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Chickens, Cows, and Pigs... Oh My!

Implications of Record U.S. Protein Expansion

RaboResearch

Food & Agribusiness Research and Advisory

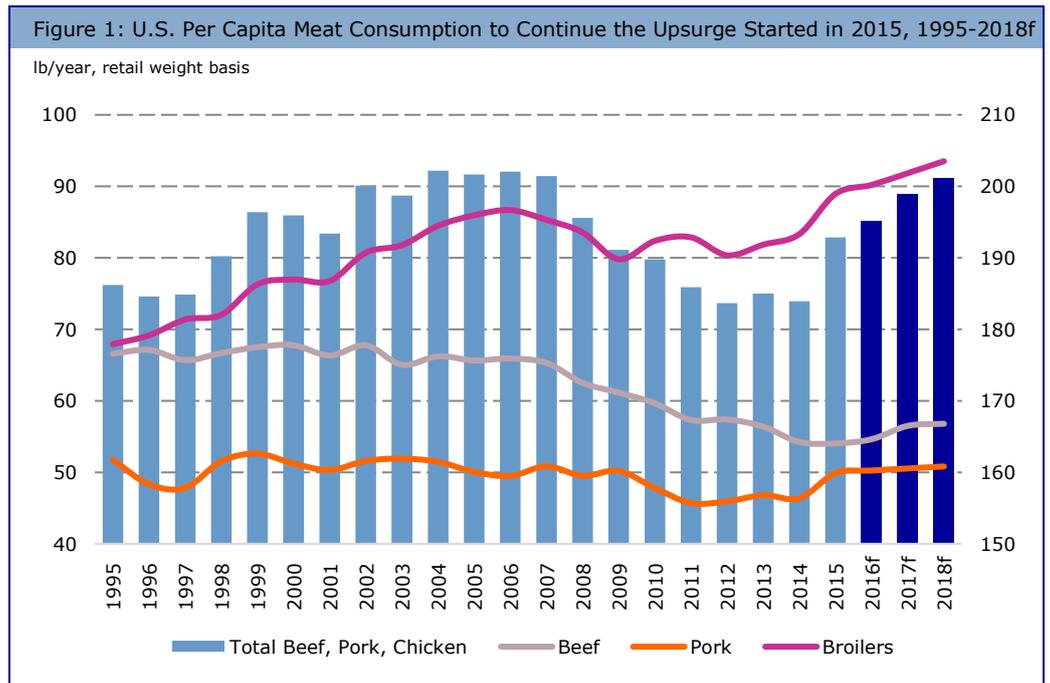
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2015 was a momentous year for U.S. animal protein, as it showed the largest increase in U.S. meat consumption since the food scares of the 1970s. Not only was last year noteworthy for the near 5 percent increase in per capita consumption, but also due to the fact that the growth was achieved without the help of beef, consumption of which was flat (see Figure 1). We expect U.S. protein production growth of 2.5 percent per annum through 2018—down from 3 percent in 2015—with beef being the largest contributor relative to pork and poultry. Trade appears to have stabilized in 2016 thus far; however, we don't foresee international markets absorbing all of this production growth, thus requiring further increases in domestic consumption. This will continue the upward trajectory of U.S. protein consumption toward the all-time peak of the mid-2000s, which will ask a lot of U.S. consumers and will come at the cost of lower prices. By the end of this expansion cycle in late 2018, we expect a more challenging profit environment across the U.S. meat industry, providing strategic opportunities for those producers with the capital and foresight to take advantage of them.



Source: USDA, Rabobank 2016

Opportunities to Turn Lemons into Lemonade

With U.S. protein production growth looking to continue at a substantial rate of 2.5 percent per annum, protein exports face numerous challenges and will struggle to keep up with this growth, suggesting an increase in domestic protein disappearance. The global meat trade is getting increasingly competitive, with exchange rate volatility being a key factor in determining market advantages. After consumption increased by 5 percent in 2015, there is a clear question regarding how much appetite for animal protein consumption exists domestically. We aren't ready to start calling for producer margins to turn negative this year, or possibly even in 2017, but we expect the profit environment by the end of 2018 to look very different than it does today. Despite the outlook for more challenging conditions, we foresee five paths to success for US animal protein companies, which are listed and detailed below (see Figure 2).

Figure 2: Paths to Success for U.S. Animal Protein



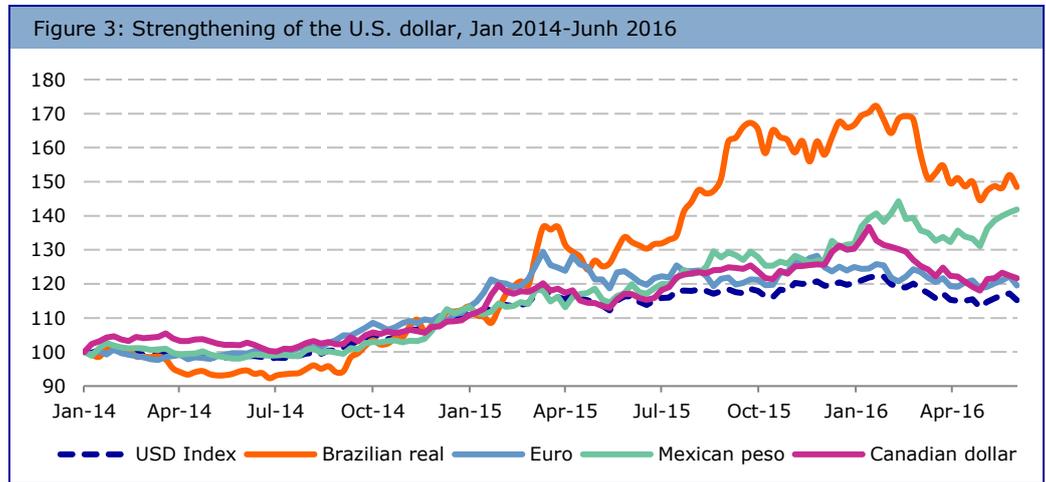
Source: Rabobank, 2016

This turning of the cycle will bring with it a number of strategic pressures for further industry consolidation. Companies who have positioned themselves to better weather the looming lower price environment will have the clear advantage. In the last few years, profit margins have generally been quite favorable, and the U.S. animal protein landscape has been filled with more buyers than sellers. This has been especially true in the chicken sector, which has now experienced five years of very favorable margins. While we don't foresee margins falling to the lows of 2008 and 2009 as prices decline through 2018, any producer considering a possible sale or divestiture should move quickly, as the outlook for margins and valuation multiples isn't moving in their favor, and it will likely be more than a few years before industry conditions return to current levels.

Beyond these consolidation opportunities, producers that can align product mix, production practices, and supply chain to an ever-evolving consumer landscape will also find the next few years to be far more fruitful than some others. Companies that can best understand what millennials want and are willing to pay a premium for will have tapped into a consumer base that not only isn't going away, but will continue to grow in its spending power and influence on the entire U.S. food industry. Whether meat companies approach this through more specialized or niche production practices, moving up or down the supply chain, or targeting flavor profiles from foreign markets, each of these strategies should help to help insulate their product's price from the swings and, in our view, decline in meat prices in the coming years.

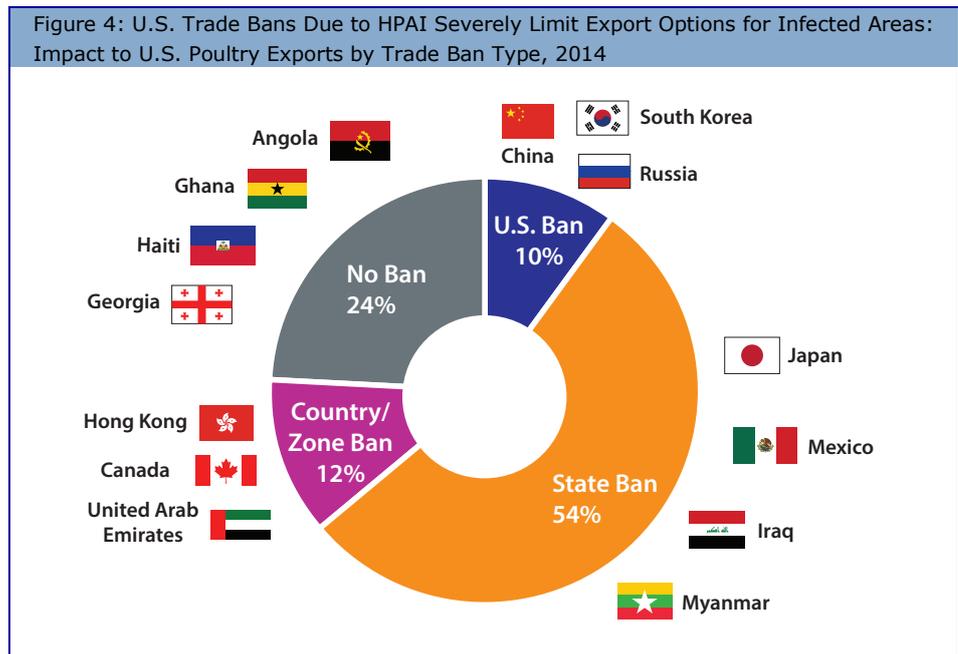
Trade Challenges: When Being a Safe Haven Is a Bad Thing

Every major protein in the U.S. faces its own set of export headwinds, but the impact of the strengthening of the U.S. dollar is a challenge for all proteins. In the last two years, the U.S. dollar index has increased by 18 percent, as the U.S. has become the 'best house in a bad neighborhood' in global macroeconomic terms. Making matters worse is that the dollar has strengthened more significantly against some of the U.S.' most important protein trade customers, including the Mexican peso, Canadian dollar, and Japanese yen, to the tune of 20 percent to 40 percent (see Figure 3). This issue is also true of the U.S.' protein trade competitors, with the Brazilian real, euro, and Argentine peso declining 25 percent to 50 percent against the dollar. This has caused production costs to increase, as grain costs are U.S. dollar-denominated, further incentivizing producers to export as much as possible.



Source: Bloomberg 2016

For the U.S. chicken sector, most of the trade issues stem from the discovery and subsequent spread of HPAI in the fall of 2014. This has led to many poultry trade partners banning U.S. poultry products in one form or another. Despite 2016 having just a single case of HPAI thus far, we still see the risk of future high-path avian influenza (HPAI) outbreaks as being a major concern for U.S. poultry exports. For most countries, U.S. poultry products are banned on a regionalization approach, where the state or region in which the virus is discovered has its exports cut off. This is a significant positive, as it means that much of the U.S. can still export poultry, given the geographic diversity of production. The downside to this scenario is that it takes only one case of HPAI for an entire state to lose the vast majority of its export markets—as Arkansas (the second-largest chicken-producing state in the country, after Georgia) experienced in 2015. According to our math, after a state is found to have a case of HPAI, that state loses as much as 75 percent of its export potential as a result (see Figure 4).



Source: USDA, USAPEEC, Rabobank 2016

For those customers who haven't banned U.S. poultry, another issue has emerged for U.S. poultry exports: declining commodity prices. Countries in West Africa—some of which are major oil producers and exporters—have been important customers for U.S. poultry and have been hard hit by the decline in energy prices over the last two years. In 2014, Angola was the second-largest customer for U.S. poultry, importing 230,000 tons, or 7 percent, of total U.S. exports. But as energy prices have fallen, U.S. shipments have declined by 40 percent. The government has also taken over the market, which has also created disruptions.

The headwinds for exports of pork from the U.S. are twofold: Mexico and ractopamine. Mexico is the largest customer for U.S. pork on a volume basis—accounting for about one-

third of total exports and, by some estimates, one in five of all hams produced domestically. Mexico has also been a strong market for U.S. pork, with growth of 10 percent per annum in the last four years, as perennial outbreaks of porcine epidemic diarrhea virus (PEDv) have stunted industry productivity. Mexican pork producers have experienced very strong margins in light of the favorable prices and, by our estimates, have responded by increasing the domestic breeding herd by nearly 15 percent in the last two years, which will begin to lift domestic pork production and put pressure on imports, assuming disease outbreaks are controlled.

The issue of the feed additive ractopamine has been a key barrier keeping U.S. pork from fully participating in the fastest-growing pork import market of China—because ractopamine is banned in pork products there. With the EU pork industry being fully ractopamine-free and the decline in the value of the euro, pork exports from Europe to China have doubled in the last three years, and today, the EU controls more than three-quarters of all pork exported to China. While an increasing number of U.S. pork producers have adopted a ractopamine-free supply chain and exports to China have started to climb, we still see a number of missed trade opportunities in this very important market.

The trade situation for U.S. beef is a real mixed bag, with threats and opportunities on both the export and import fronts. On the import side, the U.S. has seen a flood of Australian beef trimmings, which have doubled in the last two years, in light of the record U.S. beef prices and drought conditions in Australia. With Australia reaching a trough in its cattle herd and its beginning efforts to restock, Australian beef exports will decline by double digits in 2016—not only to the U.S., but also to a number of other markets. This is helping to tighten the available lean beef supply in the U.S., as well as drive export opportunities, most notably to Southeast Asian markets. In the first quarter of 2016, U.S. beef exports to Vietnam, South Korea, Taiwan, and Hong Kong are all up by double digits. We expect this to continue, as it will take a good deal of time for Australia to rebuild its beef supply.

A new source of competition, for both international market share and domestic consumption, is South America—mainly Brazil and Argentina. Each country has received approval from its executive branch to export to the U.S. However, they are currently being held up by the lack of approved plants and the lack of available quota. While the political forces behind this new trade flow are quite significant on both sides, it is only a matter of time before South American beef finds its way onto the U.S. market, becoming a serious competitor to domestic production.

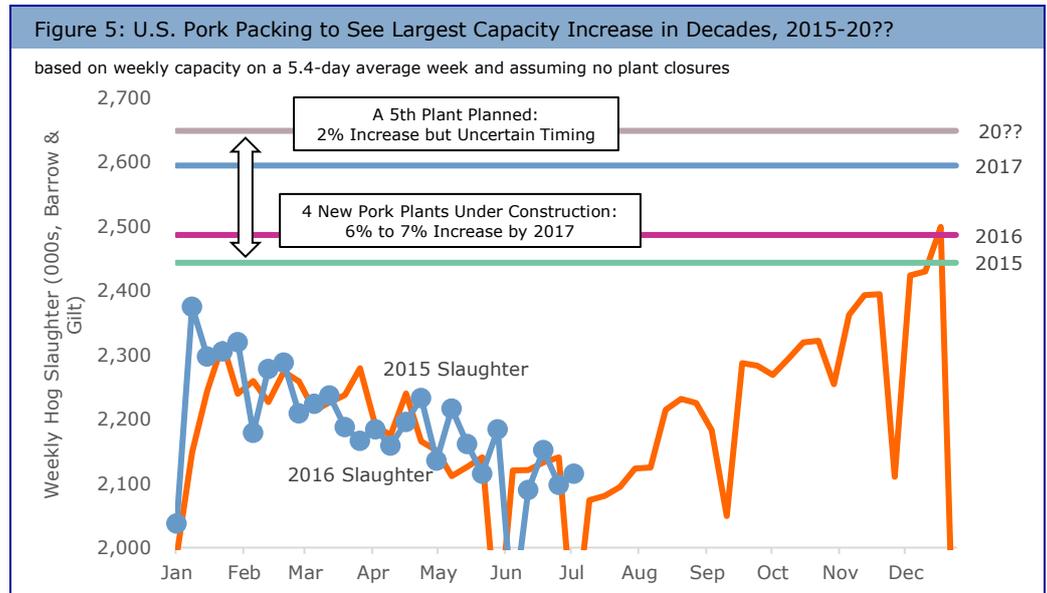
If You Build It, Will They Come?

2015 saw the largest increase in U.S. per capita meat consumption in 40 years. We expect growth to taper in the coming years (2016 through 2018) and for it to be much more evenly weighted between the three proteins. In total, we expect per capita meat consumption to rise by 1.2 percent to 1.5 percent per annum, with beef being the largest driver of the growth.

This level of consumption growth may not sound like that much in the context of the consumption patterns we see in the emerging markets; however, the U.S. is a mature market, with high levels of historically stable protein consumption. In fact, 1.5 percent average annual meat consumption growth would be the highest three-year growth rate in the U.S. in a decade. And if you take into account the growth seen in 2015, it would be the highest four-year growth rate since the 1970s.

One alleviating factor to this rising tide of meat supply is that most of the decade leading up to 2015 was quite weak for U.S. meat consumption. This was primarily driven by high meat prices relative to consumer incomes and, to a lesser extent, changing preferences. Key factors were number reductions, or lack of expansion, as a result of historically high feed costs, one of the greatest recessions in U.S./global history, and cattle herd liquidation after years of drought in the Great Plains. Domestic disease outbreaks like PEDv have also played a role. Consequently, from 2005 through 2014, U.S. per capita meat consumption fell by 9 percent, with beef declining by 18 percent, pork by 10 percent, and chicken by 1.4 percent. One could argue that the expected increase in U.S. protein consumption is a result of lower prices competing to bring consumption back to historic levels. However, the rate of industry expansion may very well be too much too fast, as it is unclear as to whether consumers are willing to exceed the historical high point in consumption seen in 2005.

The expected challenges to profitability in the U.S. animal protein sector stem from the combination of a rebuilding of the U.S. cattle herd, and the construction and expansion of plant capacity in both the pork and poultry sectors. After the production growth of 2015, both the U.S. pork and poultry sectors today reach near peak-capacity utilization during the late fall and summer months, respectively, when numbers reach their seasonal high. As a result, the pork sector is currently in the construction phase of four new pork plants, which would add 6 percent to 7 percent to U.S. packing capacity by the end of 2017, and another 2 percent, dependent on the timing of a planned fifth plant (see Figure 5). This is the largest increase in capacity in more than 20 years, and signs are that at least four of the five plants will be built. What may be even more significant is that two, if not three, of the larger plants will have the ability to run a second shift, which would double their capacity and bring the total increase to 14 percent or 15 percent.



Source: EMI Analytics, Rabobank 2016

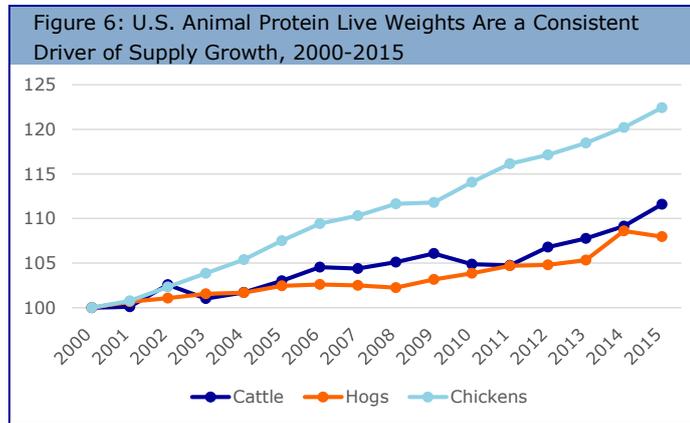
Even so, we do expect an increase in U.S. hog supplies in 2017 and 2018 to help utilize this new capacity from the U.S. Midwest and from increased Canadian hog imports. With grain prices today at multi-year lows, there is a sufficient level of demand from row crop producers to diversify into hog-finishing capacity. Supplementing the growth in the domestic hog herd, we expect an increase in the flow of feeder pigs from Canada—driven by the decline in the value of the Canadian dollar. Also adding to the increase are the end of the U.S. policy of Country of Origin Labeling, and strong demand for hogs from U.S. packers in 2017 and 2018, as most of the new plant capacity comes online.

The U.S. poultry sector is also adding new plant capacity to the tune of four or five new plants over the next few years, coupled with capacity expansion at a number of legacy plants. Profitability in U.S. chicken production has been positive since 2011, which is much longer than the normal cycle for the industry. As a result, many chicken producers have little debt, if not a significant cash stockpile. Two of these new plants will come online over the next 12 months, and the other two are deep in the planning stages. We expect U.S. chicken production to increase by 2.5 percent per annum through 2018 as a result, with increased bird weights being an important factor (see Figure 6).

The leader in production growth over the next few years is likely to be beef, as herd rebuilding will finally drive increased beef production—beginning in 2016, but accelerating into 2018/19. As we detailed in our recent industry note, *Global Beef Production Becoming More Competitive and More Complex* (published in January 2016), the heifer retention and cow herd expansion of the last couple of years will lead to a 4 percent increase in beef production by 2017. With the favorable price environment, beef production growth is expected to continue through 2020, but at variable rates.

A Good Time to Be a Protein Consumer

With protein supply in the midst of one of the largest increases in U.S. history, we expect consumers to enjoy a noticeable amount of relief in the form of lower meat prices, especially beef and pork. In the last decade, there has been a significant rise in meat prices

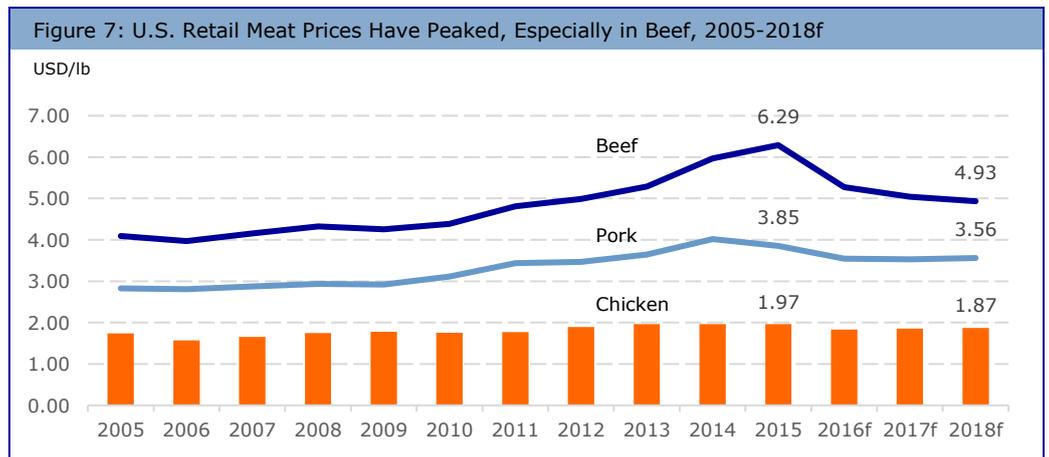


Source: USDA 2016

at retail, largely driven by the increase in feed costs during that period. In fact, composite beef prices have risen by over USD 2/lb. which equates to an increase of over 60 percent. Pork and chicken prices have also risen, but by a lesser degree—33 percent and 10 percent, respectively.

As meat prices have more than caught up with the increases in feed costs, and with additional supply from all three major proteins on the horizon, the major question that remains is as to what degree prices will fall in the coming years. Now that feed costs are back to 2009 levels, one could argue that meat prices will trend lower—and we agree. With beef having the worst feed conversion ratio of the three, it will most likely see the largest deflation, which will, in turn, put increased pressure on its chief substitute, chicken.

We expect U.S. retail meat prices to decline by 14 percent by 2018, from 2015 levels on a consumption-weighted basis, with beef prices being the major driver (see Figure 7). This view is based on modeling work done by Rabobank, which analyses historical consumption, income growth, and retail food price trends in order to develop an equilibrium level for U.S. animal protein demand. Of the three major proteins, we expect beef to have the largest amount of deflation at retail—to the tune of 22 percent—followed by pork (at 7 percent) and chicken (at 5 percent). Relative to historic levels of U.S. retail meat prices, this cycle of U.S. protein deflation will bring prices back to near-2012 levels, which is not the worst thing, as feed costs have generally halved since then.



Source: USDA, BLS, Rabobank 2016

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