

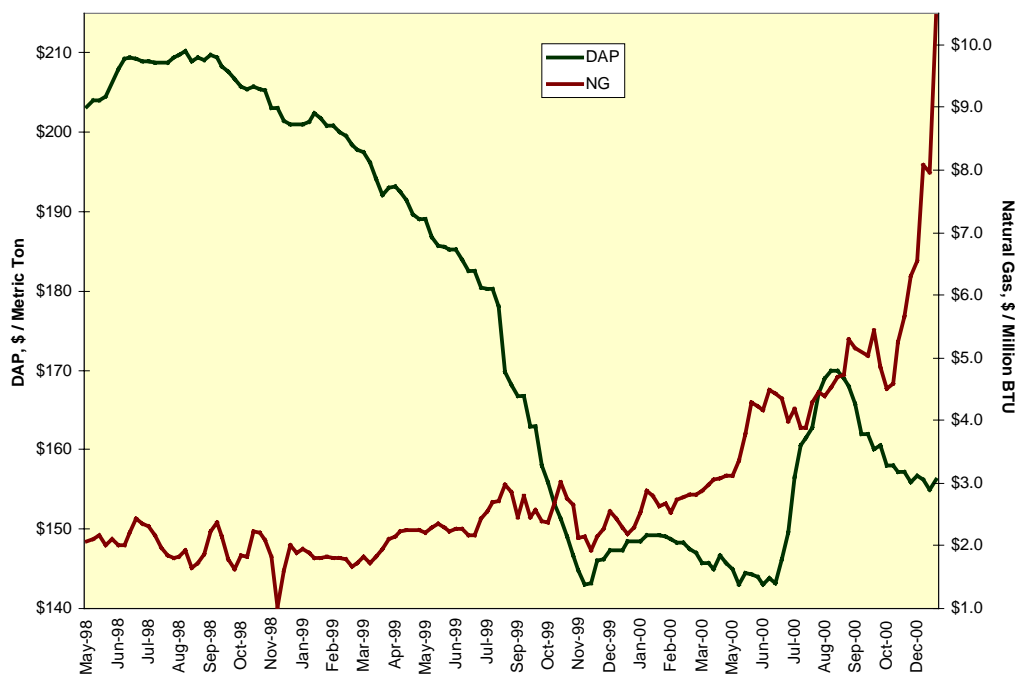
A Whiff of Ammonia

Few developments have affected modern life as much, for better and worse, than the Haber process for making ammonia. The better part comes from the subsequent use of ammonia to make ammonium nitrate, urea, and diammonium phosphate (DAP), three key components of fertilizers. The Chicago Board of Trade had futures contracts for both anhydrous ammonia and DAP, but both of these contracts failed to attract sufficient interest and were delisted in 1997. We cannot overstate the importance of fertilizers in improving the human diet and driving down the prices of agricultural commodities: It is estimated that more than one-third of all the protein material in the world today derives from synthetic nitrogen fertilizers. The worse part, into which we will delve no further, is the transformation of ammonia into nitrate explosives; this was Haber's motivation in 1916, and it allowed Germany to continue World War I for two more bloody years.

Chemically, ammonia is NH_3 , three atoms of hydrogen for every one of nitrogen. The methane in natural gas, CH_4 , four atoms of hydrogen for every one of carbon, long has been the source of hydrogen for ammonia manufacture. Has the soaring price of natural gas in the North American market – the trivial trade in cargoes of liquefied natural gas makes the North American pipeline market a virtual island – squeezed margins of U.S. fertilizer manufacturers and provided exporters of ammonia into the U.S. with a huge competitive advantage?

The chart below traces cash DAP prices at Tampa and cash natural gas prices at Henry Hub in Louisiana and does indicate that a horrific margin squeeze is underway. Given the ongoing bear markets in U.S. grain prices since 1996, fertilizer manufacturers have little leeway to pass on their higher feedstock costs. In this environment it might make economic sense for a fertilizer manufacturer to release claims against U.S. natural gas and import ammonia as an intermediate feedstock.

Natural Gas And DAP: A Disappearing Margin



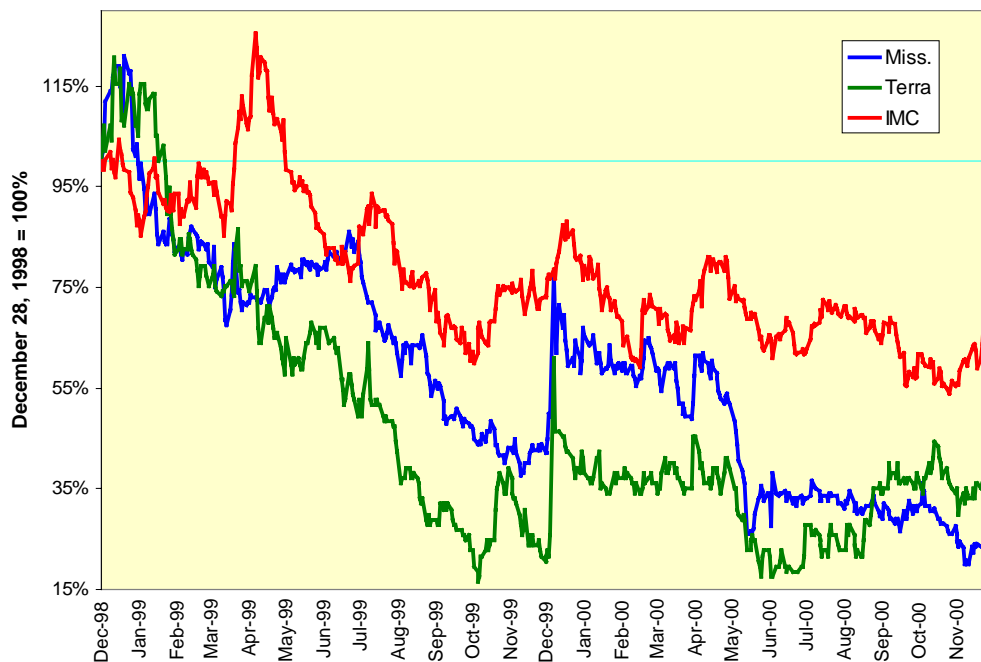
Take My Gas, Please

Let's take a look at Mississippi Chemical and Terra Industries, two of the purest domestic fertilizer plays. On December 11, 2000, Mississippi Chemical announced the sale of all of its natural gas futures contracts,

mostly for January 2001 delivery, at a pre-tax gain of \$16 million. Terra followed suit and sold its natural gas on the same day. The implicit admission in both cases was the firms stood to make far more money by selling the natural gas back to the market than they ever would turning it into fertilizer. Normally, such actions by consumers cap prices and break backwardation, or the premium of short-dated futures contracts to later contracts, but this is unlikely to be the case for natural gas. Electric utilities and residential consumers are price-inelastic in the short-term, and whatever natural gas is released to the market will find a buyer quickly.

Certainly the actions have been received unevenly by the market. Let's compare the prices of Mississippi and Terra to IMC Global, a much larger and more diversified fertilizer producer, and one more concentrated in the phosphates and potash segment of the business.

Relative Prices Of Fertilizer Producers

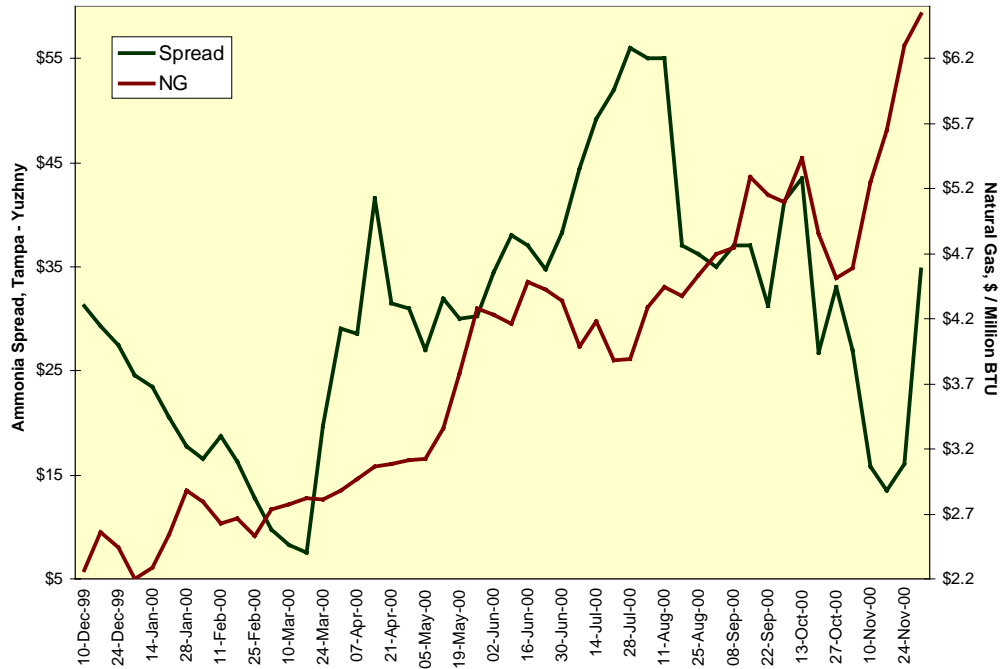


The last two years have not been kind to the industry, as it has sagged under the weight of decreasing farm incomes and higher feedstock costs. The jump higher in January 2000 came on a Deutsche Bank analyst upgrade and nothing more. However, both IMC and Terra staged small rebounds in December 2000, while Mississippi continues to struggle. On December 15, S&P cut its credit rating to B+ and issued a negative outlook for the money-losing firm. The poor performance of Mississippi is due, apparently, to more than just higher natural gas prices.

Advantage Russia?

Russia and the states of the former Soviet Union have the world's largest reserves of natural gas and a formidable ability to produce bulk chemicals in vast quantities. The soaring price of natural gas in North America is reflected only partly in European markets: The benchmark U.K. month-ahead natural gas market has increased "just" 207% over the past year. If the U.S. were to begin importing ammonia, we should expect to see a narrowing of the ammonia price spread between the U.S. and Russia.

Ammonia Spreads As A Function Of Natural Gas Prices



As measured by the price spread between Tampa and the Black Sea port of Yuzhny, this narrowing appears to have started in full force in mid-summer of 2000. Unfortunately, cash market data is available only at a weekly frequency, and often is late in reporting from Tampa (no Florida counting jokes, please). Any sort of detailed statistical analysis is virtually impossible.

Still, the macroeconomic message is clear, and that is North America may cease to be a viable producer of ammonia products so long as natural gas prices remain high. This suggests we abandon our ammonia producers and embrace those who import their natural gas as ammonia feedstock. To this end, the matched pair trade of long Terra / short Mississippi appears to make sense still.