

Chapter 17

Cycles and Waves

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We know that economies exhibit cyclical and so do financial systems, usually described roughly as *boom* and *bust*. Many academics, private organizations, and central banks do extensive research on cycles. Technical analysts want to understand boom-bust cycles to get a trading advantage, but are cycles regular and consistent enough to make the effort worthwhile? In this chapter, I do a quick review of business and financial cycles and explain why understanding cycles is useful for Big Picture perspective, but technical analysis is a whole lot easier for making trading decisions.

One aspect of cyclical, though, is seasonality, and there the historical data and statistical analysis is on our side — there is consistency and regularity to add to our edge.

Looming over both cycles and seasonality is the issue of whether there is some giant mystical order in the universe that dictates financial price movements. I look into magic numbers with a skeptical eye.

Defining a Cycle

The economic cycle is the process by which an economy (and the businesses in it) expand, reach a peak, and then contract and go into recession. They do all this in a wave-like pattern around a growth trend, generally measured by gross domestic product (GDP), which is the sum of all the goods and services produced in a country in a specific period of time. Economists have been trying to pin down the economic cycle for over two centuries. So far there have been a super-long cycle — the Kondratiev wave of 45 to 60 years; the infrastructure cycle of 15 to 25 years; the business cycle of 5 to 7 or 7 to 10.5 years; and the inventory cycle (another business cycle) of 3 to 5 years.

There are also land/real estate and agricultural cycles. For U.S. land, there's been an average 18-year cycle between 1818 and 2006, but the average disguises a range of 6 years between peaks and 48 years between peaks. To an

economist it's still a "cycle" but the practical application for a trader is lost when the peak-to-peak could be 6 years--or 48.

In agriculture, cycles are determined by export prices and by the cost of borrowing. Boom-bust cycles in U.S. agriculture are shaped by exports into a global economy with rising populations, so that rising domestic farm incomes lead to capital investment in land and equipment. To the extent farm expansion was fueled by borrowed money, busts are correspondingly harsher, especially those experienced in the 1920s and 1980s.

Oh, dear. Now we are getting into a quagmire. If there is an underlying order to economic boom-bust cycles, evidently it can be disrupted by weather, war, demographics, government interference like subsidies, banking sector credit policies, and monetary policy, and not just in the home economy.

Financial cycles

The financial cycle follows the economic and business cycles but with the addition of something new — risk management. The financial cycle is much slower than the usual business cycle of 7 to 10.5 years and tends to have more prolonged booms and busts than the last decades, especially in equities and housing. Central banks aim to equilibrate, at least to some degree, the financial cycle with the business and economics cycles. The important point to notice is that the financial cycle is not the same thing as the business cycle, and neither is the same thing as the economic cycle. You can say that the industrial production cycle in the U.S., properly adjusted, is 10.5 years, and that's the right number to look at; however, a monetarist or central banker would say the economy consists of a lot more than industrial production, and you need to look at income distribution, credit availability and use of debt, and a dozen other factors to get a full picture.

<Tip>

Put on your skeptic's hat when you encounter a trading guru who absolutely, positively knows the financial/business/economic cycle and wants to teach you how to trade using that knowledge. The best brains at universities, economics advisory firms, and central banks can't do it, and the probability is pretty good that your guru can't do it, either.

Having said that, academic research shows that if you collect data on several hundred economic data points (inflation, industrial production, employment, and so on) and buy when the cumulative number is higher than 60 days ago and sell when it falls under the 60-day average, you will make a good return in an index like the S&P, more than what you would get with buy-and-hold.

Following the earth's axis: Seasonality and calendar effects

You shouldn't be surprised to hear that heating oil futures go up as winter heads for Chicago. The prices of agricultural commodities rise and fall with the seasons. *Seasonality* is the term used for the natural rise and fall of prices according to the time of year.

Oddly — very oddly — equities and financial futures exhibit a similar effect: They change according to the time of year. The changes are regular and consistent enough to warrant your attention.

Defining seasonality and calendar effects

Seasonality used to be a term applied to agricultural prices, and *calendar effects* was a term applied to equities. Today they're used interchangeably. You can discover the seasonality characteristics of any given stock by using *seasonality trackers* on various websites, including the best-known, Thomson Financial Seasonality Tracker. Go to the website (www.thomsonfn.com), type in your security's symbol, and select "Seasonality Tracker" from the menu. You get a chart of your stock with its associated average returns by month, starting in 1986. You can also see a table of the months in which the stock rose or fell over the years.

Another excellent site is www.timeandtiming.com, which covers all the top futures contracts (interest rates, currencies, metals, oil and gas, and agricultural commodities). In addition to vast amounts of historical comparisons, you can find trading ideas that worked in the past, complete with average gain, win-loss ratio, and so on. Here's a case: You hear a seasonality guru say (on September 20) that gold, while falling at the moment, should go up into end-October on its usual seasonal pattern that has been holding for 15 years. Is this true?

You consult Timeandtiming.com and find that buying the December gold contract on September 20 and holding to end-October would have resulted in a loss of 0.30 percent over the past 20 years, or losses in 12 of 20 years. If, however, you bought in early August and held to the first week of November, the seasonality was indeed in your favor — your return would have been 2.92 percent over the years from 1974 to 2013. The guru wasn't necessarily wrong; there is a seasonal upswing in gold in the fall. But what he didn't say was that the best time to enter was already past as of September 20.

<Tip>

It's when you buy that counts. When you hear "It's when you sell that counts," it's because the buy-and-hold philosophy is being refuted. But if you are already past buy-and-hold as outdated and wealth-destroying, your new catchphrase is "It's when you buy that counts."

The most well-known calendar effects

In equities, you have probably heard the adage, “Sell in May and go away.” This advice comes from work on calendar effects by Yale Hirsch and his son Jeffrey Hirsch, who tested the correlation of stock indices with the time of year in their annual *Stock Trader’s Almanac*. The rule is called the *best six months rule*.

Hirsch discovered that nearly all the gains in the S&P 500 are made between November 1 and April 30. This rule isn’t true without exception, but it’s true for most years since 1950. When April 30 rolls around, you sell all your stocks and put the money in U.S. Treasury bills. Come November 1, you reenter the stock market. If you’d followed this rule every year since 1950 and also modified the exact timing a little by applying the moving average convergence-divergence indicator (check out MACD in Chapter 12), a starting capital stake of \$10,000 in 1950 would have ballooned to \$2,067,368 by April 2013. On average, you would’ve been invested only six and a half months each year — and remember, when you’re not in the market, you’re not taking market risk.

Other calendar effects include

- * **January Barometer:** When the S&P 500 is up in January, it’ll close the year higher than it opened. Since 1950, this rule has an accuracy reading of 90 percent.
- * **President’s Third Year:** Since 1939, the third year of a presidential term is always an up year for the Dow. In fact, the only big down year in the third year of a presidential term was 1931.
- * **Presidential Election Cycle:** Wars, recessions, and bear markets tend to start in the first two years, while prosperity and bull markets tend to happen in the second two years. Since 1833, the last two years of a president’s term produced a cumulative net gain in the Dow of 718.5 percent, while the first two years produced 262.1 percent.

Hirsch and others have discovered many other calendar effects. Hirsch’s annual *Stock Traders Almanac* publishes the probability of any of the three major indices (Dow, S&P 500, and NASDAQ) rising or falling on any day of the year. The almanac bases this information on what has happened in those indexes on those dates since January 1953.

Using seasonality and calendar effects

Paying attention to calendar effects can help improve your market timing. When you’re sitting down to make a trading or investment decision, you can avoid a costly mistake by consulting the calendar not only for the specific security, but also for the index to which it belongs. Calendar effects are certainly more than a curiosity, although a wild rally isn’t going to stop solely

because it's May 1. But because so many traders and money managers know about calendar effects, they are to some degree a self-fulfilling prophecy.

Big-Picture Crowd Theories

Some important ideas about the extent of retracements come from theories about the cyclical nature of history. This section deals with these ideas as a stand-alone section because they're pervasive — and controversial.

When you start gathering technical analysis material, you inevitably run into big-picture crowd theories, a school of thought that is very popular today. Some people swear that the ideas are obvious. But just as beauty is in the eye of the beholder, theories about the ebb and flow of history are just that — theories. No big-picture theory has been proved by statistical measures. To be fair, no theory has been disproved, either.

<Tip>

Technical analysis is a sufficiently crowded field already. Why make things more complicated than they have to be? If you use the empirical evidence in front of you — clean and easy techniques like drawing support and resistance lines, for example — you can use technical analysis to make profits and avoid losses. Do you really need to know the secrets of the universe, too?

But you need to know that these ideas are scattered throughout the field of technical analysis and some smart and successful people in the field believe them. Those who don't are mostly too polite to ridicule the ideas. You'll also run into critics who mistakenly think that all technical analysis involves big-picture crowd ideas.

Some analysts subscribe to the idea that in the ebb and flow of human affairs, they can perceive cycles, including market cycles. Some of these ideas contain mystical overtones and unproven claims about how the world works, such as “the trading crowd is only the instrument of bigger forces at work.” The core idea is that market trading is essentially an irrational process — you are trying to follow the irrational crowd and that makes you irrational — but the crowd is, unknowingly, following some hidden universal laws.

<Remember>

Because these ideas can never be verified, some critics unfairly color the whole field of technical analysis with the charge of supernatural voodoo. Empiricists cast doubt on these theories because they're not proven and by their nature, can't be proven. In particular, economics offers no theoretical basis for cycles that are fixed in size or duration. Economists do observe business cycles — several of them — but they overlap and don't appear regularly. It is undeniable, however, that retracements do occur sometimes

near the levels forecasted by market cycle theorists such as J.M. Hurst, who has a large following. As a result, technical traders are reluctant to level the charge of crackpot against cycle theories.

The Gann 50 percent retracement

In the early 1900s, a trader named W.D. Gann discovered that retracements in the securities he was trading at the time tended to occur at one-half of the original move from the low to the high. To illustrate, say the price moved from \$10 to \$30. At \$30, the crowd decided that the security was overbought and started to sell. The ensuing price decline, the retracement, stops near 50 percent of the original \$10 to \$30 move, namely \$20. Figure 17-1 shows the 50 percent retracement case.

Figure 17-1: Gann 50 percent retracement rule.

In fact, Gann said that the most profitable retracement is a 50 percent retracement. The area around 50 percent is a danger zone, because the price can keep going and become a full-fledged reversal around there (in which case you lose all the gains). But it's the best place to reenter an existing trend (with an exit planned just below using a stop-loss order in case it doesn't work). If the trend resumes, Gann wrote that it will then exceed the previous high, which gives you an automatic minimum profit target. This observation may be the origin of the phrase, "Buy on the dip."

Gann also saw retracements occurring at the halfway point of a move, such as 25 percent (half of 50 percent), 12.5 percent (half of 25 percent), and so on. Statisticians can't offer proof that retracements occur at 12.5 percent, 25 percent, or 50 percent with more frequency than chance would allow. The absence of statistical proof in a field populated by mathematical sophisticates is puzzling at first.

But when you ask a statistician why he doesn't just run the numbers and test the hypothesis, he points out that defining the low-to-high original move and then defining the stopping point of a retracement is a computational nightmare. No matter what definitions he gives his software, another analyst is sure to want to refine them in some other way. You'll see studies, for example, showing that the actual percentage change of many retracements isn't precisely 50 percent, but rather in a range of 45 to 55 percent. Is that not good enough?

<Remember>

A critical point about the 50 percent retracement rule is that you may think you want to exit to protect your profit at the 50 percent level. If you bought the security at \$10 and it rose to \$30, but has now fallen to \$20, shown in Figure 17-1, you want to sell at \$20 to hang on to the gain you have left. But

if the 50 percent retracement rule works this time, you would be getting out exactly when you should be buying *more* (adding to your position), because a resumption of the trend at the \$20 level almost certainly means that the price will now go higher than the highest high so far, \$30.

A 100 percent retracement, a price that goes from \$10 to \$30 and back to \$10, will often form a *double bottom*, a bullish formation. When the price peaks twice at the same level, you have a *double top*, a bearish formation. (See Chapter 9 for more details on these formations.)

Magic numbers: “The secret of the universe”

Another theory about how retracements should form is based on the Fibonacci sequence of numbers. This theory says that a retracement is most likely to stop at one of a series of numbers, with an emphasis on 38 percent or 62 percent of the original move. Where does this come from?

A 13th-century Italian mathematician named Fibonacci discovered a self-replicating sequence of numbers with curious properties. It starts with 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, and so on to infinity. After the first few numbers, the sum of two adjacent numbers in the sequence forms the next higher number in the sequence. Most important, the ratio of any two consecutive numbers approximates 1.618 or its inverse, 0.618. One to 1.618 is named the “golden ratio.”

Nature offers many examples of these ratios: daisy petals, ferns, sunflowers, seashells, hurricanes, whirlpools, and atomic particles in a bubble chamber. And many of man’s works purportedly embody the Fibonacci ratios as well: the pyramids in Egypt, the Parthenon in Greece, and Cézanne’s choice of canvas shape, although some mathematicians dispute some or all of these. In fact, many of the named instances of the golden ratio in nature, anatomy, art, and architecture don’t pass the test. A good example is the shell of the chambered nautilus, which supposedly obeys the golden ratio, but look it up — nautilus shells’ average growth ratios of 1.24 to 1.43, quite far from 1.618.

<Remember>

Of course, critics point out that many other events in nature, architecture, and human behavior follow a sequence of 2, 4, 6, 8, and so on. The number 11 can be considered magic, not to mention *pi* (3.14159), used to calculate the circumference of a circle. Prime numbers, which are numbers divisible only by themselves and one (3, 5, 7, 11, 17, and so on), are important numbers. In fact, many other self-replicating number sequences exist. In short, scientists say that to attribute human behavior to any single number sequence is ludicrous, or at least not plausible.

Historically, the golden ratio initially arose from Euclid, who was fascinated by the pentagon, which has five sides — and yet five is not a magic number. Tony Plummer, a stunningly brilliant writer and the foremost author on magic numbers, most recently produced *The Law of Vibration* (Harriman House, 2013), which tries to dissect the influence on human behavior of the hidden laws of cosmic vibration — including the Law of Three, the Law of Seven, and inner-octave cycles. Only a few thinkers in all of history have been able to perceive these vibrations — including Gann.

A trader named Ralph Nelson Elliott believed that man’s behavior, including his behavior when trading in the stock market, revealed similar characteristics as the Fibonacci sequence and could, therefore, be charted to predict future behavior. Elliott observed that securities prices appear in a wavelike form on charts, hence the name of his forecasting method, *Elliott Wave*. Elliott wrote that the Fibonacci sequence provides the mathematical underpinnings of the wave principle. Elliott Wave adherents expanded Elliott’s use of the Fibonacci sequence and often use Fibonacci levels, with special attention to 38 percent and 62 percent (but also including 23.6 percent, 50 percent, and 100 percent of the high-low span), to predict the extent of retracements. Note that technically, 50 percent isn’t a Fibonacci number. It’s customary to include it, though, possibly because of Gann’s influence.

To make life difficult, some traders who like the Fibonacci sequence aren’t strict adherents of the Elliot Wave principle and some Elliot Wave traders don’t necessarily believe that price moves will stick to Fibonacci numbers. See the sidebar “The Elliot Wave principle” in this chapter for more about the Elliott Wave, which goes far beyond the subject of retracements.

Seeing too many retracements

Fans of the Fibonacci sequence assert that the 38 percent and 62 percent retracement levels occur more often than chance would allow, although I have never seen statistical proof. (Perhaps because any statistical studies would degenerate into squabbling over measurement criteria.)

Some traders embrace Gann’s ideas, some embrace the Elliott Wave, some embrace Fibonacci numbers, and some embrace them all. If you were to put the main Gann retracement numbers (12.5, 25, 50, and 75 percent) and the main Fibonacci retracement numbers (23.5 percent, 38 percent, and 62 percent) on the same chart of a trend, you’d have so many lines that the next retracement would be bound to hit one of them or a level near one of them.

<Warning>

Some advisors who like all the ideas choose to display the retracements that did work while conveniently not mentioning all the others that could have been shown on the same chart. In other words, they’re going to be right no

matter how the retracement turns out. You may see advertisements and solicitations claiming that the seller has “objective” methods of forecasting securities prices, and these methods are often based on Gann or Fibonacci “scientific principles.” Beware. By definition, all math is science. If you’re going to follow an advisor, put your faith in a consistently winning track record rather than in claims of an inside track to universal truth.

Like all technical methods, applying Gann and Elliott Wave ideas is an art, and constant revision is necessary as prices evolve. Statisticians scoff at magic numbers, but in any particular market or security, if a majority of traders believe that a retracement will stop at 38 percent, 50 percent, or 62 percent after a peak, they can and do make it come about.

The sensible approach to Gann and Fibonacci retracement ideas is to be aware of their influence over some traders. You don’t have to believe in cycles, the universal truth embedded in Fibonacci numbers, or that market prices follow a hidden system in order to take advantage of what the crowd is thinking.

Figure 17-2 shows a security with four waves and three corrections (69.2 percent, 35.7 percent, and 78 percent). Notice that none of the percentage retracements qualifies precisely as a Gann or Fibonacci number, although you might stretch the point and say that 68 percent isn’t all that far from 62 percent (Fibonacci) and 78 percent is fairly close to 75 percent (Gann). Most traders acknowledge the wavelike movement of prices even if they don’t try to count them according to the Elliott Wave principle.

Figure 17-2: Wavelike appearance of a trend.

<TechnicalStuff>

The Elliott Wave principle

The wave idea became popular in part because one of its proponents, Robert Prechter, called for a massive bull market in 1982 that did materialize — and then he called the top, just ahead of the 1987 Crash. That certainly got the market’s attention! And prices do seem to move in waves on many charts.

The basic idea is that all price movements have two segments: impulse waves and corrective waves. The *impulse wave* is the way the crowd wants to take the price in a trend. Considering that the right way to look at price developments is through the lens of crowd psychology, impulse is an excellent choice of words. Each impulse wave has five parts: three waves that go in the trend direction, alternating with two that go in the opposite direction.

In a correction, each *corrective wave* has three parts: two that go against the main trend and one that goes with it. If a bull market reaches a new high in five waves instead of three and also goes down in five waves instead of three, you’re witnessing the beginning of a major bear market.

You will often see three clear waves up, although sometimes a move has more upwaves than three, as in Figure 17.2. The three-waves rule is only the model of how markets move, not a rigid orthodoxy.

Elliott Wave practitioners are the first to admit that calling corrective waves is tricky, much harder than seeing impulse waves. Experienced practitioners advise against straining to make a correction “fit” the Elliott Wave model. A correction often just keeps on going, too, whereupon it isn’t a correction but a true reversal and thus a new trend in the opposite direction.

Counting waves can be an elaborate and time-consuming process, and miscounting as prices evolve can result in losses and having to start all over again. If the wave idea appeals to you, be prepared to devote a lot of time to it. If you choose not to count waves, you can still benefit from the observation that trends start with an impulse wave that then retraces in the opposite direction before the trend resumes. “Buy on the dip” isn’t bad advice when you are sure that you have a trend.