Policy Risks: Potential consequences for the biofuels industry

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Petroleum price
(West Texas Intermediate)
Rack (wholesale) prices for ethanol and gasoline

Source: Nebraska government website: http://www.neo.ne.gov/statshtml/66.html
What’s happened since January?

- Petroleum and ethanol prices higher
- Corn supply and use much tighter
  - Not news: ethanol
  - News: 2008 planted acres and yields
  - Very strong non-ethanol demand, low stocks
- Narrow ethanol plant margins
  - Normally expect higher margins at higher petroleum/ethanol prices
  - But tight corn situation means margins narrow
Futures prices for ethanol and gasoline, June 6, 2008

- July 2009 contracts
  - Ethanol: $2.50
  - Gasoline: $3.50

- Ratio: $2.50/$3.50 = 71%

- To blenders: ($2.50 - $0.45 tax credit in 2009)/ $3.50 = 58%

- To consumers: ($2.50 - $0.45 + $0.62 taxes & markup)/ ($3.50 + $0.62 taxes and markup) = 65%

- Ethanol BTU content/gal.: ~67% that of gasoline
Futures prices for ethanol and gasoline, June 20, 2008

- July 2009 contracts
  - Ethanol: $2.77
  - Gasoline: $3.48
- Ratio: $2.77/$3.48 = 80%
- To blenders: ($2.77 - $0.45 tax credit in 2009)/ $3.48 = 67%
- To consumers: ($2.77 - $0.45 + $0.62 taxes & markup)/ ($3.47 + $0.62 taxes and markup) = 72%
- Ratio moving up: expectation of a binding mandate?
EISA provisions

Source: EISA 2007, Biodiesel RFS assumed constant after 2012
EISA: a few of the complications

• Draft regulations not expected until Fall, final regs in spring.
• What is an advanced Biofuel?
  – Whatever the EPA says it is…
  – “Advanced biofuels” must meet greenhouse gas reductions
  – What about imports?
• Sub-mandates
  – Biodiesel: 1 billion gallons by 2012
  – Cellulosic ethanol: 1 billion gallons by 2013, 7 billion gallons by 2018
• If not waived, each mandate must be met
  – Tradable RINs
  – Each class could have a different price and RIN value (conventional, cellulosic, biodiesel and other advanced)
EISA: some of the finer points

- Rollover provisions
  - If biofuel use more than required in one year, can carry some credits forward to next year
  - Thus if exceed mandate in 2009, may use less than EISA amount in 2010 (incorporated in model)

- Deficit
  - Could fall short of required biofuel use this year if made up the next (incorporated but turned off in model)

- Waivers
  - Provisions to waive, some specific, some quite vague
    - Specific provisions for cellulosic and biodiesel, overall waiver more vague
    - Other readings of bill are possible
Biofuel market results with and without EISA mandates

Biofuel supply and use, 2011-2017 average

- Ethanol production: With EISA mandates 15.6 Billion gallons, Without mandates 12.4 Billion gallons
- Ethanol net imports: With EISA mandates 1.3 Billion gallons, Without mandates 0.4 Billion gallons
- Ethanol domestic use: With EISA mandates 16.8 Billion gallons, Without mandates 12.8 Billion gallons
- Biodiesel production: With EISA mandates 1.1 Billion gallons, Without mandates 0.6 Billion gallons

Billion gallons
- With EISA mandates
- Without mandates
Removing current policies: effect on ethanol prices, 2011-17 avg.
Petroleum price revisited
2011-2017 average

Refiner's acquisition price

Average of all 500  Top 10% of 2008-17 oil prices

Dollars per barrel
Ethanol production
2011-2017 average

Without EISA, credits or tariffs
Without EISA, with credits & tariffs
With EISA, without credits & tariffs
With EISA, credits & tariffs

Source of Capacity: Renewable Fuel Association June 19
RIN
renewable identification number

• Created by biofuel producer
• Tradable
• Elements of RIN value
  – Consumer cost calculation
  – Speculation about how binding mandates may be over the life of the RIN
  – Transaction costs

Could RINs be used as a policy tool?
Core RIN values
average of 2008-2017

- Conventional RIN
- Advanced RIN

Core RIN value per gallon

- Average of all 500
- Top 10% 2008-2017 oil prices
Core RIN value per gallon

- All 500
- Top 10% of oil prices for that year

Source: FAPRI stochastic Baseline
RINs as a policy tool

- Could use RINs as a ‘safety value’
- Targeting biofuel prices or commodity prices?
  - May be effective on biofuel prices, there may be too much noise to target food prices
- Would have to be set for all RIN categories and respect mandate hierarchy
Additional Policy Risk

- Presidential ability to unilaterally waive import tariff?
- Short run commodity or oil market shocks induce waivers setting precedent
- New administration, new priorities
- 2009 energy bill?

Uncertainty affects markets
Conclusions

• Exact implementation of policies uncertain
• Current set of policies offer layered support
• The policy which is ‘most important’ depends on context
• RINs will provide market signals and could potentially be used as a policy tool
• Uncertainty about policies may effect future market outcomes
For more information

• Visit the FAPRI-MU website
  – http://www.fapri.missouri.edu/

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Core RIN value per gallon: 2012 corn yields