

Fuel In Canada's Fields

“Out here in the fields, I fight for my meals...” – *The Who*, Baba O’Riley

While we cannot be absolutely certain, it is unlikely Pete Townsend had the canola belt of Alberta, Saskatchewan and Manitoba in mind when he penned those lyrics to the 1979 classic. That is just as well; while the biodiesel boom of 2007-2008 began to cool with the downturn in crude oil prices in late 2008, the price of canola is just as likely to be set in the fuel market as in the vegetable oil market going forward. Unless, of course, we get fooled again.

Canola, a genetically-altered form of rapeseed, made its name as a trading vehicle in the 1980s and 1990s as a competitor to vegetable oils such as those derived from soybeans, oil palms, sunflowers, safflowers and cottonseed. As canola is polyunsaturated, it is prized by those seeking a more cardiac-friendly oil. Canola, the futures for on ICE Futures Canada, are priced in Canadian dollars (CAD) per metric ton, always had trading opportunities handed to it by virtue of its crop cycle, its currency and vagaries of vegetable oil production elsewhere. A bad growing season for oil palm in Malaysia or Indonesia always had to be on canola traders’ radar screens.

Currency Connections And Intermarket Arbitrage

Unlike soybeans, which are crushed into soymeal and beanoil, both of which have large and active markets, canola is driven by its oil price. The seed is about 40% oil by content. The residual canola meal is used as a high-protein additive to livestock feed mixes. The dominance of oil in the product value makes the conversions between canola, beanoil and soybeans into single-currency arbitrages relatively straightforward:

In the case of the spread between canola and beanoil:

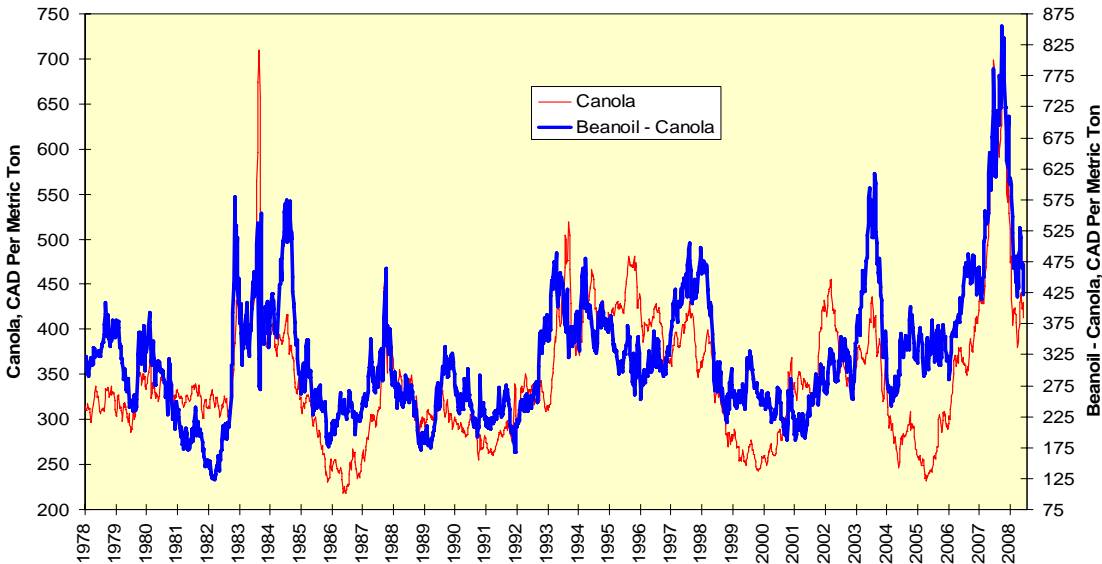
1. Multiply the beanoil price in cents per pound by 22.0462 to get USD per metric ton;
2. Multiply this by the exchange rate expressed in CAD per USD to get CAD per metric ton; and
3. Subtract the price of canola in CAD per metric ton to get the spread in CAD per metric ton

In the case of the spread between canola and soybeans:

1. Multiply the price of soybeans in USD cents per bushel by .36744 to get the price in USD per metric ton;
2. Multiply this by the exchange rate expressed in CAD per USD to get CAD per metric ton; and
3. Subtract the price of soybeans in CAD per metric ton from canola to get the spread in CAD per metric ton

The spread between beanoil and canola seen in Chart 1 has three dominant characteristics. The first is the spread can be remarkably trendy. The uptrend between September 2005 and June 2008 saw the spread expand by more than CAD 850 per metric ton, only to give half that gain back by December.

Chart 1: The Beanoil - Canola Spread



The second is the beanoil-canola spread, like all other substitution spreads, puts in reversals that must be respected. Once beanoil becomes too expensive relative to canola, such as April 2004 or June 2008, buyers change both their preferences and more importantly the engineering of the food production processes. Engineers do not tinker with production decisions lightly; this means the relative economics between beanoil and canola tend to move back to the other extreme.

The third characteristic is the spread is asymmetric; it can expand further and faster in favor of beanoil than it can contract in favor of canola. The beanoil-canola spread thus has some of the embedded call option characteristics we see in process spreads such as heating oil or gasoline crack spreads. This asymmetry should not be surprising as the global beanoil market is much larger on both the supply and demand sides than the global canola market, and that means any disruption to soybean production or any increase in beanoil demand can have a disproportionate effect on beanoil prices. Moreover, farmers everywhere often face acreage decisions between planting soybeans or either corn or cotton, depending on location. Acreage dedicated to canola is affected less by those planting decisions, and the hardy plant is less subject to weather disruptions than soybeans are.

The spread between canola and soybeans, seen in Chart 2, is far less trendy. It is a mean-reverting process, one that invites traders to buy low and sell high. Its looser connection suggests the spread is highly affected by the percentage of the soybean crush value accounted for by beanoil prices. As we can see in Chart 3, the canola-soybean spread does in fact track the beanoil as a percentage of the soybean crush value.

Chart 2: The Canola - Soybean Spread

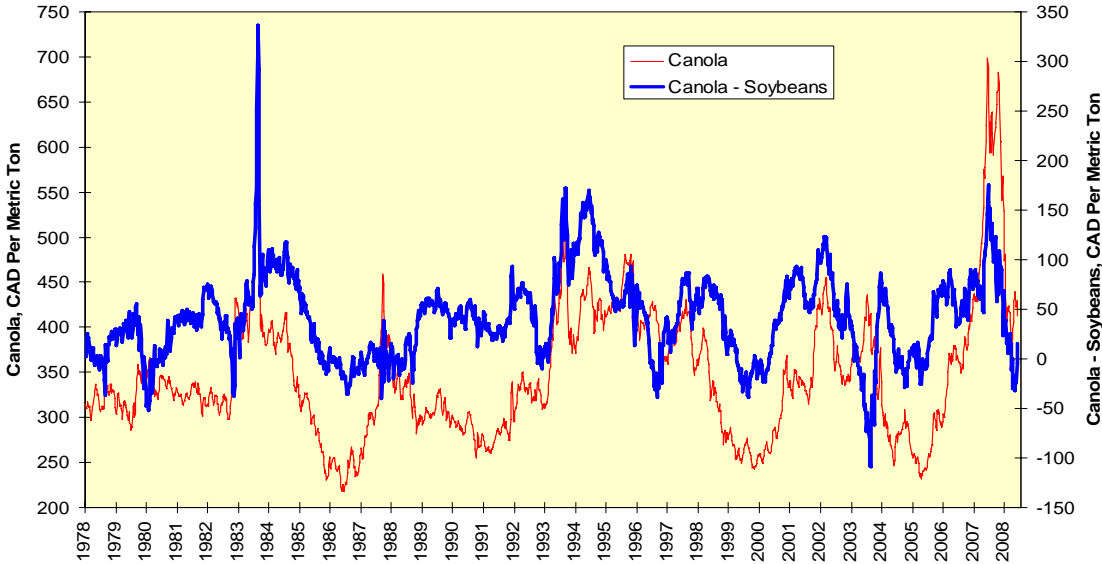
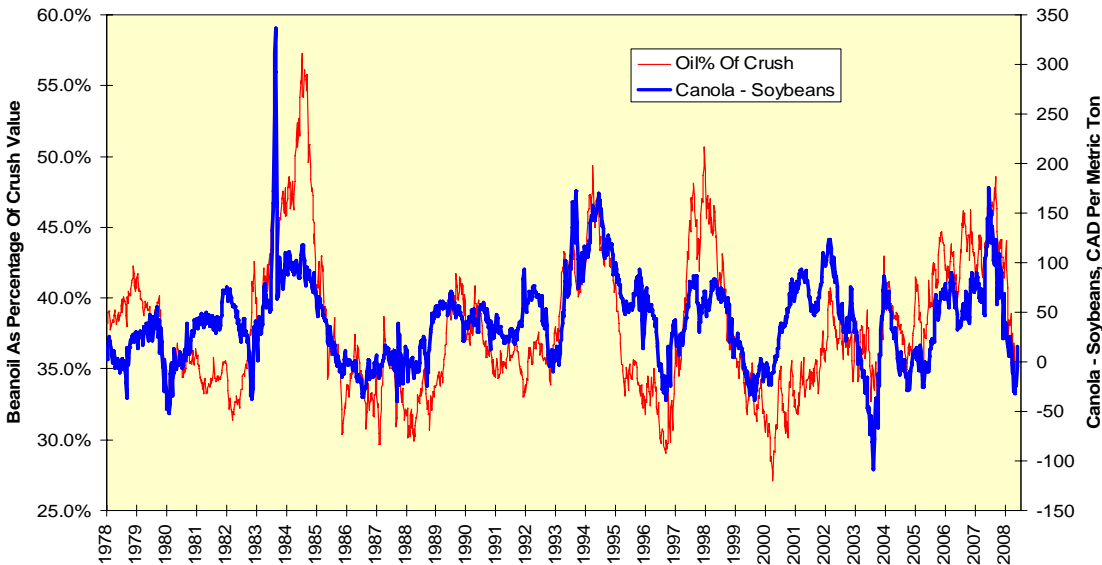


Chart 3: The Canola - Soybean Spread And Beanoil As Percent Of Crush Value



Fuel For Thought

The constant-CAD (deflated by the Canadian Industrial Price index) price of canola had been on a long-term downtrend from the mid-1970s until mid-2005. It then rose strongly as part of the global commodity rally in general and the increase in petroleum prices in particular. Canola, beanoil and palm oil all can be converted into biodiesel, and with the European Union mandating increased usage of biodiesel as strongly as the U.S. was advocating ethanol as a motor fuel, the price of all vegetable oils increasingly was set in the fuel market. The average annual increase in constant-CAD canola prices between May 2005 and February 2008 was 40.2%. This rate of increase is virtually identical to the average annual increase in cash heating oil (diesel fuel comes from the same refining “cut” as heating oil) prices of 39.4% over the same period, and this is hardly an accident

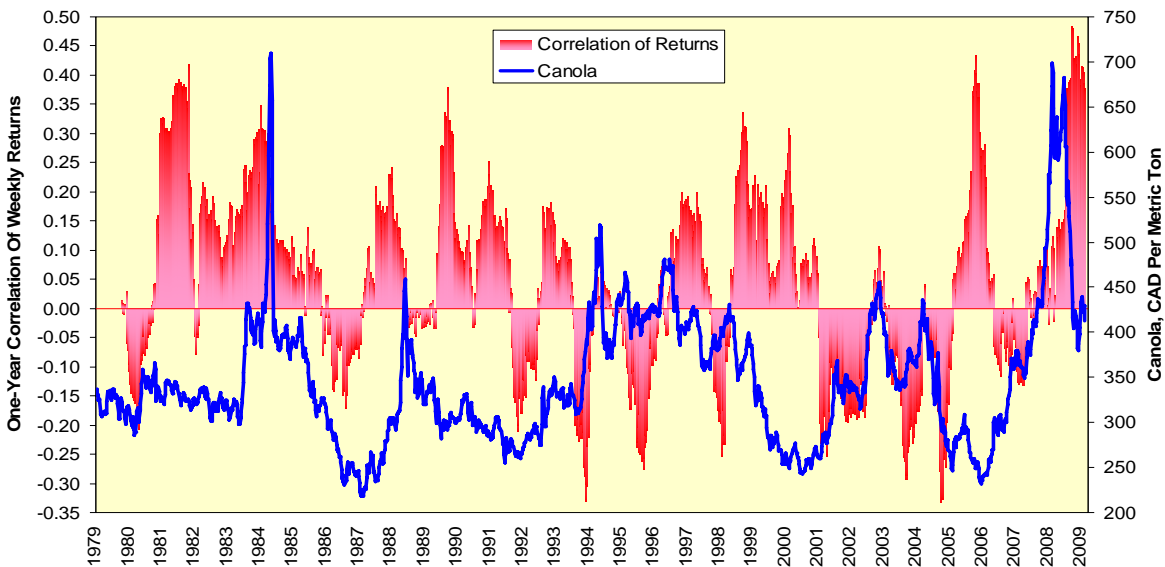
The linkage between canola and fuel prices is a double-edged sword for farmers. The global commodity price break beginning in July 2008 took no prisoners in virtually all physical commodities. Cash heating oil fell almost 70% between the end of June 2008 and February 2009, and canola fell 52% in USD terms and 42% in CAD terms over that same period. The question of whether any of this had to do with supply/demand balances for canola in the food

market as opposed to the fuel market cannot be answered conclusively, but we cannot observe any other multiple-month declines in price going back to the 1970s.

We should note canola itself is not part of the major commodity indices such as the S&P-Goldman Sachs or Dow Jones-AIG and therefore it is not affected directly by financial flows into and out of instruments tied to thereto. However, the soy complex and heating oil are part of those indices, and to the indeterminable extent those indices rose and fell under the weight of commodity indexation, canola would have been affected indirectly.

If this last statement is true, the rolling one-year correlation of weekly returns between canola and heating oil should have remained positive during the price break of late 2008. We can see in Chart 4 how, with a brief period in 2007 excepted, this correlation between heating oil and canola has been strongly and increasingly positive from the spring of 2005 onwards.

Chart 4: Correlation Between Canola And Heating Oil Increasingly Positive



Data analysts of a certain age were trained to watch for spurious correlation, those relationships between markets that exist statistically but make no sense otherwise (see “You Can’t Always Believe The Numbers,” February 2008). As an aside, we are left to wonder whether the trading and risk management debacles of 2007-2008 could have been any worse had the major investment banks used a random number generator instead of thousands of PhDs to design their trading programs, but we digress. The simple reality is no one, but no one, from twenty years ago would have believed a trader of oilseeds would have to watch heating oil futures. And, truth be told, there are some economists who recoil at the necessity, but that is a topic for another day, too. Until we end the folly of trying to turn food into fuel, canola futures offer one of the best opportunities to link the two markets.