreement
 - Adding Mexico broke the mold
- NAFTA's stated objectives
 - Eliminate barriers to trade & investment
 - *Remove tariffs and non-tariff barriers*
 - *Facilitate cross border movement*
 - *Resolve disputes*

U.S. trade with NAFTA partners more than doubled since 1993

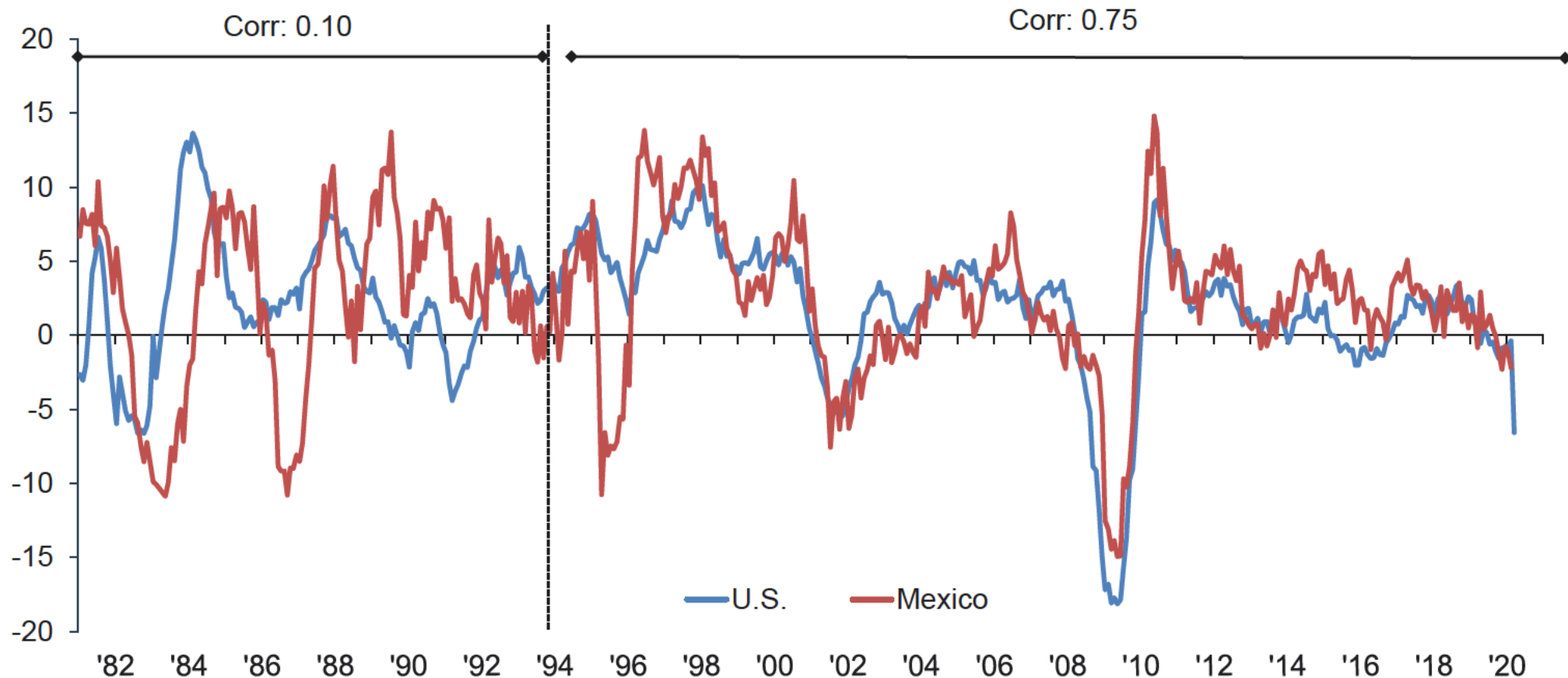
	1993	2021	
Exports	Billions of Real Dollars		% Change
Canada	\$144.6	\$307.6	112.8
Mexico	\$59.8	\$276.5	362.0
Imports			
Canada	\$156.6	\$357.2	128.0
Mexico	\$56.2	\$384.7	584.4
Total			
Canada	\$301.2	\$664.8	120.7
Mexico	\$116.1	\$661.2	469.7

NOTE: Data are given in billions of 2021 U.S. dollars.

SOURCES: U.S. Census Bureau, Bureau of Labor Statistics.

U.S. and Mexico business cycle synchronicity grows post-NAFTA

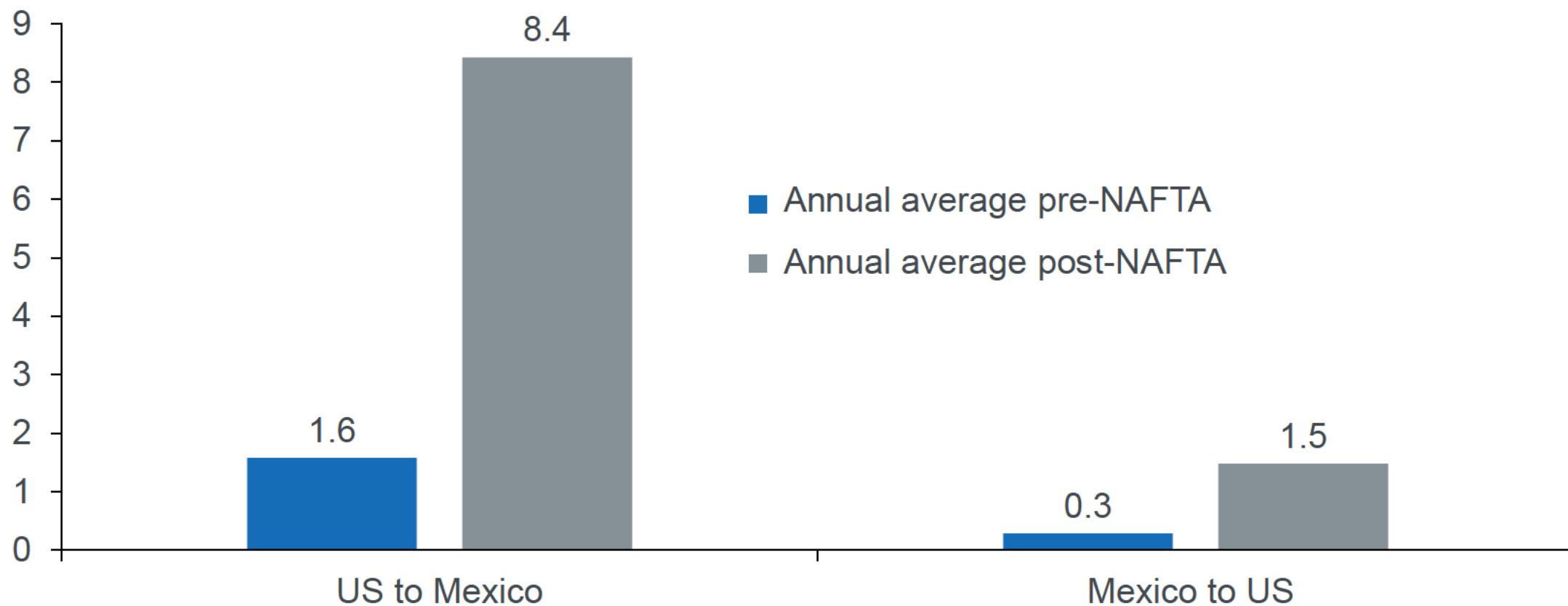
Percent, Y/Y



NOTE: Monthly changes in manufacturing component of industrial production.
SOURCES: INEGI; Federal Reserve Board.

Foreign direct investment higher after NAFTA

Billions, real 2016 \$



NOTES: Pre-NAFTA U.S. to Mexico represents years 1982-1993; Pre-NAFTA Mexico to U.S. represents years 1987-1993. Post-NAFTA represents years 1994-2018.

SOURCE: Bureau of Economic Analysis.

Aggregate effects of NAFTA tariff reductions

Country	Volume of Trade	Terms of Trade	Real Wages
Mexico	++	-	++
Canada	+	-	+
United States	+	+	+

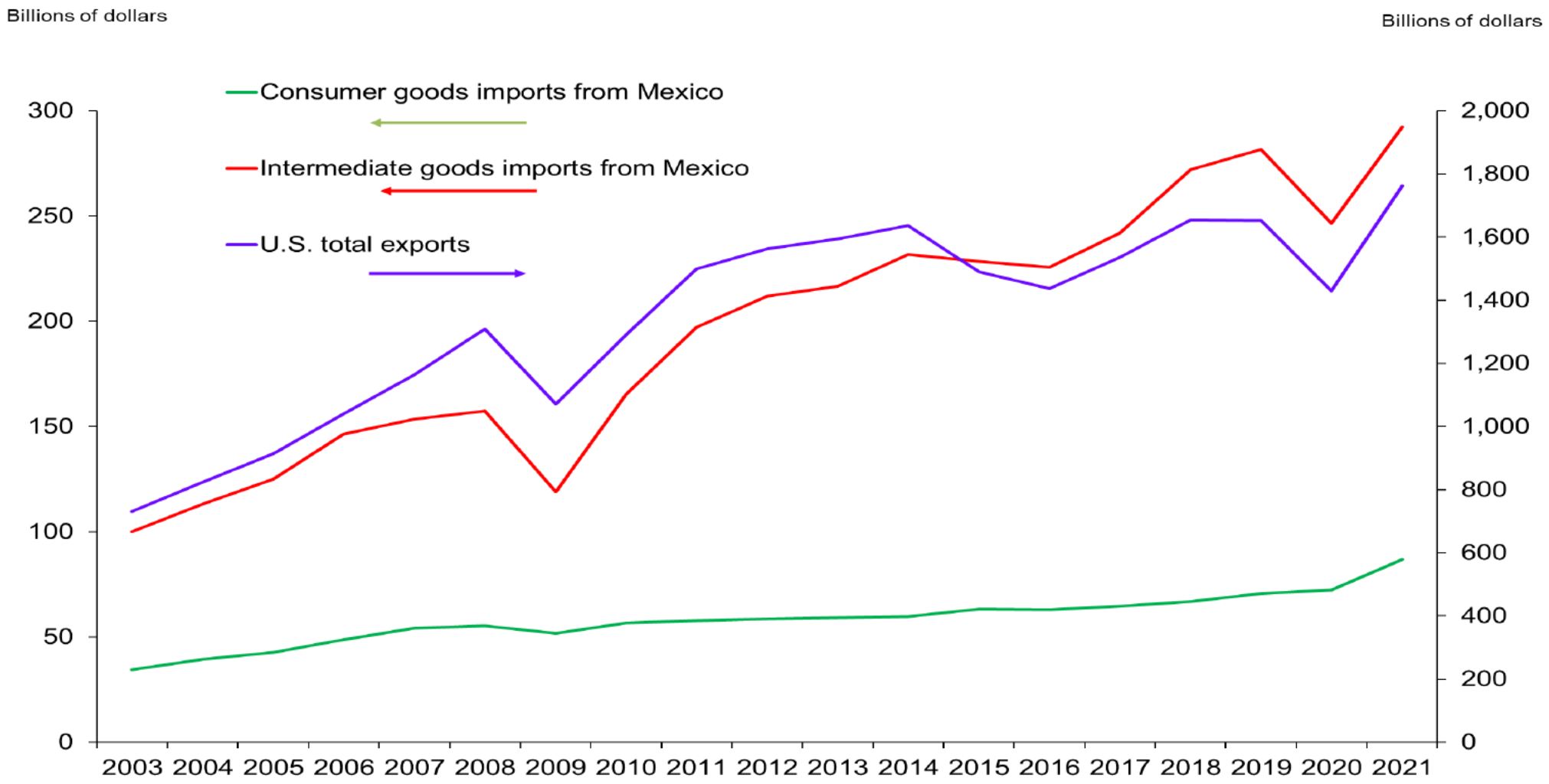
SOURCE: Lorenzo Caliendo and Fernando Parro, "Estimates of the Trade and Welfare Effects of NAFTA," NBER working paper No. 18508, 2012.

Aggregate gains mask winners, losers

- Recent research identifies losers from trade
 - Manufacturing workers, whose industries have been most affected by Mexican imports—including along the border—experienced substantially lower wage growth than their counterparts in other industries
 - Limitations on the mobility of workers both geographically and across industries appear to be very important

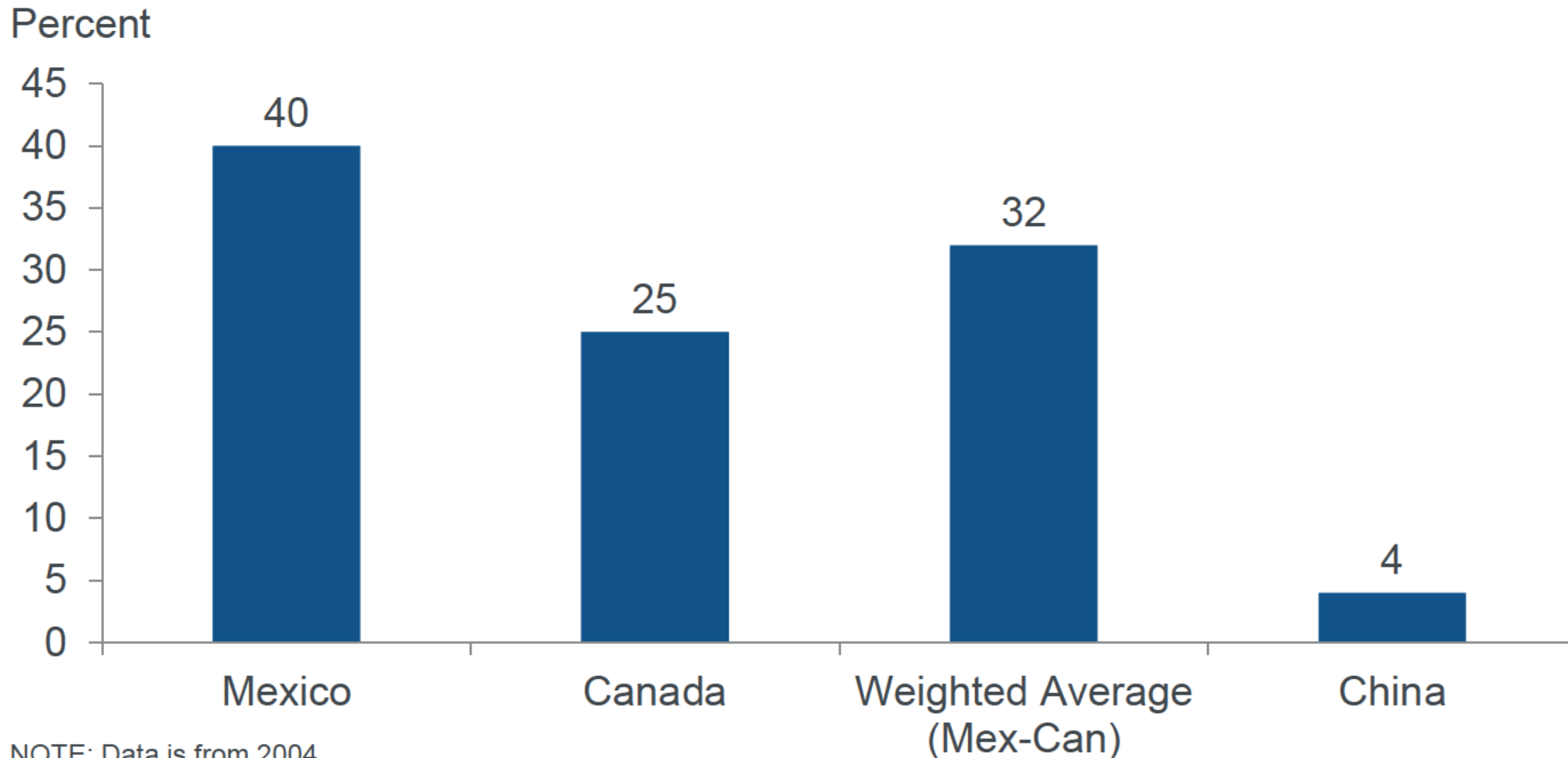
SOURCE: “Looking for Local Labor Market Effects of NAFTA,” by John McLaren and Hakobyan Shushanik, *Review of Economics and Statistics*, vol. 98, no. 4, October 2016.

U.S. Exports Highly Correlated with Intermediate Imports from Mexico



SOURCES: Bureau of Economic Analysis and Haver Analytics.

Intra-industry trade high within NAFTA: U.S. content highest in imports from Mexico, Canada



NOTE: Data is from 2004.

SOURCE: Robert Koopman, William Powers, Zhi Wang, and Shang-Jin Wei, "Give Credit Where Credit is Due," NBER Working Paper No. 16426, 2011.

Cross-border manufacturing has been able to mitigate some of the impact of economic shocks

- China's entry to the World Trade Organization in 2002
- Great Recession

SOURCE: "Offshoring and Volatility: Evidence from Mexico's Maquiladora Industry," by Paul R. Bergin, Robert C. Feenstra, and Gordon H. Hanson, *American Economic Review*, vol. 99, no. 4, 2009, pp. 1664–71.

U.S.–Mexico integrated processes help reduce volatility in U.S. manufacturing

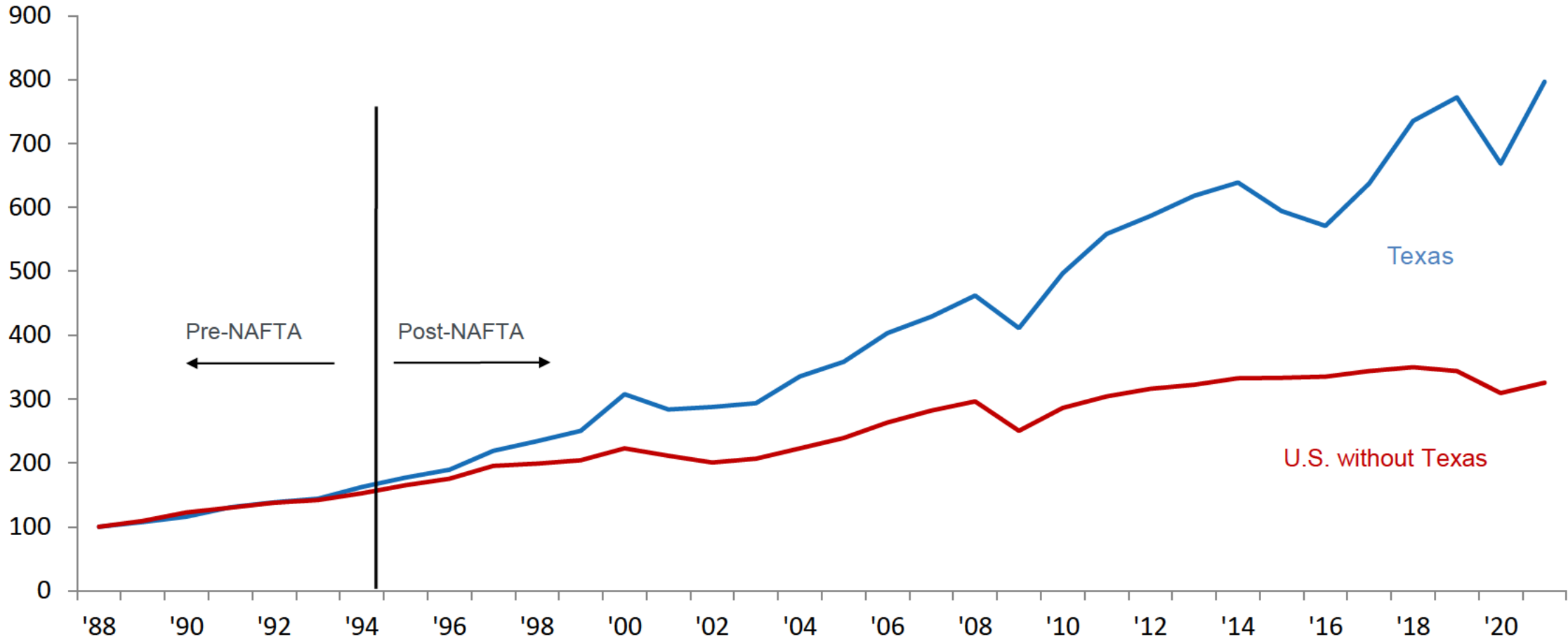


NOTES: Mexico's employment combines maquiladora and IMMEX. Shading indicates U.S. recessions.
SOURCES: Bureau of Labor Statistics; INEGI; NBER.

Texas Exports in the NAFTA Era

Texas exports grow faster in post-NAFTA period

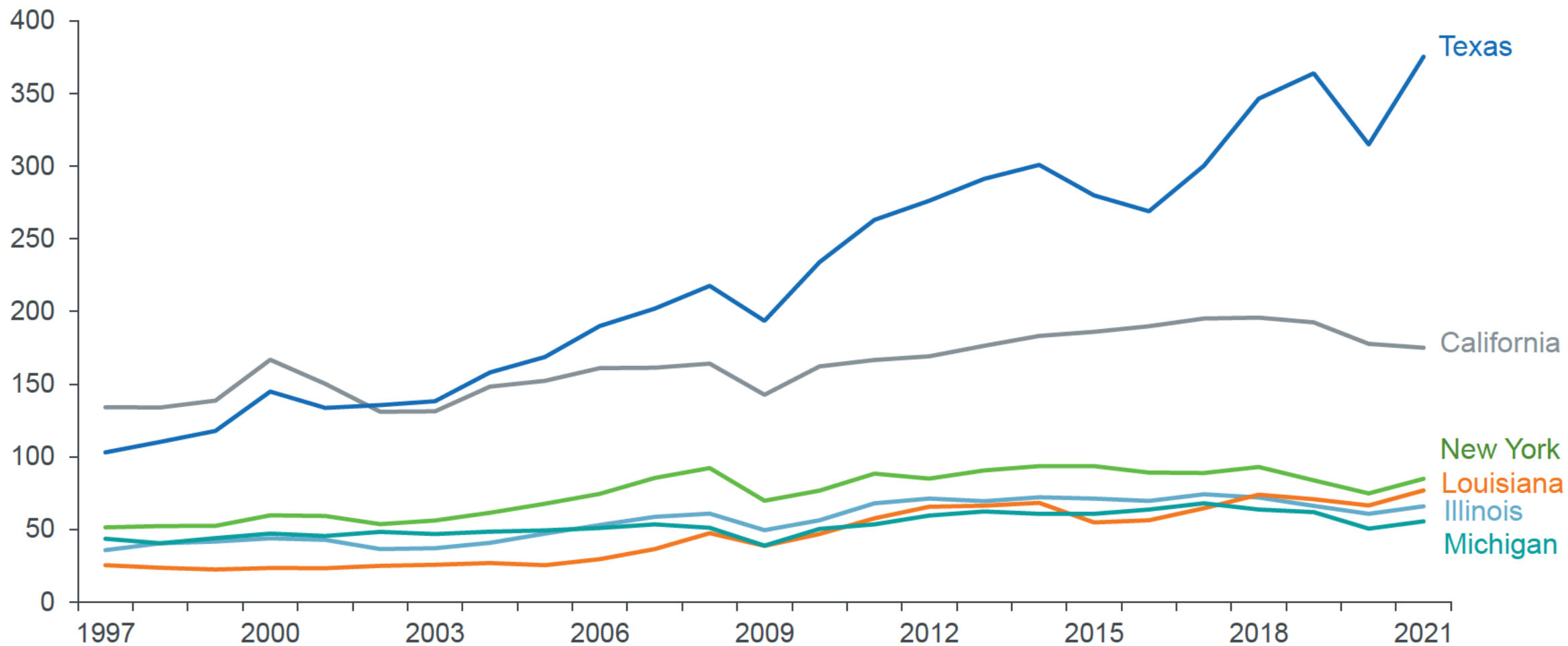
Index, 1988 = 100; real values



SOURCES: WISERTrade; Census Bureau.

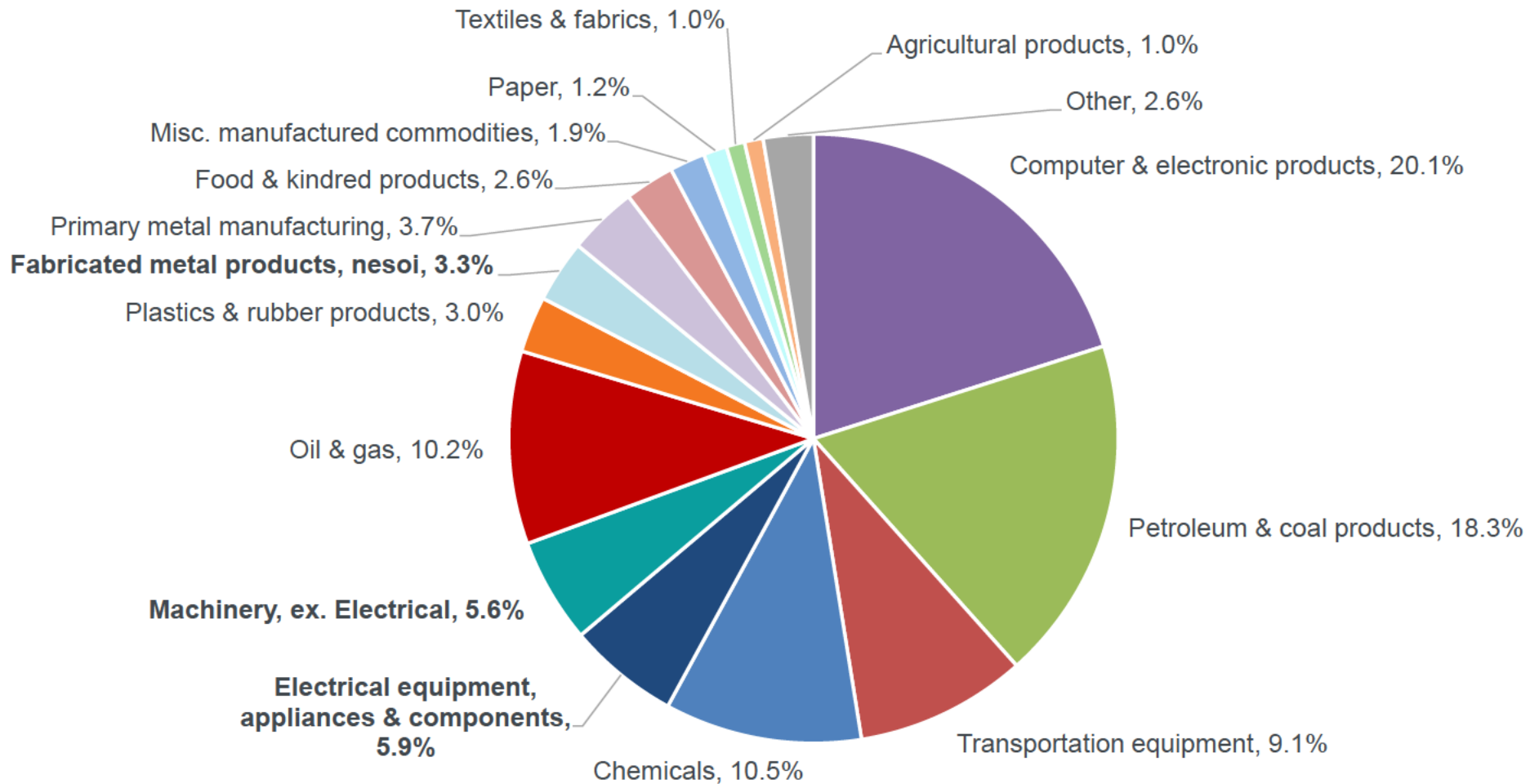
Texas becomes top exporter in 2002

Billions of real 2021\$



SOURCES: U.S. Census Bureau; WISERTrade; Bureau of Labor Statistics.

Texas exports to Mexico



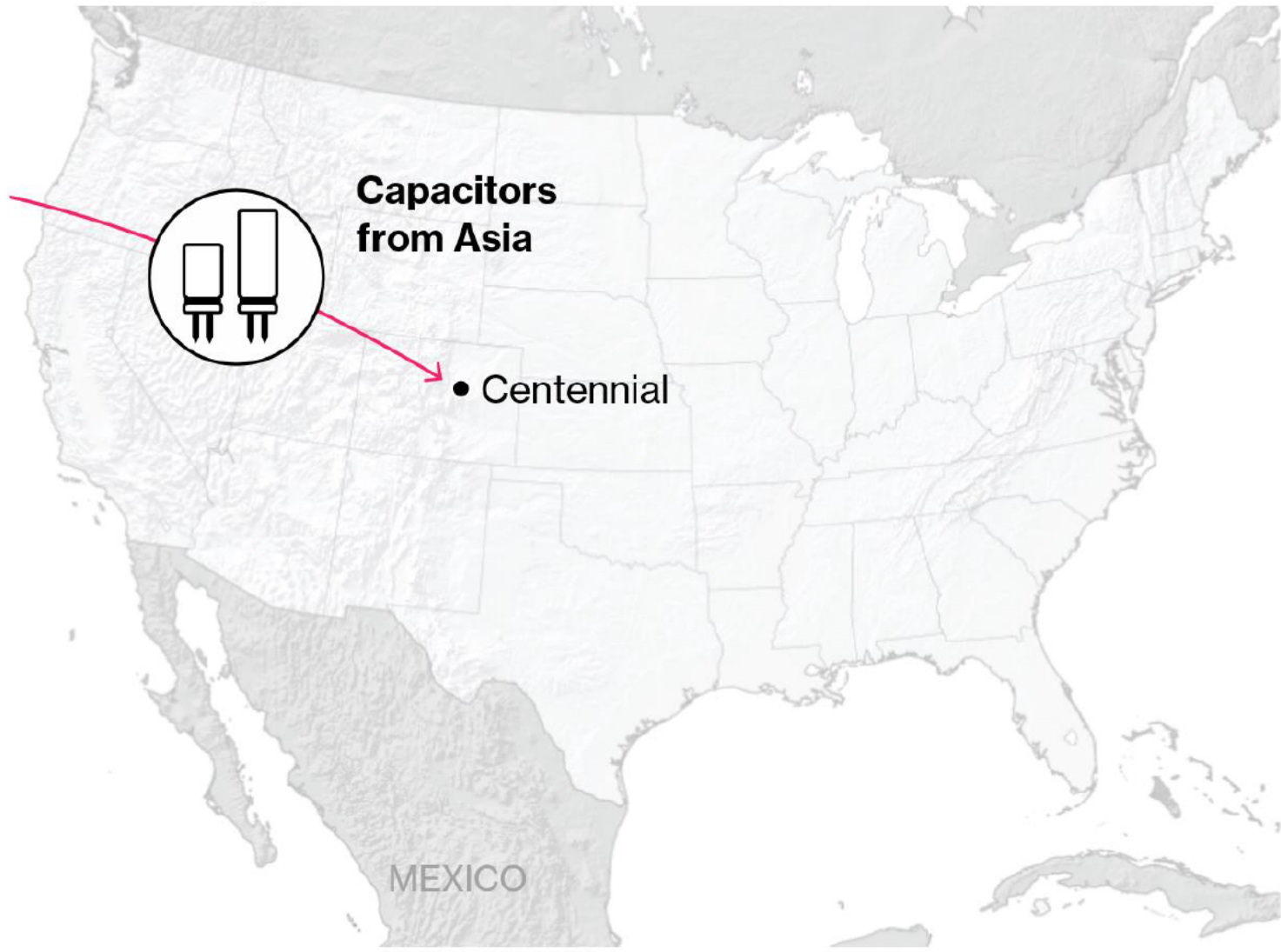
NOTE: Data refer to 2021 exports. All categories are 3-digit NAICS codes.
SOURCES: U.S. Census Bureau; Bureau of Labor Statistics.

Texas Border Cities On the Front Line of Trade

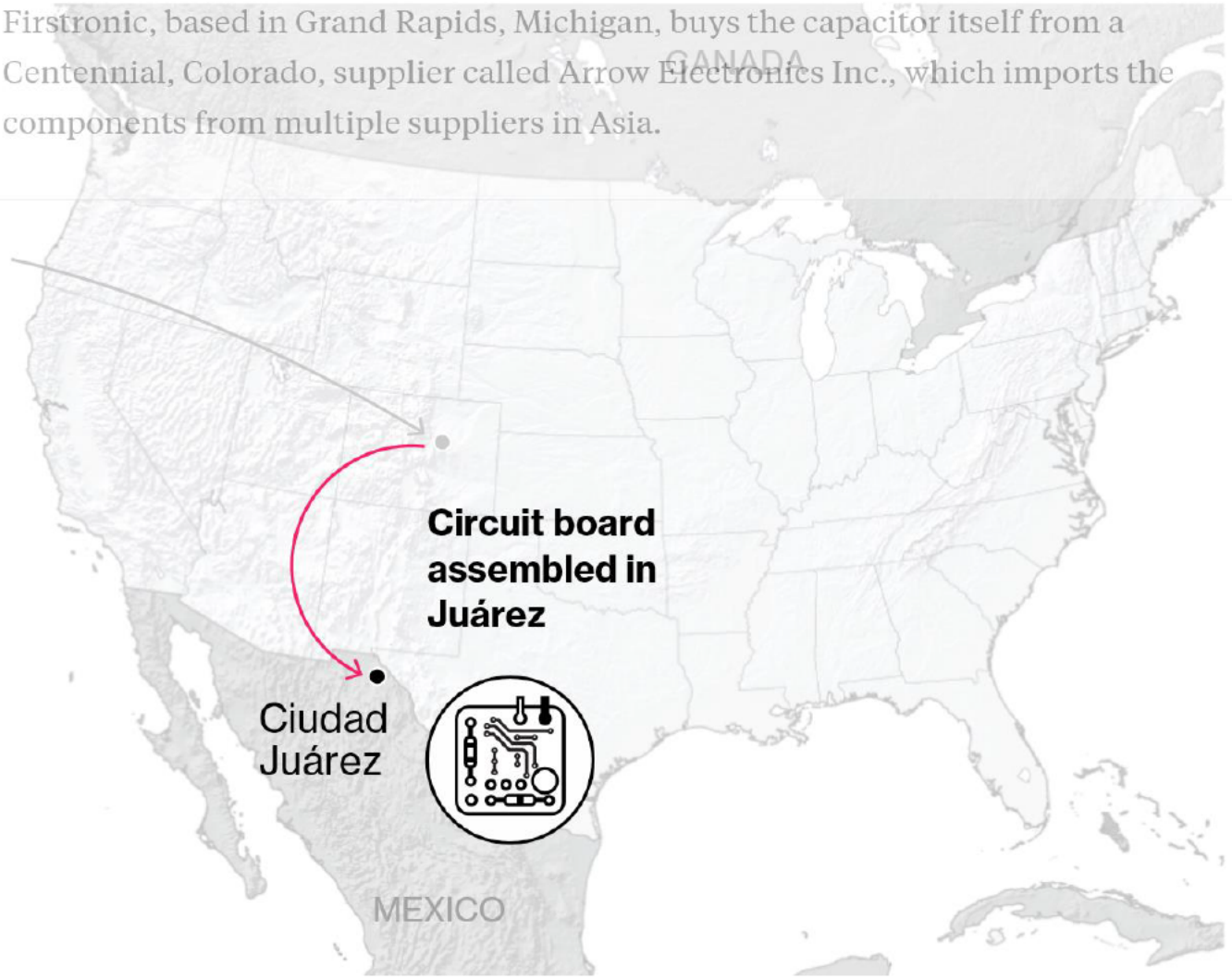
One Tiny Widget's Dizzying Journey Through the U.S., Mexico and Canada

By Thomas Black, Jeremy Scott Diamond and Dave Merrill

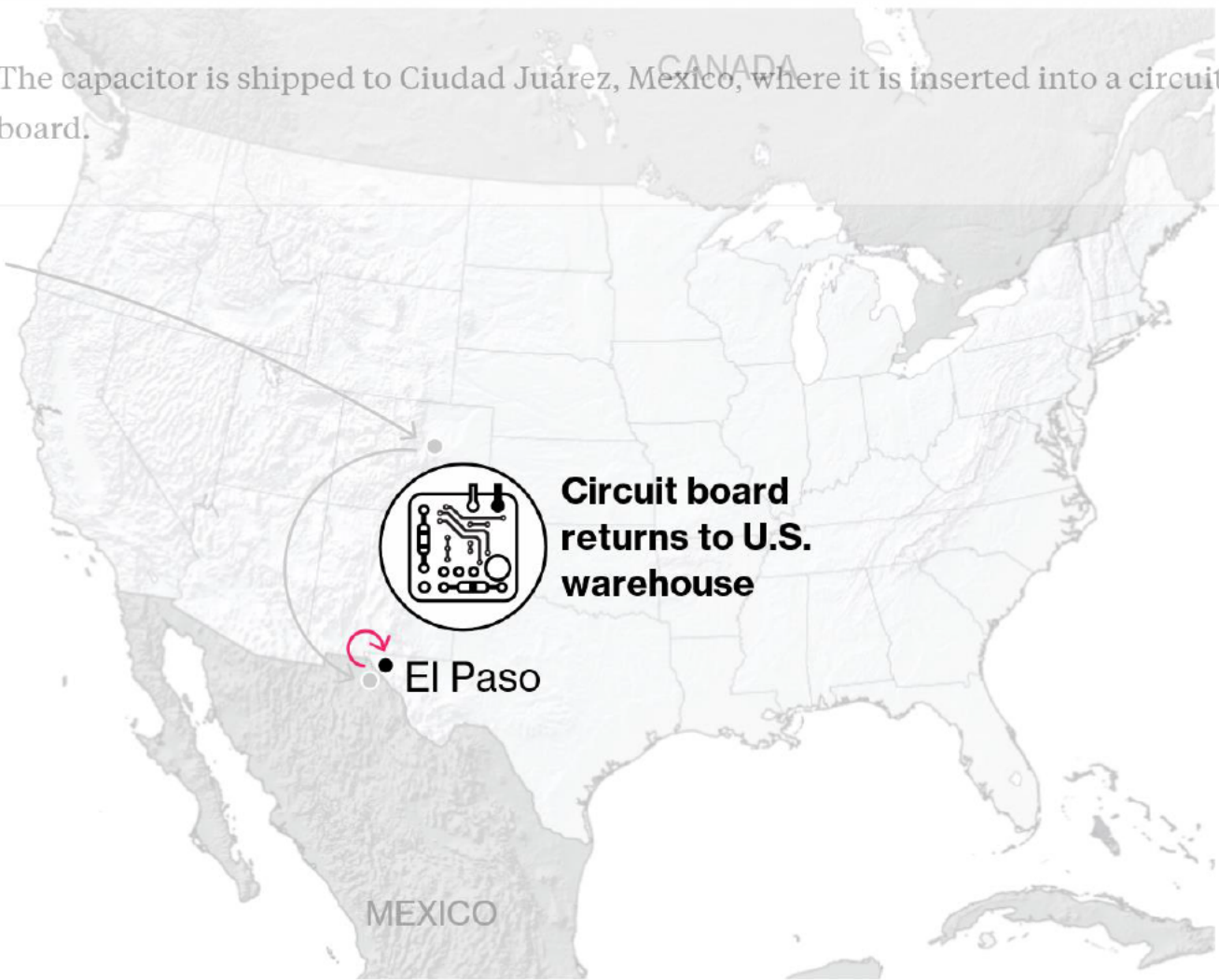
February 2, 2017



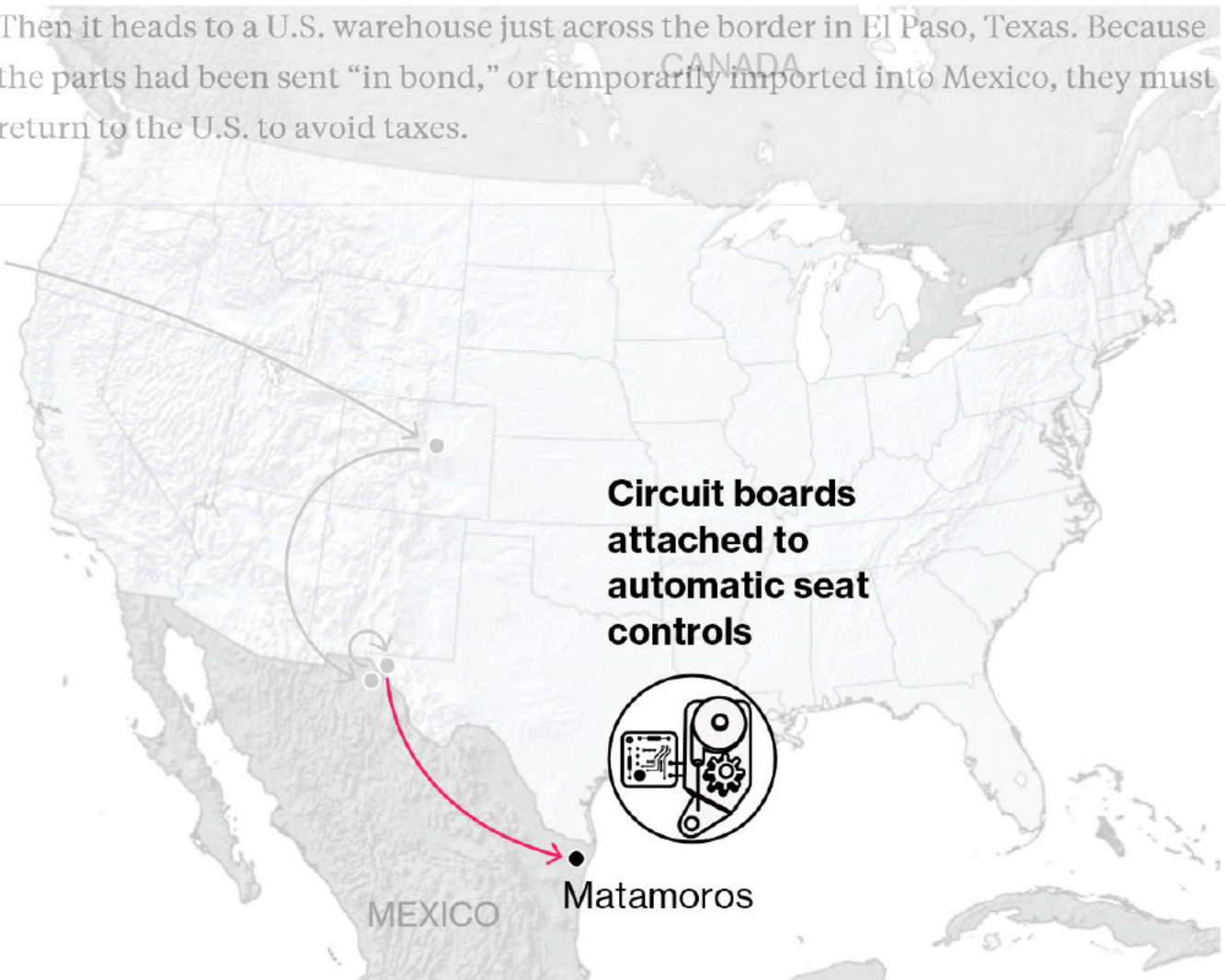
Firsttronic, based in Grand Rapids, Michigan, buys the capacitor itself from a Centennial, Colorado, supplier called Arrow Electronics Inc., which imports the components from multiple suppliers in Asia.



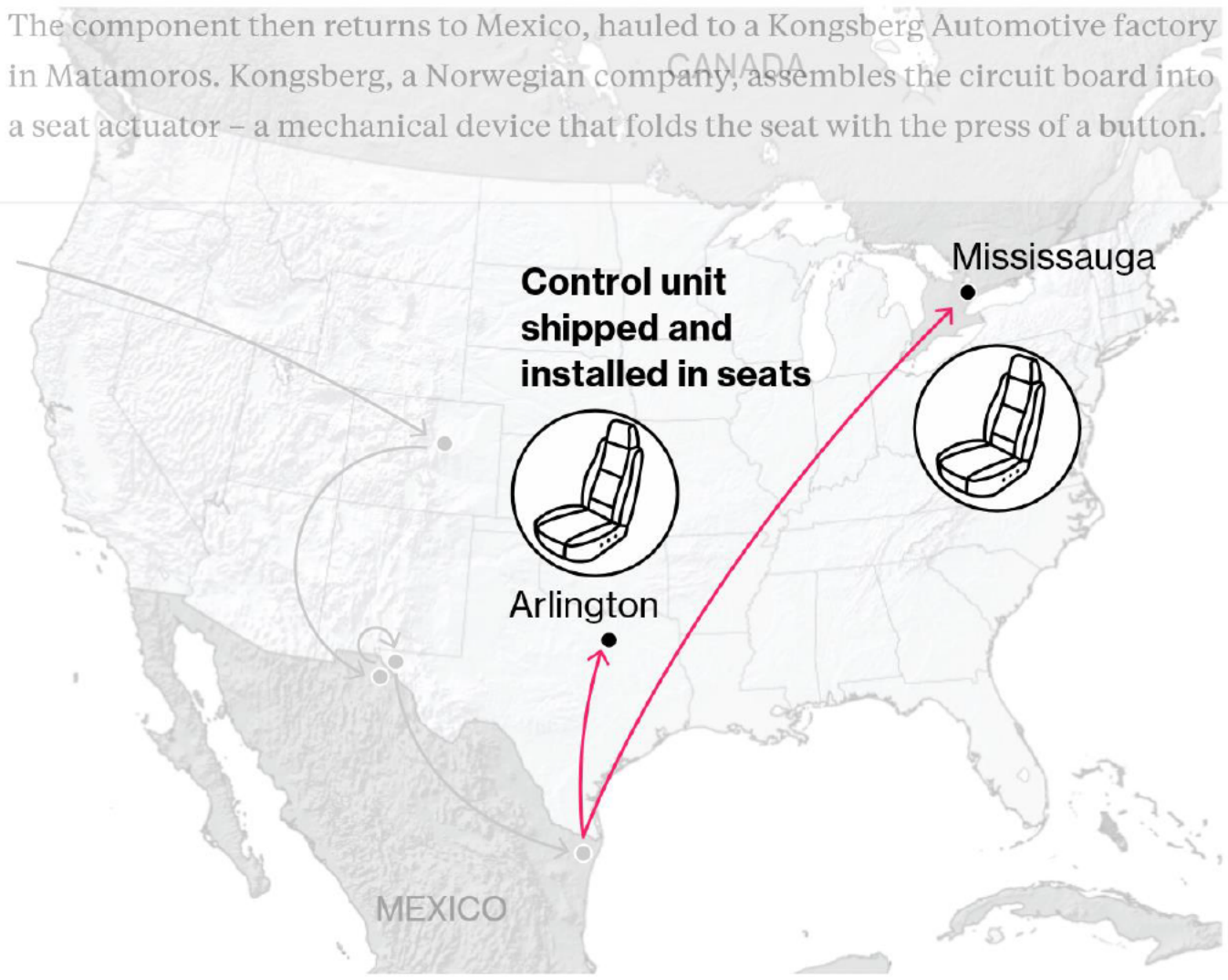
The capacitor is shipped to Ciudad Juárez, Mexico, where it is inserted into a circuit board.



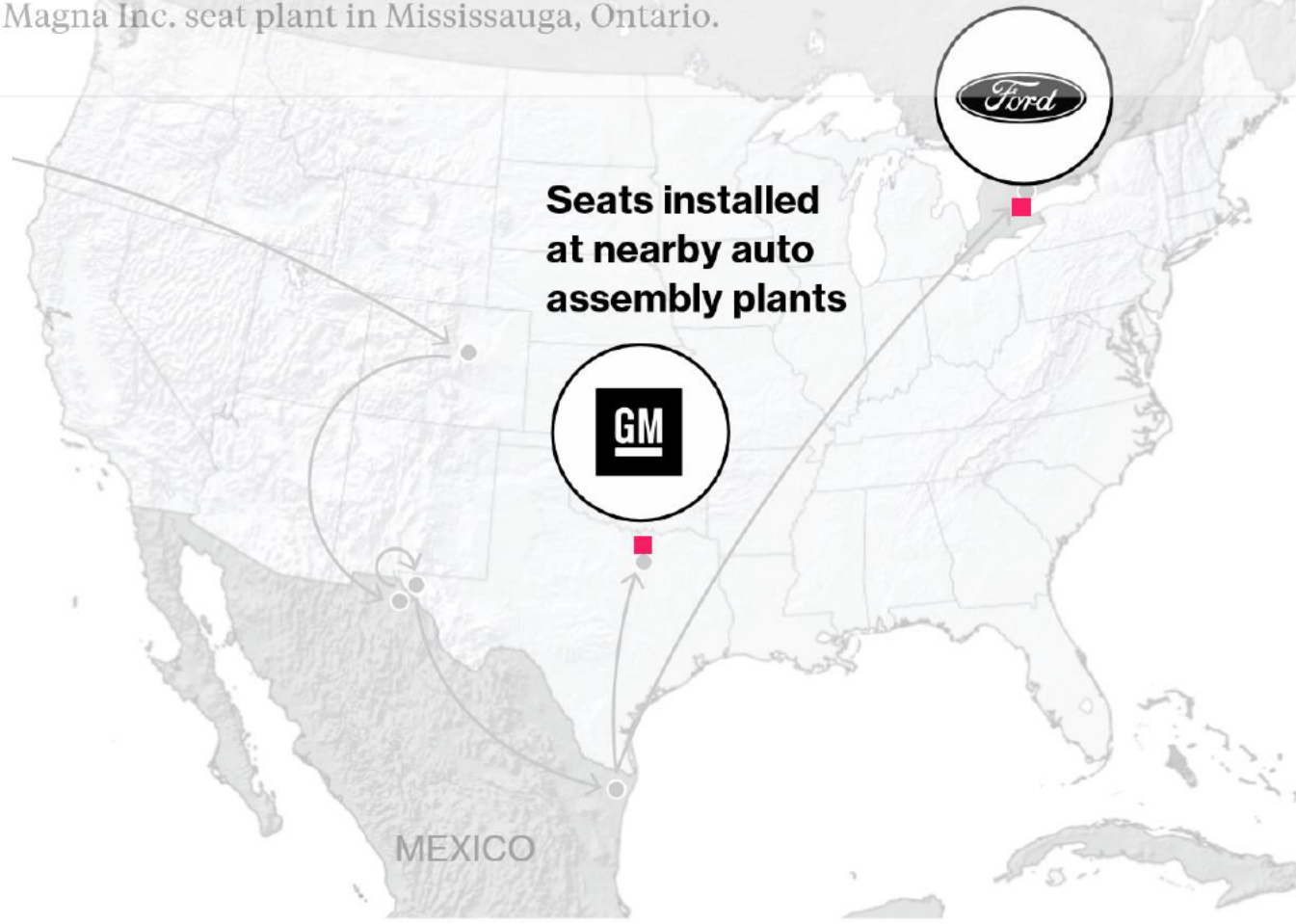
Then it heads to a U.S. warehouse just across the border in El Paso, Texas. Because the parts had been sent “in bond,” or temporarily imported into Mexico, they must return to the U.S. to avoid taxes.



The component then returns to Mexico, hauled to a Kongsberg Automotive factory in Matamoros. Kongsberg, a Norwegian company, assembles the circuit board into a seat actuator – a mechanical device that folds the seat with the press of a button.



Once the circuit board has been installed in the actuator, the control unit ships to, among other sites, a Lear Corp. seat-manufacturing plant in Arlington, Texas, and a Magna Inc. seat plant in Mississauga, Ontario.



More than 75 percent of US-Mexico Land Trade Crossed via a Texas Port of Entry in 2021

Texas	Total Land Trade (billions)	% Share
Laredo	\$242.86	43.4
Ysleta	\$61.27	10.9
Hidalgo	\$40.82	7.3
Eagle Pass	\$33.73	6.0
El Paso	\$23.67	4.2
Brownsville	\$20.39	3.6
Del Rio	\$4.57	0.8
Rio Grande City	\$0.59	0.1
Roma	\$0.47	0.1
Progreso	\$0.35	0.1
Presidio	\$0.34	0.1
Fabens	\$0.18	0.03
	\$429.25	76.7

New Mexico	Total Land Trade (billions)	% Share
Santa Teresa	\$27.00	4.8
Columbus	\$0.18	0.03
	\$27.18	4.9
Arizona		
Nogales	\$24.58	4.4
Douglas	\$2.87	0.5
San Luis	\$1.69	0.3
Tucson	\$0.15	0.03
Naco	\$0.07	0.01
	\$29.37	5.2
California		
Otay Mesa	\$53.51	9.6
Calexico-East	\$18.56	3.3
Tecate	\$1.08	0.2
Calexico	\$0.66	0.1
San Ysidro	\$0.17	0.03
	\$73.98	13.2
Total	\$559.78	100

Maquiladora activity boosts employment in Texas border cities

Estimation method: IV	El Paso	Laredo	McAllen	Brownsville
TOTAL	2.77*	4.62	6.58*	2.21
Construction	0.20	3.19	4.04*	1.29*
Manufacturing	-1.28	1.02	1.64	0.66
Transportation	5.30*	7.21*	6.63*	4.6*
Wholesale	0.43	1.96	4.01*	0.84
Retail	1.31	0.66	3.21*	1.34*
FIRE	2.12*	8.23*	4.63*	0.64
Services	1.84*	5.93*	7.38*	3.89*

NOTES: This table shows elasticity estimates. That is the table shows the percentage increase in local employment from a 10 percent increase in maquiladora production for each Texas Border Cities. * indicates significant at the 10% level.

SOURCE: J. Cañas, R. Coronado, R. Gilmer, E. Saucedo (2011) "The Impact of Maquiladoras on U.S. Border Cities", Federal Reserve Bank of Dallas, working paper.

Texas border cities narrowing the income gap with nation

(per capita income as a share of U.S. total, 2020 dollars)

	1994		2020		1994-2020 % growth
Texas	35,430	90%	55,399	94%	56.4
Brownsville-Harlingen	21,734	55%	33,690	57%	55.0
El Paso	26,233	67%	41,732	71%	59.1
Laredo	22,447	57%	35,626	60%	58.7
McAllen	19,789	50%	31,153	53%	57.4

Unemployment rates declined along the border after NAFTA

	1994	2020*
Texas	5.9	3.4
Brownsville-Harlingen	11.4	5.5
El Paso	9.0	3.6
Laredo	9.0	3.7
McAllen	18.3	6.6

*January 2020

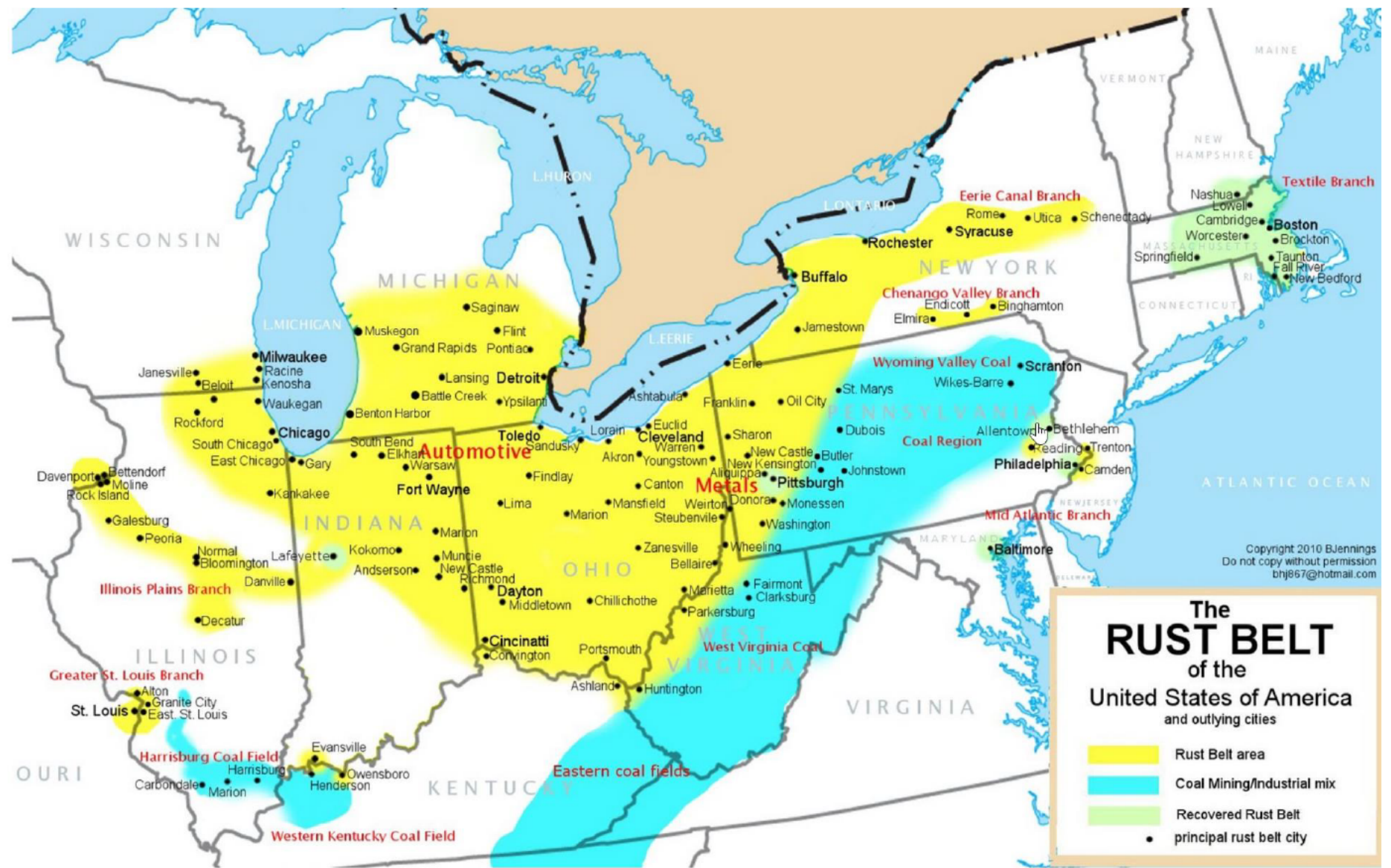
Future calls for more trade, not less

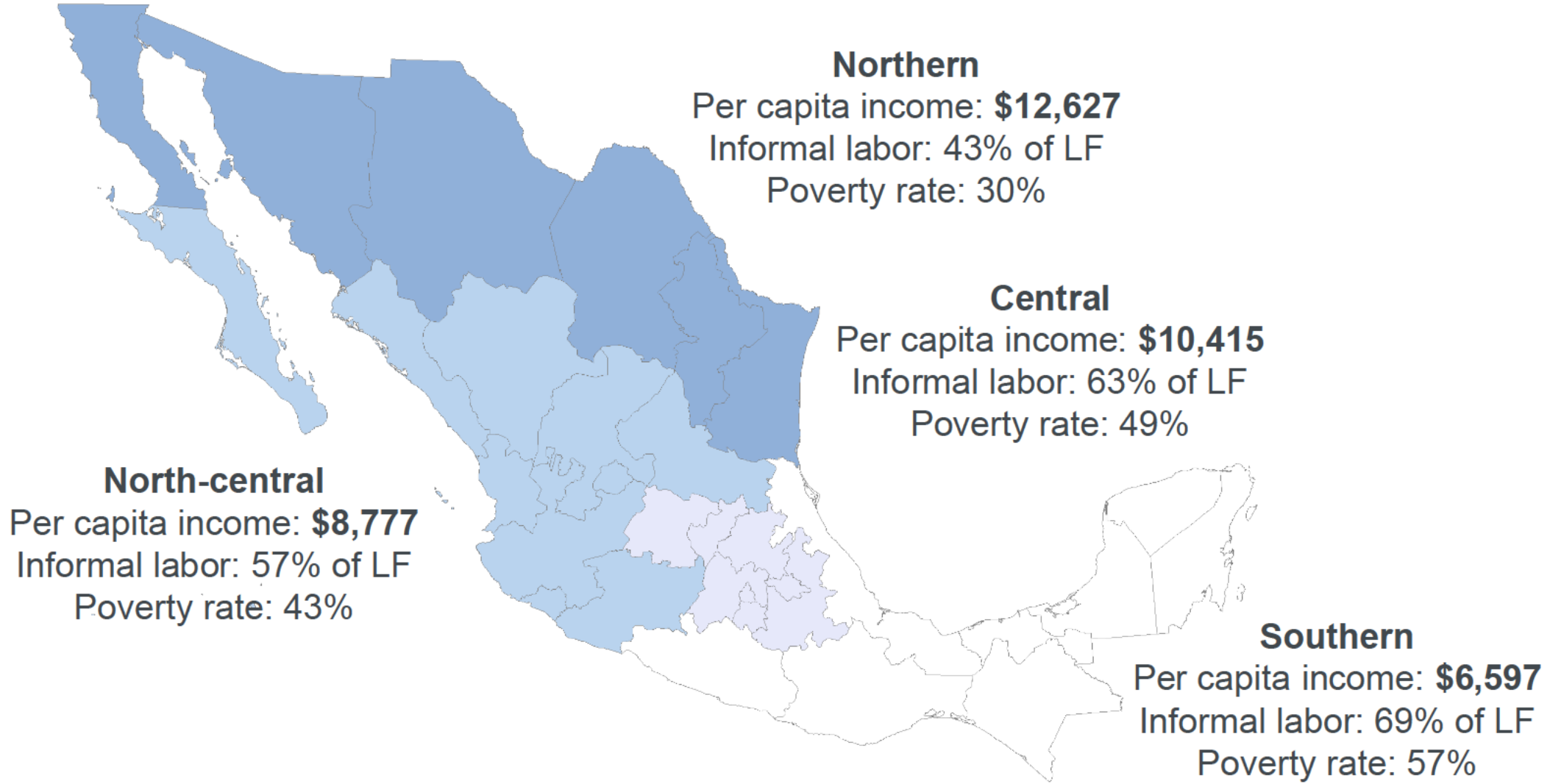
- Job growth a percentage point higher than nation
 - Over 5 million jobs gained between 1994-2021
- Per capita income growth faster than the nation
 - Rose from \$30,000 to \$54,000
- Border gains during a period marked by the implementation of (NAFTA) and expansion of the maquiladora industry
 - Border cities are no longer at the edge of the U.S. but strategic locations

Going forward...

Labor market effects

- Need for programs to identify and assist displaced workers
- Ability to adjust, diversify and grow
- Border cities overcame initial job losses, went on to thrive





Impact of the United States-Mexico-Canada Agreement (USMCA)

(by the U.S. International Trade Commission)

	NO reduction in policy uncertainty	Reduction in policy uncertainty
U.S. real GDP (billion \$)	-22.6	68.2
U.S. employment (000s jobs)	-53.9	175.7
Agriculture	-2.3	1.7
Manufacturing & mining	36.9	49.7
Services	-88.5	124.3
US wages (%)	-0.06	0.27
Total U.S. exports to the world (%)	-0.5	2.4
Total U.S. imports from the world (%)	-0.4	2.0
Total U.S. exports to Canada (%)	1.6	5.9
Total U.S. imports from Canada (%)	1.0	4.8
Total U.S. exports to Mexico (%)	1.2	6.7
Total U.S. imports from Mexico (%)	-0.6	3.8

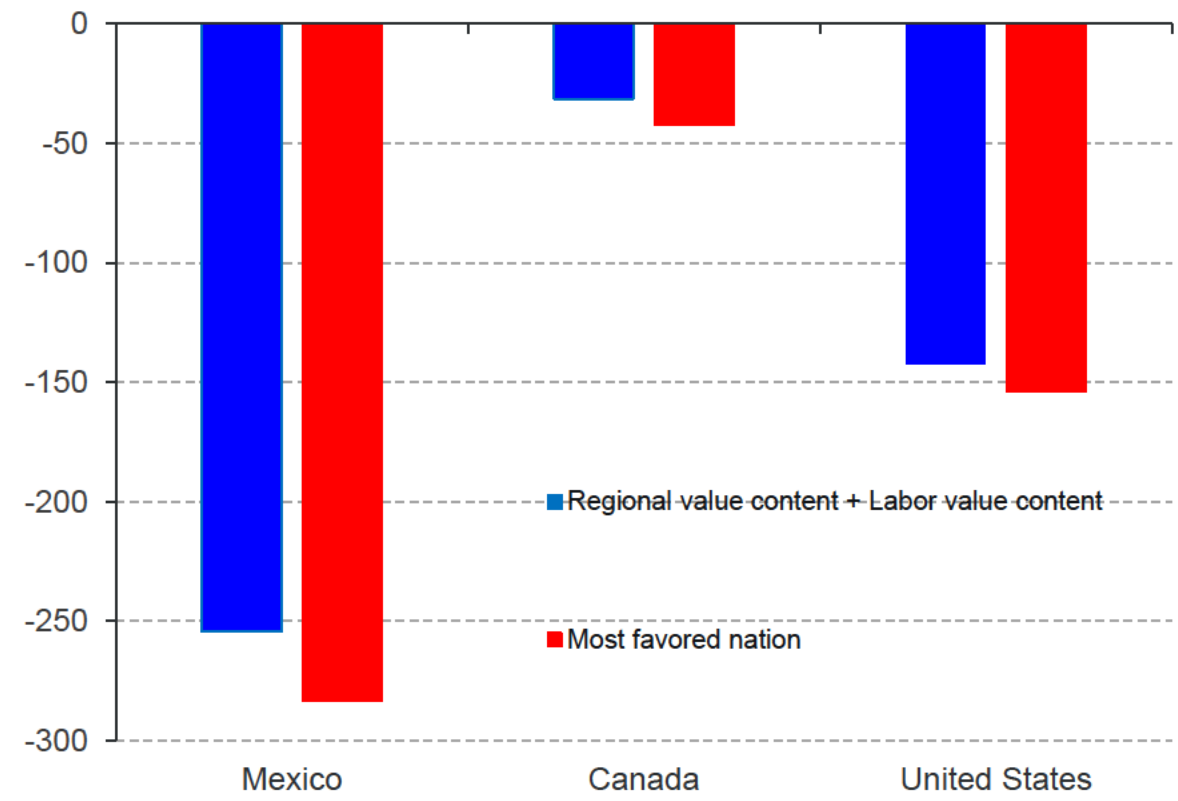
Negative effect of the USMCA under the NO reduction in policy uncertainty assumption

- Mainly due to the *new rules of origin requirements* for the auto industry
- USMCA would force US automakers to buy more of their parts from domestic parts makers
 - Help domestic workers and firms in auto-parts manufacturing
 - But higher automobile prices paid domestically
- Will reduce auto production
 - Higher prices would curb demand for American-made cars making consumers worse off

Long term effects of transition to USMCA trim automotive sector output

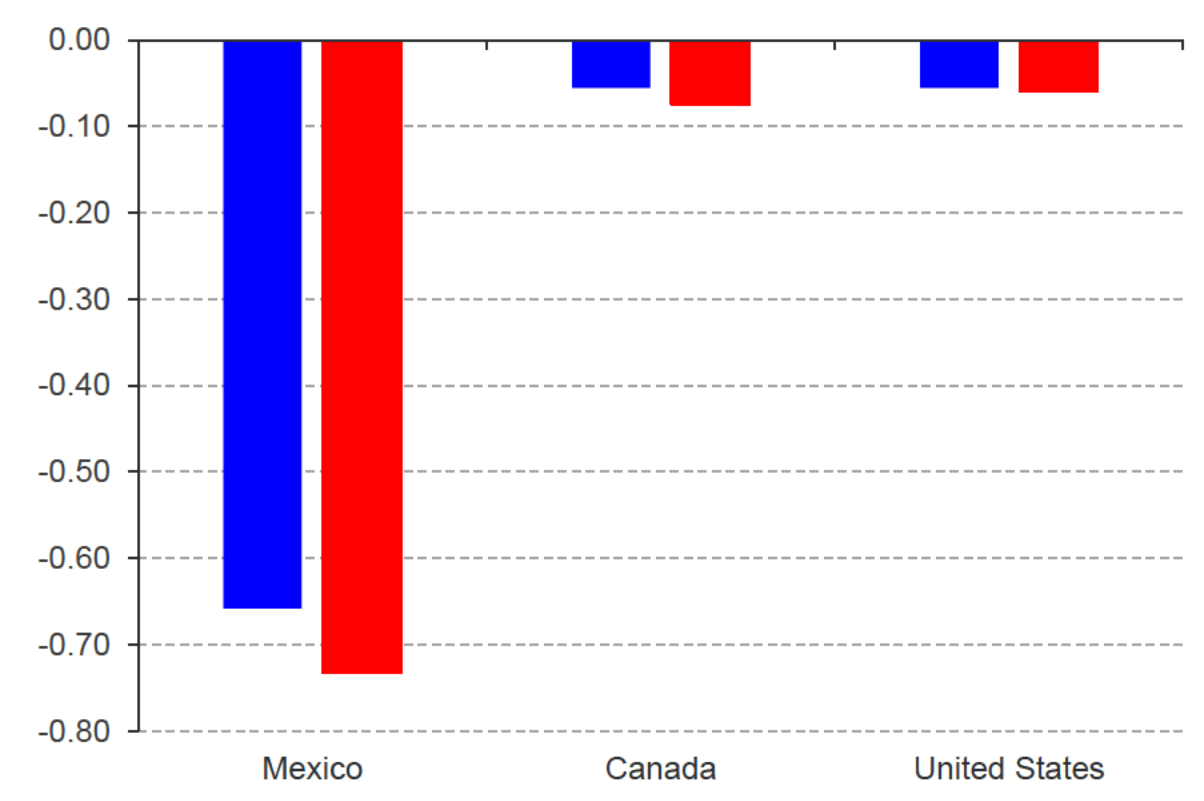
A. Effect on Light Vehicle Production

Thousands of units



B. Effect on GDP

Percent



Policy Uncertainty Reduction Explained

The USITC model uses as baseline NAFTA

- Three USMCA provisions that may reduce trade policy uncertainty; International data transfer, cross-border services, and investment commitments (increased market access positive impact foreign affiliate sales)

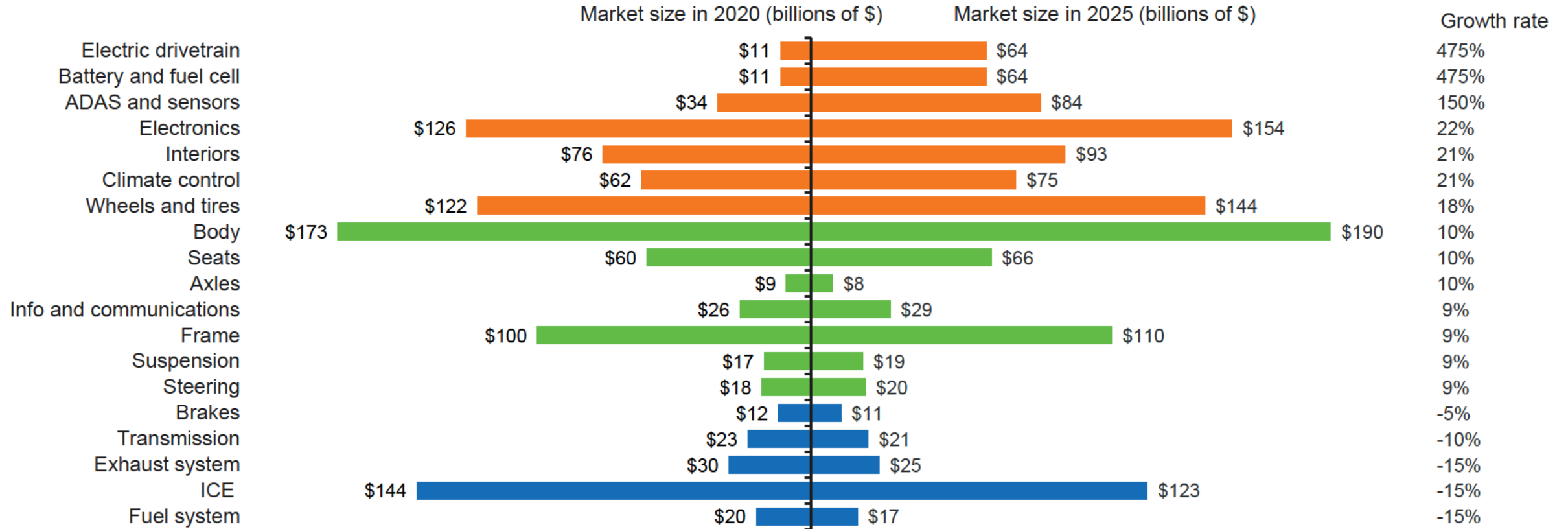
Reduction in restrictions for data transfer services and cross-border services

- Will reduce uncertainty in such sectors that will increase service trade
- Offsetting the increased cost as a result of the new/more restrictive rules of origin

Electrical vehicle challenge

- Gasoline-powered vehicles typically use about 6,000 components
- EVs require about 50% less
 - In Germany 215,000 jobs will be affected by 2030 almost 40 percent of jobs tied to internal combustion engines
 - Japan is expected to eliminate 84,000 positions by 2050
 - Mexico?
 - According to INEGI 85% of automotive jobs in Mexico are in auto parts plants, some 900,000 jobs

Growth in Electrical Based Auto Parts at the Expense of Conventional Components



NOTE: Green indicates growing, yellow indicates stagnant, and blue bars indicate declining segment sizes from 2020 to 2025.

SOURCE: Data and analysis from "The road ahead: Auto suppliers navigate new terrain" by Jason Coffman, Raj Iyer, and Ryan Robinson, Deloitte *Insights from Deloitte's 2021 Automotive Supplier Study*, 2021.

Maquiladora Employment by Selected State (2021)

Rank	State	Employment	Share of total employment (%)
1	Chihuahua	408,068	14.6
2	Baja California	364,420	13.1
3	Nuevo Leon	311,784	11.2
4	Coahuila	264,349	9.5
5	Tamaulipas	258,257	9.3
6	Guanajuato	163,990	5.9
7	Jalisco	156,146	5.6
8	Other states	141,853	5.1
9	Mexico	138,471	5.0

Rank	State	Employment	Share of total employment (%)
10	Sonora	130,031	4.7
11	Querétaro	107,124	3.8
12	San Luis Potosi	90,954	3.3
13	Puebla	79,592	2.9
14	Aguascalientes	63,036	2.3
15	Durango	46,152	1.7
16	Yucatán	24,503	0.9
17	Veracruz	21,680	0.8
18	Mexico City	21,499	0.8

SOURCE: INEGI.

Maquiladora Employment by Sector (2021)

NAICS	Sector	Employment	Share of total maquiladora employment (%)	Percent change in employment 2021-2008 (%)	Share of total maquiladora production (%)	Production as share of GDP (%)	Hourly wage (\$)
	Total nacional	2,791,909		60.6	100	10.9	4.8
336	Transportation equipment	932,093	33.4	116.9	33.0	3.6	4.9
334	Computer & electronic products	366,471	13.1	43.4	4.9	0.5	4.9
326	Plastics & rubber products	191,702	6.9	108.0	6.2	0.7	4.3
335	Electrical equipment, appliances & components	190,712	6.8	33.2	6.8	0.7	4.6
332	Fabricated metal products, nesoi	148,898	5.3	70.8	5.9	0.6	4.9
311	Food & kindred products	125,261	4.5	6.2	7.6	0.8	4.0
333	Machinery, except electrical	110,811	4.0	79.2	4.0	0.4	5.4

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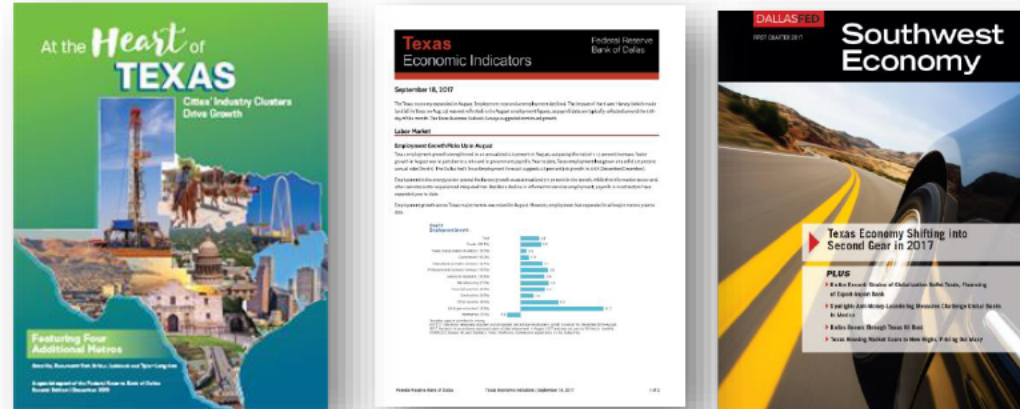
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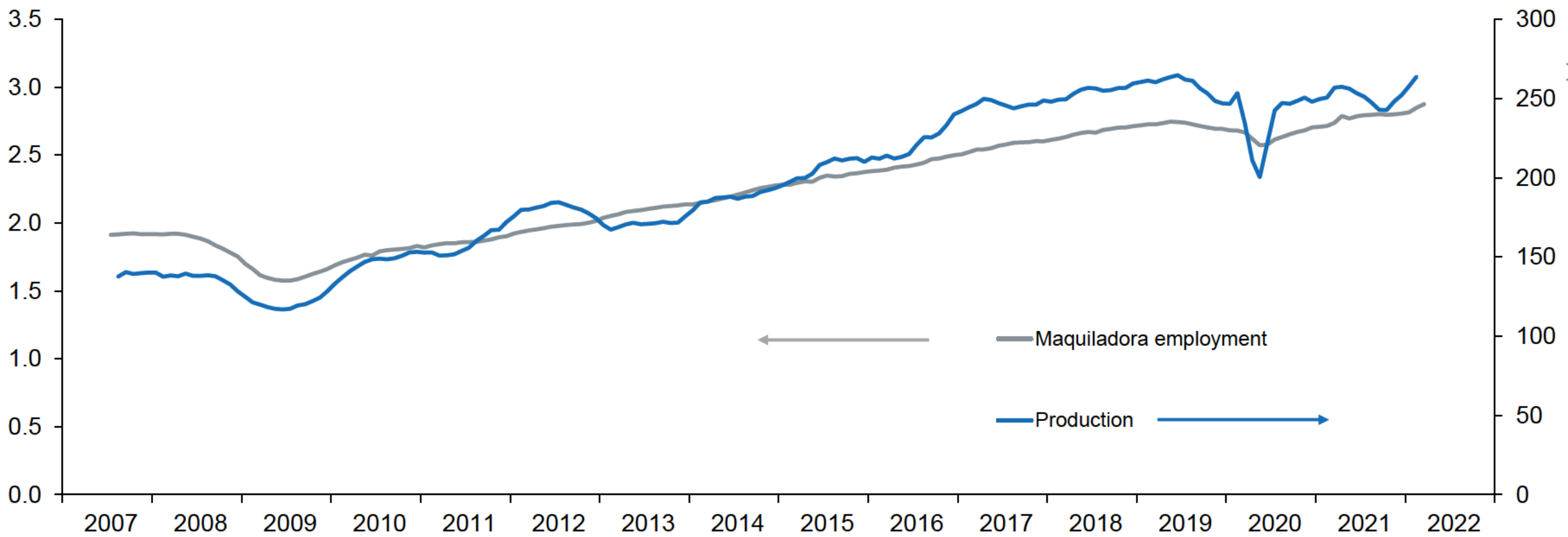
[Mobility and Engagement Index](#)



Maquiladora Activity Resilient over Last 15 Years

Millions of workers, SA

Billions of real pesos, SA, 3MMA

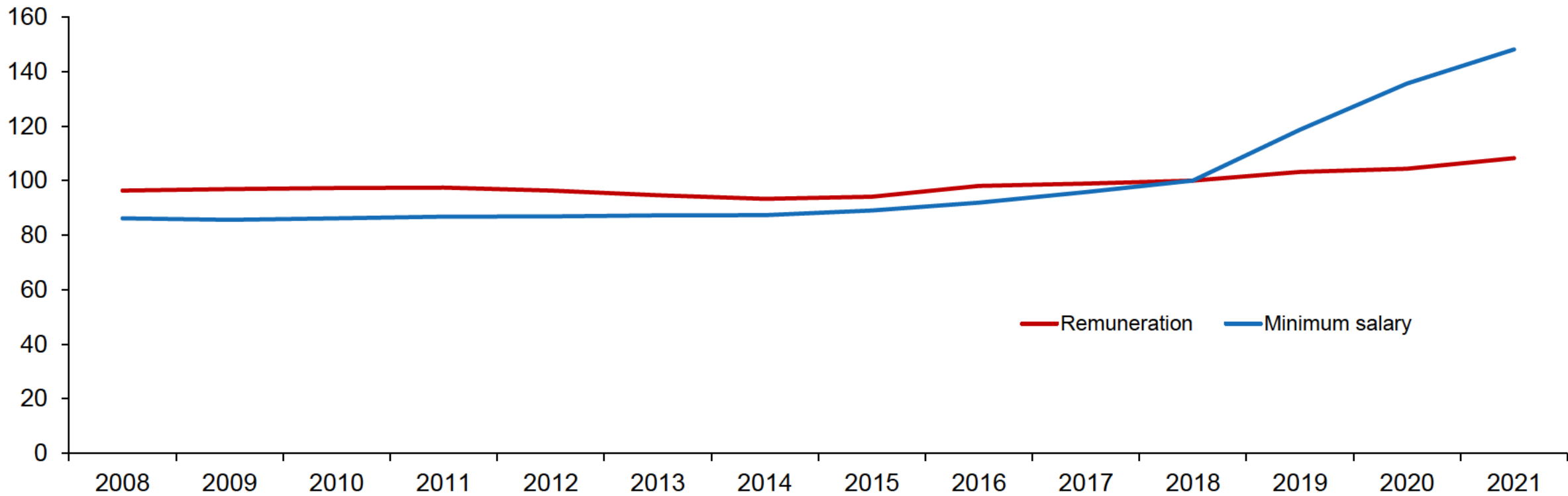


NOTES: Employment data through March 2022. Production data through February 2022 and is a three-month moving average.

SOURCES: Instituto Nacional de Estadística, Geografía e Informática (INEGI).

Dismal Growth in Maquiladora Per Capita Compensations

Index, 2018 = 100 (real pesos)



NOTE: Data through 2021.

SOURCES: Instituto Nacional de Estadística, Geografía e Informática; Comisión Nacional de los Salarios Mínimos; author's calculations.

Maquiladora Employment by Sector (2021)

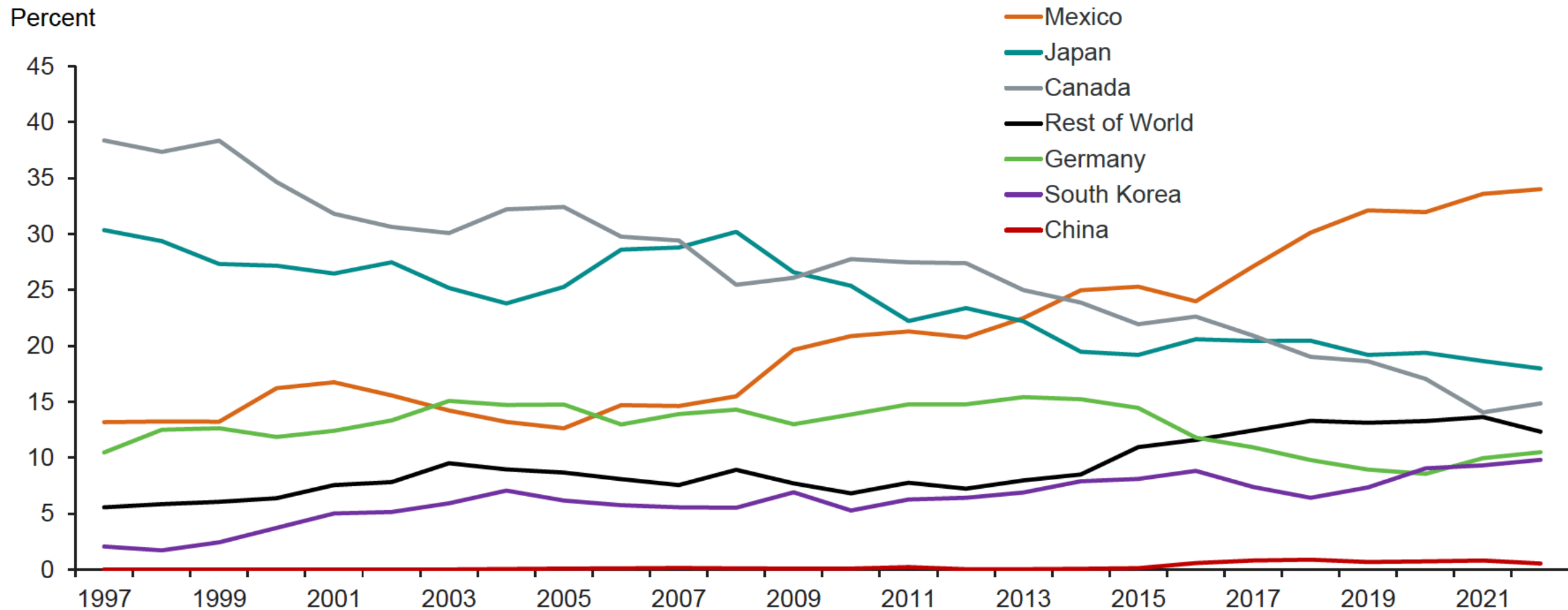
NAICS	Sector	Employment	Share of total maquiladora employment (%)	Percent change in employment 2021-2008 (%)	Share of total maquiladora production (%)	Production as share of GDP (%)	Hourly wage (\$)
331	Primary metal mfg	89,060	3.2	60.9	10.2	1.1	6.6
315	Apparel & accessories	80,716	2.9	-36.4	0.8	0.1	2.4
325	Chemicals	64,496	2.3	26.1	7.4	0.8	4.9
327	Nonmetallic mineral products	55,712	2.0	29.5	2.1	0.2	4.3
322	Paper	44,916	1.6	146.2	2.5	0.3	4.5
337	Furniture & fixtures	40,563	1.5	43.0	0.5	0.1	4.2
312	Beverages & tobacco products	38,524	1.4	38.8	3.1	0.3	5.9

Maquiladora Employment by Sector (2021)

NAICS	Sector	Employment	Share of total maquiladora employment (%)	Percent change in employment 2021-2008 (%)	Share of total maquiladora production (%)	Production as share of GDP (%)	Hourly wage (\$)
313	Textiles & fabrics	32,518	1.2	-11.1	0.8	0.1	3.0
316	Leather & allied products	24,169	0.9	57.4	0.5	0.1	3.8
323	Printed matter and related products, nesoi	16,440	0.6	70.3	0.2	0.03	4.0
314	Textile mill products	14,137	0.5	14.4	0.3	0.03	3.8
321	Wood products	9,531	0.3	46.7	0.3	0.03	3.6
339	Miscellaneous manufactured commodities	215,179	7.7	80.3	2.9	0.3	5.1

SOURCE: INEGI.

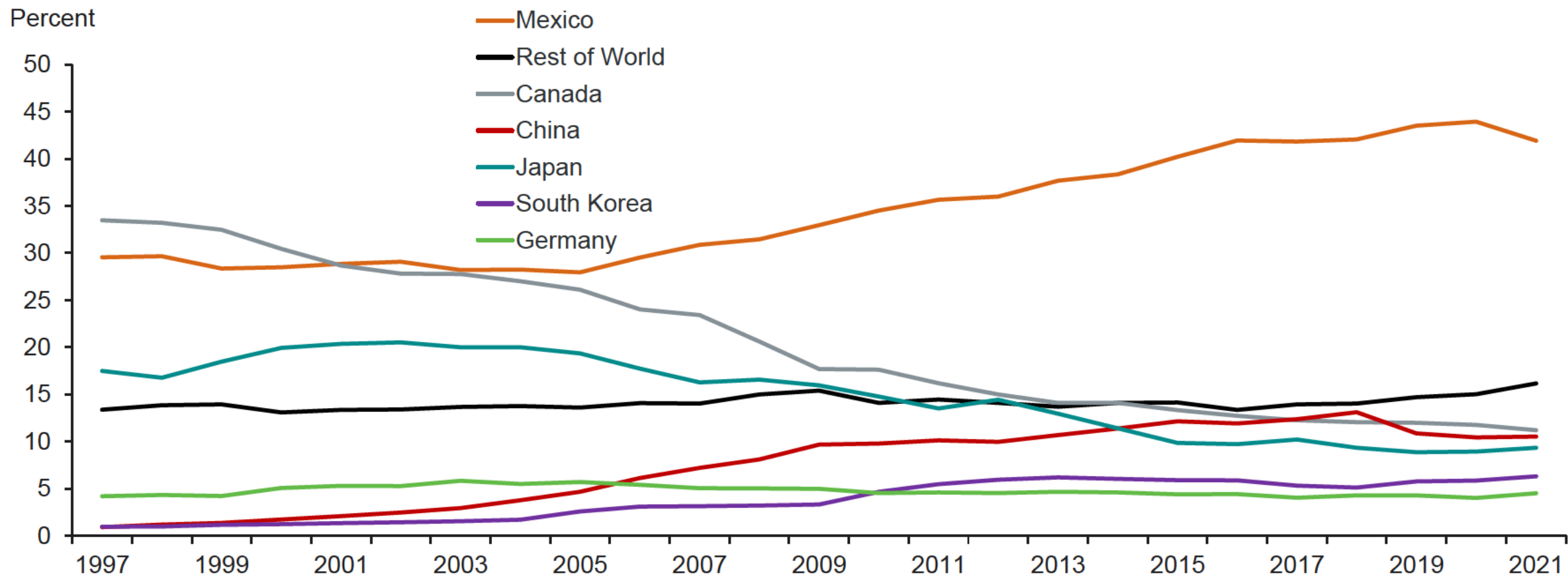
Mexico First in Share of U.S. Motor Vehicle Imports



NOTES: Shown are shares of U.S. Motor Vehicle Imports (NAICS 3361). Data for 2022 is annualized through April.

SOURCE: U.S. International Trade Commission.

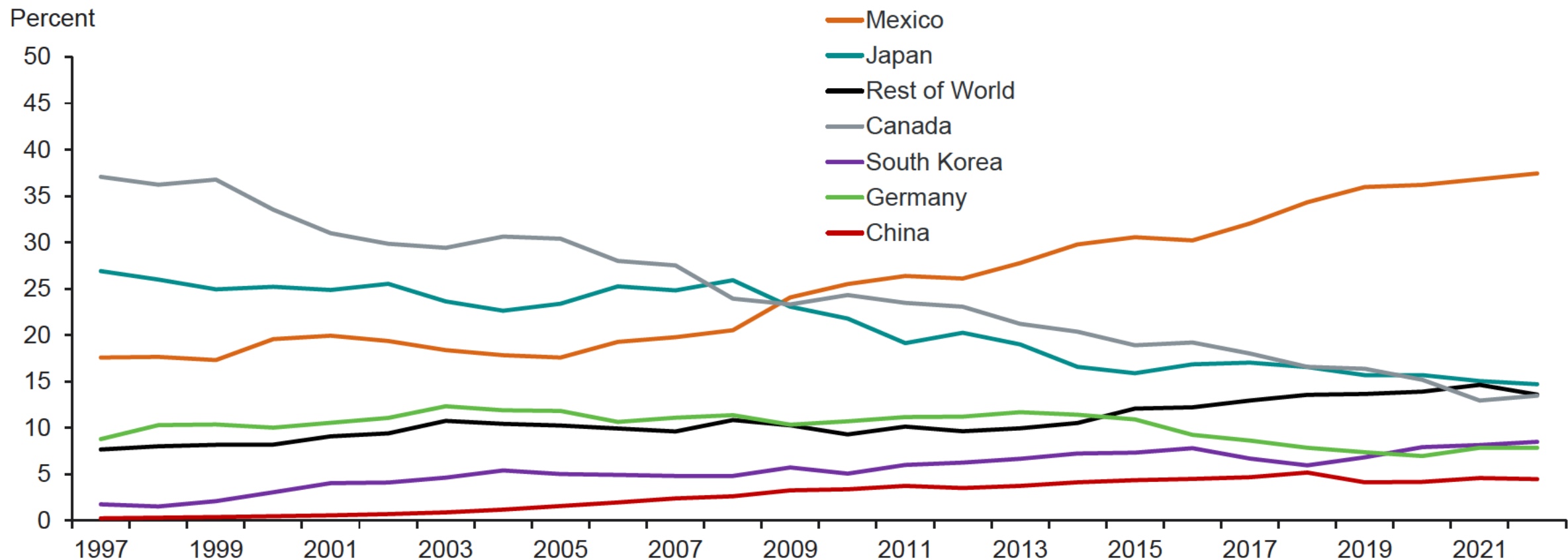
Mexico First in Share of U.S. Motor Vehicle Parts Imports



NOTES: Shown are shares of U.S. Motor Vehicle and Motor Vehicle Parts Imports (NAICS 3363). Data for 2022 is annualized through April.

SOURCE: U.S. International Trade Commission.

Mexico First in Share of U.S. Motor Vehicle and Parts Imports



NOTES: Shown are shares of U.S. Motor Vehicle and Motor Vehicle Parts Imports (NAICS 3361 and 3363). Data for 2022 is annualized through April.

SOURCE: U.S. International Trade Commission.