3rd Bio-Ethanol Conference

Etanolo di seconda generazione: una realtà in Italia
Second generation ethanol: a reality in Italy
An international perspective on the development of new energy industries

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Boom in global R&D. During 1970s

Perception that world economy will grow?
Textbook market with shocks
Oil Market with shocks

Price

Demand

Supply

Quantity
Energy is priced by (i) fundamentals or (ii) “safe store of value”?
But good prices and natural endowments... are NOT sufficient to develop an industry

- Example: Two areas of the world with similar suitability for sugarcane
Brazil took advantage of the first boom in oil prices
- Sugar Lobby in Sao Paulo
  - Politically powerful group
    - since colonization.
    - Industry was “close” to ethanol
- OK, strategy for compensation.
- But also specific regulations & coordination
- Colombia did not have that...
Prices are not the only volatile thing…

Global regulations are less than clear
Why so volatile?
Regulatory Uncertainty

• US /EU Politics and compensation
  – Pork is paid in corn!

• Global Food Prices
  – India or Thailand vs. US or EU.
  – When food price goes to the roof governments start intervening.
Usual case for regulation:
One instrument (e.g. certification) …
and one Target
Difficult with only one instrument.
Messy…

• Waiting for a coherent international regulatory framework for bioenergy…

• …Is like waiting all your life for the perfect partner to get married.
  • But we know there are 6 billion people on Earth

• → Create certainties at the margin,
  – local level. (Pre-requisites)
New industries do not grow on their own

- Some inputs are private.
- But other inputs are inherently public:
  - Specific regulation for cars.
  - Authorization for plants.
  - Contracts to solve by lateral holdup
  - Processing plant has monopoly power
  - Farmer has also power...
What about innovation?
Graph private equity investment and oil prices

• This is finance of companies that work on Biofuel, so one should be careful in the interpretation. It can be that bigger companies are entering the business of Biofuel, so the total amount is growing but the money is going somewhere else. Maybe we can split the sample to get bound of the mentioned effects…

• Venture Capital R&D investments depend on energy prices…

Private Equity investment in Bioenergy
Comparison to oil prices 1980 - 2008

Source: Author's calculation from Intern. Financial Stat and VentureXpert
Investment 2008 is projected doubling the amount until June.
Oil Prices added for 2007 and 2008
... But VC is NOT equally distributed in the world...

Venture Capital in Bioenergy (2008)
(From VentureXpert)

US$ Million

Sum of investment in all companies in the category

0 200 400 600 800 1,000

Brazil

California

Italy

Massachusetts

U.K.
In Cellulosic, innovation may not come in small pieces

• Case A: Develop a patentable biochemical step to produce a drug against Cancer.
  – Then you sell it to a Pharmaceutical
  – Software is similar

• Case B: Develop a for Cellulosic.
  – Who will buy? What feedstock? No global market for product, so complex bargaining for patents...
Biotech development

• Superstars from Academia.
• Being close to demand / industry
  – Back and forth process
• Finance: Venture Capital.
  – Sometimes outside producer firms
  – Sometimes inside producer firms
• Job hoping & spillovers
How would an industrial development hedged strategy look like?

- Works under various regulatory scenarios
  - with or w/o international market.
- Join rural and environmental politics
  - Avoid rhetoric of “burning food”.
- New industries require public goods
- Stepping stone to Biotech.
My message

• Lots of uncertainty: prices / regulations.
  – They will continue!

• Energy industries do not grow on their own:
  – Public inputs & Specificity, Holdup, R&D.

• What to do?

• Hedged strategy & stepping stone
Different from usual crops

Soybean / Wheat

Sugarcane

- Degradation
- Water & residues

- High transport cost per BTU
  (w.r.t. gasoline)

• Spatial dimension matters more… Case for local development
• Similar to other biofuels (not from seeds)