

TAKING SHAPE: NYMEX NATURAL GAS BEAR TREND HISTORY

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In “The Bear”, William Faulkner writes: “Then he saw the bear. It did not emerge, appear: it was just there, immobile, fixed in the green and windless noon’s hot dappling, not as big as he had dreamed but as big as he had expected, bigger, dimensionless against the dappled obscurity, looking at him. Then it moved....Then it was gone.”

CONCLUSION

What does historical analysis of noteworthy United States natural gas bear marketplace moves (NYMEX nearest futures continuation basis) reveal regarding the ending of the major bear trend that emerged in late February 2014? The mid-January 2015 low around 2.80 (NYMEX nearest futures continuation basis) could be, but probably is not, the final bottom. It is more likely that a final low will occur by end February 2015. The mid-January low probably will not be broken by much; in any event, substantial support lurks around 2.40.

Even if an observer focuses their attention on the natural gas price history variable alone, this is a very difficult marketplace call. In the current environment, much depends on weather, petroleum marketplace levels and trends (OPEC policy), whether (and how long) anticipated natural gas production jumps occur at current (or lower) gas prices, and the degree and duration of American economic strength. So the final bottom for natural gas may be postponed beyond February 2015.

Although history need not repeat itself, major natural gas lows (and highs) have not occurred in calendar March. April chronicles of course include the exceptional April 2012 major bottom; consequently, that calendar month represents a notable anniversary to watch, especially if weather for the balance of winter is warmer than normal. Gigantic inventories spurred the ferocious bear charge down to 1.90 in April 2012. However, assuming normal weather, and even allowing for increases in gas output, the current and probable US natural gas inventory situation looks relatively neutral, particularly in the context of NYMEX gas prices well under 4.00.

NYMEX natural gas reached many important troughs in late calendar August and September. However, a final low in late summer 2015 would stretch out the February 2014 bear marketplace longer than historical averages.

BIG BEAR MOVES, 1996 TO PRESENT **NYMEX NATURAL GAS (NEAREST FUTURES)**

The Band sings in “The Shape I’m In”:
“Go out yonder, peace in the valley
Come downtown, have to rumble in the alley
Oh, you don’t know the shape I’m in”.

Marketplace history is never marketplace destiny. Probabilities derived from viewpoints regarding “the past” are not those of “the present” and “the future”. The roughly 25 years of NYMEX natural gas history is substantial, but it is not an extremely long period. Compare benchmarks such as the Dow Jones Industrial Average, the ten year US Treasury note, and

Chicago Board of Trade wheat futures. In addition, definitions of bull, bear, and sideways marketplaces, identifications of alleged trends, and selections of relevant marketplace variables reflect opinions. Designation of particular start and end dates for apparently notable moves likewise represent personal outlooks.

Interpretation of natural gas price history can venture beyond the nearest futures continuation contract. Trend searchers may choose to peer at individual actual contract months (such as the April 2015 futures contract), several trading months of a season (as in the summer 2015 strip), calendar years (like the calendar 2016 strip of contracts), spreads (such as NYMEX March 2016/April 2016), and regional (basis) relationships. Insight into and stories regarding natural gas domains and their bull and bear trends can derive from analyzing electricity, coal, other marketplaces, and assorted additional economic and political phenomena as well. In natural gas as in other territories, supply/demand investigation can intertwine with so-called technical analysis.

Here follows one perspective on major natural gas bear moves.

<u>High; Date</u>	<u>Low; Date</u>	<u>Decline (Percent)</u>	<u>Duration (Months)</u>
1. 4.60; 12/20/96	1.68; 2/24/97	63.5pc	Two
2. 3.85; 10/28/97	1.61; 8/27/98	58.2	Ten
3. 10.10; 12/27/00	1.76; 9/26/01	82.6	Nine
4. 11.90; 2/25/03	4.39; 9/22/03	63.1	Seven
5. 15.78; 12/13/05	4.05; 9/27/06	74.3	Nine and two weeks
6. 13.694; 7/2/08	2.409; 9/4/09	82.4	Fourteen
7. 6.108; 1/7/10	1.902; 4/19/12	68.9	Twenty-seven and one wk

The average distance traveled via these seven bear moves is 70.4 percent. The average duration is about eleven and one-quarter months.

Looking back prior to the December 1996 high does not significantly alter the table's price and time portrayal. The 53.4 percent decline from the 3.72 plateau on 12/21/95 to the 1.735 valley on 9/5/96 lasted about nine and a half months (though a final low, as part of a double bottom, arguably occurred 2/24/97 at 1.68). The 60.0pc drop from 11/26/90 at 2.65 to 6/25/91 at 1.06 spent seven months. The 52.3pc fall from 11/5/91 at 2.14 to 1/24/92 at 1.02 took two and a half months.

So for the ten bear moves combined, the average fall is about 65.9 percent, with the average duration about nine and three quarter months.

What about the current marketplace situation? The nosedive from the 6.493 major high on 2/24/14 to the low since then, 1/12/15's 2.783, is 57.1 percent and ten and a half months. History suggests this bear move has been sufficiently long in duration to be looking for a noteworthy trend change. That significant trend changes have occurred in calendar January and February underlines this.

However, the percentage bear move slump from February 2014 through January 2015 is shorter than the seven preceding ones in the table above. Its tumble nevertheless is close to the second one (1997-98), not far from the first (1996-97) and fourth (2003) ones, and in line with the three

prior to 1996. In addition, there is some support (NYMEX nearest futures continuation) around 2.80/2.85; a fifty percent climb from April 2012's 1.902 major low is 2.853.

It therefore is a close case as to whether the January 2015 depth is the final bottom in the bear trend that appeared in February 2014. If the January low is broken, time and price history on balance signals that prices probably will not fall dramatically beneath this.

What are some percentage drops from the 6.493 mountaintop to monitor? A sixty percent retreat gives 2.597. Downhill from 6.493 to 2.409 (September 2009's major bottom) is 62.9pc. Incidentally, half of 6/16/14's 4.886 key drop-off point within the February 2014 bear crash is 2.443, neighboring the September 2009 trough.

Warm weather for the balance of winter 2014-15 (or a mild 2015 summer) or further sustained crashes in the petroleum complex could help to push NYMEX natural gas even lower. A 66 percent retreat gives 2.162 (6/14/12 interim low in big bull advance was 2.168), a 70.4pc one 1.922 (right next to the 4/19/12 major bottom; twice the all-time low is 2.040). A 75pc fall from 6.493 gives 1.623; this would be the lowest price since 2/26/99's final bottom at 1.625 (10 percent of the all-time high is 1.578). An 80pc collapse from the pinnacle lands at just under 1.300.

History reveals a number of important natural gas trend changes commenced in calendar January and February. Given the significant length and duration of the bear move that commenced in February 2014, this suggests that a notable bottom, even if not a major or final one, is in place or soon will be. Also, a decline to a low in late February 2015 would represent a one year diagonal time move, an important duration to watch for trend changes. A bottom in calendar January and early February 2015 would still be pretty close to that one year signpost span.

**January- significantly, there have been three major bottoms in calendar January. Note the major and record low on 1/24/92 (1.02), 1/13/95 (1.25), and 1/28/02 (1.85 final low; preceded by the 9/26/01 major bottom at 1.76). The 1/15/00 interim low also was important (2.125; see 11/24/99's 2.08 low alongside this). The two highs that occurred in January point out the potential for a significant trend change during that month. Recall the tops on 1/9/04 (7.63) and 1/7/10 (6.108).

Also, recall the January timing of two important interim lows in the bull trend that began in April 2012, 1/2/13's 3.050 and 1/10/14's 3.953.

**February- troughs at 2/24/97 (1.68), 2/26/99 (1.625 final low); summits 2/2/94 (2.69), 2/25/03 (11.90), and 2/24/14 (6.493).

To help assess probabilities for reaching a bottom in natural gas, watch petroleum (NYMEX crude oil and Brent/North Sea crude oil, for example) and other marketplaces. A trend change in NYMEX natural gas of course need not coincide with one in the petroleum complex or in commodities "in general". However, in recent months, natural gas, NYMEX crude oil, and the broad Goldman Sachs Commodity Index have tumbled downhill around the same time. For example, NYMEX natural gas established a significant interim high 6/16/14 at 4.886. The final top in NYMEX crude was 6/20/14 at \$107.73. Remember the broad GSCI's 6/23/14 interim high at 673.

From the timing perspective, and particularly for the calendar January and February context, recall that the broad GSCI achieved its major bottom in 2009 at 306 on 2/19/09. Although NYMEX crude oil reached its major low shortly before this, on 12/19/08 at \$32.40, its final low was \$33.55 on 2/12/09.

Many important NYMEX natural gas trend changes have occurred around contract expiration.

At times the CFTC's Commitments of Traders is a helpful variable for predicting significant trend changes and travels in natural gas marketplaces. Review the benchmark NYMEX and ICE natural gas contracts (futures and options combined) plus the NYMEX European look-alike options contract. In the natural gas complex, sometimes key highs and lows in price occur alongside notable levels in the net noncommercial position.

On 2/18/14, the net noncommercial long ("NCL") position peaked at about 328,000 contracts, or 7.7 percent of total open interest (the percentage of total open interest attained its 8.4pc high the following week). February 2014's net NCL summit roughly coincided with the NYMEX natural gas (nearest futures continuation) pinnacle on 2/24/14 at 6.493. The substantial liquidation of this large net noncommercial long position in natural gas helped to propel prices sharply lower in the succeeding months.

The lofty net NCL levels of February 2014 resided beneath the 367m net NCL ceiling established 4/30/13 (7.6pc of total open interest; plateau percentage 5/28/13's 7.8pc). This spring 2013 net NCL top occurred alongside the key interim top in NYMEX natural gas (nearest futures continuation) at 4.444 on 5/1/13.

What about the current battleground? As of the most recent week, 1/13/15, the noncommercial position was significantly net short ("NCS") about 191,000 contracts (5.7pc of total open interest; 5.8pc on 12/30/14 was high in the current bear trend). This represents the highest net NCS position since 11/22/11's 227m (5.5pc of total open interest), attained during the major bear move that carried down to 4/19/12's 1.902 major bottom.

History suggests there is modest room for a greater net noncommercial short position than now exists. However, the rather lofty current net NCS position and its elevated percentage of total open interest warn that the natural gas marketplace was as of around 1/13/15 vulnerable to a trend change from bearish to bullish (or at least to a sharp short covering rally) in the relatively near term.

US NATURAL GAS INVENTORIES: WINTER DRAW SEASON 2014-15 IN CONTEXT

"This is the game that moves as you play", sings the rock group X in "The Have Nots"

Detailed historical analysis of working natural gas inventories enables audiences to ascertain the degree of tightness in America's overall supply/demand situation. Although arithmetical (bcf) levels are important, review from the days coverage perspective offers greater insight.

Despite the notable arithmetic stock increase during the 2014 build season, the inventory picture at the end of build season 2014 was bullish. Remember the very depressed stocks at end winter 2013-14. Relative to calendar year 2014's roughly 73.6bcf/day of demand, 3590bcf working gas inventory at end October 2014 (EIA, Short-Term Energy Outlook, "STEO", Table 5a, 1/13/15, next release 2/10/15) represented about 48.8 days of coverage.

Let's place the 3590bcf stocks and 48.8 days coverage level for end October 2014 in historical context. October 2014's 48.8 days of inventory rested 5.0 days beneath the long run 1990-2013 average of 53.8 days. Despite the bear marketplace trend that began in February 2014 and accelerated beginning in mid-June (and thereafter), the 2014 build season inventory level ("in itself") was a bullish marketplace factor.

Nowadays, for calendar October (and for all other calendar months), the medium run span from 2006 to the present better shows the normal (average) level of days coverage than the long run 1990-present vista. Why? The average level of natural gas industry stock holding probably shifted upwards in recent years. One likely variable influencing this boost has been alternative investment in commodities, which reduces natural gas free supply. This reduction in free supply probably can have particularly significant consequences in low inventory situations around the finish of the winter draw season. See previous essays such as "US Natural Gas- a Winter's Tale" (1/12/14), "US Natural Gas Inventory: the Producing Region Drawing Board" (12/16/13), and "US Natural Gas: Drawing Pictures" (11/25/13) on this issue.

Based upon the 2006-13 perspective, end October average days coverage was 56.7 days. Thus the 48.8 days coverage at end October 2014 was nearly eight days below average, an even more bullish viewpoint.

In the following discussion regarding and table for US end March working gas inventories, the indicated "year" for a given March derives from the calendar year of the preceding October. Thus the 2473bcf (in actual calendar March 2012) noted for the 2011 "year" is from the end October 2011 to March 2012 winter draw season. This table extends through winter 2013-14 (includes the 2013 year).

END MARCH NATURAL GAS: AN INVENTORY STORY

	Long Run (1990-2013)		Long Run (1990-2013)	
	End Calendar Month	End Calendar Month		
	Arithmetic (Bcf)	Days Coverage		
	<u>Average</u>	<u>Average</u>		
<u>March</u>	1337	21.8		
	<u>Season Highs (Year)</u>		<u>Season Lows (Year)</u>	
	<u>(Bcf)</u>	<u>Days Cover</u>	<u>(Bcf)</u>	<u>Days Cover</u>
<u>March</u>	2473 (2011)	37.1 (2011)	730 (2002)	11.6 (2002)
	1692 (2005)	28.1 (2005)	742 (2000)	11.6 (2000)
			857 (2013)	12.0 (2013)
			758 (1995)	12.5 (1995)

Some statisticians would label the 1723bcf end March inventory for the 2012 year as very high. Yet this represented only 24.7 days coverage- a modest 2.9 days above the long run average, whereas 2005's leaped 6.3 days above that average. Compare calendar year 2012's 69.8bcf/day consumption with 2005's 60.3bcf/d.

March **Medium Run (2006-2013)**
End Calendar Month
Days Cover Average
24.6 days (2.8 days more than 1990-2013's time span)

End March 2014's 12.0 days of coverage collapsed almost ten days under the 21.8 days end March 1990-2013 average and 12.6 days (24.6 less 12.0) beneath the eight year 2006-13 average.

The average winter draw from 1990 through 2013 is 1967bcf, or 32.0 days. The days coverage draw from 2006-2013 is about the same, 32.1 days (the average bcf draw over that vista is 2102bcf). Winter 2013-14's sustained cold devoured US working natural gas inventories. Stocks collapsed from 3817bbcf at end October 2013 to 857bcf at end March 2014, a 2960bcf and 41.3 days coverage draw. This surpassed the 2002 year's prior record by over 570bcf. The spectacular 41.3 days coverage drawdown likewise soared over 2002's plateau of 37.8 days and 1992's 39.7 day pinnacle (and 2007's 36.3 day total). Compare the tiny 1331bcf and 19.8 day draws of the 2011 year.

What will inventories be at end March 2015? Of course much depends on whether the balance of this winter is about average, or warmer or colder than normal.

January 2015's STEO proclaimed March 2015 stocks will be 1665bcf. Based on that prediction, this reduces inventory over the course of winter 2014-15 by 1925bcf (3590-1665bcf). Relative to full year calendar 2014 demand around 73.6bcf/day, 1665bcf equals about 22.6 days coverage.

A roughly 26.2 day winter stock draw (48.8-22.6 days) is below average. It nevertheless is significant that the anticipated end 1Q15 inventory days coverage falls about 2.0 days under 2006-2013's 24.6 day average (24.6 less 22.6 days). Although relative to the 2006-13 average, the hypothetical 2.0 day end March 2015 days coverage shortfall is considerably less than end March 2014's 12.6 days, it still is a deficit. These end March 2015 inventories would surpass only slightly, by about .8 day, the 21.8 day 1990-2013 long run average.

How do these below average days coverage levels for end October 2014 and end March 2015 compare? Use the 2006-13 measurement horizon. Whereas end October 2014's 48.8 days coverage tumbles 7.9 days under its 56.7 day end October average, end March 2015's 22.6 days coverage drops only two days beneath end March's 24.6 day normal level. Increasing natural gas production via the shale drilling revolution has helped to narrow the deficit. Thus from this vantage point, although inventories are somewhat tight at end March 2015, they become considerably less so than relative to the end of build season 2014.

Natural gas price levels and trends of course depend on many other variables than current and relatively near term gas inventory levels and trends. Obviously current and anticipated natural gas production and consumption levels also matter for natural gas price levels and patterns. US weather and economic growth of course intertwine with these. Coal and electricity playgrounds

are crucial. At what point and to what extent will US natural gas producers cut back their current (or anticipated) production? Drillers have become increasingly more efficient. Watch natural gas (and oil) rig counts. What gas price (use NYMEX as a benchmark, with basis relationships in mind) will encourage drillers in the Marcellus region (or other areas) to slow or stop new drilling projects? Keep an eye on the Canadian natural gas scene (and Mexican imports too). How much fuel switching into natural gas will occur if NYMEX natural gas stays around or sustains a move under 3.00 (especially for a long strip of contract months)? Will environmental concerns related to fracking grow stronger?

Monitor petroleum price levels and OPEC policy. What is the long run prospect for LNG exports if US natural gas prices sustain a move significantly beneath current levels? At what point and to what extent will sustained lower Brent/North Sea and other benchmark crude oil prices influence American LNG export levels?

What's the bottom line in regard to the natural gas bear trend that began in February 2014 if one concentrates on the natural gas inventory variable? With the NYMEX nearest futures natural gas price well under 4.00, this end winter 2014-15 inventory factor "taken by itself", looks neutral to supportive for gas prices. This fundamental consideration should be interpreted alongside the marketplace history relating to price and time reviewed above.

What about the very near term? Glance at the end January 2015 natural gas inventory landscape. That perspective reinforces this outlook regarding the mildly supportive potential of end March 2015 stocks.

For the week ending 1/9/15, US working gas in underground storage (lower 48 states) was 2853bcf, up 294bcf and 11.0 percent relative to the prior year week. This year-on-year comparison, however, does not tell the whole story regarding inventory levels.

The January 2015 STEO predicts 2390bcf of working gas inventory for end January 2015, which equals about 32.5 days coverage. This stands modestly under the 35.8 days average end January days coverage over 2006-13. The forecast end January 2015 inventory total is quite distant from January 2012's 2910bcf inventory mountain and its 43.4 days coverage, though it is comfortably above January 2014's depressed 1925bcf level and 26.9bcf days cover.

END BUILD SEASON 2015

US natural gas inventory estimates for end build season 2015 and thereafter admittedly are conjectural. Yet that potential end build season inventory situation likewise (viewed "alone", and "all else equal") tends to boost natural gas prices.

The EIA forecasts working natural gas inventories will be 3832bcf at end October 2015 (STEO, Table 5a). Relative to calendar year 2015 demand of about 73.8bcf/day, days coverage at the dawn of winter 2015-16 draw season will be about 51.9 days. That days coverage level, though not wildly bullish, will tend to underpin prices. It slides beneath the 2006-13 end October average of 56.7 days (and including October 2014's 48.8 day statistic, 2006-14's 55.8 days coverage), as well as 1990-2013's 53.8 days.

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