

**U.S. Natural Gas Markets:
Changing Influences of Financial and Futures Markets on Physical
Markets**

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The U.S. natural gas market today is far more intricately developed, nuanced in the services that it offers, and actively traded than anyone might reasonably have imagined at its early stages in the mid-1980s. In general, that is a very good thing. An actively traded market with lots of robust options presents many effective ways for concerned buyers and sellers to manage the risks associated with volatile commodities.

Inherent, however, in that development is that robust markets attract a wider variety of participants with various motivations, interests and wherewithal to take positions in these markets. That means that a broad spectrum of speculators naturally becomes important in the development of the prices used by buyers and sellers meeting their direct, physical energy needs.

As a consequence, we must understand several important points about the functioning of the market today, and keep a close eye on how it may be changing. The first point is that, from an oversight perspective, the traditional boundaries of Commission jurisdiction don't apply. To be comfortable about natural gas prices, we have to track those particular markets that are most crucial in forming prices, those that transmit price information, and those that make use of price information created elsewhere. Relevant markets can fall in a number of categories – physical, financial and futures – because the overall market is using and transmitting information across those boundaries constantly.

The second point is that we have to acknowledge the complexity of these markets. New transactions and trading venues are being developed constantly, and existing transactions are being used in new ways. As a result, a price may

have meant a particular thing for years, but change its meaning as activity changes.

In the Commission staff's oversight efforts, we care about the movement of prices through the markets for two reasons. First is that buyers and sellers with other risks on their minds might not track changes in all the markets that affect their natural gas pricing. Educated producers and consumers are critical to making sure that markets reach effective results, and we believe that we can help educate them through publication of oversight efforts.

Second, manipulations generally require some kind of distortion of information from markets – often in a price-producing market to take profits in a price consuming market. Recent Commission orders underscore the value of looking at market information flows as a way of identifying possible manipulation.

As an example of how changes in the structure of the market over time can change the meaning of prices important to buyers and sellers, I'd like to review the emergence of the transaction known as "physical basis" and how it created an information flow different than what has been in the past.

The natural gas spot market that emerged in the mid and late 1980s consisted of traders calling each other and agreeing on prices for gas delivered monthly in many locations across the country. The trade press polled traders about fixed prices and published the results.

The New York Mercantile Exchange or NYMEX introduced its futures contract in the early 1990s, designed to tie to the monthly spot market centered on Henry Hub, Louisiana. Today, the natural gas futures contract is the second most successful energy contract that NYMEX trades, behind only crude oil. For example, in 2006, EIA estimates that the United States consumed 21.7 trillion cubic feet of gas; NYMEX reported futures trading of more than 10 times that volume.

To deal with locations away from Henry Hub, basis swaps emerged in the 1990s. In U.S. gas markets, "basis" means the difference between the price at Henry Hub and anywhere else. Basis was one of the first actively traded forms of financial natural gas transaction. Basis trading through NYMEX or the IntercontinentalExchange or "ICE" in 2006 was somewhere between 30 and 40 times the volume of U.S. fixed-price monthly trading.

With the development of more granular daily trading in the 1990s, some interest shifted away from trading fixed-price monthly transactions. Across the

eastern United States, buyers and sellers created a new physical monthly product – a product where the seller actually delivers gas at a particular location – known as “physical basis.”

Physical basis sets its price by adding to the final NYMEX futures settlement price a fixed basis amount to account for the delivery location. In effect, physical basis creates a physical price by borrowing prices from both the futures and the financial swap market.

Physical basis transactions fit trade publishers’ definitions of prices that can go into monthly indices, and so they include them. This creates a sort of conundrum. Platt’s Henry Hub index price generally relies on physical basis transactions. Consequently, the Henry Hub monthly spot market – the one the futures market was based on – now prices off the futures market itself. Monthly prices don’t come from the underlying physical market anymore; they come from the futures market instead.

Interestingly, physical basis dominates most monthly indices in the eastern United States and along the gulf Coast, and barely exists in the west.

The conundrum of underlying physical prices borrowing directly from futures trading may or may not prove to be much of a concern. The futures market is generally large and active and consequently a good place to get price information for many purposes. So long as we understand that the interests of financial players are translated into different prices for producers and consumers, most directly from futures settlement trading through physical basis.

The physical natural gas markets of interest to the Commission today are complex and highly interactive, with influences drawn from constant communication with both futures and financially-settled markets. In the end, effective oversight of jurisdictional U.S. natural gas markets requires a comprehensive understanding of the complex and changing nature of a whole complex of energy and related markets.