



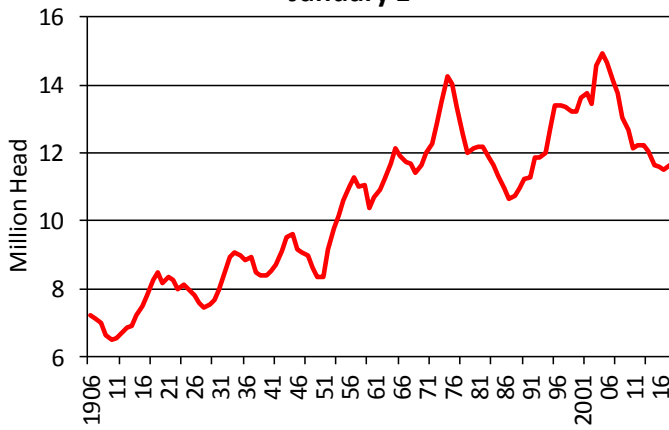
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The Cattle Cycle

The beef cycle is a biological-economic phenomenon influenced by production, prices and profits. Economic considerations determine when herd expansion or contraction will occur, and the reproductive limitations of the bovine dictate the rate at which expansion may occur.

When market signals are mixed, highly uncertain, or when outside forces such as trade barriers or drought occur the cattle cycle may be delayed or even reversed for a period of time. In years when the cycle is not necessarily followed, it is not that the cycle is not still there, but that outside forces are temporarily limiting or having a larger influence on producer decisions.

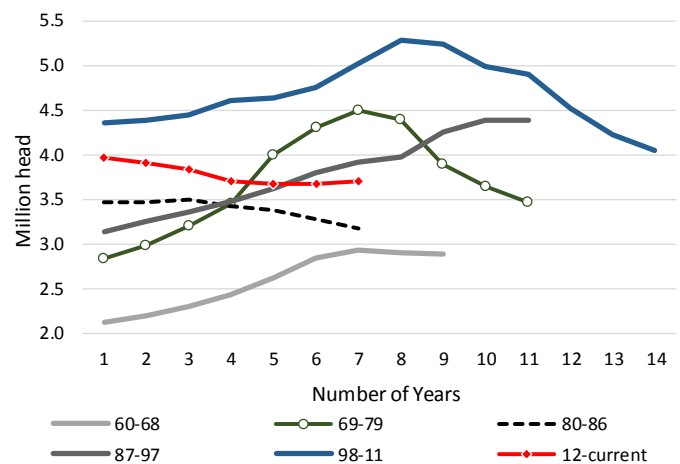
**Canadian Total Cattle & Calves
January 1**



Source: Statistics Canada

CANADIAN CATTLE CYCLES

January 1 Canadian Beef Cow Inventories by Cycle



THE CYCLE

Beef cow inventories are the production base and represents the earliest signals. There are 4 distinct stages or phases in the typical beef cycle:

1. **Consolidation** at the bottom is usually only one year in duration but in adverse economic circumstances may last up to two or three years.
2. The **Expansion** phase normally lasts five years but can be up to two years shorter and up to three years longer.
3. The **Peak** year is not easy to predict with accuracy, is influenced by outside factors such as domestic and international beef demand, and production costs.
4. The **Liquidation** phase normally is two to three years in duration.

Several factors influence the cycle including the financial condition of producers, weather (feed availability), trade barriers and market access, the exchange rate and consumer demand domestically and internationally.

The 1960-68 Cycle

Between 1960 and 1966 beef cow inventories expanded 38%, then liquidated 1% by 1968.

The 1970s – The BIG one

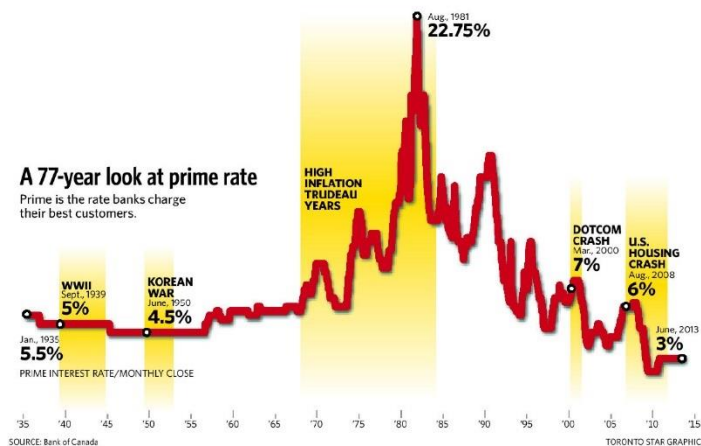
The 1970s cycle has easily been the most dramatic experienced yet. Between 1969 and 1975 beef cow numbers increased a record 58%. This growth was spurred by soaring domestic beef demand, supported by the most rapid increase ever seen in per capita disposable incomes. The very rapid growth in beef cow numbers predictably ‘overshot the mark’ and supply quickly exceeded demand. This led to the most rapid sell off of beef cows on record and between 1975 and 1979 the cow herd was reduced by over one million head or 23%.

The 1980s – A double dip

The sell off from the previous cycle ended in 1979 and by 1982 a modest 1% increase in beef cow numbers was

recorded. This was indicative of the commencement of another cycle, but the recession of the early 1980's and high interest rates brought growth to a halt. By 1986 beef cow inventories had declined 9% to a low of 3.2 million head.

The 1980-86 cattle cycle looks like a missed expansion cycle as the modest growth barely shows up before liquidation starts again. The liquidation that started in 1975 with rising interest rates continued to impact industry investment throughout the 1980s, even as interest rates came down from the 1981 peak.



The 1990s – Going International

The expansion in the 1990s was driven by increased market access and export growth. In 1989 the Canadian-US Free Trade Agreement (CUSTA) followed by private investment in packing plants in Alberta in the early 1990s and the North American Free Trade Agreement (NAFTA) in 1994 opened up the Canadian producer to a new source of international demand. Between 1987 and 1997 beef cow inventories expanded by 40%. In fact between 1986 and 1996 beef production increased 363,000 tonnes or 800 million lb. (carcass basis), while beef and cattle exports increased 535,000 tonnes or 1.18 billion lbs in the same period representing 49% of production.

Between 1983 and 1986 the Canadian dollar declined from \$0.813 to \$0.719 per U.S. dollar. As a result, Canadian steer calf prices increase around \$20/cwt. Although partly an illusion this was more encouraging than a mere US\$7/cwt rise stateside.

The liquidation of beef cows between the 1997 peak and 1998 was 1% or 26,100 head. This was even smaller than the 1960s liquidation of 33,600 head between 1966 and 1968.

It should be remembered that the 1975 cycle ended because supply significantly exceeded demand. In the 1990 cycle

domestic demand was not the determining factor. The reason behind a more moderate cow sell off was that by 1997 replacement heifer prices had recovered and by 1999 had set a new record that was subsequently broken in the fourth quarter of 2000. The rebound in prices was based partly on lower feed costs, as well as a return to profitability in the cow-calf sector.

The 2000s – Outside Forces

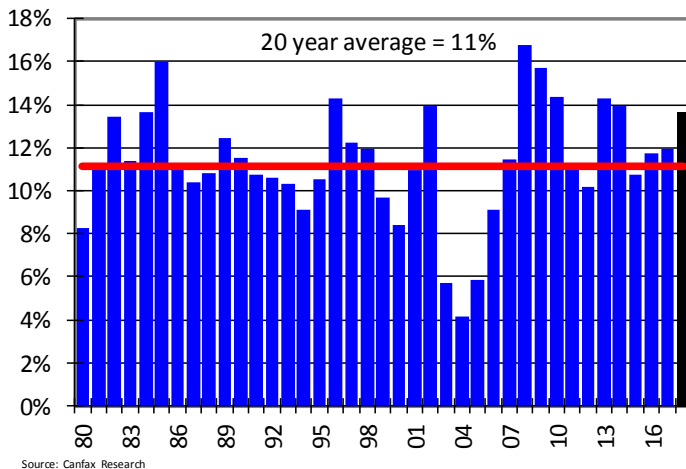
The cycle in the 2000s was different in that it was not driven by market factors, but outside forces. First in 2002 drought resulted in large feeder, fed cattle and cow exports which would have typically signaled the start of a liquidation phase. But the closure of the border in 2003 to the U.S. and other countries due to BSE prevented normal market functions. A captive market, with domestic packers focused on slaughtering fed cattle, resulting in a back log of cows and bulls. Beef cow culling rates dropped to 4% in 2004 as producers retained cull cows in the face of minimal cow slaughter and low cow prices.

Beef cow inventories expanded 20% between 1998 and 2006. When the U.S. border opened to fed cattle under-thirty-months of age in July 2005 fed and feeder cattle began to move south for feeding and slaughter, this made domestic slaughter capacity available for cows and bulls. Liquidation commenced, and inventories dropped 23% between 2006 and 2011.

In 2007 the rapid appreciation of the Canadian dollar pushed cattle prices down yet again. At the same time packer costs increased with the implementation of the enhanced feed ban in July 2007 (requiring special disposal practices of specified risk material) along with tight labour supplies, which resulted in plants operating at lower utilization rates. These market dynamics encouraged large fed cattle exports and negative price pressure, limiting returns and encouraging large cow slaughter.

Increased market access to the U.S. for cattle and beef over-thirty-months of age in November 2007 saw the resumption of cow exports; increasing cow marketings. Because of the age requirement that cows be born after March 1, 1999 Canadian and U.S. cow prices have not arbitrated completely, but increased demand has provided positive price support. Moving into 2008 market volatility and high feed grain prices continued to encourage cow marketings, which increased 30% from 2007 to 994,000 head. This was the largest cow marketings since 1985 and pushed the beef cow culling rate to 16.7%.

Canadian Beef Cow Culling Rate



Domestic packers were in a better position in 2008 with a lower dollar, easing labour markets and higher utilization rates. Therefore, they were able to keep proportionately more fed cattle at home for slaughter. However, the financial crisis in the U.S. and the global recession pressured cattle prices lower in fourth quarter 2008. A slow economic recovery and continued volatility in exchange rates and feed continued the negative pressure on the livestock sector for several years. Consequently, liquidation continued until 2011 resulting in the longest cattle cycle at 14 years.

The China Effect (2012-current)

In 2012, beef cow inventories stabilized with declines of less than one per cent indicating the move into a new cycle with the consolidation phase. A prolonged consolidation phase was anticipated as producers who had waited for better prices before retiring sold and young producers were once again entering the industry with better profitability. In addition, there would need to be a period when producers rebuilt equity that had been lost during the previous cycle.

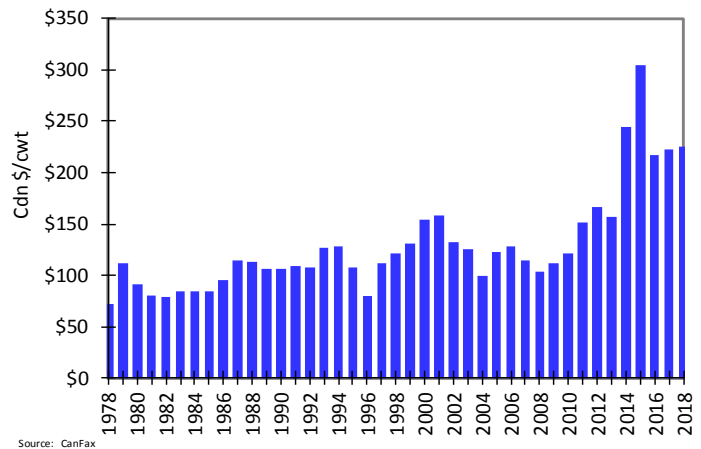
Calf prices surged in 2014 and 2015 with strong international demand, specifically with Chinese imports of beef that supported cattle prices globally. In addition, domestic beef demand rose to the highest level in 27 years to peak in 2016. This combination of strong domestic and international demand was expected to spur on expansion. And that did happen in the U.S., but despite profitability in the Canadian cow-calf sector beef cow inventories only increase 0.9% between 2016 and 2018.

Uncertainty about how long the high prices would last, higher input costs with continued high feed costs as well as uncertainty about critical trade agreements like the re-negotiations of the North America Free Trade Agreement

(NAFTA) and ratification of the Comprehensive and Progressive Trans-Pacific Partnership (CPTPP).

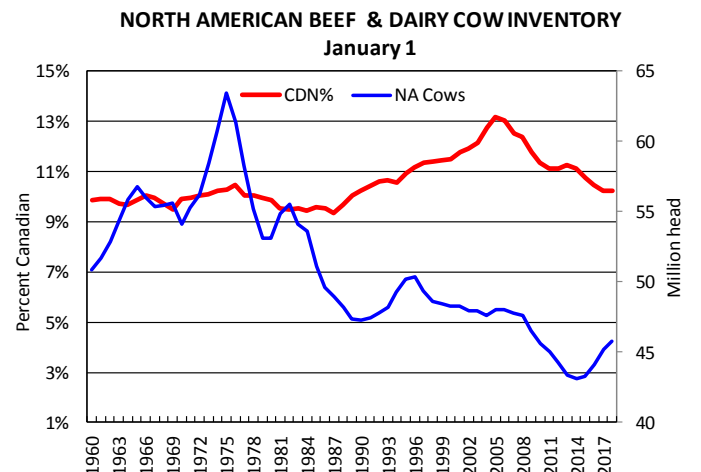
This has all leads to the question, will expansion continue or was 2012 to 2018 the missed cycle, like the 1980-86 cycle where consolidation is followed by liquidation instead of expansion. If that is the case, seven years of consolidation could soon be done with potential for another cycle to start. Larger cow slaughter in 2018 appears to be the end of the current expansion phase, that was the smallest since the 1980s.

Central Alberta 5-600 lb Feeder Steer Price



THE NORTH AMERICAN CATTLE CYCLE

Canadian cow inventories (beef and dairy) were steady around 10% of the North American total from 1960 through 1987. Before growing to a peak of 13% in 2006 and have since declined to 10.2% in 2018. While down from the peak, current levels are in line with history; indicating a balanced relationship between the two countries in terms of competitiveness and availability of resources.



The U.S. Cycle

During this last cycle, the U.S. beef cow herd has expanded 9% or 2.64 million head from the 2014 low through 2018. This was partly due to the drought induced liquidation that took place between 2008 and 2013 which has resulted in rapid restocking once weather conditions were appropriate.

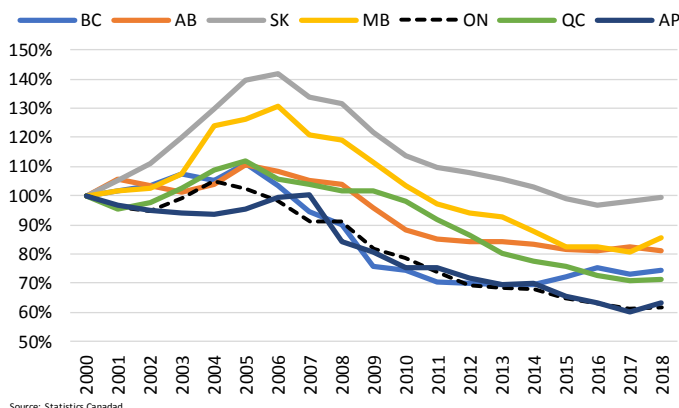
Expansion of the U.S. beef cow herd has slowed to 1.6% in 2018 and is expected to be even smaller on January 1, 2019. Larger protein supplies have been the main driver to slower expansion as prices have been pressured down. However, international demand has remained strong supporting prices at levels higher than anticipated.

Multiple case of African Swine Fever (ASF) have been reported in China since August 1, 2018. Due to different production practices, specifically a lot of small backyard operations the number of hogs that have been destroyed is relatively small considering the number of case across a wide geographical area. This highly contagious disease does not affect humans but results in death of domestic pigs and wild hogs within 10 days. This has the potential to reduce Chinese pork production, at a scale similar to what was seen with PRRS in 2008. Resulting in larger import demand for protein in the second half of 2018 as consumers move away from pork to competing meats and alternative sources than domestic product.

PROVINCIAL DIFFERENCES

Since 2000, the beef cow herd has been impacted differently in different provinces. As of January 1, 2018 Saskatchewan's beef cow herd was steady with 2000, while all other provinces were smaller. The smallest declines were in Manitoba at 85% of 2000 levels and Alberta at 81% followed by British Columbia (74%), Quebec (71%), the Atlantic provinces (63%) and Ontario (61%).

Provincial Beef Cow Inventories



Provinces that have seen the largest declines since 2000 have the greatest potential to expand in the coming cycle.

One of the challenges to future expansion is feed costs and weather disruptions.

| Beef Cow Herd changes since 2000 | 1,000 head |
|----------------------------------|---------------|
| BC | -70.4 |
| AB | -354.7 |
| SK | -4.5 |
| MB | -75.4 |
| ON | -152.7 |
| QC | -61.4 |
| AP | -23.3 |
| Canada | -742.4 |

CONCLUSION

Global protein demand has been nothing short of explosive over the last decade, with multiple rising stars on the production side (e.g. Brazil, India, Mexico, Paraguay). This unprecedented increase, driven by a growing middle class primarily in China that spurred on consumption, is not expected to continue for most commodities – beef and dairy are the exceptions. The FAO is forecasting that global per capita beef consumption will remain steady with demand driven by population growth – resulting in annual consumption increasing by 9 Mt in the coming decade compared to 6 Mt in the last decade. In addition, a portion of the increased production will come from dairy cows as demand for dairy products is forecast to be the exception, seeing accelerated growth over the next decade. Lower feed grain prices will be supportive to further expansion in animal protein as profit margins improve. However, larger supplies and competition is anticipated to keep pressure on prices.

Beef consumption is forecast to grow significantly over the next five years in MENA, Sub-Saharan Africa, China and other Asia. None of these markets can supply this demand from domestic production and are expected to increase imports. Production from India will dominate in parts of these markets, but there is room for a strategically placed high quality grain-fed product.

The U.S. and Australia are major competitors for Canadian beef in most importing markets. As mentioned already, the U.S. herd has expanded and will have larger production over the next several years. The Australian beef herd is also expected to expand at a rate of 1.3-2.5% per year through to 2021, weather permitting. Beef production is projected to be back to 2013 levels by 2020 and exports are projected to be back to 2013 levels by 2019 after modest growth in 2017 (1%) and 2018 (3%). With multiple exporting countries expanding production there will be competition as they fight for market share.