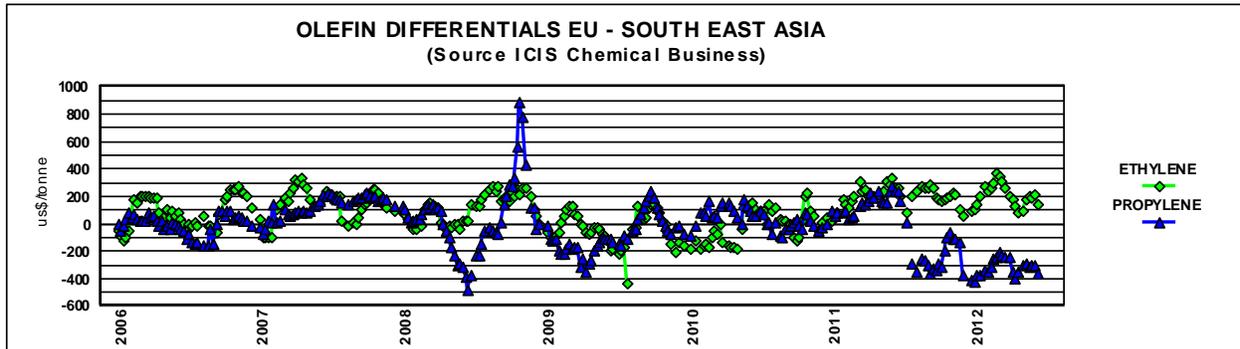


C3: HISTORICAL TREND OF EU – ASIA PRICE DIFFERENTIALS

This commentary concerns the historical trend in the price differentials between the spot market for olefins in the European Union and South East Asia (SEA). The following graph shows the trend from 2006 to mid 2012. For most of the trend curve we can see that the price for olefins in both the EU and SEA are very similar when as expressed in US\$/t.



For the period 2006 to early 2008, ethylene was generally priced higher in the EU than in SEA (positive values on the figure). There is some variation in this premium of EU prices relative to SEA which probably represents EU business cycle being out of phase with the cycle in SEA. At the maximum values, this premium was in excess of \$200/t which is well above the cost for transport of ethylene between the regions. By contrast for propylene from 2006 early 2007 the premium was in favour of SEA (negative values on the figure) until the premium switched to favour the EU.

Mid 2008 to early 2009 saw wild volatility in commodities markets, especially for oil derivative products and it would not be wise to draw too much from this period. However, it is worthwhile to note that propylene was affected more than ethylene with a range in price of the differential from -\$500/t to +\$800/t during 2008.

After the recovery of prices from early 2010 to the beginning of 2011, there was much lower volatility with little differential between the two regions. For the first half of 2011, the differential progressively swung in favour of the EU to about \$200/t.

From mid 2011, the differential for ethylene remained in favour of the EU but there is a dramatic swing in the differential for propylene in favour of SEA; this differential is on average about \$300/t, well above the cost of shipping propylene between the regions. Over this period, the value of ethylene is higher than that for propylene in the EU but the reverse is true for SEA.

There could be several factors contributing to this. The poor economic conditions existing in the EU relative to SEA with propylene demand in SEA continuing to be strong forcing prices higher. Furthermore, the weakness in the EU contributing to a lower value for the Euro relative to the US dollar, this might be influencing the quotation price of propylene in the EU which is in Euros, hence this apparently depressing the value of propylene when expressed in US dollars.

Whether the current price differentials will persist is a moot point. Clearly if this does persist it generates opportunities for swing suppliers in the Middle East and the potential for the conversion of one of the olefins into the other by olefin dismutation technology.