United States Department of Agriculture, Economic Research Service

Implications of an Integrated U.S.-Mexican Sugar and Sweetener Sector

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Introduction

NAFTA's 20^{th} Anniversary

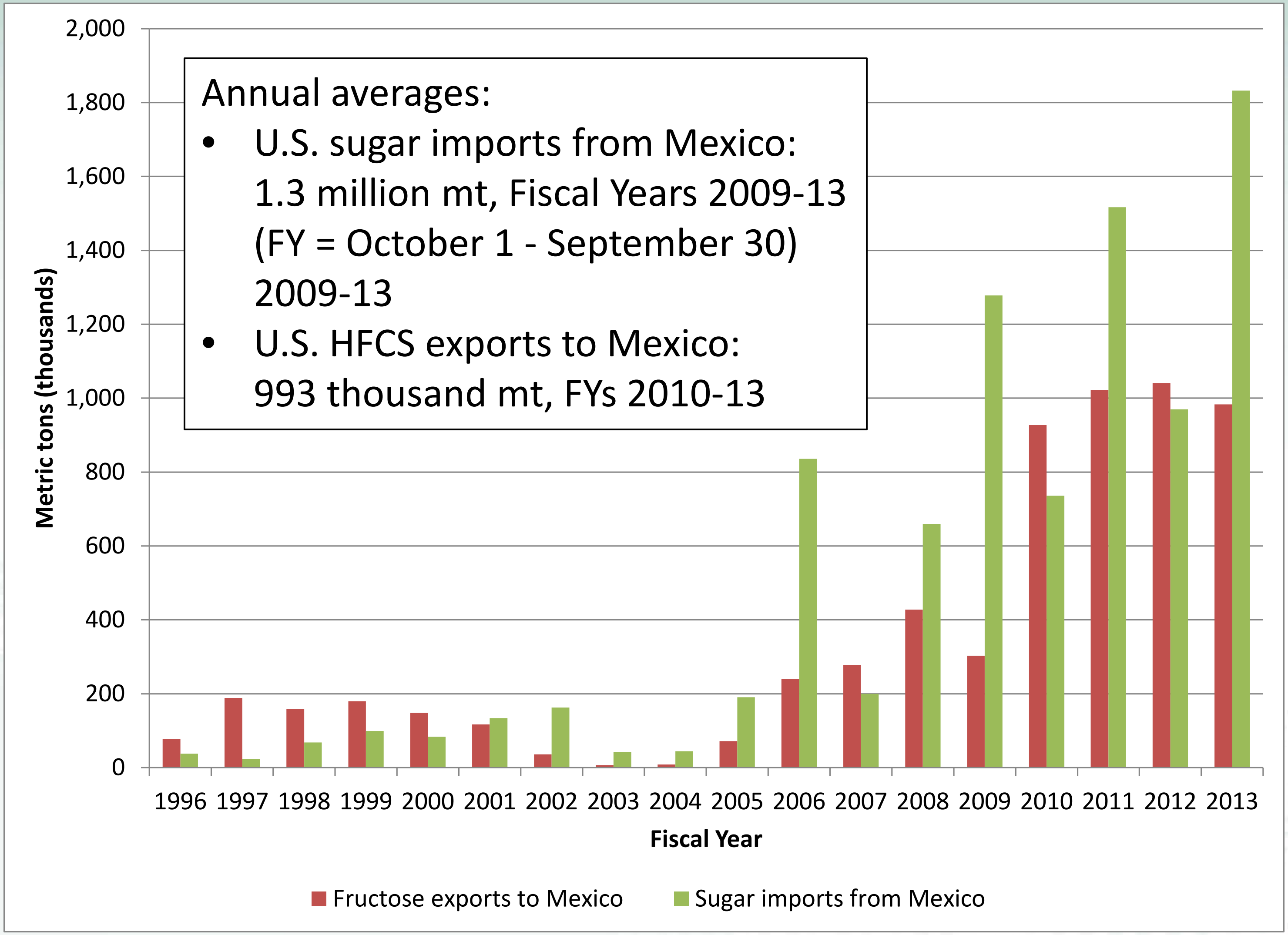
- North American Free Trade Agreement (NAFTA) implemented in 1994
- Integration of U.S.-Mexican sweetener markets starting in 2008
- Features of the integrated market include:
  - Tariff- and quota-free trade between U.S. and Mexico in all agricultural products, including sugar, corn, and sweetener-containing foods.
  - Sugar imports from other countries controlled through tariff-rate quotas (TRQs) with prohibitive over-quota tariff rates; free-trade agreements (FTAs) other than NAFTA provide some countries with additional access.
  - U.S. and Mexican Governments retain the option of allowing sugar imports beyond the minimum amounts required by their multilateral commitments at the WTO and their FTAs other than NAFTA.
  - U.S. and Mexican Governments operate separate domestic support programs for their growers.

Implications of an Integrated Market

- Increased bilateral trade in sugar, other sweeteners, and sweetener-containing products
- Scope of market shifts from national to binational
- Policy effects extend across the border
- High fructose corn syrup (HFCS) has displaced some sugar consumption in Mexico and increased Mexico's exportable surplus of sugar

Bilateral trade

Increased trade in sugar and fructose



Fructose exports are measured in terms of dry weight.

Source: U.S. Census Bureau, *Foreign Trade Statistics*, as cited by USDA-FAS, *Global Agricultural Trade System*.

Trade in a broad set of sweetener-containing products

Trade flow /commodity	Average annual value		Average annual volume	
	Calendar Years 1991-93	Calendar Years 2011-13	Calendar Years 1991-93	Calendar Years 2011-13
	U.S. dollars (millions)		*Metric tons (thousands)*	
U.S. exports to Mexico				
Fructose syrup, containing more than 50 percent by weight of fructose, NESOI	5	445	17	1,136
Chocolate and preparations	47	230	16	63
Glucose or glucose syrup	5	187	18	424
Sugar, cane or beet	44	120	116	148
Soups, broths, and preparations thereof, dried	18	176	9	66
Other bread, pastry, cake, biscuits, and bakery, wares, excluding pizza and quiche	18	96	13	17
Sauces and preparations, not elsewhere specified	5	55	2	29
Mexican exports to the U.S.				
Sugar, cane or beet	1	1,057	3	1,514
Confectionery products	23	445	15	209
Carbonated soft drinks (1)	15	204	19	298
Other nonalcoholic beverages (1)	6	73	8	96
Sauces and preparations, not elsewhere specified	--	81	--	56
Biscuits and wafers (2)	16	485	11	212
Prepared foods obtained from swelling or roasting of cereal flakes or products, with or without sugar	4	145	2	44
Corn chips and savory snacks	11	93	7	35
Pastry, not elsewhere specified or indicated	13	74	8	30
Pasta and noodles	5	52	6	57

(1) Volume is measured in millions of liters.

(2) Includes sweet biscuits, waffles, wafers, pastries, cake, and bread, among other products.

Source: U.S. Census Bureau, *Foreign Trade Statistics* , as cited by USDA-FAS, *Global Agricultural Trade System* .

A binational market

Snapshot of U.S. and Mexican sugar and corn sectors, annual averages, FYs 2012-14

Commodity	Resulting sugar, centrifugal	Production	Area harvested	Yield	Observations regarding past two decades
	Metric tons (millions)	*Metric tons (millions)*	*Hectares (millions)*	*Metric tons per hectare*	
Mexican sugarcane	6.5	50.6*	0.72*	70.0*	Upward trends in area and production Flat trend in yields
U.S. sugarcane	3.4	26.8	0.34	78.2	Flat trends in area, yields, and production
U.S. sugarbeet	4.5	29.3	0.48	61.0	Upward trends in yields and production Downward trend in area
U.S. corn	n.a.	313.8	34.94	9.0	Upward trends in area, production, and yields
Percent devoted to HFCS		4.1			

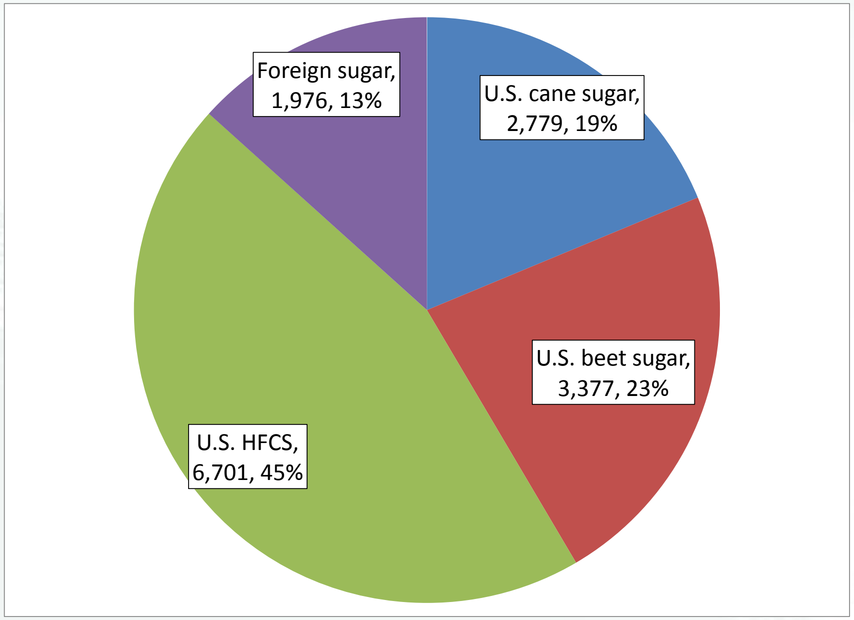
*Data correspond to harvests 2010/11 to 2012/13. Mexican data indicate that the annual average of sugar produced from Mexican sugarcane during this period equaled 5.7 million metric tons.

Note: Average yield is calculated as the average of the three annual yields.

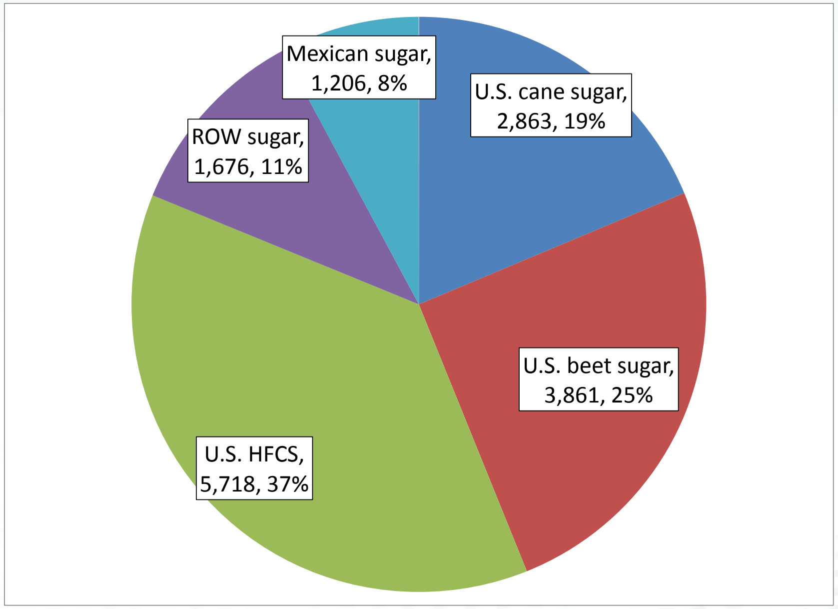
Sources: USDA-FAS, *PSD Online* (U.S. and Mexican centrifugal sugar production); SAGARPA-CONADESUCA (Mexican cane production, area, and yields); USDA-NASS, *Quick Stats* (U.S. cane and beet production, area, and yields); USDA-ERS, *Feed Grains Database* (share of U.S. corn devoted to HFCS production).

Mexican sugar cane and U.S. sugar beets account for a larger share of U.S. sweetener supply

FYs 1993-96, annual average:
Sum of U.S. sugar and HFCS supply = 14.8 million metric tons, dry weight (refined sugar basis)

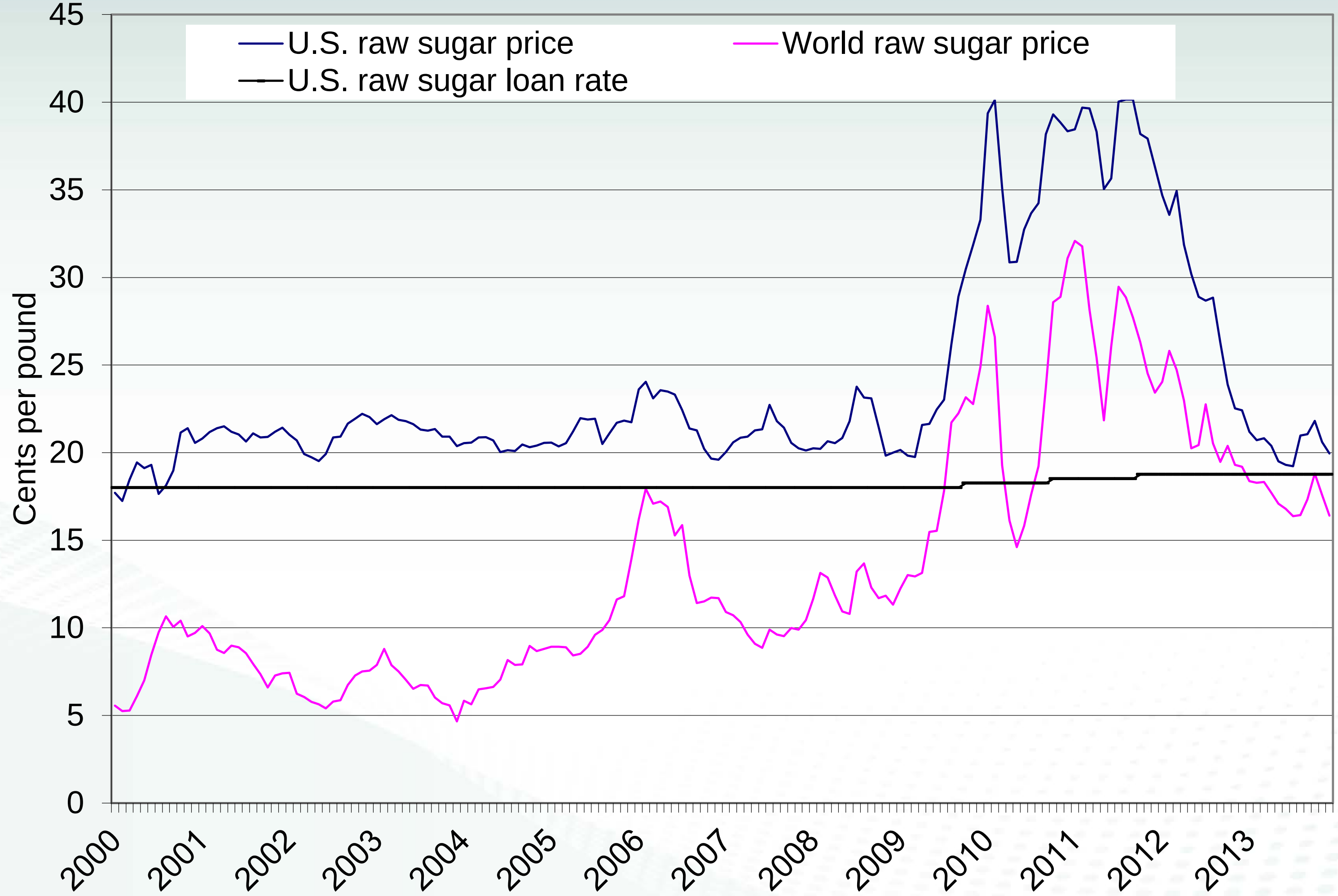


FYs 2009-13, annual average:
Sum of U.S. sugar and HFCS supply = 15.3 million metric tons, dry weight (refined sugar basis)



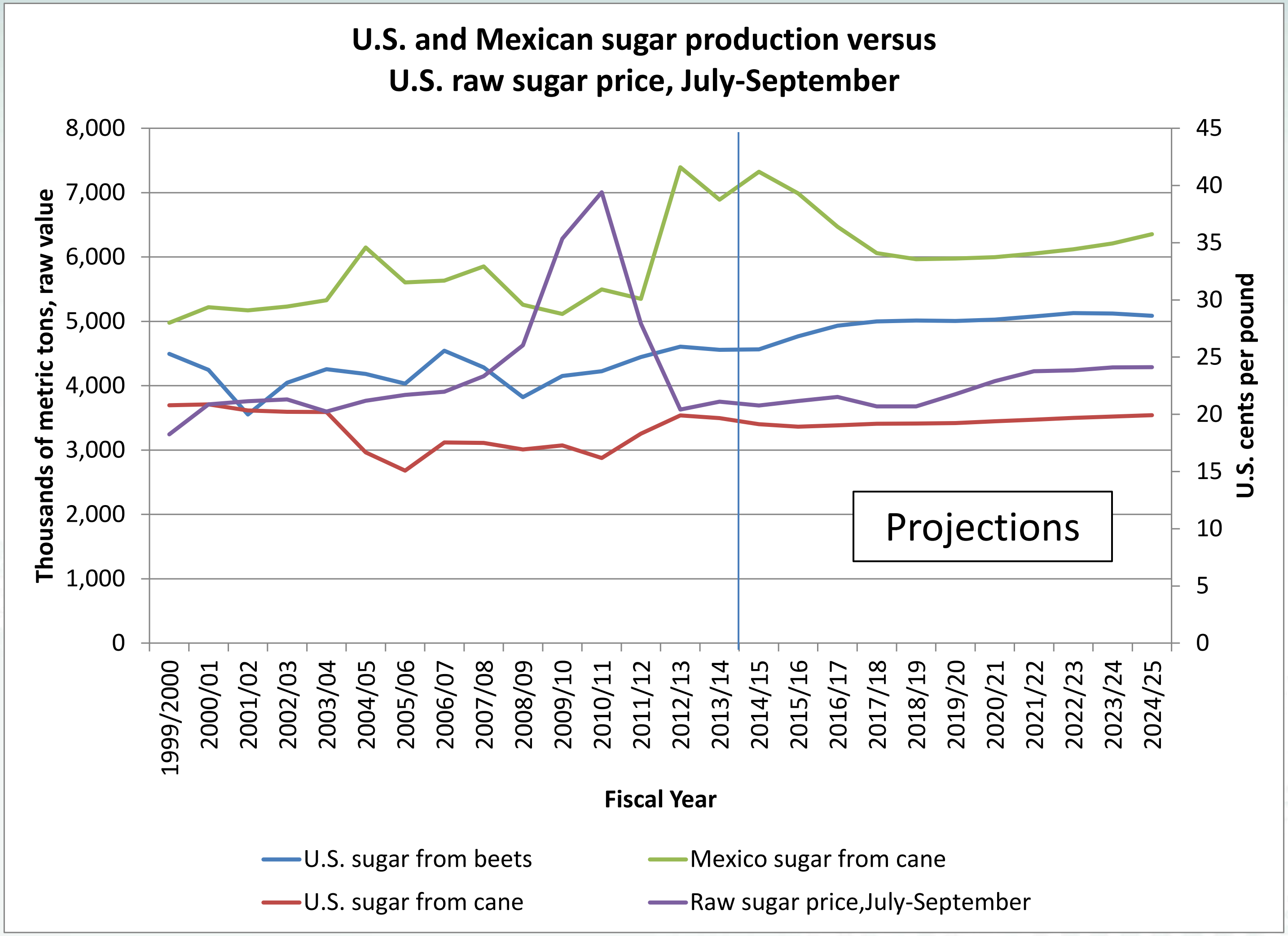
Numbers in pie charts are expressed in thousands of metric tons.
Source: USDA-ERS, *Sugar and Sweetener Yearbook Tables*.

Integration has narrowed the gap between U.S. and world raw sugar prices



Source: Intercontinental Exchange, No. 11 nearby (world), No. 16 nearby (U.S.).

USDA's long-term projections assume supply responds to price



Source: *USDA Agricultural Projections to 2024*.

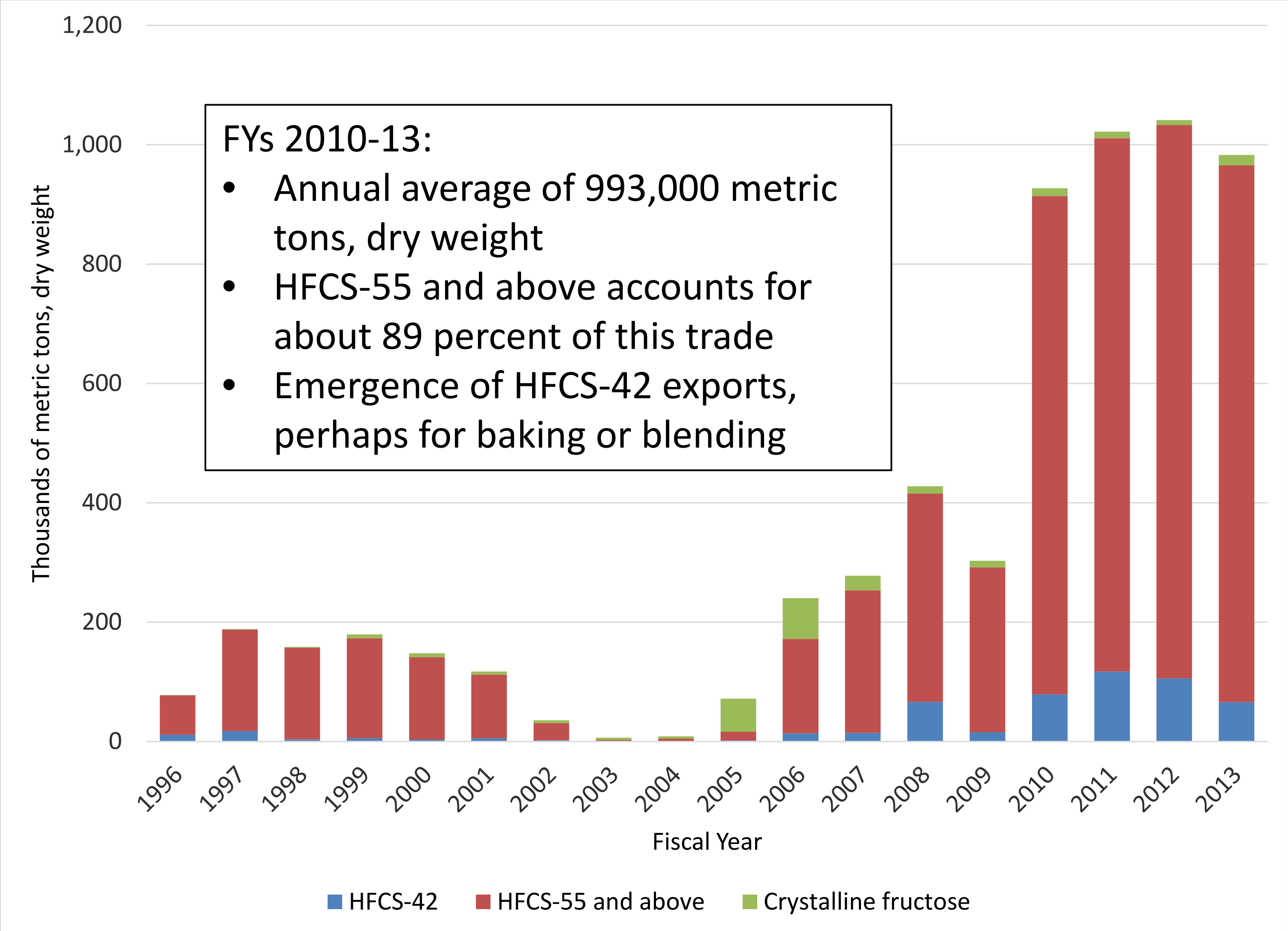
Policy effects extend across the border

Many cases where one country's policy potentially affects the other

- How does <u>broader availability of better market information</u> affect quality of decision making?
  - U.S.-Mexico Governmental Sweetener Working Group: Exchanges, analyzes, and publicizes data about U.S.-Mexico sweetener markets
- How will <u>Mexico's tax on soft drinks</u> alter beverage manufacturers' choice between cane sugar and HFCS?
- How do <u>U.S. domestic marketing allotments</u> influence market shares of U.S. and Mexican growers?
  - U.S. administers allotments to U.S. sugar producers, Mexico does not administer allotments to its producers
- How does <u>provision of additional market access</u> to third countries affect profitability of growers, refiners, and manufacturers?
- How has the <u>increased use of corn to produce ethanol</u> in the United States affected the availability of HFCS?

High fructose corn syrup in Mexico

U.S. HFCS exports to Mexico



Source: U.S. Department of Commerce, Census Bureau, HTS Export Data

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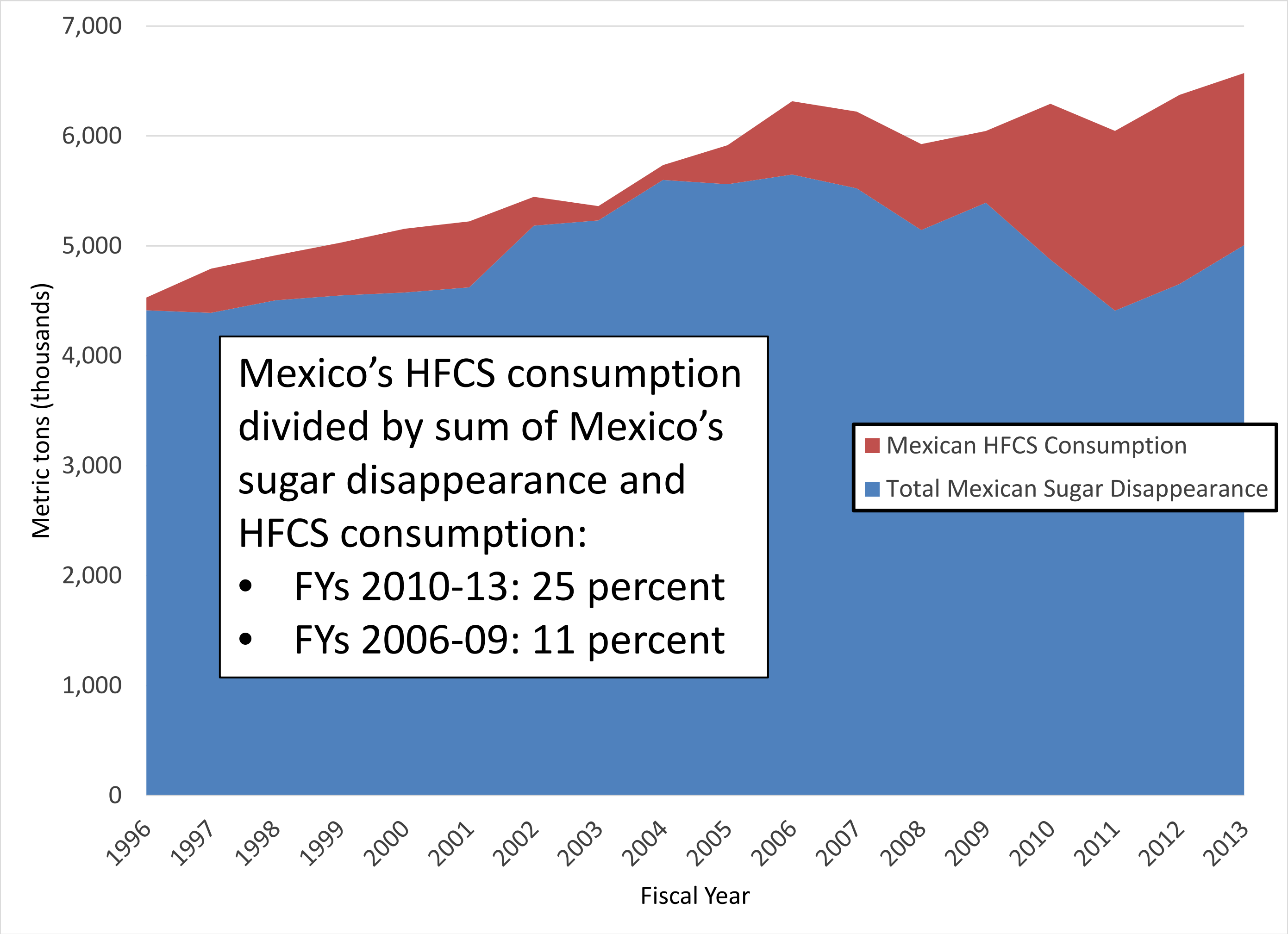
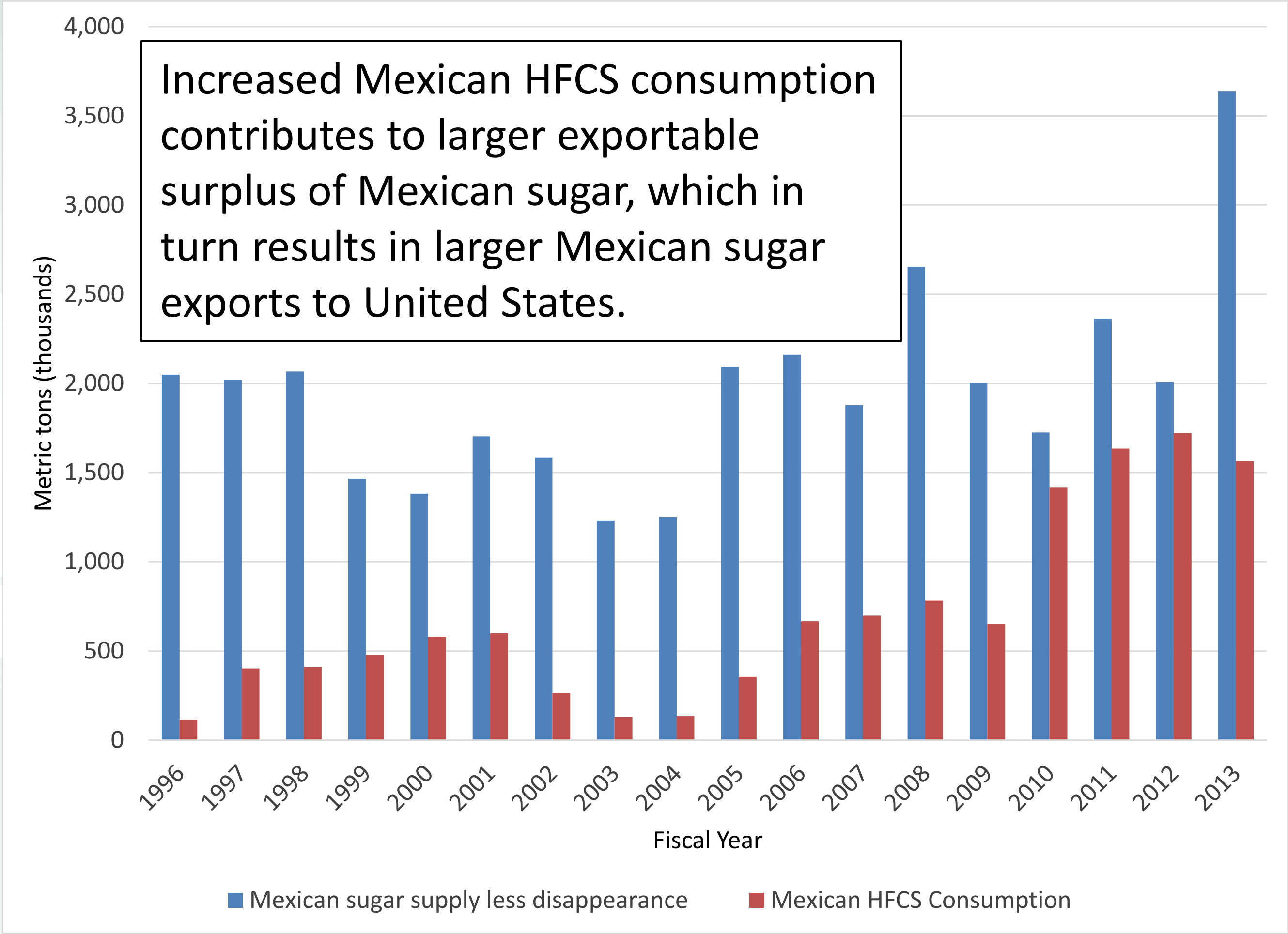
Access to U.S. corn and HFCS provides Mexicans with a broader choice of sweeteners



Sugar measured in raw value, HFCS measured in dry weight. Sources: USDA-FAS, PSD database (historical data); USDA, WASDE and ERS, *Sugar and Sweetener Outlook* (forecast data).

HFCS's possible/potential impact on Mexican sugar exports to the U.S.



Sugar measured in raw value, HFCS measured in dry weight. Sources: USDA-FAS, PSD database (historical data); USDA, WASDE and ERS, *Sugar and Sweetener Outlook* (forecast data).

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Questions to think about

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- What is the long-term growth path for sugarcane, sugarbeets, and HFCS in the U.S. and Mexico?
- What are the prospects for further rationalization in the U.S. and Mexican sweeteners sector?
- How large will be HFCS's share of Mexico's sweetener consumption?
- How compatible are domestic support and trade policies with the integrated U.S.-Mexico market?

Thanks!

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ERS website: www.ers.usda.gov
ERS Sugar and Sweeteners Page: http://www.ers.usda.gov/topics/crops/sugar-sweeteners.aspx
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