

**23. *The Impacts of Cap and Trade Legislation on the  
Agriculture Sector of the Economy***

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*Bill Golden assists farmers, policy makers, and other stakeholders throughout Kansas in developing and implementing policies associated with the State's natural resources. He also works extensively with land-water-related issues such as valuing irrigation water rights. Current research and extension efforts are evaluating producer and community impacts associated with alternative water conservation policies and the impacts of climate change on our water resources.*

***Abstract/Summary***

*In response to concerns over the impact that carbon emissions have on the climate, the United States Congress is currently considering the Clean Energy and Security Act of 2009. The House of Representatives has passed its version of the bill (H.R. 2454, also known as the Waxman-Markey Bill). While the agricultural sector is excluded from emissions caps included in the bill, concerns over the impacts this legislation might have on the agricultural sector have generated numerous economic studies that predict a variety of outcomes. The purpose of this presentation is to provide a summary of the various assumptions, analytical methods, and major findings and implications of several of the key economic studies.*

## The Impacts of Cap and Trade Legislation on the Agricultural Sector of the Economy

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## A Change in This Presentation

- **New York Times 7/22/2010**: The effort to advance a major climate change bill through the Senate has collapsed !!!

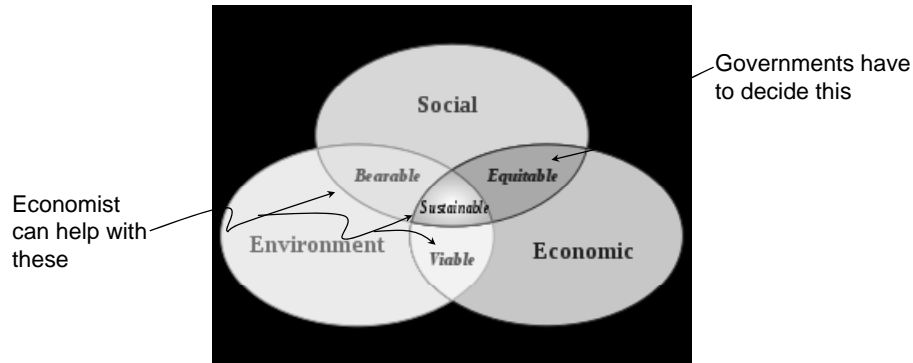
## Natural Resource Economist

- Understand the role of natural resources in the economy in order to develop more sustainable methods of managing those resources to ensure their availability to future generations.
- Many Natural Resource Economist are skeptical about free markets for environmental goods
  - Ownership of the input must exist in a free market (the right to use & the right to keep others from using)

## Natural Resource Economics

- Hotelling (1931) illustrated that efficient allocation of a nonrenewable input would lead to a depletion of the resource

## Natural Resource Economics



## Why 'Cap & Trade' ?

- Economists, for the most part, believe that a system of free markets is an efficient way for an economy to operate as long as the prices are right.
- Producers that use a natural resource as a production input may not accurately account for the social cost of that input. If this occurs, the natural resource may be over-consumed and depleted faster than the economically efficient rate.
- Environmental or Natural Resource economics typically involves situations in which the price of the natural resource is wrong.

## Why 'Cap & Trade' ?

- Many economist believe that if you restrict (cap) carbon emissions via a permitting system and then allow trading of those permits (carbon market) – then the carbon price will be correct and the market will efficiently allocate carbon.

## An Efficient Market

- Private property rights related are well defined
- Transaction costs are low between economic agents that wish to exchange property rights
- The market for property rights is perfectly competitive
- All economic agents have perfect information

## Other Methods to Regulate Carbon Emissions

- Strict Regulation (only the Cap) by EPA
- Carbon Tax
- In any case – the consumer will bear the cost.

## Clean Energy and Security Act of 2009

(HR 2454, also known as the Waxman-Markey Bill)

- “A Comparison of Select Cost-Benefit Studies on the Impacts of HR 2454 on the Agriculture Sector of the Economy”
  - Compiled by a group of KSU researchers
  - Reviewed and summarized 6 major studies focusing the economic impacts to production agriculture.

[http://www.agmanager.info/policy/commodity/Analysis/Comparison\\_Cost-Benefit\\_Studies\\_HR2454\\_12-10-09.pdf](http://www.agmanager.info/policy/commodity/Analysis/Comparison_Cost-Benefit_Studies_HR2454_12-10-09.pdf)

## Clean Energy and Security Act of 2009

(HR 2454, also known as the Waxman-Markey Bill)

- Creates a Cap-and-Trade system that will create a ‘market for carbon’.
- Agriculture will be exempt from the ‘Cap’ but will be allowed to ‘Trade’ (sell) carbon offset credits.
  - No till production systems
  - Pastureland sequestering of carbon
  - Planting trees (aforestation of farm & ranch land)

## Clean Energy and Security Act of 2009

(HR 2454, also known as the Waxman-Markey Bill)

- The 6 studies agreed that the cost of production would increase and commodity prices might not increase sufficiently to cover the cost of commodity production. - BUT – The sale of carbon offset credits will likely make farming and ranching more profitable.
- The 6 studies agreed that the net benefit will be vary by crop and region.
- The 6 studies provided different estimates of benefits because:
  - Different assumption on the future price of carbon (\$12 - \$160 per metric ton)
  - Different assumptions on the percentage of carbon offset revenue that will go to the agriculture producer (20% to 100%)
  - Different assumptions on which agriculture practices will qualify for offset credits.

Conversion to No-Till  
Methane Capture  
Nitrous Oxide Reduction  
Pastureland Sequestration  
Production of Bio-energy Crops  
Aforestation

## Clean Energy and Security Act of 2009 (HR 2454, also known as the Waxman-Markey Bill)

- On Average agriculture will probably be better off.
- Where land-use changes will occur is in dispute
- In Kansas (based on very limited information)
  - Wheat producers appear to be slightly better off
  - Corn producers appear to be no worse off
  - Cattle producers appear to be slightly worse off
- The impacts will be farm specific.
- If other countries do not have similar regulations it could put us at a competitive disadvantage internationally.

## Quote from Babcock (2009)

Given the likelihood of modest costs and benefits from a cap-and trade system, perhaps agriculture should look at whether a cap-and trade policy will change growing conditions for the better or worse as a deciding factor in whether to support a change in policy.

Given how much agriculture relies on consistent mountain snowfall and Corn Belt agriculture relies on warm summers with abundant rainfall, any disruptive change in climate will have a far greater impact on livelihoods than will the price of carbon.

## The Senate Version

American Power Act by Kerry & Lieberman

- Sets a current price of \$12 per ton for allowances to emit carbon dioxide and tries to prevent speculation
- Excludes the agriculture and forestry sectors from the carbon caps
- Energy-intensive and trade-exposed industries are held harmless
- The bill establishes criteria, administered by EPA (or, for domestic farm and forestry offsets, by the Department of Agriculture in consultation with EPA), for crediting offsets, so as to assure that offset credits are earned only for real, verifiable and permanent actions that would not happen anyway. Includes certified organic agriculture practices

## The Senate Version

American Power Act by Kerry & Lieberman

- It establishes a "Carbon Conservation Program" designed to encourage GHG reductions and sequestration activities for landowners and others with grazing contracts not eligible for the offset program. The CCP does what a lot of farmers wanted: it provides a way to reward the early adopters of beneficial practices. It will provide incentives for farmers already practicing organic practices -- or cover cropping or reduced tillage - - to continue to do so. This is vital, but also has the potential to backfire if the practices being rewarded are not actually providing climate change benefits.
- Net economic impact is approximately the same as the house version

## Positives for Agriculture

- The bills specifically
  - exempts production agriculture from emissions caps
  - provides provisions to ease the transition to higher fertilizer prices
  - fosters the development of carbon offset markets which likely will enhance agricultural revenues.

## Agricultural Offsets

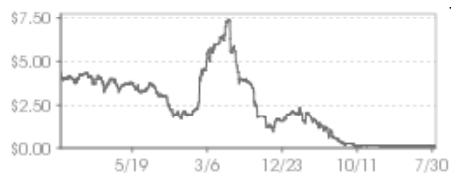
- The full list of "potential practices" is a diverse array, including altered tillage, cover cropping, nitrogen fertilization efficiency, farming methods used on certified organic farms, pasture-based livestock systems, reductions in animal management emissions, rotational grazing, crop rotations, and methods for increasing carbon sequestration in soils.

## What is the Market Telling Us?

European Climate Exchange



Chicago Climate Exchange



## Will Farmers Make Money From Climate Change Legislation?

- The opportunities for farmers to realize a net economic gain from climate legislation are significant. Offsets, biofuel, renewable power, and the ability to receive payments for multiple environmental benefits from well-managed working farmlands are among the new potential opportunities.

## Will Agriculture Really be Exempt?

- American farmers may face greenhouse gas limitations regardless of what happens in the legislative and regulatory process.
- Market-driven requirements from the private sector (e.g. Walmart), regulation by the U.S. Environmental Protection Agency (EPA), state or regional programs, and nuisance lawsuits will continue to require greenhouse gas (GHG) emissions to be reduced going forward.
- Without legislation, the piecemeal nature of GHG limitations will likely result in a worse outcome for farmers.

## My Concerns

- Most projections are based on EPA estimates
- Will the international 'playing field' really be level?
- Does the legislation give away too many carbon credits?
- Should agriculture be exempt?
- Is 'Cap & Trade' the best way to regulate carbon emissions?

## Disclaimer

- Estimates of the impacts of climate change legislation on the farm sector are subject to many uncertainties. Without knowing the precise form of legislation, how it would be implemented, and how individuals and firms around the world would respond to a complex new market environment, it is impossible to know for sure how it would affect US agriculture.

## Questions