THE OIL SHOCK OF 2005 – WHAT IT MEANS FOR U.S. AGRICULTURE

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The Oil Shock of 2005 and U.S. Agriculture

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Introduction

• Oil prices rose in 2005 more than anyone expected
• Change in the current outlook for long-term increase in oil and energy prices
• What has caused this dramatic change?
• What does it mean for U.S. agriculture?
The USDA Baseline expectations of future oil price has jumped
What has caused change in energy outlook?

Demand outstripped supply

– High GDP growth in China, India and other Asian Newly Industrialized Economies competing with.....

– High GDP growth and energy demand in the United States

– Supply uncertainties from Iran and Iraq, Venezuela, and Nigeria

– Difficulties bringing new oil supplies online
What factors will stabilize the energy market?

Over time higher prices will induce
  – efficiency gains
  – conservation
  – increase supplies from producers
Energy use index of major users

Source: EIA
China becomes number two oil consumer in 2003
China has high energy use per dollar output, average 2001-2003

Source: EIA
But China shows highest efficiency gains

Source: EIA
Where does U.S. agriculture fit in?

• Agriculture is an energy intensive sector
• Cheap energy has facilitated energy intensity
• Efficiency gains more important for sector
• Reducing energy use will result from:
  – further efficiency gains
  – compositional change away from high energy use in agricultural subsectors
Energy use is concentrated in crop production

Source: Economic Research Service, USDA
U.S. agriculture has increased energy efficiency over 50 percent

Source: Economic Research Service, USDA
Farm percentage of US gasoline use drops sharply from 1980 to 2004

Source: Economic Research Service, USDA
Farmers replace gasoline with diesel

Source: Economic Research Service, USDA
Fertilizer use peaks in 1974 while pesticide use peaks in 1997.
Farm energy intensity declined faster than overall U.S. energy intensity 1980 to 2004

Source: Economic Research Service, USDA and EIA
Emerging patterns of agricultural energy use and efficiency

- Energy will be a major share of farm costs, even as efficiency improves
- High energy costs will be a drag on farm income
- High energy prices will stimulate energy efficiency gains
- High energy costs will encourage production of lower energy crops