Transition to a Bioeconomy: Environmental and Rural Development Impacts

Financing Growth of Cellulosic Ethanol

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Oct. 15-16, 2008

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Historical Path

- 2005 Renewable Fuel Standard
- Favorable corn prices
- Rising oil prices
- Production standards

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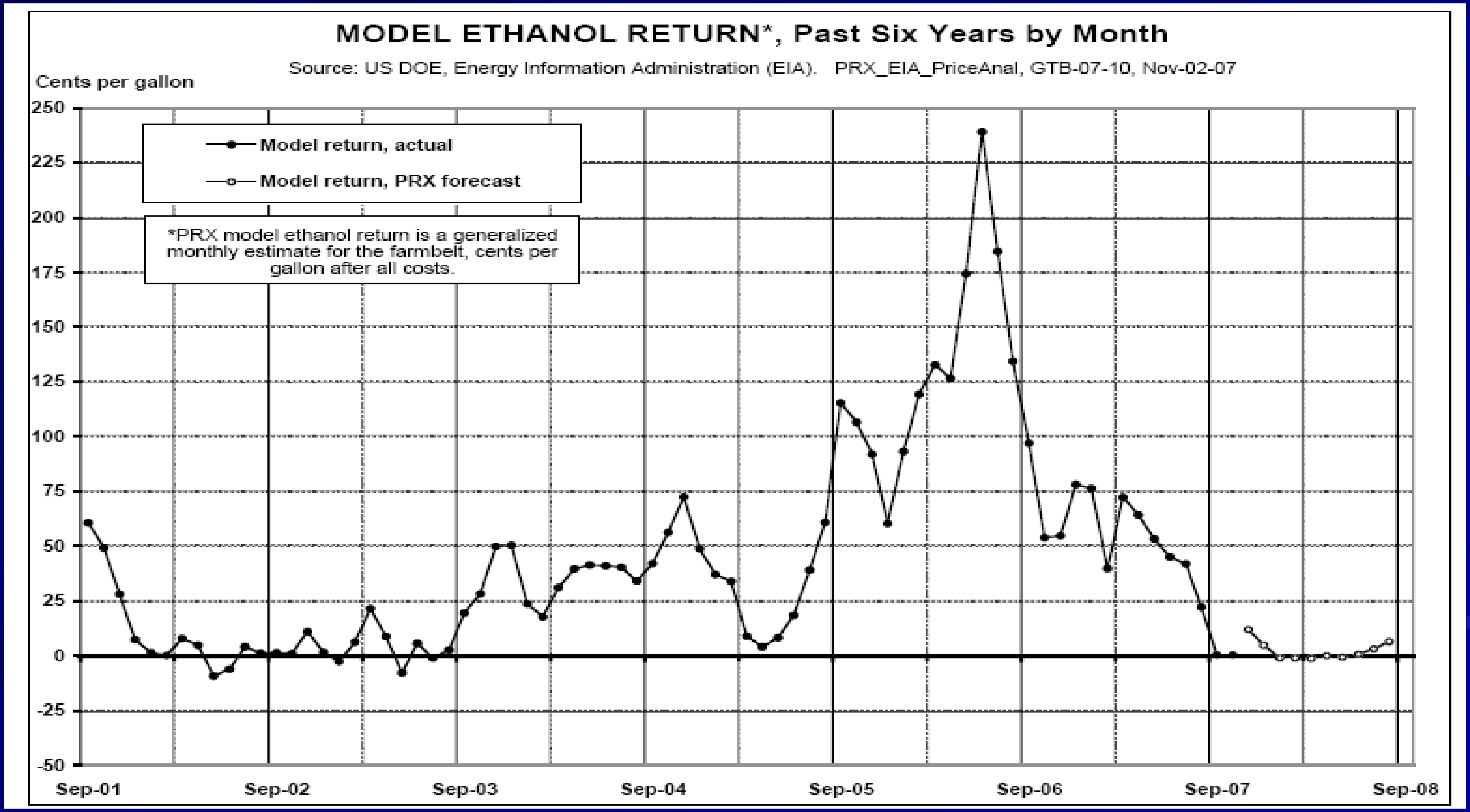
Rapid Expansion

Historical Path

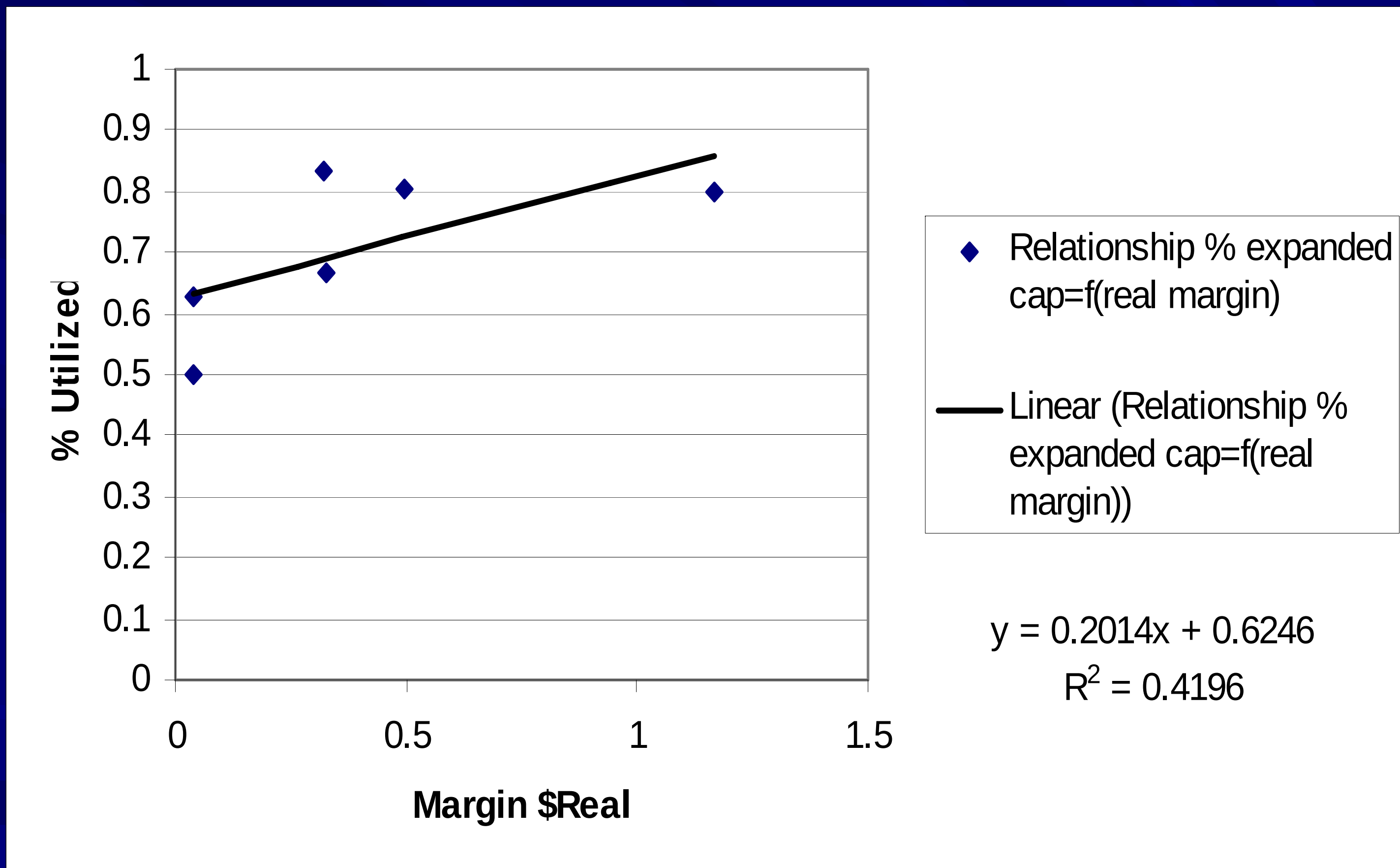
- $3 billion new investment in agriculture (WSJ, 2007)
- $1.3 billion state and local tax revenue (Urbanchuk, 2007)

1 percent less local ownership = 1 less job (ISU, 2007)

Current Setting: Margins Converge to Near Nil



Capacity Utilization vs. Margin



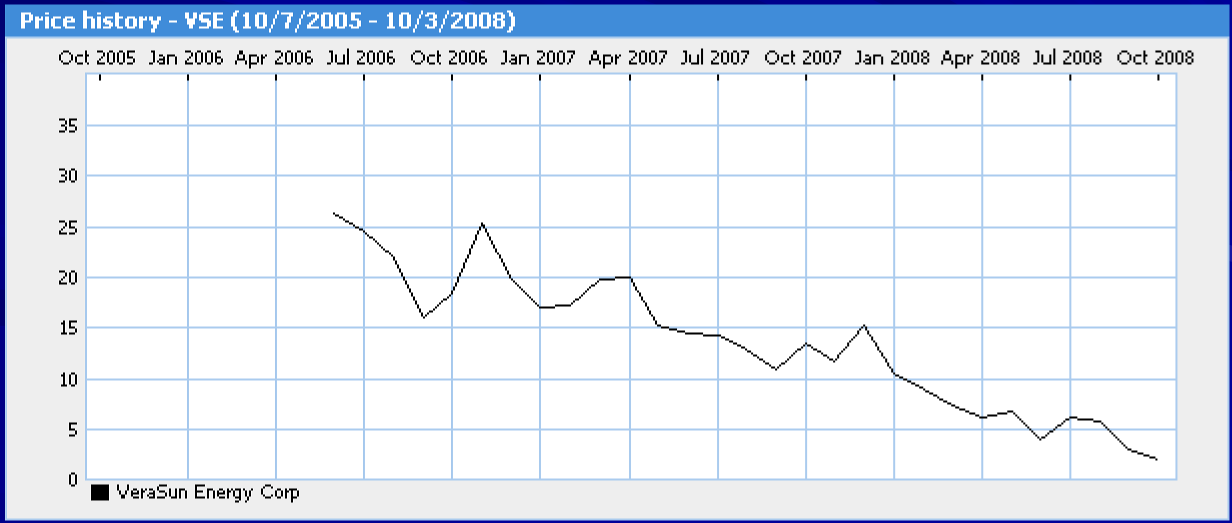
Wilson, 2008

Investment Climate Has Cooled

- Corn price and supply uncertainty
- Construction costs have risen
- Tax credits are not certain
- New concerns about environmental impact, resource demands (water), and product quality
- Federal loan programs do not align with scale of new plants
- New biomass technology may render existing corn grain plant technologies less profitable

Creditors are Monitoring

- AgCountry Farm Credit Services (DeVos, 2008)
  - Financed 44 of 174 plants operating
  - Three (3) plants closely watched
  - One (1) plant in difficult position
- VeraSun



U.S. Financial Market Collapse

- Credit for new plants was negligible prior to collapse
- Existing biofuel plants “bruised”

New Ethanol Technology

- Need constant innovation to compete in commodity markets (ethanol and corn)
- Fractionation
  - Endosperm, 82% of kernel, 86% starch
  - Germ, 10% of kernel, 80% oil
  - Pericarp, 8% of kernel, gasify
- Gasification of distillers grains
- Fluid Bed Technology
- Cellulosic

2008 Economic Emergency Stabilization Act

- Extension of numerous biofuel credits
- 50% write-off for cellulosic facilities
- $10/ton CO2 (oil recovery)
- $20/ton CO2 (permanent)
  - GAO estimates $1.1 bil. over decade

Issue #1 – Lack of Capital

- Lender portfolios are saturated
- Sweeps – plants have limited reserves
- New technology 4x expensive as 2006 plants, new tax credits are helpful.

Issue #2 – Industry Uncertainty

- Lack of production standards due to diverse feedstock
- Federal tax credits
- Implementation of 2007 EISA (RINS)
- Value of carbon/GHG reduction
  - Tiffany ($0.20-0.40/gal.)
- Gap in biomass feedstock cost
  (producer cost vs. plant ATP)

Issue #3 Wall Street Turmoil

-Reduced GDP for next decade
(KC FRB, 2008)
-Lower oil prices
-Higher exchange rate
-Corn price

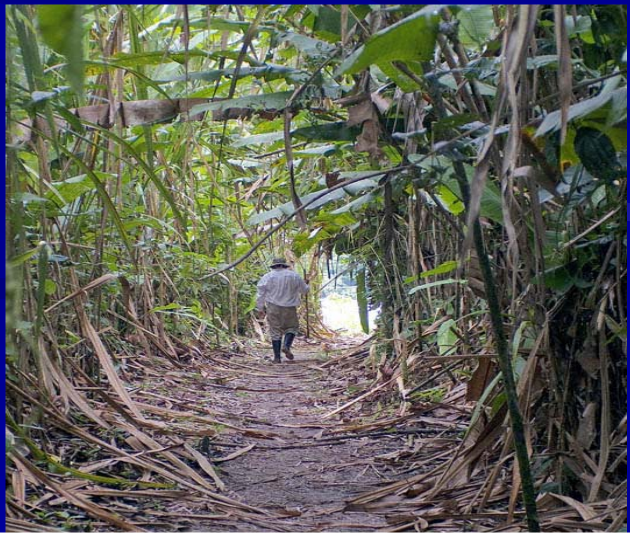
South America/Mexico Ramp Up and Target U.S.

-ApexBrasil/Unica, $10 million promotion campaign

-Grupo Santos, $12 billion, 60 sugarcane plants

-BP, $60 million sugar to ethanol, Gaois, Brazil

-Bunge and Itochu ink Sugar-Ethanol JV in Brazil



EP Overview 3/3/08, 9/24/08

Questions?

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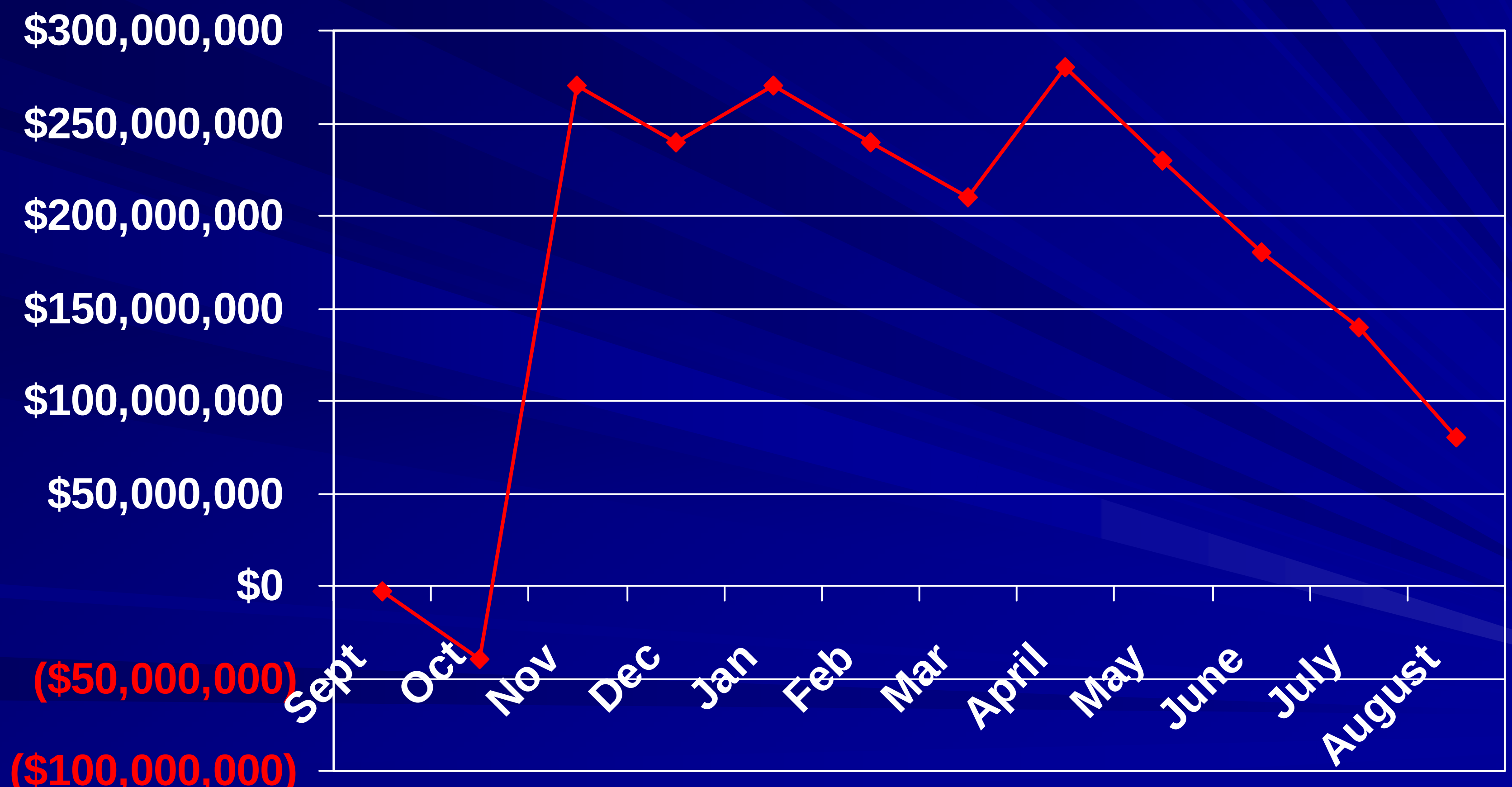
Agribusiness Seasonal Financing



Agribusiness Seasonal Financing

1) Determine max. credit need

2) Negotiate letter of credit/revolving loan
   - a) Pay fee for service
   - b) Don’t expect to utilize
   - c) Serves as safety net

3) Obtain lower cost credit directly from commercial paper mkt.