The Global Cattle Cycle

GLOBAL CATTLE INVENTORIES

Global cattle inventories have declined 2.8% since 2004. Global beef production has declined only 0.6%, with productivity gains offsetting some of the decline in numbers. As productivity gains occur in reproductive efficiency, survival rates and carcass weights fewer cows are actually needed to produce the same amount of beef. It also means that for every cow removed from the herd a larger volume of beef is being removed and further productivity gains are needed to offset the loss.

Canadian exports represented 6.8% of global trade in 2011 to be the fifth largest exporter and the second largest exporter of grain fed beef after the US.

THE NORTH AMERICAN CATTLE CYCLE

In North America the cattle cycles in Canada and US have historically followed each other with prices being set in the larger US market. There have been variations at times, with the Canadian herd growing faster in the 1990s as a lower exchange rate supported domestic prices. They diverged widely following BSE in 2003, as the Canadian herd grew while the US herd continued to see slow liquidation. Since the border opened in 2005 the long term trend has been renewed, with liquidation occurring in both countries.

While the cattle cycle is most often discussed in terms of beef cow inventories, supplies are ultimately measured by beef production. Productivity advancements in reproductive efficiency (which is now at 90%) and carcass weights, which continue to grow, make expansion of the cow herd
questionable given the outside pressures faced by the industry including: consumer demand, competition for land, high feed costs, and volatile input and output prices.

In terms of consumer demand in a mature North American market where per capita consumption is relatively high at 26 kgs in the US and 20 kgs in Canada; further growth in demand is highly contingent upon exports. Exports have also become critical to maximizing the value from the entire carcass as the domestic consumer focuses increasingly on fewer cuts. This makes market access a critical point for the industry.

CANADA – A STABLE HERD

Canadian cattle inventories stabilized in 2012 after a liquidation phase that lasted from 2005 to 2011. At the bottom of the cattle cycle inventories are typically stable for 2-3 years before noticeable expansion occurs. During this time some operations will expand, while others continue to contract. This particular consolidation phase is expected to be longer than in historic cycles as older producers rebuild equity and younger producers are challenged by the higher equity requirements to invest in much higher priced bred heifers. In addition, younger producers who are excited about the industry must weigh the opportunity cost of keeping land in pasture versus growing a cereal crop on it. While inventories have stabilized, beef production is expected to be stable to slightly smaller as slaughter declines modestly in 2013 due to a smaller calf crop, which is expected to be only partially offset by larger carcass weights.

Total domestic consumption is relatively flat at around 1 million tonnes annually. This means additional production is driven by international market demand.

This focus on production numbers not inventory numbers as the true measure of the cattle cycle is necessary to understand future movement. Maintaining the current cow herd without further losses would require larger exports. In the meantime the production declines are only now becoming evident in the US market. USDA is projecting beef production is be down 4% in 2013 after being down 2.3% in 2012.

MEXICO

Mexico’s cattle inventories are falling as cattle are slaughtered or being exported due to long-term drought that is affecting the industry and driving up feed prices. The cattle industry has been struggling with tighter feed supplies and higher production costs. With the lack of forage, feeders were compelled to...
partially liquidate herds during the last quarter of 2011. This was accomplished through the slaughtering of non-breeding cattle and export of calves to the US and more recently to Turkey. The export of calves could cause future limited availability of steers for slaughtering intended to supply the domestic beef market.

Mexico lacks sufficient grazing land for large herds and for animals closer to desirable market weights. As such the export of live cattle is a trend that will continue. In addition there is strong demand from the southern states which have seen reduced inventories over the last two years.

In 2011 there was a concerted effort to diversify export market destinations. Mexico is now exporting beef to a number of developing economies as well as Japan, the United States, Russia, and Korea. Mexico’s processors and traders expect that these markets will purchase greater volumes of Mexican beef during 2012 as larger slaughter will increase production over the short term. Domestic consumers prefer “bistec” or muscle thin beefsteak, with demand for finer cuts limited to a small upper-income consumer. As such these finer cuts are exported.

In addition to being the world’s eighth largest beef exporter, Mexico is also the ninth largest beef importer. Imports of beef are forecast to remain strong through 2012 as domestic production is not sufficient and imported product appeals to various segments of the population.

Beef prices have increased with smaller supplies. This will affect lower-income households more than middle and upper income consumers (a smaller portion of the population) who will maintain or even be able to see a slight increase in their consumption levels. Middle and upper income consumers are reportedly increasing their purchases of imported beef.

THE SOUTHERN HEMISPHERE

Does the cattle cycle exist in grass finished countries? This is a valid question with the production cycle prolonged in grass finished systems where expansion in the cow herd does not increase beef production for at least four years. Reproductive efficiency is also typically lower in these hotter climates resulting in larger cow herds to produce similar levels of beef production.

BRAZIL – A DOMESTIC FOCUS... FOR NOW...

The Brazilian cow herd has been expanding since 1999. In 2007, they became the world’s largest beef exporter representing 29% of global trade. However expansion has not been without challenges. Low prices slowed growth to less than 1% in 2006, as cow slaughter increased. With a four year lag in production this did not show up in production until 2010 when exports dropped. In 2012 Brazil is expected to be the third largest beef exporter, with a significantly diminished 15.5% of global trade.

Following the larger cow slaughter in 2006 and 2007 there was a run up in prices as supplies tightened and the industry was facing stronger demand. However, expansion has been lackluster at best. Beef cow numbers have grown on average 3% per year since 2010 despite stronger cattle prices. Part of the challenge in Brazil has been the exchange rate. While prices are closer to the US, a higher Real means a lower price received by producers and therefore a more modest incentive to expand. Cow/calf profitability was still negative for smaller operations in 2006; turning modestly positive in 2007. Even in the best year since then cow/calf returns over cash costs has only been US$18-53 per cow. Furthermore producers must decide which commodity will provide the highest return for their time and resources. This means beef competes for land and resources, with crops that have seen record high prices since 2006.

It is important to noted that even with increased cropping there is a portion of land that shifts from grain as a first crop to a second crop of higher productive grass for grazing. Grazing land provides an important diversity of income streams for the producer (risk management).

Further growth is expected to be limited by new regulations, which have put in place a Federal Reserve. This Federal Reserve requires that producers have a buffer zone around all water sources (i.e. rivers) and producers are to replant forest in sensitive Amazon areas. This is expected to limit any further expansion into forested areas by production agriculture.

In the meantime, domestic protein consumption is increasing. Per capita beef consumption has increased 5.2% since 2006 – from 36 kgs to 38 kgs. When combined with population growth, total consumption has increased 13%. At the same time production has only increased 2%; resulting in a sharp decline in beef exports (34%) Moving forward even if production starts to grow by 3% annually, as inventory numbers would suggest, this will not keep up with the growing domestic consumption. Consequently further declines in exports are projected.
THE HYBRID – ARGENTINA

Argentina has for many years finished cattle on grain for the last 100 days and consequently doesn’t fit the traditional grass fed or grain fed model.

Since the export tax was put on beef in 2005 producers have been reducing their herds. This liquidation was in response to a lack of export access – not price signals which were high domestically and internationally. Anytime cattle or beef prices increased the government restricted exports to ensure stable domestic supplies. Consequently beef cow inventories in 2011 were 14% smaller than in 2005 at 18 million head. The 3 million head decline and subsequent drop in production (-21%) increased prices and stabilized inventories in 2012 which were up 2%. Further growth, while expected, may be slow as producers have shifted production into commodities that are not impacted by export restrictions. In addition drought has reduced the anticipated increase in the 2012 calf crop. Higher grain prices may also result in slower heifer retention. Recovery of the herd while underway is expected to be slow.

AUSTRALIA – PRODUCTIVITY GAINS...

Australia has increased their feedlot sector since 2004 when North America was closed out of many markets due to BSE. This gave them the opportunity to enter many markets in Asia, but they needed a higher marbled product to successfully compete against the US over the long term. On average over the last several years one third of their production has been finished in feedlots. While feedlot production is highly dependent upon feed grain supplies from year to year the sector appears to have stabilized. Maintaining market share in countries like South Korea and Japan has been done with alliances and investment from those countries.

Further growth in the Australian cattle sector will come from increased productivity – particularly larger carcass weights and reproductive efficiency. Over the last decade carcass weights have been increasing by 3.7 lbs per year from 577 lbs to 614 lbs
in 2010. As has been seen in other countries these gains are sustainable for many years to come. Over the long term improved productivity of pasture and forages should allow Australia to maintain and even expand their herd further. In 2012/13 large supplies of feed quality wheat and lower feed grain prices will support beef production over the short term, with beef production projected to be slightly higher than the previous record set in 2006. A strong Australian dollar and strong competition in key export markets is expected to keep export volumes constrained to the third highest on record.

**INDIA – GROWTH UNCHECKED...**

India has grown their dairy herd by 14% since 2000 as demand for dairy products has grown with the rapidly expanding middle class. Buffalo milk is preferred as it has a higher fat content for a product called ghee, which is popular with Indian consumers. Consequently, as spent dairy (buffalo) cows are culled from the herd beef production has increased dramatically (130%) from 1.5 million tonnes in 2000 to 3.5 million tonnes in 2012. As India per capita beef consumption is extremely small (1.6 kgs) due to religious beliefs, exports have increased four-fold since 2000 to be 1.5 million tonne. Recent data is explosive - in 2011 exports were up 33% from 2010 and in 2012 exports are up another 25%. A number of slaughter and processing facilities have been developed and more are planned to come online in 2012 with a focus on the export market.

A National Dairy Plan calls for milk production to grow by 6 million tonnes annually over the next 15 years. For the first phase the Government has committed US$416 million (20 billion rupees) for the first 6 years. The plan intends to increase dairy production through improved breeding and feeding as well as extension and management services.

In 2011 India became the fourth largest exporter in the world; representing 10.5% of global trade. This is expected to increase to 11.1% in 2012. India is expected to be the largest beef exporter by 2013, with increased production being driven by domestic dairy consumption and not beef prices. The competitively priced buffalo meat makes it popular in a number of markets. India exports primarily into the price sensitive markets of Vietnam, Southeast Asia, the Middle East and Africa. India’s Foot and Mouth Disease (FMD) status will make inroads into other markets like Eastern Europe and Indonesia difficult. Indian exporters are operating voluntary vaccination programs and while positive, the reality of FMD is a significant hurdle for expanding market access.

India’s product competes directly with Brazil in price sensitive markets and faces the same challenges with FMD (although Brazil is further along in many respects in terms of vaccination programs and regional controls). It has the potential to replace Brazil, as the dominant supplier into many markets as Brazil reduces exports and focuses on their domestic market. It should also be remembered that as a dairy sourced product this will be lean manufacturing beef that could potentially compete with New Zealand – particularly in Southeast Asia.

**NEW ZEALAND**

Beef production in New Zealand is predominantly a by-product of the dairy industry, with 30% of slaughter being dairy cows. Hence, production is determined by profits in the dairy sector. Dairy inventories have been on a slow and steady growth trend over the last two decades. With 5.9 million cows, close to 1 million could be culled each year in a status quo situation – assuming a 17% culling rate. It is important to remember dairy culling rates are usually much higher than beef culling rates, with the long term average dairy culling rate in Canada being 24%.

Further growth in beef production is projected, as a result of excellent pasture conditions driving larger carcass weights and increased total slaughter. In 2012 beef production is projected to increase by 6.5%.

**India Buffalo/Beef Disposition**

![India Buffalo/Beef Disposition](source)

**New Zealand Cow Numbers**

![New Zealand Cow Numbers](source)

Eighty-two percent of beef production is exported. The main destination is North America (~49%). However exports to the US have been negatively impacted by exchange rates.
URUGUAY

Uruguay like New Zealand is a relatively small producer on a global scale, but with 77% of its production being exported they are the seventh largest exporting nation accounting for 5.3% of global trade. Key markets for Uruguay include Russia (#1 since 2008 due to price, and the EU (#2).

Uruguayan beef production was down in 2011 and 2012. However inventories are stable and good profitability has encouraged heifer retention. Over the long run the herd is expected to expand. Being a grass-based system it will take time (approx. 4 years) before this shows up in the form of increased beef production. It is important to point out that 16% of grassland was ploughed up for crop production in 2011. Competition for acres for crop production will make further expansion challenging unless improved forages are planted.

2020 PRODUCTION OUTLOOK

Back in 2010, GIRA completed a 10 year outlook. Between 2010 and 2020 it projected production gains in Brazil (900,000 tonnes), USA (800,000 tonnes), China (536,000 tonnes), MENA (501,000 tonnes), Argentina (281,000 tonnes) assuming the export ban is removed, and other countries (1.25 million tonnes). Given everything that is happening in the US with drought, competition for acres, and high feed costs it now seems unlikely that the US will see such substantial gains. All protein sectors in the US have been severely impacted by the high and volatile corn price in recent years. The beef industry has been hit by drought in major producing regions and is expected to take several years to recover. In the meantime, competition for acres dominates. The “other countries” projection will most likely be dominated by growth in India.

By 2020 export gains were projected to occur for Brazil (379,000 tonnes), Argentina (220,000 tonnes), Australia (210,000 tonnes), the US (176,000 tonnes), and Uruguay (100,000 tonnes). Given what we now know about challenges in Brazilian production and continued limitations in the Argentine market, export growth is likely to be more modest in these countries.

Consequently there is much opportunity for countries like Australia, Canada and India to step in and fill the gap.

CONSUMER DEMAND

The supply side is only half the equation. Growth in production can only occur if consumers are willing to pay for that product. The OECD/FAO Agricultural Outlook projects that beef consumption will grow by 20% in non-OECD countries over the next 10 years as disposable incomes and populations increase in many of these regions. If growth in consumption over the next 10 years is only expected to come from developing countries, they are unlikely to be willing to pay such high prices. However, beef consumption is projected to grow 9% in developed nations over the next 10 years.

Currently the largest beef importers are: the US (19.3% of global trade), MENA (17.7%), Russia (12.3%), Japan (9.3%), Other Far East (9.5%), South Korea (5.2%) and the EU-27 (4.6%).

Demand Factors that will influence how this picture will change over the next 10 years include:

- There will be 750 million more people on earth in the next 10 years
- Economic growth will have implications for consumption
- Market access will determine if certain production deficit countries see increased consumption
- International currencies will influence the price and returns producers receive for product

The US beef supply and demand complex and has already been covered. Below is an overview of the outlook for other major beef importing nations.

MENA

The Middle East and North Africa (MENA) is a price sensitive market with product supplied primarily by India and Brazil. To a lesser extent Australia ships to the market, with proximity and the hotel and restaurant (HRI) business presenting opportunities for a step up in quality. This region is a challenge due to the price sensitivity, as well as the Halal requirements which change from one country to the next.

The main importing countries in the region include: Egypt, Iran, Israel, Algeria, Saudi Arabia, United Arab Emirates (UAE), & Jordan. There is great diversity in the economic climate of these countries with some driven by the crude oil market. Tourist demand fluctuates with government stability in the region.

RUSSIA

While beef consumption in Russia has been relatively stable since 2005, at 17.7 kgs/capita, declining production has resulted in an increased reliance on imports. Since 2004 beef imports have increased 37%. While the government has been long committed to expand the pork and poultry sectors to reduce dependence on imports, cattle were excluded until recently. Even with the government programs production is expected to be focused on the dairy sector, with beef as a by-product, leaving an opportunity for suppliers of higher quality beef.

The Russian market is primarily supplied by South America, but with reduced South American supplies there are increased opportunities for other exporters. Australia has already made their presence known in Russia.

Beef consumption is expected to increase when Russia is accepted into the WTO and access for beef improves through better tariff-rate quotas (TRQ), a reformed high quality beef definition and reformed sanitary regulations. Increased TRQ access for the US will potentially increase volumes in the near future. Meanwhile, growth in domestic production will be driven by profitability in the dairy sector.

JAPAN

Japanese beef production has been steady for two decades. Growth in consumption has come from imports, primarily from North America, as consumers prefer a highly marbled grain fed product (usually AAA or Prime). Imports dropped in the early 2000s and have been flat since 2003. While Australia was able to gain some market share while North America was out of this market following BSE, they were unable to completely replace them. Since access has been regained for North American beef increases in total imports have been minimal with the greater battle being for market share. Under the current situation, where product is limited to that from cattle that are under twenty-one months in age, it is also difficult to produce the desired AAA or Prime carcass.

Moving to U30M access for North America could dramatically change this picture. With larger supplies of the right kind of beef available, beef consumption could start to rise again. The question becomes how will consumers respond as global beef prices move higher in this extremely price sensitive market? A lack of positive income growth has meant the average consumer remains price conscious. However larger supplies of imported product would be expected to lower in-market prices and support consumption growth.
SOUTH KOREA

Per capita beef consumption has been increasing since 2004 and is up 46% at 14 kgs; surpassing the 2002 high of 13 kgs. While domestic production has increased in response to stronger demand, imports have also been increasing. Imports in 2012, at an estimated 420,000 tonnes (CWE), are just under the 2003 high of 457,000 tonnes.

Korea Beef Disposition

Larger cattle slaughter in 2012 is expected to reduce inventories for the first time since 2002. Korea has a distinct cattle cycle with beef cow inventories peaking in 1986, 1997, and potentially 2012. The domestic market is periodically impacted by FMD outbreaks that impact production.

South Korea Beef Cow Numbers

On December 30, 2011 the South Korean National Assembly ratified the import health requirements for Canadian beef. This had been anticipated as one of the most challenging steps in the Korean process to enable Canadian beef to re-enter the South Korean market. The process to restore access for Canadian beef was successfully completed with the final approval letters from Korea received on January 20, 2012. With the receipt of these letters, Canadian beef and beef products from UTM cattle could be exported to Korea immediately. South Korea re-opened to UTM Canadian beef in December 2011. The first shipment cleared inspection in Korea in early March 2012. During the first half of 2012, 850 tonnes have been shipped.

On March 15, 2012 the Korea-US Free Trade Agreement (KORUS) was implemented. Under the KORUS the Korean tariff on US beef imports will decrease by 2.7 percentage points per year until U.S. beef is duty free in 2026. Canadian beef will remain subject to the full 40% tariff unless Canada and Korea also reach an FTA.

EUROPEAN UNION

The EU, with 502.5 million people, is a large potential market for Canada beef that cannot be ignored. However beef consumption has declined by 9% since 2007. This combined with perpetual difficulty with some major import suppliers (particularly Brazil due to traceability issues) has reduced beef imports by 44% over that period. As a result of this reduction, the EU became a net exporter in 2011 and again in 2012. This is the first time since 2002. The question becomes will EU beef consumption rebound in the next 10 years or will the current economic uncertainty have a longer lasting impact that would reduce demand for imports over the next decade?

EU-27 Beef Disposition

Moving forward tariff reductions and increased access for importers will lower prices and is expected to turn around the current decline in consumption. Removal of some Common Agricultural Policy (CAP) programs will make domestic producers less competitive and would reduce production further, with lower priced importers supporting consumption. GIRA projects EU beef imports to increase by 652,000 tonnes by 2020. While ambitious in the current economic environment, consumption and import growth is still expected following policy changes.
OTHER MARKETS...

An Asian market that does not make it into the top 10 importers is Taiwan. This small country is entirely dependent on imports for beef consumption. Consumers have a preference for grain fed beef from North America and the country has strong ties with the US, with the economy driven by electronic exports to the US. Therefore a downturn in the US has ripple effects in this market. Beef consumption has been steadily increasing since the early 1980s - this trend is expected to continue. Canadian exports to Taiwan have been limited since January 2011 when they started testing for ractopamine with a zero tolerance policy. In July 2012 Taiwan’s government announced it will recognize the CODEX standard for ractopamine minimum residual limit (MRL) for beef and pork. This is an important first step in addressing this issue and Canada regaining its ability to export product into this market in a meaningful manner. Only once product is accepted will packers feel confident in sending product.

The Chinese market opened in December 2011 with a small test shipment. Volumes to mainland China have been limited in the first half of 2012 with 224 tonnes moving from January to May. Similar to Taiwan, a zero tolerance for ractopamine was implemented on December 5, 2011. This currently limits the market to hormone-free beef of which production is limited or beef produced with Zilmax (an alternative to Optiflex which contains ractopamaine). While historically Mainland China and Hong Kong and Macau have acted as one market, shipments to Mainland China have been severely limited by the zero tolerance for ractopamine while exports to Hong Kong and Macau do not appear to be impacted.

Hong Kong & Macau is an important market for Canada representing 6.3% of exports in 2011, the third largest market. Exports in 2011 totaled 21,000 tonnes valued at $61.8 million. In the first half of 2012 exports are up 1% in volume and down 30% in value.

2020 DEMAND OUTLOOK

Similar to the production and export outlook for 2020, GIRA also projected consumption and import growth going out to 2020. From 2010 to 2020 beef consumption is projected to increase in China (686,000 tonnes), MENA (600,000 tonnes), US (505,000 tonnes), Mexico (272,000 tonnes), and India (200,000 tonnes). Reviewing the US projection, a significant increase in population would be necessary or rebound in per capita consumption, to meet this projection.

Imports projections for 2020 showed the EU up 652,000 tonnes – which again would require a reversal in the current decline of consumption and growth in exports, Japan (103,000 tonnes), MENA (99,000 tonnes), Russia (92,000 tonnes), South Korea (27,000 tonnes) and other countries (229,000 tonnes). Given the reduced supply outlook for the US due to drought and continued high feed costs, imports will most likely be steady. As previously mentioned the EU growth is optimistic but still expected to happen as policy changes are implemented. South Korea increased consumption by 83,000 tonnes over the last decade – while the majority of that was supplied by domestic production the estimate of 27,000 tonnes for imports over the next decade is probably modest.

So how does this impact the picture for the top 10 beef importers? Not much. In 2020 the top 5 importers are projected to be the US, MENA, Russia, Japan and the EU with the EU replacing the Other Far East.

World Beef & Veal Importers - 2020p

So who is going to supply? That depends on who has the product consumers prefer in any given market. Grain-fed production continues to be priced much higher than grass-fed. However the cost of production differences have been rapidly narrowing with higher input, land, and labor costs all impacting global beef production.