Influences upon palm oil production costs

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The key factors influencing production costs

I am going to try to cover a lot of ground today, since the influences on production costs are so many.

Among the more important I will review today are:

- Trends in yields and the impact of palm age profiles
- Labour productivity and fertiliser consumption
- Production costs, with and without by-product credits
- The recent sharp swings in exchange rates
Trends in palm oil yields per hectare
You will be familiar with the yield of oil palms over their life cycle. We apply this profile to estimate average yields over the life time of all palm areas.
The yields over the lifetime of oil palm plantings we call “adjusted yields”. This adjustment raises Indonesian yields more than Malaysian yields.
The impact of the adjustments is revealed if we compare actual vs adjusted yields in high yielding Sabah and low yielding Sarawak in Malaysia.
Yield adjustments are highest when a region has a high share of young trees. Colombia has a much higher immature share than other important areas.
Here I have made a brave attempt to guess how yield adjustments for age would affect the CPO yield per mature hectare in Colombia.
Be careful when comparing oil palm yields

Recorded CPO yields per mature hectare are highest in Malaysia, followed by Indonesia and Colombia.

In all three countries, the recorded yields have been flat or even declining since 2008.

However, the recorded yields fail to take account of the implications of the wave of new plantings made from 2007, which reduced the average age of mature areas.

For this reason, we at LMC now build up age profiles of oil palm areas by country, region or company to be able to estimate their underlying age-adjusted yields and deduce the impact on their production costs.

The next slide illustrates this for a big plantation group.
This company’s CPO yield in 2014 was 4.7 mt/ha. and its age-adjusted yield 4.4 mt/ha. Applying the adjusted yield, its cost rose from $267 to $290/mt.
Continuing consideration of production costs
Oil palm records much lower production costs per tonne of oil than annual oilseeds .... but only before one allows for by-product credits.
Soybean processors, in particular, have been enjoying high credits from the sale of their meal output. Oil palm credits from kernel are smaller.
If you deduct by-product credits from production costs of oils (where land values are not included in field costs), soybean oil costs are now negative!
Real CPO production costs have risen with higher input costs, notably labour. Costs in 2010-2014 in Malaysia and Colombia were above 1985-1989.
The detailed data from the US reveal how much harder it has become for its soybean farmers to reduce their production inputs further.
Lowering production costs has become difficult

The annual oilseed crops have enjoyed a bonanza as a result of high by-product credits from the sale of meal, which are much more important per tonne of oil than oil palm’s credits from the sale of palm kernel.

Trends in production costs, before the deduction of by-product credits, seem to be pointing slowly upwards. Maybe this is due to complacency from high prices.

Input price rises have made things difficult for oil palm producers, with wages rising quite rapidly in South East Asia, for example.

I now turn to consider the impact of these inputs.
Labour and fertilisers, the major palm inputs
Malaysian and Indonesian costs of employing general field workers in US$ in 2014 were 320% and 380%, respectively, of their 2001 levels.
In Malaysia, this has prompted an increase in the mature area per worker in recent years. However, part of this rise has been due to labour shortages.
Here I contrast the total area (both mature and immature) per worker in Malaysia and on estates in Indonesia, where the trend is at best flat.
Fertiliser is also a crucial input. Here I plot not the price of fertilisers, but the fertiliser-CPO price ratio. One can understand why its use is now falling.
The impact of cutbacks in fertiliser use in reaction to high fertiliser prices may be seen in the year-on-year CPO growth cycle in Malaysia.
Spending on inputs is set to fall significantly

The reduction in fertiliser use in response to the failure of fertiliser companies to reduce their prices will undoubtedly cut cash costs of CPO production and will hit output growth next year, compounding the effect of drought on oil palm yields.

In the case of labour costs, there have been two new developments: cutbacks in field maintenance and in the frequency of harvesting rounds; and (totally outside the control of the oil palm sector) the sharp devaluations of the currencies in many oil palm producing countries.

I conclude by examining the effect of currency turmoil.
Exchange rate fluctuations
Most oil palm producing countries have seen their exchange rates (local currency/US$) soar since 2012. Ecuador has been tied to the US$.

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![Exchange rate index, average 2012 = 100](chart)

- Malaysia
- Indonesia
- Colombia
- Brazil
- Ecuador
Devaluations have softened the impact of the fall in the world CPO price, when it is expressed in local currencies.
I end with the consumer view, showing how CPO prices have moved in local currency in importing countries. (Brent is a proxy for crude oil exporters)
Input cost reductions may help many palm producers to manage current low prices.

It seems highly unlikely that fertiliser prices will be able to withstand the pressures they face from falling sales, not just from oil palm producers but also from growers of annual crops whose prices have fallen back.

For those countries that have devalued substantially against the US$, these devaluations, until they feed through to inflation and pressure for higher wages, will lessen the immediate impact of low CPO prices.

Whatever happens, CPO production will respond in 2016 and help to raise CPO prices. However, a word of caution: don’t forget that higher prices will affect demand, both if soy oil becomes competitive and if biodiesel demand is reduced.
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