CLASSIC TECHNIQUES

Crowd Behavior And Elliott Waves

The Third Wave

Does the crowd always behave the same way? According to Elliott wave theory, they do, and this is what forms the basis of the impulse pattern of five waves. Here's part 1 of a quick study.

by Mircea Dologa, M.D.

When it comes to trading different types of trend waves, trading wave 3 in Elliott wave theory is the most profitable, even if the position may sometimes reach its maximum accepted limit. It's a question of observing all this unwinding (referred to as *chaos* by academics) in a tridimensional approach. In the first dimension, you must grasp the meaning of each trend's module. In the second, you must follow up on the functionality of the continuous developing mechanism. And in the third, you must trade — that is, make decisions — and preserve capital.

THE FRACTAL NATURE OF WAVES

In his wave theory, R.N. Elliott's major innovation pointed out that the crowd always behaves the same way, thus constituting the impulse pattern of five waves (noted as W1 through W5), immediately followed by correction pattern of three waves (noted as A, B, C). When all these waves (impulsive or corrective) contain themselves within multiple levels of subwaves, typically referred to as *lesser-degree waves* (Figures 1 and 2), you understand the fractal nature of the waves.

The Impulse Pattern

After the low of a correction pattern, an impulse pattern usually follows. The first impulse wave could be a wave 1 or a wave A, and you'll see the required five lesser-degree waves. The main reason I equate wave 1 with wave A is because when an impulsive/corrective pattern starts, you don't really know which of the two it will be until the third wave is terminated. So to make things easier, I refer to the first wave as wave 1/A, the second wave as wave 2/B, and the third wave as wave 3/C.

If you don't see them, you should go to a shorter time frame. After that first impulse wave, a corrective wave 2 or wave B develops. This is in line with the alternation principle characterizing any correction pattern.

The next wave will be either an impulsive wave 3 or a wave C, which will differentiate between an impulse pattern and a corrective one. Wave 3 will be followed by a corrective W4. The impulse pattern's W5 ends this pattern.

Once the correction W2/B is terminated and the impulsive W3/C starts to form, you should draw the wave extensions.

Normal Development of Wave 3

The development of wave 3 should be followed closely. In fact, you should watch it so closely that every time you see the

FIGURE 1: TYPICAL IMPULSE ELLIOTT PATTERN. On this five-minute chart, you can see the occurrence of Elliott wave patterns over a two-day period.

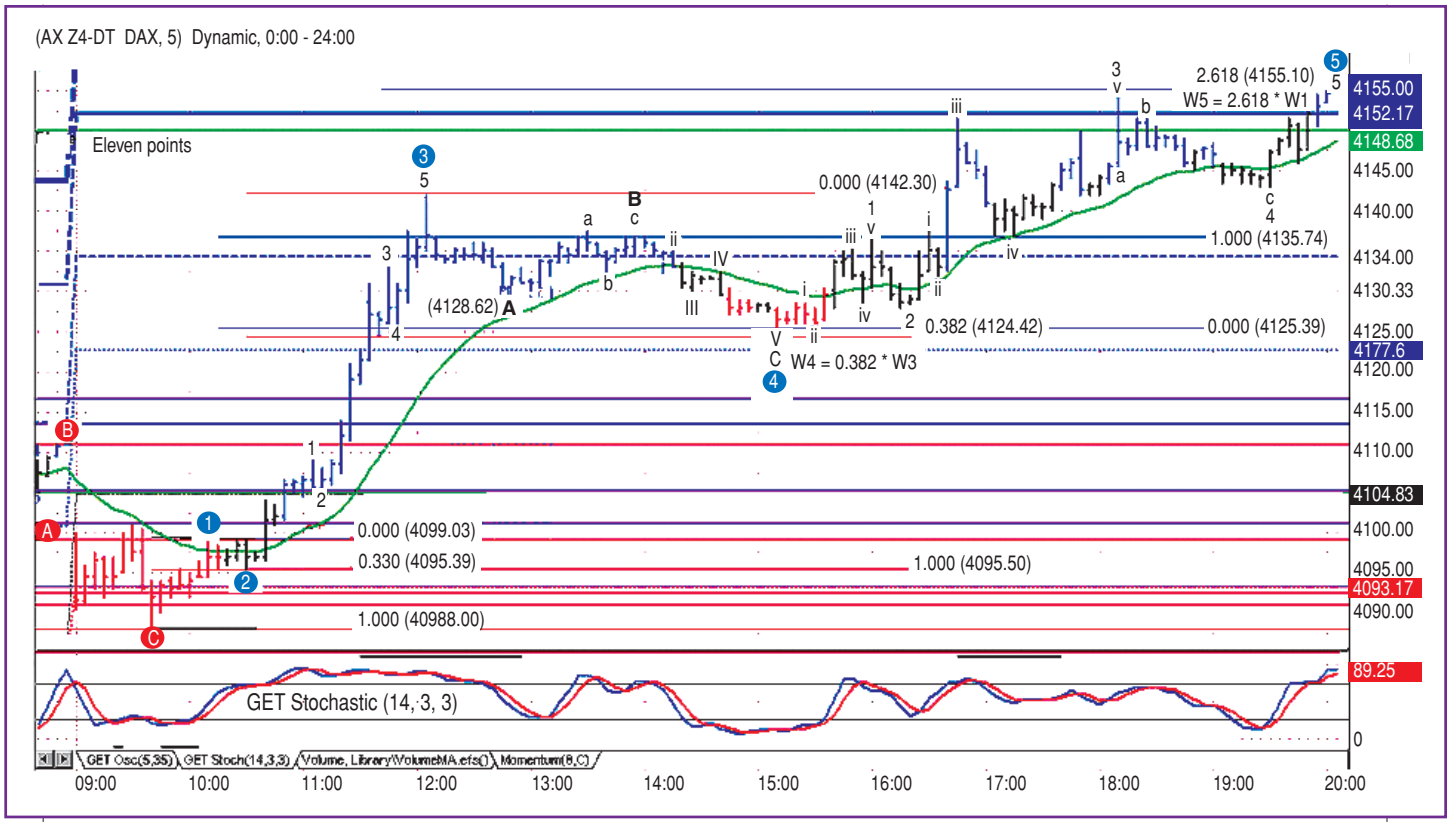

FIGURE 2: IMPULSE PATTERN OVER A ONE-DAY PERIOD. Get into the habit of observing patterns in various time frames, because the naked eye can pick up some surprising details.

pattern repeating, you should experience déjà vu. The following make up the development of wave 3:

- If it reaches only the 1.00 * W1 price level and then retraces below the high of W1, an overlapping phenomenon, you can consider it to be a correction pattern. You should be prepared, however, for a retracement below a 0.786 ratio, which is borderline between the up and down impulse/correction pattern area.
- If W3 continues its development beyond the 1.00 * W1 level, you can say that W3 is in progress. At 1.618 * W1, it may be labeled as a normal wave 3. Some aggressive traders consider 1.10 or even the 1.146 * W1 level as the area to initiate W3 trades, even if the 1.618 * W1 level has not yet been reached (see sidebar, "Miner's and Fisher's Fibonacci calculations of end of wave 3"). The reasoning for this decision is hidden in the steepness of the entire impulse pattern, and especially the trend of W3.
- The extended W3 starts after the level of normality, which becomes enhanced when the 2.618 * W1 level is reached; even higher levels such as 4.236 and 6.85 may follow. They may even be higher in the case of an elongated wave.

Macro Observation of the Waves (Figure 2)

It's a good idea to get into the habit of closely observing every pattern in various time frames because the naked eye can pick up some amazing factors. After a while, the following will become easy to identify:

- If W1 is small enough and there is a minor degree of W2 retracement, you can expect W3 to be extended and W5 to equal W1.
- If, on the contrary, W1 has a normal length with an average W2 retracement and W3 has a 1.00 to 1.618 ratio with respect to W1, you should expect an extended or even elongated W5.
- The Fibonacci number count will give you a hint in pinpointing the end of W3 with 1, 2, 3, 5, 8, 13, 21, 34, and 55 series. Establish the characteristics of the waves: the average swings, the length of uptrends and downtrends, the pullbacks, and the length of Elliott waves in bars and values.
- Determine the measure (in bars) of the preceding trading range and expect the high of the current trend will be a multiple ratio of this range.
- The pullback characteristics: What is the order in the trend, the depth, and the number of bars? Is the pullback leaning against the eight-period exponential moving average (EMA)? Or do you see a technical analysis pattern such as a flag, pennant, or rectangle?
- The slope of the trend: It goes without saying that the steeper the slope, the stronger the trend nearer the end!

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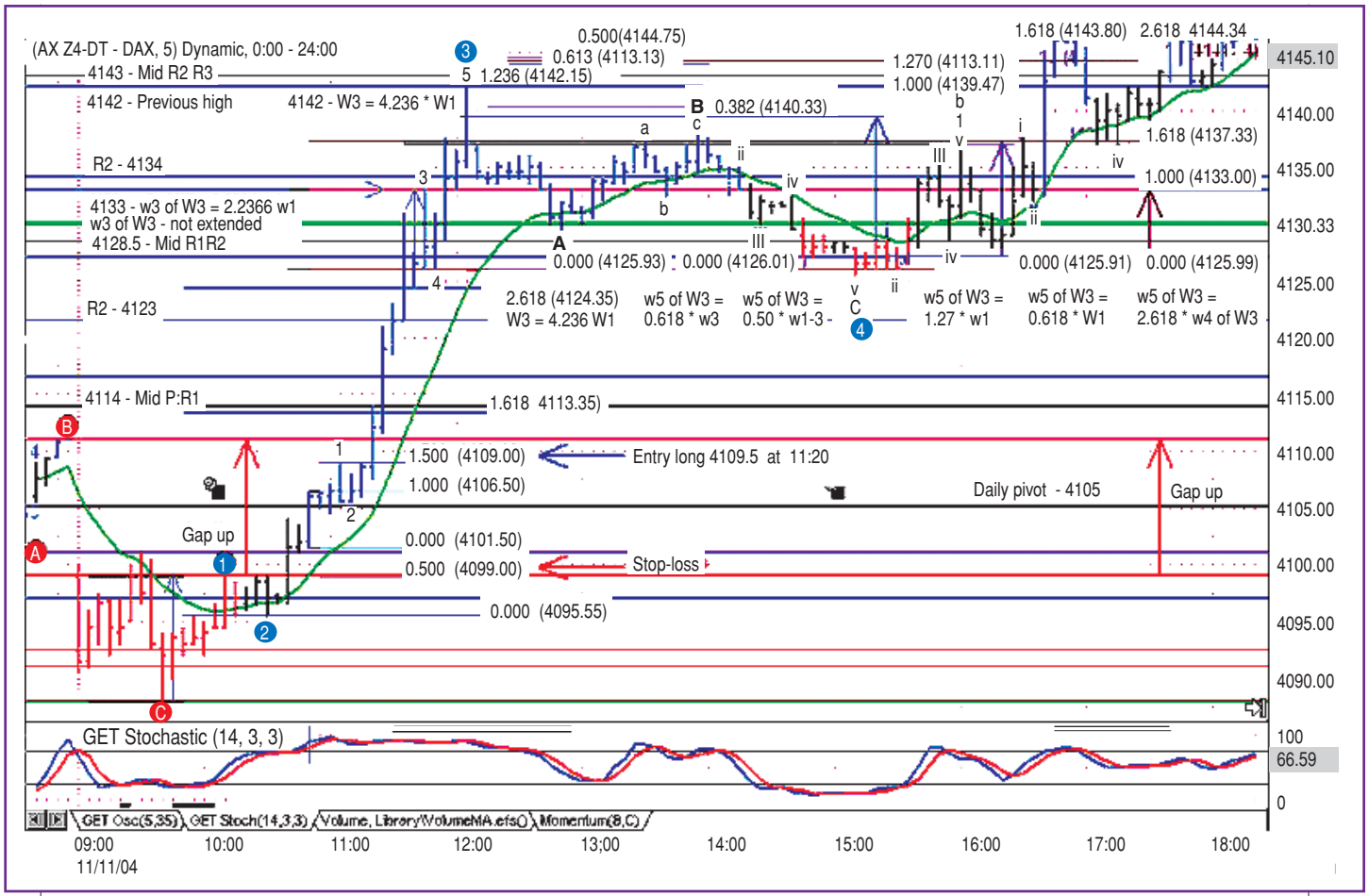

FIGURE 3: END OF W3. On this five-minute chart, you see the target extensions, floor pivots, and entry and exit points at the end of wave 3.

Extended Wave 3 Development

Of the three impulse waves, the wave 3 extension is by far the most frequent. It has the following characteristics:

- A weak W2 retracement of only 23.6 or 38.2%, instead of the normal 38.2 – 61.8%. When this happens, it almost seems as if the wave is impatient (steeper slope) or even anxious (more numerous pullbacks) to reach the final level.
- On a five-minute chart, the W2 retracement is one to three bars long.
- The steepness of the trend is greater than 45 degrees.
- The distance between the price and smaller moving average (eight-period EMA) diverges.
- There are high levels of momentum (8) above the zero line.
- The RSI(13) confirms momentum and sometimes works better when identifying highs.
- The steeper slope of VolumeMA curve and occurrence of multiple spikes is synchronous with the rhythm and number of pullbacks.

This extending process starts easily with the first swing after the end of w2:W3, the inception territory of the third of the third wave. Thus, wave 3 becomes the best standard representative of the impulse wave pedigree.

HOW HIGH IS HIGH?

Once all these parameters fit into context, the problem of keeping the most of your hard-earned money arises (see Figure 3, above, and the sidebar on the following page). The optimal solution also comes from forecasting the fifth of the third wave (w5:W3).

Lesser-degree wave projections: It is commonly accepted that in the case of extended wave 3, the projection of wave 5 should only use wave 1 as an extension basis (w1:W3 in our case):

$$w5{:}W3 = 1.000 * w1{:}W3$$

If w3:W3 is not extended, the target of w5:W3 is calculated by using the following extension basis, listed by order of importance:

- w1-3:W3, with ratios of: 0.618, 0.500 or 0.382
- w3:W3, with ratios of : 1.000, 0.786, 0.618, or 0.500
- w1:W3, with a ratio of 1.272 (not used often)
- w2:W3, with ratios of: 1.272, 1.618, 2.618, 4.85 (not used often)
- w4:W3, with ratios of: 1.272, 1.618, 2.618 (again, not used often)

Primary degree waves: The objective of all these projections is to find out the end of wave 3 of the current impulse pattern, which implies the end of w5:W3. The extension basis belong-

MINER'S AND FISHER'S FIBONACCI CALCULATIONS OF END OF WAVE 3

Miner & Fisher *Fibonacci* Calculations of End-of-Wave (W3)

This Excel file can be obtained from the author

IMPORTANT: *Please read carefully the Notes(bottom of page), before use !*

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Dax Futures Dec Contract - Nov. 11, 2004

	- W3 Projections (end of W3) - Primary Waves Use					*- w5 :W3 Projections - (end of W3) -* Lesser Degree Waves Use										*- w5:W3 Projections -* Mixing Waves Use			
Extension Basis	**W1****	W1****	**W2****	*W2*	**W3**	w1	*w1*	w1-3	*w1-3*	w2	*w2*	w3	*w3* ****	w4***	*w4*	w5	**W1*****	*W1*	**W2*****	*W2*
Value at 0%	4088.0	*4088.0*	4099.0	*4099.0*	4095.5	4095.5	*4095.5*	4095.5	*4095.5*	4109.0	*4109.0*	4105.0	*4105.0*	4133.0	*4133.0*	4126.0	4088.0	*4088.0*	4099.0	*4099.0*
Value at 100%	4099.0	*4099.0*	4095.5	*4095.5*	Cluster	4109.0	*4109.0*	4133.0	*4133.0*	4105.0	*4105.0*	4133.0	*4133.0*	4126.0	*4126.0*	Cluster	4099.0	*4099.0*	4095.5	*4095.5*
End of **W3** & **w5** - *Real Market Value*					4142											4142				
Length in pts	***11.0***		***3.5***		*46.5*	***13.5***		***37.5***		***4.0***		***28.0***		***7.0***		*16.0*	***11.0***		***3.5***	
	0.236								*4141.9*											
Ratios	*0.382*				-	4131.2	*4138.2*	***4140.3***	*4147.3*	4127.5	*4134.5*	4136.7	*4143.7*	4128.7	*4135.7*	-	4130.2	*4137.2*	4127.3	4134.3
	0.500				-	4132.8	*4139.8*	***4144.8***	*4151.8*	4128.0	*4135.0*	***4140.0***	*4147.0*	4129.5	*4136.5*	-	4131.5	*4138.5*	4127.8	4134.8
	0.618				-	4134.3	*4141.3*	***4149.2***	*4156.2*	4128.5	*4135.5*	***4143.3***	*4150.3*	4130.3	*4137.3*	-	4132.8	*4139.8*	4128.2	4135.2
	0.786	4104.1	*4107.6*		-	4136.6	*4143.6*	***4155.5***	*4162.5*	4129.1	*4136.1*	***4148.0***	*4155.0*	4131.5	*4138.5*	-	4134.6	*4141.6*	4128.8	4135.8
	1.000	4106.5	*4110.0*	4099.0	*4102.5*	- *	***4139.5***	*4146.5*	***4163.5***	*4170.5*	4130.0	*4137.0*	***4154.0***	*4161.0*	4133.0	*4140.0*	-	***4137.0***	*4144.0*	4129.5	4136.5
	1,000+10%**	4107.6	*4111.1*																	
	1.146	4108.1	*4111.6*																	
	1.270	4109.5	*4113.0*	4099.9	*4103.4*	-	***4143.1***	*4150.1*	4173.6	*4180.6*	***4131.1***	*4138.1*	4161.6	*4168.6*	*4134.9*	*4141.9*	-	***4140.0***	*4147.0*	***4130.4***	4137.4
	1.618	***4113.3***	*4116.8*	***4101.2***	*4104.7*	-	4147.8	*4154.8*	4186.7	*4193.7*	***4132.5***	*4139.5*	4171.3	*4178.3*	***4137.3***	*4144.3*	-	***4143.8***	*4150.8*	***4131.7***	4138.7
	2.618	***4124.3***	*4127.8*	***4104.7***	*4108.2*	-	4161.3	*4168.3*	4224.2	*4231.2*	***4136.5***	*4143.5*	4199.3	*4206.3*	***4144.3***	*4151.3*	-	***4154.8***	*4161.8*	***4135.2***	4142.2
	4.236 *	***4142.1***	*4145.6*	4110.3	*4113.8*	-	4183.2	*4190.2*	4284.9	*4291.9*	***4142.9***	*4149.9*	4244.6	*4251.6*	4155.7	*4162.7*	-	4172.6	*4179.6*	***4140.8***	4147.8
	6.850	***4170.9***	*4174.4*	4119.5	*4123.0*	-	4218.5	*4225.5*	4382.9	*4389.9*	***4153.4***	*4160.4*	4317.8	*4324.8*	4174.0	*4181.0*	-	4201.4	*4208.4*	***4150.0***	4157.0
Inter-waves Ratios	*w3=4,236*w1*	-	-	-	W3=W3	*w5=1,00*w1*		*w5=0,38*w1-3*		*w5=4,236*w2*		*w5=0,50*w3*		*w5=2,618*w4*		w5=w5	*w5=1,270*W1*		*w5=4,236*W2*	
						*w5=1,27*w1*		*w5=0,50*w1-3*				*w5=0,62*w3*					*w5=1,618*W1*			

Notes : ***The italic written waves & cells are Fisher's Calculations (ex: W1, w1) & non-italic are Miner's calculations (ex: W1, w1).***

* Bordered cells represent the inter-waves ratios projected levels, concerning *Miner's* & *Fisher's* Calculations

** W1 & W2 can be used as extension basis of W3, from the end of W2 level (4095,5). - *Miner's calculation*

*** Lesser degree & mixing waves extension basis of W3 (w1 through w4, W1 & W2), can be used at the end of w4:W3 level (4126) - *Miner's calculation*

**** W1 & W2 can be used as extension basis of W3, from the end of W1 level (4099) - *Fisher's's calculation*

Lesser degree & mixing waves extension basis of W3 (w1 through w4, W1 & W2), can be used at the end of w3:W3 level (4133) - *Fisher's calculation*

Cluster Target Zone (4139,5-4144,5) contains ***12 price levels*** *, using Miner's calculations and* ***14 price levels*** *using Fisher's calculations.*

SIDEBAR

ing to primary degree waves are the earliest ones available:

- Use of W1 as extension basis for W3: 1.618, 2.618, 4.236, 6.85 ratios
- Use of W2 as extension basis for W3: 1.272, 1.618, 2.618 ratios

This gives you the advantage to follow the W3 trend very closely through the following parameters:

- EMAs, slope, pullbacks
- Indicators [stochastics (14, 3, 3), RSI(13) momentum (8) and MACD (5, 35)]
- Fibonacci counts, preceding trading range measure

Mixing primary degree and lesser-degree waves: Using the alternation principle that is also applied to impulse waves, you could associate the use of these two types of waves in order to more precisely forecast the end of w5:W5.

- w5:W3 = 1.272 * W1 (primary W1), projected from the low of w5:W3
- w5:W3 = 1.618 * W1 (primary W1), projected from the low of w5:W3

The same forecast can be applied to primary wave 2 (W2):

- w5:W3 = 1.618 * W2 (primary W2), projected from the low of w5:W3
- w5:W3 = 2.618 * W2 (primary W2), projected from the low of w5:W3
- w5:W3 = 4.236 * W2 (primary W2), projected from the low of w5:W3

Dynamic time projections: This technique is very efficient, especially for trading index futures.

Technique of applying wave projections: To get a reliable cluster with a zone as narrow as possible for the target of w5:W3, I selected the ratios displayed in Figure 3. These projections can be done only when the market reaches the end of W2 and w4:W3. It goes without saying you should have extensive experience to draw all these projections with the Fibonacci charting tools before wave w5:W3 is completed. To speed up the calculations, you can use an Excel file and obtain multiple probable targets within a few minutes. This tool detects:

- Cluster target zone with its minimum, typical, and maximum levels
- Timing to apply all these projections (the time availability of necessary data), located at the end of:
  1. W2 (eoW2 trading time frame bar)
  2. w4:W3 (eow4:W3 trading time frame bar)

Cluster zone and the reality of the numbers: These projections are precise compared to what really took place (Figure 3). If you analyze the proposed extensions and retracements, you'll see its results in a 12 price-level cluster zone:

- W3 high (projected at end of W2):
  4142 - 4.236 * W1

- w5:W3 High (projected at end of w4:W3):
  4139.5 - 1.000 * w1:W3

4140 - 0.500 * w3:W3 & 1.272 * W1
4140.5 - 0.382 * w1-3:W3
4141 - 4.236 * W2
4143 - 1.272 * w1:W3 & 4.236 * w2:W3
4143.5 - 0.618 * w3:W3
4144 - 2.618 * w4:W3 & 1.618 * W1
4144.5 - 0.500 * w1-3:W3

From the five-minute chart, you can see all of the announced projections within a cluster price zone of 5 points, from 4139.5 to 4144.5. This means:

- 0.12% of W3 market price, *and*
- 10.76% of W3 length.

Curiously enough, the high of W3 was completed at 4142, which is no more or less than exactly 50% of the cluster price zone. Again the 50% magical Gann number!

In part 2 of this three-part series, I'll discuss several other techniques you can apply to help identify the primary and lesser-degree waves.

Mircea Dologa began his investment and trading career in 1987. As a Commodity Trading Advisor, he subsequently founded a new teaching concept based on the practical aspects of trading. His website can be found at www.pitchforktrader.com.

†See Traders' Glossary for definition