

2-bar NR and ORB

by Toby Crabel

Markets are in a constant state of flux; they are continuously shifting from movement to rest and back to movement again. This interchange is never ending — from contraction to expansion to contraction — with one phase directly responsible for the other's existence. A two-bar narrowing range (2-bar NR), a price pattern that is the narrowest two-day range relative to any two-day range within the previous 20 market days (Figure 1), reflects that market activity and quantifies the market concept of *contraction*. Thus, contraction is a relative condition that can occur even in a volatile market.

Once a market concept is formulated, it becomes tradeable. In this study, an opening range breakout (ORB) trade was taken the day after the 2-bar NR was formed. An ORB is defined as a trade taken at a predetermined amount above or below the opening range. My assumption is that with a contraction of this kind, trending action would follow the direction of the breakout. Another assumption is that because this pattern is such a well-defined contraction, trending would take place over the next several days. Figures 2 through 9 confirm these assumptions and illustrate, in order:

- The amount above or below the open that the trade was initiated .
- The number of days in the trade (zero indicates an exit on the close the same day of entry, five indicates an exit on the close five days after the entry).
- Whether the trade was a buy or a sell (determined by gross profits only).
- The percentage profitability on each trade (no stops were used on the tests).
- The number of trades.
- The average of all winning and losing trades.
- Gross profit exclusive of commission or slippage.

Figure 1 shows five 2-bar NR patterns. The tendency of the market to place the high or low of the day on the open or close to the open is notable. The subsequent ability to expand the daily range is also noteworthy and is a good example of this pattern's potential.

High probability patterns

Several observations can be made about the results on 2-bar NRs. Of 128 individual tests, there were 32 tests that lasted from the open to the close of the same day. Of those, 18 showed the highest probability of success relative to others in the group. The open-to-close trades (zero in the "No. of days in trade" column, Figures 2-9) were 25% of the total sample and accounted for 56% of the highest probability trades.

Eurodollars, bonds and crude oil displayed reasonably high percentages on two- and five-day trades. Coincidentally, these three markets have the highest open interest and volume.

Although these tests are presented in a rough system format, they should not be traded as such. The purpose of my work is to determine the market's nature, in which the 2-bar NR concept assists me. When

2-bar NR

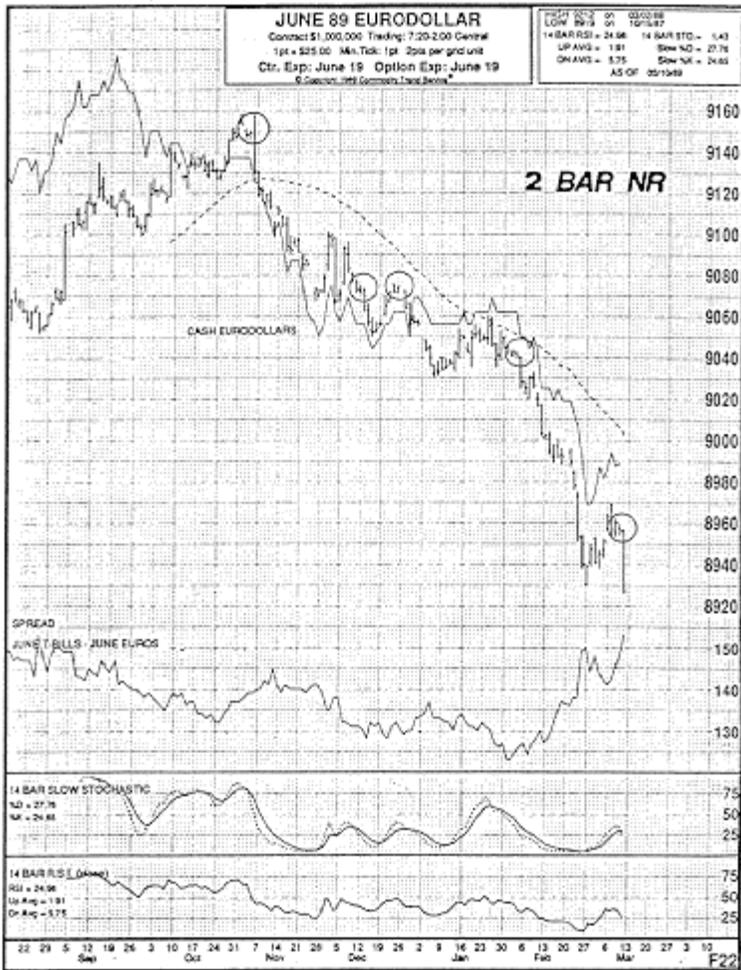


FIGURE 1: A 2-bar NR pattern is the narrowest two-day range relative to any two-day range with the previous 20 market days, and quantifies the market concept of contraction.

Eurodollars 1984-1989							
	No. of days in trade	Buy/sell	% Profit	No. of trades	Avg. win	Avg. loss	Gross profit
Open plus 8 ticks	5	Buy	63%	27	\$574	\$460	\$5,174
Open plus 8 ticks	2	Buy	78	27	347	445	4,624
Open plus 8 ticks	1	Buy	67	27	280	272	2,599
Open plus 8 ticks	0	Buy	67	27	177	108	2,249
Open plus 4 ticks	5	Buy	64	59	590	463	10,824
Open plus 4 ticks	2	Buy	68	59	336	411	5,649
Open plus 4 ticks	1	Buy	64	59	252	278	3,824
Open plus 4 ticks	0	Buy	66	59	150	123	3,399
Open minus 4 ticks	0	Sell	61	56	153	131	2,324
Open minus 4 ticks	1	Sell	61	56	182	247	4,399
Open minus 4 ticks	2	Sell	62	56	280	330	2,849
Open minus 4 ticks	5	Buy	54	56	479	346	5,099
Open minus 8 ticks	0	Sell	76	21	168	145	1,974
Open minus 8 ticks	1	Sell	71	21	261	141	3,074
Open minus 8 ticks	2	Sell	57	21	318	230	1,749
Open minus 8 ticks	5	Sell	56	21	484	359	1,974

FIGURE 2

T-bonds (1978-1986)							
	No. of days in trade	Buy/sell	% Profit	No. of trades	Avg. win	Avg. loss	Gross profit
Open plus 16 ticks	5	Buy	56%	34	\$1,443	\$1,358	\$4,156
Open plus 16 ticks	2	Buy	56	34	1,103	1,124	4,094
Open plus 16 ticks	1	Buy	62	34	791	644	8,245
Open plus 16 ticks	0	Buy	76	34	432	605	6,406
Open plus 8 ticks	5	Sell	49	57	1,429	1,323	1,663
Open plus 8 ticks	2	Sell	56	57	901	1,148	121
Open plus 8 ticks	1	Buy	54	57	796	616	7,813
Open plus 8 ticks	0	Buy	68	57	483	611	7,874
Open minus 8 ticks	0	Sell	75	67	423	384	15,085
Open minus 8 ticks	1	Sell	66	67	670	577	16,221
Open minus 8 ticks	2	Sell	64	67	971	852	21,285
Open minus 8 ticks	5	Sell	64	67	1,363	1,152	30,964
Open minus 16 ticks	0	Sell	79	42	350	330	8,584
Open minus 16 ticks	1	Sell	62	42	687	285	13,311
Open minus 16 ticks	2	Sell	62	42	1,111	875	14,901
Open minus 16 ticks	5	Sell	64	42	1,546	1,381	21,526

FIGURE 3

Crude Oil (1983-1989)							
	No. of days in trade	Buy/sell	% Profit	No. of trades	Avg. win	Avg. loss	Gross profit
Open plus 20 ticks	5	Buy	67%	21	\$463	\$637	\$2,029
Open plus 20 ticks	2	Buy	62	21	286	267	1,580
Open plus 20 ticks	1	Buy	62	21	288	122	2749
Open plus 20 ticks	0	Buy	76	21	182	133	1,219
Open plus 10 ticks	5	Buy	64	44	454	469	5,209
Open plus 10 ticks	2	Buy	61	44	259	402	159
Open plus 10 ticks	1	Buy	70	44	227	290	3,269
Open plus 10 ticks	0	Buy	66	44	143	154	1,849
Open minus 10 ticks	0	Sell	73	33	159	164	2,339
Open minus 10 ticks	1	Sell	70	33	345	311	4,839
Open minus 10 ticks	2	Sell	76	33	404	225	8,299
Open minus 10 ticks	5	Sell	70	33	566	749	5,539
Open minus 20 ticks	0	Sell	69	16	191	76	1,729
Open minus 20 ticks	1	Sell	69	16	381	390	2,250
Open minus 20 ticks	2	Sell	81	16	406	250	4,540
Open minus 20 ticks	5	Sell	56	16	593	367	2,770

FIGURE 4:

Japanese yen (1979-1988)							
	No. of days in trade	Buy/sell	% Profit	No. of trades	Avg. win	Avg. loss	Gross profit
Open plus 18 ticks	5	Buy	51%	39	\$1,153	\$583	\$12,537
Open plus 18 ticks	2	Buy	59	39	885	597	3,899
Open plus 18 ticks	1	Buy	59	39	491	314	6,274
Open plus 18 ticks	0	Buy	74	39	246	201	5,124
Open plus 9 ticks	5	Buy	43	83	1,007	611	8,600
Open plus 9 ticks	2	Buy	58	83	504	609	2,862
Open plus 9 ticks	1	Buy	54	83	410	450	1,387
Open plus 9 ticks	0	Buy	54	83	248	211	3,137
Open minus 9 ticks	0	Sell	62	87	155	206	1,575
Open minus 9 ticks	1	Sell	55	87	418	437	3,012
Open minus 9 ticks	2	Sell	60	87	458	615	2,325
Open minus 9 ticks	5	Buy	49	87	870	600	11,012
Open minus 18 ticks	0	Sell	52	44	175	141	1,850
Open minus 18 ticks	1	Sell	64	44	345	596	124
Open minus 18 ticks	2	Buy	43	44	703	430	2,612
Open minus 18 ticks	5	Buy	61	44	925	742	12,360

FIGURE 5:

Soybeans (1970-1988)							
	No. of days	Buy/sell	% Profit	No. of	Avg.	Avg.	Gross
	in trade			trades	win	loss	profit
Open plus 10 cents	5	Sell	53%	60	\$1,403	\$1,057	\$15,300
Open plus 10 cents	2	Sell	45	60	330	264	187
Open plus 10 cents	1	Buy	50	60	587	561	775
Open plus 10 cents	0	Sell	45	60	330	264	187
Open plus 5 cents	5	Buy	56	123	1,214	1,096	23,525
Open plus 5 cents	2	Buy	57	123	753	620	20,618
Open plus 5 cents	1	Buy	60	123	540	486	15,662
Open plus 5 cents	0	Buy	70	123	262	390	8,075
Open minus 5 cents	0	Sell	68	107	331	235	17,281
Open minus 5 cents	1	Sell	64	107	648	420	28,787
Open minus 5 cents	2	Sell	88	107	873	581	28,000
Open minus 5 cents	5	Sell	57	107	1,486	734	56,925
Open minus 10 cents	0	Sell	76	52	339	321	8,700
Open minus 10 cents	1	Sell	67	52	777	340	21,437
Open minus 10 cents	2	Sell	56	52	1,182	482	23,212
Open minus 10 cents	5	Sell	62	52	1,903	675	47,412

FIGURE 8

Cattle (1970-1988)							
	No. of days	Buy/sell	% Profit	No. of	Avg.	Avg.	Gross
	in trade			trades	win	loss	profit
Open plus 50 pts.	5	Buy	54%	95	\$584	\$524	\$6,728
Open plus 50 pts.	2	Buy	58	95	384	339	7,580
Open plus 50 pts.	1	Buy	64	95	264	280	6,552
Open plus 50 pts.	0	Buy	59	95	117	151	3,364
Open plus 25 pts.	5	Buy	55	162	502	556	4,160
Open plus 25 pts.	2	Buy	52	162	363	355	3,512
Open plus 25 pts.	1	Buy	56	162	285	290	5,332
Open plus 25 pts.	0	Buy	61	162	158	174	4,664
Open minus 25 pts.	0	Sell	58	146	149	135	4,512
Open minus 25 pts.	1	Sell	57	146	311	251	9,972
Open minus 25 pts.	2	Sell	59	146	373	334	12,088
Open minus 25 pts.	5	Sell	53	146	641	516	14,927
Open minus 50 pts.	0	Sell	55	80	140	139	1,180
Open minus 50 pts.	1	Sell	51	80	338	211	5,619
Open minus 50 pts.	2	Sell	54	80	377	270	6,220
Open minus 50 pts.	5	Sell	55	80	684	583	10,368

FIGURE 9

applying the 2-bar NR (or any market concept), the full context of the market must be considered. Market context is the integration of the trend, price action, price pattern studies and support/resistance; of those, the trend overrides other particulars of market context.

It has been my observation that once the market has moved away from the open in one direction after a 2-bar NR, it should not return to the opening price.

The idea behind this pattern originated with Richard D. Wyckoff's last point of supply or last point of support thesis. These were described by Wyckoff as periods of price action that displayed unusually narrow ranges and low volume, which occurred just after a period of accumulation or distribution and just before a markup/markdown phase. The 2-bar NR attempts to quantify this kind of take-off point prior to a trend.



The pattern also resembles, to some degree, the ending distribution formulated by Peter Steidlmeyer, the developer of the Chicago Board of Trade's Market Profile. An ending distribution is loosely defined as the point at which the market is ready to begin a new movement and is indicated by a loss of movement or no distribution.

It has been my observation that once the market has moved away from the open in one direction after a 2-bar NR, it should not return to the opening price. If it were to do so, that would disqualify the day as a trend day. Trending action is ideal and is expected after the pattern. If a new phase is beginning, it should also be obvious and unnecessary to question whether the trade was correct; it would be obvious by the immediate .

The breakdown of the Elliott wave on a five minute chart is another means by which to determine a successful breakout. After the initial move off the open, which most likely would be wave 1 of a five wave sequence, the wave 2 correction should not retrace more than 61.8% of wave 1. If it does, the move is suspect. Also, a clear five waves in the proposed wave 1 should be seen. This would imply that at least one more five-wave sequence was upcoming.

In addition, it is advantageous if the 2-bar NR is holding at an important angle of support/resistance, including trendlines, when it is formed. In fact, some of the best ORB trades occur after the market opens at an important price angle.



By employing these theories as reference points, a trailing stop can also be used. For instance, after the initial move off the open, a stop can be placed on the open. In addition, after a wave 1 is surpassed, a stop can be placed at wave 2. If acceleration occurs, a stop can be placed on the opposite side of a low-volume point left by the acceleration.

When considering a position for more than a day, the next day's price action is informative. A gap favoring your position is ideal, with a move off the open in the direction of the gap still better, indicating that an impulse wave is in progress. Given that the market has a natural tendency to move against the previous day's closing direction, the ability of the market to buck this bias is indicative of market conditions.

Toby Crabel is a CTA and AP with RB&H Commodities and a principal in Toby Crabel & Associates. A former trader at the CME and CBOT, he now edits Market Analytics.



References

- Crabel, Toby [1988], "Opening Range Breakout," *Stocks & Commodities, Volume 6: Market Timing*, pp. 337,366, 462.
- Crabel, Toby [1989], "Opening Range Breakout," *Stocks & Commodities*, April-July.
- Crabel, Toby [1989], "Price pattern studies," *Stocks & Commodities*, September.
- Crabel, Toby [1989], "Trading close-to-close patterns," *Stocks & Commodities*, October.
- Drinka, Thomas and Robert McNutt [1988], Market Profile series, *Stocks & Commodities Volume 6: Market Timing*.
- Weis, David [1987], Wyckoff in action, *Stocks & Commodities Volume 5: Trading Strategies*, p. 99.
- MacDowell, C.R. [1990], Elliott Wave dilemma: Bull or bear market? *Stocks & Commodities*, January, p. 54.
- Dimock, Dan [1990], Trading five-wave reversals, *Stocks & Commodities* January, p. 76.