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Chart School

# Support and Resistance

Support and resistance represent key junctures where the forces of supply and demand meet. In the financial markets, prices are driven by excessive supply (down) and demand (up). Supply is synonymous with bearish, bears and selling. Demand is synonymous with bullish, bulls and buying. These terms are used interchangeably throughout this and other articles. As demand increases, prices advance and as supply increases, prices decline. When supply and demand are equal, prices move sideways as bulls and bears slug it out for control.

## What is Support?

Support is the price level at which demand is thought to be strong enough to prevent the price from declining further. The logic dictates that as the price declines towards support and gets cheaper, buyers become more inclined to buy and sellers become less inclined to sell. By the time the price reaches the support level, it is believed that demand will overcome supply and prevent the price from falling below support.


Support does not always hold and a break below support signals that the bears have won out over the bulls. A decline below support indicates a new willingness to sell and/or a lack of incentive to buy. Support breaks and new lows signal that sellers have reduced their expectations and are willing sell at even lower prices. In addition, buyers could not be coerced into buying until prices declined below support or below the previous low. Once support is broken, another support level will have to be established at a lower level.

## Where is Support Established?

Support levels are usually below the current price, but it is not uncommon for a security to trade at or near support. Technical analysis is not an exact science and it is sometimes difficult to set exact support levels. In addition, price movements can be volatile and dip below support briefly. Sometimes it does not seem logical to consider a support level broken if the price closes 1/8 below the established support level. For this reason, some traders and investors establish support zones.

## What is Resistance?

Resistance is the price level at which selling is thought to be strong enough to prevent the price from rising further. The logic dictates that as the price advances towards resistance, sellers become more inclined to sell and buyers become less inclined to buy. By the time the price reaches the resistance level, it is believed that supply will overcome demand and prevent the price from rising above resistance.


Resistance does not always hold and a break above resistance signals that the bulls have won out over the bears. A break above resistance shows a new willingness to buy and/or a lack of incentive to sell. Resistance breaks and new highs indicate buyers have increased their expectations and are willing to buy at even higher prices. In addition, sellers could not be coerced into selling until prices rose above resistance or above the previous high. Once resistance is broken, another resistance level will have to be established at a higher level.

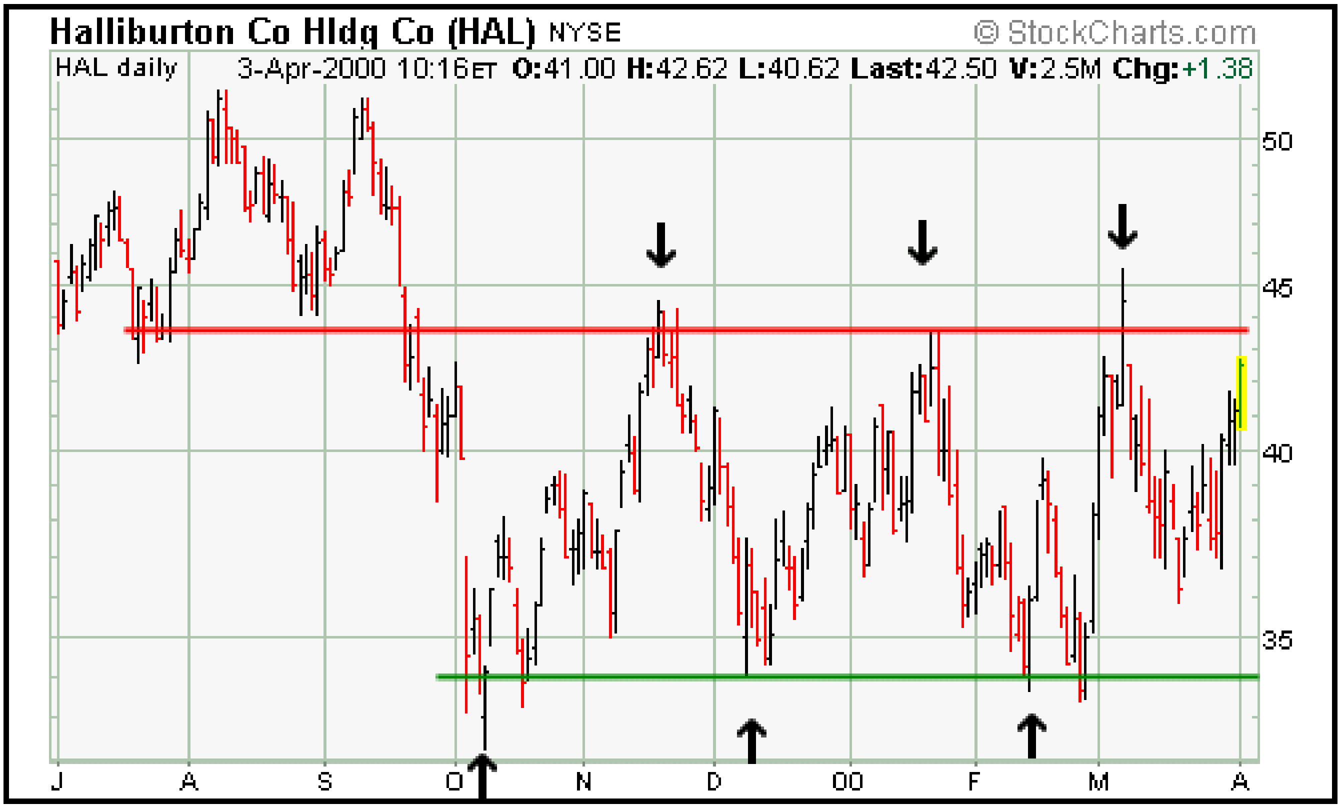
## Where is Resistance Established?

Resistance levels are usually above the current price, but it is not uncommon for a security to trade at or near resistance. In addition, price movements can be volatile and rise above resistance briefly. Sometimes it does not seem logical to consider a resistance level broken if the price closes 1/8 above the established resistance level. For this reason, some traders and investors establish resistance zones.

## Methods to Establish Support and Resistance?

Support and resistance are like mirror images and have many common characteristics.

Highs and Lows:
Support can be established with the previous reaction lows. Resistance can be established by using the previous reaction highs.

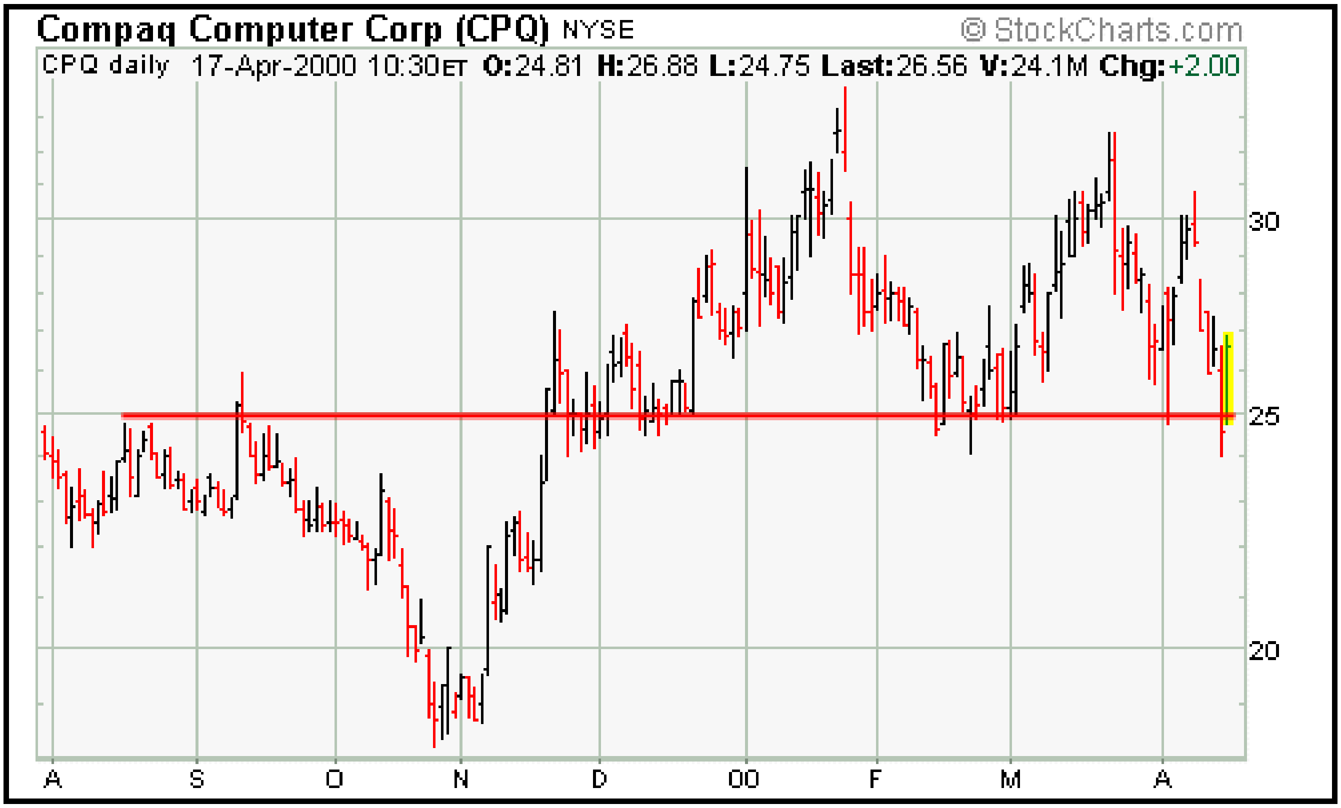



The chart for HAL shows a large trading range between Dec-99 and Mar-00. Support was established with the October low around 33. In December, the stock returned to support in the mid-thirties and formed a low around 34. Finally, in February the stock again returned to the support scene and formed a low around 33 1/2.

After each bounce off support, the stock traded all the way up to resistance. Resistance was first established by the September support break at 44. After a support level is broken, it can turn into a resistance level. From the October lows, the stock advanced to the new support-turned-resistance level around 44. When the stock failed to advance past 44, the resistance level was confirmed. The stock subsequently traded up to 44 two more times after that and failed to surpass resistance both times.

Support = Resistance
Another principle of technical analysis stipulates that support can turn into resistance and visa versa. Once the price breaks below a support level, the broken support level can turn into resistance. The break of support signals that the forces of supply have overcome the forces of demand. Therefore, if the price returns to this level, there is likely to be an increase in supply, and hence resistance.

The other turn of the coin is resistance turning into support. As the price advances above resistance, it signals changes in supply and demand. The breakout above resistance proves that the forces of demand have overwhelmed the forces of supply. If the price returns to this level, there is likely to be an increase in demand and support will be found.




In the CPQ example, the stock broke resistance at 25 Nov-99 and traded just above this resistance level for over a month. The ability to remain above resistance established 25 as a new support level. The stock subsequently rose to 34, but then fell back to test support at 25. After the second test of support at 25, this level is well established.

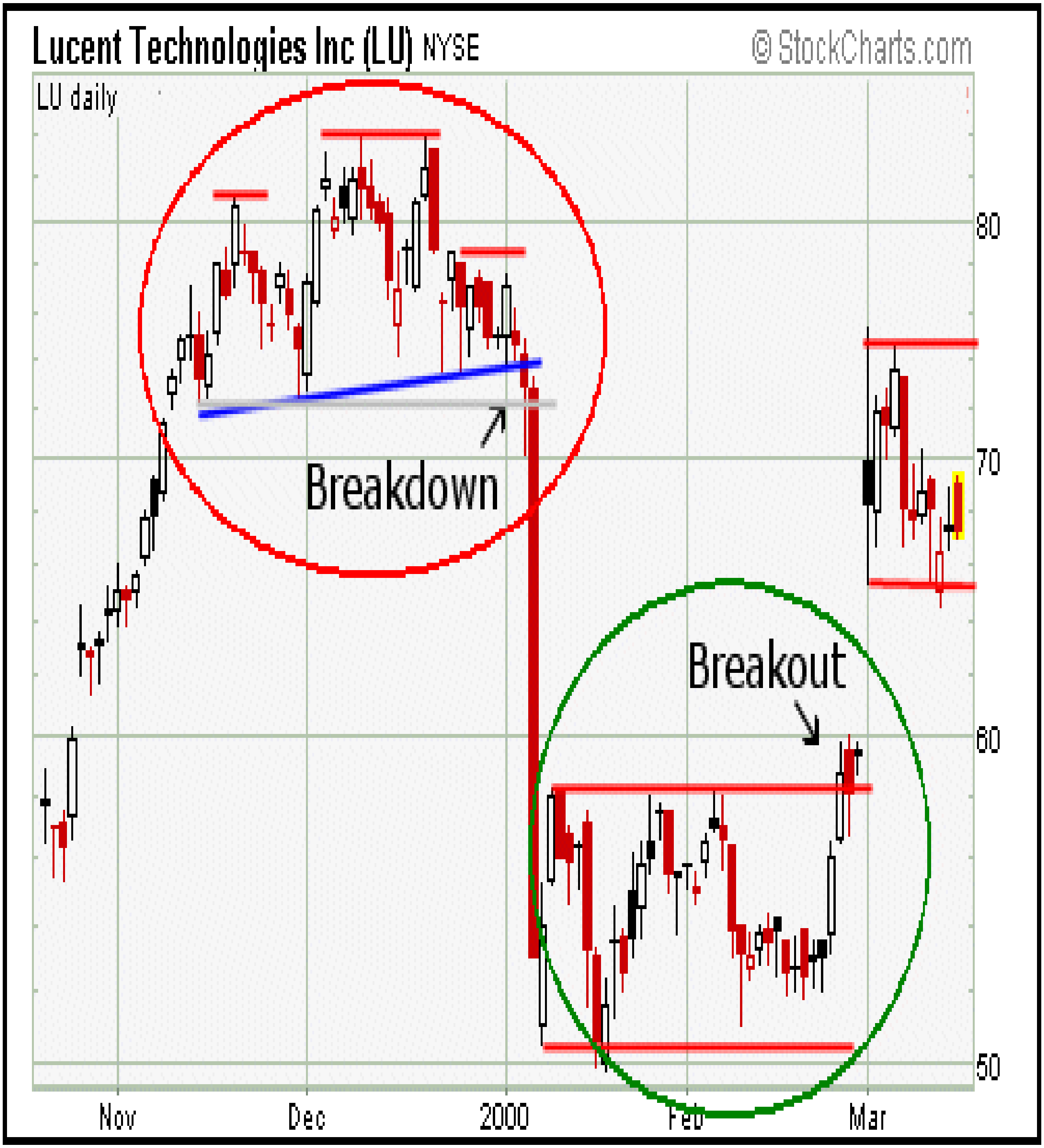

From the PSFT example, we can see that support can turn into resistance and then back into support. PSFT found support at 18 from Oct-98 to Jan-99 (green oval), but broke below support in Mar-99 as the bears overpowered the bulls. When the stock rebounded (red oval), there was still overhead supply at 18 and resistance was met from Jun-99 to Oct-99.

Where does this overhead supply come from? Demand was obviously increasing around 18 from Oct-98 to Mar-99 (green oval). Therefore, there were a lot of buyers in the stock around 18. When the price declined past 18 and to around 14, many of these buyers were probably still holding the stock. This left a supply overhang (commonly known as resistance) around 18. When the stock rebounded to 18, many of the green-oval-buyers (who bought around 18) probably took the opportunity to sell. When this supply was exhausted, the demand was able to overpower supply and advance above resistance at 18.

Trading Range

Trading ranges can play an important role in determining support and resistance as turning points or as continuation patterns. A trading range is a period of time when prices move within a relatively tight range. This signals that the forces of supply and demand are evenly balanced. When the price breaks out of the trading range, above or below, it signals that a winner has emerged. A break above is a victory for the bulls (demand) and a break below is a victory for the bears (supply).


After an extended advance from 27 to 64, WCOM entered into a trading range between 55 and 63 for about 5 months. There was a false breakout in mid-June when the stock briefly poked its head above 62 (red oval). This did not last long and a gap down a few days later nullified the breakout (gray arrow). The stock then proceeded to break support at 55 in Aug-99 and trade as low as 50. Here is another example of support turned resistance as the stock bounced off 55 two more times before heading lower. While this does not always happen, a return to the new resistance level offers a second chance for longs to get out and shorts to enter the fray.




In Nov/Dec-99, the LU formed a trading range that resembled a head and shoulders pattern (red arrow). When the stock broke support at 72 1/2, there was little or no time to exit. Even though the there is a long black candlestick indicating an open at 71 13/16, the stock fell so fast that it was impossible to exit above 55. In hindsight, the support line could have been drawn as an upward sloping neckline (blue line) and the support break would have come at 73 1/2. This is only 1 point higher and a trader would have had to take action immediately to avoid a sharp fall. However, the lows match up rather nicely on the neckline and it is something to consider when drawing support lines.

After LU declined, a trading range was established between 51 and 58 for almost two months (green oval). The resistance level of the trading range was well marked by three reaction peaks at 58. The support level was not as clearly marked, but appeared to be between 51 and 50. Some buying interest began to become evident around 53, in mid to late February . Notice the array of candlesticks with long lower shadows, or hammers as they are known. The stock then proceeded to form two up gaps on 24-Feb and 25-Feb, and close above resistance at 58. This was a clear indication of demand winning out over supply. There were still two more opportunities (days) to get in on the action. On the third day after the breakout, the stock gapped up and moved above 70.

### Support and Resistance Zones

Because technical analysis is not an exact science, it is sometimes useful to create support and resistance zones. This is contrary to the strategy mapped out for LU, but it is sometimes the case. Each security has its own characteristics and the analysis should reflect the intricacies of the security. Sometimes exact support and resistance levels are best and sometimes zones work better. Generally, the tighter the range, the more exact the level. If the trading range spans less than 2 months and the price range is relatively tight, then more exact support and resistance levels are probably best suited. If a trading range spans many months and the price range is relatively large, then it is probably best to use support and resistance zones. These are only meant as general guidelines and each trading range should be judged on its own merits.


Returning to the analysis of HAL, we can see that the November high of the trading range (33 to 44) extended more than 20% past the low, making the range quite large relative to the price. Because the September support break forms our first resistance level, we are ready to set up a resistance zone after the November high is formed, probably around early December. At this point though, we are still unsure if a large trading range will develop. The subsequent low in December, which was just higher than the October low, offers evidence that a trading range is forming and we are ready to set the support zone. As long as the stock trades within the boundaries set by the support and resistance zone, we will consider the trading range to be valid. Support may be looked upon as an opportunity to buy and resistance as an opportunity to sell.

## Conclusion

Identification of key support and resistance levels is an essential ingredient to successful technical analysis. Even though it is sometimes difficult to establish exact support and resistance levels, being aware of their existence and location can greatly enhance analysis and forecasting abilities. If a security is approaching an important support level, it can serve as an alert to be extra vigilant in looking for signs of increased buying pressure and a potential reversal. If a security is approaching a resistance level, it can act as an alert to look for signs of increased selling pressure and potential reversal. If a support or resistance level is broken, it signals that the relationship between supply and demand has changed. A resistance breakout signals that demand (bulls) has gained the upper hand and a support break signals that supply (bears) has won the battle.

Written by Arthur Hill

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