Oil palm and the world market for oil crops

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Outline of my presentation today

I start by reminding you how oil palm enabled the world’s vegetable oil sector to respond to the growth in demand for oils for biodiesel. This changed the balance in the supply of different oils, and, via price signals, led to a major expansion in the areas planted to oil palm.

There is clear evidence that area growth in oil palm is now slowing. I explain what this will mean for the long term trend in palm oil prices.

Large sales of biodiesel transformed vegetable oil price behaviour, creating the price band linking vegetable oil and petroleum prices.

Recently the Indonesian government introduced a scheme to fund biodiesel subsidies. This has changed the behaviour of palm oil prices.

I conclude with the outlook for palm oil stocks and prices till December.
Biofuels gave a big boost to the growth in demand for oils

The biofuel revolution saw this important new end-use capture a large share of the world production of many major crops. In this presentation we shall see how this transformed vegetable oil price behaviour.

Before biofuels were introduced, the growth in the world demand for oils and protein meals tracked the growth in world income. Since the arrival of biofuels, the consumption of oils has grown faster than world meal demand.
Oil palm was excellently placed to meet the new balance of growth between the demand for oil and meal. These are the worldwide average yields per hectare of the four main oil crops. The attraction of oil palm as a means of providing lots of oil without much extra meal is clear. Since oil palm was good at meeting additional oil demand, while soybeans satisfied the growing meal demand (with oil a by-product), palm became the world’s largest source of oil.

Average Annual Growth 1975-2016
- Palm Oil = 8.0%
- Palm Kernel Oil = 7.9%
- Rapeseed Oil = 6.0%
- Soybean Oil = 4.5%
- Sunflower Oil = 3.2%
Palm’s high productivity as a source of oil has limited the area needed to increase output, but its yield growth has been slow.

As a result of its much higher productivity in yields of oil per hectare, oil palm supplies more vegetable oil than any other crop from the smallest area of the four leading oil crops.

A disappointing aspect of the palm sector’s performance in supplying so much extra oil was how little of this came from higher yields, when compared with the other main oil crops.
Efforts to limit palm oil supply raise questions about how much extra land would be needed to meet growing demand for oils.

If we simply assume that demand for oil and meal and yield growth of oil crops in 2015-2035 follow the trends seen in 1995-2015, we can see the need for oil palm area growth.

Future oil palm area growth is now controversial, but you see how much other crops’ areas would need to rise if palm output stood still and these crops supplied the “lost” oil.
Without rapid growth in palm oil output, it would have been very difficult to meet the surge in demand for biodiesel. The decade from 2002 to 2012 was remarkable for the creation of a new demand for oils in biofuels. In 2002, biofuels represented just over 1% of the demand for oils in food. By 2010, they absorbed the equivalent of 18% of the food use of oils. In other words, biofuels added 17% to the demand that would have been expected. Meanwhile, sales of oils for food and of meal for feed grew in parallel, as before. This transformation in the balance of demand growth between oil and meal called for an oil crop that yielded lots of oil, but not much extra meal. Oil palm was ideal. Palm’s high oil yields per hectare minimised the area that had to be planted to oil crops to meet biofuel demand. (Note: palm oil does not go mainly to biofuel. It fills supply gaps as other oils go to biofuels.) Today, oil palm provides over 35% of all vegetable oil output, but still uses less land than each of the main annual oil crops. Pressures to limit the expansion in oil palm areas will create a dilemma in terms of the much larger areas of other oil crops needed to replace the “lost” palm oil.
Palm oil prices were the key to achieving the growth in output.

Germinated seed sales are the best indication of producers’ desire to plant oil palms. It is clear that high prices were key to attracting the extra areas to oil palm – in both countries.

It is significant that higher prices in 2016 did not lead to an increase in seed sales in either country. In fact they fell. I am sure that reflects pressures to limit new plantings.
A slowdown in oil palm area growth is well established now.

The recent slowdown in the annual percentage rate of oil palm area growth (with a brief leap, from a low starting point in Africa) is now affecting all major producers.

In Malaysia and Indonesia, we can see that a general slowdown in the growth in palm areas has been reinforced by the moratorium on new palm areas in Indonesia.
There are important implications for future palm oil prices.

Environmental pressures will continue to limit the growth in oil palm areas, not only in Asia, but also, considering the importance of S.E. Asia, worldwide.

If oil palm cannot continue to supply its high share of the growth in world vegetable oil supplies, oils prices will have to rise to attract extra oil from other oil crops.

That’s not the end of the story. Other oil crops, led by soybeans, rely more on meal revenues than palm, and if they are to fill gaps created by slower growth in palm output, they must increase their planted areas, thus adding to world meal supplies.

This extra meal will hit meal (and seed) prices. Yet, we know that oilseeds prices must rise sufficiently to attract the oilseeds needed to replace the ‘lost’ oil in palm.

With lower meal prices, the only way that annual oilseeds prices (and output) can rise is if the price of oils increases enough to offset the fall in meal revenues.

We conclude that the slowdown in palm plantings on environmental grounds will eventually lead logically to higher vegetable oil prices, including for palm oil.
Turning now to the behaviour of prices in the short term

A major impact of biofuels on oils markets was to create a price band. Oils now trade in a range with Brent crude the floor to the band and EU oils prices above the floor.

MPOB stocks play a major role in determining the premium for CPO over Brent. Low stocks ⇨ a high premium; high stocks a low premium. At the floor, no subsidy is needed for biofuels.
How does biodiesel, with all its mandates, affect oils prices?

It may seem impossible that biodiesel can have such a big influence on oils prices. After all, mandates like the B10 in Colombia stipulate that each drop of diesel contains a fixed percentage of biodiesel, and this is not affected by oils prices.

The reality is complex. One reason is that the largest biodiesel users, the EU and US, fix mandates by the year, not the litre. At the end of the year, blenders must prove that they fulfilled the mandate. They need not use biodiesel if they feel it is too expensive vs. diesel, but can buy more than the mandated % when biodiesel is seen as cheap. The swings give biodiesel more power over prices than a 15% share of world oils output leads you to expect. The tail (of biofuel) wags the dog (of oils).

In fact, the EU and US permit more flexibility than this, allowing different biofuels (i.e., ethanol and biodiesel) to substitute for one another within some mandates. The most interesting flexibility, however, with a direct impact on recent CPO prices, is Indonesia’s biodiesel mandate, introduced in mid-2015, which I shall now discuss.
Indonesia’s CPO Fund and biodiesel mandate are revolutionary

Indonesia has announced mandates for several years, but the problem was always that, if there was a big premium for palm oil over crude oil, the government did not pay the money needed to subsidise the cost of biodiesel and did not want to see high prices of biodiesel passed on to the user. In 2015 it introduced a scheme, with producer support, where producers pay the full cost of the biodiesel subsidies.

This may sound crazy. After all, why would producers agree willingly to pay a large sum into a fund to subsidise biodiesel?

The answer is that they believe, as I do, that paying an export levy into a fund to ensure that a large quantity of biodiesel is subsidised each year will reduce palm oil stocks and raise the world CPO price by more than the cost of the export levy.

The levy on every tonne of CPO is US$50 and on RBD olein is $30 (giving local refiners an advantage). The levies (totalling $US800-900 million this year) go to a CPO Fund, which uses nearly all this money to bridge the gap between the full costs of a biodiesel producer, who is guaranteed a US$100 margin over local CPO prices, and the cost of imported gasoil, which is the alternative fuel for the local petroleum company.

This diagram show how the ‘mandate’ works. I assume that the Fund spends $800 million; Brent crude is $50/bbl; the biodiesel seller is paid a $100 margin over local CPO plus its delivery costs; and Singapore gasoil is $90/tonne over Brent.

At $800 FOB S.E. Asia CPO prices, the Fund can subsidised 2 million tonnes/year; at $660 - 3 million; at $590 - 4 million tonnes; at $550 – 5 million; and at $525 – 6 million tonnes.

Indonesia has created a stabilising system for palm oil prices.
Were Indonesia’s producers right to support an export levy?

I have no doubt that the producers were very clever to have proposed and supported the creation of the CPO Fund. They know that at high FOB CPO prices, say $800, the Fund can subsidise 2 million tonnes of local biodiesel sales, which would not be subsidised otherwise. At low FOB prices, they benefit more from 5 or 6 million tonnes of biodiesel sales.

Why do I praise this initiative? The diagram below gives the reason. In Q4 2015, palm oil stocks were at an all-time peak. Normally this would have pushed the EU CPO premium over Brent down to zero; but it didn’t happen. The market could see that the CPO Fund was working and held the EU price $200 above Brent; which was a good return for a $50 levy.
The recovery in palm oil production after the end of El Niño

The recent El Niño and weak La Niña have driven CPO output since 2015. We can see that Malaysia’s year-on-year growth path this time has been similar to 1997-99, but, unlike then, there are few new estates coming into production. So, I do not expect the recovery this time to be as strong as in 1999.

One thing that is impressive in this El Niño cycle is the very similar growth paths followed in different parts of the world. The recovery here in Colombia has actually been stronger than that in Thailand or Peninsular Malaysia, but the cycles have been running broadly in parallel with one another.
What about the palm oil market today and for the rest of 2017?

Continuing the analysis of the recovery from El Niño, if one judges the behaviour of Indonesian palm oil output by the performance of publicly quoted local plantation companies, the swings in Indonesian production have been greater than those in Malaysia, with bigger falls and larger recoveries.

Stocks and output will grow in S.E. Asia from July as workers return after Ramadan. This will reduce CPO’s premium over Brent crude; but, as in 2015, the rise in stocks and the fall in the premium will be moderated by the growth in Indonesian biodiesel use thanks to the operations of the CPO Fund.
The conclusions and their implications for palm oil prices

Palm oil was crucial in enabling the world to meet the extra demand for vegetable oils for biofuels. Palm provided the oil for biofuels without generating lots of meal as a by-product. Other oil crops would have needed much more land than oil palm.

If palm area growth stops, large increases in other oil crops’ areas would be needed to replace the “lost” palm oil output. These crops would produce lots more meal, cutting its price. So, to lift the output of seed oils, prices of oils would have to rise enough to offset the drop in the value of meal. CPO prices would end up higher.

Biofuels caused vegetable oil prices to trade in a band above petroleum prices with the level of stocks determining the CPO premium over Brent. Indonesia’s CPO Fund, paying biodiesel subsidies out of export levies, now adapts its biodiesel quantities to the CPO premium over Brent. This will stop CPO prices falling too close to Brent.

The recovery from El Niño will raise palm oil stocks and Indonesia’s CPO Fund will limit the decline in its price, but I still expect Rotterdam prices to fall $120 to touch a low point of $600 in Q4, but this would still be $225 over Brent (at $50/bbl.).