



# Drawing objective trendlines: TD Lines

Although traditional trendlines are notoriously subjective, it is possible to develop trendline-drawing rules and trading guidelines that can be applied consistently and objectively.

BY ACTIVE TRADER STAFF

**T**echnicians use trendlines to identify trends and determine when they end or reverse. The only problem with traditional trendlines is they are subjective — 10 traders could look at a chart and draw 10 different trendlines. Proper trendline application and analysis require consistent, objective rules.

The TD-Line technique was developed by Tom DeMark and is detailed in his books *The New Science of Technical Analysis* (John Wiley & Sons, 1994) and *DeMark on Day Trading Options* (McGraw-Hill, 1999). The complete methodology includes objective rules for plotting these trendlines, rules for validating them, and rules to determine whether to trade or fade a trendline break.

To accomplish this, TD Lines require a trendline to connect “TD Points” (which are more commonly called “pivot” highs or lows, or “swing” highs or lows). A TD Point high is a high preceded and followed by an equal number of lower highs. A TD Point low is the opposite — a low surrounded by an equal number of higher lows. For example, a “Level One” TD Point low has one higher low before and after it; a Level Two TD Point low has two higher lows before it and two higher lows after it, and so on.

TD Lines of different degrees of significance are constructed by connecting TD Point highs or lows of the same degree — i.e., connecting Level Two TD Point lows or connecting Level Three TD Point highs.

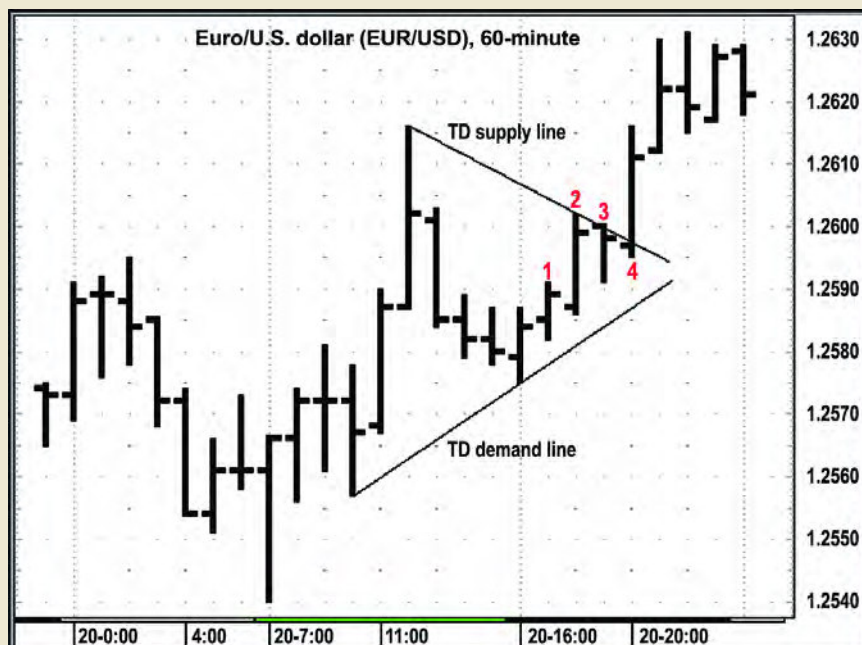
For example, to plot a Level One TD Demand Line (Figure 1), which is used to identify support, start from the right

side of the chart and connect the two most recent Level One TD Price Point lows. (Starting from the right side of the chart insures that the most recent price history is being used to identify the trend.) If the TD Demand Line is sloping upward, the current trend is up. A horizontal TD Demand Line reflects a sideways market.

A TD Supply Line is plotted using the same procedures. Start from the right side of the chart and look for the two most recent Level One TD Price Point highs. Draw the supply line along these two highs.

**FIGURE 1 — TD SUPPLY AND DEMAND LINES**

*These TD Supply and Demand Lines are plotted by connecting Level One TD highs and lows, respectively. The breakout occurred on Bar 4. Bar 3 closed down, which met the first qualifier for a trade.*



Source: QCharts

**TABLE 1 — TD LINE QUALIFIERS**

*If any of the four qualifiers are true, the trendline break is valid.*

<b>Upside breakout qualifiers</b>
<b>Qualifier 1:</b> The price bar prior to an upside breakout must be a down close.
<b>Qualifier 2:</b> The current price bar's open must be greater than both the current TD Supply Line and the previous price bar's close and must then trade at least one tick higher.
<b>Qualifier 3:</b> The previous price bar's close plus the previous bar's "buying pressure" must be below the current price bar's TD Supply Line price level.
<b>Qualifier 4:</b> The current price bar's open must be above both the previous two price bars' closes, and the current price bar's TD Supply Line must be above the previous price bar's high.
<b>Downside breakout qualifiers</b>
<b>Qualifier 1:</b> The price bar prior to a downside breakout must be an up close.
<b>Qualifier 2:</b> The current price bar's open must be less than both the current TD Demand Line and the previous price bar's close and must then trade at least one tick lower.
<b>Qualifier 3:</b> The previous price close minus the previous bar's "selling pressure" must be above the current price bar's TD Demand Line price level.
<b>Qualifier 4:</b> The current price bar's open must be below both the previous two price bars' closes, and the current price bar's TD Demand Line must be below the previous price bar's low.

*Source: DeMark on Trading Options (McGraw-Hill, 1999)*

### TD breakout qualifiers

Most books describing trendline analysis would stop at this point, leaving the technician with a few examples and perhaps a recommendation to use "other indicators" to confirm the likelihood of a break of a trendline by the price as the signal to take a trade.

There are four qualifiers to validate TD Demand and Supply Line penetrations; if any qualifier is true, the trendline break is considered a valid signal. Table 1 lists the four qualifiers for upside penetrations of TD Supply Lines and downside penetrations of TD Demand Lines.

The third qualifiers use the terms "buying pressure" and "selling pressure." Buying pressure is the difference between a bar's close and its "true low," which is the lower of that bar's low or the previous bar's close. Selling pressure is the difference between the previous bar's close and its true high, which is the higher of that bar's high or the previous bar's close.

In Figure 2 none of the qualifiers from Table 1 were met. The high of bar A was 1.2890 and the close was 1.2833; the bar's close minus its selling pressure value was 1.2776, which was below the TD Demand Line.

Reviewing the qualifiers reveals the importance of determining whether buying or selling momentum has been exhausted before the penetration of a TD Line — that is, whether a price has already run up a great deal before an upside breakout or declined a great deal before a downside breakout. If this is the case, trading in the direction of the

breakout would be too late, except in special cases.

For example, Qualifier 1 for the breakout of a TD Supply Line requires the previous bar's close to be a down close. In other words, buying on an intraday basis after two (or more) consecutive up days is risky.

However, Qualifier 2 posits that a gap-up opening above a TD Supply Line accompanied by follow-through buying is a sign of strength and should be traded accordingly.

Qualifier 3 is designed to avoid buying a trendline breakout after a market has already demonstrated a great deal of buying has exhausted itself.

Qualifier 4 is another "go with the strength" rule in that it implies an exceptionally strong opening has occurred.

If none of the qualifiers are met, the TD Supply or Demand Line breakout should be faded. (Rarely do books detailing trendline analysis offer a reversal trading strategy following the break of a trendline.) For example, fading the break of the TD Demand Line in Figure 2 (i.e., buying) would have been appropriate for a short-term day trade.

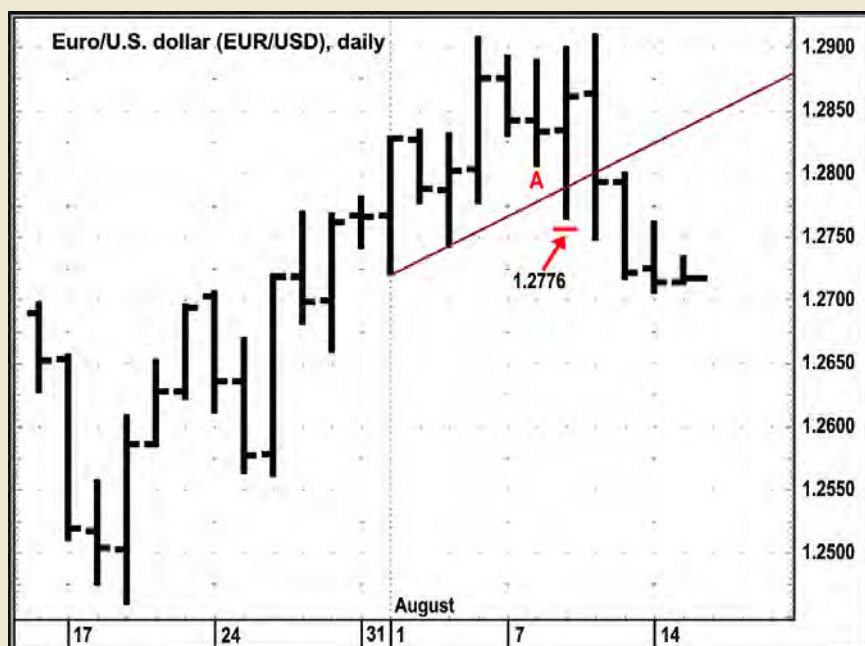
There is one problem with using these four qualifiers with cash forex data: Because of the 24-hour nature of forex, the opening price of a bar is often the same as the preceding close (or one tick above or below it). For example, the upside trendline break in Figure 3 failed the first three qualifiers. The buying pressure level for qualifier 3 (1.2843) was above the TD Supply Line. However, the market opened up one tick from the previous bar's close, and therefore all the

*continued on p. 26*



**FIGURE 2 — UNQUALIFIED TRENDLINE BREAK**

*None of the four qualifiers are met. 1.2776 was the selling pressure value, which is below the TD Demand Line.*



Source: QCharts

**FIGURE 3 — QUALIFIED OR NOT?**

*None of the first three qualifiers were satisfied, but because the market opened one tick higher, the fourth qualifier was validated. The breakout, however, failed.*



Source: QCharts

criteria for qualifier 4 were met. But the breakout failed.

Most other markets close for the night, which can lead to pent-up buying or selling that will be expressed by a strong up or down open the next day. Accordingly, further research regarding forex prices and TD Lines is recom-

mended. However, currency futures prices, which do not have the same open-close problem as cash forex prices, can also be used.

### Price objectives

Following the qualified breakout of a TD Supply Line, an upside price objective can be determined by calculating the difference between the line and the lowest low below it and adding that amount to the breakout price level (Figure 4). For a downside breakdown below a TD Demand Line, find the distance between the line and the highest high above it and subtract the result from the breakdown price.

In Figure 4, the market consolidated after meeting the price objective calculated after the TD Supply Line breakout.

### Risk management

The TD Line methodology also includes rules for exiting a trade executed on a trendline breakout. There are three situations for exiting a trade after a breakout of a TD Supply Line:

Exit if the bar after the breakout bar opens below the breakout price level.

Exit if the bar after the breakout bar opens below the close of the breakout bar and closes below the breakout price level.

Exit if the bar after the breakout bar fails to exceed the high of the breakout price bar.

There are three rules for exiting a short trade taken after a breakdown below a TD Demand Line:

Exit if the bar after the breakout bar opens above the breakout price level.

Exit if the bar after the breakout bar opens above the close of the breakout bar and closes above the breakout price level.

Exit if the bar after the breakout bar fails to trade below the low of the breakout price bar.

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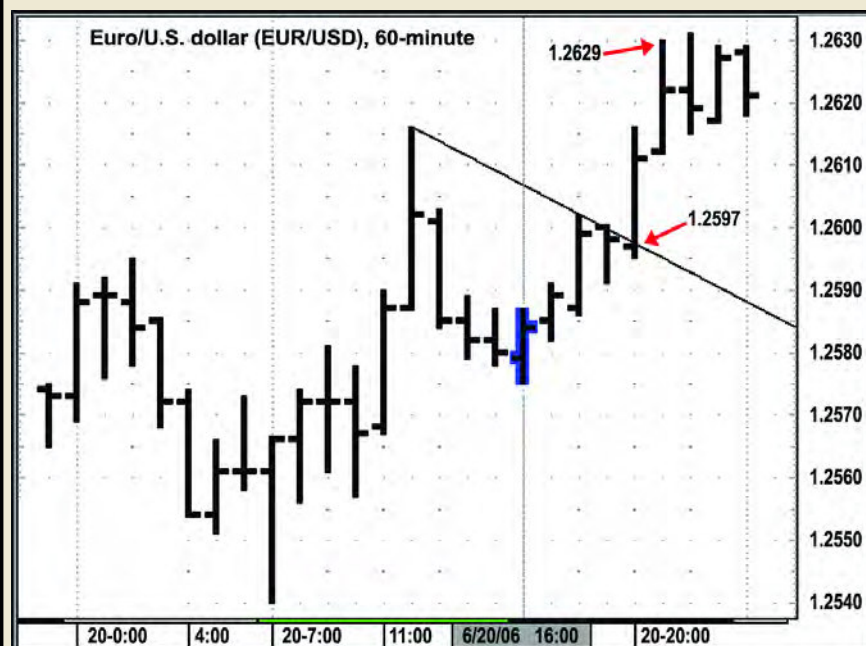
These rules are based on the expectation that there will be immediate follow-through in the expected direction. (Considering these rules are from a book for trading options, this makes sense. Options are a wasting asset. The longer you hold an option position, the less likely it will be profitable.)

### The search for objectivity

As traders continue to look for computer-based algorithms that smooth, detrend, and differentiate the markets, there is still something to be said for using price charts — as long as you do so objectively. DeMark's work is interesting in that it is chart-based, analyzes demand and supply, and offers set procedures that involve less subjectivity and make back-testing possible. 📊

**FIGURE 4 — UPSIDE PRICE OBJECTIVE**

At the close of the 16:00 bar the low was 1.2575 and the TD Supply Line value was 1.2607, a difference of 0.0032. Adding that value to the breakout level of the TD Supply Line (1.2597) set a price target of 1.2629.



Source: QCharts

## Related reading

### Books:

#### *The New Science of Technical Analysis*

by Tom DeMark (John Wiley & Sons, 1994).

#### *DeMark on Day Trading Options*

by Tom DeMark and Thomas DeMark Jr. (McGraw-Hill, 1999).

### Articles:

#### "Countertrend forex trading with TD Sequential"

Tom DeMark and Rocke DeMark (*Currency Trader*, January 2005). Currencies have long been praised for their trend capacity, but in today's market, an objective countertrend technique might be a forex trader's most valuable asset. TD Sequential is designed to identify trend exhaustion points and keep you one step ahead of the trend-following crowd.

#### "Demarking trend exhaustion zones"

by Lindsay Glass (*Active Trader*, July 2002). Learn how to use TD Sequential and TD Combo to identify trend-exhaustion zones.

#### "Tom DeMark: Objectively speaking"

by Mark Etzkorn (*Active Trader*, November 2001). An in-depth interview with Tom DeMark.

#### "Absolute price projections"

by Tom DeMark and Rocke DeMark (*Active Trader*, July 2004). TD Absolute Retracement is a mechanical technique for calculating price retracements and extensions that avoids the subjectivity and ambiguity of conventional technical approaches.

#### "Trading System Lab: DeMark variation"

by Thomas Stridsman (*Active Trader*, September 2001).

This system is based on TD Carrie, a simple pattern, described by Tom DeMark in his book *New Market Timing Techniques*. (This article is also part of the [Basic Breakout Trading Technique article collection](#).)

#### Tom DeMark four-article set

This discounted collection includes four articles written by or about Tom DeMark and his trading techniques:

#### "Absolute price projections"

by Tom DeMark and Rocke DeMark (*Active Trader*, July 2004).

#### "Tom DeMark: Objectively speaking"

by Mark Etzkorn (*Active Trader*, November 2001).

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