The Cost-Price Squeeze

Ian McLean, July 2013

It is not rising costs, but falling prices, for commodities that is the root cause of declining incomes for beef producers. Real prices for commodities decline over time and hence, real beef prices will continue to decline. Producers must always strive to find new ways to make their business more efficient to address the inevitable cost price squeeze. Solutions do exist for beef producers to address their declining terms of trade.

Any producer will tell you that the prices they are paying for their inputs seem to be going up each year, while the prices they receive do not. This pressure between costs and income is generally referred to as the cost-price squeeze and is often very topical particularly during periods of low income to the business but what is it and what causes it?

The cost-price squeeze is known in economist circles as the ‘terms of trade’. The ‘terms of trade’, is a measure of prices received for goods produced (outputs) relative to the prices paid for inputs. More exactly, the cost-price squeeze is the effect from declining terms of trade.

Commodity prices for all Australian farm products such as wool, sugar, beef, wheat, etc have been declining at 1.7% per year on average for the last 60+ years. As shown in Figure 1, which shows an index of prices received and prices paid for all Australian farmers in real terms (i.e excluding inflation), prices paid (costs) have not increased much at all but prices received have been in a steady continuous decline.

Figure 1. Index of real prices paid and prices received
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This didn’t begin in 1949, this is simply when this data set commenced, In fact the phenomenon was identified by an American Agricultural Economist in the 1950’s, Willard Cochrane, who called it a treadmill, the reason for which is shown below.

So what causes it? That is perhaps easiest explained by using some basic economics.

Figure 2 is a basic supply and demand curve that depicts how the two interact. The **red demand** curve shows that when prices are high, the quantity demanded will be lower and when prices are low, the quantity demanded will be higher. The **blue supply** curve is the opposite, when prices are low, the quantity supplied will be lower, however when prices are high, the quantity supplied will be higher. Where the 2 curves meet is regarded as the equilibrium. It is this equilibrium point that determines prices for a particular commodity, such as beef, at a point in time. This model is used to understand what may happen to the price and quantity sold of a good in a market as supply and demand change.

![Figure 2. Supply Demand curve](image)

Over time, new technologies and techniques emerge and are adopted that in turn make the production of a commodity more efficient and usually cheaper to produce per unit. This will in turn shift the **supply curve** to the left. At the same time, demand for a product or good can change, for example, through population growth, new markets, competing products or services or growth in existing markets.
As is often the case with agricultural commodities, increases in demand are often not enough to offset the increase in supply, and so, prices fall to bring the supply and demand curve back to a new equilibrium (i.e. p1 to p2 in Figure 2). This is a normal phenomena of industry constantly finding new ways of being able to produce a product or service at a lower price, which is why Cochrane labelled it a treadmill, farmers always having to continuously adopt new technology and become more efficient to stay ahead of the decline in real prices.

While this is happening, the more efficient producers are maintaining their profit margins by producing at lower cost.

This challenge of having to constantly improve the business’s efficiency applies not only to agriculture, but all industries across the globe. Right now, the Australian car industry is demonstrating the challenges of producing and selling a competitive motor vehicle against highly efficient overseas car manufactures.

The Northern Beef industry also faces the real challenge of constantly needing to produce beef more efficiently. In fact that we are now producing more beef with less inputs and less staff than we were 20 years ago.

Figure 3 shows average productivity improvements across the Northern Beef Industry over the last 35 years, on average productivity has been increasing by just less than 1% a year. Which is good in itself; however the declining terms of trade at 1.7% on average are eroding these gains at two to one. No wonder so many beef producers remark about the pressure their businesses are suffering from the cost price squeeze.

**Figure 3. Total Factor Productivity – Northern Beef Industry**
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So are there solutions for beef producers to address this decline in terms of trade or cost price squeeze?

The good news is, yes, there are many solutions. The bad news is it isn’t easy, if you wish to remain in the industry, you must seek out and adopt these new technologies and solutions, and find a 2% improvement each year to keep you ahead of declining terms of trade.

One example of a solution to address declining terms of trade is through genetic gain. Figure 4 shows the genetic improvement in dollar terms (expressed as an index) being achieved by the Australian Seedstock industry utilising BREEDPLAN, provided by the Beef Breeding Extension Division of the Agricultural Business Research Institute-UNE. The rate of genetic gain amongst these Seedstock producers has far exceeded their declining terms of trade.

Figure 4. Declining Terms of Trade and Genetic Gain

In summary, declining terms of trade, or the cost-price squeeze is a constant feature in agriculture and there is no indication that it will cease anytime soon. To stay ahead of the declining terms of trade, producers need to lift their productivity and efficiency by approximately 2% each year. There are gains to be made across all aspects of production, including pastures, herd productivity, labour efficiency, technology adoption, etc.

An important start for producers is knowing what your current productivity and performance is. Understanding the strengths and weaknesses of your business will help identify where to focus attention to lift the performance of the business.

will give you this information.