



## Average Directional Movement Index (ADX)

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Hi, this is Ty Young with Surefire-Trading.com and today I will be discussing the Average Directional Movement Index (ADX), which is comprised of the positive Directional Indicator (+DI) and the negative Directional Indicator (-DI).

### History

Have you ever heard of the game where everyone sits in a circle and the first person in the circle tells the next person a piece of information? That person then secretly relays that bit of info to the next person...and on and on it goes until the information has passed through everyone in the circle. And when the last person in the circle discloses the sentence he or she received, low-and-behold, generally without exception, the “little one-liner” has been so distorted that the context can hardly be recognized.

And so it is with the study of directional movement.

In studying these indicators, I found a lot of conflicting data being propagated by ill-advised traders – even many of the defining terms had been completely corrupted. As a result, I elected to get my information straight from the “horses mouth”.

In his book, New Concepts In Technical Trading Systems, J. Welles Wilder, Jr. states,

“Directional movement is the most fascinating concept I have studied. Defining it is a little like chasing the end of a rainbow...you can see it, you know it's there, but the closer you get to it the more elusive it becomes. I have probably spent more time studying directional movement than any other concept. Certainly one of my most satisfying achievements was the day I was actually able to reduce this concept to an absolute mathematical equation.”

Wilder is a contemporary technical analyst well noted for his accomplishments as the designer of several technical indicators, including the Relative Strength Index (RSI). Although many traders claim the benefits of using the Directional Movement Indicators as “stand-alone” systems, Wilder developed these indicators to be used as part of a larger system; **the ADX and the**

+/- DIs were not designed to function as “stand-alone” systems.

In other words, When the ADX signals a trend, a “trend following” system is advised. Conversely, if the ADX is signaling no trend a “non-trending” system is advised.

And frankly, I don't recommend the use of any indicator without additional confirmation. In this lesson we will be confirming the data received from the ADX with the Bollinger Bands and the RSI.

The implications of being able to rate the directional movement of any index, commodity, stock, or currency is staggering. And due to Wilder's hard work, we have a product that is nothing short of genius. The process by which Welles developed the necessary equations is complicated and laborious. So, for fear of diminishing the enormity and value of Wilder's research, I will attempt to interpret his calculations in such a manner as to simplify his intentions so they that may be applied and managed practically.

## **Technical**

The calculations for the ADX are incredibly complex the depth of which is beyond the scope of this lesson – giving us a great appreciation for our charting software.

But in order to give you a small taste of what is involved with calculating Directional Movement, below is a custom ADX formula that will plot the decimals after the calculation. The built-in indicators plot exactly as Welles Wilder plots them in his book, New Concepts in Technical Trading Systems. These custom indicators calculate the same way save the rounding aspects that Wilder uses.

```
Periods:=Input("Time Periods",1,100,14);
PlusDM:=If(H>Ref(H,-1) AND L>=Ref(L,-1), H-Ref(H,-1),If(H >Ref(H,-1) AND
L<Ref(L,-1)
AND H-Ref(H,-1)> Ref(L,-1)-L, H-Ref(H,-1),0));
PlusDI:=100*Wilders(PlusDM,Periods)/ATR(Periods);
MinusDM:=If(L<Ref(L,-1) AND H<=Ref(H,-1), Ref(L,-1)-L,If(H>Ref(H,-1) AND
L<Ref(L,-1)
AND H-Ref(H,-1)<Ref(L,-1)-L, Ref(L,-1)-L,0));
MinusDI:=100*Wilders(MinusDM,Periods)/ATR(Periods) ;
DIDif:=Abs(PlusDI-MinusDI);
DISum:=PlusDI+MinusDI;
ADXFinal:=100*Wilders(DIDif/DISum,Periods);
ADXFinal
```

And this is only part of it, so.....

Simply put...

- the DIs and the ADX are displayed on a scale which has a range of 0 – 100.
- When the +DI is above the -DI, a bullish market is implied. As the DIs cross, giving the -DI top billing, bearish control is implied.
- True Directional Movement is the Difference between the +DI14 and the – DI14. “The more directional the movement of an index (or currency), the greater will be the difference between the DIs”; in other words, as seen on a chart, after the DIs cross and their difference increases they begin to “pull away” from each other (the gap widens), while subsequently, the ADX continues to rise – implying a “trending” market.
- In essence, the ADX (Average Directional Index – the operative word being Average) is smoothing the action calculated by the DIs.

**THE ADX SHOWS US THE STRENGTH OF A TREND. IT DOES NOT TELL US WHICH DIRECTION THE TREND IS MOVING.**

- The +/- Directional Indicator (DIs) shows us which way the trend is moving.
- If the price is criss-crossing in a sideways direction, then the gap would be narrowing – implying a “non-trending” market.

### **CAUTION**

Because, the crossing of the DIs is merely an “early warning”, Wilder states that the following guidelines should be understood....

Did you catch that?

It is only an “early warning” signal.

I found many traders advocating a system that encourages entering the market at the “crossing” of the positive and negative directional indicators –

**NOT ADVISED**

So, with this in mind.....

- If the ADX reading is below 20 or the ADX drops below both DIs - a “weak trend” or a “non-trending” market is implied. This does not mean such a signal should not be traded. It does mean, however, that a “non-trending” system should be used for confirmation, i.e., oscillators, such as MACD or Stochastics. But, even though the BBs are not generally defined as oscillators, they are a great tool to utilize for OB/OS levels – (if used properly) “bing-botta-bing”. ☺
- When the ADX drops below 10, the current trend is virtually dead. Be ready for the beginning of a new trend – bullish or bearish; the ADX doesn’t distinguish the direction. Use your other indicators to make this decision. So, if you’ve been long, and the ADX drops below 10, it’s time to secure your profits. However, after a period of consolidation, a “new” trend may resume in the previous direction.

Don't assume that since your current position has given you an ADX reading of 10 (or lower) implying that your trend is over that the subsequent ADX move above 20 will take you in the opposite direction....no, no, no.

- An ADX reading above 20 implies the “beginning” of a new trend; whereas; a rise above 25 implies a “trending” market; even a bearish market. So, know this - it is possible to have a reading of 35 and the market can be falling like a rock. [An upward moving ADX does not specify market direction – only market trend. Please burn this into your brain.](#)
- IF the ADX rises above the 40 level, the market is even stronger; however...
- If the ADX subsequently drops below the 40 level, it’s an early indication that the market is weakening, which frequently leads to a reversal.
- Subsequently, a turndown at the lower levels (without reaching the 40 line) is generally a retracement or consolidation signal (not a reversal signal)....so, don’t panic. Look for confirmation and trade accordingly.
- After the DIs cross and their difference increases; in other words, as they begin to “pull away” from each other; better yet, the gap widens, while subsequently, the ADX continues to rise – trending market strength is implied.
- Once the ADX breaks above the +DI and the –DI, a retracement or reversal is on the horizon.

However, **REMEMBER:** Get confirmation!!! I can't stress this enough - when it comes to trading "with the trend" – especially while trading Currencies, the ADX is often above the DIs for an extended period of time. To interpret a move in which the ADX is above the DIs as an exit signal is generally to exit the market – **TOO EARLY.**

Let's take a look at some examples.

## Charts

Let's set up our chart with...

- three guiding levels; 20, 25, and 40 (remember: do a little experimenting to see if the index or currency you are trading has a "break away" level of 25 or not. Your traded market may be lower – like 16 to 25).

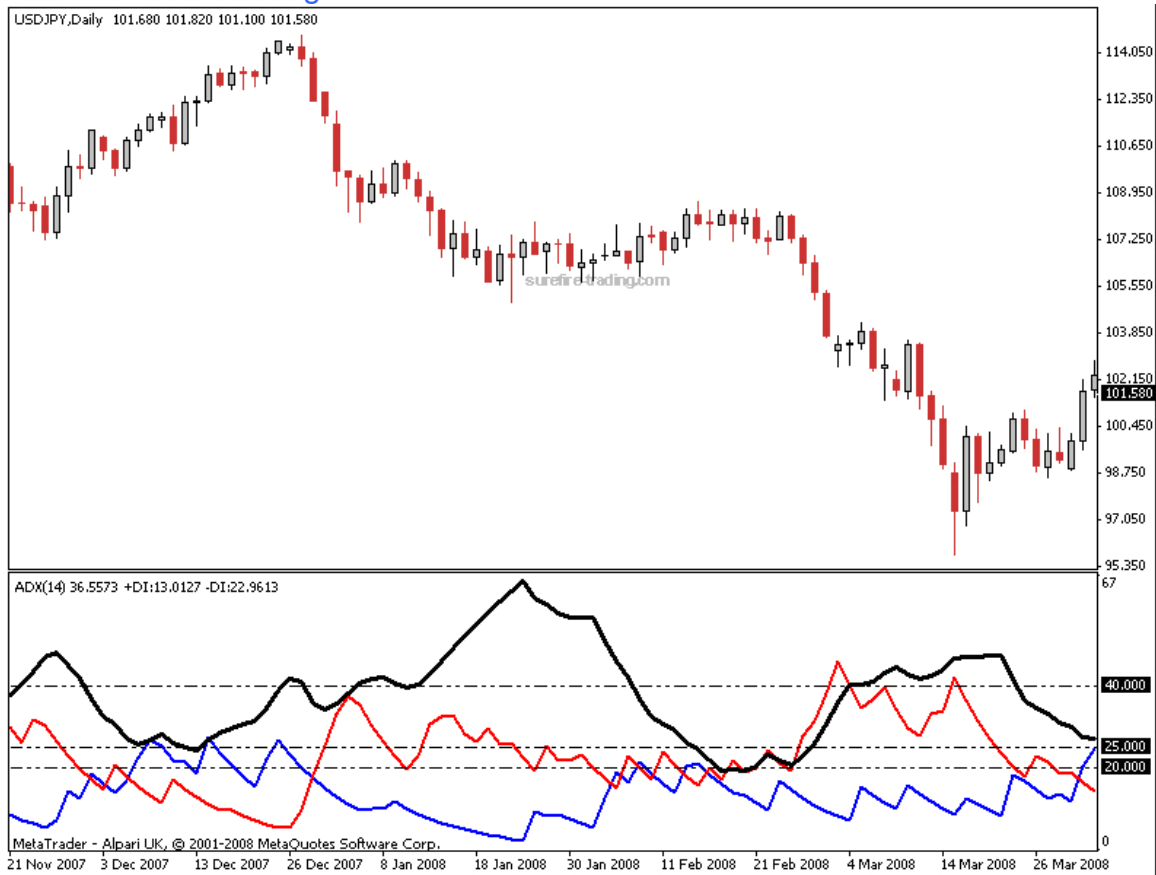


Then we add the tools....

- the +DI (blue).

- the -DI (red).
- the ADX (black).

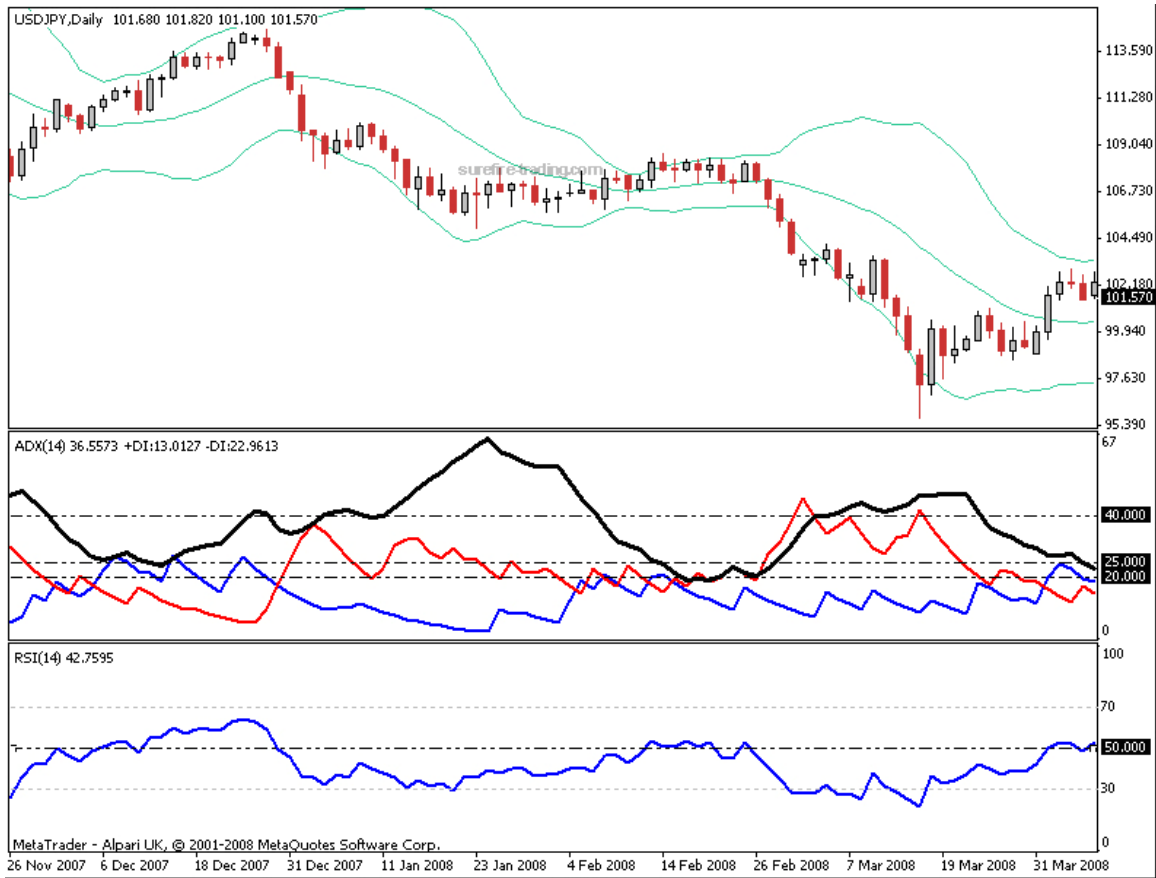
.....each with a setting of 14.



Our “trend-following” system will include the Bollinger Bands, RSI, and your basic trend line strategies (use the systems that suit you the best).

So, we have also entered (chart below)...

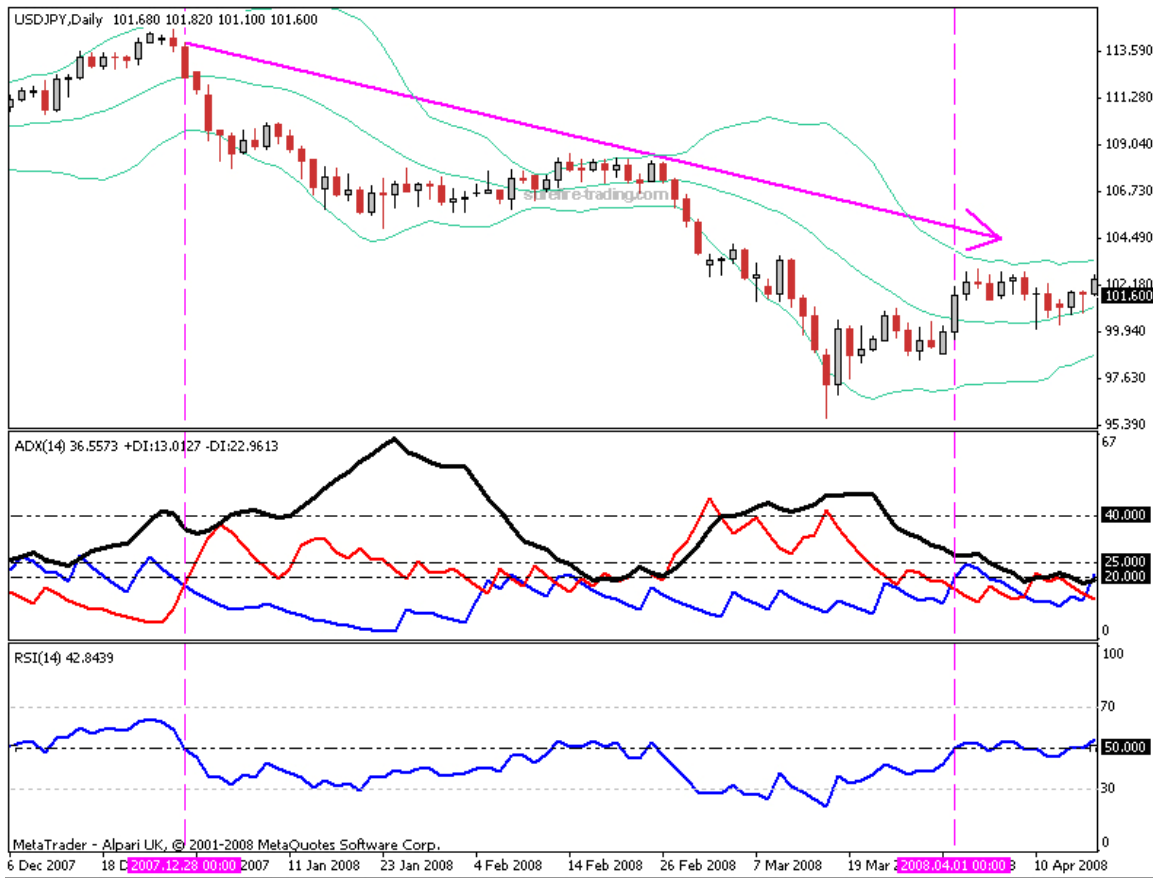
- the RSI with a setting of 14 and a guiding line set at 50.
- and our faithful Bollinger Bands set at 20 with a standard deviation of 2.



Now we have a 4-hr. chart of the USD/JPY ready to help us make the big bucks. And what do we see (chart below) - price is in an obvious downtrend, which is confirmed by the following....

- 1) the -DI is predominantly above the +Di.
- 2) the gap between the DIs have widened.
- 3) the ADX breaks above the 20 and 25 levels.
- 4) multiple closes below the lower BB - imply bearish strength.
- 5) RSI has moved into bearish territory.

A whole lot of confirmation going on...



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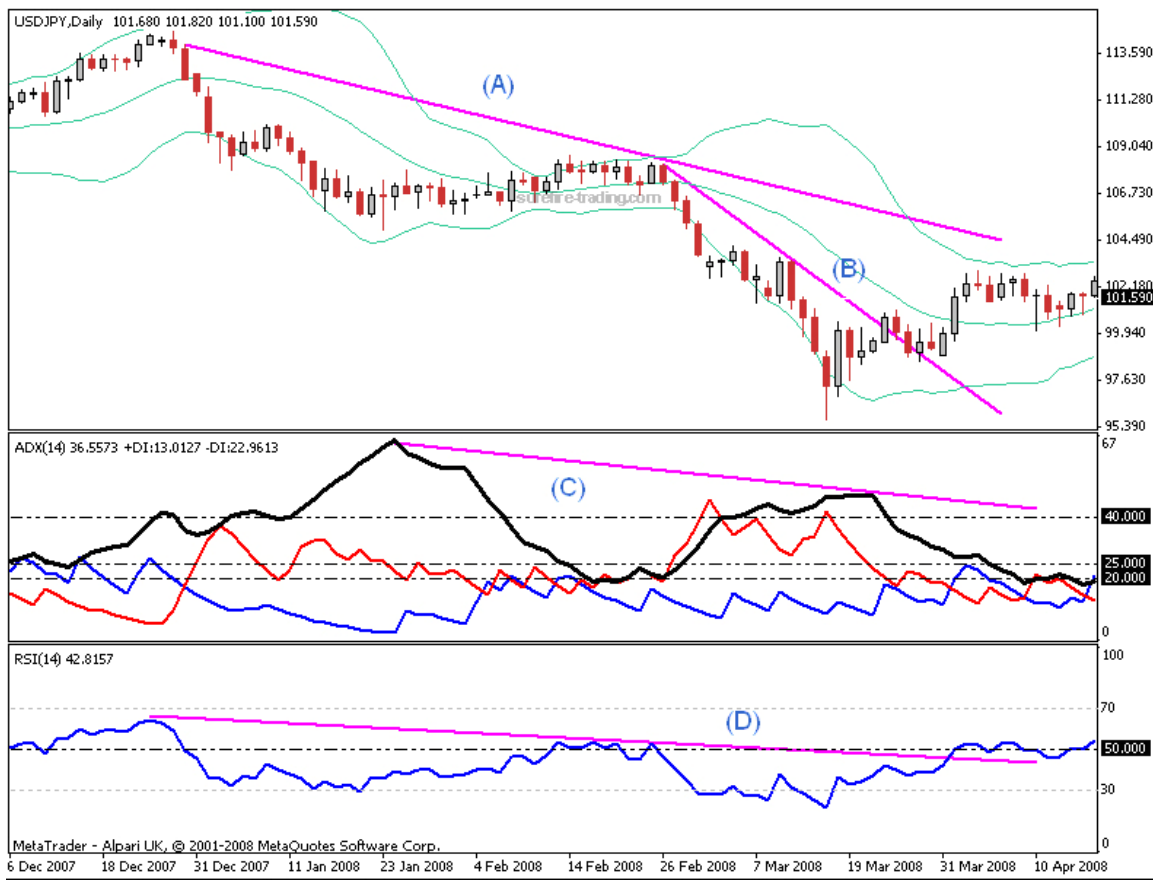
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- If we were fortunate to be riding this bearish train, we would be looking for a good exit point, or....
- If we are not carrying an active trade at this time, we are looking for an opportunity to safely jump into the market mid-stream on the short side - or enter long on a reversal.

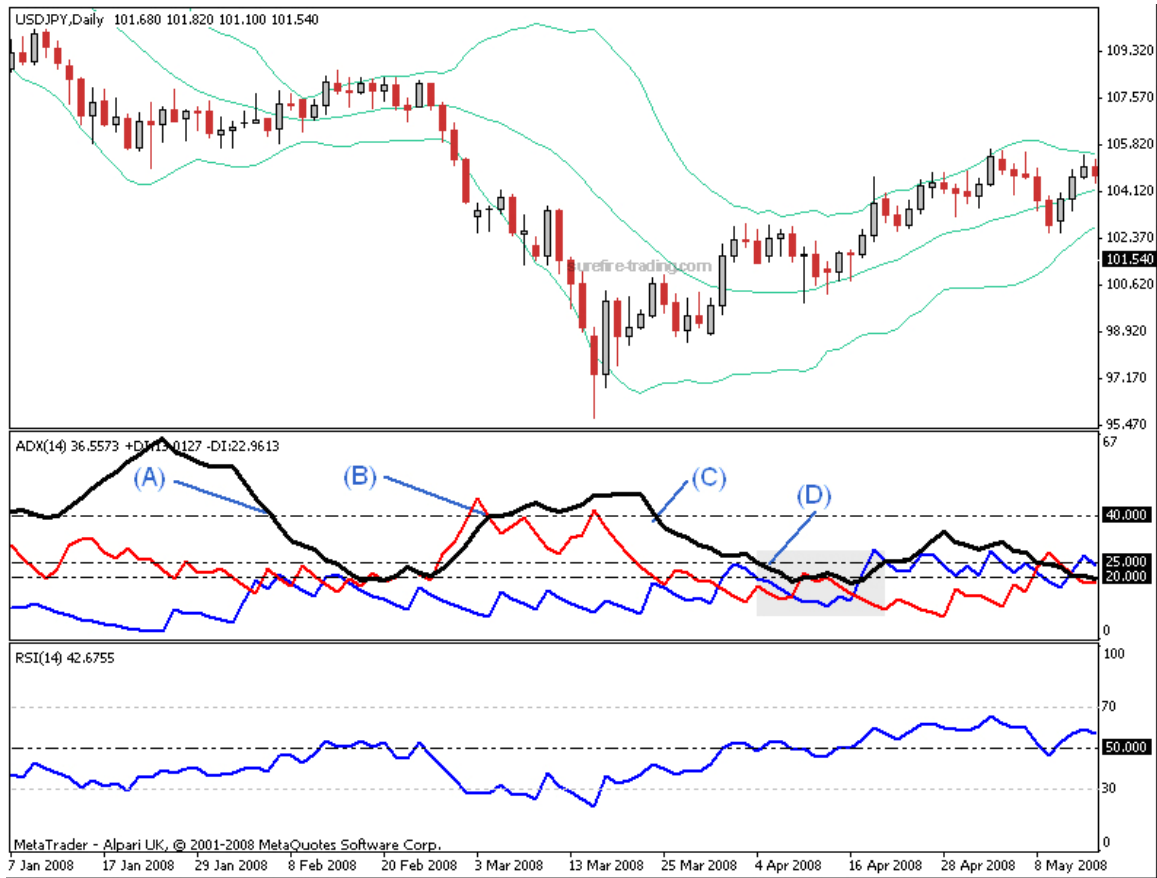


So, looking (chart below) at this same chart once again, let's add some appropriate trend lines. We have a....

- 1) primary Trend line (A) on the price chart.
- 2) secondary T/L (B) on the price chart.
- 3) T/L (C) on the ADX.
- 4) T/L (D) on our RSI.



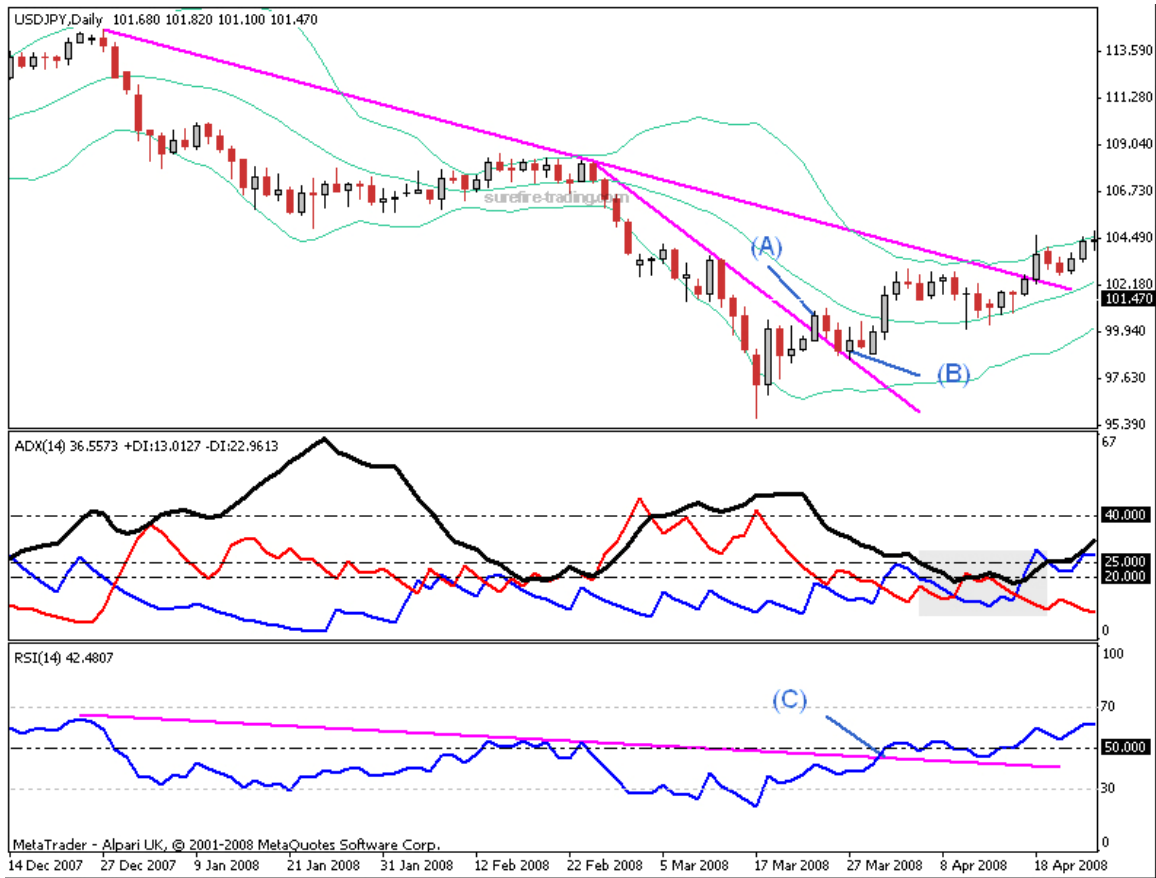
And our interpretation is????



- On the chart above, the ADX has risen above the 40 line and subsequently dropped below the 40 level (A), once more pulls above the 40 level (B), and once again drops below the 40 line (C); likelihood of - reversal....followed by a drop below the 25/20 line (D); high probability reversal.
- The -DI falls below the 25/20 line (shaded area) – the bears appear to be losing control.

Confirmed by....

- A break on the price chart below of the secondary T/L (B) – implying bullish strength
- A suburb pullback to T/L (B) coinciding with ...
- A subsequent break of the RSI T/L (C) to the bullish side.

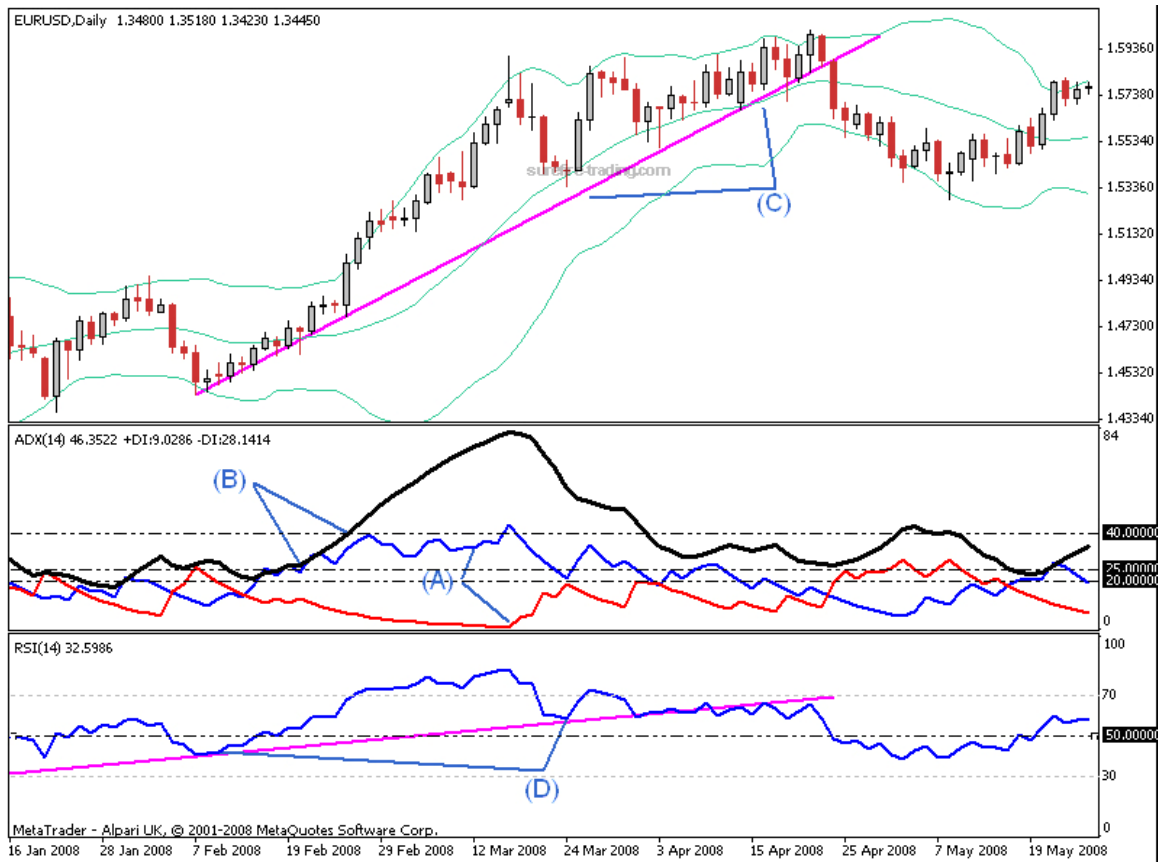


Providing us with a great opportunity to enter on the long side of the market – with a minimum target at the Primary T/L (A).

Let's do another one. Remember our recent Euro crash....check it out.

Below is the EUR/USD Daily chart with the same settings as used previously on the USD/JPY.

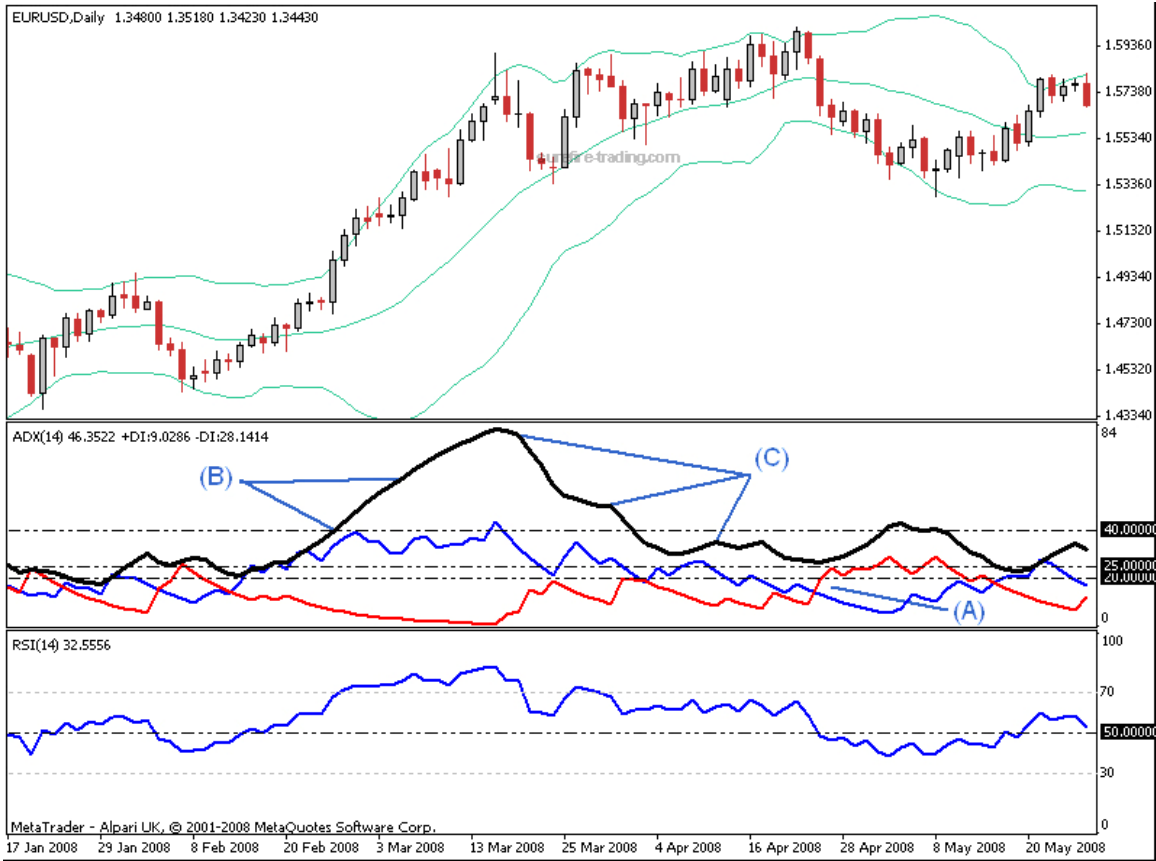
- 1) +DI is above the -DI (A); bullish
- 2) ADX is strong as it crosses the 25/40 line to the bullish side (B).
- 3) Price is on an obvious upward move T/L (C).
- 4) RSI is strong (D); also bullish.



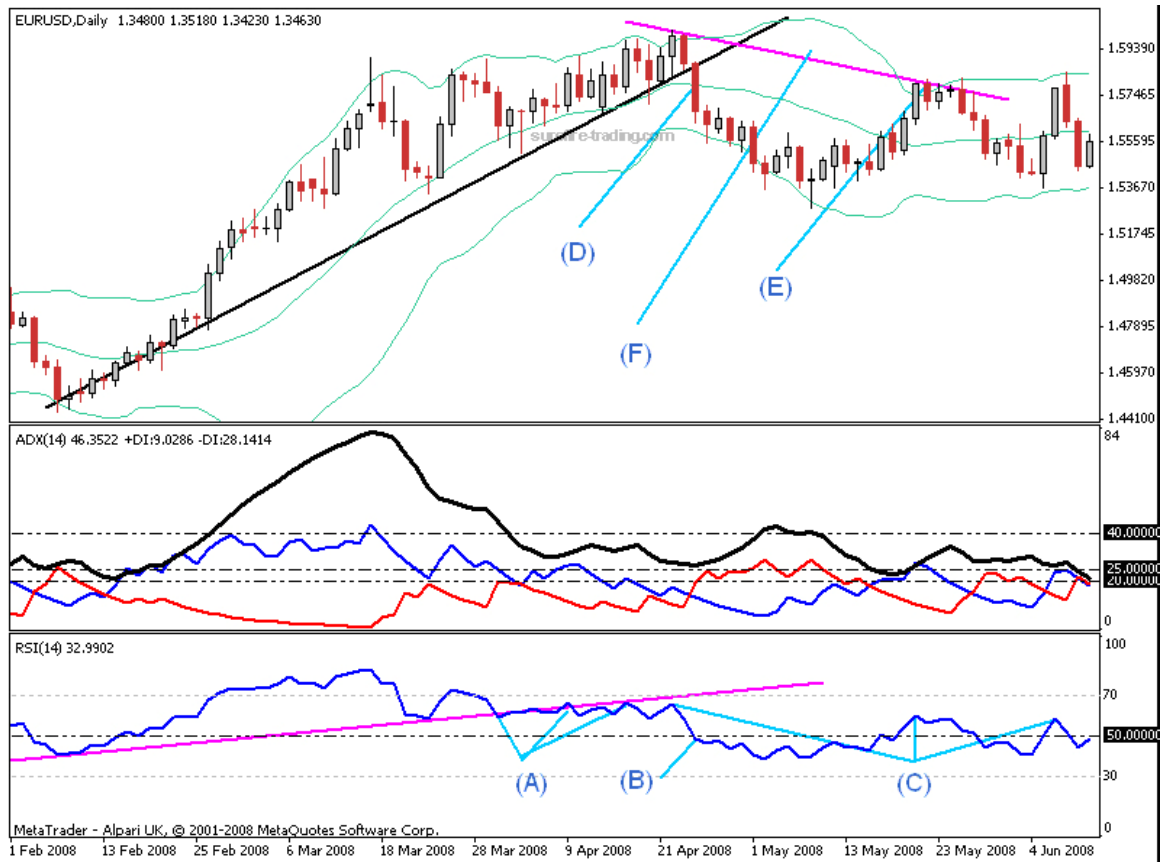
Now here's the fun part ☺

On the chart below, the...

- -DI moves above the +DI (A); bearish
- ADX moves way above the 40 line; demonstrating extreme climate (B).
- ADX drops displaying peaks, with each peak subsequently lower than the previous peak, eventually dropping below the 40 line; reversal signal (C).



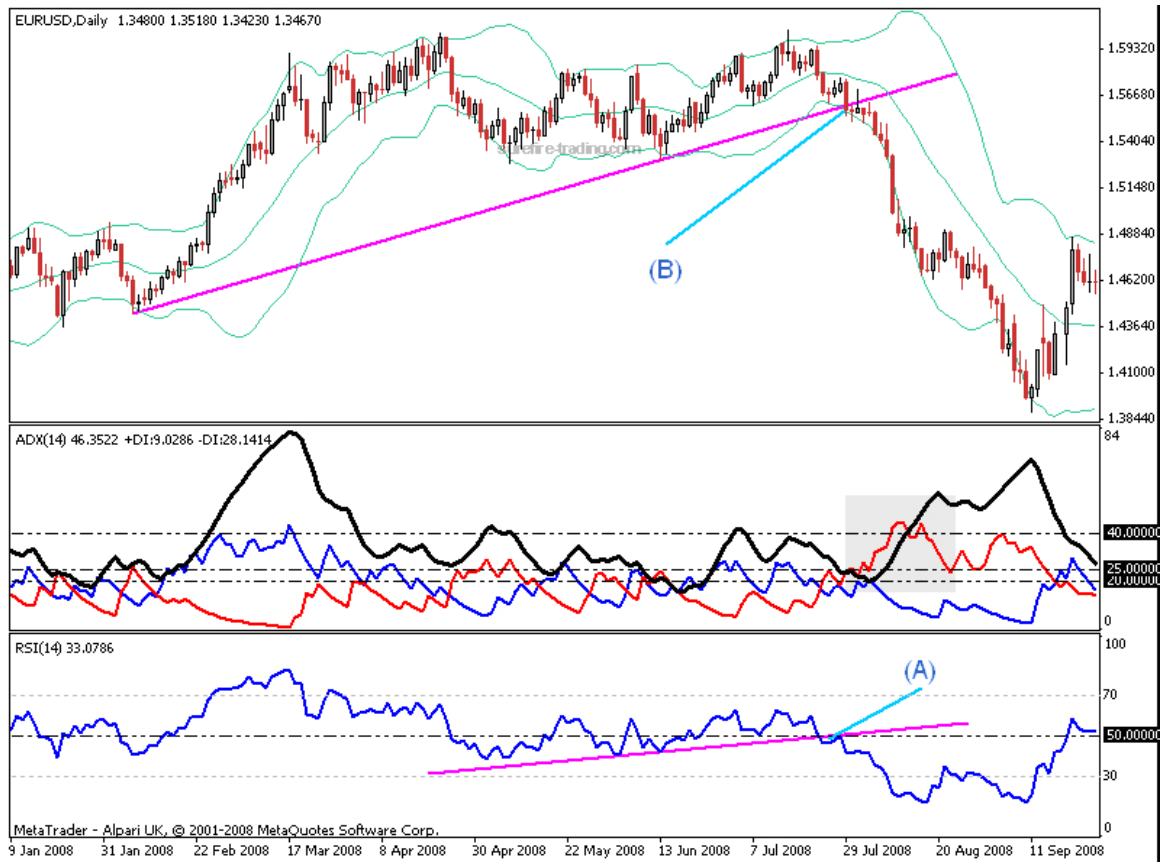
On the chart below, our short position “in the making” is confirmed by....



- 1) A break of the RSI T/L (A), while the RSI retracement remains below the RSI T/L. (A)
- 2) Along with a subsequent drop below the 50 line (B).
- 3) RSI rises and falls forming three peaks, with each peak lower than the previous peak (C).
- 4) Price breaks and closes below the T/L (D) with a subsequent pullback to the upper BB (E) which is lower than the previous break of the upper BB (F).

All this showing market weakness.

Ultimately – after a bit of consolidation, a short position is confirmed with the use of the ADX and DIs (shaded area), RSI break (A), BBs, and the proper use of price trend line (B)s.

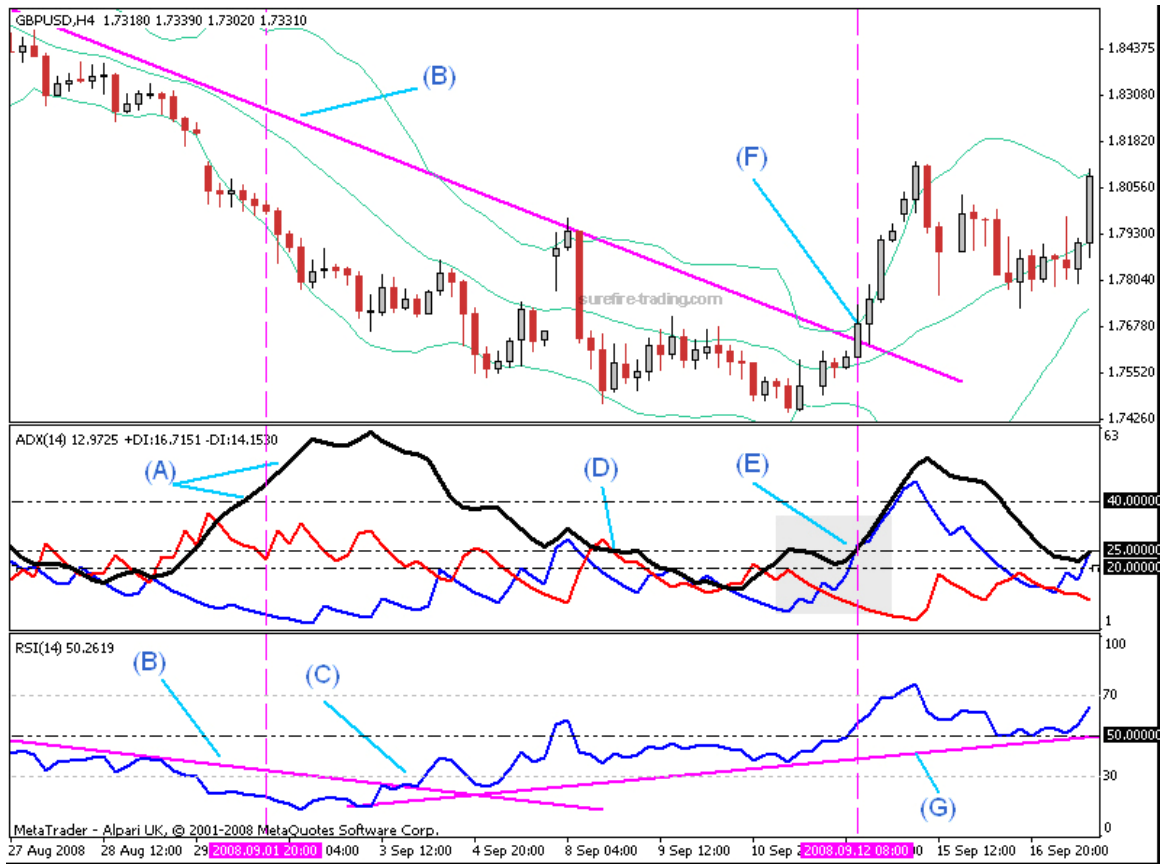


OK, GREAT. Let's do a trade.

On this 4-hr. GSP/USD below, I will use the ADX as my initial signal to alert me as to the end of the current trend, which presently is bearish. On September 1, 2008, the ADX broke 40 and continued upward (A). It was at this time that I set my trend lines on the price chart and the RSI (B).

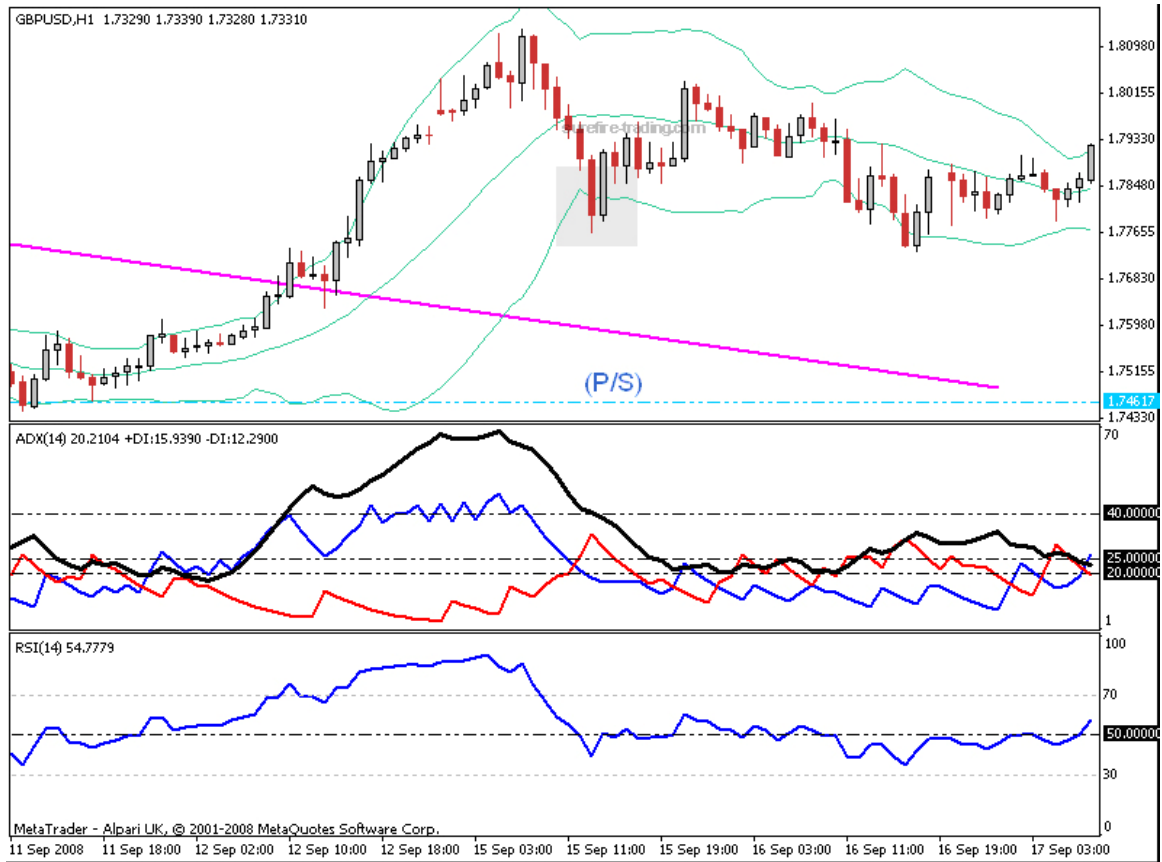
Keeping a close eye on these two indicators along with the BBs, I waited for a break of the RSI trend line (C), which occurred three days later. I continued to watch the ADX drop until it fell below the 20 line (D).

When the ADX broke upward above the 25 line (E), I waited for a break and subsequent close of the price trend line (F), which was triggered on Sept. 12<sup>th</sup>.



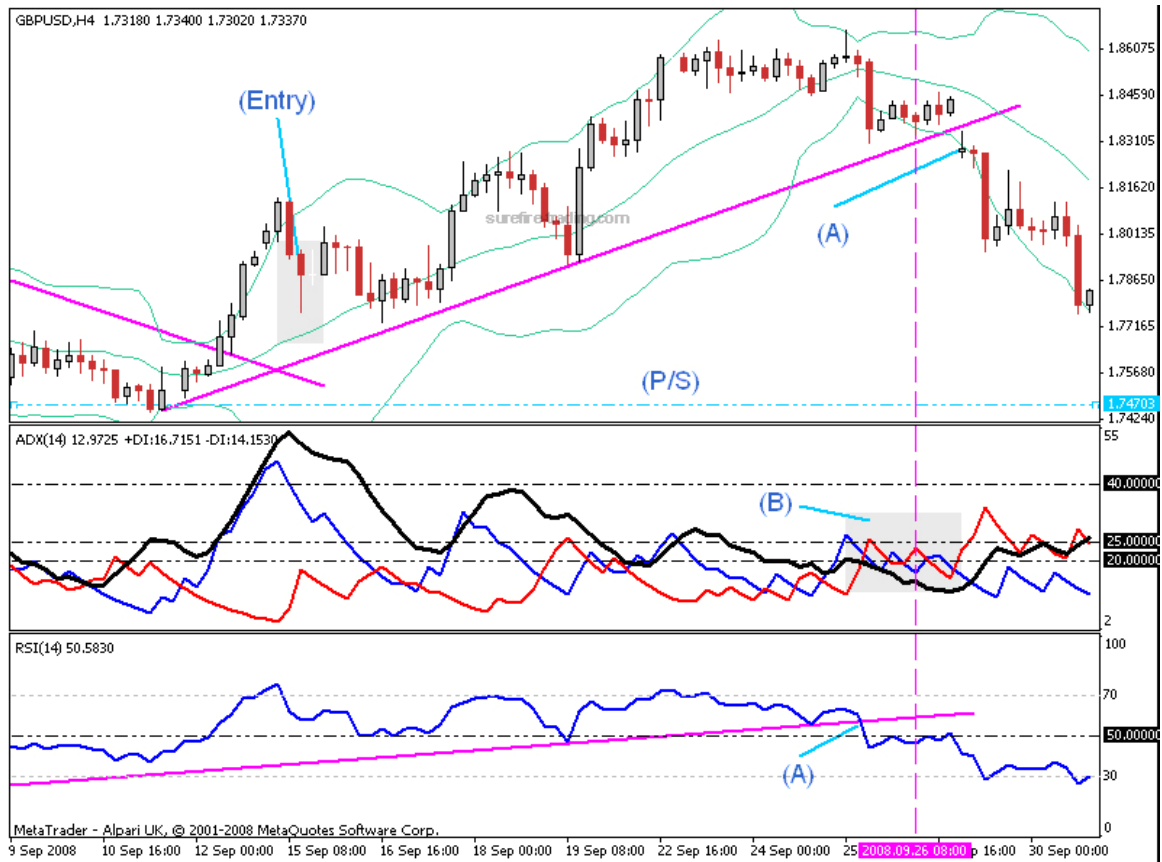
Since the +Di crossed above the -DI and the ADX moved above the 25 level (shaded area), and the RSI continued to move upward remaining in bullish territory (G), I dropped down to the 1-hr. chart and entered the market on the long side when the price pulled back to the lower Bollinger Band (shaded area).





Immediately, I placed my Protective Stop (P/S) at the previous low.

Once in the market, I returned to the 4-hr. chart to manage my position.



With a break of the RSI trend line and the price trend line (A), subsequently followed by the DI already meandering in consolidation (shaded area B), I closed my position on Sept. 26<sup>th</sup> for a gain of over 600 pips.

With Sure-fire Trading.com, this is Ty Young, reminding you to “Read the Charts”. ☺



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