

**GENERAL SESSION III**  
***Impact of Chinese Reforms on US Agriculture***

**DERMOTT HAYES**  
**Iowa State University**

Dr. Dermott Hayes is the Pioneer Hi-Bred International Chair in Agribusiness, and professor of economics and finance at Iowa State University. He heads the Trade and Agricultural Policy Division at CARD. He is co-director, with Jacinto Fabiosa, of the Food and Agricultural Policy Research Institute, a research center dually administered through CARD at Iowa State and the University of Missouri.

A native of the Republic of Ireland, Hayes obtained his degree in agriculture science from the University College in Dublin in 1981 and his Ph.D. from the University of California, Berkeley, in 1986 with a major in international trade. Hayes joined the Department of Economics at Iowa State University in March 1986. He has distinguished himself with many awards at the college and university levels for his work as a teacher and researcher. In 2006 he received a "Publication of Enduring Quality" award from the American Agricultural Economics Association. AAEA named him a Fellow in 2007. Besides his analysis of U.S. farm policy and international agricultural trade, his other research interests include food safety, livestock modeling, demand analysis, and commodity markets.

## Impact of Chinese Policy Reforms on US Agriculture

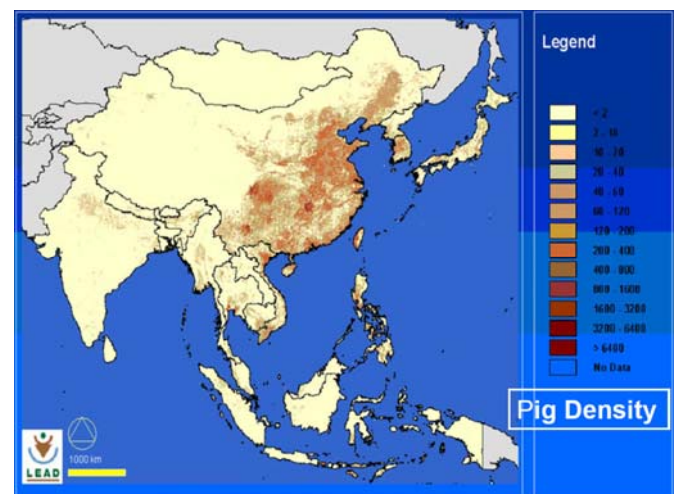
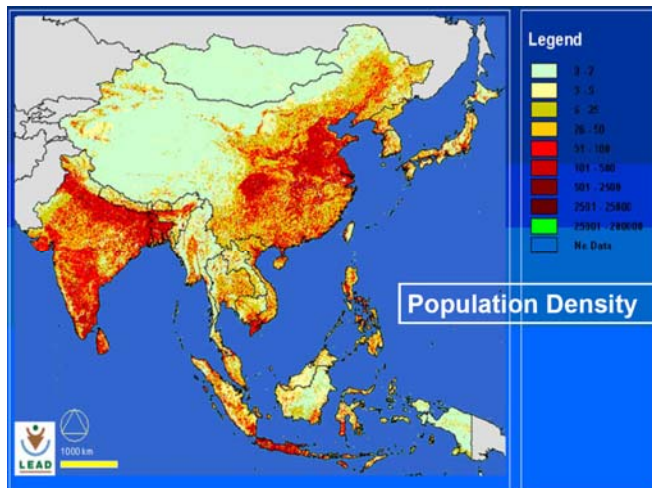
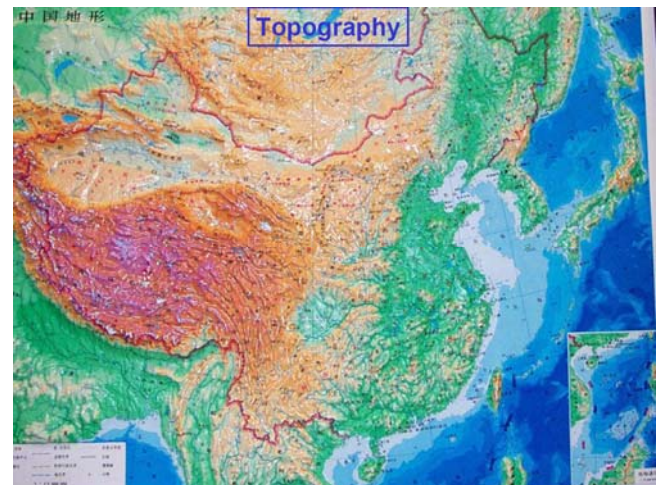
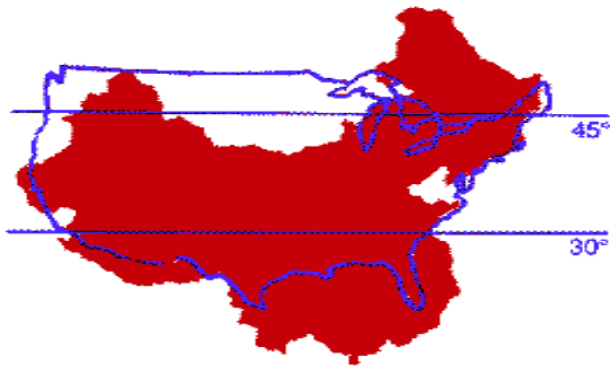
Presented at the 2014 Risk and Profit Conference  
August 22nd, 2014  
K-State Alumni Center  
Manhattan, Kansas

Dermot Hayes  
Pioneer Chair in Agribusiness  
Iowa State University

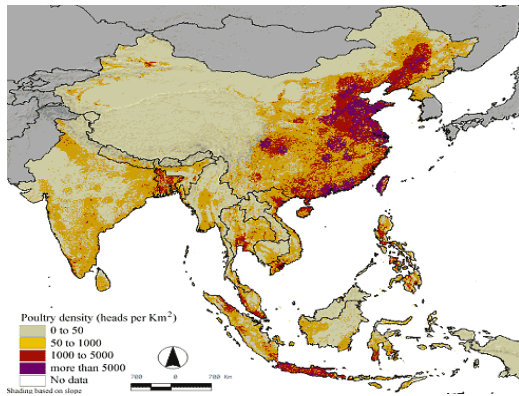
## Overview

- Density maps: livestock, people, disease phosphorous and urban areas
- Political changes and possible effects on imports
- Import Trends in Japan, South Korea, and Taiwan at China's stage of development
- Possible impact on US exports and markets

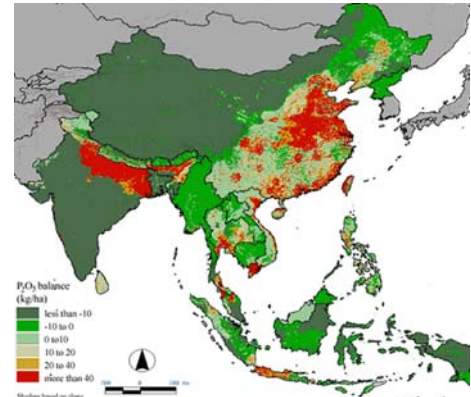
## China-US Comparison



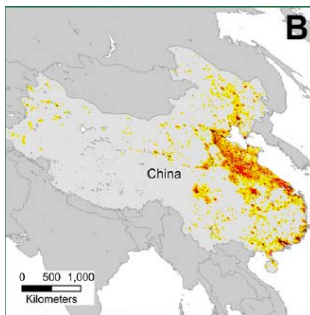
## Poultry Density



Red means more than 40% more Phosphorus than is needed



## Predicted new urbanization



"In China, urban expansion is forecasted to create a 1,800-km coastal urban corridor from Hangzhou to Shenyang  
<http://www.pnas.org/content/early/2012/09/11/1211658109.full.pdf>

One fifth of the per capita water resources of the US

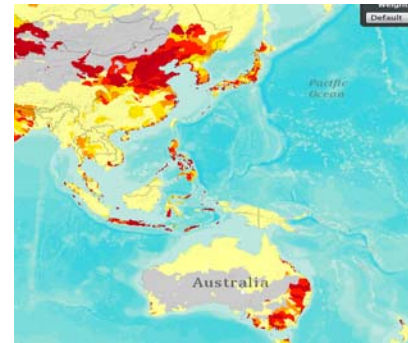


Figure 1. Tons of Pork Produced per Sow in Inventory

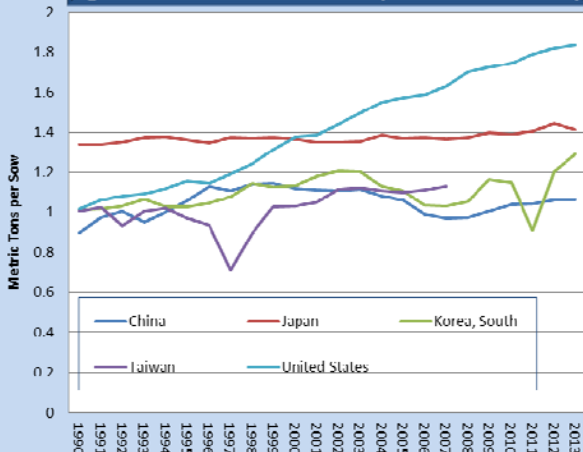
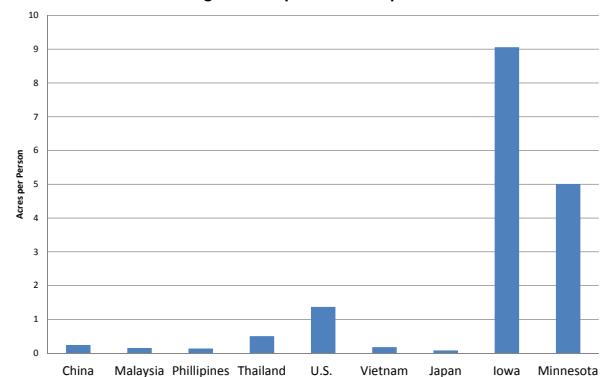


Figure 1. Crop Acres Per Capita



## Agricultural Resources

- China has gone below the politically sensitive 120 million hectares (296 million acres), has at most 275 million acres, a lot of which is poor quality land that cannot be mechanized and should not be farmed
- The US has about 360 million acres in crops and about 400 million acres of pasture, total agricultural area of almost a billion acres
- Yet China feeds almost five times the population, the key to this success is the creative Chinese diet, and the use of labor to substitute for crop land and animal feed
- China has given up on the most land intensive products (beef, cotton, sugar and soybeans) and is importing some corn

## Miles of new construction outside every city

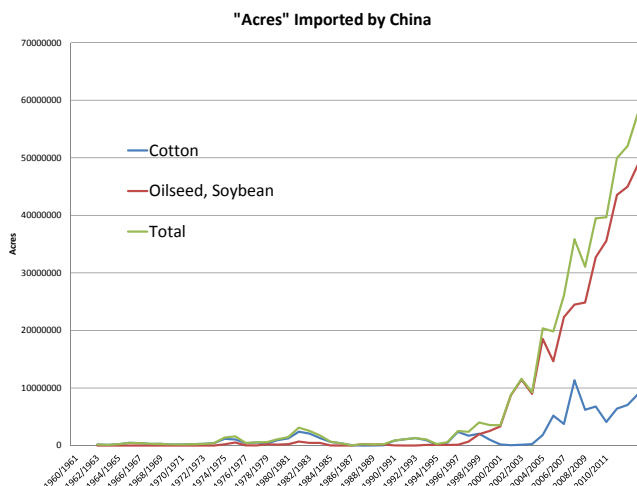


## Backyard units



[http://www.agrarhauson.hu/galeria/image/products/1039\\_pigs\\_china.jpg](http://www.agrarhauson.hu/galeria/image/products/1039_pigs_china.jpg)

- 30% of the pork in China comes from smaller units **these farms turn labor into feed**
- Backyard pig production disappears quickly once households can afford a car to drive to the grocery store and to find employment
- Current mortality in Chinese pork production is reported to be very high due to disease



## Who Said This

- Protectionism is a "blind alley," calling for free trade to help achieve a global economic recovery.



## Answer

- The new Chinese Premier Li Keqiang
- This was reported in the China Daily!
- Li is a pupil of leading free-market economist Li Yining, the Chinese Milton freeman
- Li is China's first premier to have a doctorate in economics
- Private Chinese firms spent more on U.S. investments in the past 15 months that in the previous 11 year period

## More Quotes

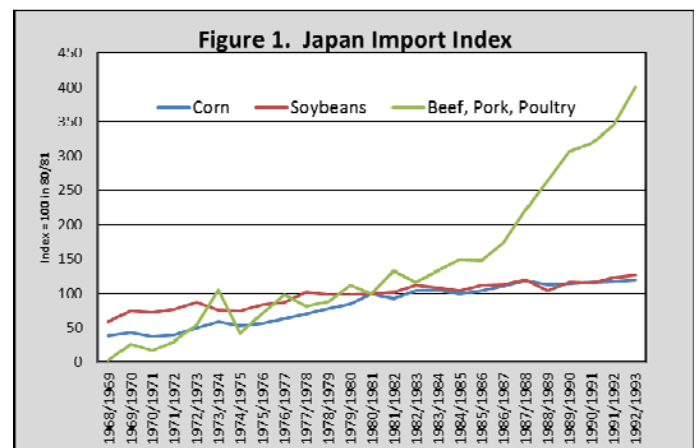
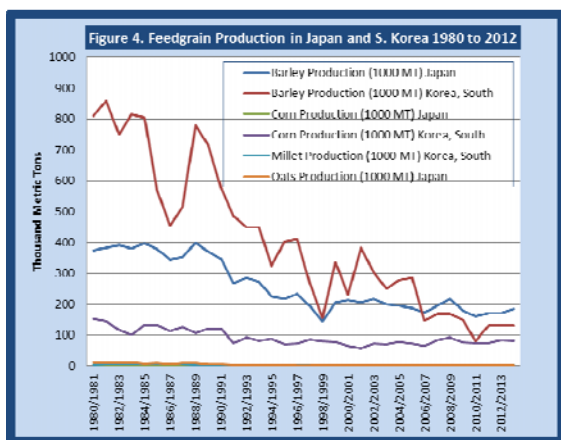
- The Chinese Communist Party (CCP) led by President Xi Jinping and Premier Li Keqiang have announced a third wave of pro-market reforms, aiming to open up state-run sectors of the economy to global capital.
- Li is embarking on one of the most radical reconfigurations of Chinese society since the Mao era. His goal is to cut the rural population of 642 million roughly in half by nudging, urging, and sometimes forcing farmers and their families to settle in China's cities
- Theoretically, this process will create a new, willing workforce to staff the cities' service industries and factories. The ex-farmers' incomes will rise, their children will get a better-quality education, and when they grow up they'll land better jobs than their parents."

## What if....?

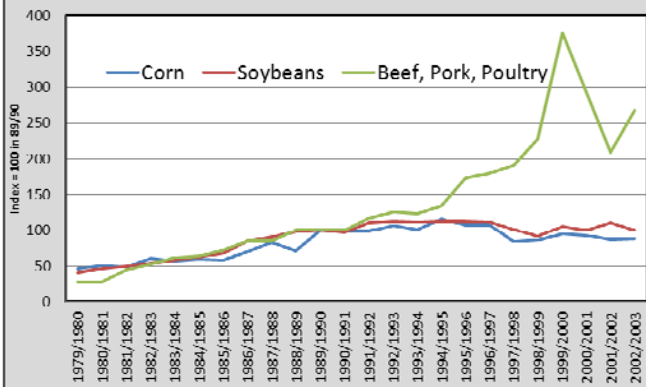
- China stopped trying to be self sufficient in corn and livestock?
- China allowed its currency to float
- China allowed rural people to move to cities?

## Las Angles Times 2/19/2014

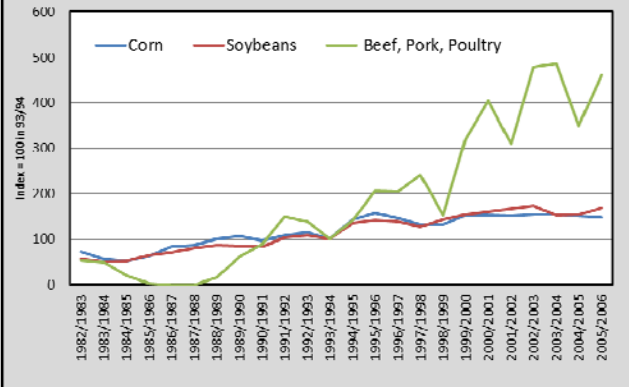
- China has been increasingly importing grains such as soybeans and corn from the U.S. and Brazil to boost its livestock population. Grain self-sufficiency was becoming like communist dogma in China: more a theory than a practice.
- Then last week, [Beijing called it quits](#) by announcing it was scaling back its annual grain production targets to put a greater emphasis on quality rather than quantity.
- The decision frees up precious little arable land for more high value crops such as fruit and vegetables. And it could help ease the pressure on food inflation, an issue linked to social stability and driven largely by the price of pork.
- The shift in grain policy was the clearest signal that policymakers had decided meat production was paramount, a pivot that will ripple across the globe and probably intensify China's quest for foreign sources of meat, grain and dairy.



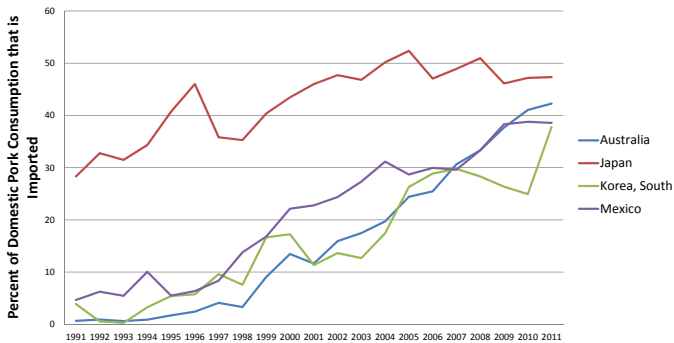
**Figure 2. Taiwan Import Index**



**Figure 3. South Korea Import Index**

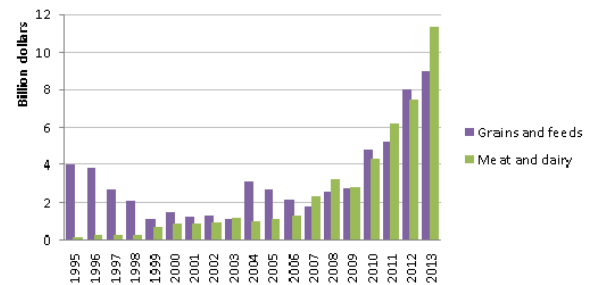


**Self Sufficiency Ratios for Pork in Selected Feed Grain Scarce Countries**

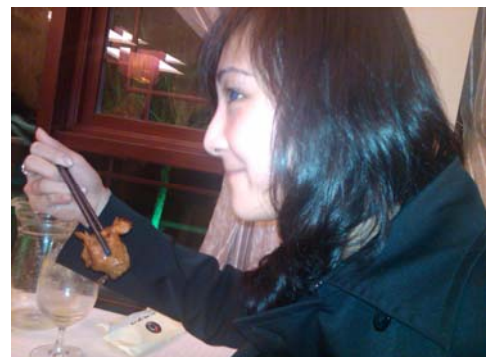


**Is China different?**

**Imports of animal protein outpace feed imports**



**Chicken heads and fish eyes are a delicacy**



## Bottom Line

- If China frees its people it will need as much as 140 million tons of corn (more than 5 billion bushels), this is bigger than ethanol
- If China frees its livestock markets a large proportion of future needs will be imported
- The impact of livestock product imports on world markets will not be as severe as the alternative policy of importing grain
- This is true because Chinese livestock have poor FCE's because Chinese consumers have complimentary preferences to consumers in the West

