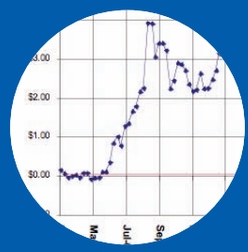
Global Feed Commodities Market

Its Impact on the British Pig Industry and Risk Management Strategies to Mitigate This



Prepared by BPEX Ltd with independent contributions by ABN and Barclays

April 2008

Contents

Executive Summary

The English pig industry is operating in an extremely difficult climate with high feed prices having a huge impact on cost of production.

This report examines the industry and its future from three different perspectives:

- what is likely to happen to cereal prices and the factors affecting those prices.
- the effects of cereal prices on pig production costs showing them at 148p in March 2008 and estimating them to reach 180p per kg by 2010.
- risk management and the steps producers can take to manage their feed costs.

Section 1
Commodity futures

There are a large number of factors that could influence world supply and demand in the feed sector over the next five years:

- Chinese meat consumption will continue to increase and China may become a net importer of maize.
- U.S. bioethanol expansion may mean reduced maize exports.
- The U.S, which has been traditionally a big exporter of soya beans, will export a lower proportion of their crop to produce biodiesel. They may, however, maintain soya meal exports.
- Availability of oilseed meals such as soya meal and rapeseed meal will be good.
- Glycerol will be available in much bigger quantities as a by-product of biodiesel production and may have a role to play in the feeding of pigs.
- Demand for cereal grains looks set to be very strong, primarily due to additional requirements for bioethanol production.
- There will be good availability of distillers' grains from bioethanol plants, which will have an increasing influence on pig nutrition as a partial substitute for soya meal.
- Volatility in pricing of agricultural commodities looks set to increase
- There will be increased trade (exports) of biofuels.
- The supply chain for a wide range of ingredients such as phosphates will be tighter as supply struggles to keep up with demand.

Some specific EU factors

- The EU requires member states to have a minimum proportion of biofuels and other renewable fuel on their markets. The targets were 2% of petrol and diesel by 31st December 2005 and 5.75% by 31st December 2010.
- The EU system for approving new genetically modified crops typically takes two to three times as long as it does in the U.S.
- The zero tolerance policy regarding unapproved GM crops also makes it very difficult to ship from countries where these varieties may be grown.
- The biggest problem for the EU is looming in 2009 when the U.S. intends to grow the next generation of GM soya varieties. The EU has no viable alternative to feeding soya to pigs and poultry. If the U.S. varieties are not approved in time by the EU there is a danger that we will be held to ransom by South America.

Price forecasts

- There will be a strong and growing demand for food, feed and bioenergy over the next five years, with supply struggling to keep up. Prices for cereals and oilseeds therefore look set to move higher.
- The price of crude oil will have a big impact on agricultural commodity prices, as it will determine the economics of producing biofuels. Where biofuel usage is mandatory, food and feed prices will be forced to take the burden of any crop failures, so prices will perhaps continue to move higher than before.
- The availability of oilseed meals, distillers grains and glycerol for use in pig feeds looks set to improve.

Section 2
The outlook for feed and its impact on pig cost of production

This section compares forecast costs with the baseline year of 2006, when the cost of producing pig meat in Great Britain averaged 108.2p/kg dw.

- In 2008 as a whole, average purchased compound prices are expected to be just over 70 per cent higher than the 2006 level. However, much will depend on the weather conditions in the first half of 2008. Prices in the second half of 2008 will also be affected by developments in southern hemisphere harvests.
- Average compound feed price forecasts for 2010 range from £158 to £310
- Feed costs per kg of pig meat totalled approximately 50p per kg in 2006 but are now up to about 88p. As a result, feed's share of total costs has increased from 46 per cent to 60 per cent.
- The cost of producing a kg of pig meat is forecast to rise from an average of 108.2p in 2006 to 148.1p in March 2008.
- Assuming an average producer price of 115p in 2008, this implies a loss of 30p/kg, which is equivalent to £22 on every pig produced. On an industry-wide basis this means an annual loss of £200 million.
- The forecast cost of production in 2010 ranges from 120.2p to 180.9p depending on the assumptions used. However, even at the low end of the range, production costs will be well above pre-2007 levels.

Section 3
Risk management for farmers and the pig industry

Interest rates

Most business activities generate some element of financial risk, but two of the most common for farmers are interest rates and foreign exchange. There is currently a great deal of uncertainty in the financial markets, which generates risk. The areas of financial risk for UK farmers include UK interest rates, the dollar exchange rate and the exchange rate with the Euro.

- Barclays' economics team is expecting three 0.25% rate cuts between early April and end of August 2008 to leave the base rate at 4.5%. This compares with other bank economic forecasts ranging from no cut at all to as many as six cuts over the next twelve months.
- A short-term view of interest rates is often not appropriate for pig producers as they tend to borrow for long periods, particularly for buildings and land. Over longer periods interest rates will tend to vary more widely, for example UK interest rates have fluctuated by nearly 2.5 percentage points in the last eight years alone.

Foreign exchange markets

- Foreign exchange markets have been volatile in recent months and in the short-term observers are concerned about a further slowing of the UK economy in response to a possible recession in the US, as well as a slow down in European growth.
- Since soya prices, for example, will be influenced by the sterling/dollar exchange rate, some may wish to take out a 'translational' hedge to lock in to a particular rate and cash it in at the time they pay for their feed.
- Barclays are forecasting GBP will weaken further against USD in the short term, forecasting a fall in GBP/USD to 1.93 over the next twelve months, while they predict a relatively stable GBP:EUR relationship at around 1.3 for the next twelve months.
- These are not particularly dramatic changes but, if they come to pass, they will not help reduce the already high cost of feed.

Managing risk in feed prices directly

Buying forward cover

- This is a common practice among intensive livestock farmers, although it is not without its risks. To buy forward at a time when the value of the finished product is static or rising may well make good sense since it locks a major element of total costs at a known level which will leave a profit or at least limit any short term losses.

- Equally, if a short term contract has been taken, when it comes up for renewal at a time when cereal and protein prices have been rising while output values have not improved, there could be a sudden jump in costs against static output values resulting once again in reduced profit or a shift to trading losses. It is this last combination of circumstances in which the industry now finds itself at the beginning of 2008.

Using forward grain markets and Options

- Buyers of feed can buy an Option to buy wheat at a given price. If the market goes up, they exercise the option to buy at the lower price, thus effectively locking in to a maximum feed price. Should the market fall, they 'tear up' their Option contract, write off the cost of it, and buy at the lower price in the market.

- In the case of livestock feed, the business which buys the Option to buy feed ingredients could be either the pig farmer or his feed compounder. In the latter case the feed manufacturer will pass on the costs of the arrangement, no doubt including administration, to their customer, but at least both parties know that they can trade with each other for the duration of the arrangement without worrying about what the grain market is doing.

Managing risk through collaboration in the supply chain

- Fixed price contracts. These involve negotiating a price based on known feed costs and other costs in the chain which leave a modest margin for efficient operators and offer the opportunity for the more efficient to prosper further.

- Sale contracts linked to commodity prices. To reduce the risk of either or both parties to a fixed price contract being locked in to an unfavourable arrangement for any length of time, they may wish to consider a contractual arrangement with flexibility built in. An example of this would be linking finished pigs to wheat prices, for example the HGCA spot price on a given day, or the London International Financial Futures Exchange (Liffe) futures price for wheat.

Section 1
Commodity Futures

By Hugh Burton, Raw Material Manager, ABN

Introduction

Firstly I will define commodities in the context of this paper as those agricultural commodities, which are commonly associated with the feeding of pigs. The outlook detailed in this paper reflects the factors prevailing at the time (February 2008) but as will be discussed, commodity markets can change very quickly.

Commodity markets historically have been influenced primarily by supply and demand. The volatility of prices has attracted speculative investor's money into commodity futures exchanges for many years. More recently commodity indexes such as the Goldman Sachs and Commodity Research Bureau have become popular with investors. These Indexes have a portfolio of commodity investments ranging from crude oil to metals to corn.

The heavy level of investment in the commodity futures markets tends to distort pricing and cause confusion around the long term direction of markets for those whose livelihoods are more directly linked to individual or small baskets of commodities. Price risk management has become an important feature in the thinking of successful pig producers globally in relation to feed costs.

This comes at a time when the world has also become very concerned about the generation of greenhouse gases and using renewable energy sources. So, in addition to, the continually growing demand for commodities for direct human consumption and livestock production, there is new legislation being implemented across the world, which is creating a huge demand to use commodities as a raw material for energy production. The implication of the alternative use for energy production is that the growth of global crop production must start to increase more rapidly to keep pace with demand.

Figure 1 which shows Chicago futures market soya meal prices 2004-2007 ranging from $150-350 per short ton is a good example of volatile prices and hence the price risk to which pig producers are exposed.

Figure 1
Soya Meal Continuation Chart

Source: Reuters

Supply

Global production of corn, wheat and soya continue to grow but there are some changes developing in terms of what is grown where.

Cereals

World wheat production has been largely static over the last ten years. **Figure 2** shows that there was a steady decline in wheat production between 1997/98 and 2003/04 with the highest ever global production of 628.84 million tonnes in 2004/05. **Figure 3** illustrates the trends in major wheat producing countries that have a trend, which can be identified.

In China and the United States the volume of wheat as a percentage of world production appears to be declining where as in the E.U. it appears to be increasing. In China it is widely reported that there is a definite trend away from growing commodity crops, farmers are instead preferring to grow fruit and vegetable crops for which they can more readily get paid in cash. This is illustrated in **Figure 4** (page 6).

Figure 2
World Wheat Production

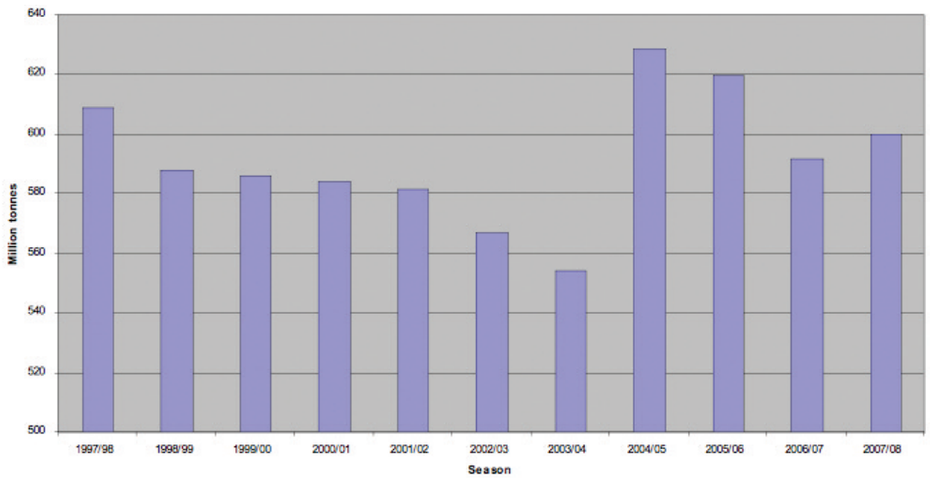


Figure 3
Percentage of World Wheat Production

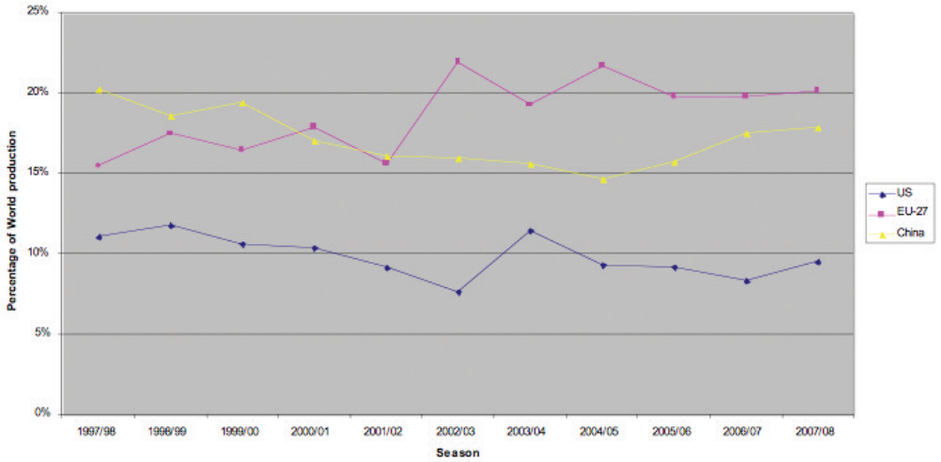
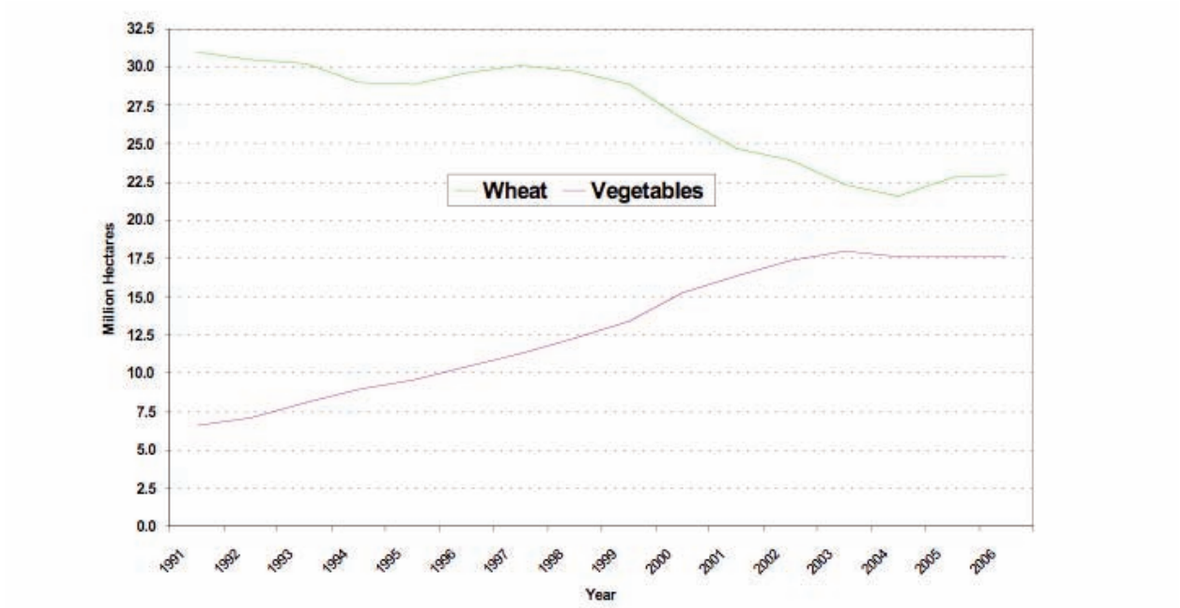


Figure 4
China Planted Area Wheat v Vegetable



Source: International Agribusiness Group L.L.C

World corn production was quite stable between 1997/98 and 2003/04 but has increased by around 100 million tonnes in the last three years **(Figure 5)**. Further increases are expected with additional demand from the biofuel sector.

The countries growing corn have not changed significantly in the last ten years with the United States being by far the largest producer at 40 percent of the World Production followed by China at 20 percent. It looks very likely that the United States will be even more dominant in terms of world corn production in the future. There is however a battle for acres underway between corn and soya in the US in regard to what will be planted in the spring.

Figure 5
World Corn Production

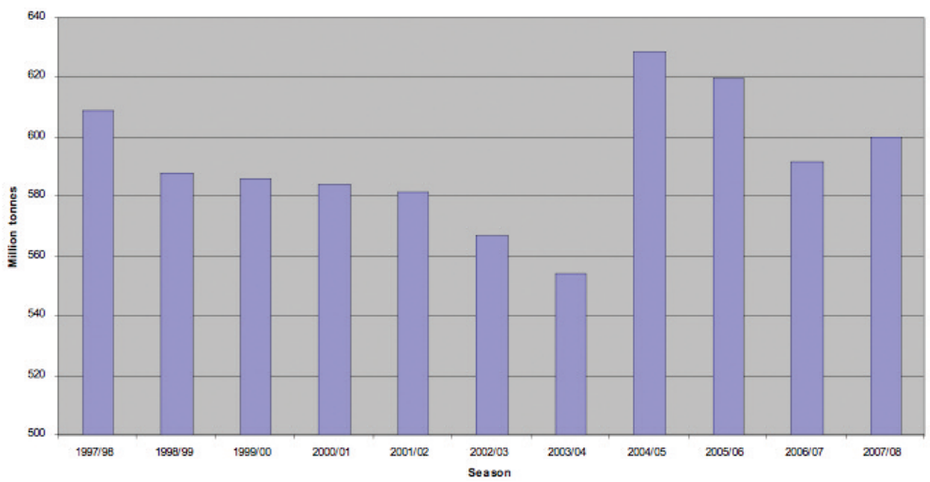
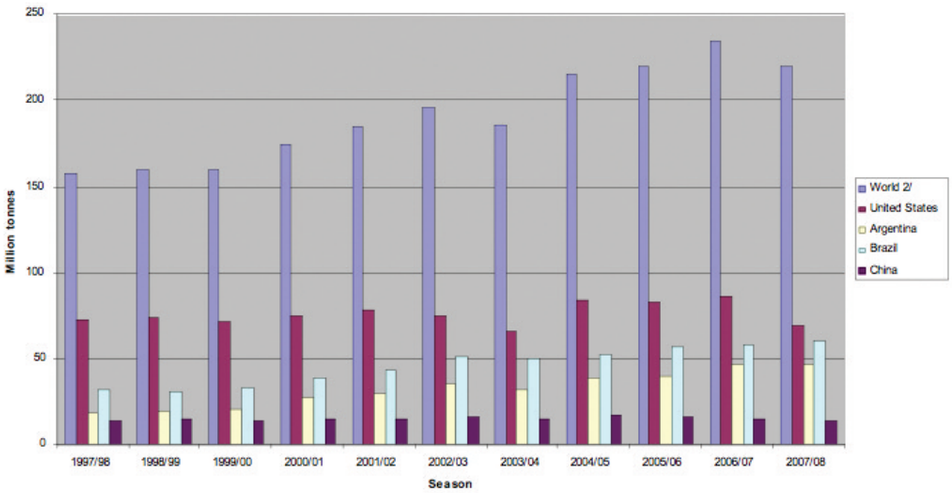


Figure 6
World Soya Production

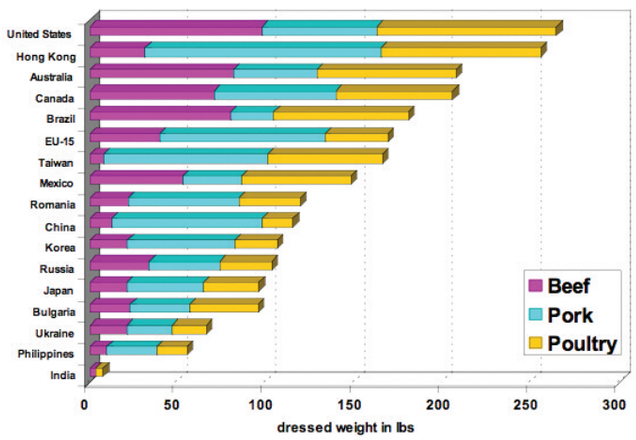


Soya

Global soya production has increased from 158 million tonnes in the 1997/98 season to a peak of 235 million tonnes for 2006/07 but is forecast to decline in 2007/08 due to reduced plantings in the U.S. **Figure 6** shows that there has been a significant increase in the proportion of soya grown in South America in the last ten years. Brazil has nearly doubled its production in that time and now equates to 25 percent of world production.

Argentina has more than doubled production and now accounts for 20 percent of the global figures. Whilst production in the United States has increased, especially in the harvests 2004-2006, their proportion of global production has declined. The picture in China is similar to the United States albeit on a smaller scale.

Figure 7
2006 Per Capita Protein Consumption by Country



Source: International Agribusiness Group L.L.C

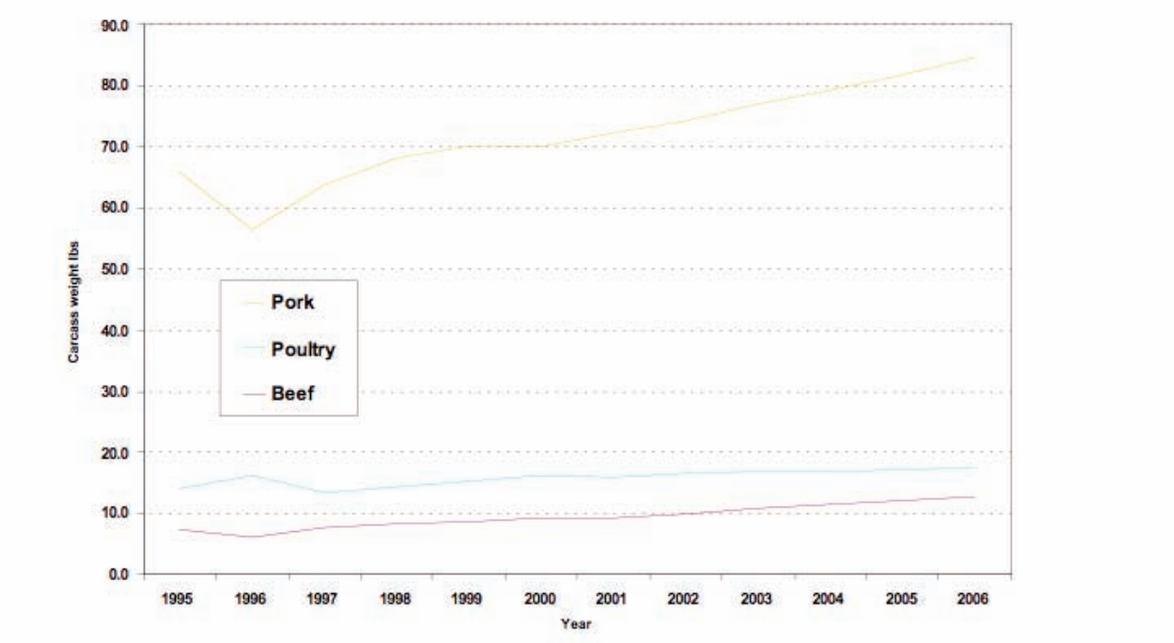
Demand

Population
The world's population is increasing by around 80 million people every year and growth in food demand is estimated to be 5.8 percent annually.

Demand for food and feed will continue to grow as population expands and diets change with increased wealth. In Asia in particular, people have tended to move from the countryside to the cities and raised their requirements for living standards. This combined with higher incomes obtained from industrial jobs has led to more consumption of meat and diary products.

The livestock sector is growing at a rapid rate in order to meet this increased demand for meat created by a combination of population growth, rising incomes and urbanization. The per capita consumption of livestock products for industrialised countries was estimated by WHO to be 88.2 kg per year for the period 1997-1999 compared to less than 10 kg per year in South and East Asia. **Figure 7** makes some very useful comparisons between meat consumption in different countries as of 2006. If one was to make the broad assumption that the consumption in Hong Kong is where China might be some time in the future then you could deduce that demand for meat in China will more than double. It then becomes no surprise that world annual meat production is forecast to increase from 218 million tonnes in 1997-1999 to 376 million tonnes by 2030.

Figure 8
China Per Capita Consumption of Meat



Source: International Agribusiness Group L.L.C

Demand for food and feed is expected to double in the next 25 years if these trends continue. In China the demand for food is believed to be growing at 9-10 percent per year. The increased demand for pork is particularly strong **(see Figure 8)**. There is some debate about whether China's production capacity is able to keep pace with this rapid increase in food demand. Certainly imports of soya beans into China have increased dramatically in the last 10 years from 2.94 million tonnes in 1997/98 season to a projected 34 million tonnes in 2007/08. China is currently a small exporter of corn. Exports have fallen from 4 million tonnes to just one million tonne for the 2007/08 season. With internal demand increasing it could be that China may become a net importer of corn within a few years.

Biofuels

For much the same reasons as with food, demand for energy has also increased, but at the same time the world has become increasingly aware of the need to reduce greenhouse gas emissions.

The Kyoto Protocol, which came into force in February 2005, assigns mandatory targets for the reduction of greenhouse gas emissions to those nations, which are signatories to the United Nations framework convention on climate change. Kyoto has influenced participating countries to set targets on the use of biofuels. Some of the main biofuels being considered can be produced from crops currently grown for use in human and animal feeds. The main biofuels being discussed at this point in time are biodiesel and bioethanol.

Biodiesel
Biodiesel is a fuel derived from vegetable oil, animal fat or used cooking oils, which can be used in unmodified diesel engines. Biodiesel is biodegradable and typically produces 60% less net carbon dioxide emissions than petroleum based diesel. Whilst biodiesel can be produced from a wide variety of vegetable oils, the main crops being considered commercially appear to be soya beans, rapeseed and palm. In the United States soya bean oil is typically used where as in Canada and the E.U. rapeseed oil predominates.

About 3.4 kg of oil are required to produce one gallon of biodiesel. The raw oil is processed by combining with alcohol to produce biodiesel (mono-alkyl ester) and crude glycerol. The by-product glycerol (also known as glycerine) constitutes about 10 percent of the output.

The National Biodiesel Board in the U.S. reported that at the end of January, 2008 there were 171 companies who had invested in biodiesel plants and that the annual capacity was now 2.24 billion gallons. If all the existing plants were at capacity they could use 7.62 million tonnes of oil. If this all were to come from soya oil then it equates to 80% of 2007/08 forecast U.S. production. Soya beans typically yield around 19% oil so it would take 40 million tonnes of soya beans to produce the required oil or 57% of the 2007 U.S. production.

It does not follow that all the biodiesel will come from soya oil so this is very much theoretical maximum. Also, whilst there are U.S. tax incentives to produce biodiesel, unlike bioethanol in the U.S. there is not currently any mandatory minimum usage for biodiesel so it will need to compete economically to get any where near this level of production .

Figure 9, courtesy of LaSalle Group Rosenthal Collins Group, illustrates the profitability table for biodiesel derived from soya oil and shows how the relationship between diesel prices and soya oil prices affects biodiesel profitability. At the snapshot during January 2008 it was unprofitable. **Figure 10** shows that based on spot values US biodiesel production has not been profitable since April 2007!

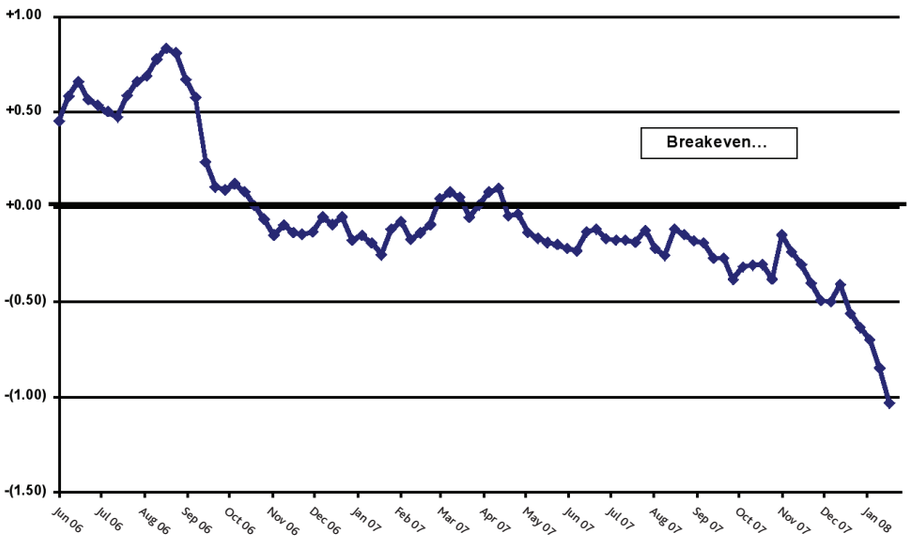
Figure 9
Profitability table for Biodiesel derived from Soya Oil

Theoretical US Bio-diesel Margin Grid - Spot...											
Avg. US	CBOT Soybean Oil Futures -- cents per lb										
Rack Diesel	40.91	42.91	44.91	46.91	48.91	50.91	52.91	54.91	56.91	58.91	60.91
$1.60	-$1.12	-$1.27	-$1.42	-$1.58	-$1.73	-$1.88	-$2.03	-$2.18	-$2.33	-$2.48	-$2.63
$1.70	-$1.02	-$1.17	-$1.32	-$1.48	-$1.63	-$1.78	-$1.93	-$2.08	-$2.23	-$2.38	-$2.53
$1.80	-$0.92	-$1.07	-$1.22	-$1.38	-$1.53	-$1.68	-$1.83	-$1.98	-$2.13	-$2.28	-$2.43
$1.90	-$0.82	-$0.97	-$1.12	-$1.28	-$1.43	-$1.58	-$1.73	-$1.88	-$2.03	-$2.18	-$2.33
$2.00	-$0.72	-$0.87	-$1.02	-$1.18	-$1.33	-$1.48	-$1.63	-$1.78	-$1.93	-$2.08	-$2.23
$2.10	-$0.62	-$0.77	-$0.92	-$1.08	-$1.23	-$1.38	-$1.53	-$1.68	-$1.83	-$1.98	-$2.13
$2.20	-$0.52	-$0.67	-$0.82	-$0.98	-$1.13	-$1.28	-$1.43	-$1.58	-$1.73	-$1.88	-$2.03
$2.30	-$0.42	-$0.57	-$0.72	-$0.88	-$1.03	-$1.18	-$1.33	-$1.48	-$1.63	-$1.78	-$1.93
$2.40	-$0.32	-$0.47	-$0.62	-$0.78	-$0.93	-$1.08	-$1.23	-$1.38	-$1.53	-$1.68	-$1.83
$2.50	-$0.22	-$0.37	-$0.52	-$0.68	-$0.83	-$0.98	-$1.13	-$1.28	-$1.43	-$1.58	-$1.73
$2.60	-$0.12	-$0.27	-$0.42	-$0.58	-$0.73	-$0.88	-$1.03	-$1.18	-$1.33	-$1.48	-$1.63
$2.70	-$0.02	-$0.17	-$0.32	-$0.48	-$0.63	-$0.78	-$0.93	-$1.08	-$1.23	-$1.38	-$1.53
$2.80	$0.08	-$0.07	-$0.22	-$0.38	-$0.53	-$0.68	-$0.83	-$0.98	-$1.13	-$1.28	-$1.43
$2.90	$0.18	$0.03	-$0.12	-$0.28	-$0.43	-$0.58	-$0.73	-$0.88	-$1.03	-$1.18	-$1.33
$3.00	$0.28	$0.13	-$0.02	-$0.18	-$0.33	-$0.48	-$0.63	-$0.78	-$0.93	-$1.08	-$1.23
$3.10	$0.38	$0.23	$0.08	-$0.08	-$0.23	-$0.38	-$0.53	-$0.68	-$0.83	-$0.98	-$1.13
$3.20	$0.48	$0.33	$0.18	$0.02	-$0.13	-$0.28	-$0.43	-$0.58	-$0.73	-$0.88	-$1.03
$3.30	$0.58	$0.43	$0.28	$0.12	-$0.03	-$0.18	-$0.33	-$0.48	-$0.63	-$0.78	-$0.93
	Profit margins in $ per gallon										
Assumptions:	$1.00 per gallon tax subsidy fully captured by biodiesel manufacturer.										
	Crude soybean oil basis 338 points under futures (rough average east to west).										
	Soybean oil refining cost 270 points, plus 80 point transportation costs to deliver to biodiesel plant.										
	Conversion rate of 7.55 lbs soyoil per gallon of biodiesel										
	Total conversion costs of 63 cents/gallon - split evenly between chemical inputs & manufacturing.										

January 18, 2008

Source: LaSalle Group Rosenthal Collins Group

Figure 10
Weekly - Average Implied US Biodiesel Profit Margins (in cents per gallon)



Source: LaSalle Group Rosenthal Collins Group

Brazil is now also likely to export a lower proportion of its soya beans as their previously voluntary 2% biodiesel blending has become mandatory as biofuel in 2008. It is believed that Brazil plans to replace 5 percent of diesel usage with biofuel by 2013. The potential reduction in Brazil's soya oil exports is dependant on how much of the biofuel comes from biodiesel rather than bioethanol.

Argentina is reported to have adopted a 2 percent biodiesel mandate with plans to increase to 5 percent by 2010. Current export tax structure favours the exports of biodiesel rather than soya oil. With a large crushing industry Argentina has the capacity to become a regular supplier of biodiesel to the E.U. Argentinean taxes have encouraged the expansion of its crushing industry to the extent that it may import soya beans from near by countries such as Paraguay, Uruguay, Bolivia and even Brazil. With a relatively low domestic demand for soya bean products Argentina looks likely to be a major exporter of soya oil and soya meal as well as biodiesel over the next few years.

Malaysia and Indonesia are also reported to be making significant investments in the biodiesel sector. Malaysia now has at least 0.5 million tonnes of capacity with Indonesia about one year behind them in terms of construction. As there is no mandatory use in Malaysia, it is suggested that this production will be exported to the E.U. and U.S. This may reduce the volume of palm oil available for other countries to make biodiesel although more likely overall production of palm oil will increase through increased plantings of oil palm.

The E.U. directive 2003/30/EC on the promotion of the use of biofuels or other renewable fuels for transport has stimulated a significant increase in biodiesel production. The EU25 produced 4.945 million tonnes biodiesel in 2007 but competition from US exports is restricting further growth in production. The directive states that member states should ensure that a minimum proportion of biofuels and other renewable fuel is placed on their markets. The reference values for biofuel targets given were on an energy basis as 2% of petrol and diesel by 31st December 2005 and 5.75% by 31st December 2010.There is a further proposal that 10% of all transportation fuel should come from biofuels by 2020. As the energy value of biodiesel is lower than diesel a volume inclusion of 6-6.5% biodiesel will be needed by 2010.

In order to meet the targets by 2010 the E.U. will need use at least 18 million tonnes of biofuels. The proportion of this total that biodiesel will form is not defined but if we assume 50% then biodiesel production would need to treble from the 2005 production level. If this was the case and it was all produced from rapeseed then at a 40% oil extraction rate then 22.5 million tonnes of rapeseed would be required. This compares to the current EU25 production level of 16 million tonnes of rapeseed. In reality rapeseed oil is unlikely to be the sole source in the E.U. with used cooking oil, soya oil and palm oil the likely alternatives. With the German government imposing taxes on biodiesel early in 2007 production from rapeseed within the EU has slowed for the time being. Overall if the E.U. is going to achieve its biofuel use objectives then this production is expected to increase again at some stage. Russia and Ukraine are expected to increase rapeseed acreage in response to the E.U. forecast demand and could export either the rapeseed or rapeseed oil.

There has already been evidence that the volume of glycerol produced as a by-product of E.U. biodiesel production has at times exceeded the requirements of traditional uses such as cosmetics. Glycerol prices are therefore more volatile and it has already found its way into animal feeds as a molasses substitute. As the volume of biodiesel production continues to increase then further uses for glycerol will be required.

Bioethanol

Bioethanol is an alternative to petrol and is produced by the fermentation of carbohydrate derived from crops. This is as opposed to the generic ethanol, which can be produced by other means such as hydration of ethylene from petroleum. Up to now production of bioethanol is primarily from sugarcane, corn and sugar beet. Brazil, Colombia, China and the United States have already developed bioethanol fuel programs and many others including the UK have plans to go down this route.

In the United States around 80 million tonnes of the corn crop is expected to be destined for bioethanol production in the 2007/08 season (this is 24 percent of the crop). In the United States, the Energy Policy Act of 2005 (EPACT) initiated a raft of biofuel incentives which included the Renewable Fuels Standard (RFS). The RFS dictates a scale of increase for the volume of the U.S. fuel supplies, which must come from renewable fuels. This started at four billion gallons in 2006 and rises to 7.5 billion gallons by 2012. This requirement provides a baseline calculation for the minimum U.S. production of biofuels. Beyond this the price relationship with crude oil prices will have a large influence on ethanol production.

Figure 11, courtesy of LaSalle Group Rosenthal Collins Group, illustrates their view on the relationship between corn prices and ethanol prices in terms of profitability of ethanol production. The market price of ethanol is, in turn, influenced largely by the crude oil price. This snapshot taken January, 2008 shows a good profit margin supported by a buoyant crude oil market. **Figure 12** shows that U.S. bioethanol margins have been extremely good in the last two years.

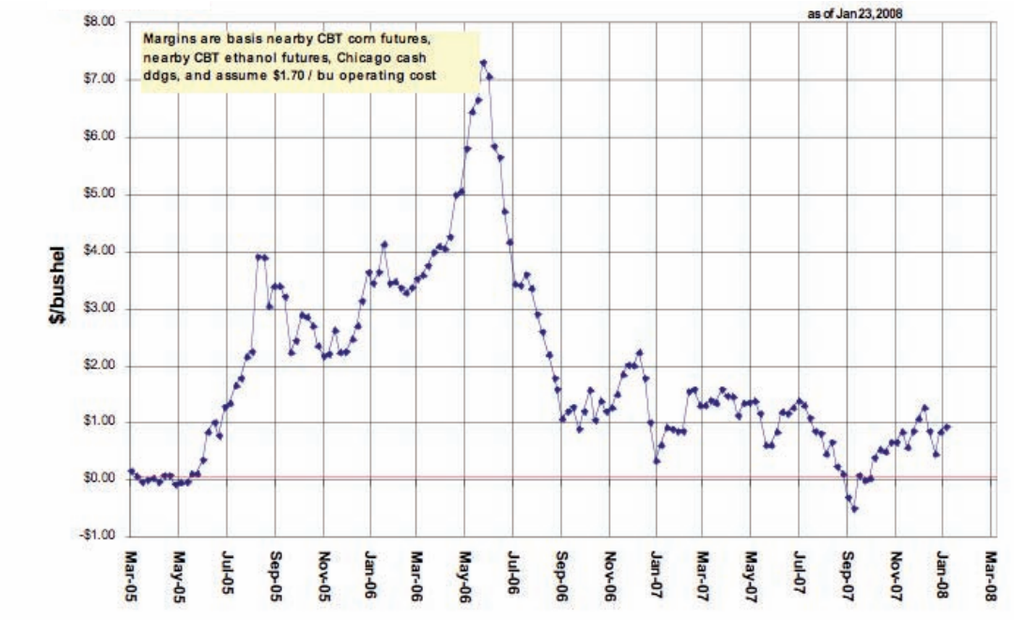
Figure 11
Profitability table for Ethanol

Theoretical US Ethanol Profit Margin Grid - Spot											
FOB Iowa Plant	Cash Corn Price -- $ per bushel										
Ethanol $ gallon	$3.70	$3.90	$4.10	$4.30	$4.50	$4.70	$4.90	$5.10	$5.30	$5.50	$5.70
$1.30	-$0.34	-$0.54	-$0.74	-$0.94	-$1.14	-$1.34	-$1.54	-$1.74	-$1.94	-$2.14	-$2.34
$1.40	-$0.06	-$0.26	-$0.46	-$0.66	-$0.86	-$1.06	-$1.26	-$1.46	-$1.66	-$1.86	-$2.06
$1.50	$0.21	$0.01	-$0.19	-$0.39	-$0.59	-$0.79	-$0.99	-$1.19	-$1.39	-$1.59	-$1.79
$1.60	$0.49	$0.29	$0.09	-$0.11	-$0.31	-$0.51	-$0.71	-$0.91	-$1.11	-$1.31	-$1.51
$1.70	$0.76	$0.56	$0.36	$0.16	-$0.04	-$0.24	-$0.44	-$0.64	-$0.84	-$1.04	-$1.24
$1.80	$1.04	$0.84	$0.64	$0.44	$0.24	$0.04	-$0.16	-$0.36	-$0.56	-$0.76	-$0.96
$1.90	$1.31	$1.11	$0.91	$0.71	$0.51	$0.31	$0.11	-$0.09	-$0.29	-$0.49	-$0.69
$2.00	$1.59	$1.39	$1.19	$0.99	$0.79	$0.59	$0.39	$0.19	-$0.01	-$0.21	-$0.41
$2.10	$1.86	$1.66	$1.46	$1.26	$1.06	$0.86	$0.66	$0.46	$0.26	$0.06	-$0.14
$2.20	$2.14	$1.94	$1.74	$1.54	$1.34	$1.14	$0.94	$0.74	$0.54	$0.34	$0.14
$2.30	$2.41	$2.21	$2.01	$1.81	$1.61	$1.41	$1.21	$1.01	$0.81	$0.61	$0.41
$2.40	$2.69	$2.49	$2.29	$2.09	$1.89	$1.69	$1.49	$1.29	$1.09	$0.89	$0.69
$2.50	$2.96	$2.76	$2.56	$2.36	$2.16	$1.96	$1.76	$1.56	$1.36	$1.16	$0.96
$2.60	$3.24	$3.04	$2.84	$2.64	$2.44	$2.24	$2.04	$1.84	$1.64	$1.44	$1.24
$2.70	$3.51	$3.31	$3.11	$2.91	$2.71	$2.51	$2.31	$2.11	$1.91	$1.71	$1.51
$2.80	$3.79	$3.59	$3.39	$3.19	$2.99	$2.79	$2.59	$2.39	$2.19	$1.99	$1.79
$2.90	$4.06	$3.86	$3.66	$3.46	$3.26	$3.06	$2.86	$2.66	$2.46	$2.26	$2.06
$3.00	$4.34	$4.14	$3.94	$3.74	$3.54	$3.34	$3.14	$2.94	$2.74	$2.54	$2.34
	Profit margin in $ per bushel										
Assumptions:	Above grid assumes "zero" subsidy to the ethanol producer.										
	All-in operational and conversion costs of $1.70 per bushel.										
	Breakdown of costs - 70 cents/bu energy, 38 chemicals and 62 misc (includes labor, maintenance, etc).										
	Conversion rate of 2.75 gallons of ethanol per bushel of corn.										
	Using a DDG price of $175 per short-ton.										
	Cash corn price assumes 20 under the March futures										

January 23, 2008

Source: LaSalle Group Rosenthal Collins Group

Figure 12
Spot Ethanol Margins



Source: LaSalle Group Rosenthal Collins Group

With current technology one bushel of corn produces about 2.8 gallons of bioethanol or one tonne of corn produces 110 gallons of bioethanol. The U.S. Renewable Fuels Association (RFA) estimate that the U.S. capacity as of February 2008 was 7.2 billion gallons of bioethanol with further plants under construction which could take the capacity above 12 billion gallons well before 2012. This enhanced capacity could use up to 109 million tonnes of corn! This huge demand for corn has led to a significant increase in prices of corn, with a knock on effect on wheat and soya prices also. This unprecedented demand domestically for U.S. corn is likely to limit U.S. export growth in the next few years. Argentina and Ukraine are two countries that have the potential to increase corn production and exports to make up for any U.S. shortfall.

The main by product of bioethanol production is distillers grains which may be produced in a moist or dried form. It is estimated that a corn grind of 70 million tonnes would produce 22 million tonnes of distillers grains. The quality of distillers grains produced from modern bioethanol plants is widely believed to be good and is allowing inclusions in pig finisher and sow rations of up to 15 percent. This inclusion is reducing the reliance on soya meal in these rations.

The U.S. legislation also requires that beginning 2013, a minimum of 250 million gallons per annum of cellulosic derived ethanol be included in the RFS; this increases further to 16 billion gallons by 2022. Cellulosic ethanol may in theory be derived from plants such as switchgrass but will require further technological breakthroughs before commercial production could be contemplated.

Whilst the U.S. is forging ahead with biofuel production, the Chinese government, by contrast has put a halt to ethanol production from corn due to the threat it poses to the country's food sector. It will, however, promote bioethanol production from commodities less critical as food such as cassava.

In the E.U. it is expected that bioethanol will play a significant part in reaching the 5.75 percent incorporation of biofuels by 2010. Toepfer estimate that 22 million tonnes of grain (predominantly wheat) will be required for ethanol production and that 7 million tonnes of distillers grains per annum will be produced as by-product. However it is not even clear that all this bioethanol will be produced in the E.U. as it could well be imported. Brazil is widely considered a very economic source of bioethanol produced from sugarcane and even Russia and Kazakhstan have plans to build large plants to produce bioethanol from wheat and export to the E.U.

It is clear though, that demand for grain is going to be very strong on a global basis.

In the UK a number of projects have been evaluated to produce bioethanol from wheat with two looking likely to come to fruition in 2009. There is a joint venture between ABF, BP and Dupont to build a plant at Hull with capacity for 420 million litres or 330,000 tonnes of bioethanol. This plant will consume around one million tonnes of wheat and produce around 330,000 tonnes of wheat distillers. It is believed that the distillers co-product will be available in both the moist and dried forms.

The Ensus project plans to build a slightly bigger plant at Immingham with a capacity of 400,000 tonnes bioethanol and is estimated to consume 1.1 million tonnes of wheat per annum.

There is also an ABF owned bioethanol plant at Wissington already operational but using sugar beet as its feedstock. It is believed to have a capacity of 70 million litres or 55,000 tonnes but there is no significant net increase in co-products from this process.

Combustion (or Co-Firing)

In the UK the Renewables Obligation requires power suppliers to derive from renewables a specified proportion of the electricity they supply to their customers. It started at 3% in 2003, and rises gradually to 15% by 2015.

Eligible renewable generators receive Renewables Obligation Certificates (ROCs) for each MWh of electricity generated. These certificates can then be sold to suppliers, in order to fulfil their obligation. Suppliers can either present enough certificates to cover the required percentage of their output, or they can pay a 'buyout' price of currently £34.30 /MWh for any shortfall in 2007/08. All proceeds from buyout payments are recycled to suppliers in proportion to the number of ROCs they present.

So far the renewables that have been successfully used include palm kernel expeller, sheanut, olive pulp, wheatfeed and wood. The legislation currently limits the amount of ROCs from co-firing, non-energy crops to 10% so that any co-fired ROCs above this are worthless unless they are produced from energy crops. Co-firing currently ceases to be eligible for NIROCs after 31 March 2016. There are further amendments to the Obligation expected which may define banding of technologies that could penalise co-firing in favour of more expensive technologies such as offshore wind and photoelectric cell technology. The table below shows the current co-firing restrictions:-

Year(s)	Max % of Obligation	Max % of Energy Crops
2005/06	25	0
2006/08/09	10	0
2009/10	10	25
2010/11	10	50
2011-15/16	5	75
2016-2027	0	-

The likely energy crops that will be co-fired in the future are miscanthus grass, coppice (poplar or willow) and possibly cereals. Whichever energy crops are grown there will be competition for arable acres. Other E.U. countries have similar polices to encourage combustion of renewable biomass.

Recent rises in commodity prices have undoubtedly reduced the potential for co-firing on an economic basis.

Land Use

It is obvious that competition for acres to grow crops will be fierce in the years to come with demand for food, feed, biofuels and combustion. Set-a-side in the E.U. has been phased out as a result. Whilst the U.S. seem reluctant to release land from their Conservation Reserve Programme (CRP) , non productive land will not be an option if all these requirements are to be met. Also uncultivated areas of land in other countries such as South America, Eastern Europe, the Former Soviet States or even Africa, may need to be brought into production. Minority crops which can not be used in biofuel production or command a premium for direct human uses are likely to decline. The need for crop rotation can not be ignored, but pulses such as field beans and feed peas are likely to decline. Whilst the headlines in the U.S. are about a battle for acres between soya and corn, a number of other crops are also reducing acreage to make way for corn and soya, such as sorghum, rice and cotton.

Higher prices for commodities will enable less productive land to be cropped economically and therefore stimulate a higher acreage to be planted.

Figure 13
World Grain Stocks

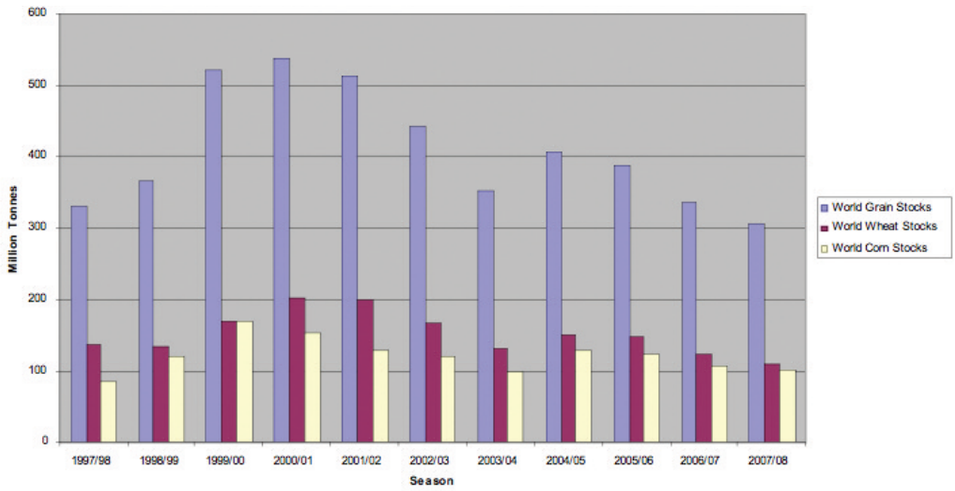


Figure 14
World Grain Stocks : Usage Ratio

World Stocks

Cereal Stocks

It is perhaps no surprise that having detailed the growing demand for commodities for both food and fuel that the world is struggling to maintain adequate stocks. **Figure 13** shows world grain stocks over the last 10 years. Grain stocks have declined dramatically in the last eight years and are now clearly the lowest in the last ten years. It is a concern that world grain production has only exceeded world usage twice in the last 8 years. When expressed as a ratio of total use as, in **Figure 14** (page 14), it is possible to appreciate that world grain stocks are relatively very low.

It is the very low forecast stocks that have ultimately influenced prices to move higher, in order that stocks are conserved where use is not essential. This will also potentially mean that grain prices will become even more volatile because crop yields, good or bad, have more potential impact when stocks are so precariously positioned, as do any changes in the demand picture.

Figure 15
World Soya Stocks

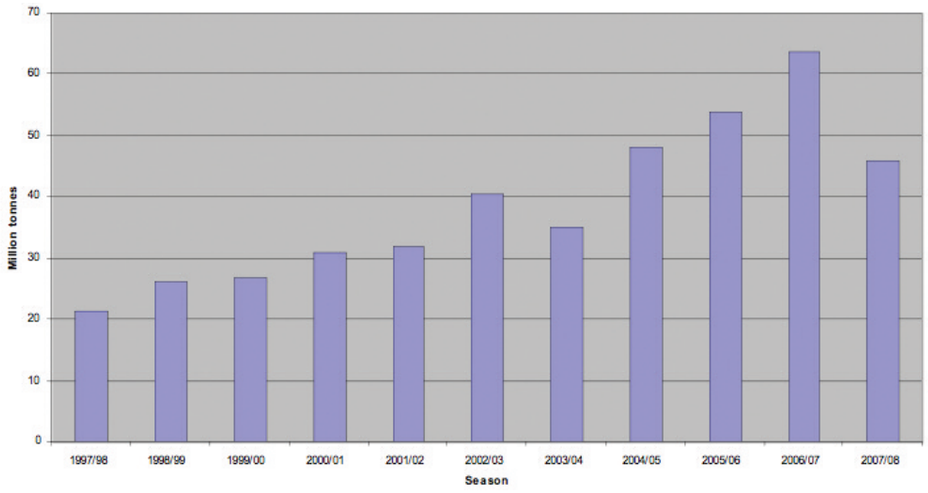
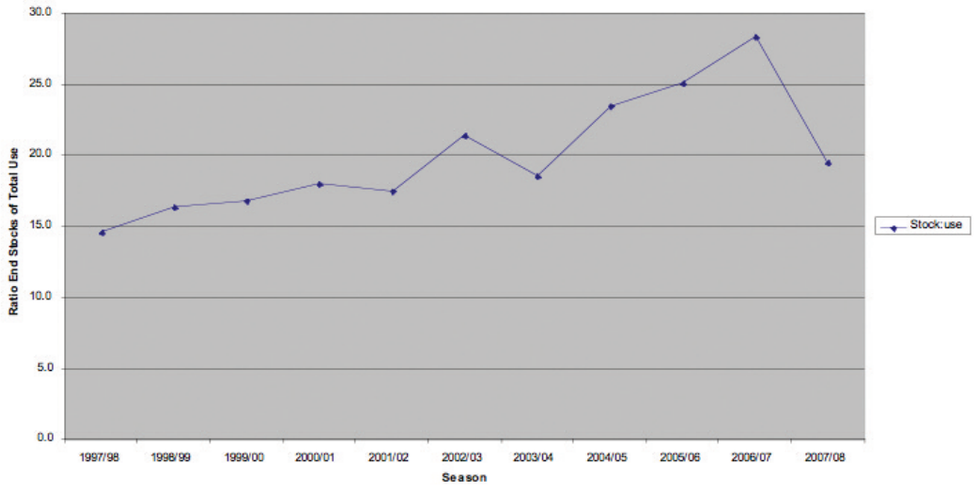


Figure 16
World Soya Stocks : Usage Ratio



Soya Stocks

Due to a succession on bumper harvests in North and South America, world soya stocks reached all time highs in 2007 but are now declining due to increased plantings of corn at the expense of soya. **Figure 15** shows how world soya stocks have grown in the last 10 years. This is still the case when expressed as a stock to usage ratio, as in **Figure 16**, however the drop between 2006/07 season and the forecast for 2007/08 is the most dramatic ever seen and substantiates high prices. Soya prices have rallied in order to keep pace with corn prices in the competition for arable acres. The plantings in the US this spring will be pivotal for future soya and corn stocks.

Phosphate Stocks

Recent events have illustrated the knock effects of increased demand for commodities stretches the supply chain in all directions. A shortage of phosphates has developed in quarter one of 2008 mainly due to unprecedented demand for fertilisers due to the high cereal prices. Feed phosphate demand comprises a small proportion of the phosphate sector for example about 5% in the E.U. Raw ingredients in the phosphate supply chain, Sulphur and Rock Phosphate have both been found to be in short supply.

It has been estimated that it may take 2-3 years to expand rock phosphate mines to meet demand!

Feed phosphate prices have trebled in less than two months and look set to remain at these much higher prices until the supply base is able to catch up.

Oil Stocks

Global vegetable oil stocks have declined from 10.3 million tonnes in 2006 to a forecast of 8.6 million tonnes for September 2008. This is not a low stock historically as a finite volume but expressed as a percentage of global use at 6.7 percent it is the second lowest in the last ten years. The stock situation looks even worse if it is narrowed down to the oils most relevant to feeds, that is, soya, sunflower, rapeseed, cotton and palm. The total stock for these five oils is forecast to be just over 7 million tonnes, with a stock to usage ratio of 4.5 percent. The increase in global usage from 79 million tonnes in 1998/99 season to a forecast of 127 million tonnes in 2007/08 is due to a combination of the demand factors already described. Namely these are growing population with a changing lifestyle and demand for biodiesel production.

The economic value of feed fats and oils for biodiesel production is largely dictated by the crude mineral oil price and in the last 12 months appears to have provided a floor rather than a ceiling to the market. The USDA forecasts predict that crude oil prices will continue to increase in 2008 and 2009, then drop slightly between 2010 and 2013 as they believe that new supplies with offset increased Asian demand. They predict that after 2013 oil prices will rise slightly faster than inflation.

The local E.U. supply and demand for oils and fats is complicated by the biodiesel dynamics. Despite the E.U. having capacity to produce more than 10 million tonnes of biodiesel per annum it is likely that production will be far less than this with cheaper biodiesel being imported from the Americas in the short term.

The Funds

The price volatility in commodity prices has attracted speculative investment for many years, particularly in the Chicago futures market. It has become accepted that investment funds play a major role in Chicago futures trades. Investment funds will buy or sell commodities depending on their investment policies, which often do not relate directly to supply or demand fundamentals of world crops. Increasingly computer models are used to buy or sell on a semi- automated basis. As a snapshot example for Chicago soya meal on 26th February, 2007, the speculative funds owned 67,100 contracts (each contract is 100 short tons). This long holding represented 29.3% of the open interest in the soya meal market, which is one of the highest recorded positions held by the speculative funds. This perhaps suggests that commodity markets are becoming increasingly interesting to speculators.

2005 saw the rise of the index funds. Index funds such as the Goldman Sachs Index or the Commodity Research Bureau (CRB) Index have existed for many years in the U.S. but 2005 saw a strong trend for investors to put money into commodity indexes. Commodity indexes are made up of a basket of commodities for example the Goldman Sachs index includes wheat, corn, soya beans, coffee, sugar, hogs, crude oil, copper, gold and silver.

Investors buy the index and their money is distributed across the basket of commodities at set percentages. Money entering the market creates a long holding in the relevant futures markets and only when investors withdraw their money are those long holdings sold back. So index funds tend to be in for the long term and would not sell the market short, although they will reposition long holdings further into the future, before they are in any danger of being called for physical delivery. The index funds typically represent a smaller proportion of the market than speculative funds.

There is also a category of funds termed hedge funds that have more complex and longer term investment strategies than the largely short term speculative funds. The volume that hedge funds represent is not reported but it would be quite possible for the three categories of funds in total on hold positions, which represented 50% of open interest in soya beans, corn or wheat. With such large positions held by investors, who have no direct interest in producing or consuming the commodities, price movements are often distorted or exaggerated away from the pure fundamentals of supply and demand. The increasing influence of the various funds will surely create further market volatility.

The Chicago market has always attracted a large speculative interest however this trend is spreading to other commodity markets such as the London wheat futures where a much bigger influence from banks and pension funds has been reported in recent months than has been traditionally the case.

E.U. Specific Issues

E.U. commodities are now heavily influenced by world market price movements. Recent French and UK wheat futures increases following a shortage of Minnepolis milling wheat is a good example of this.

The most obvious anomaly though in the E.U. is the asynchronous approvals regarding genetic modification. The E.U. process for approving new genetic events typically takes two to three times as long as it does in the U.S. Whilst the E.U. system of evaluation probably has more safety checks than any other in the world the biggest problem appears to be the lack of support from a number of member states preventing a qualified majority vote being achieved. With a majority vote that fails to achieve a qualified majority this means a further vote by ministers is required delaying the approval process.

The zero tolerance policy regarding unapproved GM events also makes it very difficult to ship from countries where these varieties may be grown. For example shippers are reluctant to ship U.S. corn by-products into the E.U. even if they believe them to be free from unapproved GM varieties. This is simply because even if the tiniest amount of an unapproved variety is found then the whole shipment will be worthless within the E.U. and this is considered too big a financial risk to take.

The E.U. can survive without U.S. corn and its by-products albeit at a cost. During most of 2007 U.S. corn was the most cost effective cereal available and would have featured in the E.U. animal feeds despite import taxes. Inefficient trade flows developed, as a result, where Brazil bought U.S. corn for domestic consumption and exported their own Brazilian non-GM corn to the E.U. Sorghum was exported direct from the U.S. to the E.U. as it this ancient grain has not been genetically modified commercially. With E.U. wheat plantings significantly increased for the 2008 harvest, corn and sorghum are likely to have a lower profile for the 2008/09 season.

The biggest problem for the E.U. is looming in 2009 when the U.S. intends to grow the next generation of GM soya varieties. Three new varieties are expected to be grown, these are Round up ready II, Optimum-Gat and Liberty Link. The E.U. has no viable alternative to feeding soya to pigs and poultry. If the U.S. varieties are not approved in time by the E.U. there is a danger that we will be held to ransom by South America. The other likely outcome will be that South America adopts these varieties either by legal approval or illegal plantings and the E.U. would be unable to source enough soya for its needs.

Outlook

So far in this paper it has been indicated that the following outcomes look likely over the next five years.

1. Chinese meat consumption will continue to increase and China may become a net importer of corn.
2. With the expansion of the U.S. bioethanol industry, U.S. corn exports may be reduced in the next three years.
3. The U.S. which has been traditionally a big exporter of soya beans will export a lower proportion of their crop as beans or oil, in order to produce biodiesel. They may, however, maintain soya meal exports.
4. Availability of oilseed meals such as soya meal and rapeseed meal will be good where these crops are being grown for biodiesel production.
5. Glycerol will be available in much bigger quantities as a by-product of biodiesel production and may have a role to play in the feeding of pigs.
6. Demand for cereal grains looks set to be very strong, primarily due to additional requirements for bioethanol production.
7. There will be good availability of distillers grains from bioethanol plants which will have an increasing influence on pig nutrition as a partial substitute for soya meal.
8. Competition for arable acres will be very strong. Other areas of land will need to be brought into production.
9. Volatility in pricing of agricultural commodities looks set to increase.
10. There will be increased trade (exports) of biofuels.
11. The supply chain for a wide range of ingredients such as phosphates will be tighter as supply struggles to keep up with demand.

Commodity Price Outlook

The emphasis over the next five years appears to be about the strongly growing demand for food, feed and bioenergy, with supply struggling to keep up. The impact of any crop failures, especially in the cereal sector is likely to be very severe with world stocks already very low. So prices for cereals and oilseeds look set to trend higher. It is not possible to say how high prices will rise but it is obvious that the price of crude oil will have a big impact on agricultural commodity prices, as it will determine the economics of producing biofuels from them. Where biofuel usage is mandatory food and feed prices will be forced to take the burden of any crop failures, so prices will perhaps continue to move higher than we have seen before.

Availability of oilseed meals, distillers grains and glycerol for use in pig feeds look set to improve so prices relative to cereals, whole oilseeds and vegetable oil should fall. Please note that I use the word relative. It should be the case that it will be more economic to feed the above mentioned by-products in pig feeds over the next five years. This paper has concentrated mainly on the main ingredients for pig feed but dramatic price rises are occurring across the complete basket of materials. The increased demand for fertiliser in order to promote higher cereal yields has already tightened the phosphate supply chain to the extent that prices have trebled. In addition to this a local shortage of ammonia has developed in South America, has hindered production of synthetic lysine and prices are rising. The production of trace minerals and vitamins for feedstuffs is another low profile area where prices have risen around 30 percent year on year. Within this rise Vitamin E prices have doubled. This sector looks vulnerable to further issues where a large proportion of production facilities are located in China and so exposed to the export policies of the Chinese government and environment issues that exist in Asia.

Prices of commodities will not keep rising forever. Producing corn, in particular, is very energy intensive when the energy required to produce the fertiliser, pesticide and herbicide required to grow it are taken into account. There is considerable debate as to whether it takes more energy to produce bioethanol from corn than it provides! Ethanol is difficult to move because it absorbs water and corrodes pipes, so it uses a lot of energy to transport it.

It appears that when the animal feed by-products are taken into account then the bioethanol production process does produce more energy than it consumes. There is also further debate as to whether growing cereal crops on the same land over and over again is sustainable as soil fertility will be depleted. On the plus side, it is cheaper to build ethanol refineries than crude oil refineries and cereal crops are renewable and also carbon neutral.

Producing ethanol from cereals is not the perfect answer, it is just the best so far.

Producing ethanol from cellulose promises much greater progress in reducing greenhouse gas emissions but the process needs to be perfected and it remains uneconomic for now. If and when cellulosic ethanol production technology is improved world cereal prices will fall dramatically. If cellulosic ethanol production proves not to be the answer then other solutions will be sought.

The jatropha plant offers to provide a source of vegetable oil for biodiesel production that does not compete with the food chain also. This inedible plant which can grow in harsh climates found in India and Africa has not yet been cultivated on a commercial scale but has shown much promise in trials.

The current plans for biofuel production are creating international controversy over the concerns about rising food prices and environmentally contentious land use. Some of the early work justifying biofuels didn't account for farmers converting forest and grassland to grow feedstock for biofuels. This land use can create food shortages and reduced biodiversity building pressure for legislation to change.

Legislation (including taxes) can change at any time and will have a big influence on commodity futures markets in the years to come.

Price Risk

Pig producers will have tough decisions to make over the next few years when agreeing feed contracts as prices will be far higher than they are used to dealing with. Use of futures market options or maximum price feed contracts may become more common place. This allows producers the confidence that if committing to long term feed prices at higher levels than they have done historically, then they have some insurance if prices subsequently fall. Of course there is an additional cost with any type of insurance and options are no different in this respect, it is just that they give more peace of mind when prices are high.

Nutrition

Nutritionists will also be stretched into new territory and will be asked to produce diets to utilise more by-products and rely far less on cereals, whole oilseeds and vegetable oils. Where bioethanol plants produce moist distillers grains, rather than a dry pellet, then new feeding systems will also be required. Glycerol may become a common ingredient in pig feeds.

Summary

Global cereal and oilseed production is going to be driven to expand at a rapid rate over the next five years. Higher prices for these commodities are necessary in order to stimulate increased land area to be brought into production. The world's quest to reduce greenhouse gas emissions and use sustainable sources of energy is leading to a massive potential increase in demand for these commodities. This coincides with increasing demand from a growing world population with evolving dietary requirements.

Increased speculation and investment in commodity markets and low world cereal stocks will increase price volatility in commodities. Pig producers will need clearly defined strategies to manage the price risk of their feedingstuffs.

Global pig production will need to align itself, to best utilise the higher volume of oilseed meals and distillers grains that will become available as by-products of biodiesel and bioethanol production.

Section 2
The Outlook for Feed and its Impact on Pig Cost of Production

By Tony Fowler, Senior Economic Analyst, AHDB Meat Services

Background

The average cost of producing a kg of pig meat in Great Britain, as published in a recent BPEX report "Pig cost of production in selected countries" was 108.2p/kg in 2006 – the highest of the 13 participating countries. Since 2006, cereal prices have risen to record levels, and protein prices are also very sharply higher. Consequently the cost of producing a kg of pig meat, in Britain and in other countries, will also currently be considerably higher than it was in 2006. The Great Britain cost of production in 2007 is provisionally estimated at 123p/kg, and will be even higher in 2008.

This section of the report looks at whether high feed prices might be a continuing negative factor in the pig industry. Forecast compound feed prices for 2008 and, looking slightly further ahead, for 2010 have been built into BPEX's cost of production model to assess the likely impact on overall costs.

Feed Prices

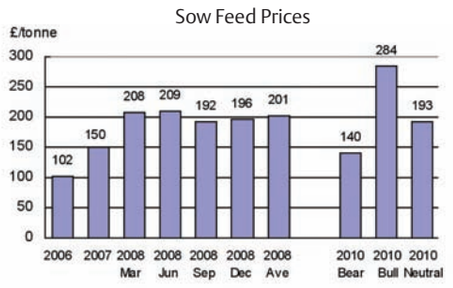
The projected compound feed prices that have been used in this exercise are shown in the following charts. The feed price forecasts have been provided by ABN.

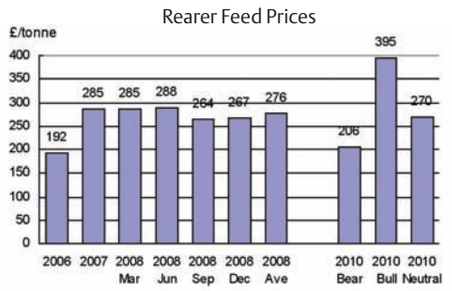
The increase in feed raw material prices over the past year has been due to a combination of supply and demand factors, including:

- Poor European harvests in 2007
- Historically low world stocks
- Increasing demand from India and China
- The growth in biofuels

The area planted to cereals for the 2008 northern hemisphere harvests is higher than in 2007, so the current expectation is that there will be some downwards pressure on cereal raw material prices in the second half of 2008. Consequently pig ration costs are currently quoted lower for the back end of the year, although the downward impact on costs may be limited by continuing high protein prices.

In 2008 as a whole, average purchased compound prices are l expected to be just over 70 per cent higher than the average for 2006. However, much will depend on the weather conditions in the first half of 2008. Prices in the second half of 2008 will also be affected by developments in southern hemisphere harvests.





In addition to the very firm market conditions over the past year, there has been a great deal of uncertainty in the feed industry. This has led to some marked changes from week to week in spot prices. Clearly, the degree of uncertainty will be greater as we look further forward. And this is reflected in the wide range of possible outcomes for 2010

Currently two of the factors that are making longer-term predictions more difficult are:

- The future growth of biofuels. The high profile of biofuels has attracted speculative investment in commodities, and there is considerable disagreement between market analysts over whether it will continue to grow steadily.
- Low world stocks mean they cannot act as a buffer to absorb changes in supply: demand imbalances from year to year. This implies greater volatility in prices.

Average compound feed price forecasts for 2010 range from £158 ("bear market") to £310 (bull market), with "neutral" market conditions leading to a forecast of £213.

Impact on costs of production

The feed price projections have been input into the BPEX cost of production model. It is assumed that there are no other changes in physical performance parameters or in the costs of inputs compared with 2006.

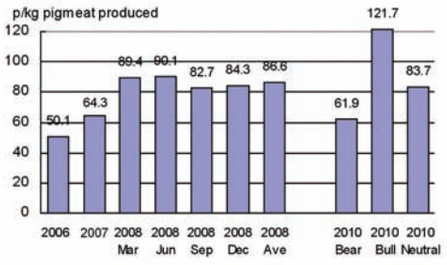
Feed costs per kg of pig meat produced totalled approximately 50p in 2006 but are now up to about 88p/kg. As a result, feed's share of total costs has increased from 46 per cent to 60 per cent.

The cost of producing a kg of pig meat is forecast to rise from 108.2p in 2006 to 148.1p (on an annualised basis) in March 2008. Although there will be a decline in the last two quarters of 2008, the average cost of production for 2008 as a whole will be 145.3p/kg dw. This is 34 per cent higher than the cost of production in 2006.

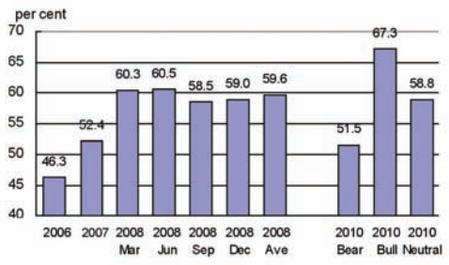
Assuming an average producer price of 115p in 2008, this implies a loss of 30p/kg, which is equivalent to £22 on every pig produced. On an industry-wide basis this is also equivalent to an annual loss of £200 million.

The forecast cost of production in 2010 ranges from 120.2p to 180.9p depending on the assumptions used. However, even at the low end of the range, production costs will be well above pre-2007 levels.

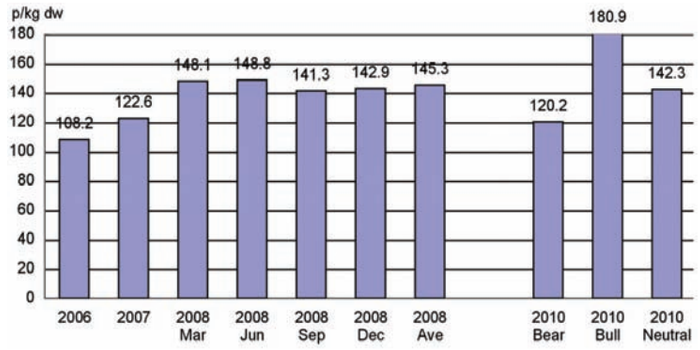
Projected Pig Feed Costs



Feed Costs as % of Total Costs



Projected Costs of Pigmeat production



Section 3
Risk Management for Farmers and the Pig Industry

By Martin Redfearn, Agricultural Specialist, Barclays Commercial Bank

Every farming business faces many risks every day. Weather, disease, and volatile markets to name but three. Most farmers are used to living with these issues, and managing them or, more likely, simply coping with them. Some other risks will arise in areas outside normal day to day farming experience and expertise, for example financial risk and, for the first time on the present scale, huge increases in the cost of feed and other essential farming inputs.

Managing financial Risk

Most business activities will generate some element of financial risk, but two of the most common for farmers are interest rates and foreign exchange. The former clearly applies to anyone borrowing money, and in proportion to the amount of money borrowed. The latter also affects most farmers since many of the commodities they buy and sell are traded internationally and, depending on the country of origin, prices of imports and the value of exports can go up and down as the values of major currencies fluctuate against each other.

Background

There currently is a great deal of uncertainty in the financial markets, and uncertainty generates risk. The areas of financial risk for UK farmers include uncertainty surrounding UK interest rates, the exchange rate between Sterling (GBP) and the American Dollar (USD) and also the exchange rate between GBP and the Euro (EUR).

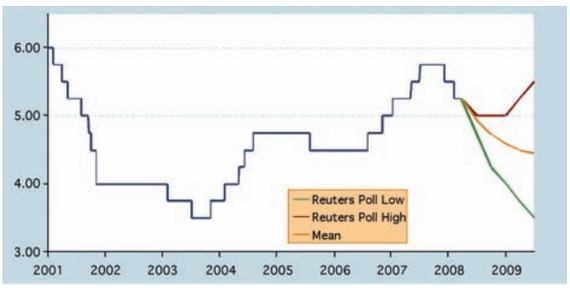
Current uncertainty in financial markets arises from a relatively unique situation whereby there is a disparity between the usually offsetting forces of growth and inflation. Under normal circumstances high levels of growth and inflationary pressures go hand in hand, but this is not the case at present. Rising inflation is being experienced at the same time as economic growth is slowing. This is what economists term stagflation but may also be described as a nightmare scenario for central bankers!

Like most businesses, governments want their business (the national economy) to grow, but at a rate that is sustainable. In order to help achieve this objective they determine an inflation target. In the UK the inflation target is currently set at 2%, as measured by the Consumer Price Index (CPI). The government then ask their respective bank, in the UK the Bank of England, to set interest rates in order to achieve this inflation target. If the economy is 'running' too fast the Bank of England will increase interest rates, thus encouraging saving and discouraging borrowing, thereby reducing spending and inflationary pressure. Alternatively, if the economy is 'running' too slow, the Bank of England will reduce interest rates, thus discouraging saving and encouraging borrowing, thereby increasing spending and allowing increased demand in the economy to push prices up, or increase the rate of inflation.

UK Base Rates

With the high degree of uncertainty surrounding the outlook for UK Base Rates, and the broader economy over the coming 12 - 24 months, the importance of financial risk management has rarely been more apparent. The chart below highlights the diverse range of market forecasts at present. They are drawn from a wide range of major financial institutions who report their forecasts to Reuters on a regular basis.

Historical Bank of England Base Rate and Forecasts



Source: Barclays Capital; Reuters 14th February 2007

At one extreme are those who believe UK interest rates will be held at the current rate this year, and rise again next year, while at the other are those who expect up to six cuts in rates over the next twelve months. Barclays rates forecast is near the middle of this range, with our economics team expecting three 0.25% (25 basis point) cuts between now (early April) and the end of August 2008 to leave the base rate at 4.5% by the end of 2008. The difference between the two extremes, if either were achieved and maintained for a full year, for a business borrowing £100,000, is £2,000 per year.

Minutes from the Monetary Policy Committee ("MPC") point to higher energy costs, high import prices and, ironically for farming business, higher food prices as the key short-term threats to inflation. Indeed February inflation came in at 2.5% against the Treasury target of 2.0%.The consequence of this inflationary pressure would normally be that interest rates would not be cut aggressively while inflation remains above target. This tends to support the view that expectations of short-term, larger interest rate cuts could be misplaced. Indeed with recent sharp increases in food commodity prices, and no sign of a sustained drop in energy prices, inflationary pressures are such that Barclays believes the Bank of England is likely to tend towards fewer, rather than too many, interest rate cuts.

Peace of mind against volatility in interest rates

Given a short term (one to two years) expectation that interest rates are more likely to fall than to rise, borrowers may decide to wait for the market to reduce their borrowing costs for them. However most farmers who borrow do so for a range of reasons including major investment in, for example, livestock buildings and equipment with a long life expectancy, and the ultimate long term investment land, and therefore do so over rather longer periods than some other borrowers. A short term view may not therefore be thought appropriate when the graph above illustrates that UK interest rates have fluctuated by nearly 2.5% in the last eight years alone.

It is not the intention here to give chapter and verse on detailed mechanisms for reducing the risk of volatile interest rates. The people who advise on these matters are highly trained and experienced, and closely regulated by their own businesses as well as national authorities, and each case is different and must be considered in isolation on its own merits.

A useful analogy, however, is one of buying an insurance policy. In consultation with suitably qualified and experienced advisors a client will decide over what timescale he wishes to 'insure' his debt, a top level of interest rate with which he feels comfortable, and a lower level which he would be content to pay even if actual market rates fall below it at any stage during the 'insured' period. The advisor will use these parameters, together with the sum of debt involved, to calculate the cost of the 'insurance premium'. Such calculations are time sensitive since financial markets move constantly, so quotations have a limited life after which the calculation will have to be re-run. An approach which requires a premium payment will ultimately provide a great deal of flexibility in favourable market movements. Typically a client will wish to reduce the premium payment, and it may be possible to set up an arrangement for no cost in return for the client making a commitment that their participation in favourable (lower) interest rate movements may be limited.

Such risk limiting mechanisms have been around for many years but, until recently, were usually only available to businesses borrowing huge sums. More recently increased sophistication and experience in financial institutions has made them more widely available. Even so there will be a lower limit below which they will not be economic to set up. Here again it is for the advisor to decide, but typically a lower limit of around £500,000 might be applied.

It is important to recognise that few things in life are entirely without risk, and these products are no exception. While they can insulate borrowers from some of the vagaries of the market there may be some terms and conditions which require careful consideration. For example the lending and 'insuring' institution will wish to offset its own risk with third parties, and the cost of unravelling these arrangements in the event of early repayment or abandonment of the protection for any reason may have to be met by the borrower. Particularly in the early years of such arrangements these 'breakage' costs can be considerable, and here again it is essential to take good advice before committing to a proposal.

Overall, for borrowers of significant sums over extended periods, which many farmers are, such mechanisms have merits worthy of consideration. Through such a mechanism a borrower can determine an upper and lower limit to the cost of borrowing over a given period in a way which is much more flexible than basic 'fixed' rates of interest and will usually negate the need for any up front premium. Crucially, the risk of wide fluctuations in interest rates is reduced to an overall cost with which the borrower is comfortable, thus freeing up management time and energy to get on with running the business.

Foreign exchange markets

Foreign exchange markets have been volatile in recent months, with GBPUSD depreciating as much as 8% from its highs of 2.11 in late 2007, and over 13% against EUR. Falling interest rates in the UK and a slowing economy have contributed to the negative sentiment and weakening pound over this period.

The consequence of a strong pound relative to the dollar is that we can import goods and commodities from USA at a lower cost in sterling terms. For livestock farmers this means that, for example soya bean meal, essential high protein ingredient in pig and poultry diets, can be lower. Even though the real issue in soya prices is that the overall world price has rocketed, a strong pound has at least limited some of the pain in the short term, however with sterling now a little weaker against the dollar, protein prices are unlikely to fall in the short term.

Looking ahead in the short term some observers are concerned about a further slowing of the economy and a possible recession in the US, as well as a slow down in European growth. However, the outlook for the UK economy is also uncertain and, if UK interest rates are cut more than expected amidst slowing growth this side of the Atlantic, the risk exists that GBP may continue to depreciate, adding to the woes of livestock farmers paying high prices for feed.

It is possible to protect UK based businesses which buy dollar-priced commodities from adverse fluctuations in the GBP:USD exchange rate. At its most simple a UK business can buy dollars at a time when they think the exchange rate is good, and subsequently buy their US commodity with those dollars. However while they would thus be insulated from the effect of a weakening GBP, there is the opposite risk that the GBP will strengthen further in the interim, thus making their USD buying power less effective than had they not bought the currency in the first place.

In practice few if any farmers will wish to buy, for example soya, direct from USA, and will not be interested in a straight 'transactional' need for USD. Never the less, since a component of feed price most certainly will be influenced by GBD:USD exchange rates, some may wish to take out a 'translational' hedge to lock in to a particular rate, and subsequently cash it in at the time they pay for their feed.

These are complicated areas in which few farmers in practice currently get involved. However sophistication in financial matters as well as excellence in practical farming are increasing all the time, and we expect to receive more enquiries on these issues as time moves on.

Barclays are forecasting that GBP will weaken further against EUR and USD in the short term, forecasting a fall in GBP/USD to 1.93 in the next twelve months, particularly if weak UK economic data and the slowing in the property market prove more pronounced than market consensus is currently forecasting. This sentiment is expected to spill over into the GBP/EUR exchange rate in the short term as well with Barclays economists targeting the pair to hold around 1.3 over the coming months. These are not particularly dramatic changes but, if they come to pass in practice, will not help reduce the already high cost of feed.

Managing risk in feed prices directly

Buying forward cover

Most intensive livestock producers on any scale will be familiar at least with the concept of buying their feed ahead at a pre-determined price, and many do so in practice. To do so at a time when the value of the finished product is static or rising may well make good sense since it locks a major element of total costs at a known level which will leave a profit or at least limit any short term losses to manageable proportions. Such arrangements, regardless of the value of farm output which is not their immediate concern, make sense for feed compounders also. They can offer a price based on known forward prices for the main feed ingredients, and ensure their own operating margin by buying the ingredients when the contract is signed.

The obvious dilemma for a pig farmer contemplating buying forward is for how long to fix the price, and will the value of his product rise (good news) or fall (not good) during the period? The risk is that value of the output will fall, thus reducing profit. It is usually the fear that this scenario could come about which limits the number of months over which forward contracts are agreed. Equally, if a short term contract has been taken, when it comes up for renewal at a time when cereal and protein prices have been rising while output values have not improved, there could be a sudden jump in costs against static output values resulting once again in reduced profit or a shift to trading losses

It is this last combination of circumstances in which the industry now finds itself at the beginning of 2008. Those with no forward cover have been hurting for a number of months, and those whose forward cover has run out find themselves in the same position, albeit later than some of their colleagues in the industry. Even those with forward cover still in place are counting the days to when they will have to renegotiate at levels very much higher than they can afford at current pig prices. The simple and straightforward mechanism of buying ahead is thus not without risk, and in any event is time limited. Pig farmers will want to leave the door open to renew contracts should cereal and protein prices fall, and feed compounders will want to limit the number of months they sell ahead for the same reason, or simply because there is a limit to the distance ahead that they are able to buy at what they consider to be sensible prices.

Using forward grain markets and Options

The cost of livestock feed is clearly very closely linked to the cost of wheat and other combinable crops, and soya. In very simple terms sellers of these crops can sell forward while buying an Option which locks them in to a minimum price (sale price less the cost of the option) while allowing them to 'tear up' the Option and sell at higher prices in the event that the market moves that way. Buyers of feed have a similar opportunity open to them. They can buy an Option to buy wheat at a given price. If the market goes up, they exercise the option to buy at the lower price, thus effectively locking in to a maximum feed price. Should the market fall, they 'tear up' their Option contract, write off the cost of it, and buy at the lower price in the market.

This mechanism in principle is not unlike the cost of 'insuring' an interest rate. The buyer fixes a level of cost, including the cost of the 'policy', with which they are comfortable, and they are then free to get on and manage the business knowing that a major element of their total costs is protected from adverse movement while leaving them able to take advantage of any favourable movements. In the case of livestock feed, the business which buys the Option to buy feed ingredients could be either the pig farmer or his feed compounder. In the latter case the feed manufacturer would offer their customer a maximum price contract which included the costs of the arrangement, no doubt including administration, but at least both parties know that they can trade with each other for the duration of the arrangement without worrying about what the grain market is doing. This gives a welcome element of certainty to both parties in what, as we have seen in the earlier sections of this report, is a highly volatile world.

Just as with interest rate protection, the precise detail of setting up such arrangements should only be undertaken by those qualified to do so, and it is for the pig farmer and his feed supplier to take the best advice. Also as in the case of interest rate protection, there are likely to be minimum contract sizes, and the cost of the cover will vary with the degree of perceived risk, including the time over which the arrangement is in place, but at least a degree of certainty can be achieved relative to a market which is volatile and therefore full of risk.

Managing risk through collaboration in the supply chain

Hitherto in this chapter we have been considering risk management mechanisms which already exist and which are available to all comers. It is also pertinent to consider what other mechanisms might be created that could be bespoke to the pig industry.

Pig meat is currently a widely available commodity, and trades freely within the EU and further afield. Buyers therefore have free choice as to from whom and in which countries they buy, and one of the considerations will be the foreign exchange issues discussed above. However the high feed cost and low output value are affecting all EU producers, and there is some evidence that the pig herd is shrinking. In considering theses options we make an assumption that all involved with the industry in this country, from feed manufacturer to retailer, wish to see at least some British pig meat available to the British shopper.

Fixed price contracts

A pig farmer confident in his technical ability, and who is able to contract forward to sell weaners or finished pigs at a known price – assuming that the price leaves a margin for him - will have the confidence to contract with feed suppliers for a similar period and thus offer the buyer certainty of supply. While we would not expect buyers to contract to buy at prices that offer a return for inefficient producers, there is some logic in negotiating a price based on known feed costs and other costs in the chain which leave a modest margin for efficient operators and offer the opportunity for the more efficient to prosper further.

Sale contracts linked to commodity prices
Few things are more certain that commodity markets will move up and down, and parties to fixed price contracts will wish to limit the period of time for which they are committed in order to enable them to renegotiate as markets move. In order to reduce the risk of either or both parties being locked in to an unfavourable arrangement for any length of time, they may wish to consider a contractual arrangement with flexibility built in.

Given the close correlation between animal feed prices and the cost of wheat, and that feed is such a large proportion of the total cost of producing pigs, it would make sense to consider a price for finished pigs linked to wheat price, for example the HGCA spot price on a given day, or the London International Financial Futures Exchange (Liffe) futures price for wheat. The relationship between the two could be renegotiated or recalculated from time to time as other factors in the mix change, but at least a degree of certainty could be achieved for all involved in putting UK pig meat on UK dining plates.

Summary and conclusions

In the early months of 2008 the UK pig industry is under huge pressure from feed prices at least 50% higher than a year ago while the value of their output has hardly changed. There are steps that individuals can take to protect themselves from some of the risks of being in business generally, and indeed some of the risks specific to being in the pig business. However these will go only some way to mitigate the effect of high world grain and soya prices and are unlikely, on their own, to keep the average producer in profit. There are other risk mitigation strategies available, but they will require wider consultation and negotiation, all of which will take time, and time itself carries risk – that something else beyond your control will change.

The ultimate risk is that, were the pig meat supply chain to come to an arrangement by which the high cost of feed was recognised in the price paid to farmers and therefore ultimately passed down to the consumer, the consumers could vote with their wallets, and reduce the amount of pig meat they buy. This would not be the best news for the industry. However to do nothing while feed prices remain high is to risk that pig farmers will vote with their feet, in which case the British consumer would have less choice as to whether they buy British pig meat or not. We have already observed that commodity, and therefore animal feed prices, will move down as well as up over time. A strategy for the industry which recognises those risks, and rewards all involved for involving each other – including the consumer when prices fall – may be thought to be goal worth working towards.

Published by BPEX Ltd
Winterhill House
Snowdon Drive
Milton Keynes
MK6 1AX

Tel: 01908 677577
Website: www.bpex.org.uk

BPEX Ltd is a subsidiary of the Agriculture
and Horticulture Development Board

With contributions by:

ABN - a division of AB Agri Ltd
(written by Hugh Burton, Raw Material Manager)
Oundle Road
Peterborough
PE2 9PW

Tel +44 (0)1733 422161
www.abagri.com <http://www.abagri.com>

and

Barclays Commercial Bank
(written by Martin Redfearn, Agricultural Specialist)
85 Main Street
Witchford
Ely
Cambs
CB6 2HQ

Tel: +44 (0)1353 659218