

A Review of the U.S. Senate Report on the Amaranth Debacle

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This article is excerpted from a two-day seminar by the author on "The History of the U.S. Futures Industry with a Focus on the Role of Chicago."

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On June 25, 2007, the U.S. Senate Permanent Subcommittee on Investigations released a report on the Amaranth debacle, entitled, "Excessive Speculation in the Natural Gas Market". The report was released in conjunction with the subcommittee's public hearing on the same date. Further hearings are scheduled for July 9th.

The 135-page report (and its further 345 pages of appendices) provides a wealth of detail on the largest hedge-fund debacle to have thus far occurred. In carrying out their forensic analysis, the Senate subcommittee examined several million individual trades. The subcommittee obtained this information by subpoenaing records from the New York Mercantile Exchange (NYMEX), the Intercontinental Exchange (ICE), Amaranth, and other traders.

The report basically covers two areas:

- (1) It provides factual detail on how massive Amaranth's natural-gas positions were;
- and
- (2) It discusses how inadequate the U.S. regulatory approach currently is in the face of large-scale energy trading.

This review will mainly summarise what the report covered, and then will briefly touch upon important areas that the report omitted.

Amaranth's Positions

In September of 2006, Amaranth Advisors, LLC, a multi-strategy hedge fund, lost about 65% of its \$9.2 billion in assets in a little over a week due to U.S. natural-gas futures positions.

Soon after the debacle, market participants were able to infer the types and magnitudes of the fund's positions. Participants were able to do so by examining dislocations in the natural-gas futures curve, which were consistent with a distressed liquidation. This was done, for example, in EDHEC's position paper on the debacle, which was released on 2 October 2006.¹

That said, the Senate report still has the power to surprise by providing numerous metrics on the extreme magnitude of the fund's position-taking. For example, in late July 2006, Amaranth's natural-gas positions for delivery in January 2007 represented *"a volume of natural gas that equaled the entire amount of natural gas eventually used in that month by U.S. residual consumers nationwide"*.

Figure 1 summarises the scale of Amaranth's natural-gas trading activity. Figure 2 draws from the report's appendix to show the exact positioning of the fund through May 2009, as of the end of August 2006. (The report does not include similar charts for the fund's positions past the May 2009 maturity date.)

Essentially, Amaranth set up futures calendar spreads² on a massive scale on both the NYMEX and the ICE. These positions would have benefited from potential weather shocks from 2006 through 2010.

The report links the extreme values of various calendar spreads with Amaranth's trading activity during several months of 2006. Specifically, the report shows how correlated Amaranth's positions were with various spread values, which traded to historically extreme levels.

Both economists and statisticians would *normally* not like to see correlation and causality as being confounded. Also, prior econometric work has generally shown that it is commercial hedging activity that leads to changes in speculative positions, as for example in Haigh *et al.*

1 - A returns-based analysis of Amaranth's positions was also performed in Chincarini (2006).

2 - A futures calendar spread is the difference in price between two different delivery months for a futures contract. For background on both the fundamentals of natural gas and futures trading strategies, the interested reader is invited to read the EDHEC-Risk Publication, "EDHEC Comments on the Amaranth Case: Early Lessons from the Debacle." This publication was also referenced by the Senate report for those readers interested in a "detailed discussion of the financial strategies of producers and speculators."

(2005). This article from the Office of the Chief Economist of the U.S. Commodity Futures Trading Commission (CFTC) also found that over the period, 4 August 2003 to 8 August 2004, there was "no evidence of a link between price changes and MMT [managed money traders'] positions (conditional on other participants trading) in the natural gas market."

But given the extreme magnitude of Amaranth's positions, one may agree with the Senate committee's report that *normal* considerations regarding the impact of speculative positions on futures price relationships do not apply in this case.

US Regulatory Reforms

The Senate report notes how Amaranth was able to shift a substantial fraction of its NYMEX natural gas futures positions to equivalent over-the-counter (OTC) positions on ICE. The report refers to ICE as "a virtually unregulated exchange that operate[s] largely outside CFTC oversight and the confines of the CEA [Commodity Exchange Act]".

The report concludes that steps need to be taken to allow the CFTC to have enhanced oversight of energy trading. This would be achieved by providing greater funding for the CFTC through "user fees" and by requiring over-the-counter, electronic trading to be subject to the same regulatory requirements as regulated exchanges such as the NYMEX.

Figure 1: Scale of Amaranth's Natural-Gas Trading

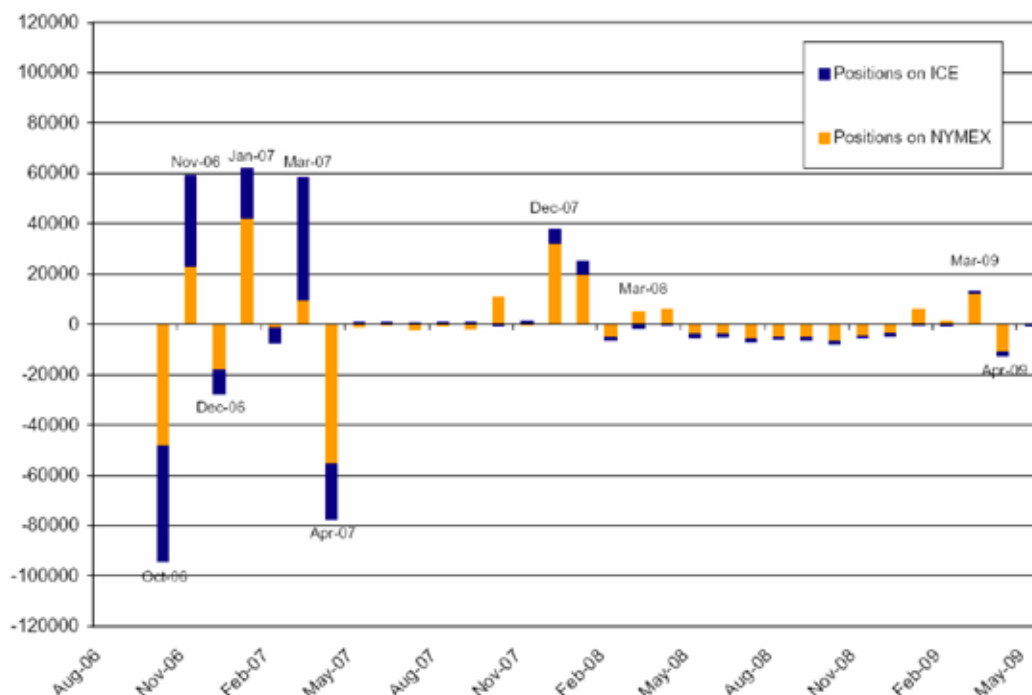
At times Amaranth controlled up to 40% of all the open interest on NYMEX for the winter months (October 2006 through March 2007).	pp. 51-52
In late July 2006, Amaranth held a total of more than 80,000 NYMEX and ICE contracts for January 2007, representing a volume of natural gas that equaled the entire amount of natural gas eventually used in that month by U.S. residential consumers nationwide.	p. 52
Amaranth's primary strategy was to (1) buy futures contracts for January 2007 while selling futures contracts for November 2006; and to (2) buy futures contracts for March 2007 while selling futures contracts for April 2007.	p. 52
On July 31st, 2006, Amaranth's trading in the March and April 2007 contracts represented almost 70% of the total NYMEX trading volume in each of these contracts on that date.	p. 52
Amaranth also held large positions in other winter and summer months spanning the five-year period from 2006-2010.	p. 52
For example, Amaranth held 60% of the outstanding contracts (open interest) in all NYMEX natural gas futures contracts in 2010.	p. 52
On 7/24/06, Amaranth's futures position as a % of NYMEX futures open interest in the December 2007 contract was 81%.	p. 94
On 8/28/06, Amaranth accounted for over 40% of the total volume on the ICE, and over 25% of the entire volume of exchange-traded futures and swaps on NYMEX and on ICE on that date.	p. 101

NYMEX: New York Mercantile Exchange

ICE: Intercontinental Exchange

Source: "Excessive Speculation in the Natural Gas Market," Staff Report of the Permanent Subcommittee on Investigations, Committee on Homeland Security and Government Affairs, United States Senate, June 25, 2007.

Figure 2: Amaranth's forward Curve on 31 August 2006
Natural Gas contracts on Nymex and Ice



Source: Staff Report, United States Senate, Permanent Subcommittee on Investigations, 25 June 2007, Appendix V, page 38.

Important Omissions

Even though the report provided a large volume of valuable information on the Amaranth debacle, market participants may have been disappointed by what the report left out. Four areas stand out:

(1) *The Senate report does not cover the global nature of energy futures trading, which arguably should not only require a domestic regulatory response, but also one which is coordinated with other regulatory authorities.*

For example, the report does not mention that one division of ICE is a regulated energy futures exchange (ICE Futures), which in turn is regulated by the UK Financial Services Authority (FSA). Market participants are well aware that both futures and securities markets "are growing in ways that transcend national sovereignty", as reported by Corcoran (May/June 2007) in Futures Industry magazine and also by Dowd (2007).³

That said, one may understand that a first public-policy step is to make sure that U.S. regulatory agencies are fully up to their primary task of protecting U.S. capital markets before formally enhancing cross-border regulatory arrangements.

(2) *The Senate report's conclusion declined to emphasize the role of diminishing domestic natural gas supplies that when twinned with expanding demand can lead to structurally higher prices and periodic price spikes. Instead, the report emphasized the role of "excessive speculation" in leading to increases in winter natural-gas prices.*

The report itself notes that natural gas production in the U.S. peaked in 2001, while demand for natural gas to generate electricity has been increasing. The report further notes that U.S. natural gas prices have spiked in five of the past six winters.

3 - Dowd (2007) discusses the new phenomenon of "global venue shopping" in natural-resources futures trading: "The exchange of the future will not be constrained by sovereign boundaries. Each country's tax, legal, and regulatory environment will determine how favourable a venue is for the establishment of exchanges in the future."

During testimony at the June 25th hearing, an industrial user of natural gas stated, "To bring natural gas prices back to a long-term affordable level, we ultimately need to increase the supply of natural gas." Corbin (2007).

That said, even though the more important issue for US energy security may be the structural imbalance between the supply and demand for natural gas, one may concede the Senate committee's point that one speculative participant should not be able to amass a position size equal to an entire month of U.S. residential natural-gas consumption.

(3) Unlike post-mortems after the Long-Term Capital Management debacle, the report does not examine the role of Amaranth's credit providers in allowing their client to amass such massively concentrated positions across both exchange-traded and over-the-counter platforms.

That said, one may understand that the Senate committee needed to narrow its focus to solving one critical issue at a time. In this case, they needed to examine how to improve the existing regulatory approach to commodity futures trading, given the large-scale participation by a new class of market participants. This is also an area that the FSA is examining, as documented in Doyle et al. (2007).

(4) While the Senate's investigation included the viewpoints of both residential and industrial consumers of natural gas, the report omits what effect the Amaranth debacle had on natural-gas producers and storage operators.

One would have preferred that the report include interviews with commercial hedgers in order to provide a complete view of the operation of commodity derivatives markets. In Till (2007) for example, we estimated that commercial hedgers were the beneficiaries of about two thirds of the price-pressure effect caused by Amaranth's distressed liquidation.

That said, as noted in the introduction to this article, the report provides a wealth of factual detail on the Amaranth debacle, so it is difficult to be too harsh in pressing one's criticisms of the report's omissions.

Conclusion for Global Investors

Ultimately one would hope that the market-place would provide a sufficient disciplining mechanism in preventing future Amaranths. After all, no hedge-fund investor would want to see 65% of their investment lost in a little over a week. Perhaps the lesson for global investors in 2006 and 2007 will be that value matters: one should not pay historic levels for forward U.S. winter natural-gas prices relative to non-winter months; just like one should not invest in the U.S. sub-prime mortgage market without adequate compensation for default risk, as explained by Tavakoli (2007).

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