



THE WORLD OIL PALM MARKET TODAY

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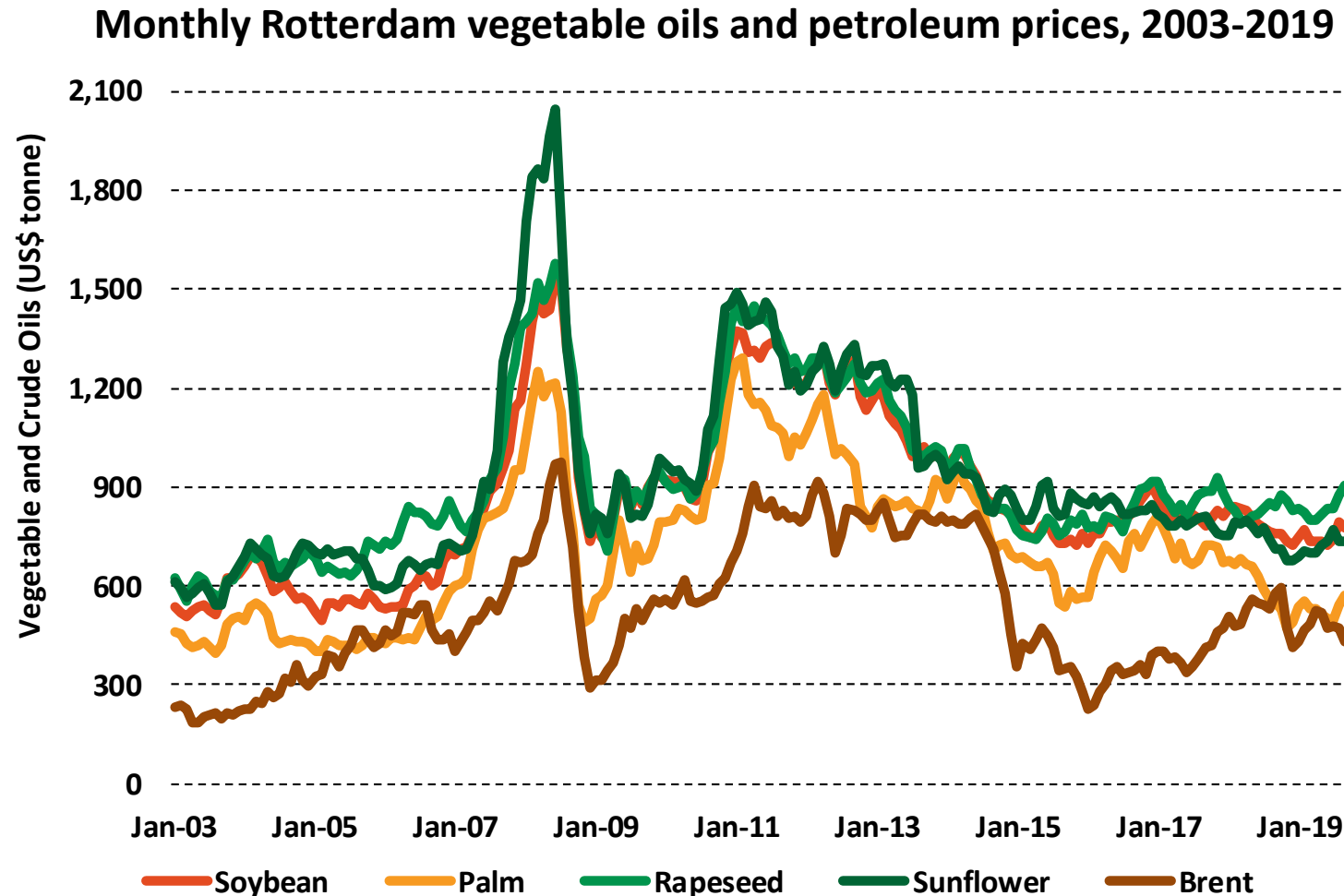
Outline of my presentation today

1. First, I review the behaviour of the prices of leading oils - palm, soybean, rapeseed and sunflower – in relation to petroleum.
2. I will explain how this link has developed and the key role of biofuels.
3. There has emerged an oils “price band”, which is a trading range in which all vegetable oil prices trade, with crude oil prices acting as the floor to the trading range for vegetable oils.
4. Then I examine the recent trends in oil palm output in the world’s largest palm oil producers: Malaysia and Indonesia.
5. In view of the importance of petroleum prices for palm oil and other vegetable oils, I turn to an explanation of the way in which the development of efficient technologies for the extraction of shale oil in the US has transformed the petroleum market and, with it, the future levels of vegetable oil prices, via the price band just mentioned.
6. Finally, I conclude with a summary of the lessons to draw from my presentation, together with an outline of the prospects for palm oil prices over the next six months.

Vegetable oil price movements

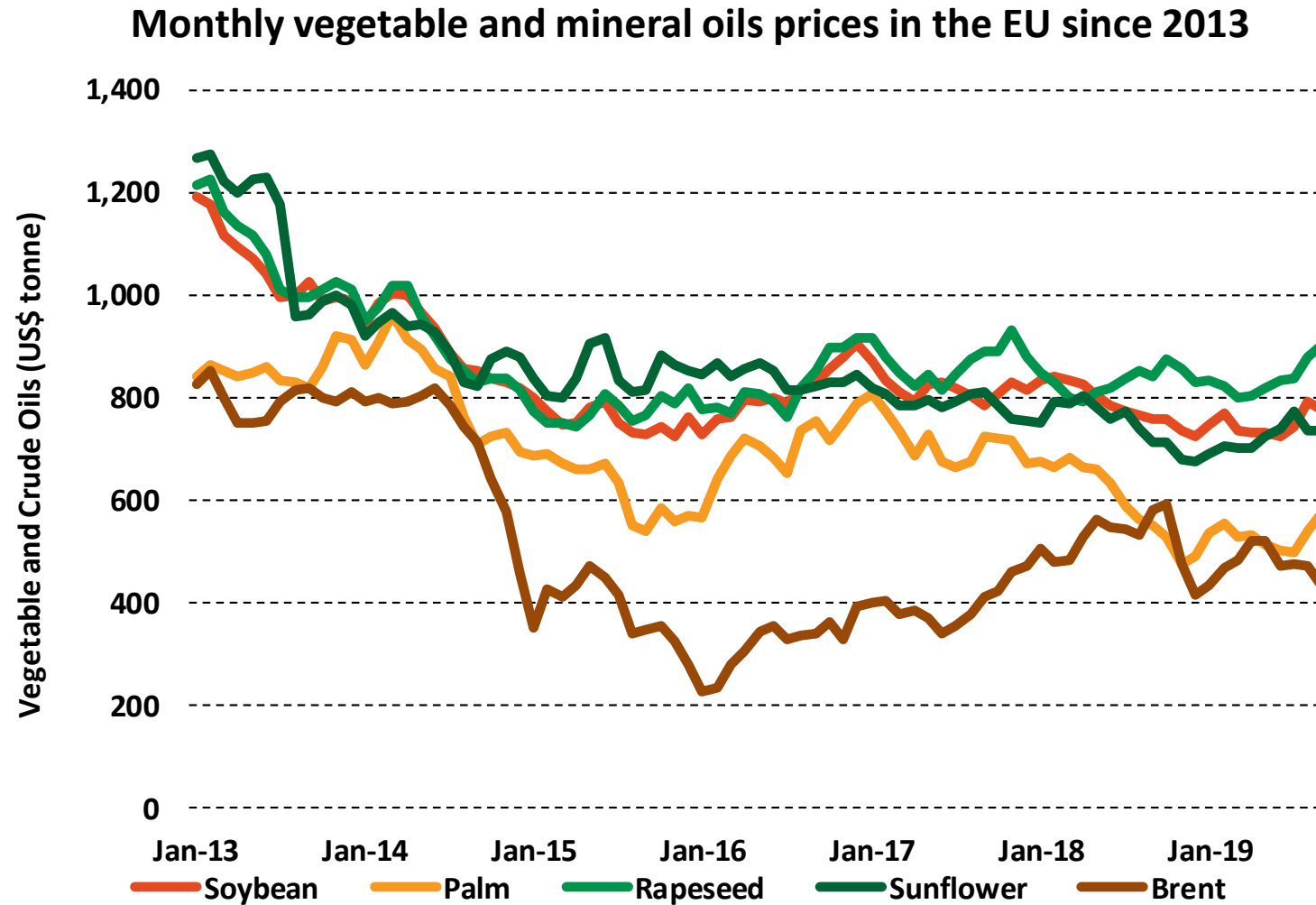
This plots EU oils prices alongside Brent North Sea crude oil

Here you can see the price band for Rotterdam vegetable oils prices, with Brent crude oil as a floor. All vegetable oils now trade in a price range above Brent, where prices are all in \$/tonne, and this price band is now clearly very well established.



This is the same data but displays prices only since 2013

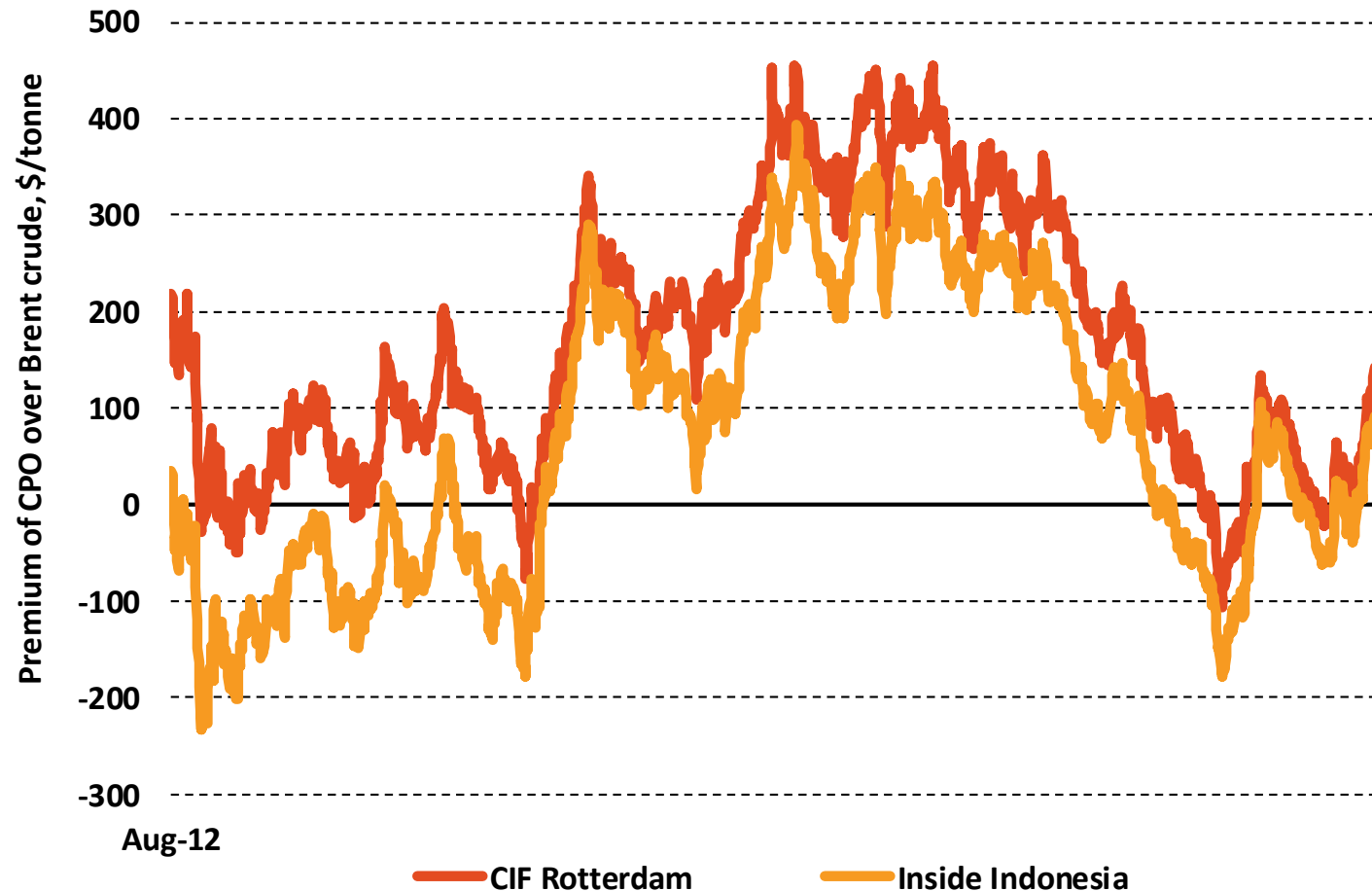
This is a bit clearer. You see several times when EU CPO prices fell to the level of Brent North Sea crude oil. At that point, CPO prices in South East Asia are below crude oil prices because CPO producers must pay export taxes and sea freight to deliver palm oil to the EU. When palm oil becomes a competitive fuel, biofuel demand increases and lifts the CPO price.



If we focus solely on the premium of CPO over crude oil

There have been several times when CPO's premium over Brent in Rotterdam fell to zero (the prices were the same) or even briefly negative (CPO was cheaper than crude oil). This diagram confirms that the CPO premium over Brent crude oil inside Indonesia is always lower, due to sea freight costs and export taxes.

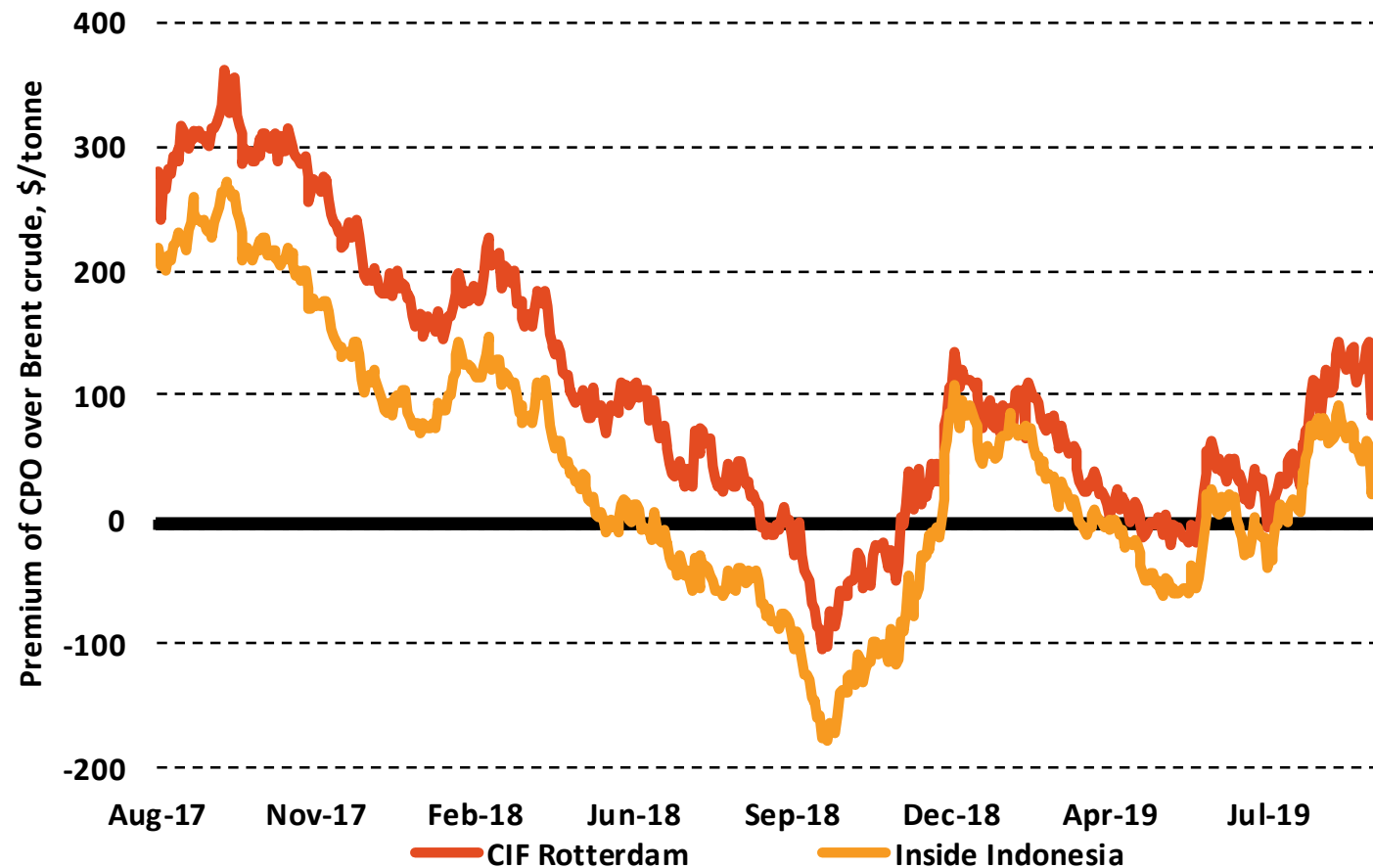
Daily CPO premium over Brent crude oil in Rotterdam and inside Indonesia



This is the same diagram over a shorter period

There were several times in the past year when CPO, especially inside Indonesia, but even in the EU in October, was a much cheaper source of fuel than crude oil. No subsidy was needed then to sell biodiesel at lower prices than diesel fuel.

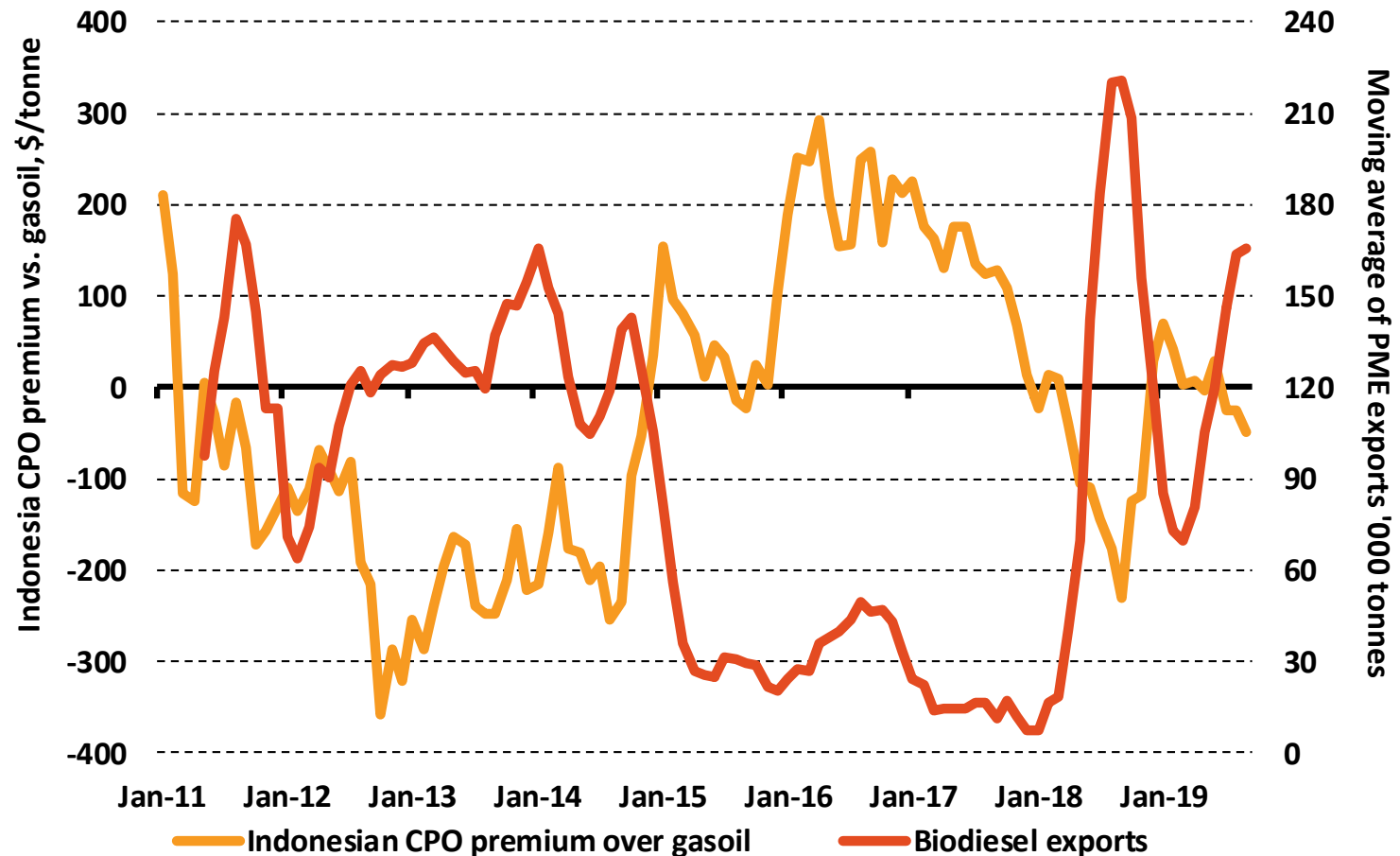
Daily CPO premium in the past 12 months in Rotterdam and inside Indonesia



The main reason why petroleum sets the floor to EU CPO prices

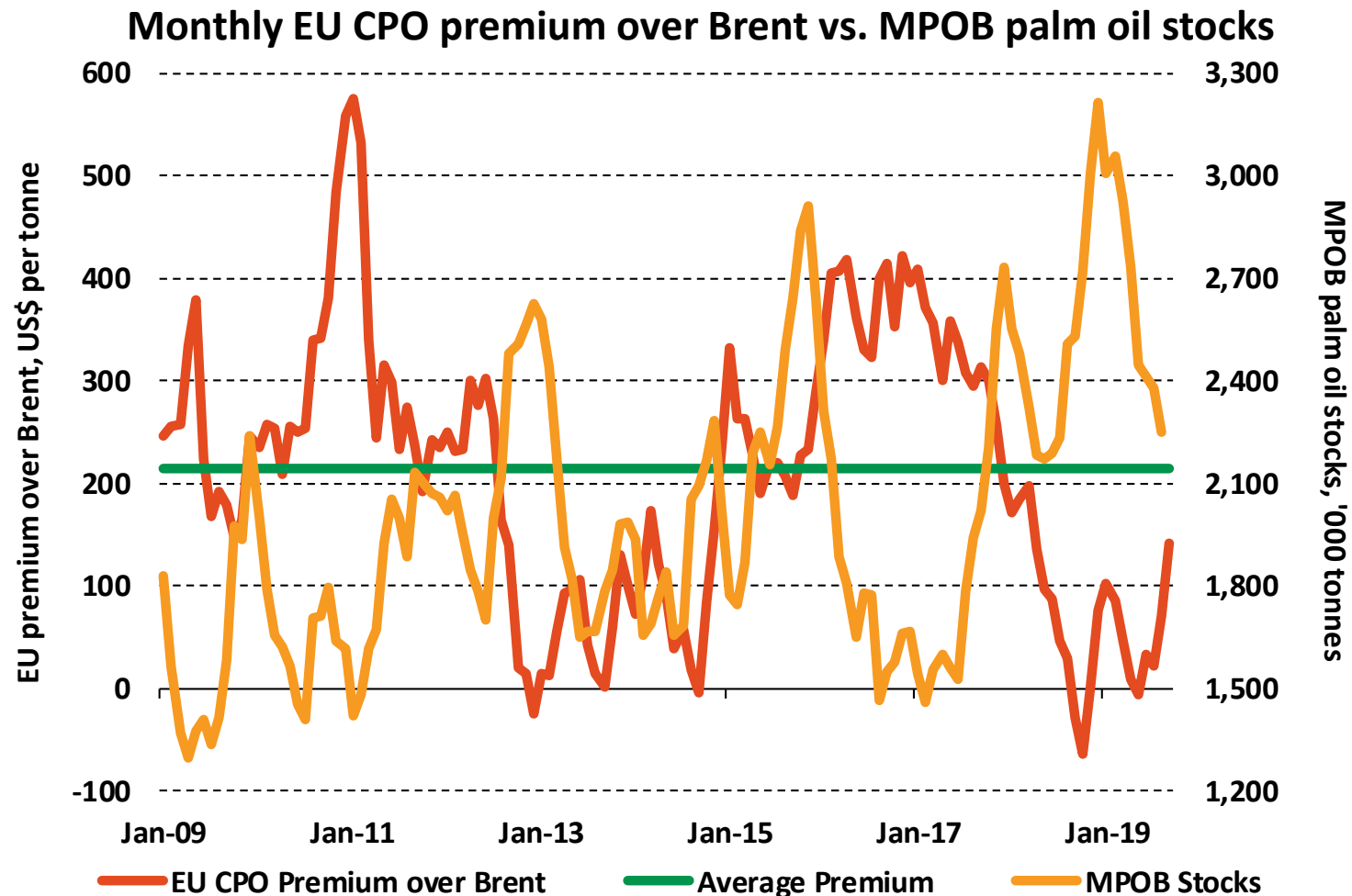
One reason is that Indonesian biodiesel exports react quickly to the competitiveness of local CPO vs. Singapore gasoil, with which biodiesel competes as a fuel. A large CPO discount vs. gasoil helps to boost biodiesel demand, such as for export. This increases demand for CPO to make the biodiesel and reduces world palm oil stocks, which in turn raises CPO prices.

Moving average of biodiesel exports vs. the local CPO premium over gasoil



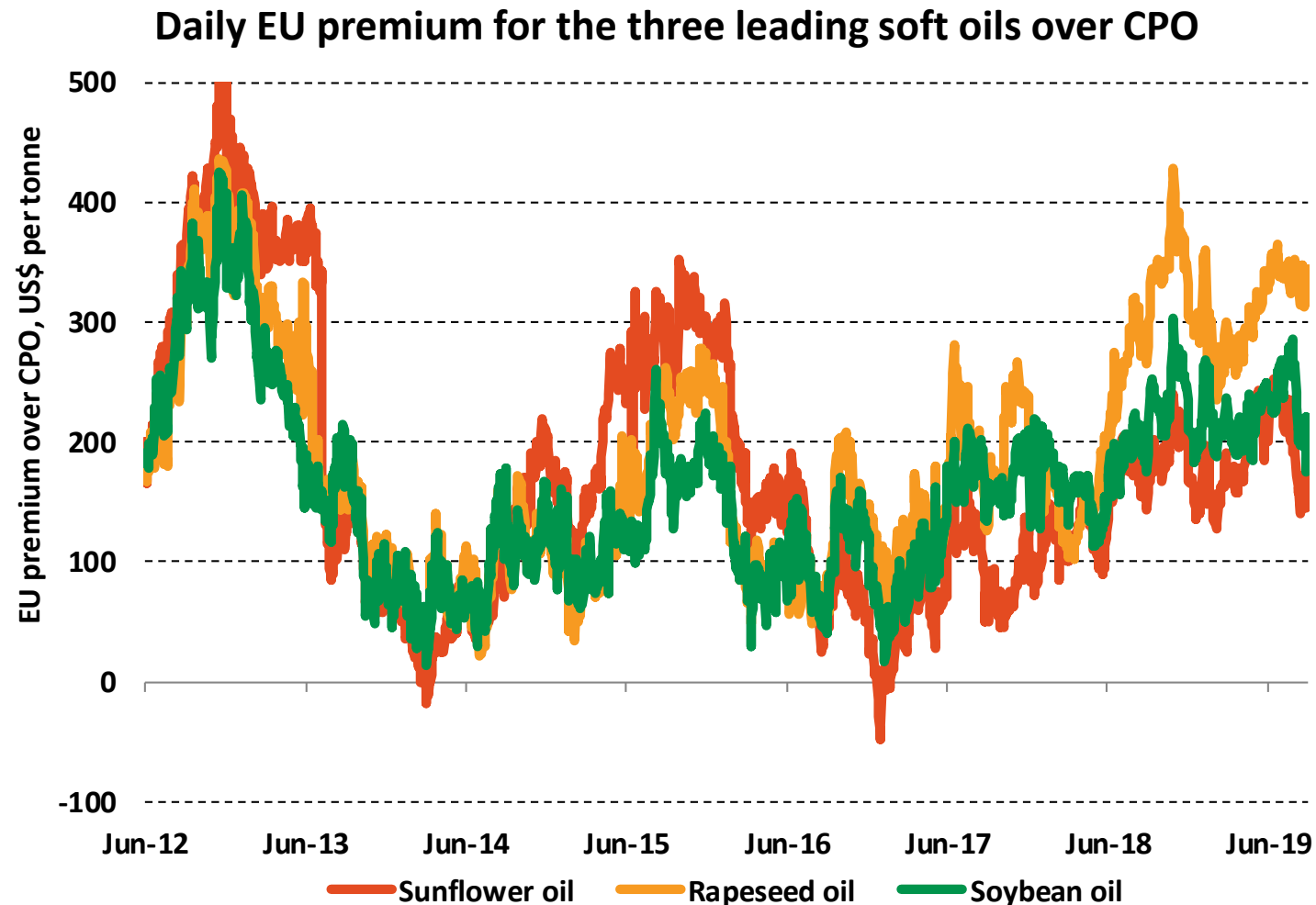
Stocks determine the CPO premium over crude petroleum

This plots the EU CPO premium over crude oil (the CPO price *minus* the Brent price) against Malaysian palm oil stocks, which are the only stocks that are trusted by the market. Higher stocks imply a lower premium; and lower stocks a higher premium. The CPO supply-demand balance (via stocks) sets the premium over Brent, not the actual CPO price.



We must not forget about other oils

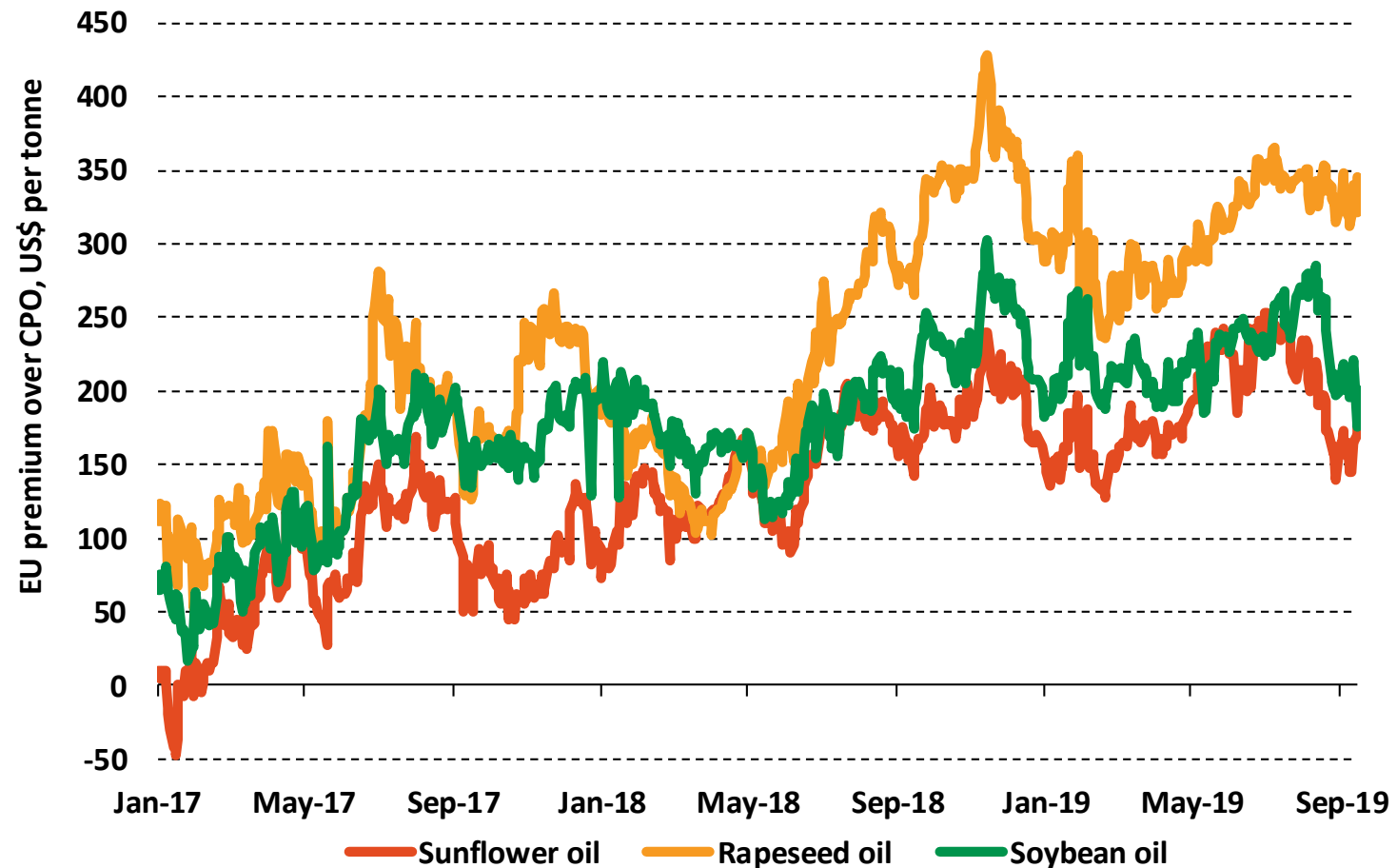
The EU premia for other vegetable oils over CPO have recently increased significantly. Large palm oil supplies have made CPO into a competitive oil in the export market and palm oil is capturing market share from the other oils in price-sensitive importing countries, notably China and India.



This again is the same diagram over a shorter period

This emphasises the point I made in the previous slide about the competitiveness of palm oil today. In the EU, CPO is trading between \$150 and \$200 per tonne below sunflower and soybean oils, and \$350 below rapeseed oil,

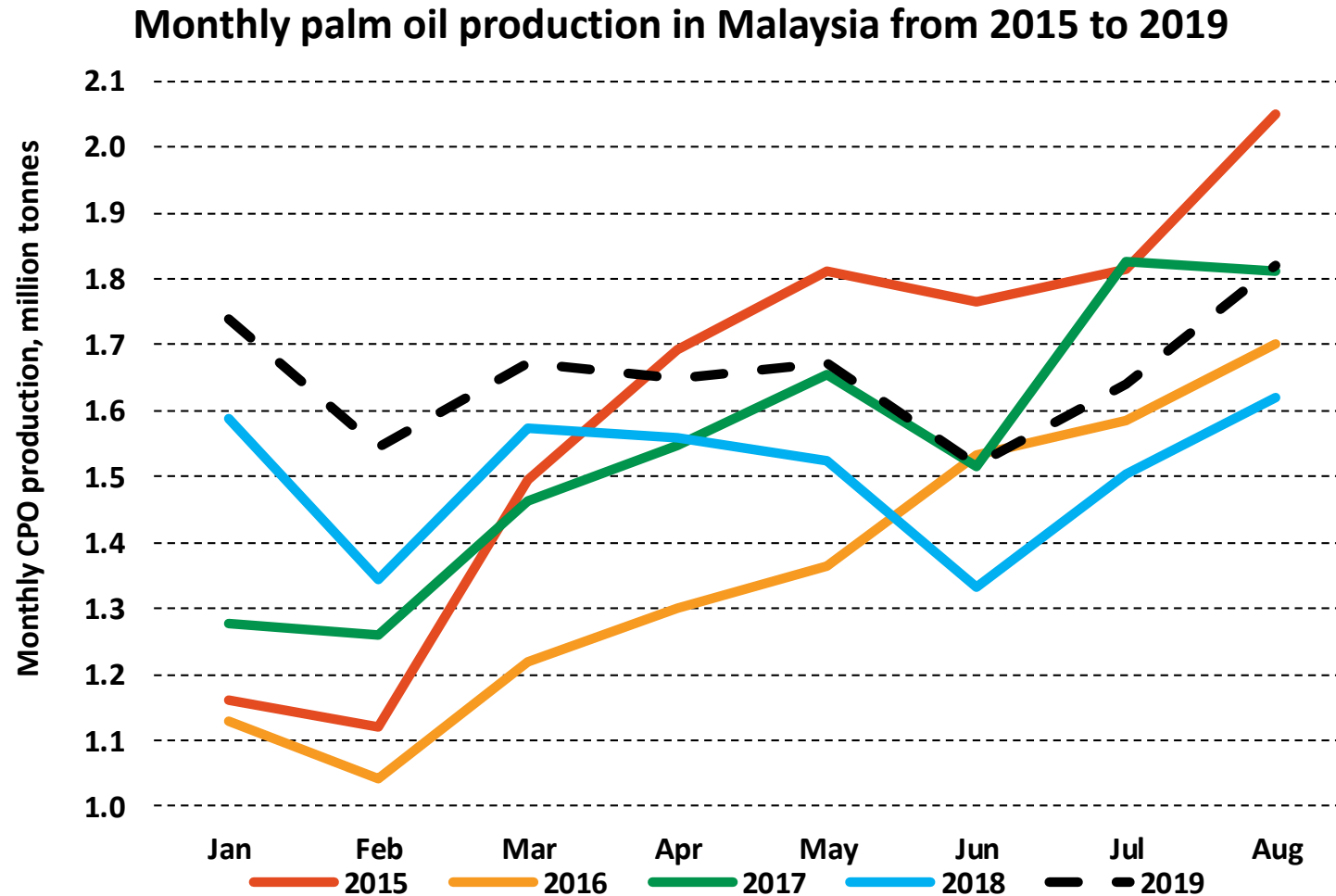
Daily EU premium for the three leading soft oils over CPO since Jan 2017



Recent trends in palm oil output

Malaysian output began 2019 at a record pace

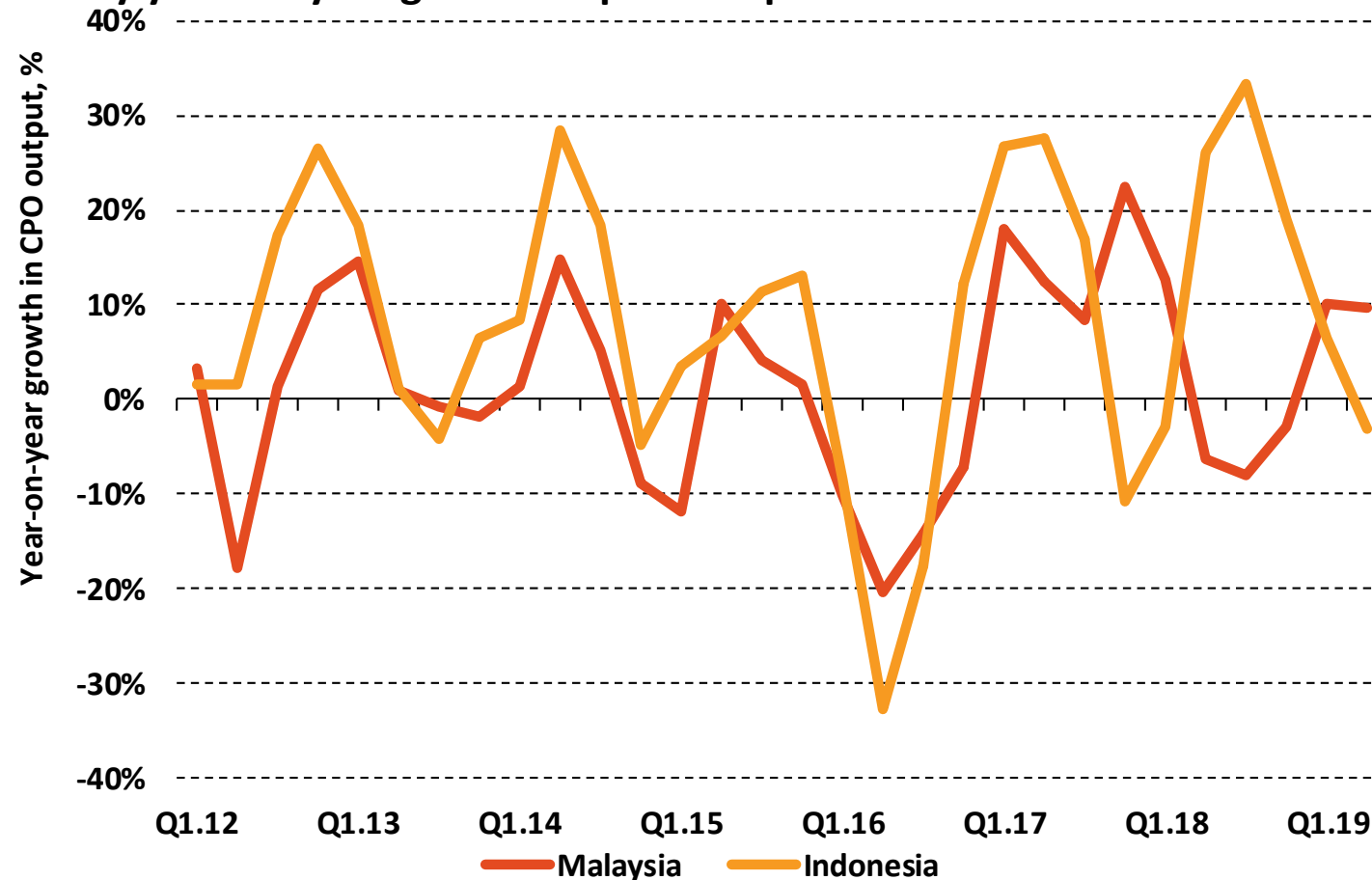
Malaysia publishes excellent monthly statistics. From these, we see that CPO output this year has been consistently ahead of 2018 levels, but has struggled to keep up with 2017 levels and has fallen behind the 2015 performance ever since April.



Indonesian and Malaysian production cycles are out of step

My colleagues work hard to estimate Indonesian production, as its output is well over double the size of Malaysia's. In the past Indonesia and Malaysia moved in step with one another. After the 2015-16 El Niño, their year-on-year changes in quarterly output (i.e., Q2 2019 on Q2 2018) have moved in opposite directions; when one is up, the other is down.

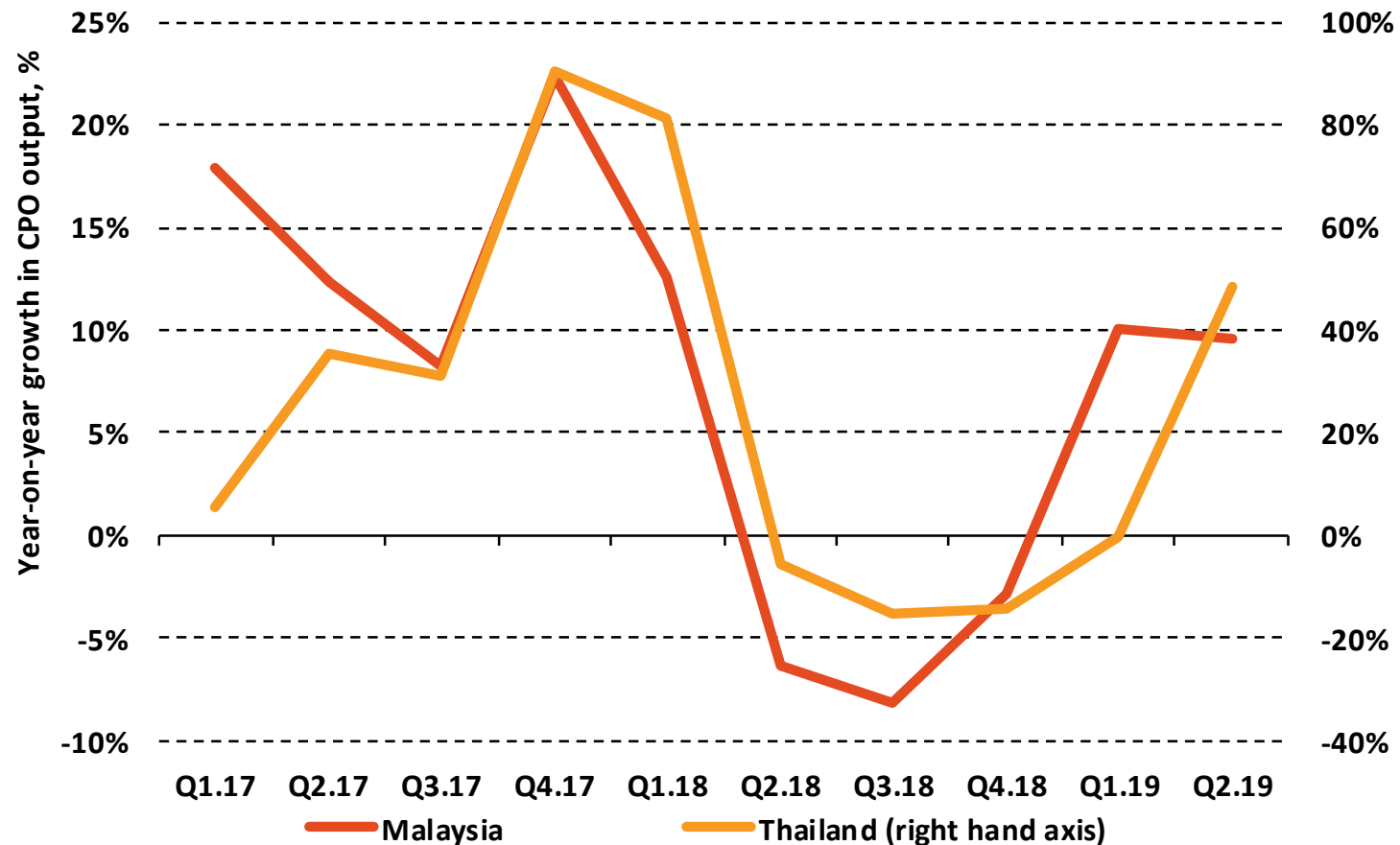
Quarterly year-on-year growth of palm oil production in Indonesia and Malaysia



Thai and Malaysian production cycles have been fairly similar

Thailand's oil palm areas are to the North of Malaysia. It is no surprise that they have a similar pattern in their production cycles; though the swings in Thailand are much greater (note that the scale for Thailand is four times larger).

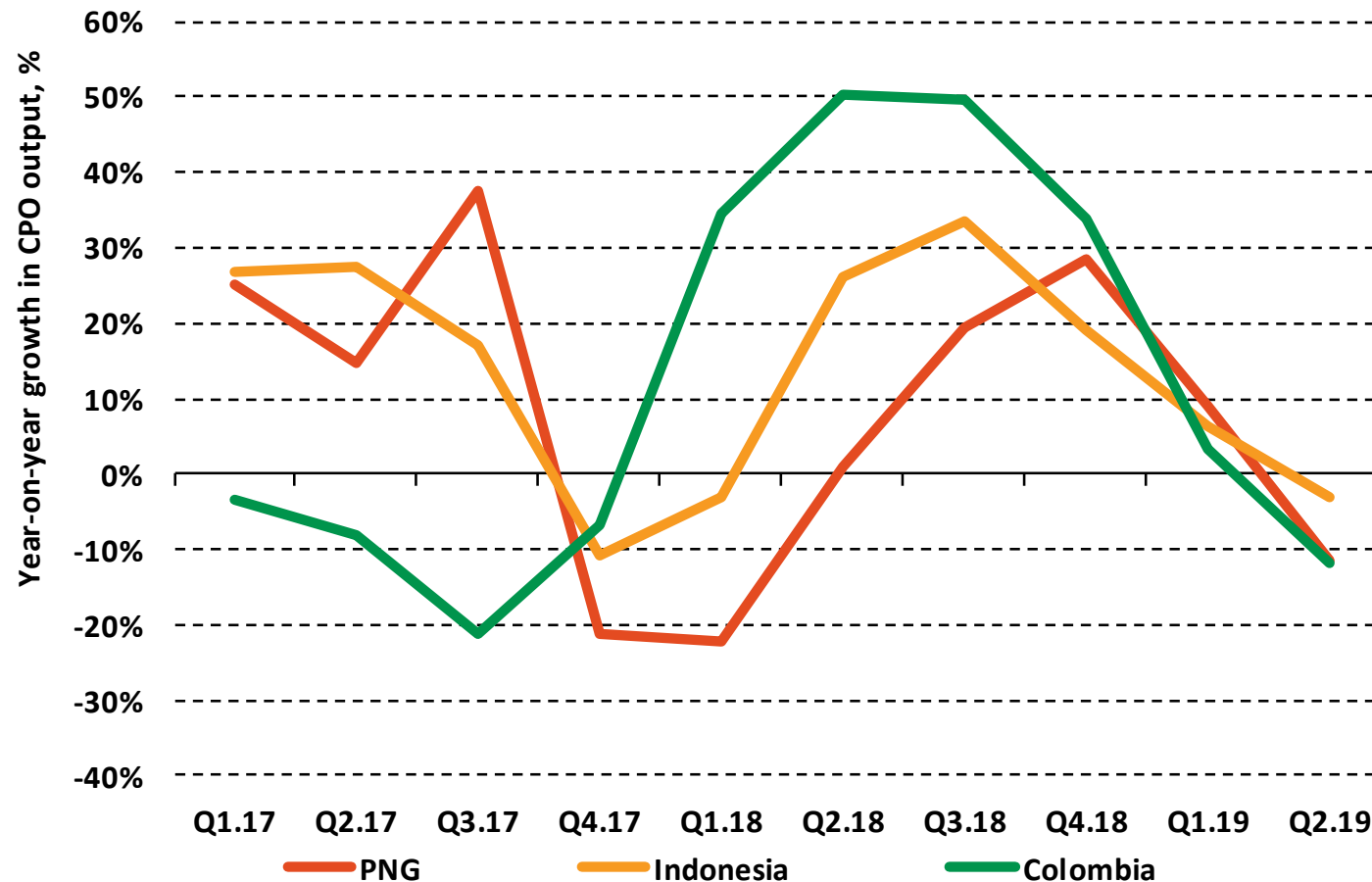
Quarterly year-on-year growth of palm oil production in Malaysia and Thailand



Indonesian, PNG and Colombian cycles are similar right now

Although Indonesia's cycles currently are quite different from those in nearby Malaysia, they follow the same broad pattern as that in Papua New Guinea and recently that in Colombia, far away on the other side of the Pacific Ocean.

Quarterly year-on-year growth of CPO output in Indonesia, PNG and Colombia

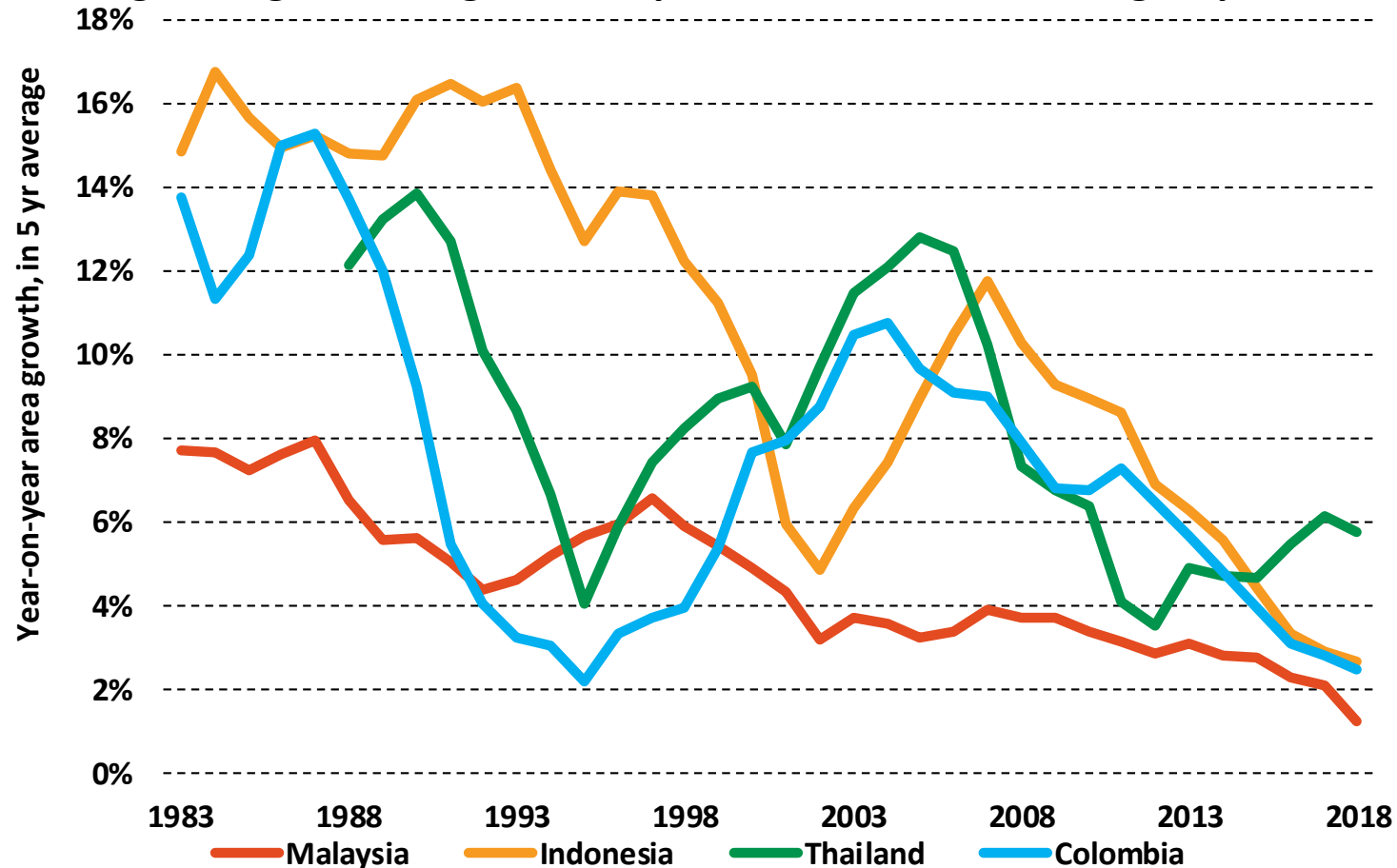


Long run trends in palm oil output

The growth in oil palm areas is clearly slowing dramatically

Only Thailand (where palm is replacing rubber) is seeing an upturn in its area growth rate. Pressure from NGOs has made plantations uneasy about expanding. This means that, in the future, the underlying growth in CPO output will lag behind global growth in vegetable oil demand unless CPO yields increase, a challenge after the past decade without yield growth.

Moving averages of the growth in palm areas in the four largest producers

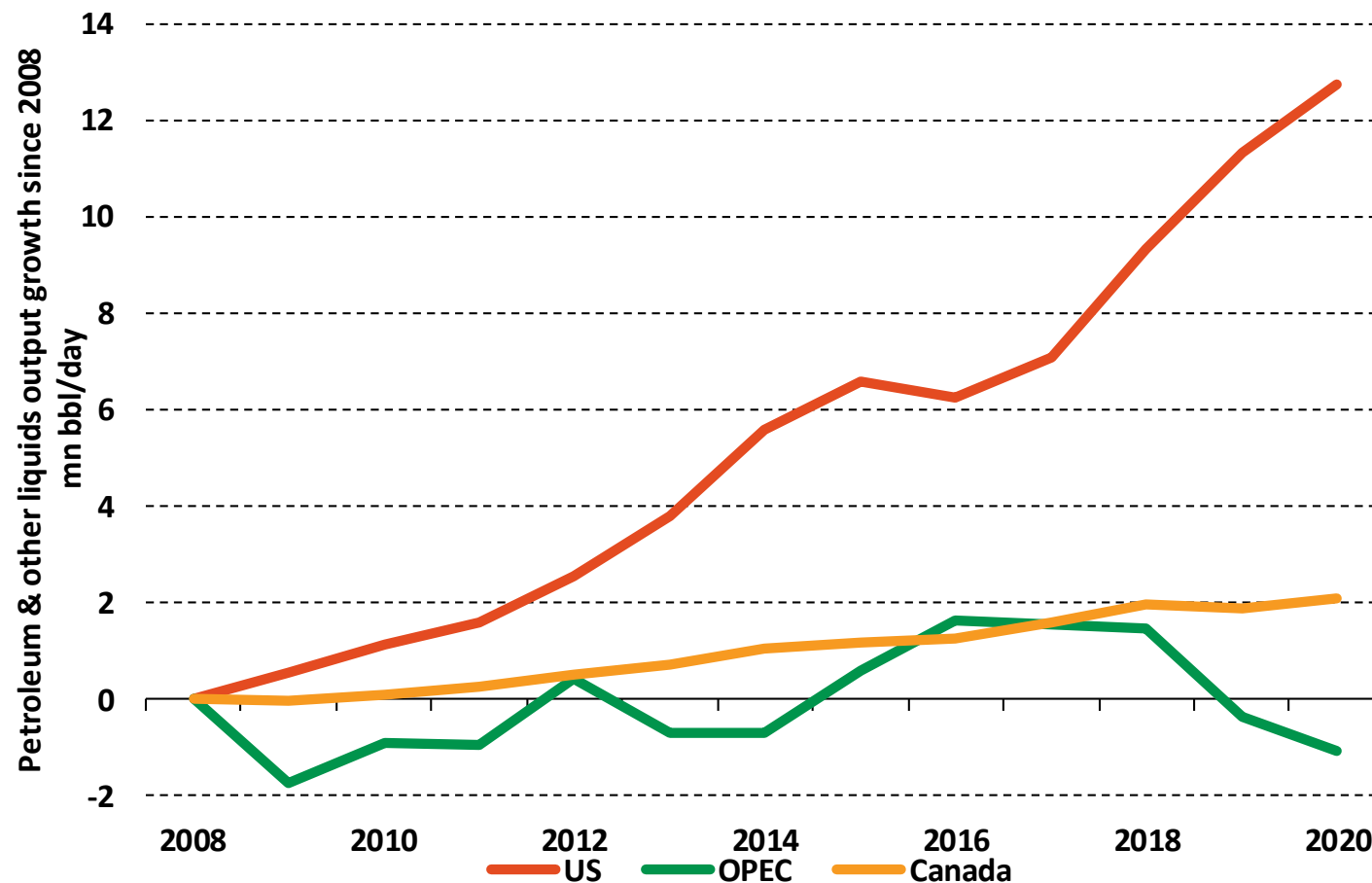


Crude oil, the key factor behind CPO prices

North America, led by the US, now leads oil output growth

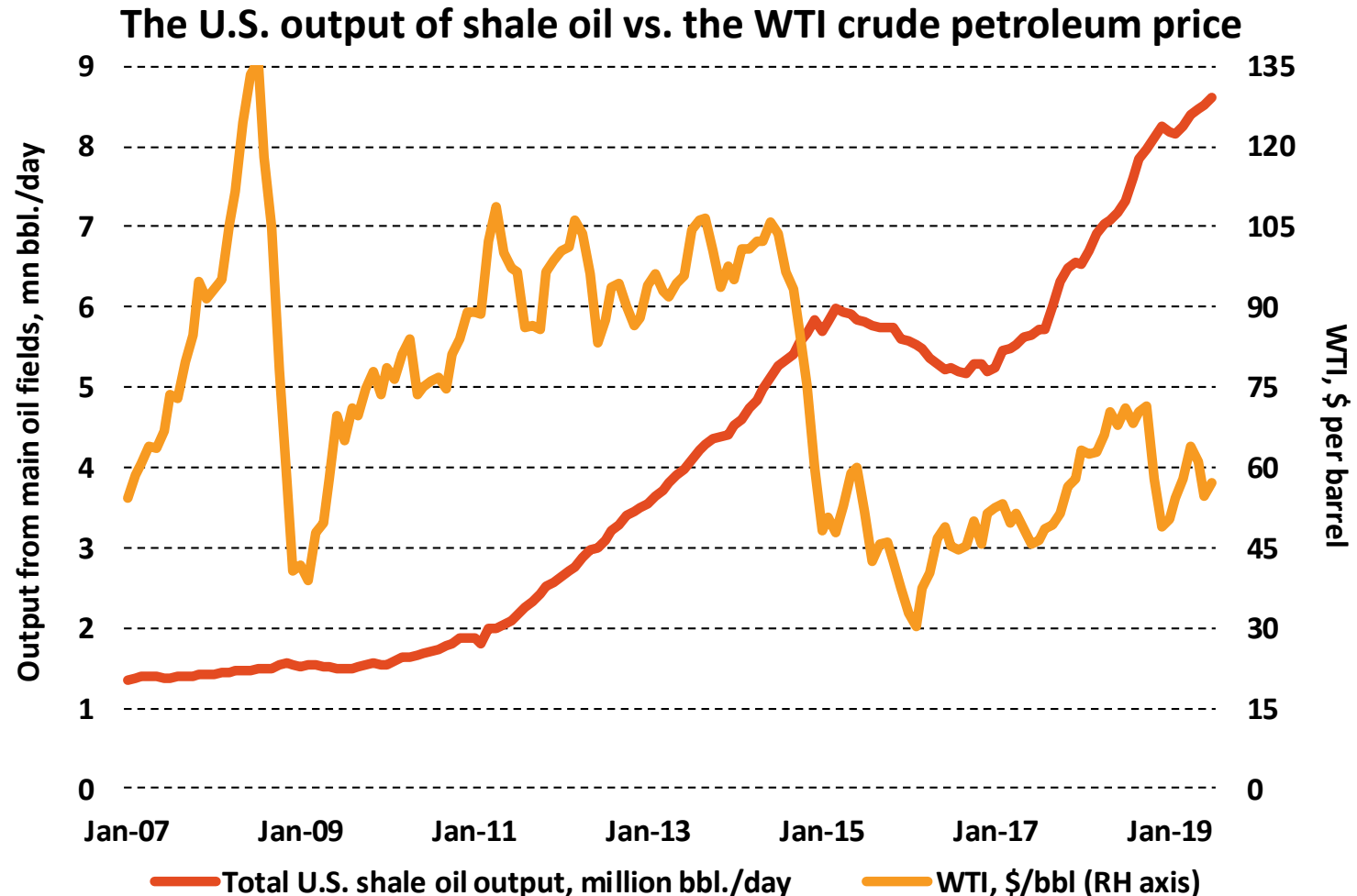
Since 2008, OPEC crude oil output has actually fallen, and the US, with some help from its neighbour Canada, has been the leader in world production growth from petroleum and other liquids (which include condensate from natural gas and biofuels, but not LNG).

Total growth in petroleum and other liquid fuels production in the US, Canada and OPEC since 2008



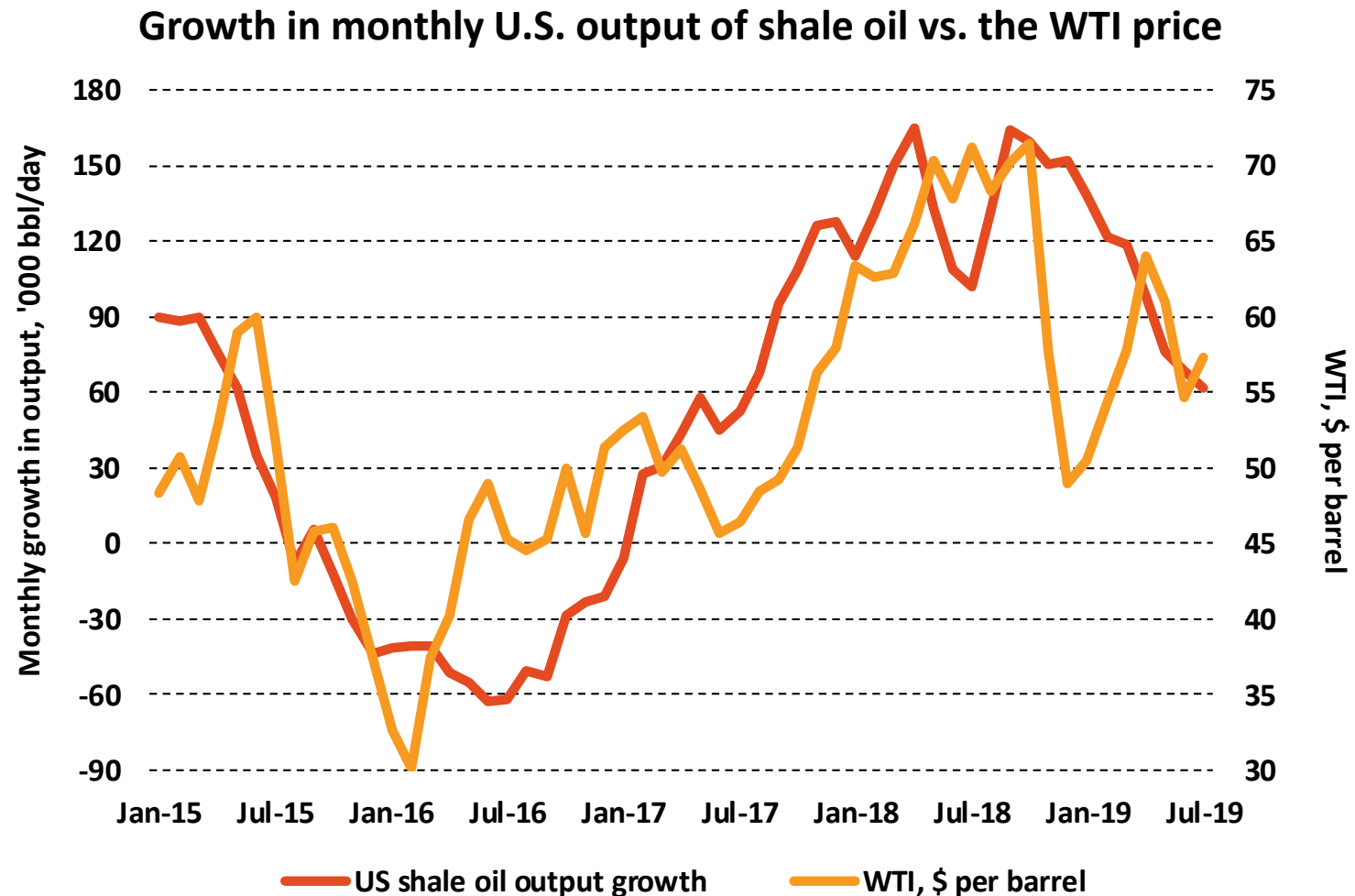
One sector, tiny just 10 years ago, drives the crude market

In 2009, US shale oil output was 1.5 million barrels/day. Today it is over 8.5 million bbl./day, i.e., 7 million bbl./day higher, despite WTI (US crude) prices roughly halving to \$50-\$55/barrel (Brent is \$5-\$10/bbl. higher) since 2014. As a result of the emergence of US shale production, OPEC and Russia have more or less lost control of the world petroleum price.



Tracking the monthly growth in U.S. shale oil production

Shale oil wells have a high peak flow at the start and are almost exhausted 18 months later. Therefore, output reacts quickly to changes in US (WTI) crude prices, and this has transformed world oil price dynamics. At \$70/bbl WTI, shale oil can supply all the world's crude demand growth of 125,000 bbl/month. At \$55, it supplies half the growth.



Conclusions from my presentation

1. You should divide your analysis of vegetable oil prices into two main parts. First, you must study and do your best to understand what drives world crude oil prices. Then you must analyse the behaviour of the premium of the individual vegetable oils, among which palm oil is by far the most important, above the crude oil price.
2. For palm oil, the monthly MPOB stock figure is the main indicator that the market follows as a guide to the global palm oil market balance.
3. For other vegetable oils, you must monitor their supply-demand balances in relation to the size of palm oil stocks. These determine their spreads over CPO, and these spreads persuade customers who are flexible in their choice of vegetable oils to switch between these oils.
(Remember: palm is the only oil crop that is processed immediately after harvesting. Other oil crops can be stored as seeds and are only crushed when there is a demand for their products.)
4. Looking ahead, unless the Middle East explodes, crude oil is now led by US shale. The EU CPO price floor will be where WTI fluctuates between \$55 and \$70/bbl; with Brent \$5/bbl. higher.
5. Later this year, Malaysian palm oil stocks will rise on a seasonal basis, keeping the CPO price in check, but as we get into 2020, its stocks will fall, helped by the large rise in Indonesia's biodiesel mandate, and this will pull CPO further above crude oil prices per tonne.

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