# Where's the Beef?

## US Protein Production to Decline Sharply in 2012

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**Meat and poultry production in the US is headed for a precipitous fall in 2012. The long-term structural downtrend in the cattle herd is being exacerbated by extreme drought in the South and Southwest. The chicken industry is suffering probably its worst-ever downturn in profitability, which is causing production cutbacks. Profitability in the pork industry has so far been holding steady as rising hog prices have substantially offset a dramatic increase in feed costs, but there are some early signs of increased sow slaughter as the industry comes to grips with some of the tightest corn supplies in history. Rabobank believes that US meat and poultry production could decline by nearly 5 percent year-on-year by mid-2012. Overall, Rabobank expects global protein supplies to tighten further in 2012 as production lags behind GDP growth. Barring major economic disruption, Rabobank believes that this will lead to another year of record prices in most markets for most proteins around the world.**

## Introduction

The dramatic decline in United States (US) protein production will likely have a significant impact not only on price, but also on availability, which could create concerns for buyers such as foodservice operators and retailers (*see Figure 1*). Since the US is a large and significant exporter of meat protein, the decline will also affect world markets as well as demand for feed, notably for corn.

This report examines the national impact and global perspectives for each of the three key US protein sectors. Setting aside the impact of the drought on the US cattle herd for the moment, the big picture is that global meat and poultry production is in the midst of a multi-year process of adjusting to higher and more volatile feed costs. We believe that long-term prices for key protein-production inputs such as corn and soybeans will gravitate towards the incremental cost of production, which we estimate to be near USD 5/bushel and USD 12/bushel, respectively, plus a factor for return on capital. Despite a large rebound in crop production from the Black Sea region in 2011, there is still no margin for error for global crop supplies, due primarily to poor yields in the US. Crop-production costs have moved structurally higher, and the cost to produce meat protein is adapting, in part through supply adjustments to achieve compensating pricing.

**Figure 1: YOY growth of US animal protein production, 2011-2012f**

percent

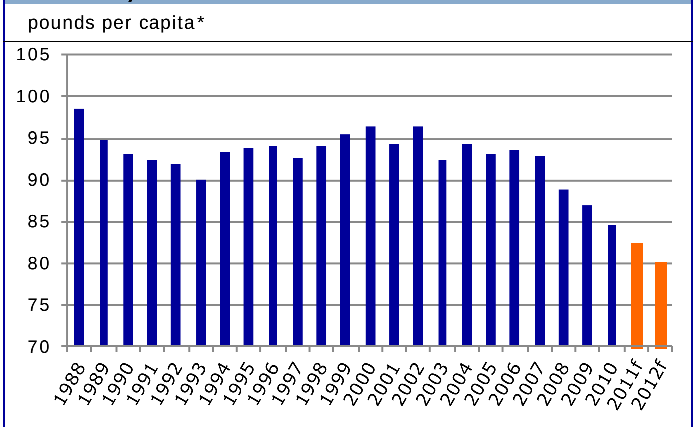
| | Beef | Pork | Broiler | Total |
|---|---|---|---|---|
| Q1 2011 | 3 | 2 | 6 | 4 |
| Q2 2011 | 0 | 1 | 3 | 2 |
| Q3 2011 | 1 | 0 | -2 | 0 |
| Q4 2011f | -1 | -2 | -4 | -2 |
| Q1 2012f | 3 | -2 | -5 | -2 |
| Q2 2012f | -1 | 0 | -4 | -2 |
| Q3 2012f | -6 | -1 | -5 | -4 |
| Q4 2012f | -7 | -1 | -6 | -5 |

Source: Rabobank, USDA, 2011

## U.S. beef outlook: Cattle herd liquidation

The state of Texas and the surrounding region is suffering from its worst drought in history. This region is home to about 25 percent of the US beef cows and has recently been accounting for roughly 50 percent of beef cows coming to market, signifying significant herd liquidation. Placements of cattle into feedlots in July were up 22 percent year-on-year and are continuing at a rapid pace into September. While this clearly indicates that US beef supplies will be plentiful when these placements come to market late in 2011 and into 2012, the liquidation of breeding stock at this level will have a long-term impact, and, we believe, cause a potentially dramatic decline in beef production by mid-2012. We estimate that, by late 2012, US beef production will be running at a rate of 7 percent below comparable 2011 levels. We expect that US per capita beef consumption will continue its multi-year decline (*see Figure 2*), but that it will not fall as fast as the sharp drop in production in the second half of 2012 (assuming currency exchange rates near current relationships). Even if the US dollar continues to fall, the drop in production may result in the US becoming a net importer again for a while.

**Figure 2: Per capita beef consumption in the US, 1988-2012f**




* carcass weight

Source: Rabobank, USDA, 2011

While plentiful supplies in early 2012 will weigh on prices, the sharp shortfall by sometime in spring 2012 should lead to another year of record-setting cattle and beef prices in the US. We estimate that 2011 fed steer prices will average USD 113/cwt compared to USD 96/cwt in 2010, an 18 percent increase (*see Figures 3 and 4*). On top of this sharp rise, and despite a surge in production early in the year, we believe that fed steer prices will increase further and will average USD 116/cwt in 2012. Some impacts are highlighted below:

- These developments will be of concern to all in beef procurement, and will also have a follow-on effect to proteins such as pork and poultry. Some of this is already reflected in futures prices, but outright availability could become an issue.

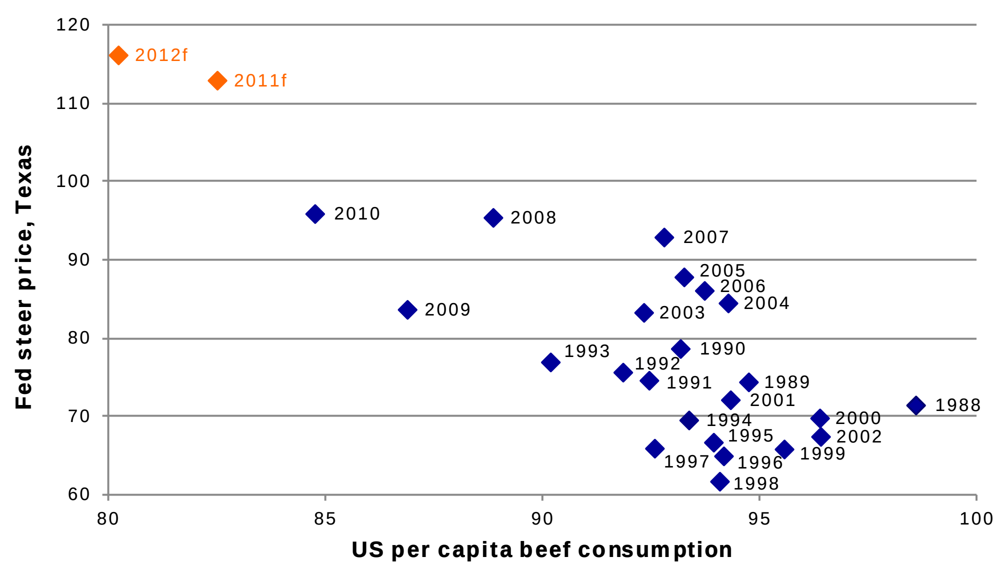
- Given our belief that domestic consumption will not fall as sharply as production but will continue its long-term decline trend, we expect that the availability issue will be especially pronounced for importers of US beef. Continued declines in the US dollar could make imports into the US more expensive, adding further potential challenges to domestic supplies.

- US beef packers will face challenges to manage capacity utilisation in such a way as to cover fixed costs with reduced output, but the industry has been doing a good job of managing for margin rather than market share in recent years. Plants in Texas and Arizona will be the most challenged to maintain capacity utilisation. The drought will both accelerate the need for more capacity to come out of the packing industry and cause further problems for the cattle feeding sector which has even more excess capacity. We believe that excess capacity is about 10 percent in the packing industry and about 20 percent in the cattle-feeding sector.

- We believe that beef available for export from the US could be down at double-digit levels in the second half of 2012, which could be of concern to importers, but create opportunity for exporters from Brazil and Australia, both of which are in a herd rebuilding phase and which we expect to increase production in 2012.

**Figure 3: Fed steer price vs per capita US beef consumption, 1988-2012f**

USD/cwt, lbs/annum*

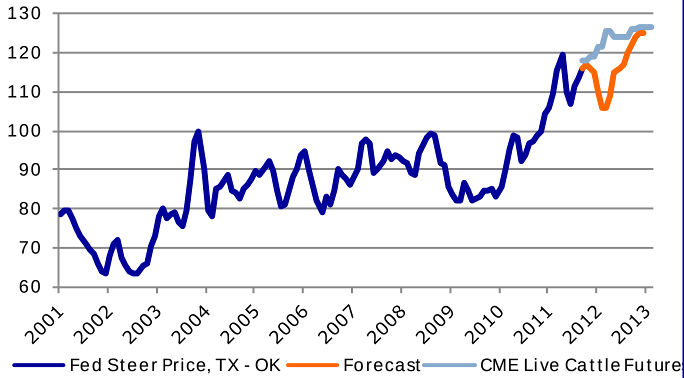



* carcass weight

Source: Rabobank, USDA, 2011

**Figure 4: Fed steer prices in the Texas-Oklahoma panhandle, 2001-2013**

USD/cwt*




* live weight

Source: Rabobank, USDA, CME, 2011

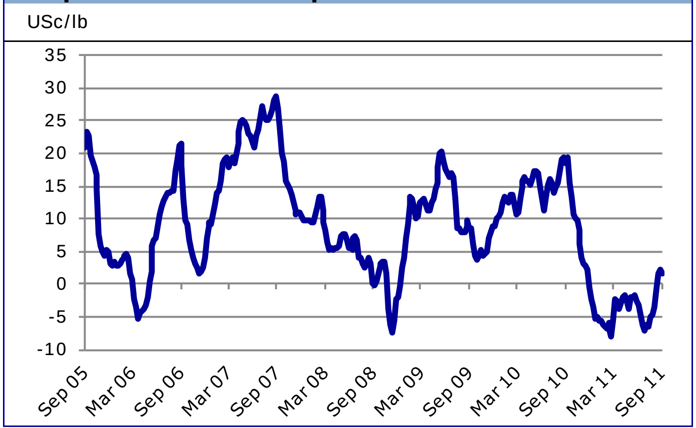
Recovering from the drought will be a struggle for the US beef industry. Given the long cattle-production cycle, as well as a relatively high feed conversion ratio, beef is the protein sector least able to cope with structurally higher and more volatile corn prices. Ranchers are aging and the income and lifestyle offered by the industry has become less attractive. Using land that has been in beef pasture for hunting or other recreational uses has become more attractive. Unfortunately some long-term meteorologists believe that a drought of this magnitude can be self-reinforcing and last several years. We do not see herd rebuilding on the near or medium-term horizon.

## U.S. Broiler Outlook: Industry must make cutbacks

The US broiler industry is suffering some of its worst losses in history (*see Figures 5 and 6*). The industry has expanded at a time when demand has been softening due to the weak economy. As breast meat is mainly a domestic product, low breast-meat prices are the primary culprit in this debacle.

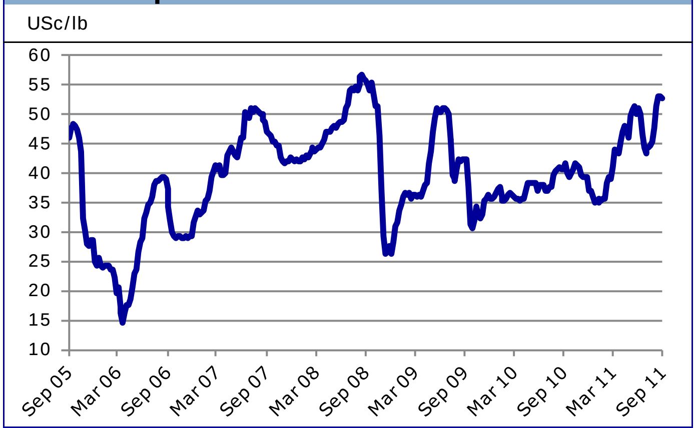
Despite a big decline in exports to Russia, leg quarter prices have been robust as economic growth in many developing markets is driving an increase in their imports.

**Figure 5: US broiler production margin, September 2005-September 2011**




Source: Rabobank, USDA, Bloomberg, 2011

**Figure 6: US leg quarter prices, September 2005-September 2011**

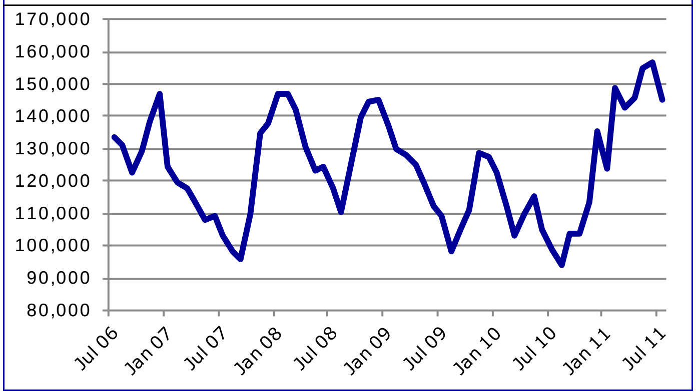



Source: USDA, 2011

Despite some cutbacks in bird production, we believe profits will remain under pressure into early 2012 as bird weights have provided a significant offset, and due to a large increase in breast meat inventory. Breast meat inventories hit record levels in the summer of 2011, the season when demand typically peaks and cold storage inventories typically trough (*see Figure 7*). Therefore with demand set to decline on a seasonal basis, reducing these inventories is likely to require larger cuts than have been seen to date. Leading indicators such as eggs set and chicks placed have implied mid-single-digit declines in bird numbers, but overall weight increases of 3 percent to 4 percent have been mitigating these declines (*see Figure 8*). The most recent egg-set figure was for a decline of 7 percent, which is a step in the right direction for supply to move back into balance with demand. Barring further market dislocation, we believe that the industry can return to profitability some time next spring, but only if the more aggressive cutbacks we expect actually take place. Perversely, the industry needs to expect losses to continue in order to get them to stop.

**Figure 7: Breast meat in cold storage in the US, July 2006-July 2011**

thousand lbs

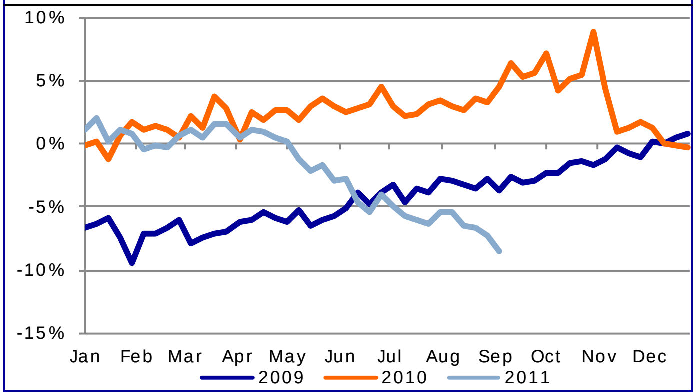



Source: USDA, 2011

Cutbacks in broiler production will exacerbate the US protein production shortfall caused by the prospective decline in US beef production by mid-2012. The two simple scattergraphs below describe the potential price of chicken given domestic disappearance (*see Figures 9 and 10*). While both graphs suggest higher prices for 2012, we believe that they likely understate the magnitude of the increase, given the decreased availability of competitive meats. Full-year estimates should also be considered in the context of weak pricing in the first quarter, followed by the recovery through the balance of the year.

**Figure 8: YoY change in eggs set, 2009-2011**

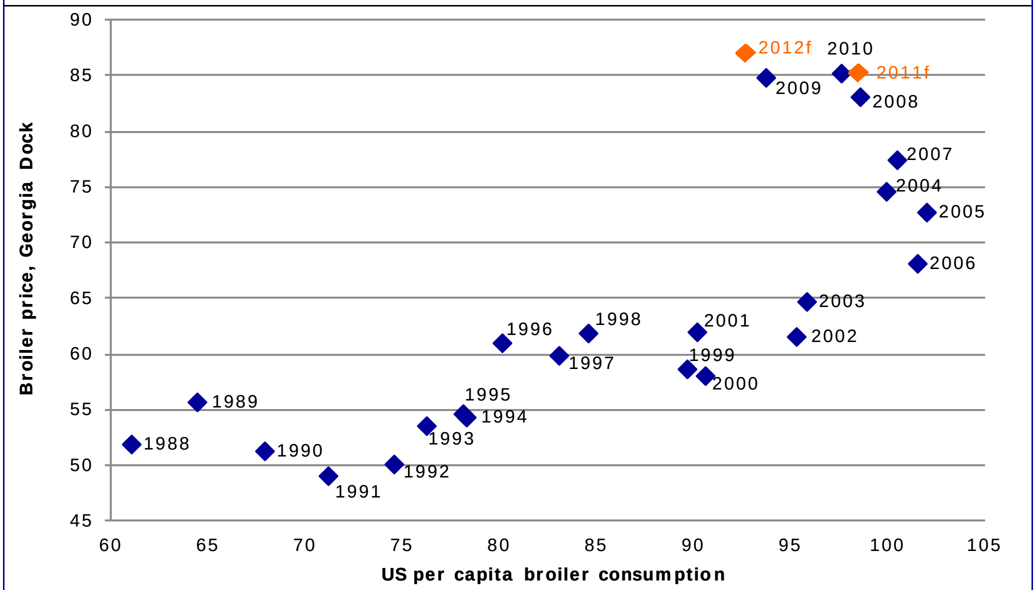
percent




Source: USDA, 2011

**Figure 9: US broiler price vs. per capita broiler consumption, 1988-2012f**

USc/lb, lbs/annum*

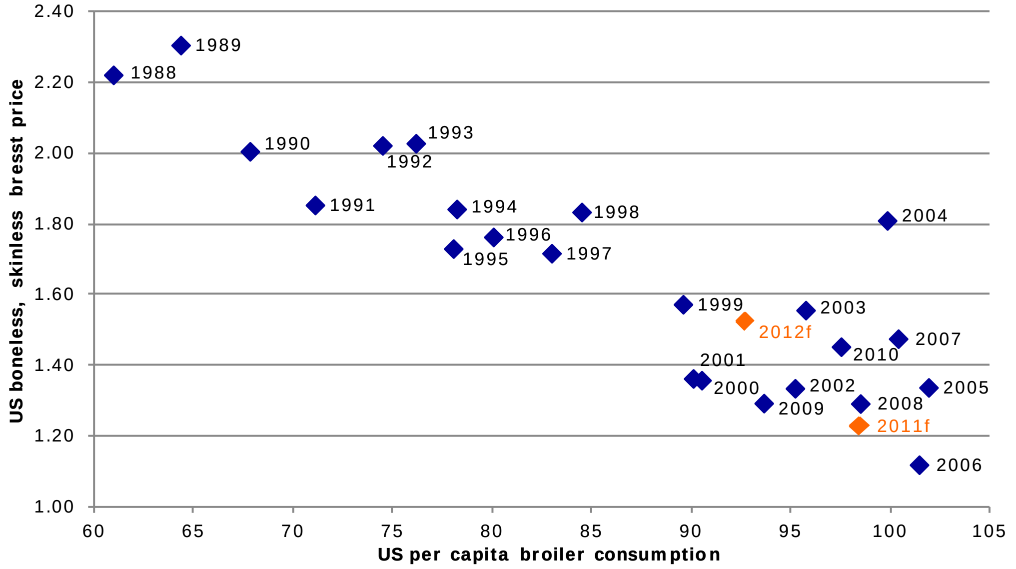



* carcass weight

Source: Rabobank, USDA, 2011

**Figure 10: US boneless, skinless breast price vs. per capita broiler consumption**

USD/lb, lbs/annum*



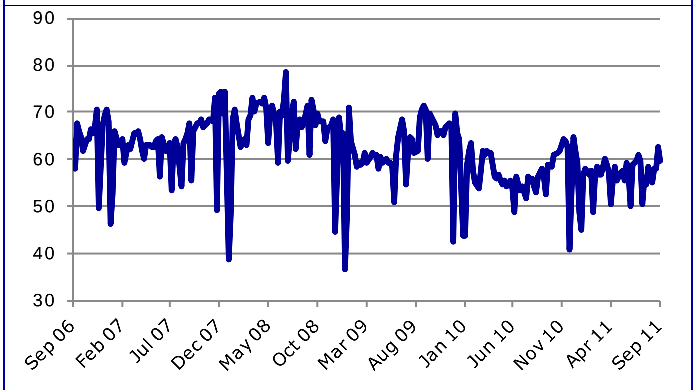

* carcass weight

Source: Rabobank, USDA, 2011

## U.S. Pork Industry Outlook: Production will remain subdued

**Figure 11: US weekly sow slaughter, September 2006-September 2011**

thousand head

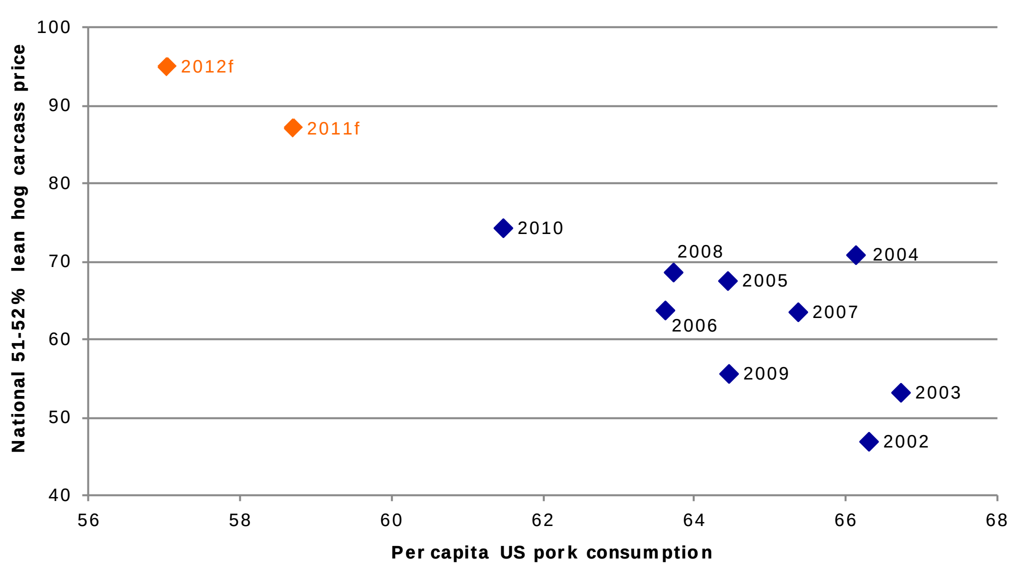



Source: USDA, 2011

The current supply and demand situation for the US pork industry is much more stable than for beef or poultry. Strong export demand (currently accounting for roughly 25 percent of output) coupled with solid domestic pricing has allowed producers and packers to weather the storm of rising feed costs. That said, the deterioration in US crop conditions which has led to higher corn prices has caused a deterioration in the outlook. This in turn has led to an increase in sow slaughter, a sign of herd liquidation and potentially reduced pork output (*see Figure 11*). While this needs to be set against continued productivity gains, we believe that pork production will remain subdued and show modest declines in the course of 2012. With current exchange rates suggesting that US pork is among the most competitive in the world, and prospective declines in pork production in Europe of 4 percent or so, the outlook for US hog and pork prices is robust. Furthermore, at the time of writing, pork prices in China are continuing to rise. Brazil's small hog farmers have suffered large losses this year and we are seeing liquidation in this sub-sector, though larger producers are offsetting these declines. Simple scattergraph analysis— which ignores the significant decline in competition from beef and chicken — suggests that in 2012 hog prices could end up on average 10 percent higher than even the record levels seen in 2011 (*see Figure 12*).

**Figure 12: US hog price vs. per capita pork consumption**

USD/cwt, lbs/annum



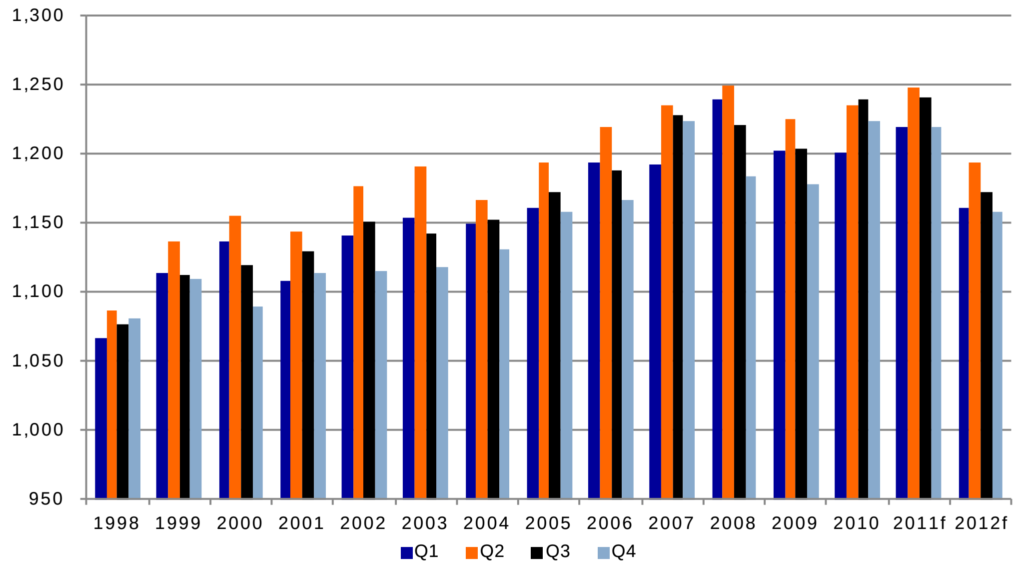

Source: Rabobank, USDA, 2011

## Impact on Corn Demand

Reduced US production of beef, chicken and pork will clearly have an impact on corn demand. With ethanol accounting for 40 percent of the use of the 2011 corn crop, the impact will be lower than in the past, but still significant. We estimate that corn demand will decline by an incremental 50 million bushels in the third quarter and by 100 million bushels in the fourth quarter of 2012 compared to 2011 (*see Figure 13*). Participants will need to take account of this bearish component to market dynamics. If we also include some impact in the second quarter, the total would amount to about 1.5 percent of the USDA's current production forecast. While on the face of it this does not sound like a lot, this 175 million bushels is a significant amount in the context of the USDA's current estimate of corn ending stocks for the 2011/12 crop year of only 672 million bushels and the implied stocks-to-use ratio of 5.3 percent — the second lowest in history.

**Figure 13: US corn used for feed, 1998-2012f**

million bushels

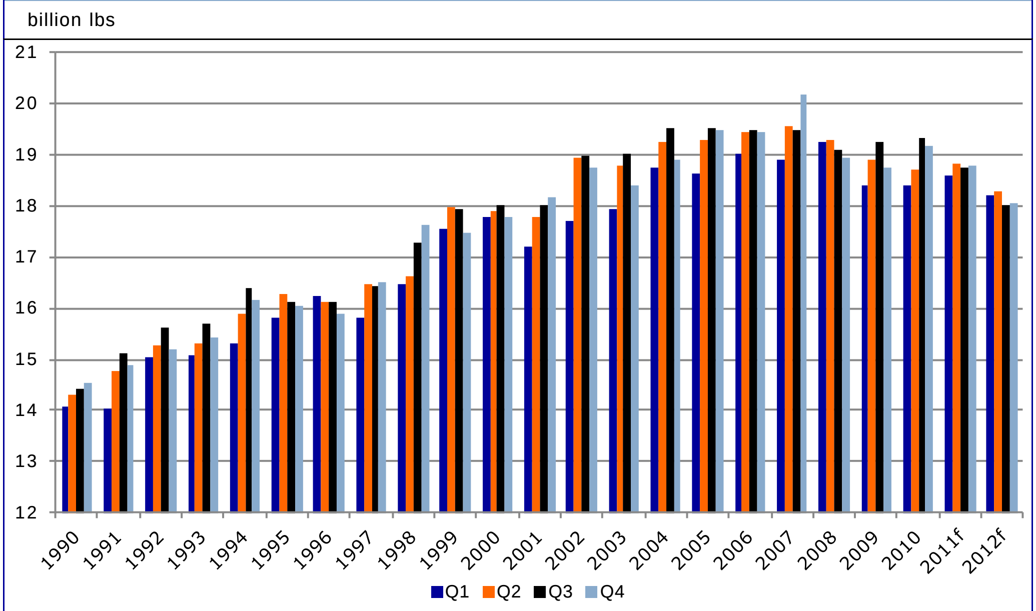



Source: Rabobank, USDA, 2011

## Three concluding observations

Firstly, per capita US meat consumption appears to have peaked (*see Figure 14*). This is due to a combination of factors which may include an aging population, the rising preference for ethnic cuisines for which meat is not a center-of-the-plate item, and some increased interest in vegetarian diets among younger consumers. It also likely includes some impact from a recessionary economy, especially for food away from home. That said, consumption does not equate to demand, as evidenced by the fact that consumers have shown a willingness to pay higher prices, albeit for a smaller amount. A key takeaway for this point, however, is that the meat industry, and particularly the chicken industry, should no longer count on rising demand to grow its way out of over-production situations.

**Figure 14: US meat* consumption, 1990-2012**




* beef, pork and poultry

Source: Rabobank, USDA, 2011

Secondly, a key difference between today's markets and past markets is the rise in demand from developing economies. Protein demand tends to rise faster when per capita GDP consumption is in the range between USD 3,000 and USD 5,000 per year. Countries with large populations, such as China, India and Indonesia, are in this sweet spot which supports global protein demand even when developed economies are weak (*see Figure 15*). This was not the case during the Asian financial crisis when we did see demand destruction. Therefore, as long as economic growth is maintained in the developing world, we believe that protein demand will remain strong. We recognise that such growth is not a given, as some key developing markets are suffering from inflation and are raising interest rates to dampen it, India being a case in point as this report is being written.

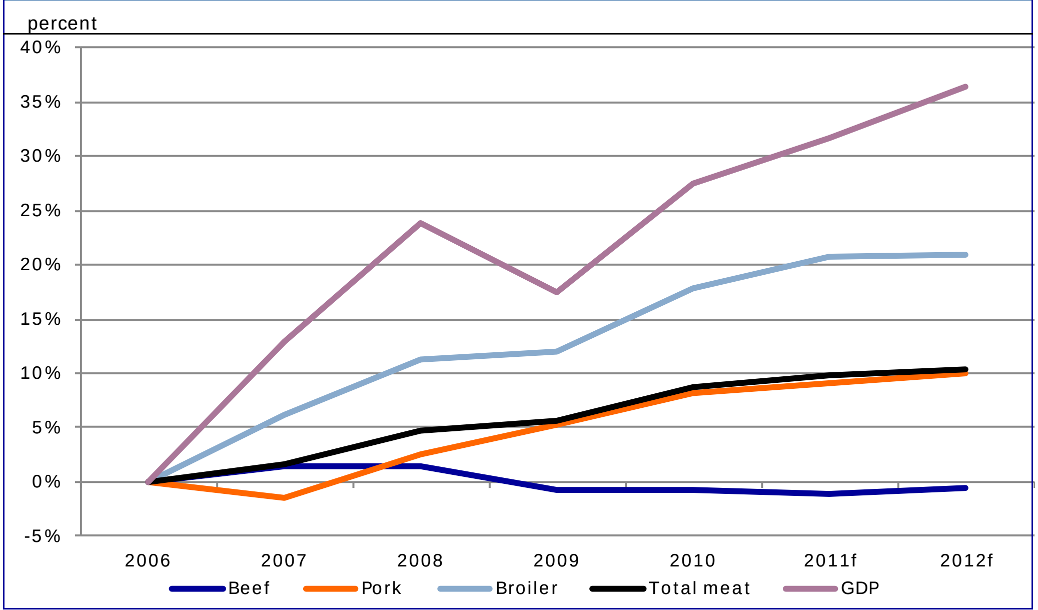
**Figure 15: Economic growth rates, selected regions, 2010 vs. 2011**

| | 2010 GDP growth | 2011 GDP growth | Population |
|---|---|---|---|
| Brazil | 7.5% | 4.2% | 193,734,000 |
| China | 10.3% | 9.3% | 1,331,460,000 |
| India | 8.8% | 8.0% | 1,155,348,000 |
| Indonesia | 6.1% | 6.3% | 229,965,000 |

Source: CIA World Factbook, World Bank, 2011

Third and finally, with rising GDP in the developing world, meat protein demand is rising globally. This is the key driver to rising feed costs which in turn drive up the cost of raising animal protein. Global meat and poultry production continues to significantly lag GDP growth (*see Figure 16*). This is obviously the key factor behind rising prices.

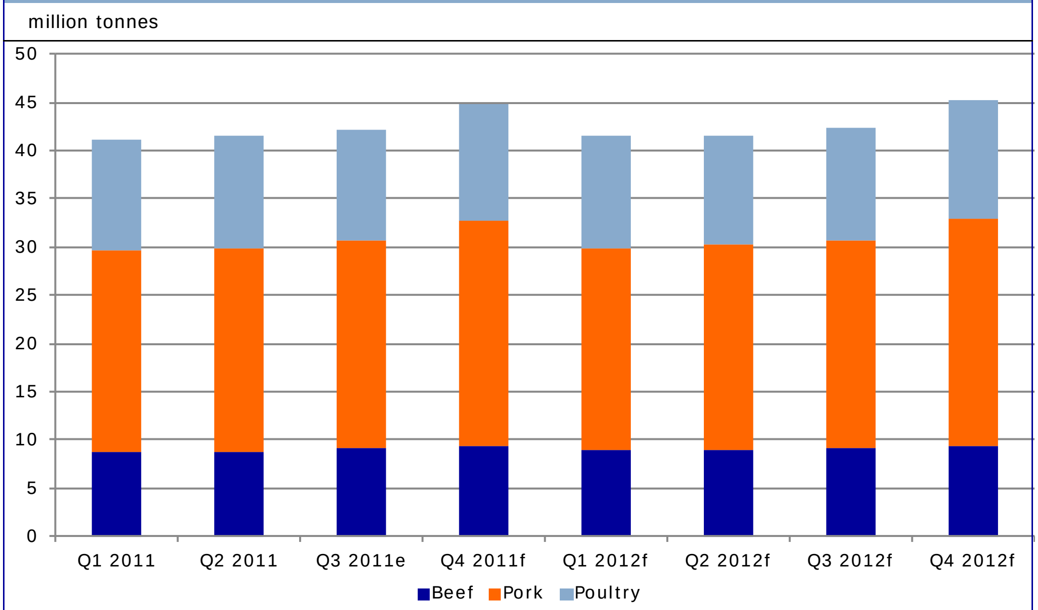
Figure 16: GDP and meat production growth, 2006-2012f




Source: Rabobank, USDA, World Bank, 2011

In fact, we estimate that in 2012 world meat and poultry production will decelerate meaningfully from the USDA's growth estimate of 1.5 percent in 2011, to about 0.6 percent in 2012 (*see Figure 17*). This is only about half the pace of world population growth, implying tight supplies and high prices.

Figure 17: World meat* production 2011-2012f




* beef, pork and poultry, carcass weight

Source: Rabobank, USDA, 2011