

Renko Charts [ChartSchool]



stockcharts.com/school/doku.php

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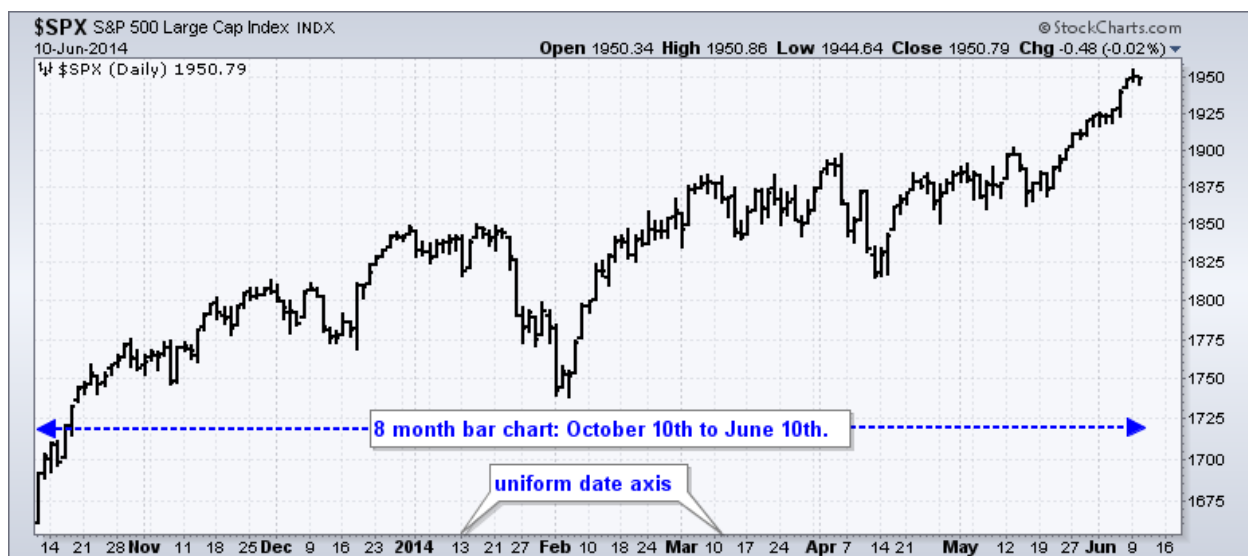
Introduction

Invented in Japan, Renko charts ignore time and focus solely on price changes that meet a minimum requirement. In this regard, these charts are quite similar to Point & Figure charts. Instead of X-Columns and O-Columns, Renko charts use price “bricks” that represent a fixed price move. These bricks are sometimes referred to as “blocks” or “boxes.” They move up or down in 45-degree lines with one brick per vertical column. Bricks for upward price movements are hollow while bricks for falling price movements are filled with a solid color (typically black).

Construction and Characteristics

Renko charts are based on bricks with a fixed value that filters out smaller price movements. A regular bar, line or candlestick chart has a uniform date axis with equally spaced days, weeks and months. This is because there is one data point per day or week. Renko charts ignore the time aspect and only focus on price changes. If the brick value is set at 10 points, a move of 10 points or more is required to draw another brick. Price movements less than 10 points would be ignored and the Renko chart would remain unchanged.

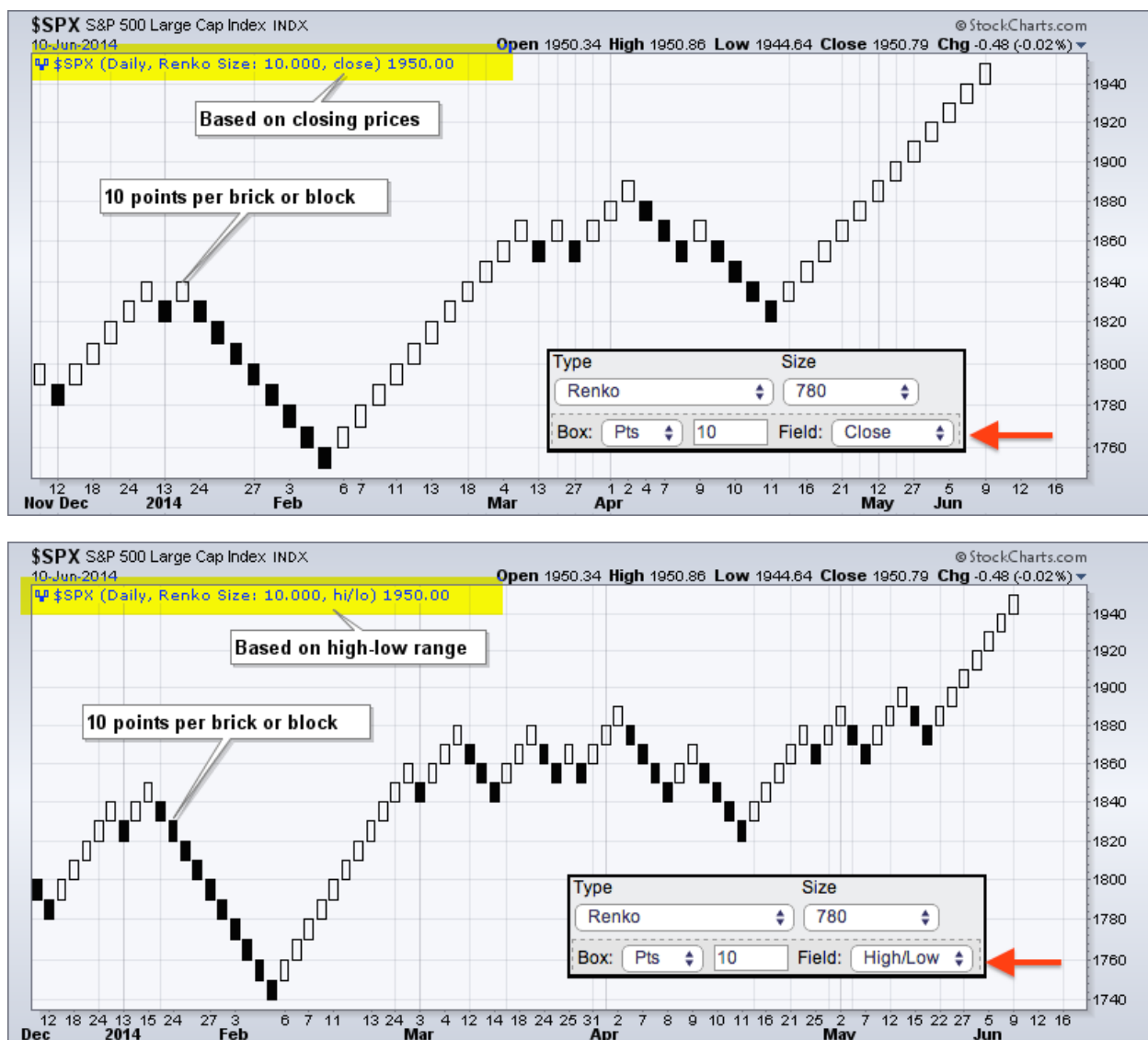
Using the S&P 500 10-point Renko chart as an example, a new Renko brick would not be drawn if the S&P 500 were at 1840 and advanced 9 points to 1849. If the S&P 500 then advanced to 1850 the very next day, a new Renko brick would be drawn because the entire move was at least 10 points. This brick would extend from 1840 to 1850 and be hollow, or white in this example. Alternatively, if the S&P 500 declined from 1840 to 1830, a new Renko brick would be drawn and it would be solid, or black in this example



The two charts above cover a six-month timeframe, but the Renko chart sports an irregular date axis and the price action is less choppy. This is because the S&P 500 Renko chart ignores price moves that are less than 10 points and remains unchanged until there is a move of at least 10 points.

Close Versus High-Low Range

Renko charts can be based on closing prices or the high-low range by using the “field” setting in SharpCharts. Closing price means there is one data point per period and less volatility. The high-low range puts two data points into play and increases the fluctuations, which results in added bricks. The examples below show Renko charts for the S&P 500 and the box size is set at 10-points for both. The first chart is based on closing prices and the second is based on the high-low range. Notice that the Renko chart based on the high-low range fluctuates more than the close-only Renko chart.



Fixed Value versus ATR

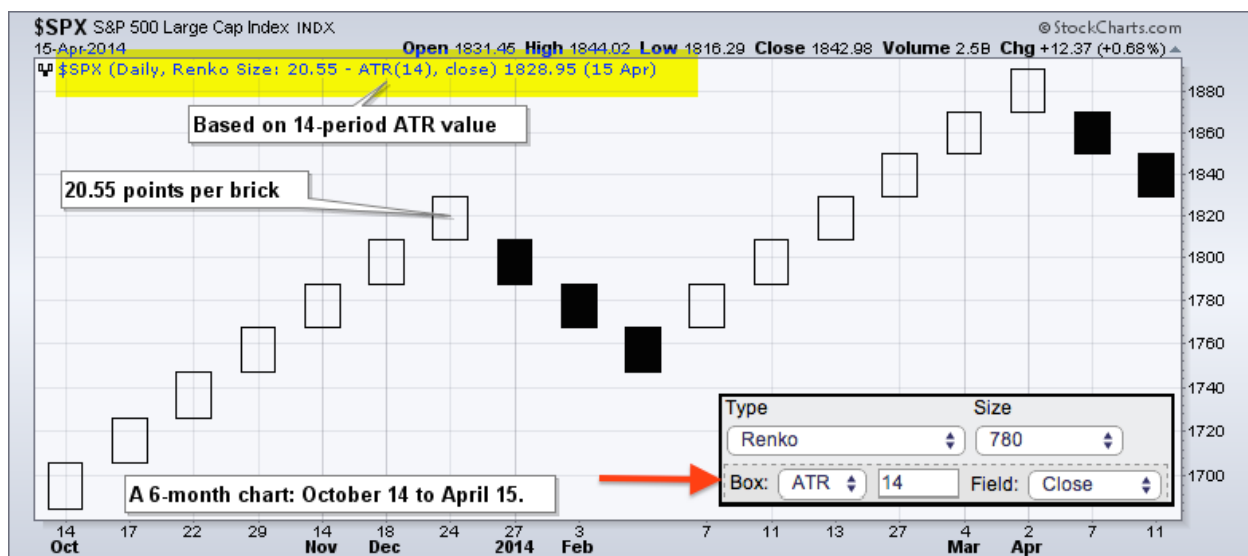
Chartists can use the “box” settings to set brick size as a specific value or as the Average True Range (ATR). A specific point value means brick size will remain constant even as new data is incorporated into the chart. In other words, new price data is added every trading day and the brick size will remain constant. The two charts above have a fixed value and each brick represents ten points.

In contrast to fixed price bricks, brick size changes change when the ATR value is used. The default ATR is based on 14 periods and the Average True Range fluctuates over time. The brick size is based on the ATR value at the time the chart is created. Should the ATR value change the next day, then this new ATR value will be used to set the brick size. Also note that ATR values are based on standard charts, such as close-only, bar and candlestick. These charts have one data point per period and a uniform x-axis (date axis). The ATR value shown on these charts can differ from the ATR brick value on a Renko chart due to rounding issues.



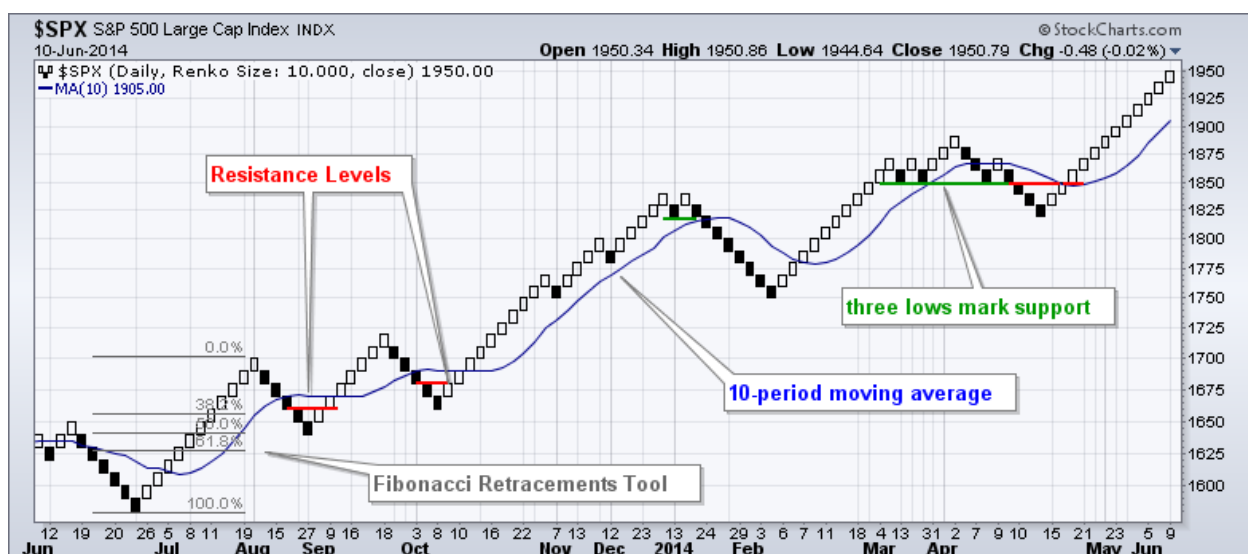
The next two examples show how the ATR value changes when the ending chart date changes. The first chart ends on June 10th and the ATR value is 12.05, which is the value for each Renko brick. The second chart ends on April 15th and the ATR value is 20.55, which is the value for each Renko brick. Notice how the brick value changed as the ATR value changed. The bricks on April 15th have a much higher value than the bricks on June 10th.





Trends, Support and Resistance

White bricks form when prices rise a certain amount and black bricks form when prices decline a certain amount. The image below shows a daily S&P 500 chart with 10-point bricks and a 10-period simple moving average. Note that a 10-period moving average calculation is based on the last ten Renko values, not the last ten trading days. An indicator on a Renko chart is based on Renko values and will differ from the same indicator on a bar chart. Chartists can typically use shorter moving averages on Renko charts because smaller price movements have been filtered out.



Chartists can use troughs to mark support levels and peaks to mark resistance levels. Chartists can also look for a two brick reversal to signal a trend change. Notice how the index fell with five black bricks in August and again in September-October. These declines looked like falling flags. A reversal occurred when two white bricks formed and broke above the short-term resistance level. Chartists can also apply the Fibonacci Retracements Tool to Renko charts.

Conclusions

Like their Japanese cousins (Kagi and Three Line Break), Renko charts filter the noise by focusing exclusively on minimum price changes. Renko bricks are not added unless price

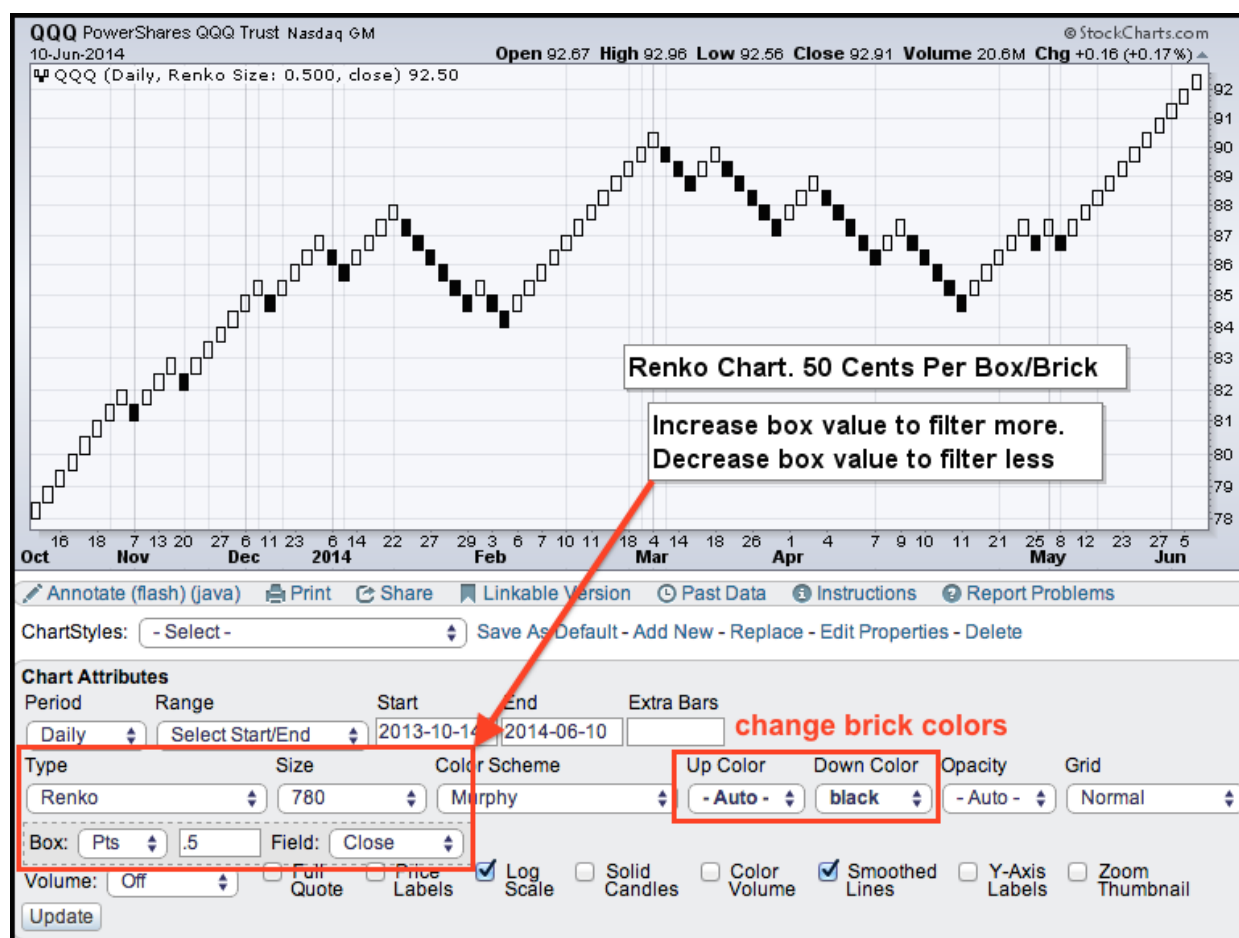
changes by a specific amount. As with Point & Figure charts, it is easy to spot important highs and lows, and identify key support and resistance levels. Armed with this information, chartists can identify uptrends with higher highs and higher lows or downtrends with lower lows and lower highs. As with all charting techniques, chartists should employ other technical analysis tools to confirm or refute their findings on Renko charts.

SharpCharts

Chartists can create Renko charts by going to the “Chart Attributes” section and selecting Renko as the chart “Type”. This section is just under the SharpChart on the left side. Users will then be able to choose between points or ATR, and then set the parameters for these two options in the next box.

The “ATR” setting uses the Average True Range indicator from the symbol's underlying bar chart to determine an “Automatic” value for the Renko chart's box size. Note: This ATR value might change as prices change which can cause the Renko chart to change significantly whenever it is updated.

The “field” can be set at close or high-low range. Chartists looking for more sensitivity can choose the high-low range. Chartists looking to focus on end-of-day price data can choose the close. The brick colors can also be changed using the “up color” and “down color” drop down menus just below the SharpChart. [Click here](#) for a live example.



Note: If the phrase “AT LIMIT” appears at the top of a chart, it means that the box size specified would result in a chart that is too large for us to display. In that case, we increase the box size to the smallest size we can successfully display and add the “AT LIMIT”

message to the top of the chart.

Frequently Asked Questions

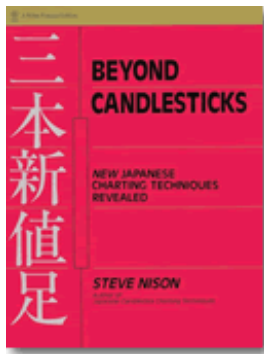
Q: Why are the Renko bricks changing on my chart?

If you are using the ATR box size, the box size is computed automatically. However it may change during the day, so the chart may change along with it.

Further Study

As the name implies, this book goes beyond candlesticks to show chartists other technical analysis techniques from the Far East. Nison devotes an entire chapter to Renko charts. Nison also covers Three Line Break charts, Kagi charts and explains how Japanese traders use moving averages.

Beyond Candlesticks
Steve Nison



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