U.S. Agricultural & Biofuels Policy

Classifying Biofuel Subsidies: Farm Bill and WTO Considerations

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Rayburn Office Building, Room B - 340

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Presentation Overview

• Govt Biofuels Policy Distorts Markets
  ‣ Typically more expensive than petroleum counterparts, policy lowers the price gap to encourage greater production and use
    ✤ But biofuels policy is not presently limited under WTO rules

• Are Biofuels part of U.S. farm policy?
  ✤ Types of Biofuels Support:
    • Non-Agricultural: Tax credit; mandate; tariff; R&D; infrastructure
    • Agricultural: Biomass Crop Asst. Program (BCAP), biomass R&D
  ✤ Feedstock Linkage

• What is the implication for Govt Outlays?
  ✤ Indirect Price Support
    • Raises crop prices; lowers traditional program outlays
    • Tax credits are targeted to blenders, not biofuel producers
  ✤ How to measure the market effect?
  ✤ Notifications?
Biofuels Policy is Linked to Agriculture by the Feedstock

- **ETHANOL** – an alternative to gasoline, is made by fermenting sugar into alcohol
  - Corn (starch): United States
  - Sugarcane: Brazil

- **BIODIESEL** – an alternative to diesel fuel, is made from vegetable oil
  - Rapeseed oil: EU
  - Soybean oil: United States
U.S. Motor Vehicle Fuel Use, 2009

- Ethanol Share ~5.2% (gasoline equivalent)
- Biodiesel share ~1.0%
- 4.7% of total transportation fuel market in the United States

Primary U.S. Biofuel Policies

- **Blenders Tax Credit (TC)**
  - Lowers the cost of ethanol (versus gasoline) to blender
  - Enhances the effect of high oil prices
  - By increasing the demand for ethanol, the TC raises the demand for feedstocks... corn

- **Mandated (RFS) Minimum Usage Requirement**
  - If NOT binding, its effect is null at the margin
  - If binding,
    - guaranteed market reduces risk of investing in biofuel production
    - artificially increases demand and prices for biofuels & their feedstocks

- **Import Tariff on Foreign Ethanol**
  - Raises the cost of acquiring lower-cost foreign-produced ethanol
  - Allows less efficient U.S. biofuel producers to remain competitive
Secondary: U.S. Biofuels Policy

- **Loans, Loan Guarantees, and Grants**
  - Research & Development Funds
    - Feedstocks
    - Processing technology
  - Physical Infrastructure
    - Processing
    - Delivery & Distribution

- **Biomass Crop Assistance Program (BCAP)**
  - Cost-share payments for biomass crops

- **Farm Programs**
  - Support production of biofuel feedstock crops—corn, soybeans
    - Price support: Marketing loan program
    - Income support: Counter-cyclical program + ACRE
    - Risk reduction: Crop Insurance + SURE provides
    - Additional support: Extension and research
Key Federal Legislation that Supports Biofuels... it's not just Farm Policy

- **2002 Farm Bill (P.L. 107-171)**
  - First Energy Title; funded Bioenergy Program

  - Established first mandate (RFS-1) of 7.5 billion gallons by 2012

  - Expanded mandate (RFS-2) to 36 billion gallons by 2022.

- **2008 Farm Bill (P.L. 110-246)**
  - Several energy-related provisions—grants, loans, and loan guarantees
Rate of U.S. Ethanol Production

- RFS-2 established
- Katrina hits
- MTBE phase out
- RFS-1 established
- Bioenergy Program kicks in

Source: Actual production data from Renewable Fuels Association.
Biofuels Policy Have Clearly Supported Corn Price

Even using $3.85/bu Corn, the slope is positive since 2005.

Source: USDA, NASS; regular, unleaded U.S. city average gasoline prices, EIA, DOE.
Have Corn Prices Moved to a New Plateau?

Super-Cyclical Price Shift?

1915-1945: $0.82/bu
1945-1971: $1.28/bu
1972-2005: $2.33/bu
2006-2010: $3.85/bu

Source: National Agricultural Statistics Service, USDA
Ethanol Production Capacity Expands due to Profit Outlook...

- Market forces impact biofuel feedstocks indirectly by changing demand for biofuels
  - U.S. Govt Biofuel Incentives + High oil prices
    - high ethanol price $\rightarrow$ new prod. Capacity
    - more corn demand $\rightarrow$ higher corn prices
- Once built, ethanol capacity will continue to operate if: revenue $>\$operating\ costs$

Biofuels Market Dynamics can be Very Complex
- High corn prices $\rightarrow$ high production costs
- High protein feed by-product $\rightarrow$ advantageous to local livestock
Consider Traditional Supply & Demand Intersection at Equilibrium $P^*$ and $Q^*$
In the Very **Short-Term** Supply is Fixed

An Unexpected or sudden Increase in Demand raises prices to P2

Slide 13
Over longer time period, supply responds to market incentives and policy, lowering price impact.

Supply responsiveness is enhanced by:
- Abundant substitutes
- Agr R&D Policy

Supply responsiveness is limited by:
- Available land
- Technology
- Input costs
U.S. Planted Area: 6 Major Crops

- Barley
- Sorghum
- Cotton
- Wheat
- Soybeans
- Corn

Ethanol Uses an Increasing Share of U.S. Corn Production

USDA’s Spent $114.4 Billion in 2009*

*Includes $3.6 billion in offsetting receipts; $108.3 billion was initially authorized.
Conservation includes Forestry Outlays. Source: USDA, FY2011 Budget Summary.

- **Nutrition Programs** 67%
- **Commodity Programs** 12%
- **Conservation** 7%
- **Rural Development** 2%
- **Crop Insurance** 8%
- **Trade, Research, & Other** 4%

**~$250 million in biofuels-related assistance (~0.2%).**
U.S. Farm Program Outlays as Notified to the WTO ($ billions)

- AMS de minimis
- AMS
- Blue Box
- Green Box

*Source: WTO notifications.*
U.S. Farm Program Outlays (non-Green Box) as Notified to the WTO ($ billions)

AMS DeMinimis: Crop Insurance
AMS DeMinimis: Non Crop Insurance
AMS Limit
Price Contingent AMS

*Source: WTO notifications; and USDA, RMA, Summary of Business data.
Biofuel Prod-- Renewable Fuel Standard (RFS-2)*

- Biodiesel
- Unspecified
- Cellulosic Biofuel
- Corn-starch Ethanol
- Actual Ethanol Production

Mandated Production

36 BGYP

*Under the EISA of 2007 (PL 110-140) the enlarged and extended RFS starts in 2008 with 9 billion gallons.
Annual Cost of RFS-2 Mandated Tax Credits*

* Assumes that all expiring tax credits are extended through 2022.
U.S. Farm Program Outlays: WTO Notifications and CBO/CRS Projections ($ billions)

*Source: WTO notifications; Projections: CBO for FCIC, and CRS for AMS, Biofuels tax credits, and tariff costs.*
• Higher commodity prices ➔
  ▸ lower farm program payments as biofuels subsidies substitute for traditional price supports
  ▸ Distort commodity, land, & environmental markets

• How do WTO Members want to treat biofuels subsidies?
  ▸ Exclude from AMS entirely
  ▸ Green with no limits?
  ▸ Blue with some limits?
  ▸ AMS with hard limits?
For More Information on U.S. Farm and Biofuel Programs...

• Contact me directly at:
  - Randy Schnepf, 7-4277, rschnepf@crs.loc.gov

• CRS Reports
  - RL41282 — Agriculture-Based Biofuels: Overview+Emerging Issue
  - R40110 — Biofuels Incentives: A Summary of Federal Programs
  - R40155 — Renewable Fuel Standard (RFS): Overview & Issues
  - RL34130 — Renewable Energy Programs in the 2008 Farm Bill
  - R41296 — Biomass Crop Assistance Program (BCAP): Status and Issues
  - R41317 — Farm Safety Net Programs: Issues for the Next Farm Bill
  - RL34394 — Farm Commodity Programs in the 2008 Farm Bill