Impact of Biodiesel Demand on Soybean Meal Prices

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Thanks to the National Biodiesel Board, the United Soybean Board, and U.S. Department of Energy (DE-EE0003118)
Myth

• There are some serious misperceptions about the impact that increased demand for soybean oil has had soybean meal prices

“… the increased demand for oil to supply biodiesel production is putting further pressure on livestock producers by increasing feed cost…”
Reality

• Increasing demand for soybean oil actually helps to increase the supply of and reduce the price of soybean meal.
What drives soybean prices?

- Basic economic fundamentals of supply and demand for soybean oil and soybean meal
- A multitude of factors impact the supply and demand of these co-products
- What results is a continuum of price swings that are seemingly unexplained by any single factor
Estimated Processed Value (EPV)

\[ \text{EPV} = \text{Oil \$ Price \times Quantity} - \text{Processing Margin} = \frac{\text{Value of Soybeans}}{} \]
Estimated Processed Value (EPV)

**Oil $**
- $0.52/lb
- 11.45 lbs

**Meal $**
- $344/T
- 44 lbs

**Hulls $**
- $162/T
- 3.6 lbs

\[
\text{EPV} = \left( \frac{\text{Oil $}}{\text{Meal $}} \right) - \text{Processing Margin} = \text{Value of Soybeans}
\]

- $5.95
- $7.57
- $0.67
- $0.29

\[
\text{EPV} = \frac{13.81}{44} - \frac{0.67}{3.6} = \frac{13.14}{3.6}
\]

- $13.81
- $0.67
- $13.14
Processed Value vs. Soybean Prices

Component Prices

Component Yields

Processed Value

Soybeans

Marketing Year

$ per Bushel

Source: USDA ERS and AMS

January 2012 Update
Soybean Co-products: Oil and Meal
Basic Economics for Soybean Co-products

Basic rule of thumb:
When demand for one co-product increases, the price of the other co-product decreases, with everything else equal.
United Soybean Board’s Value Chain Analysis (VCA) Model

• Evaluates the impact of a single supply or demand factor (e.g., increase in soybean oil demand) on the soybean sector
  – in isolation of other economic sectors (such as corn sector) and
  – holding other supply and demand factors constant.

• This helps us understand the impact of changes in soybean oil demand on oil prices, soybean prices and supply, and meal prices and supply.
Soybean Oil and Meal Price Responses

Example: Demand for soybean oil increases by 10%

- Soybeans: $0.24/bu
- Oil: $0.05/lb
- Meal: $12.90/T

Soybean meal demand remains constant

Utilization

Price

Crush

Price

Production
Historical Impact of Biodiesel Demand on Soybean Meal Prices

- Analysis: understand the impact of biodiesel production staying constant at MY 2004 levels

![Soybean Oil Price Chart]

![Soybean Price Chart]

![Soybean Meal Price Chart]
Future Impact of Reducing Production from Mandated Amounts

• Analysis: understand the impact of reducing future biodiesel production by 25% of mandated amounts

![Graph showing reduced oil demand and soybean oil use over marketing years 2011 to 2015. The graph indicates a decrease in reduced oil demand from 1.46 to 1.50 BB lbs in 2011, followed by a steady increase to 1.58 BB lbs in 2014 and 2015.]
Future Impact of Reducing Production from Mandated Amounts

**Soybean Oil Price (cents/lb)**

- '11: (9.90)
- '12: (10.50)
- '13: (10.60)
- '14: (10.70)
- '15: (10.60)

**Soybean Price ($/bu)**

- '11: (0.21)
- '12: (0.28)
- '13: (0.31)
- '14: (0.33)
- '15: (0.33)

**Soybean Meal Price ($/T)**

- '11: 36.77
- '12: 36.40
- '13: 35.50
- '14: 35.15
- '15: 34.44
Summary

• Greater soybean oil demand for biodiesel production increases crush, subsequently
  – increasing the demand for soybeans, ultimately leading to higher soybean prices
  – increasing the production of soybean meal, thus lowering soybean meal prices
Summary (cont.)

• Historically, the increased demand for soybean oil has lowered soybean meal prices by $16 to $48 per ton from where they otherwise would have been for MY05 through MY09

• Losing just a portion of the demand for soybean oil in the future could
  – Lower soybean prices ranging from 21 to 33 cents per bu
  – Increase soybean meal prices ranging from $34 to almost $37 per ton
Summary (cont.)

- Therefore, a healthy biodiesel industry with the capacity to produce at least the mandated RFS2 volume will provide support to soybean oil demand and help to stabilize and moderate soybean meal prices.
Thank You!

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