Chapter 3

Executive summary

It is important to understand history before you can attempt, however feebly, to predict the future.

And so in this chapter on the ebb and flow of commodity markets, we will recount why the crude-oil markets came to be in the hands of the speculators thanks to legislative changes that date back to 2000. There are clear links between the amount of open positions held by non-commercial players, such as hedge funds and (increasingly) pension funds, and the peaks in oil prices over the past few years.

More recent history tells us that the recovery in pricing since 2009 is the result of a one-way bet created by the Federal Reserve. Hugely increased liquidity and very low interest rates have made it a no-brainer for financial players to trade paper contracts, and for the physical traders to put crude and refinery products into storage. This will be another major theme of this chapter.

Real demand has not mattered. Instead, what has counted has been the record low cost of carry (interest rates plus the cost of storage) and the markets being in persistent contango (contango is when future prices of crude are higher than prompt prices. Backwardation is the opposite – when prompt prices are higher than in the future).

Stories about real demand growth matter greatly, though, in order to convince the media and therefore the wider world that there is justification for future prices being higher than prompt pricing.

Equally important when supply disruptions dominate the agenda is convincing this wider world that the disruptions are significant enough to again support the market being in contango.

Some market participants know what's really going on, but perhaps not the pension funds which have moved heavily into commodities, and crude in particular, out of bonds and equities. Their returns from this strategy, if it is worth calling it a strategy, have been very poor.

Pension funds and other investors have bought heavily into commodity index funds that trade across a broad range of energy, other commodities and equities.

As we shall see from history again, the increasing importance of correlation trading – the bread and butter of these indexes – has led to illogical links between, for example, crude pricing and the S&P 500.

Macro trends are driving all kinds of commodity and equity markets that move in lock-step together

thanks to correlation trading, which is facilitated by super-fast computers. These computers do not look at the fundamentals of supply and demand – a dying art, perhaps – but instead focus on technical trading based on changes in sentiment.

To a large extent, therefore, the price of oil is what the financial community says it is, with the argument being spun changing on whether those with the most influence within the community have gone long or short.

On the whole, however, since 2003 the financial world has been long on crude – a major reason why oil prices have been mainly on a bull-run since that year.

Warren Buffett, the legendary investor, said: "It's only when the tide goes out that you learn who has been swimming naked."

This occurred in the fourth quarter of 2008. Many of the supposedly smart financial players who had driven crude up to an unsustainable level were left holding long positions when the market collapsed.

This danger will still be there as long as the financial sector keeps control over the price of oil.

In 2008, the catalyst of the collapse was the bankruptcy of Lehman Brothers, with the underlying cause the sub-prime crisis.

Next time round it will, of course, be something else – perhaps geopolitics, which has recently driven the price of oil to another unsustainable level.

Crude was already too expensive for motorists, shoppers etc before Lehman Brothers went under.

This reaffirms that the physical world of oil – what people can ultimately afford to pay for their gasoline or their food – has to matter in the end.

For companies down every product chain from raw materials to finished goods, guessing both the strength of final end-user demand and the price of oil has become much harder. This is largely the result of dysfunctional oil markets that led to the massive inventory losses of late 2008 – when crude suddenly collapsed

Separate sections of this chapter will also look at China.

Justification for the recovery in oil post-2008 was that while OECD demand was falling, growth prospects in emerging markets more than compensated for this decline.

China, due to the scale of its economy and its industrial production-focused growth, was leading the emerging-market charge.

But did China's demand growth justify the rise in oil prices from the second half of 2009 and throughout 2010? We believe not.

We will deal with how structural reforms of China's economy threaten its pace of overall growth – and therefore its pace of oil-consumption growth – in later chapters. This obviously presents a threat to any story that the financial community continues to sell about China driving the oil price.

In this chapter we will talk about another key element of the China story – the extremely speculative nature of its economy.

This makes understanding what is really driving demand exceptionally difficult, whether we are talking about crude oil or the example we cite here – polyethylene (PE). This is a type of plastic used to make food wrapping, food containers and numerous other applications.

China's futures market for PE is driving the physical price for the commodity.

OIL-MARKET LIBERALISATION

The roots of the collapse of crude-oil markets, along with the wider global economy, in late 2008 can be traced back to 15 December 2000. This was when US President Bill Clinton signed the Commodity Futures Modernisation Act (CFMA) into law.

The Act designated certain over-the-counter contracts to be outside the jurisdiction of the Commodity Futures Trading Commission (CFTC), meaning that financial players were able to bypass the speculative limits set by exchanges. This was thanks to successful lobbying by the now-bankrupt Enron.

The CFMA also excludes swap transactions, allowing institutional investors to take larger positions on actual exchanges than would have been the case if they still had to stick to limits on speculative positions.

The groundbreaking legislation also made it more difficult in general for the CFTC to regulate the NYMEX, according to a research paper published by the James A Baker Institute for Public Policy at Rice University. The paper was written by Kenneth B Medlock and Amy Myers Jaffe.

The authors suggest that because the International Commodity Exchange in London is outside the jurisdiction of the CFTC, this has further added to financial-sector influence. This is referred to as the "London Loophole".

Non-commercial traders were able to increase their market presence 15-fold from 1995 to August 2009, the authors add.

As Chart 32 shows, open interest (red line) held by these non-commercials in early 2005 was 20% of activity on all the futures markets. Just before the great 2008 crash it had risen to more than 55%.

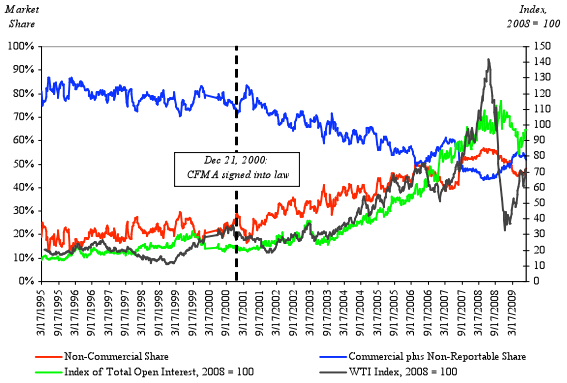
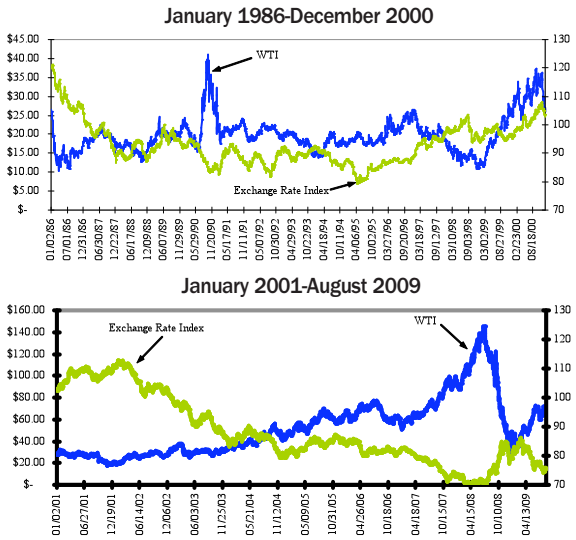


Chart 32: The growth of speculative trading in oil futures markets since 2000

Source: James A Baker Institute

"And more importantly, open interest by the non-commercial players moved from a lagging to a leading indicator of price [black line] by 2006," continues the same study.

Correlation trading is another theme the study covers and one that we will return to later on.



Charts 33 and 34: Changing correlations between the oil price and the US$

Source: James A Baker Institute

As Charts 33 and 34 show, the inverse correlation between the movements in the value of the US dollar (green line) and the price of oil (blue) was a negligible 0.08 in 1986-2000. But in 2001-2009 it had risen to 0.82.

This radical turnaround in the relationship between crude oil pricing and the US dollar is the result of the rise in oil index-linked funds.

The super-fast computers we referred to at the beginning of this chapter, which shift hundreds of millions of dollars in fractions of a second based on "technical analysis", operate these funds.

Not surprisingly, the amount of money invested in such products has risen in line with the increasing link between the greenback and crude. For example, a total of $300bn was invested in July 2008 – just before the great crash – four times more than in 2006, according to the International Energy Agency (IEA).

The economic damage caused by dysfunctional crude markets is a constant theme of this chapter and one that has been very keenly felt by the US as a result of the correlation trade referred to above.

The country's oil import bill accounted for 47% of the overall trade deficit in 2008 compared with just 19% in 2002.

As the dollar declines it creates the potential for a vicious and highly damaging downward spiral.

The weaker greenback means that producers of crude outside the US push for higher oil prices, as their returns have been reduced because oil is priced in dollars per barrel.

Rising crude prices, in parallel with a weak US currency, also make it easier for other importing countries to stomach more expensive oil. The affordability of oil improves as their local currencies strengthen against the dollar.

Producers pushing for higher pricing and unabated demand in some consuming countries tempt the funds to switch from dollars into oil and so on and so on….

A further problem identified by the James A Baker Institute is petro-dollar recycling.

Oil producers cannot fully absorb their earnings in what are often small domestic economies, particularly in the Middle East. This excess money has instead found its way into the oil-index funds, increasing their influence on the overall market.

THE ONE-WAY BET

Global surplus crude production capacity fell from 5.54m barrels a day in 2002 to 1m barrels a day in 2005. This resulted in the oil price doubling to around $50 a barrel, say those who believe that supply and demand fundamentals drive the market.

Surplus capacity, however, then increased in 2006-07 as prices rose towards historic highs, damaging their case.

Another claim was made during this period to justify the surging cost of crude. There was a lack of refinery capacity able to handle heavy grades of oil – those containing high amounts of sulphur.

This added to the premium for lighter crudes that the refineries could handle. This, in effect, reduced total supply because heavier grades could not be processed by many of the refineries.

Oil prices then tumbled in 2009 as surplus crude capacity increased from 1.49m barrels a day to 4.33m barrels a day. All well and good you might argue – a sign that the oil market was once again functioning correctly.

But 2010 saw surplus capacity increasing even further to more than 5m barrels a day and yet prices rose – because something else was happening.

That year also saw the start-up of a record amount of "full-conversion" refinery capacity able to handle heavy grades of crude, adding to the length in overall market.

There now follows an explanation about why the market behaved in this way.

"The easiest way to check the underlying health of the oil market since early 2009 has been to go to the east coast of Singapore and enjoy a seafood meal," says a senior executive with a global petroleum and chemicals logistics provider.

He is referring to the number of very-large crude carriers (VLCCs) moored outside the Singapore harbour. The higher the number of vessels in-view from the open-air seafood restaurants, the wider the contango.

When onshore storage for crude has become full, the VLCCs have been the only remaining option.

Putting crude and refinery products, such as gasoline and diesel, into storage became a no-brainer for physical traders from late 2008/early 2009 onwards. (Note that the financial, or non-commercial, players trade only in paper contracts as they never want to take physical delivery.)

This was the result of the "one-way bet" – confidence that there would be no change in US Federal Reserve policy for a length of time relevant to the markets.

Since late 2008 the "Fed" has been printing money in an attempt to achieve a lasting recovery in the US economy. The purpose had been to avoid deflation, and even to inflate high levels of debt away, while the extra money in circulation stimulated overall economic activity.

In August 2010 the Fed clearly signalled it was planning QE2 – a second round of quantitative easing.

A wide range of commodity prices, including crude, rallied as a result because of even greater confidence in the Fed maintaining both high levels of liquidity and record-low interest rates.

This was followed by the formal launch of QE2.

Record low interest rates had already made it very cheap for participants in the oil market to borrow money to either put physical crude and crude products in storage, or trade in paper contracts.

Ironically, the fall in real demand for oil, gasoline etc had reduced the cost of putting all of these commodities into storage.

Ship owners took delivery of brand-new VLCCs just as the 2008 crisis occurred.

The owners were unable to occupy these vessels by supplying real demand as demand had collapsed. The only option was to therefore rent out storage space to the speculators at very low rates.

The result was historically low total costs of carry – interest rates plus storage charges.

MORE OF WHAT MAKES YOU SICK

Like the morning-after cure for an alcoholic – a glass of whiskey containing a couple of raw eggs – the Fed had been piling-on more debt in 2008-early 2011 in an attempt to solve a debt crisis.

It was a different kind of debt, this time government rather than private. But everyone was aware that at some point the US would have to cut deep into expenditure to deal with the budget deficit.

But as long as such corrective action remained out of sight, the one-way bet on commodities continued.

As Chart 35 shows, US unemployment was at 9.4% in early 2011 and the authors of this book are prepared to lay a large bet that it remains at a very high level. The wider U-6 measure, including discouraged workers, was at 17%.

Chart 35: US unemployment rate 2001 – 11

Source: US Bureau of Labor Statistics

Quantitative easing had addressed none of the structural problems with the US economy that we highlight elsewhere in this book.

Inflation rather than deflation, largely because of rising oil prices and commodities in general, had become an issue in the US and globally.

One in seven Americans – 43m of the population – was forced to fall back on the government's Food Stamps programme in early 2011.

Mortgage interest rates had also started to creep up as a result of inflation. This was putting pressure on one of the sectors that the quantitative easing was supposed to help – the US housing markets.

As Chart 36 shows, corporate profits, however, rebounded enormously in 2010. This was to a considerable degree the result of strong emerging-market sales, cost cutting and inventory rebuilding.

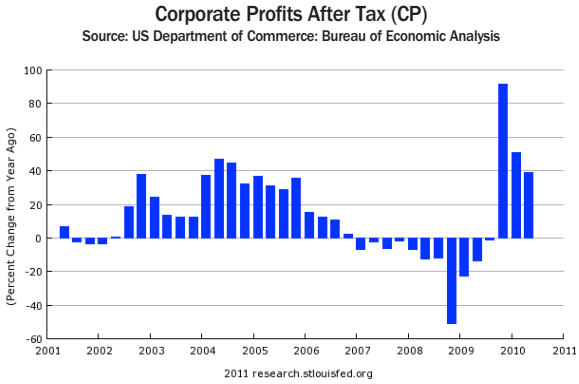


Chart 36: US corporate profits 2001 - 11

Source of Chart: Federal Reserve Bank of St Louis

Huge raw-material inventory losses were incurred by US companies in late 2008 due to the collapse of crude. This led to stocks being depleted down all production chains from basic raw materials to consumer goods.

The re-stocking process that followed was inevitable once it became clear that the world's financial system was not going to collapse. Life returned to what seemed like normality, but this was the New Normal.

WHAT USE IS REAL KNOWLEDGE?

Weighing the relative importance for each company of emerging market versus domestic sales, cost cutting and inventory replenishments are important tasks for "stock pickers" in equity markets. Parsing the data enables them to detect whether a company's shares have been over- or under-valued.

The broader growth of index-linked funds, including the oil-linked funds we referred to earlier, has diminished the role of these stock pickers. As in the oil markets, informed analysis of the fundamentals has become less important.

This broader growth has involved exchange-trade funds that move between all commodities, bonds, currencies and equities.

Chart 37 highlights that equities in the S&P 500 Index increasingly move in one particular direction on changes in the macro-economic outlook. The close links between movements in the crude price and the S&P 500 have also been the result of the growth in these exchange-traded funds.

As we have already described, these funds are run by super-fast computers that move money around based on short-term changes in overall sentiment.

Chart 37 shows the close link between the S&P 500 (blue line) and the price of two key global benchmarks for crude – West Texas Intermediate (green) and Brent (red). Both are traded on the major NYMEX futures exchange, the most liquid of all the crude futures markets.

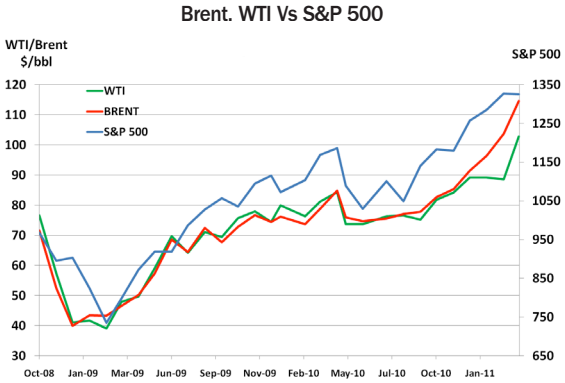


Chart 37: Correlation between the US S&P 500 and crude oil

Source of Chart: International eChem

This close correlation between the S&P 500 and WTI/Brent is another example of how commodity and equity markets have increasingly moved up and down together, in lock step, as money has swept in and out of exchange-traded funds.

When investors are "risk on", money tends to pour into equities and other investments seen as risky, such as emerging markets and commodities.

"Risk off" is when cash starts pouring out of such asset classes and into the safe havens of the US dollar (hence the correlation trade we discussed earlier on between the greenback and oil), US Treasuries and the Japanese Yen.

One can start developing conspiracy theories here to the point of paranoia about the ability of the financial world to influence sentiment, as well as react to changes in mood that have already taken place.

From the second half of 2009 and throughout 2010, anybody picking up the financial press would have seen a constant shift in the tone of the newspapers, quite often from one day to the next.

On Monday you could easily be convinced that we were heading for a double-dip recession. But by Tuesday you could have ended up in a state of delirious euphoria over a new era of sustained strong global growth. This might have merely reflected that we were living in very uncertain times. Or was it also because the banks and hedge funds etc were setting the news agenda in order to make money from short- term, micro movements in sentiment?

Arguments have been constructed to justify illogical trends in markets, which has been the case with

the correlation between the S&P 500 and oil markets.

Stronger oil prices indicated China was booming and so the S&P 500 was right to rally because US companies made a lot of their money from China, was one such argument.

The difficulty with this claim is that many of the companies that make up the S&P 500 still generate a large percentage of their sales from the US. Higher oil prices also mean higher input costs for everyone.

OIL MARKETS AND DEMAND DESTRUCTION

By as early as 2007 crude had become unaffordable for US consumers, resulting in, for example, a decline in the number of miles being driven, as shown in Chart 38.

Emerging-market consumers felt the pain a great deal less, but their governments were suffering because of heavy fuel-subsidy programmes in countries such as China and India and throughout the Mid-

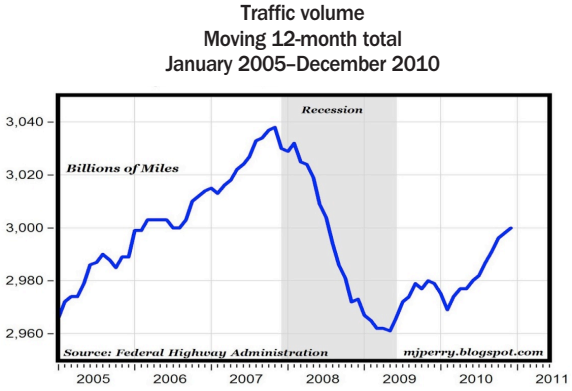


Chart 38: US vehicle miles driven, 2005-10

Source of Chart: Professor Mark J Perry's Blog for Economics and Finance

dle East. Emerging and developing countries spent a total of $250bn on subsidising fuel costs in 2010, according to the International Monetary Fund.

Returning to the US, most oil industry consultants believe that gasoline demand peaked in 2007, and then began a long-term decline.

One reason was that the Federal Government introduced an aggressive programme to increase the amount of ethanol that was blended into gasoline, thereby reducing demand for hydrocarbon-based fuels. Another reason is the near-40% increase in fuel-efficiency levels mandated to come into force by 2016 for new vehicles, which will take US autos close to efficiency levels in the rest of the developed world.

A further reason is the demographic-driven decline in overall economic growth – the beginning of the end of the baby boomer economic bonanza – that we described in Chapter 1.

Gasoline became even more unaffordable for US motorists as we entered 2008 due to the collapse in the US housing market. We were already into the sub-prime mortgage crisis, but oil prices carried on rising.

Robert McNally from the Rapidan Group, a consultancy, believes that American consumer confidence started falling once gasoline went above $3 a gallon.

Bullish oil-price forecasts made by banks in early 2008 – one in particular claiming that crude would reach $200 a barrel by the end of the year when it in fact fell to $35 a barrel – may well have been motivated by the long positions some of these banks had taken.

We believe that more demand destruction will continue to occur (and is likely to have occurred in 2010-2011 during the post-financial crisis recovery in the oil price) as long as the crude markets remain dysfunctional. Chart 39 illustrates the cost to the Western economies as a result of higher oil prices.

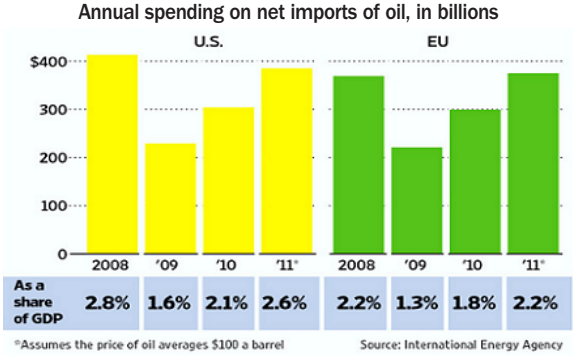


Chart 39: US and EU import costs for crude oil, 2008-11

UNDERSTANDING CHINA

The heading above smacks of extreme arrogance if you take it too literally. Do not assume that what follows will help you get a firm grip over the country's real oil demand – and therefore the direction of its overall economy.

We do not understand China. It is too vast a country with too many contradictions and complications to be adequately understood by anybody, resulting in constant surprises for oil and oil-product markets.

A case in point occurred in the second half of 2010 when the central government, scrambling to hit emissions reduction targets under its 11th Five-Year Plan, ordered the closure of many coal-fired power stations in the eastern and southern provinces.

This led to an unexpected surge in demand for gasoil needed to power small-scale generators – ironically, making local air quality worse even if overall emissions were reduced.

The surge in demand for gasoil resulted in a 17.7% year-on-year rise in apparent oil demand in December 2010, according to the IEA, as shown in Chart 40.

Rising gasoil demand accounted for a third of total fuels demand in China a month earlier.

Total demand surpassed the 10m barrels a day level for the first time to reach 10.2m barrels a day, the agency added. Gasoil demand was clearly, therefore, at risk of a sharp correction in early 2011 as China achieved its targets and turned its coal-fired power stations on again.

China invested heavily in new refinery capacity in 2009-2010 to supply booming domestic gasoline and diesel demand just as fuel affordability became an issue for many motorists due to subsidies being unwound.

This led to China becoming a substantial exporter of gasoline, indicating that a significant amount of crude was being imported to be re-exported as gasoline.

But such nuances were not reflected in markets that, as we have said, remained in constant contango in the second half of 2009 and throughout 2010.

All boats were sailing in the same direction as the oversimplified story kept being repeated – that China's oil demand was moving in a constant and uninterrupted upward direction. By itself, China was seen as more than compensating for negative or weak growth in the OECD countries.

The other problem in "understanding China" is the reliability of data which causes problems even for the experts at the IEA. This meant that oil demand could have been underestimated with the gasoil factor a big reason, according to the IEA's February 2011 Oil Market Report.

Quoting in full from the IEA report:

"China's oil demand outlook has become increasingly crucial for global oil balances. Predicting Chinese trends, however, is far from being an exact science, mostly because of huge uncertainties with respect to official data.

"With GDP growth in 4Q10 put at 9.8% year on year (from 9.6% in 3Q10), bringing full-year expansion to 10.3% (from 9.2% in 2009), the implied oil demand income elasticity stood at roughly 1.2 – about 30–50% higher than most analysts had expected (typically 0.6 to 0.8 for an energy-intensive economy such as China's).

"This vast discrepancy may have been due to the gasoil surge, waste or a combination of both – or the result of much stronger-than-reported economic activity. Indeed, official GDP figures appear too low when compared to other indicators, such as industrial production, which rose by over 15% on average. The question on the reliability of GDP data is recurrent; if actual economic growth in 2010 was higher than suggested by official statistics, the income elasticity would indeed be closer or within the range of most observers' expectations.

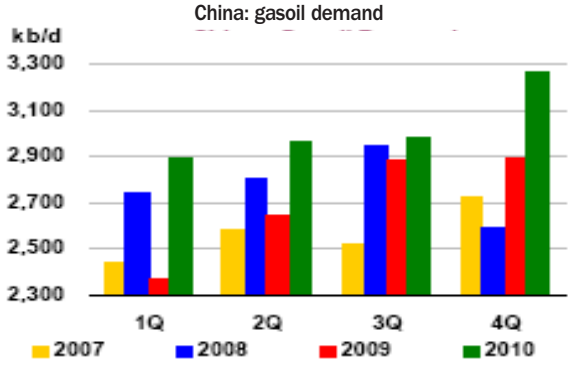


Chart 40: China gasoil demand 2007-10

That, of course, presupposes that oil data are themselves completely accurate, a challenging assertion for many countries." One could imagine a situation in the future where GDP growth is over-reported rather than under-reported for social stability reasons, creating the potential for more complications in the China oil story.

The possibility of a substantial slowdown in China is something we examine in later chapters.

THE CHINA PRICE

To date this chapter has focused entirely on Western oil and other commodity markets and what we believe has been their harmful influence on the global economy.

Here, in this final section of Chapter 3, we are going to cite one example of a commodity market within China and how it has influenced the global price of a type of plastic – polyethylene. Polyethylene is used to make all manner of consumer goods from gasoline tanks in cars to kitchen utensils and food-wrapping.

China's rapidly growing economy has meant that the "China price" – what it is prepared to pay for oil, iron ore, copper, aluminium and many other commodities – heavily influences global prices. The same applies to polyethylene as the country remains in substantial deficit for this type of plastic, leading to fierce competition for import volumes.

In 2007 a futures contract was launched by the Dalian Commodity Exchange in one particular grade of polyethylene – linear low-density polyethylene (LLDPE). At first, liquidity on the exchange was low, but then China's enormous economic stimulus package was launched in late 2008. The package included a sharp rise in bank lending.

Chart 41 shows how the surge in bank lending, which began in later 2008/early 2009, corresponded with a sharp increase in trading on the exchange.

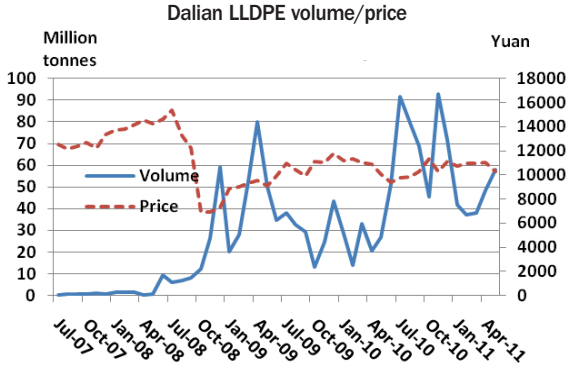


Chart 41: LLDPE Volumes and Pricing, Dalian Futures Exchange, 2009-11

Source of Chart: International eChem

Note: You will notice prices quoted are yuan per tonne as the futures contract is in domestic LLDPE. When the domestic price is sufficiently higher than import prices to cover a profit margin once import duties, local taxes, distribution costs etc are taken into account, imports take place (and, of course vice versa). As a result, local prices are keenly observed.

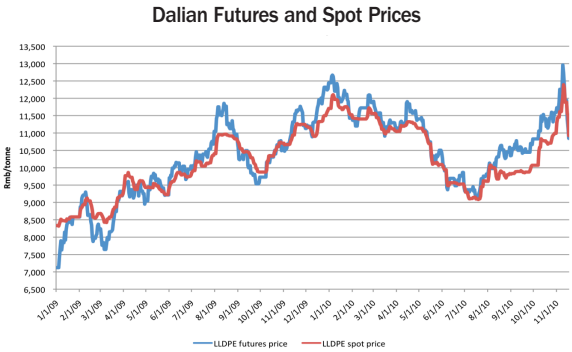


Chart 42: LLDPE Pricing, Physical market and Dalian Futures Exchange, 2009-11

Source of Chart: ICIS Chemease

The big concern among polyethylene producers is that this market seems to have added to price volatility. They also feel that they have lost influence on pricing to the physical traders and the financial players who dominate trading on the exchange.

What seems very evident, as shown on Chart 42, is that the greater volume associated with the futures price on Dalian is now setting the physical domestic price.

We make the distinction between a futures price and a "physical" price here because on the Dalian exchange, the vast amount of business transacted never involves actual delivery of polyethylene when a contract matures. Instead only paper contracts are exchanged.

Physical prices involve the actual sale of plastics, in the form of tiny pellets, by producers, traders and distributors to manufacturers who melt the pellets in order to shape them into finished goods.

As is the case with the Western oil markets, where again the bulk of business is in paper contracts, overseas producers are concerned about the role of the speculators.

The Dalian is a microcosm of what we described earlier when talking about the NYMEX etc. Analysis of the fundamentals of supply and demand for polyethylene has come to matter less than movements in overall sentiment.

And ironically, to bring us neatly back to where we began, there has been a close relationship between the movement in Dalian prices and crude oil until very recently, as shown in Chart 43!

Crude prices ultimately set the floor for the cost of making polyethylene as its basic raw material is oil.

However, as oil prices fluctuate by the minute, such short-term movements should not be setting the price of polyethylene. What should matter is the cost of oil over a period sufficiently long to influence the actual production costs of making polyethylene.

There is a further reason to be concerned about the role of the Dalian and perhaps numerous other commodity futures markets in China.

The physical traders in polyethylene – those who do actually take physical delivery of the plastic pellets and sell them on – are, as we have said, very active on the Dalian.

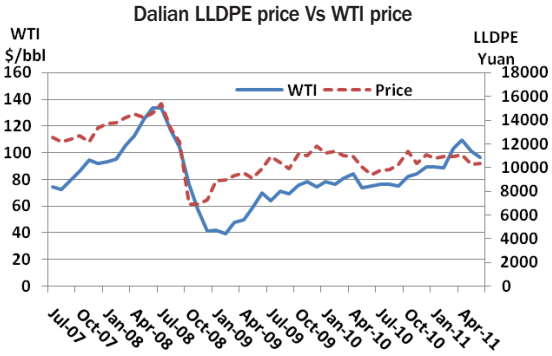


Chart 43: LLDPE Pricing and WTI Crude Oil Price 2007-11

Source of Chart: International eChem

Some of the traders say they made a great deal of money out of the Dalian in 2009-2010 by correctly guessing the direction of the futures contract.

This made the traders more willing to offload real cargoes at a loss, below what they actually paid, confusing producers. The producers were unaware of the successful positions the traders had taken on the Dalian because, as with other exchanges, business is anonymous to all but the Dalian's regulators.

Market muddle from these below-cost sales was not the only problem. Cheap polyethylene acted as a further export subsidy to the manufacturers (polyethylene is often imported to be made into finished goods and then re-exported), thereby hurting overseas competitors.

We will look at all the formal, government-directed export subsidies and their distorting effect on the global economy in the next chapter.

The right type of regulation is needed to govern the growth of these exchanges and how they operate.

Better regulations might also help decouple the global oil price from the financial sector.

In China, though, the effective enforcement of legislation is as much a problem as unreliable data.

Volumes traded on China's futures markets will ebb and flow based on the availability and cost of lending, as is the case with markets overseas.

Once markets become established during periods of easy lending, however, they may retain their influence.

CONCLUSION

It is always best not to believe in everything you read, especially if there is a financial motive behind what has been written or said (this book, at least in its online form, is free!).

One of the main objectives of this chapter was not, therefore, to prove we are right – but rather to raise some scepticism.

The other point was to further explain the roots of the global financial crisis. Now we have finished describing where we have been, we will move on to where we believe we are heading.

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