

# **“International Trade and Ethanol”**

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# Some contrasting views.....

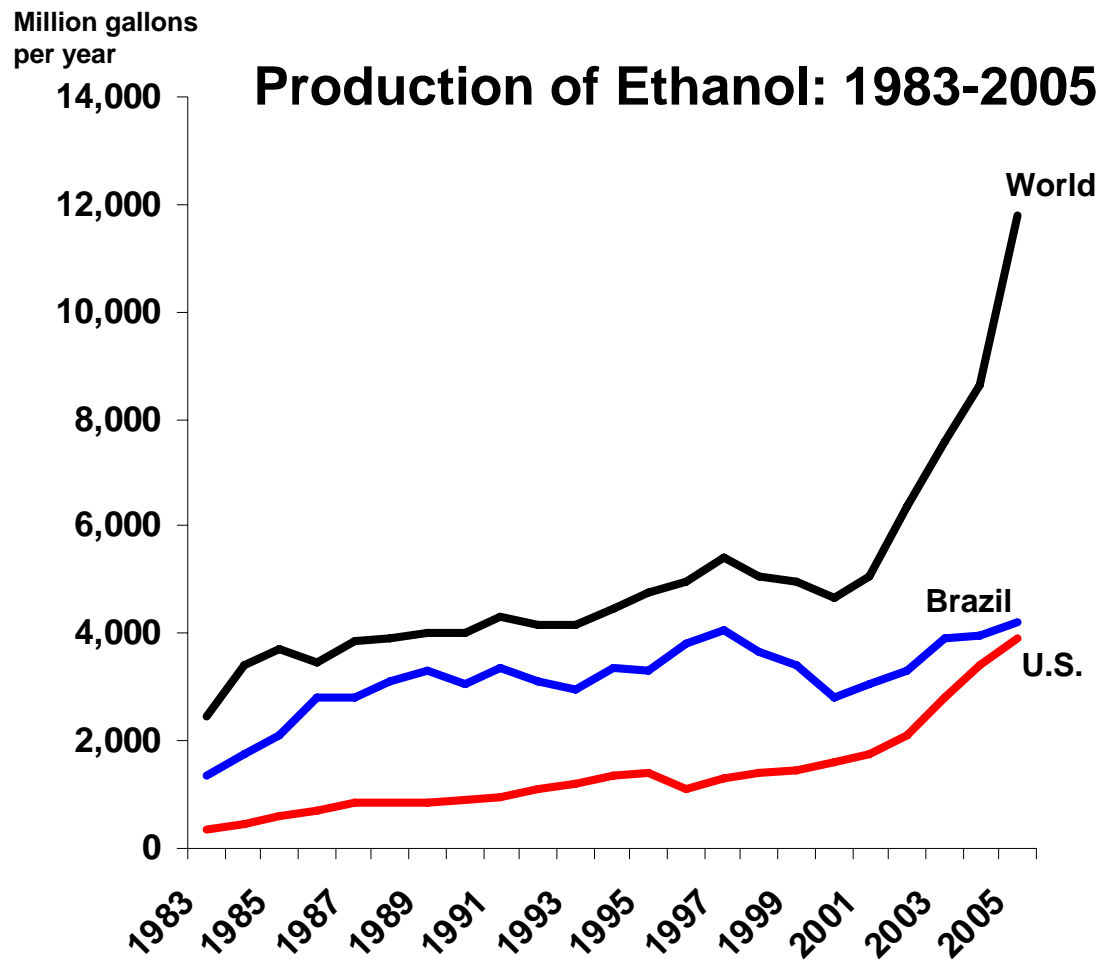
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- ◆ **“If our refineries are going to be forced to use ethanol...they should not be constrained by artificial protectionist tariffs” (Sen. Dianne Feinstein, May 5 2006)**
- ◆ **“Providing more duty-free treatment for ethanol won’t increase supplies or reduce prices at the pump. It’s a solution in search of a problem” (Sen. Chuck Grassley, May 5 2006)**
- ◆ **“Is the fact that the U.S. has imposed a 54-cents-a-gallon tariff to prevent Americans from importing sugar ethanol from Brazil just stupid or really stupid?” (Thomas Friedman, *New York Times*, September 20, 2006)**
- ◆ **“There is a place for ethanol in the world’s energy future – but that place is in the tropics” (Paul Krugman, *New York Times*, January 29, 2007)**

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# World production of ethanol



Source: Earth Policy Institute, 2005

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# World production of ethanol

Leading ethanol producing countries, 2004-2005

Country	2004		Country	2005	
	(mil. gal. per year)	(percent)		(mil. gal. per year)	(percent)
<b>Brazil</b>	<b>3,989</b>	<b>37</b>	<b>Brazil</b>	<b>4,227</b>	<b>35.8</b>
<b>United States</b>	<b>3,400</b>	<b>32.8</b>	<b>United States</b>	<b>3,904</b>	<b>33.1</b>
China	964	9	China	1,004	8.5
India	462	4.3	India	449	3.8
France	219	2	France	240	2
Russia	198	1.8	Russia	198	1.7
South Africa	110	1	Germany	114	1
United Kingdom	106	1	South Africa	103	0.9
Saudi Arabia	79	0.7	Spain	93	0.8
Spain	79	0.7	United Kingdom	92	0.8
Others	1,029	9.6	Others	1,366	11.6
Total	10,770	100	Total	11,790	100

Source: von Lampe (2006)

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# Production in U.S. vs. Brazil

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- ◆ **Corn vs. sugarcane feedstock**
- ◆ **Costs per gallon of fuel\*:**
  - **\$1.09/gallon from corn**
  - **\$0.83/gallon from sugarcane**
- ◆ **U.S. delivered costs per gallon†:**
  - **\$2.47/gallon**
  - **\$2.12/gallon (c.i.f)**

\* von Lampe (2006), Shapouri *et al.* (2006) † Based on October 2005 prices

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# U.S. ethanol consumption

Estimated U.S. Consumption of Fuel Ethanol, Gasoline, and Diesel  
(million gasoline-equivalent gallons)

	1996	1998	2000	2002	2004
E85 <sup>a</sup>	1	2	7	10	22
E10 <sup>b</sup>	660	890	1,110	1,120	2,052 <sup>c</sup>
Gasoline	117,800	122,850	125,720	130,740	136,370
Diesel	30,100	33,670	36,990	38,310	40,740

<sup>a</sup> Blend of 85% ethanol with 10% gasoline    <sup>b</sup> 10% ethanol blended with gasoline

<sup>c</sup> 3.4 billion gallons of ethanol consumed in 2004, but equivalent gallons lower due to lower energy content

Source: Yacobucci, 2006

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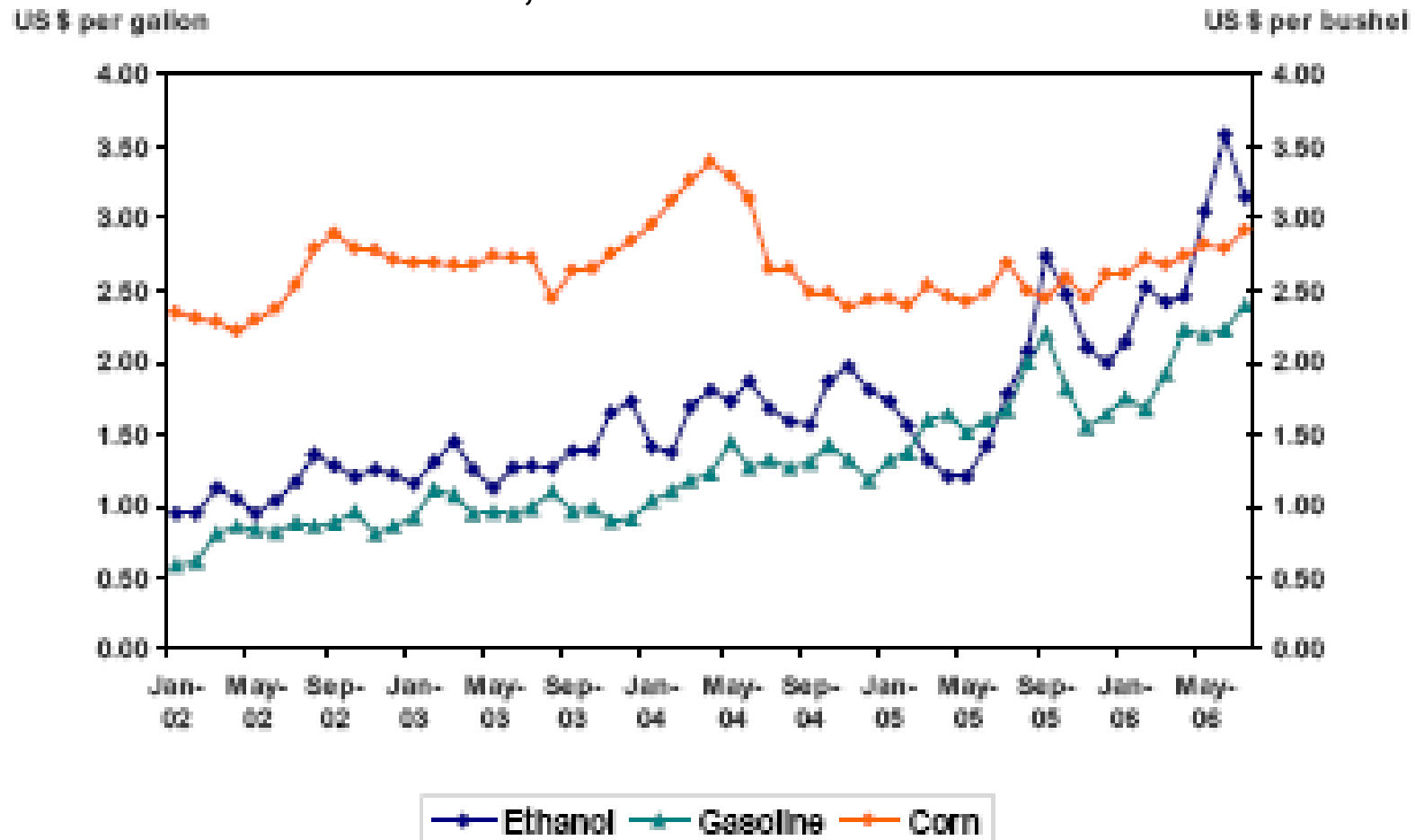
# Factors impacting U.S. ethanol demand

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- ◆ **Renewable Fuel Standard (RFS) in 2005 Energy Policy Act, requiring fuel production to include minimum amount of renewable fuel – 7.5 billion gallons by 2012**
- ◆ **State bans on use of MTBE as an additive**
- ◆ **Relaxation of federal oxygenate requirements and no MTBE liability protection**
- ◆ **Rise in gasoline prices has increased use of ethanol as a fuel extender (Eidman, 2006)**
- ◆ **Tax credit of 51 cents/gallon of ethanol used in blending**

# U.S. ethanol prices

## U.S. Ethanol, Gasoline and Corn Prices



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Source: Tokgoz and Elobeid, 2006

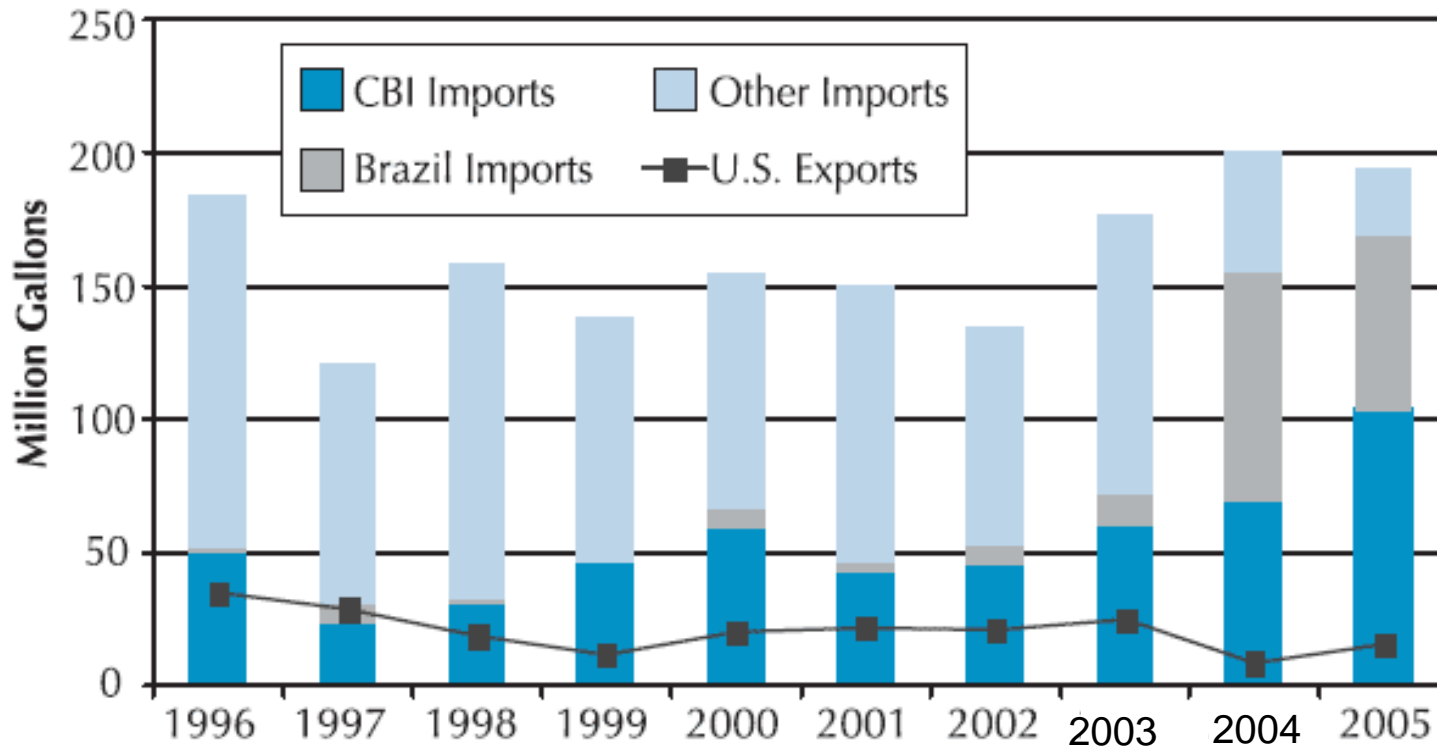
# U.S. trade policy and ethanol

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- ◆ **To offset U.S. tax incentive, most ethanol imports subject to 54 cent/gallon duty**
- ◆ **Caribbean Basin Economic Recovery Act (CBERA) of 1983 established rules for ethanol imports:**
  - **duty-free if 50% CBERA feedstock**
  - **quota on ethanol from non-CBERA feedstock that is duty-free – 7% of U.S. market**
- ◆ **Brazil able to export to U.S. under CBERA rules, e.g., via Jamaica and Costa Rica**

# U.S. trade in ethanol

U.S. Ethanol Imports and Exports



Source: Tokgoz and Elobeid, 2006

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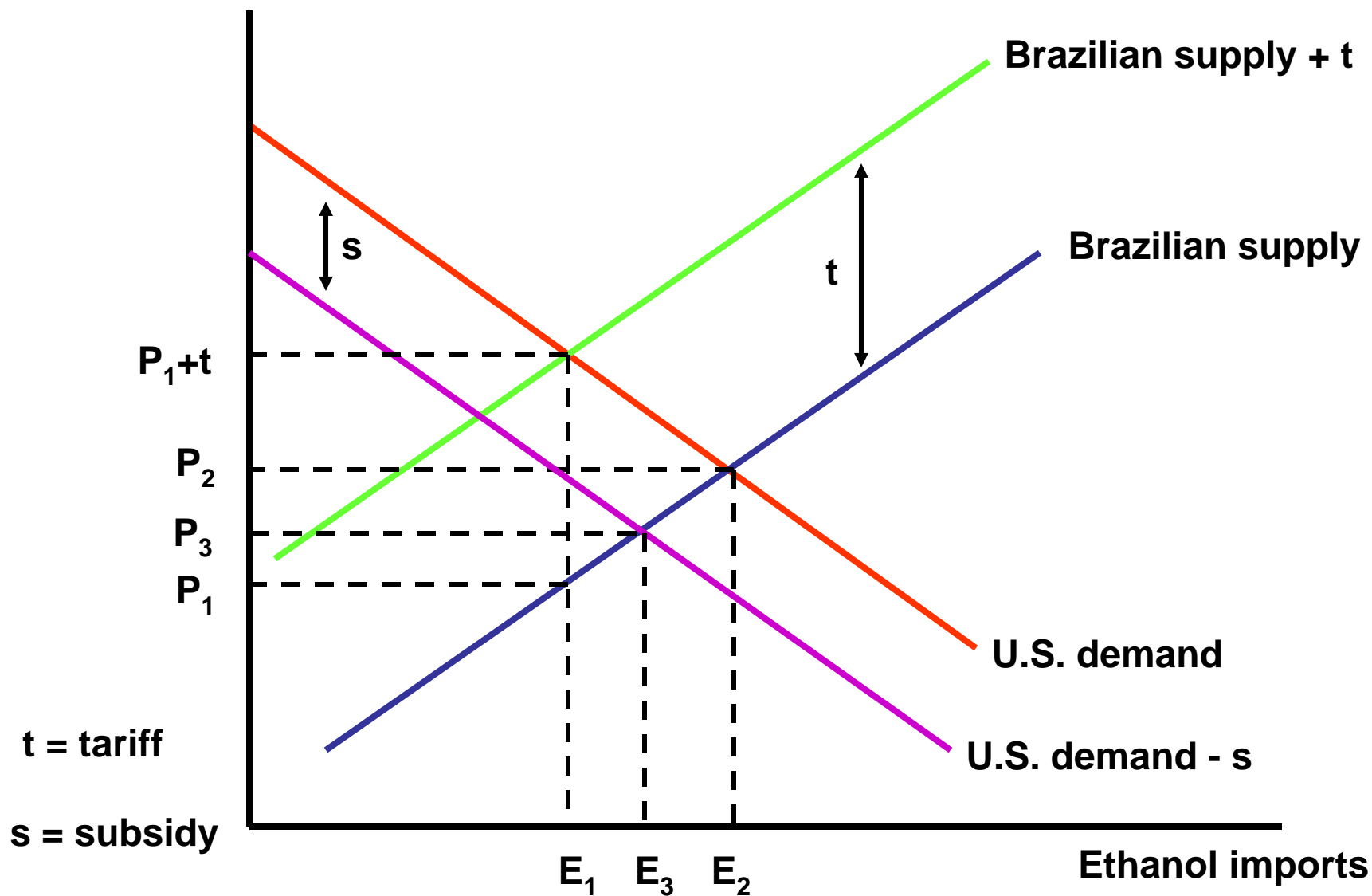
# Freeing up U.S. ethanol trade

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- ❖ **Volatility in domestic ethanol prices, and occasional price spikes have led to demands for removal of U.S. import duties**
- ❖ **What might be economic effects of removing ethanol import tariff and tax exemption to blenders?**
- ❖ **Based on 2005 data, recent study at CARD, Iowa State has simulated effects (Elobeid and Tockgoz, 2006)**

# World Ethanol Market

Ethanol price



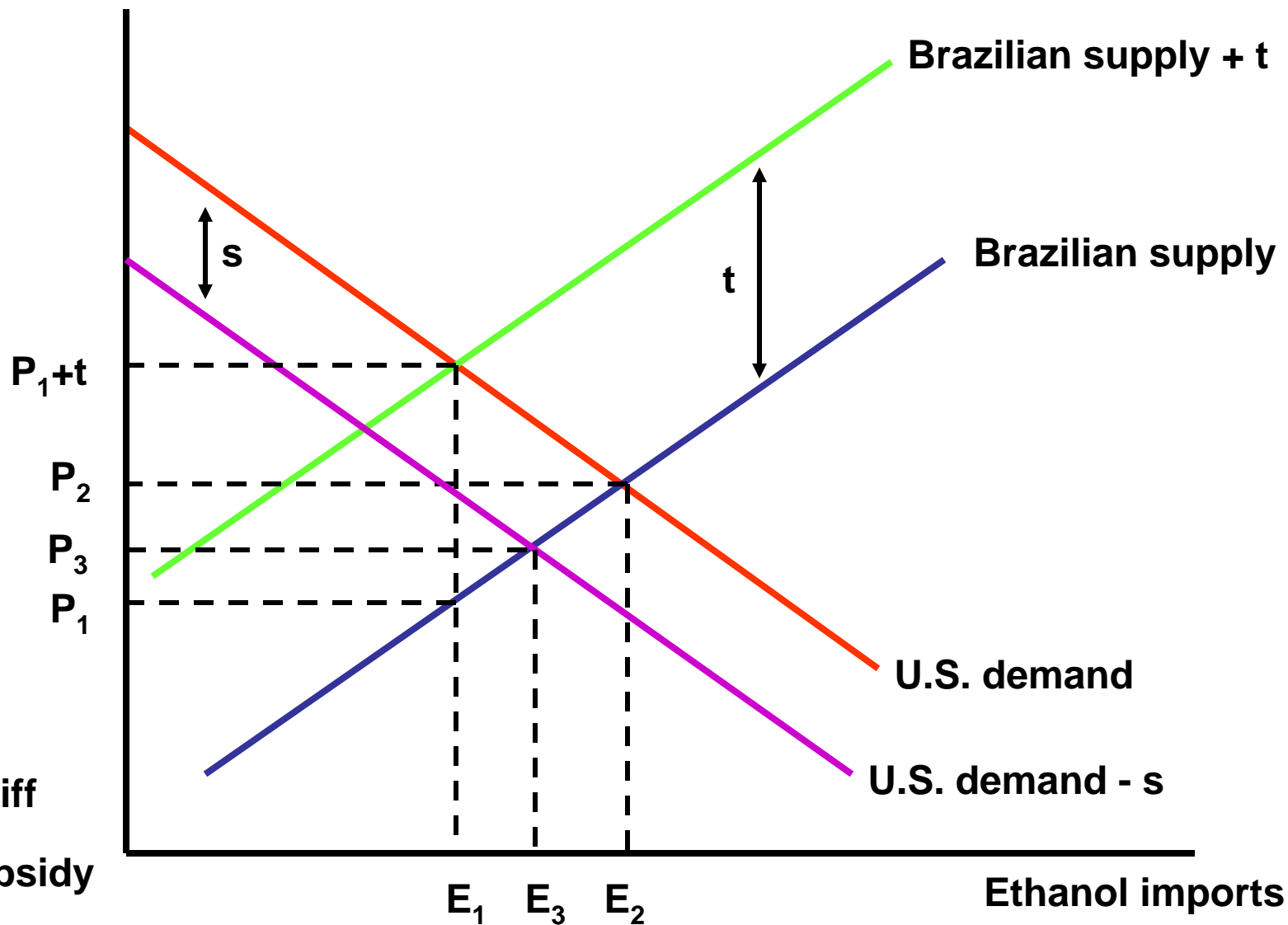
t = tariff

s = subsidy

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# World Ethanol Market

Ethanol price



t = tariff

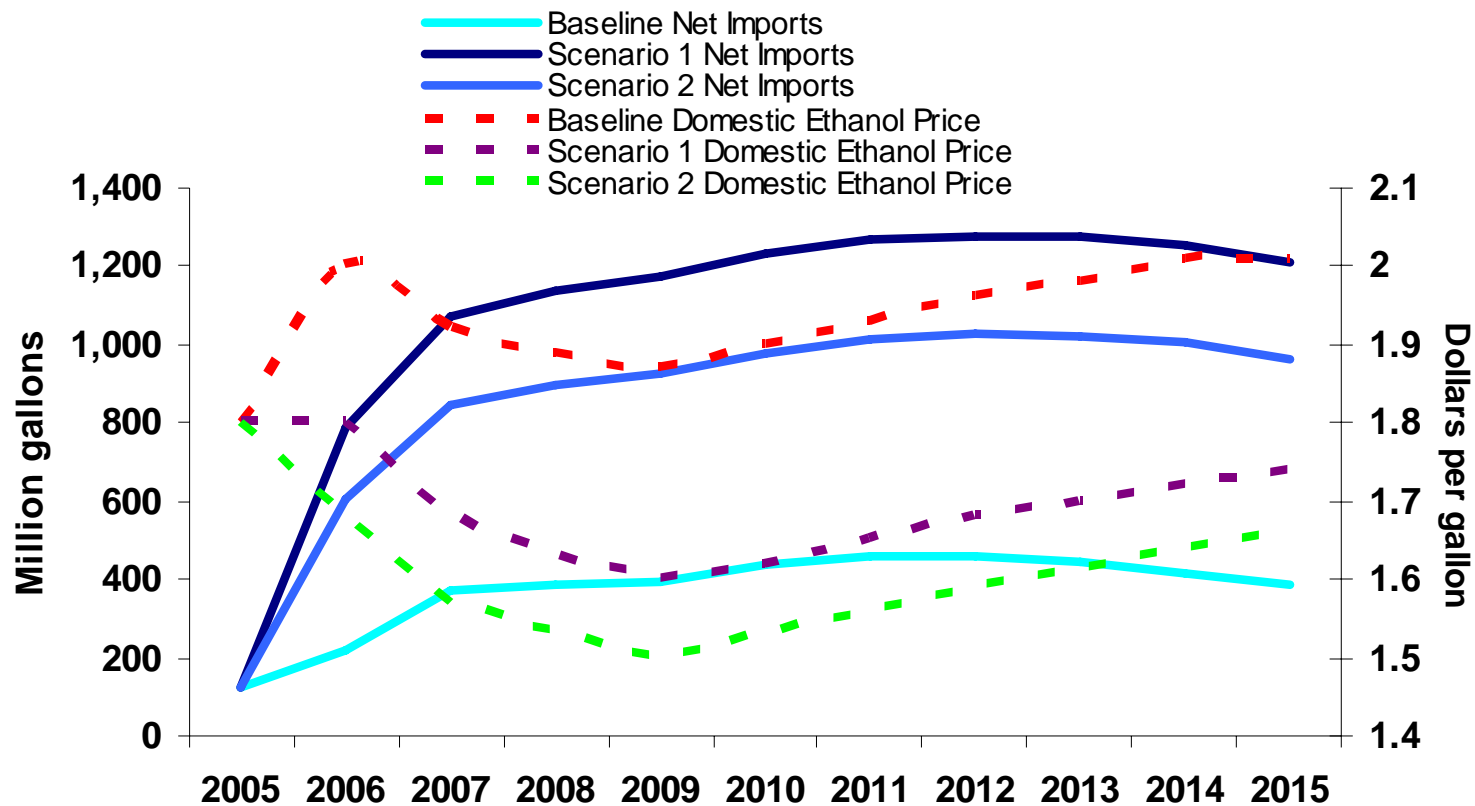
s = subsidy

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# Effects of free trade in ethanol

U.S. Net Ethanol Imports and Domestic Ethanol Price: 2005-15



Source: Elobeid and Tokgoz, 2006

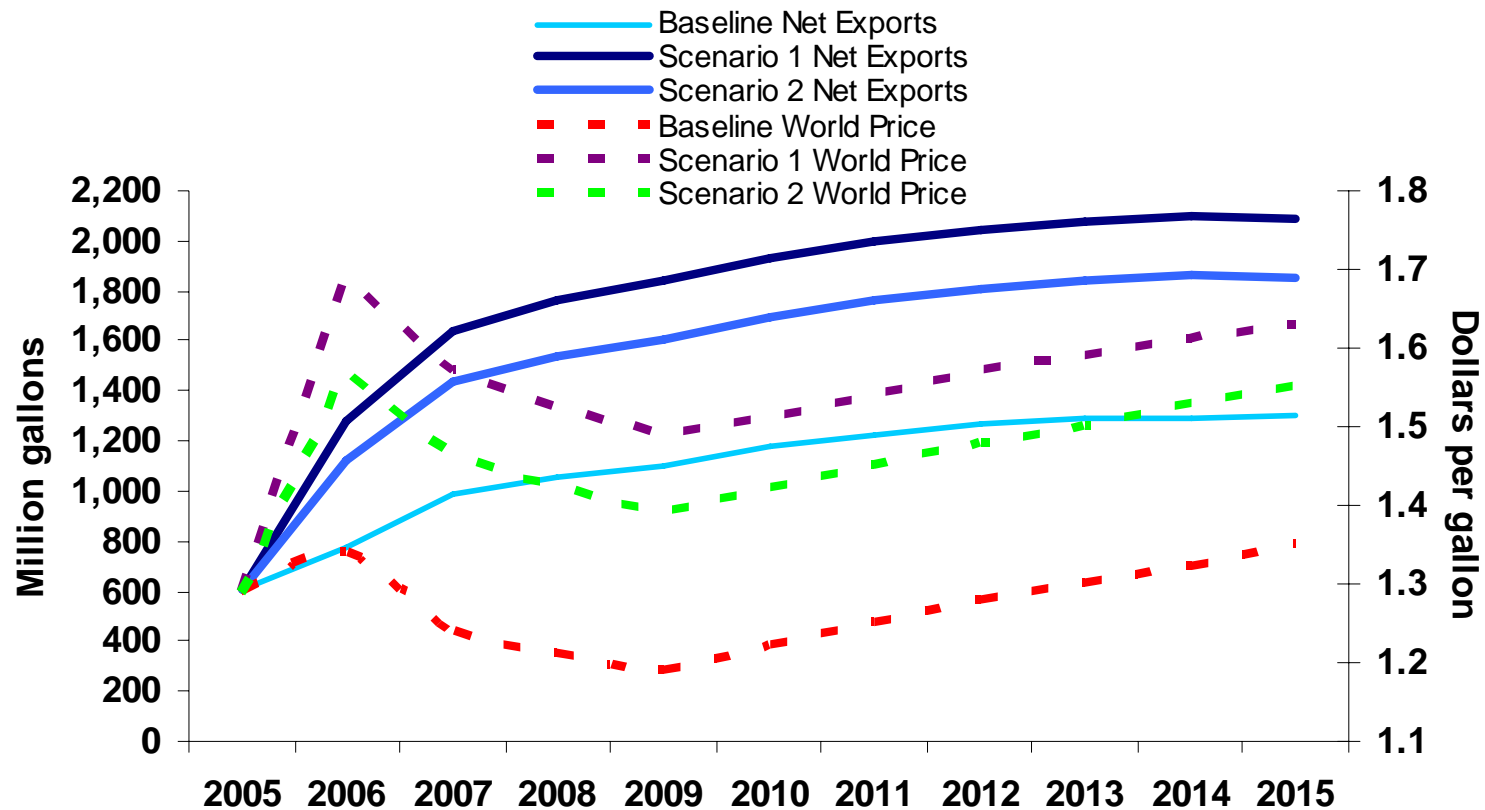
Scenario 1: No U.S. tariff  
 Scenario 2: No U.S. tariff/subsidy

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# Effects of free trade in ethanol

Brazil Net Ethanol Exports and World Ethanol Price: 2005-15



Source: Elobeid and Tokgoz, 2006

Scenario 1: No U.S. tariff

Scenario 2: No U.S. tariff/subsidy

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# Observations.....

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- ◆ **Freeing up trade in ethanol would allow Brazil to exploit its comparative advantage**
- ◆ **If ethanol is mostly a complement to gasoline, why tax cheap imports?**
- ◆ **Taxing gasoline would seem a first-best policy for reducing U.S. dependence on foreign-oil**

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