TRADING TECHNIQUES

Predicting price targets with the Rule of Seven

BY ARTHUR FIELD

Entering a position is tough enough, but knowing when and where to exit can be even more formidable. The simple "Rule of Seven" is a technical tool that helps with this challenge.

Fear and greed are always poised to derail an otherwise viable trading plan. You are most vulnerable to these dangerous emotions, however, when you're already in a position and it comes time to exit. To combat their effect, technical traders employ an array of tools, most designed to determine some form of trading stop.

It's useful in these situations to have an idea of how far a move will go. A price target helps abate fear and greed. If a trade is entered and the trader determines there is a 95% probability price will achieve a certain target, this will help the trader hang on and get out when necessary.

Exits
Price targets
Fibonacci

A robust heuristic tool for this process is the Rule of Seven. It has been uncannily accurate at predicting price targets and is extremely simple for any trader to calculate. The strategy gets its name from the method of calculation. It projects four price targets based upon the first leg of a price move. And, because it is robust, it works on one-minute bars and one-month bars equally well. The only decision a trader must make to apply the rule is determining which move to designate as the first leg. This decision will depend upon the trader's time horizon.

"Leg up in copper" (right) depicts opportunities in copper following its late 2008 low. The low price was $1.2550 per lb. on Dec. 8, 2008. Copper completed a minor first leg up to $1.6550 on Feb. 9, 2009 (the high of the sideways phase begun in early January). It completed a major first leg up on April 14, 2009, at $2.2340. For the Rule of Seven example, a position trader could have got long based on various trend indicators once the move started.

Let's analyze both first legs, starting with the minor one. Because it is only a minor leg, we don't expect much precision from the result, but we do expect at least two or three of the four possible targets to be achieved with 95% probability. The major leg will be more precise, but we will expect to see only the first target with 95% probability and the second with 90%.

The probability of a price failure short of the target increases with the third and fourth targets. Price surpassing a target by 3% activates the next target. Although the Rule of Seven is solely about price and not time, experience shows the first target usually is achieved in roughly the same time frame as the initial leg – that is, two time periods. The second target will be achieved within three time periods from the initial low. The third, if at all, will be achieved within five, and the final within eight from the first bottom. As you may have noticed, this is a Fibonacci series.

To employ the Rule of Seven, we will multiply the first leg by the following fractions to estimate goals and produce price targets: 7/4, 7/3, 7/2 and 7/1. It is the use of 7 in the numerator that gives this strategy its name.

Step 1: Measure the distance of the initial leg extremes.

D = High - Low
D = 1.6550 – 1.2550
D = 40¢

Step 2: Determine the goals by multiplying the distance by the Rule fractions:

7/4 x D = 1.75 * 0.40 = 0.70
7/3 x D = 2.33 * 0.40 = 0.932
7/2 x D = 3.5 * 0.40 = 1.40
7/1 x D = 7 * 0.40 = 2.80

Step 3: Add the goals to the original low price to determine price targets:

1.2550 + 0.70 = 1.9550
1.2550 + 0.932 = 2.1870
1.2550 + 1.40 = 2.6550
1.2550 + 2.80 = 4.0550

Because $1.6550 was the high of the first leg, once copper completes its retracement and then surpasses $1.6550 by 3% ($1.6996.), (a more aggressive trader could use an entry trigger of 1.5%), the next target is activated. Because this is a minor leg, we expect to see both of our first two price targets achieved, and usually within a period not exceeding three times the initial leg. Price now has a 95% probability of achieving $1.9550, which it does on April 3, 2009. The initial target may serve as a stopping point, or price may continue toward the second target.

On April 14, the second target was exceeded with copper reaching $2.2340, the high of the move. Price promptly retreated to $1.9005 on April 28. This retreat set up our first major leg (see "Second leg," right). We can employ the rule to find longer time frame targets.

Step 1:
D = 2.2340 – 1.2550
D = 97.90¢

Step 2:
7/4 D = 1.7133
7/3 D = 2.2843
7/2 D = 3.4265
7/1 D = 6.8530

Step 3:
Target 1: 2.9683
Target 2: 3.5393
Target 3: 4.6815
Target 4: 8.1080

Copper crosses back above $2.2340 on June 1, 2009, closing at $2.3190, more than 3% beyond the recent high, thereby setting up the first price target. The first leg lasted four months and seven days, so we loosely expect to achieve $2.9683 with 95% probability around Aug. 19. Price tops at $2.9890 on Aug. 31 and then retreats to $2.640 on Oct. 2. An astute trader could have entered at $2.3190 and exited at $2.9685 and picked up 64.95¢ in 90 days – a $16,087.50 profit after allowing $150 for slippage and commissions (see "Second leg," right).

Now, our astute trader sits back and waits to see if price exceeds the $2.9683 target by 3%, or $3.0573. On Oct. 21, copper hits a daily high of $3.0575, triggering the next target of $3.5393. Because this is the second target, the probability of success is reduced to about 90%, and a price high just short of this target must be considered possible. We expect to see this move high achieved sometime around Dec. 24, or three times 127 days from the initial Dec. 8, 2008, date. We go long at $3.0575 with a target of $3.4950, allowing for a price failure just shy of the $3.5393 target.

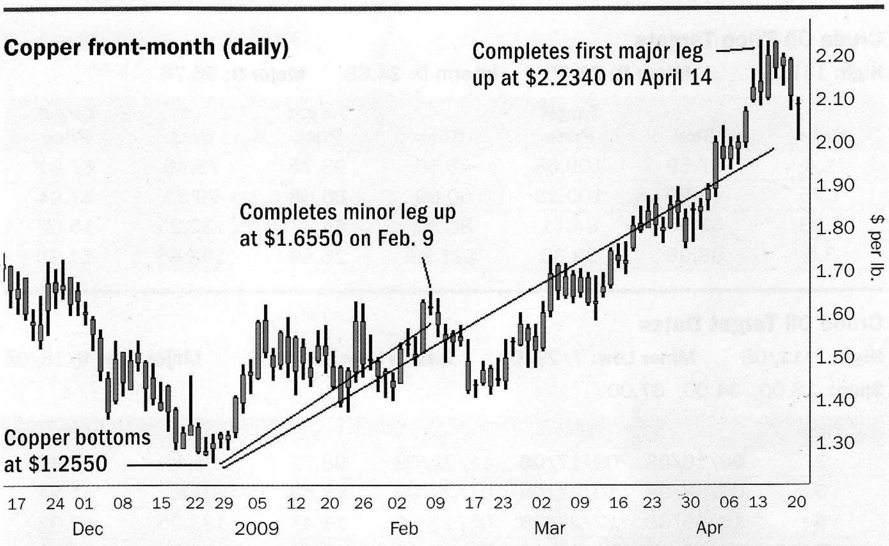
On Jan. 7, 2010, or 14 calendar days late of our forecast, price tops at $3.5440. It promptly falls back to a low of $2.8110 on Feb. 5. The trader just made another 43.75¢, or $21,725 net in under three months. The next step is to sit back and wait for price to exceed $3.6455 and re-enter, looking for $4.6815. Because that would be the third major target, the probability of reaching it is reduced to about 80%, so the trader might set a lower mental target and expect to see price move into this range by roughly Sept. 4, 2010. Nevertheless, combining the minor and major targets, the trader would reasonably be assured that an entry over $3.6455 should achieve the $4.0550 level from the fourth minor target, perhaps as soon as April 26, 2010.

Short side seven

The Rule of Seven works equally well on the short side, but on a smaller price and time scale. The fraction multipli-

LEG UP IN COPPER

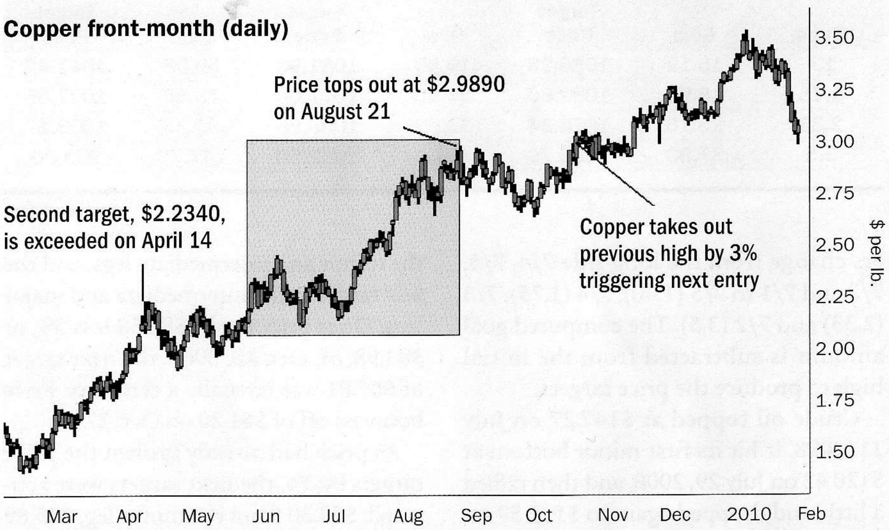
Using the Rule of Seven, we can predict price targets using the distance of the price leg that got us into the market.



Source: eSignal

SECOND LEG

Greater profits are available in secondary moves in copper.



Source: eSignal

PRICE TARGET BREAKDOWN

These tables show the price targets and dates for trading on the short side of crude oil and on the extremely short term in the S&P 500.

Crude Oil Price Targets

High: 147.27 **Minor D:** 26.85 **Interm D:** 34.68 **Major D:** 56.76

Ratio	Goal	Target Price	Goal	Target Price	Goal	Target Price
1.4	37.59	109.68	48.55	98.72	79.46	67.81
1.75	46.99	100.28	60.69	86.58	99.33	47.94
2.33	62.56	84.71	80.80	66.47	132.25	15.02
3.5	93.98	53.30	121.38	25.89	198.66	-51.39

Crude Oil Target Dates

High: 7/11/08 **Minor Low:** 7/29/08 **Interm Low:** 8/14/08 **Major Low:** 9/16/08

Span: 18.00, 34.00, 67.00

Time						
2	08/16/08	09/17/08	11/22/08	98.72	79.46	67.81
3	09/03/08	10/21/08	01/28/09	86.58	99.33	47.94
5	10/09/08	12/28/08	06/11/09	66.47	132.25	15.02
8	12/02/08	04/09/09	12/29/09	25.89	198.66	-51.39

S&P 500 Targets

High: 1101.5 **Bottom:** 1090.7, 1087.5, 1059.3

Minor D: 10.8 **Interm D:** 14 **Major D:** 38.2

Ratio	Goal	Target Price	Goal	Target Price	Goal	Target Price
1.4	15.12	1086.38	19.60	1081.90	59.08	1042.42
1.75	18.90	1082.60	24.50	1077.00	73.85	1027.65
2.33	25.16	1076.34	32.62	1068.88	98.33	1003.17
3.5	37.80	1063.70	49.00	1052.50	147.70	953.80

Source: eSignal

ers change from the long side 7/4, 7/3, 7/2 and 7/1 to 7/5 (1.40), 7/4 (1.75), 7/3 (2.33) and 7/2 (3.5). The computed goal amount is subtracted from the initial high to produce the price targets.

Crude oil topped at $147.27 on July 11, 2008. It hit its first minor bottom at $120.42 on July 29, 2008, and then rallied a little and dropped again to $112.59 on Aug. 14, 2008, an intermediate leg and a distance of 34.68. It hit its next bottom at $90.51 on Sept. 16, 2008, a distance of 56.76, and set up a major leg. Applying the target distances sets up the minor, intermediate and major targets shown in the first table in "Price target breakdown" (above).

The $112.59 price was close to the $109.68 minor target and the $90.51 major bottom was loosely predicted by the $84.71 third minor target. Notice the confirmation in the roughly $85 target in the minor and intermediate legs, and the $67 target in the intermediate and major legs. Once price broke $86.58 less 3%, or $83.98, on Oct. 10, 2008, the next target of $67.81 was virtually a certainty. Price bounced off of $61.20 on Oct. 27.

As price had already broken the prior targets by 3%, the next targets were activated: $53.30 from the minor leg, $25.89 from the intermediate leg (both fourth targets) and $47.94 from the major leg. Because the $47.94 was a major leg second target, it was 90% likely to occur and did on Dec. 2, 2008. The $25.98 intermediate leg target was only about 70% likely. Price bottomed at $33.20 on Jan. 15, 2009, achieving the major target and falling short of the third major target ($15.02) and the fourth intermediate target.

The second table shows target dates for the minor, intermediate and major leg price targets, using our same rough time estimates as on the long side. Notice how the intermediate leg low occurred on almost the exact target date of the first minor low target and the same happened for the major low target.

Of course, the short side is constrained by a natural floor, which cannot trade beneath zero and usually cannot fall beneath the production cost of the commodity. Similarly, the long side may be subject to similar constraints in the commodities if price gets too high.

The Rule of Seven price heuristic works similarly well on very short time spans using a three-tick entry buffer. Using a 15-minute bar on the S&P 500 March 2010 contract, the high at 3:15 p.m. Eastern on Feb. 2, 2010, is 1,101.50. The minor, intermediate and major bottoms in the next move set up price targets as shown in the third table in "Price target breakdown."

The actual lows were 1,059.50 on Feb. 4, at 3:45 p.m.; 1050.60 at 6 a.m. on Feb. 5, and 1,041.00 at 1:45 p.m. on Feb. 5. Once again, notice how the first target of the minor wav (1,086.38) set up the first bottom of the intermediate wave (1,087.50) and the fourth target of the minor wave (1,063.70) predicted the first bottom of the major wave at 1,059.30. The first target of the major wave was 1,042.42, which proved to be the end of the downtrend begun on Feb. 4. An entry sell stop set at 1087.20 (three ticks below the intermediate low) sets up a nice trade. It is confirmed by the third and fourth minor targets, and the second and third intermediate targets, which then culminate in the fourth intermediate and second major targets. Selling at 1,087.20 and covering at 1,043 would produce a profit of 44 S&P points in two days, $4,250 in the mini-S&P after slippage and commissions.

No heuristic will be 100% accurate, but the Rule of Seven is a reliable indicator for dulling the profit-sapping effects of fear and greed. Traders should test the effectiveness of this simple tool with their own strategies and determine if it can help them take more money off the table and protect the paper profits they have achieved.

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