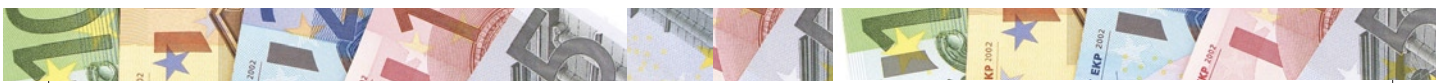

What's Beneath Price Movement?

Seasonality Pivot Points

Markets, some more than others, are impacted by seasonal tendencies such as production schedules, weather, and supply/demand conditions. A deeper analysis into these seasonal patterns can help reveal the reality behind price movements and could help in your strategy development. Here's how.

by Karl Montevirgen

Market seasonality is essentially a history of price movements, but one whose sole aim is to record patterns of consistency. These patterns, often appearing cyclical, may have some basis in actual supply/demand conditions. It is because of this possibility alone that some traders are tempted to view these patterns as market "tendencies." Sadly, seasonality analysis has been slightly stigmatized by this erroneous and popular view. To address the elephant in the room, it's important to point out that an undefinable portion of these "repetitive" patterns just may be purely coincidental.

Seasonality analysis is not designed to distinguish economically driven events from random ones. Its merit rests on its sole objective to pinpoint and map out recurring price patterns, patterns that often escape more traditional modes of market analysis.

For seasonality research to become more useful and actionable, it requires a greater degree of rigor in approach. It needs to undertake its project with greater detail and comprehensiveness. Most important, it must offer multiple and comparative perspectives toward any single object under its analytical scope.

A MAP OF POTENTIAL EVENTS

Contrary to popular opinion, seasonality is not about prediction. If anything, it's analogous to a temporal cartography: It maps events that seemingly tend to recur across the calendar year. Once these events have been identified and recorded, it's the trader's job to interpret the significance of these events, filtering random instances from those that present viable opportunities and risks.

Take an assortment of specialized maps that highlight characteristics of a given environment, for example, traffic congestion, accident-prone areas, foot traffic, high-risk neighborhoods in a city, and so on. These maps don't predict events; they warn. Analogous to these maps, seasonality research

ART: MINDSCANNER/SHUTTERSTOCK

highlights the possibility of certain price movements occurring based on historical "repetition."

For traders who specialize in markets affected by seasonal factors—namely weather, production schedules, and various calendar-driven supply/demand conditions—seasonality research can be a valuable "map" for strategy development.

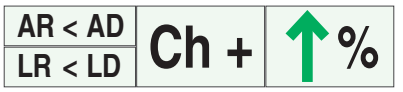

FIGURE 1: POSITIVE CHANGE DUE TO UPSIDE FREQUENCY. Even though there's a seasonal tendency for prices to rise, the average decline was greater than the average gain. The reason for the positive change is that there were more up days than down days.

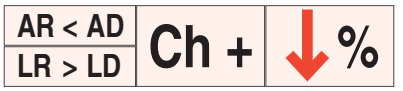

FIGURE 2: BULLISH OR BEARISH SCENARIO? If there are more down days than up days, the average declines are greater than average rises, the largest rise is significantly higher than the largest decline, and the net change is positive, it could obscure the bearishness of the market.

PROBLEMATICS OF SEASONALITY RESEARCH

Seasonality projections come in various forms. More commonly, they are presented as charts illustrating average returns over a calendar year, or event-specific projections—for example, the Halloween effect, Santa Claus rally, presidential cycles, and so forth. As helpful as these projections are in alerting us to consistencies in market behavior, they nevertheless lack the adequate detail and specificity necessary for strategy integration.

Suppose you came across a projection that stated a 70% probability of a market rising in a given month based on historical cycles. Is it a steady rise, or did that rise take place in, say, the last week of the month? Was the average rise greater or lesser than the average decline? Let's take another example to go further into this matter.

Suppose that a given market rose only 0.8% historically in the fifth week of the year for the last 25 years. It may not seem very bullish. But what if, during that particular week of the year, markets had actually risen 80% of the time throughout its 25-year span? That figure alone may seem bullish, but it still doesn't explain the low return. So what if we found out that during one of the years, week 5 experienced a rare substantial decline large enough to skew the data to the downside? And in addition to this one-time event, what if week 5's average rise was significantly greater than its average decline?

In this case, the figure of 0.8% conceals particular data that might be considered exceedingly bullish. It hides the real dynamics behind the commodity's price history.

In short, a solid seasonality analysis requires not only more detail, but also the means to interpret the variations of stats that make up that detail. It needs a basic framework to render the data and all its permutations more interpretable.

INTERPRETING SEASONALITY STATS FROM MULTIPLE ANGLES

Viewing statistics on price movements from multiple angles can be confusing. Take Coffee C futures. From 1980–2016, trading during the ninth week of the year has shown that prices had risen 65% of the time with an average change of 0.53%. The average price rise of 3.17% is smaller than the average decline of -4.35%. The largest rise of 8.69% is dwarfed by the largest decline of -16.93%. What "story" do these stats tell us?

As an aside, if you were to consider stats for every market you trade, the number of permutations can cause confusion unless you establish a set of heuristics to aid interpretation (such as the one shown in Figure 1). It's important to note that each permutation tells a story, providing valuable details about each market outcome. Let's get back to our coffee example.

Here are the abbreviations used in Figures 1 & 2:

AR = Average rise
AD = Average decline
LR = Largest rise
LD = Largest decline
Ch + = Positive change
Arrows up or down % = Frequency of rise or decline

Week 9 exhibited a "seasonal" tendency to rise, with the average decline being greater than the average gain. The positive change is attributable to the frequency of up days—the only factor sustaining week 9's positive levels.

For the sake of further elaboration, let's imagine a different scenario. What if there were more down days than up days, with average declines being greater, largest rise being significantly higher, and a positive net change?

In this variation (see Figure 2), perhaps the largest rise skewed the data, in which case the scenario's bearishness would be obscured by the positive net change.

Ultimately, adding greater detail and interpretability to seasonal data can make research efforts more relevant to traders. But how can we make this data immediately applicable to current markets? One solution is to convert seasonality data into pivot points.

WEEKLY SEASONALITY PIVOT POINTS

Pivot points provide a technical framework from which to gauge trends and anticipate potential support & resistance levels. There are several "types" of pivot points. And although their calculations differ, their means of abstracting data are paradigmatically similar.

Seasonality pivot points take a different approach: support & resistance projections are based on historical averages and extremes. Beyond this, there are no further abstractions save one: the actual pivot level, which is determined by averaging the average change and median return.

In addition to these price levels, the data are also used to determine the percentage frequency in which markets had risen

Seasonality pivot points serve as a bias for which trades are initiated based on the trader's individual strategy.

		Historical Rise	Historical Decline
R2 = Largest Rise	77.88	64%	36%
R1 = Average Rise	70.71		
Pivot	69.03		
S1 = Average Decline	65.90		
S2 = Largest Decline	57.90		

FIGURE 3: CONVERTING SEASONALITY DATA INTO PIVOT POINTS. Here you see an example of the calculation of seasonality pivot points in the June 2017 lean hog contracts. The average and extreme price rises and declines are used in the calculations of the support and resistance levels. The pivot point is the average of the median return and average change.

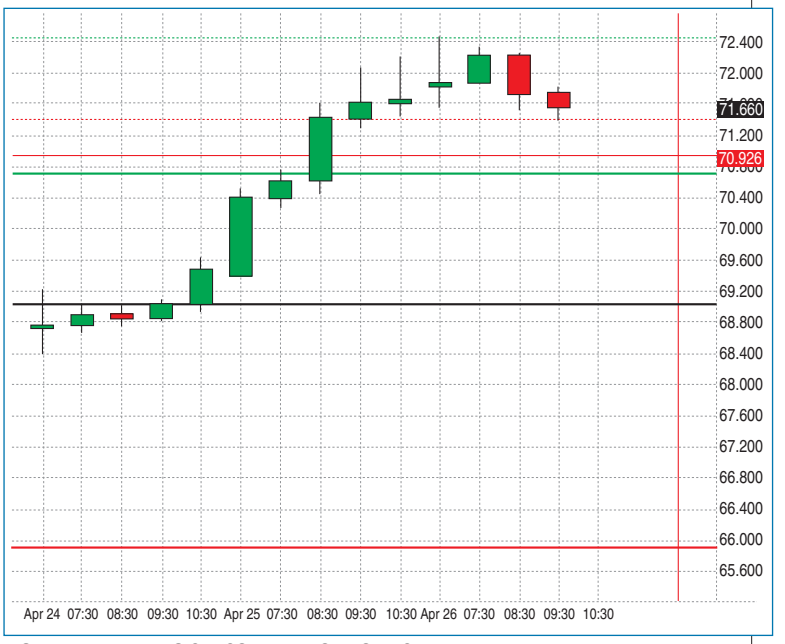

FIGURE 4: APPLYING SEASONAL PIVOT POINTS. Seasonal pivot points can be used as a visual framework or point of reference. Here, the green horizontal line represents R1 and the red horizontal line represents S1. Traders could use R1 and S1 as anticipatory price targets and base their trading strategies on these levels.

or fallen. So if a market had risen in a given week 18 times out of 25 years, the frequency of markets rising is, of course, 72%, which is a bullish figure.

In short, we plot the following points:

R2 = Largest historical (%) rise
R1 = Average rise
Pivot = Average of the median return and average change
S1 = Average decline
S2 = Largest decline
% markets up and down.

Example:

From 1973 to 2016, week 17 for lean hogs had been tepidly bullish. With an average change of 0.94%, the average gains (3.50%) are lower than the average losses (-3.54%), and the largest gain (14%) is slightly smaller than the largest decline (-15.25%).

Yet the lean hogs market had risen 64% of the time in week 17. Similar to our earlier coffee example, we can assume that the positive average change was due to the frequency of markets rising.

Now let's take these figures and plot them across the current market. At the time of this writing, the June contract HEM17 had opened at 68.32 at the beginning of the week.

I will use the following calculation:

R2 = Weekly close × (1+LR) or 68.32 × 1.14
R1 = Weekly close × (1+AR) or 68.32 × 1.035
Pivot = (Weekly close × [1+Average change or 1-Average change if negative]) + (Weekly close × [1+Median])/2 or (68.32 × 1.0094) + (68.32 × 1.0113)/2
S1 = Weekly close × (1-AD) or 68.32 × (1-0.0354)
S2 = Weekly close × (1-LD) or 68.32 × (1-0.1525)

The results are shown in the table in Figure 3.

Currently, lean hogs had exceeded R1. Of course, the chart in Figure 4 isn't intended to demonstrate a predictive outcome but to show how seasonal pivot points can be used as a visual framework or point of reference (R1 = green, S1 = red; R2 and S2 are not shown).

HOW TO USE SEASONALITY PIVOT POINTS

You can integrate seasonality pivot points into your market analysis or trading strategy the same way you would with other pivot points.

Some traders might view R1 and S1 as potential price levels to anticipate. Depending on the individual strategy, these levels serve as a bias for which trades are initiated based on the trader's individual strategy.

Traders might also view R2 and S2 as price thresholds from which, depending on weekly ATR, short outright futures or options might be initiated, or long breakouts anticipated and traded.

The historical rise and decline percentages serve as a further directional bias, but only to the extent that the statistical returns support their favorability (in other words, a market that rises 55% of the time might not be so bullish if the average decline is three times that of the average rise).

The main differences in using seasonality pivot points can be summarized as follows:

1. If you were to use R1 and S1 as anticipatory price "targets," you would base your benchmarks on *historical* average gains and losses (as opposed to an abstract calculation).
2. If you were to use R2 and S2 as anticipatory price thresholds, you would base your benchmarks on historical limits rather than an abstraction of price data.
3. Percentage of rising and falling weeks may be read as a mere "bias" but one derived from actual price history.

DOES MARKET HISTORY PROVIDE A BASIS FOR ACTION?

History never repeats itself in exactly the same manner. The slightest similarities will always reveal heterogeneous differences and discontinuities in anything resembling a simple cause or effect. With regard to seasonality research, terms like "cyclicality" and "recurrence" are used loosely and frequently, as they are hard to avoid. Unfortunately, these terms tend to do more harm than good, as both can be taken a step too far as to imply "prediction."

Once again, seasonality research is not about prediction—it's about scenario planning. It's about mapping potential outcomes—"outcomes" with emphasis on plurality, and "potential" standing as its critical modifier. At times, certain market outcomes will resemble the past, at other times they won't.

Either way, if you value what historical consistencies may reveal, despite the fact that patterns may not always repeat, having a map that clearly illustrates historical patterns will only keep you more informed and prepared. After all, it helps to know what has consistently happened, in which market, in what week or month, and by how much. It gives you a "road map" of potential things to anticipate, things that you may choose to avoid or act upon.

This is what seasonality research is all about—anticipating potential events based on historical patterns. And making these histories clearer, more interpretable, and actionable are what seasonality profiles and pivot points can help you achieve.

Seasonality research is not about prediction—it's about scenario planning.

Karl Montevirgen is a content designer/strategist at Halifax America LLC, a stocks/option, futures, and forex brokerage in Sherman Oaks, CA. In addition to creating and designing content, he has extensive knowledge of and experience with commodity futures and foreign exchange. He can be contacted through the Halifax America website at www.halifaxamerica.com or by email at kmontevirgen@halifaxamerica.com. Halifax America's seasonality website can be found at www.actionablemarkets.com.

FURTHER READING

Montevirgen, Karl [2017]. "Use Seasonality To Optimize Algorithmic Strategies," *Technical Analysis of* STOCKS & COMMODITIES, Volume 35: January.