Global pork demand is outpacing supplies. Much of that demand is in emerging markets where people feel better off and are willing to consume more meat. As a low cost supplier, US pork producers should enjoy strong financial returns in the next five years but understanding risks and being prepared remains a critical challenge for the industry.

**Main Point**

Our focus today

**Demand Discussion**
- Economic growth: If you don’t have money you don’t eat meat
- Population trends: Growth areas
- Wealth effects: Income growth in emerging markets driving demand for meat, especially pork
- World eating preferences: What do we eat and where is the potential for growth
- Religion: Muslim, Hindu, Jewish
- Fish: The biggest competitor that seldom is talked about
- China situation: The elephant in the room
- Risk: Growing dependence on exports makes US producers more vulnerable to outside shocks

**Supply Discussion**
- Hog inventories: Trends in global hog inventory numbers and the position of China supplies
- Disease issues: Foot and Mouth, PEDv, H1N1
- Feed Costs: Feed costs will drive ability to expand production
- Per capita consumption: A supply, not a demand, measure
- Global Trade Flows: US has become #1 global pork supplier, surpassing Europe

**Conclusion**

Canada: Slow growth
Mexico: At risk
Brazil: Slow growth
Argentina: Difficulties mounting
Australia: Economy in transition
New Zealand: Recovery on track
Japan: Monetary stimulus
Russia: Stagnation
India: Sharp slowdown
Euro Zone: Contraction
China: Stabilized
South Korea: Growth
United States: Recovery
Canada: Slow growth
Mexico: At risk
Brazil: Slow growth
Argentina: Difficulties mounting
Australia: Economy in transition
New Zealand: Recovery on track
Japan: Monetary stimulus
Russia: Stagnation
India: Sharp slowdown
Euro Zone: Contraction
China: Stabilized
South Korea: Growth
United States: Recovery

Source: Moody’s Economy.com
Economic Growth
Asia and S. America Outpace Other Regions

Global Growth Outlook

World | N. Am. | S. Am. | Euro | Asia | Oceania | Change
--- | --- | --- | --- | --- | --- | ---
2011 | 3.0 | 2.0 | 4.3 | 1.6 | 4.8 | 2.5
2012 | 2.4 | 2.7 | 2.4 | –0.6 | 4.6 | 3.7
2013 Est | 2.2 | 1.8 | 2.8 | –0.6 | 4.6 | 3.7
2014 Fcst | 2.2 | 1.8 | 2.8 | –0.6 | 4.6 | 3.7
2015 Fcst | 2.5 | 1.8 | 2.8 | –0.6 | 4.6 | 3.7

Latest data: 3/3/2014

Economy has been adding jobs but two big caveats:
1. Size of the labor force has shrunk (fewer people working or looking for work)
2. People working fewer hours

Economic Growth
2013 Boom in Commodity Values Helped States in Central US

Updated through February 2014
Economic Growth
Fewer People Looking for Work

Ratio of "labor force/total non-institutionalized civilian population" now back to the 1970s area. Labor force is people 16 – 65 looking for work.

Basically, a larger part of the population is now outside the labor force. This implies a lower purchasing power for a larger portion of the US population.


Economic Growth
Duration and Magnitude of Unemployment Remains a Drag

Average (Mean) Duration of Unemployment: "Shaded Areas Represent Recession"

Economic Growth
Demand Drivers: Income

Per Capita Disposable Income Growth: 12/2014 Change. Last Data is for January 2014

Economic Growth
Energy Markets and Impact on Disposable Incomes

CRUDE OIL FUTURES

Human Population Growth

It took only from 1999 to 2011 to get to 7 billion

More people
+ Longer lives
+ Higher incomes
= Higher meat consumption
Jensen/Miller “Giffen Behavior: Theory & Evidence”

- **Experiment:** Subsidize the price of staples, noodles and rice (i.e., effectively lower the price for these two goods)
- **Economic theory:** When price declines, people consume more of the good
- **Reality:** As price of inferior goods declined, people reduced their consumption. They increased consumption of meat protein.
- **Rationale:** Subsidy made poor households richer, and as they became richer, they increased their consumption of better tasting calories
- **Implications:** As developing markets become richer, expect decline in consumption of staples, increase in demand for better tasting calories.

**Wealth Effect**

- **Urbanization in Emerging Economies to Drive Growth**
- **Real World Evidence**
World Eating Preferences
World Consumption of Main Proteins

WORLD RED MEAT, POULTRY AND FISH PRODUCTION
Source: FAO, Estimate, Year: 2014-CY

Production (mil MT)

Fish *  Pork  Poultry  Bovine  Ovine

* Fish category includes both wild catch and aquaculture

World Eating Preferences
Global Meat Consumption Growth

CHANGE IN BEEF, PORK AND BROILER CONSUMPTION: 2012 VS. 2000
Source: FAO, Livestock Estimates

Domestic Consumer
US Food Spending In Context

2012 Food & Beverage Expenditures as % of Total Household Spending

Domestic Consumer
If you think this is your consumer...

... think again
**Domestic Consumer**

**US Pork Flow in 2012**

- **Produced Domestically**: 23.3 Billion Pounds
- **Imported**: 0.8 Billion Lb

**Domestic Consumer**

**Domestic Consumption Still Remains Critical**

- **Share of US Pork Production Going to Domestic and World Consumer**

**Domestic Consumer**

**Foodservice is Growing**

- **Foodservice Pork Market**
  - The total 2009 foodservice pork category includes 0.23 Billion Lbs. In Currans Weight Equivalents (CWE), a 42.2% market increase since 2008. Over the past five years, foodservice has been strong growth within the total pork category. Kielbasa, 19.3% market share, foodservice is well poised to be at a high and rise in 2009.

**Domestic Consumer**

**Pork at Foodservice**

- **Currans Weight Equivalents (CWE)**
- **Sausage**: 1,495MM Lbs., 16%
- **Breakfast**: 2,188MM Lbs., 23%
- **Processed Ham**: 1,993MM Lbs., 64%
- **All Other**: 695MM Lbs., 44%

**Source**: Technomic and National Pork Board Study
Pork Strengths and Weaknesses

Strengths
- Food safety
- Cost efficiency
- Broad acceptance
- Changes in US demographics favor increases in US pork consumption

Weaknesses
- Flavor
- Maybe sodium phosphate cannot fix everything
- Campbell soup story
- Religious issues for some populations
- Consumer understanding of your business

Relative Prices: Ground Beef vs. Chicken Breast

Ratio: 78CL Meat Block/Blns Skinless Chicken Breast

+334%
Relative Prices: Pork Loins vs. Chicken Breasts

Ratio: 1/4" Pork Loins/ Bnls Skinless Chicken Breast

Relative Prices: Pork Loins vs. Ground Beef

Ratio: 1/4" Pork Loins/ 78CL Meat Block

Domestic Consumer
Changes in Demographics

The Changing Face of America
How the demographic breakdown of the U.S. has changed

Total U.S. population by race/Hispanic origin

Pt. among those under 18

Beef Grading Has Reversed Course. Marbling (Fat) is Back in Thanks to Angus Breeds

Weighted Average Yield Grade (by pounds)
Monthly (gray line) and 12-Month Moving Average (red line)
Religious Issues

Potential pork consumers in the world: 3.5 - 5.5 billion people
Total world population: 7.2 billion

Fish

The Biggest Competitor Seldom Talked About

Potential pork consumers in the world: 3.5 - 5.5 billion people
Total world population: 7.2 billion
China Appetite for Meat
Pork Consumption Sharply Higher

Economic growth + Appetite for Pork = Global Pork Leader
By end of this decade, China GDP to be bigger than US

At near 500 million hogs, China has over half of the world inventory.
US hog inventory in March = ~ 60 MM
Chinese traditionally like to eat pork. China does not have the resources to raise cattle on a large scale. If there isn’t a lot of beef, you’ll have to eat pork if you like to eat meat.

Chairman Wan, CEO, Shuanghui

**China Appetite for Meat**

**China Pork Demand Sharply Higher**

<table>
<thead>
<tr>
<th>Million lbs.</th>
<th>Pork</th>
<th>Chicken</th>
<th>Beef</th>
</tr>
</thead>
<tbody>
<tr>
<td>116.2</td>
<td></td>
<td>29.9</td>
<td>12.3</td>
</tr>
</tbody>
</table>

Chinese Red Meat and Poultry Consumption

1% = 1.162 bil. lb.

US Pork Exports: 2013 Steiner Est. = 5.138

1% China increase to US exports

1.162/5.138 = 22.62%


If China takes 1.162 bil. lb. of that, US reduction in consumption will be:

1.162 / 19.161 = 6.05%

6% reduction in US consumption would cause about a 12-18% increase in US hog prices

**Example of Export Reliant Countries: New Zealand**

- Exports: +1.0% in 2013; -1.5% in 2014
- Production: +0.2% in 2013; -1.1% in 2014
- Herd, Jan 1: +1.8% in 2013; -0.7% in 2014
- In 2013, exports should be 84% of total production on a carcass wt. basis

**Global Trade Opportunities**

Exports:
An opportunity...
But not without risks

Prudent risk management and reasonable debt levels will probably be necessary if you want to stay in business for the long run.
**Global Hog Inventories. Selected Countries**

**China Hog Inventory vs. US & ROW**

- **World Hog Inventory**
  - China: 473,340
  - USA: 66,361
  - ROW: 257,753
- **World Hog Breeding Stock Inventory**
  - China: 49,280
  - USA: 5,803
  - ROW: 23,429

800 MM Head per USDA

78.7 MM Head per USDA

4/7/2014

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**Global Hog Inventories**

US and China Inventories Relative to Other Large Producers

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**Global Hog Inventories**

China Inventory 5 Fold Increase Since 1961

- **1961 Inventories**
  - China: 85.6 MM
  - USA: 55.5 MM
  - Brazil: 26.7 MM
  - Germany: 24.1 MM
- **2007 Inventories**
  - China: 474.9 MM
  - USA: 66.3 MM
  - Brazil: 38.6 MM
  - Germany: 66.4 MM

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US Hog Map
Mexico is Today #1 USA Pork Export Market

Feed Additives and Impact on Pork Supply/Demand

- Paylean (Hogs)
- Zilmax (Cattle)
- Optaflexx (Cattle)

2013 Pork Exports

Mexican Price Inflation in Main Protein Groups

Forecast Source: Steiner Consulting Group

www.SteinerConsulting.com
From a recent commentary:

“Take the case of Jeremy Ranck, a 30-year old Pennsylvania hog farmer and subject of an insightful profile in the Des Moines Register as World Pork Expo gets underway in Iowa’s capital this weekend.

“Any farm, that’s your life, that’s your passion,” Ranck was quoted as saying. “We do everything we can to have the best production in crops, the best production in hogs. It is very frustrating when there are activist groups and social media blitzes of blatant lies.

That quote could probably have come from any of thousands of producers across the country, and indeed in its essence, Ranck’s observation informs a whole lot of conversation among attendees at virtually any industry trade show or conference I’ve ever attended.

That’s the problem: When producers try to state what they believe to be the obvious advantages of modern production, consumers come away with a far different interpretation – they buy the lies.”

Expectations for the Future

- More growth in exports
- Significantly more growth in exports to China
- More growth opportunities at foodservice
- Shrinking size of meat case at retail
- We need to pay attention to the consumer (here and abroad):
  - China/Russia have both said they do not want ‘Paylean’
  - Sometimes it does not matter what the science is if your customers do not want it, you should listen

These are some of the things taking place in today’s global marketplace that make me bullish of the financial results for the USA hog industry over the next five years.

Improve Market Share May Be the Wrong Measure

- Improve per capita consumption may be a better goal
- Get the story out that meat consumption is a healthy, long term lifestyle