Foreword

The aim of this book is to give you a method of earning money that I and thousands of other people across the World use.

I have no intentions of giving you a history lesson, telling you all of the ins and outs of the markets or telling you how to use all of the functions of a spread firm.

I trade indices with these methods. If you wish to apply these methods to trading Commodities, Currencies, Shares, House prices or a million and one other things, please do so. It will work for anything, but you have to know the area that you are going to trade in.

What I am trying to convey is that I do not trade in anything else, and therefore I cannot comment on anything else. It is up to you to watch and learn about anything else that you wish to apply this knowledge to.

I am going to give you the knowledge that you will need to make money.

I can give you copies of a stack of books that cover market speak, futures, options and the like (free upon request) but I have no intention of covering subjects that are of no relevance to making money using this method.

I will, however, cover everything that you need to know to succeed with these methods. If you get stuck or do not understand, please contact me with your query.

I am trying to avoid the needless filling that is contained in most courses.

Having said all of that, I want anyone to be able to read this course and make money. So with that in mind, I have provided within this course, more than enough information to satisfy everybody.

You can go through this course from start to finish or you can navigate to the areas of this course that you are interested in.

In the index page, I have given a brief description of each chapter to help you decide where to start.

If you like courses with filling and you feel you need to know my shoe size or require other information about me, then feel free to get in touch with me.

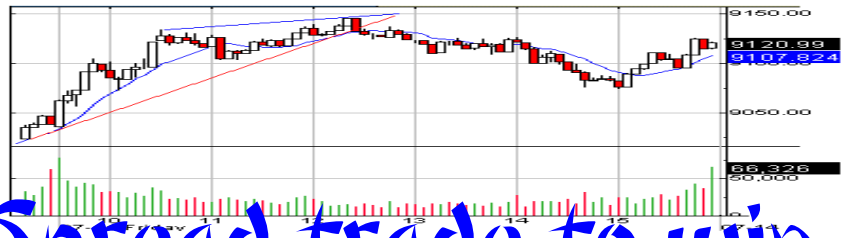
I reserve the right to ignore any personal questions, but you never know until you ask.

Finally, do not panic or get bogged down by any of the technical stuff

contained within this course. It is there for those of you who like to have all of the technical bumph. The last chapter of this course will put everything into context and enable you to trade and make a living without having to know all of the ins and outs. But it is always there if you need it at a later date.

If you have questions at any stage please email me at:
mailto:rob@spreadtrade2win.com

Enjoy.



Spread trade to win

COURSE CONTENTS

(Click on the blue text to view the page you desire)

CHAPTER 3

Overview: How the markets work and which techniques are employed to view them. Of interest, but if you already know, move along.

CHAPTER 4

Overview: A snapshot of the Financial Spread Firms in the U.K and where to open up a virtual trading account. May be of interest to beginners.

CHAPTER 5

Overview: The very basics of how spread trading works and how to place a trade. May be of interest to beginners.

CHAPTER 6

Overview: Where to get free market data to enable you to make successful trades. Anything free has to be of interest.

CHAPTER 7

Overview: Technical indicators, what they are, what they do and most importantly, how they help you. Make up your own mind.

CHAPTER 8

Overview: Chart settings and why I use the settings that I use. Ditto.

CHAPTER 9

Overview: Moving averages, a full low down on them. Not for the feint of heart, one for the information junkies.

CHAPTER 10

Overview: Bollinger bands, more information than you can shake a stick at. Ditto.

CHAPTER 11

Overview: MACD thoroughly explored and explained. Ditto.

CHAPTER 12

Overview: Fast stochastic, reaching information overload.

CHAPTER 13

Overview: RSI, the last bit of the puzzle for the over informed.

CHAPTER 14

Overview: Candlestick formations. Must read if you want to make money.

CHAPTER 15

Overview: Putting it all together. Errrrrr..You work it out.

CHAPTER 16

Overview: Leaving the best until last.
Even a 7 year old could make money using these techniques. If you read nothing else you must read this or be destined to fail. This is what you are paying good money for.
Skip this at your peril.
You've been warned!

DISCLAIMER (BORING LEGAL BIT)

This book is for educational purposes only. I do not make any recommendations about particular stocks, bonds, options, securities and derivatives of any kind.

I disclaim any liability for loss or risk incurred as a consequence of the use and misuse, either directly or indirectly, of any or all the information presented within this document.

I can give no guarantee of earnings or of profitability. Betting on financial markets is highly speculative and you are advised not to bet with money that you cannot afford to lose.

The indices I mention in this book are for illustrative and educational purposes only. How you use the information that is presented within is entirely up to you. I am in no way liable for your trading activities resulting from information obtained from this document.

Ultimately all investment decisions are made by you. Only use capital that you can afford to lose.

YOU and only YOU are accountable for your actions, enough said.

Acknowledgements

To everyone who has ever written a book or course on this subject, thank you for inspiring me to do better.

Thanks to everyone out there who has a website with the word candlestick somewhere in their description. You are too numerous to mention but I recommend that anyone reading this should look up candlestick formations in a search engine.

These sites have provided me with a lot of free information, some of which is contained within, and as requested, so are the links to your sites. So, no complaints.

I must add that all of the technical stuff is written by a man called Arthur Hill. His work is not reproduced in its entirety because the website that it comes from would like me to leave the links in to enable you to update your information, should it change. So I have given you enough technical jargon to help you succeed, but if you want more (have mercy on me) please follow the links and have a good look around the web sites.

Thanks to Simon Clayton for inspiring me to get this finished and for being one of the first people to try my system and to give helpful advice, and to my new-found friend and associate Glyn Williams for really putting me through the mill and getting me to improve this course even further.

Finally, respect to you all for getting off your backsides and trying to find a way to get out of the rat race and to my family for coming along for the ride.

Success to us all.

Rob.

1

Do we have to have fish for supper?

Why write a book about Financial Spread-Betting?

Firstly, let us dispense with the term 'Financial Spread-Betting'. Let us call it 'Financial Spread-Trading'. A subtle change in name perhaps, but one that will change the way you view betting.

Let me explain.

I do not bet on anything as this implies that I gamble. I have never backed a horse because of it's colour or name or traded stocks because aunt Maude used to buy her panty-hose there.

Trading implies that I make a transaction and in return get something of equal or better value.

I have spent years developing programs where I make a living from the outcome of sporting events. I like to cover all eventualities and come out making a profit.

In sporting terms this is called 'Arbitrage'.

I invest money in an event, and regardless of the outcome, I make a profit. Much the same as a bookmaker would.

Bookmakers do not make money from backing horses and neither do most punter's. Bookmakers make money from laying all of the horses or outcomes in an event, at a margin greater than 100%.

100% is break-even territory, anything over and above that is profit.

The punter then racks his brain to find the winner and the Bookmaker could not care less, because regardless of the outcome, he makes a profit.

What does this have to do with 'Financial Spread-Trading'?

Well, all markets are just a two horse race and if your horse is not winning, you can always swap.

Better still, I will show you how to always trade the winner.

Anyway, where was I?

Why write this book?

The answer to that is because not many people have covered the subject and those that have, have kept an awful lot back.

I personally have spent a fortune on courses, only to discover that the authors were plugging some expensive soft-ware or they wanted me to subscribe to their site. Or worse still, they wanted me to attend one of their seminars and part with £5,000 of my Earth pounds.

To say that I was disappointed is an understatement. I have no problems with free enterprise, but not at my expense.

If people wish to pay huge sums of money for this information, and clearly they do, then let them. There is obviously a market for people with very large pockets.

But I prefer to actually see a return on my investment before I start shelling out even more money.

Other authors suggest that you relax and take it easy and they will kindly do all of the work for you, at a price, and you just follow their lead. One service that I am aware of, sells real-time data to it's customers for £100 per month.

Why would people take up that offer, especially when they can get the same data for less than £15 per month?

What happens to you when these people go on holiday, go bust, sell up shop or a million and one other things?

Well, you are left high and dry without a clue as to how to do the job yourself. You have become reliant upon them to make you an income!

My aim is to teach you to make a grand living from doing everything for yourself, at no extra expense, save for the princely sum you paid for this book.

As the old adage goes:

Give a man a fish and he will have fish for supper.

Teach a man to fish and he can eat fish until he is sick to death of fish and fancies a change.

He can always swap his catch for a slap-up meal at the local restaurant. He just hopes and prays that fish is not on the menu that night.

Or words to that effect!

It is always better to be in control of your own destiny and have a choice, rather than sitting and waiting for someone to throw fish at you.

2

Get to the point!

I know how tricky it is to learn a new subject. All you want to do is get to the money making bit, get a good grasp of the subject and get on with it.

But the author has other ideas. He wants his masterpiece to be a massive creation, full of wonderful pieces of useless information and more padding than a sumo wrestlers midriff.

This course, however, is not designed that way.

I shall give you a brief description of what it is we are trying to achieve.

I will show you:

1. Where to get all of the free resources required to start trading.
2. How to go about using them to your advantage.
3. How to trade.
4. Where to trade.
5. When to trade.
6. and what to trade on.

Any technical stuff that we come across that is relevant to the way I trade, will be explained there and then.

The rest you can learn about at your leisure, so it will be at the end of this book.

So take a deep breath and lets move swiftly on.

3

I never really knew what was going on!

A brief over-view of how any market is gauged.

Information of any kind, be it on the Stock Market, individual shares, horses and even the weather, loosely falls into two categories:

FUNDAMENTAL ANALYSIS

TECHNICAL ANALYSIS

As with anything in life, both sides have their supporters and both have their detractors. Both have their uses and both techniques can be incredibly accurate and terribly wrong.

Fundamental Analysis for Stock Markets is the study of Industrial, Company and Economic conditions (amongst other things) to determine the value of a company's stock.

Technical analysis is the study of prices with the aid of charts and numerous technical indicators.

There are only two things that make the two techniques perform so differently. They are time scale and herd mentality.

Fundamental Analysis can be manipulated, false reports can be filed (Enron and World Com spring to mind) and rumours abound. This sets it at odds with whatever is actually happening in the markets.
You only have to look at the Dot.Com boom and bust. Companies were making no money, in actual fact they were losing money

hand over fist and yet their share value was leaping.

The fundamental analysis was perplexing because the market kept on going. There was no rational reason behind it.

And there in lies the problem for anyone who studies fundamental analysis. The markets are not run by reason or governed by rational thinking. They are driven by emotions, namely fear and greed.

Technical Analysis on the other hand displays the open sentiment of the market. The fear, greed and the utter chaos behind the herd mentality.

The unique thing about technical analysis is that it is a self-prophecy.

Because all of the chart patterns and indicators are known and watched and acted on by all of the traders, they immediately follow the path that they are expected to take.

The conclusion to all of this is that fundamental analysis will be proven right in the long run. But the question that must be asked is "How long is the long run?"

So, although I believe that there is credence for both techniques, I believe that fundamental analysis is a complete waste of time and energy. Anything that has you sitting around waiting for the hammer to fall cannot be very productive.

I say get out and enjoy the ride, just change directions when your path comes to an end.

As for time scale, the shorter the better. There is nothing worse than buying a share and watching it rise and fall over the course of a year.

Why not catch every rise and fall that it makes.

Our aim is to trade a stock or an index or a commodity, at least once a day.

And this is how we go about doing just that, using technical analysis as our guide.

Now, before panic sets in and you start to believe that you are going to have to learn all of the chart formations and indicators, let me set your mind at ease.

You will need to know and recognize a couple of formations, but that is it. That is unless you want to spend all of your time learning stuff that has no relevance.

Rather you than me, but hey, each to their own.

SUMMARY

- Fundamental analysis tells you what the markets should be doing, which is good for the long-haul view.

- Technical analysis tells you what the markets are really doing, which is excellent for the short-term to medium term view.

- This document is concerned with technical analysis and therefore the short-term view.

- Everyone has different opinions. If they didn't there would be no market place.

- I don't give a monkeys for anyone else's opinions. This is my book and my opinion. Go and get your own opinions.

I do not wish to offend anyone.

Everything expressed in this book is only my opinion. Who is to say that my opinion is right or that my opinion is wrong. My opinion is exactly that, MY OPINION.

I use what works for me, and in this case technical analysis works for me.

4

I will say this only once - Financial Spread Trading.

We are firstly going to look at Financial Spread Betting (Trading) companies. They supply us with some of the free information that we need. And of course, you are going to have to have an account with one of them (or more) should you wish to earn money with them.

All of the Financial Spread Betting (Trading) firms are very well run. They all have their plus points and I am loathed to recommend anyone in particular.

But if you are brand new to financial spread betting (trading), I recommend that your first account be with Finspreads. Purely because they have a training academy for beginners, and during that time (8 weeks) you can place trades with them from as little as 1 pence per point.

All of the firms have very good websites. Some are easier to use than others, and again, Finspreads comes top of my list. But please do not be put off any other firms because of my view. Try them all out for yourself.

Most have a demo of how to use their site and while you are there you can get an information pack from them, via their websites, as well as an application form.

Here is a list of current Financial Spread-Trading companies that operate in the U.K.

No doubt there are others out there, but I do not profess to know all about them and the workings of their sites.

My soul aim is to teach an easy method of earning a living. How

you expand upon what I teach you is up to you.

Deal4free	www.deal4free.com
I G Index	www.igindex.co.uk
Cantor Index	www.cantorindex.co.uk
City Index	www.cityindex.co.uk
Financial Spreads	www.finspreads.com
Spreadex	www.spreadexfinancials.com
Tradindex	www.tradindex.com
IFX Financial	www.ifxfinancial.com (part of Finspreads now)

All of the spread betting companies listed here are FSA regulated and they all have a strong financial capital base. Which basically means that you will get your money should anything get bent out of shape.

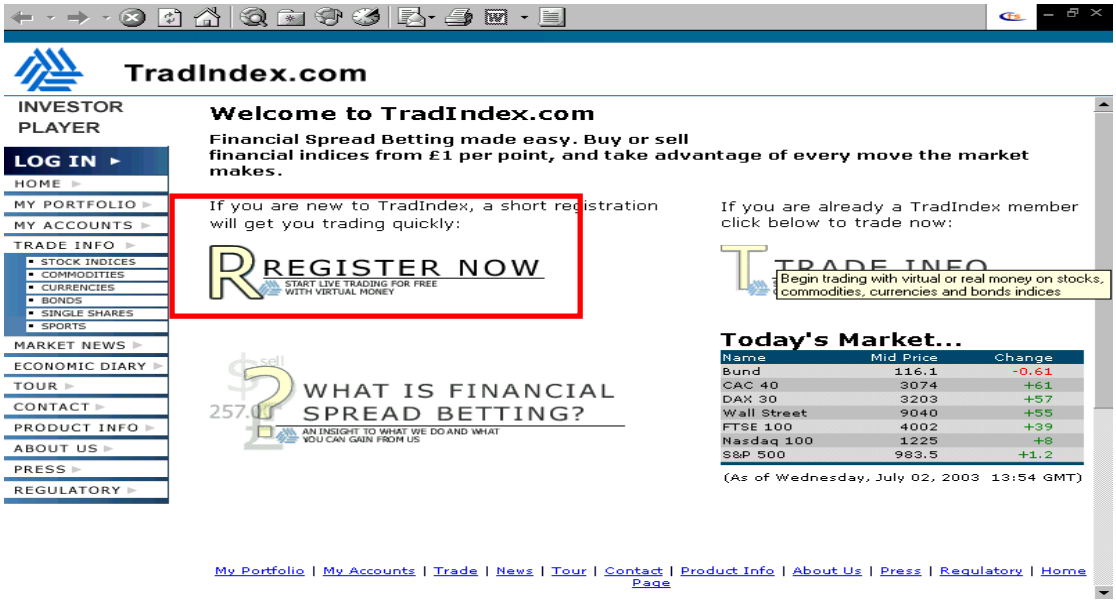
Before you open an account with any particular company, it is imperative that you sign-up with Tradindex. This is completely free and takes only a couple of minutes via their website.

I recommend doing this straight away because it will take a few days for an account to be opened with the other firms. Also, this is where you have a virtual account. Which means that you can practice what you learn.

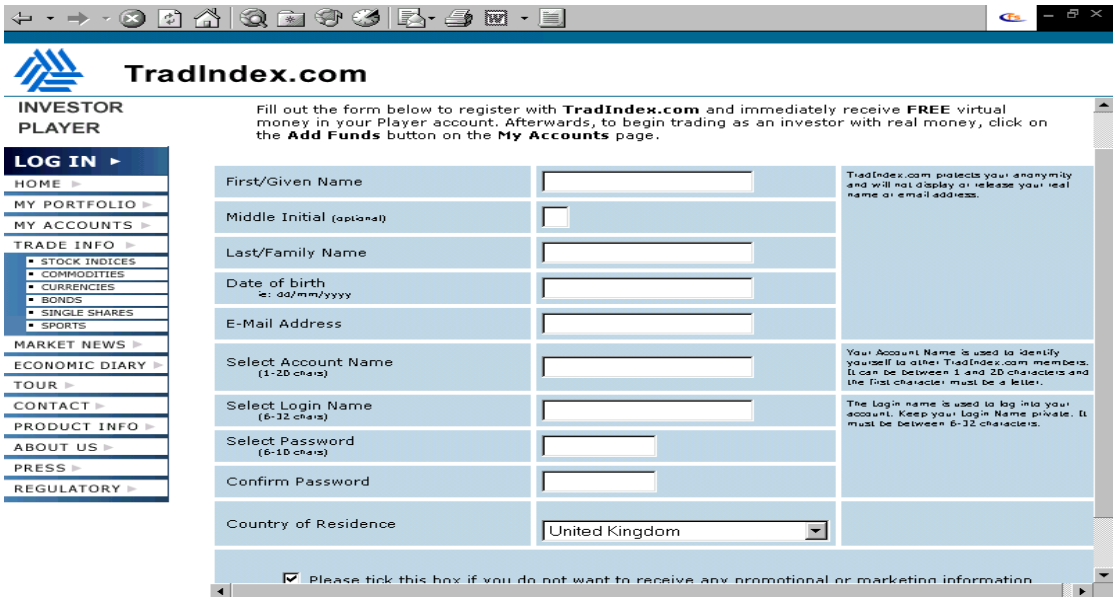
The virtual account gives you a starting balance of £20,000, and can be reset at any time. If only real-life trading were as simple to reset or you were handed £20,000 to play with.

I shall now walk you through the sign-up process for an account with Tradindex.

Below is the home page screen shot, click on 'Register Now' in the middle of the screen. (CLICK HERE TO VISIT TRADINDEX HOME PAGE)



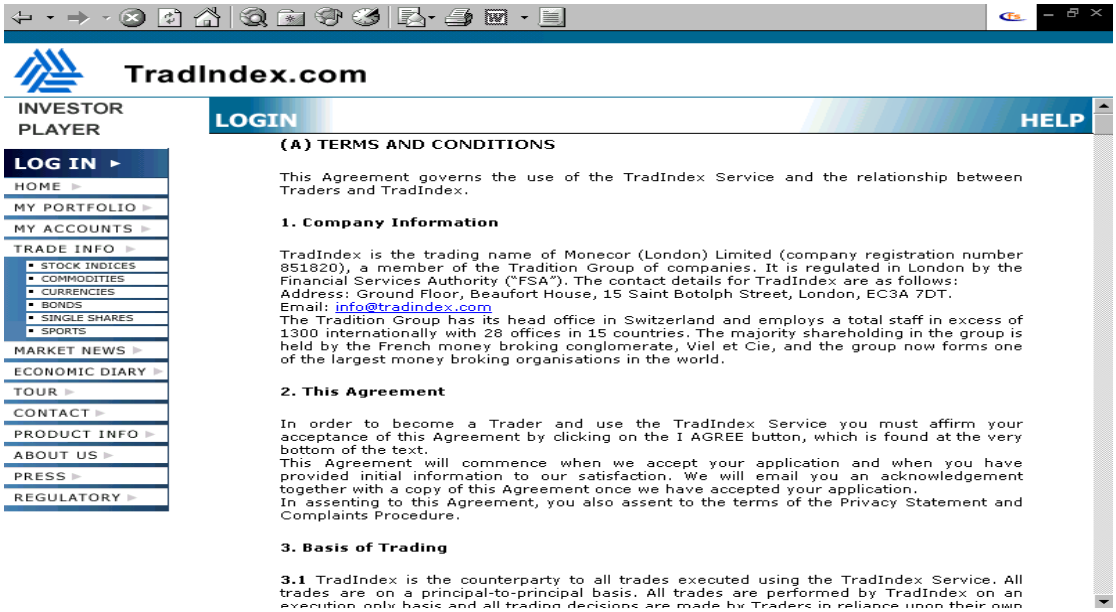
The following screen will appear.



Fill in all of the simple form (believe me, they don't come any simpler than this form), making sure to scroll down to the bottom of the page.

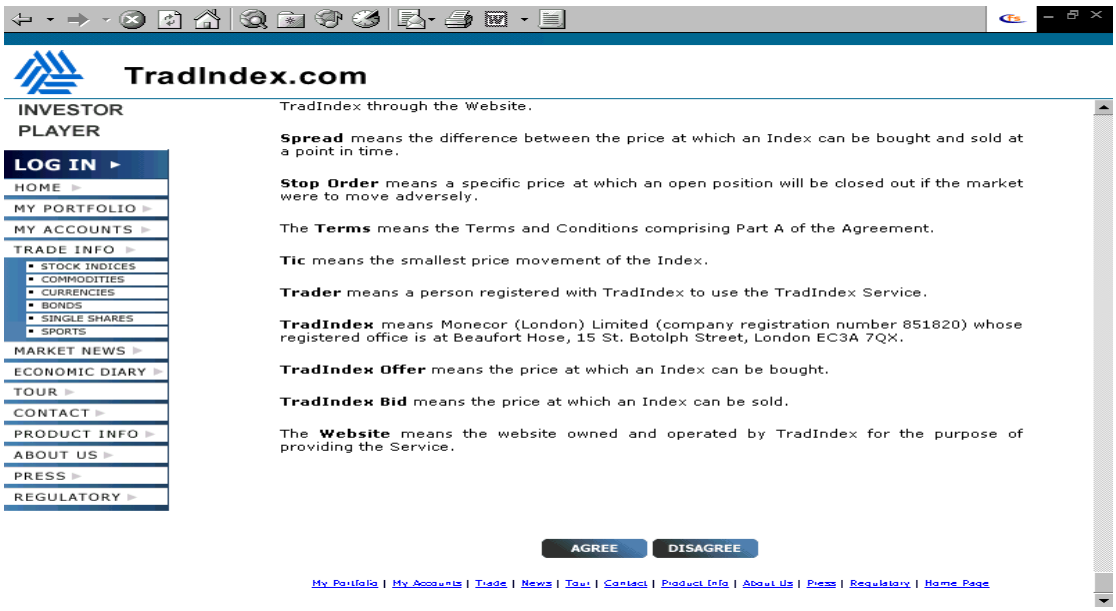
Once the form is complete, click on the green 'Submit' button at the foot of the registration page.

Once you have submitted the form, the following screen will appear.

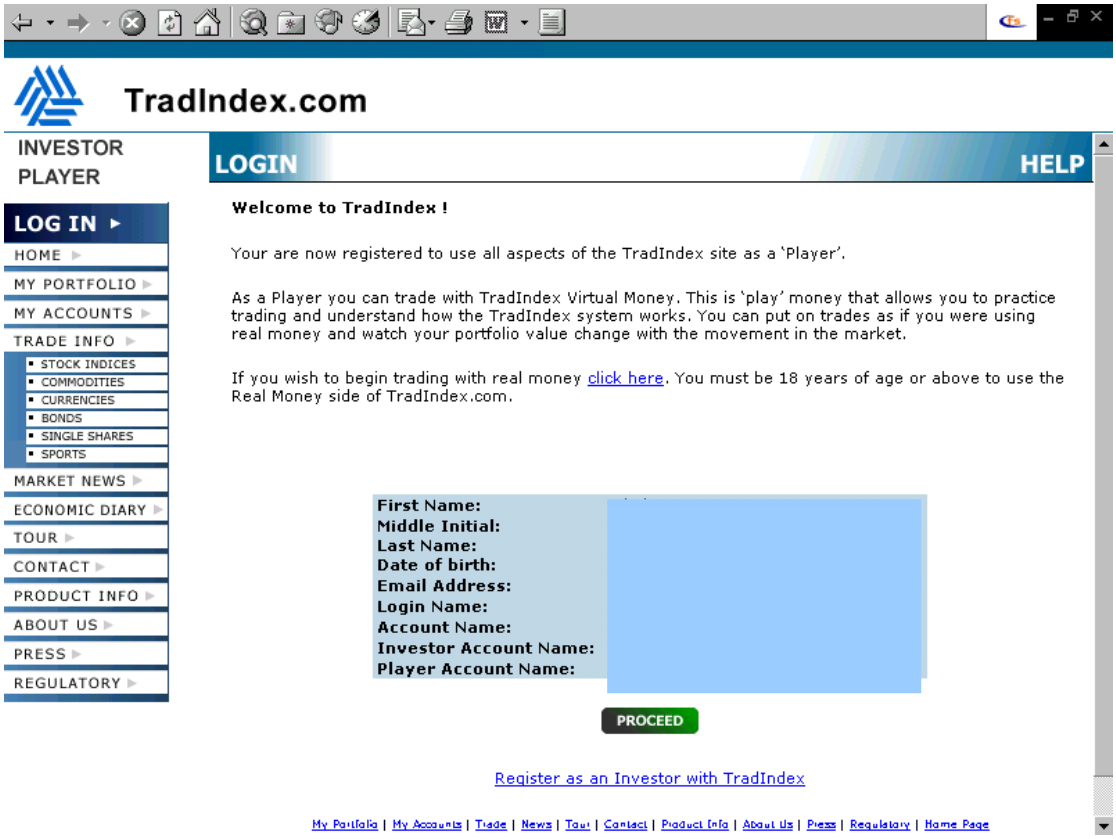


This is the 'Terms and Conditions' form. Read it carefully, making sure to scroll to the end of the page.

If you are happy with it (and why shouldn't you be, you are only using the virtual trading account for the time being) proceed by clicking on the 'accept' button at the bottom of the 'Terms and Conditions' page - As shown below.



Once you have agreed to the terms and conditions and have clicked on the 'Agree' button, the following welcome screen will appear.



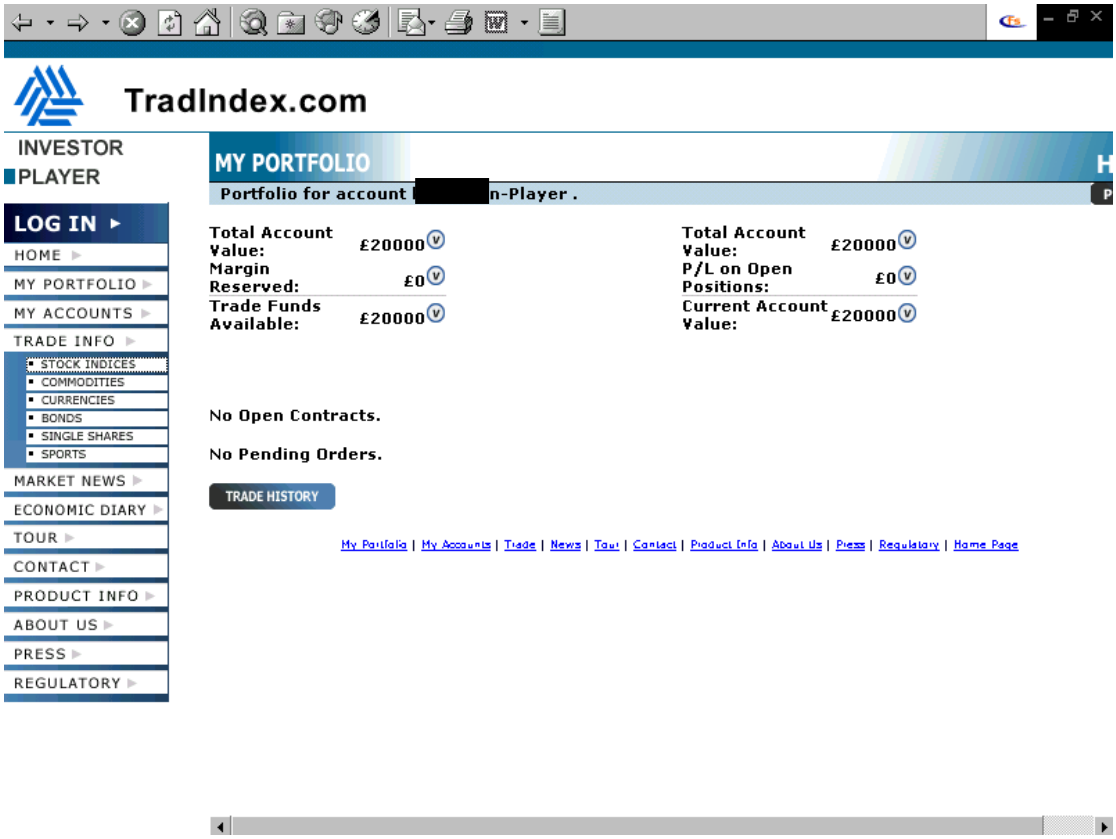
Notice that the details that you entered at the beginning of the form are shown. Make a note of these details, as you will need them in future to login.

Congratulations, you now have a trading account!

I have coloured in the information above to protect me from people accessing my account and making money for me.

Once you are happy and have taken all of the details down, proceed by clicking on the aptly named 'proceed' button.

The following screen will appear. Showing that you have a virtual trading account with £20,000 in it.



You are now free to have a good look around the site and virtual trade, should the mood grab you.

In future visits to the site, you will have to login through the home page, using the details that you gave to set up the account.

By way of note, if you couldn't be bothered to make a note of the information that was displayed on the 'account details' screen, **WHY NOT?** I told you to make a note of it.

I am of course hoping that you did indeed make a note of the information.

It is easy enough to get the information that you require to login. The point that I am trying to illustrate is that I gave you a simple instruction.

If you did not bother following that simple instruction, it is going to be a struggle to get you to follow the moneymaking instructions.

AND IF YOU DO NOT FOLLOW THEM, YOU WILL LOSE YOUR MONEY.

SO, PLEASE PAY ATTENTION. IF YOU CAN'T, LEAVE THIS ALONE. IT IS NOT FOR YOU.

Anyway, where was I, oh yes, the login screen.

Enter your login name and password. Notice that the box below is asking you if you wish to login as an investor. Leave this box alone, you are logging in as a Player.

If you have not made a note of your password, click on the 'Forgotten your password' which is located above the proceed button. You will then be shown how to retrieve your password.

I have no idea what this entails, so you are on your own with this one. See you when you get your password.

Assuming that everyone has got their password, click on the 'proceed' button.

Every time that you login you will be taken to your virtual account, which gives you a summary of your virtual balance.

You are given £20,000 to start with, and you can reset it at any time. But, more on that later.

Note, although this a virtual account, use it as if it were your own account.

If you are used to betting with large amounts of money, then fine. If you are not, start small, get the feel for it and slowly increase your stakes as your profits grow.

If you get used to doing this now it will be a lot easier when you start trading for real.

I shall cover the psychology of it all later.

Now it is time to have a good look around, familiarize yourself with the site.

On the left of the screen, there is a list of options, try them all out, take the tour and have some fun with it.

The tour will explain how everything works, but I shall endeavor to cover what you need to know next.

By the way, should you wish to open another virtual trading account, you can do so at City Index. Their site is even easier to navigate, the form is next to non-existent and they even send you an email confirming your password and login id. (click here to visit city index home page)

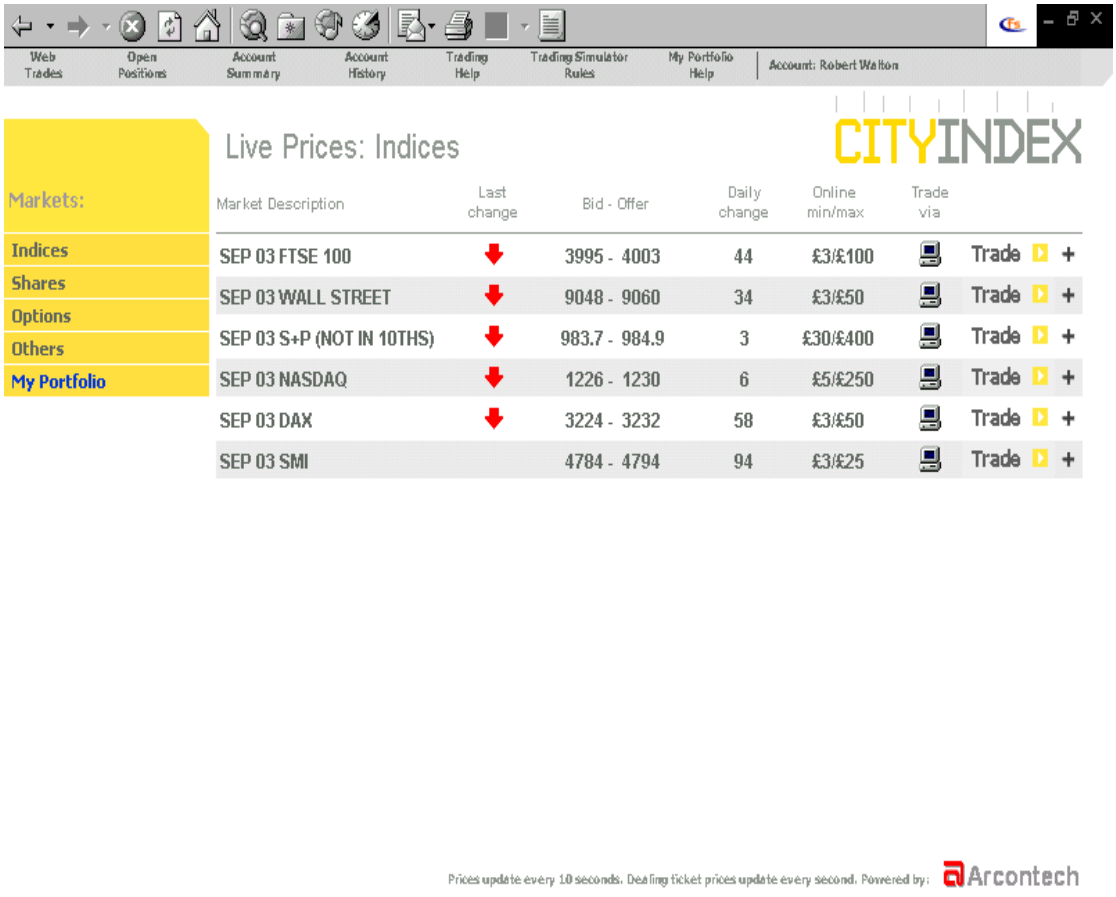
The slight downside (if we are splitting hairs) is that you only get £10,000 of virtual money to play with (boohoo) and you have a very limited number of Indices to play with.

But as I only deal with two indices and they are both there, what the hell.

On the upside, the site is very easy to use and placing a trade is even simpler than the last site.

Once you have got your account id from the email that City index immediately send you, log in via the virtual trading logo at the bottom of their home page.

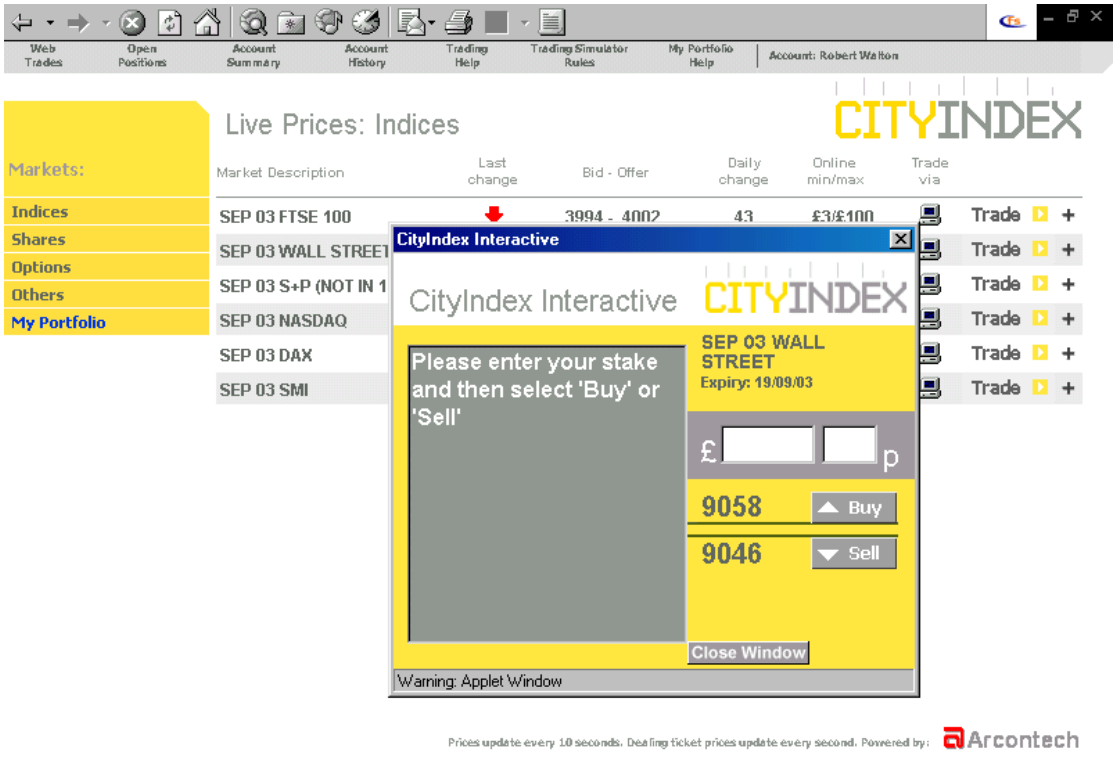
This will take you straight through to the virtual trading site shown below.



As you can see from the above screen shot, everything is very easy to understand.

To place a virtual trade, choose the index you are interested in (in my case Dow or FTSE) and click on 'Trade'.

The following screen-shot will appear.



All you have to do is decide how much you want to stake and choose which way the market is going to move and trade it.

Very quick and simple, but I am not sure if you can reset the £10,000 virtual working capital.

Anyway, as they say, 'That is all there is to it'.

Play about with them all, get the hang of it and see which site suites you best and then read on.

5

And you thought spread was something to put on toast!

Okay, you've had a good look around, you've taken the tours and everything seems pretty much as it should be. Or is it?

You know how to place a trade, but how do you get out of a trade once it is in place?

Why are the Buy and Sell figures different?

How on earth do you know which direction the market is going to move?

Well, let us consider the Buy and Sell figures first.

In the previous chapter that last screen shot shown was a trade being initiated on the Dow. (Pictured below)

The only market that City Index had was 'Sep 03 Wall Street' (Dow)* with a BID (Sell) price of 9046 and an OFFER (Buy) price of 9058.

*Sep 03 denotes when the contract that we are trading in is due to end, in this case September 2003. More specifically, the third Friday in September.

If I thought that the Dow was going to drop (go lower) than the BID (sell) price of 9046, then I would BID (Sell) at that price.

Alternatively, if I thought that the Dow was going to rise (go higher) than the Offer (Buy) price of 9058 then I would OFFER (Buy) at that price.

That is easy enough to understand, but why the difference between the Sell and Buy prices?

The short answer is that you are trading something, in this case the Dow, using a middleman, and he makes a profit from the difference between the buying and selling prices, known as 'The Spread'.

As a quick example, I think the Dow is going to rise. I check the prices and see that the quote is 8490 - 8500. I buy @ 8500 (because I think it is going to go higher). The second that I placed

the trade, I am automatically 10 points down (the difference between the sell and buy price) so, should I decide to sell at once, I will lose 10 points.

Anyway sure enough the market does go higher, all the way to 8600. I check the prices once again and see that the quote is now 8590 - 8600.

If I sell now, I will not get the 8600, I will get 8590. The middleman keeps the rest, that's his profit. Out of his profit comes the smaller spread of who ever he is buying and selling from.

Whenever you make a trade, you will always buy at the higher price and sell at the lower price.

This might sound like a very odd way for a Bookmaker to make a living and a very puny one at that. But the Bookmaker (for that is what he is) can never lose.

If you win, he wins, if you lose, he still wins because he keeps part of your losses in the spread. So if you lose £100, he only loses £90 of the £100 you gave him, giving him £10 profit minus the spread he has to pay.

Okay, we have covered why there is a spread, but why is it so big?

The size of the spread has a lot to do with the volatility of the particular object that you are trading and the time scale of the trade.

A daily contract compared to a monthly or quarterly contract will have a relatively small spread, due to the fact that it does not have the capability to move as far (in theory) than that of a longer duration contract. There is less risk involved or so they would have you believe.

What you are actually paying for is the privilege of having a longer period of time to complete your trade.

The same applies to the volatility of a particular object. The

more volatile an object is, the greater the spread.

Having said all of this, as long as you are aware of the spread, it does not really matter. In a perfect world, there would be minimal spread. So if it bothers you that much, find something safe to trade in over a short period of time.

Or shop around at different spread firms.

Now to cover the question of how to stop a trade once it has been placed.

Well, you do exactly the opposite of what you did to place the initial trade. In other words, if you placed a buy trade at £10 per point, to cancel that trade you place a sell trade on the same object for £10 per point.

One trade effectively cancels out the other.

The final question was about knowing when to place a trade. Well we are getting to that bit in the near future, so be patient.

Summary

So far you are aware of:

- All of the Financial Spread betting firms in the U.K. They are growing in number all of the time, so I apologize if I have missed out one or two.

- How to open an account to use their virtual trading facilities on line.

- How to get around their sites, having taken the tours.

- How to request an application form to open a real account, which is standard information on all of the websites.

- How to place a trade.

- How to end a trade.

- What a spread is, and that a small spread is better for you and worse for your spread firm.

Now all you need is the information to make well- informed trades.

Onwards and upwards!

6

The truth is out there - and it's free!

Now that you have access to a virtual account, are in the process of opening a real account and a have an idea of what to do. It is time to assemble all of the information that you will need to be successful in your trading.

Now, before I go any further, I must take this opportunity to point out that I only trade the Dow. I started trading the FTSE and then moved my attention to the Dow.

The reason that I started with the FTSE is because it is about as stable as an index can ever be. I could have chosen the DAX (German) or the CAC (French) but they pretty much all mirror what the FTSE is doing and vise versa.

With the FTSE being relatively stable, that means price fluctuations are not very wild by and large (there is always the exception) and therefore neither are your chances to make large gains in a single trade.

The other downside to trading the European Indices is that beyond a certain time of the day, they stop being independent and start to wait for the U.S markets to open. They then follow what the U.S markets do until their close.

So you effectively have three hours of normal trading, followed by two to three hours of the markets waiting and then two hours of mirroring the U.S - but on a smaller scale.

The other point that I must make is that I trade over a short time scale. My trades rarely last more than 90 minutes and can be less than 15 minutes.

Why such a short time scale?

Well, I discovered that if you trade over a long time period, say one month. The index you are trading might only gain 200 points in your favour over that time scale.

On the other hand, the very same index will move more than that in the course of a week.

The Dow will often move that amount and more in the course of the day. Dropping several hundred points and then gaining several hundred points.

The closing statistics will only show that the Dow made or lost a few points and therefore the markets were pretty quiet. When the truth is that the Dow lost 200 points and then gained back another 150 points.

If you had traded both these swings you would have made yourself 350 points. If your trades had been for 50 pence a point, you would be £175 in profit minus £3.50 in spread (daily cash markets on the Dow have a spread of 7).

Obviously, the more money you have on your trades, the greater the return. If you had £1 per point you would have earned £350 - £7 spread. If you had put £10 per point, £100 or even £500 per point.....you do the math.

But let's not jump the gun, all I am trying to point out is that there is a lot more profit to made daily, than looking at your trades over a longer term.

Trading over the long term is for people who do not wish to maximize their trading potential.

Whichever way you trade, and whatever you decide to trade on, this technique can be used to attain your goals. So do not despair, all shapes and sizes welcome.

As I pointed out an age ago, I use technical analysis to trade the market that I am interested in, namely the Dow.

This information is freely available and I get it from The Financial Times website.

This particular source of information does have it's own website, but I find the FT website more user-friendly.

Here is the web address: click here to visit their home page

http//news.ft.com/home/uk/

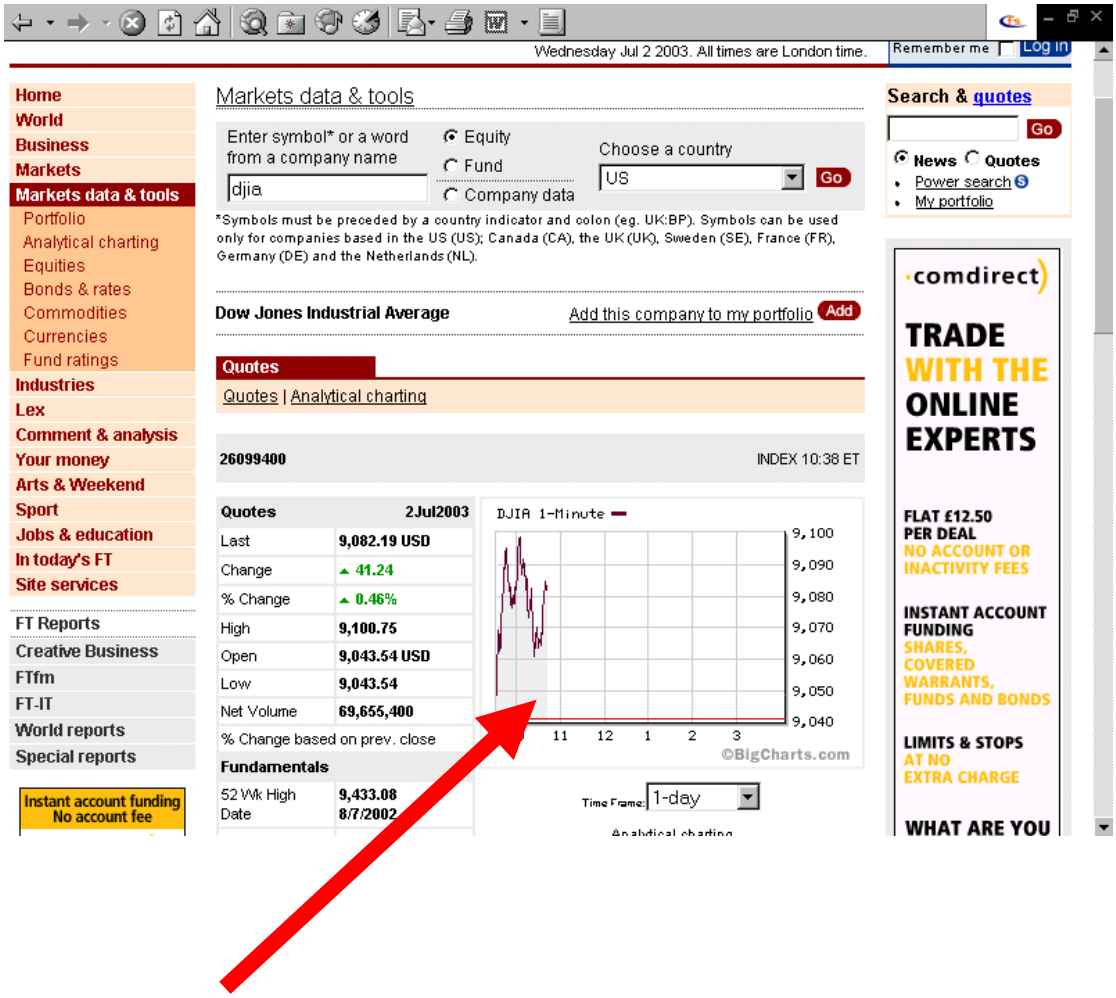
Just type that into the url address in your browser and you will reach the FT home page and this is what it should look like.

The data we are looking for is on the right-hand side of the page, under the heading 'World Indices'. You will see S&P, DJIA(Dow), NASDAQ, FTSE, CAC 40, DAX and H. SENG.

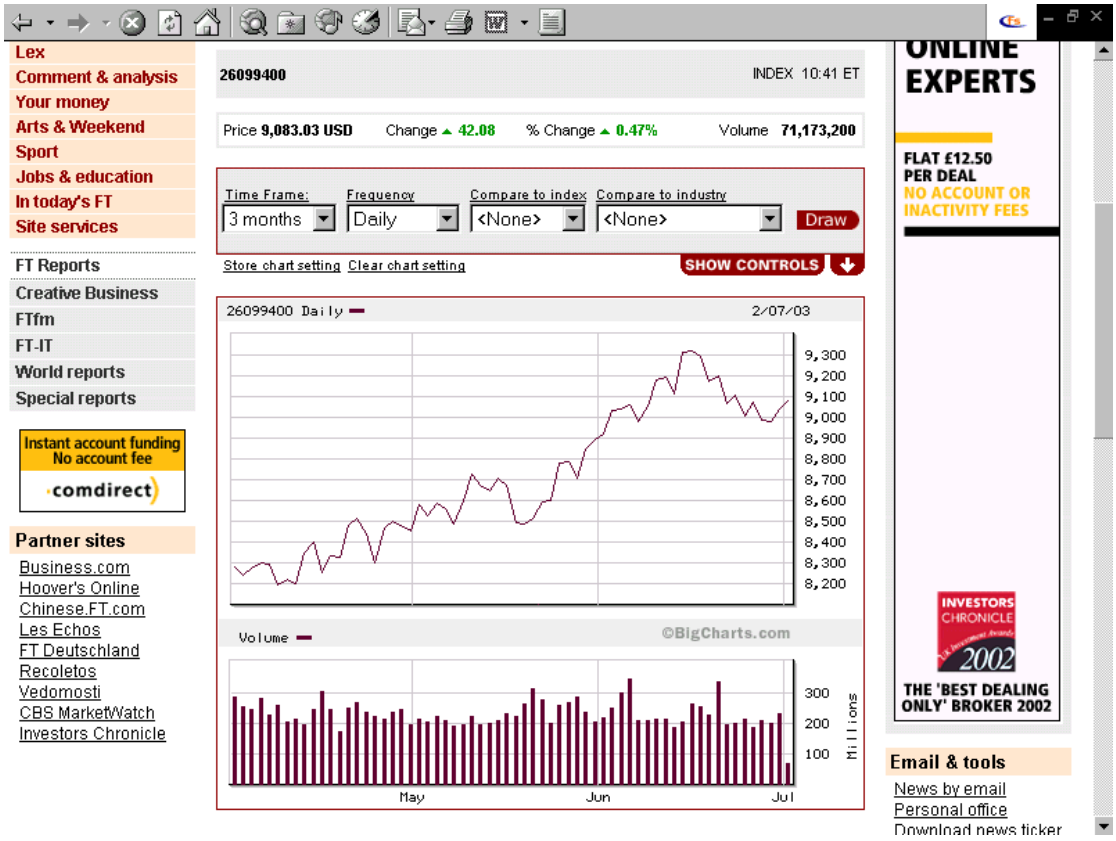
Select the index you are looking for, in this case DJIA (Dow) and click on it.

The following page will appear. You will need to scroll down a

little bit.



To access the information we are after, click on the chart and you will see the following screen shot. Remember to scroll down the screen a little bit.

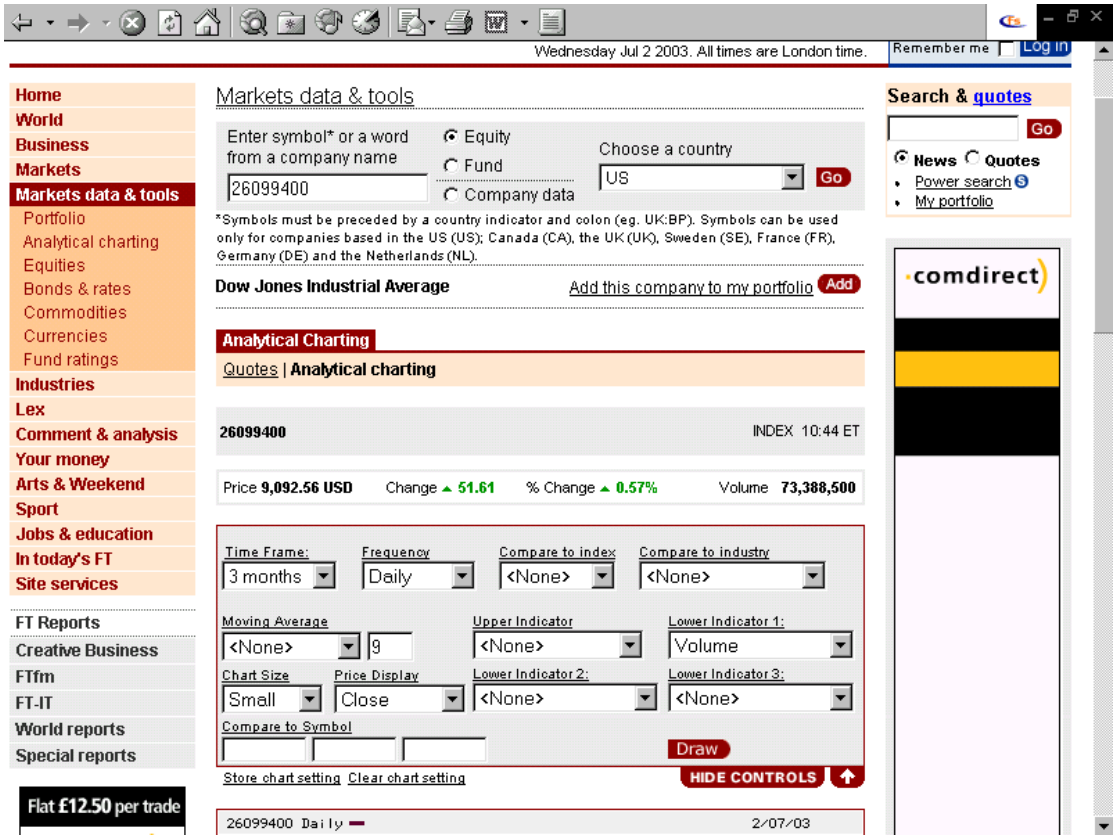


The above chart shows the Dow over the last three months, which is nice, but not quite what we are looking for.

We now have to set the chart settings to get the chart to represent the time period etc. that we are looking for.

Click on the red panel above the chart that says 'SHOW CONTROLS'.

The following screen will appear.



Now that the controls are on display, we can set them to meet our needs.

Starting with the top-left box 'Time Frame', click on the drop-down menu and select '1Day'.

Move to the next box to the right called 'Frequency' and select '5-Minutes' from the drop-down menu.

The last two boxes on the top line are of no relevance to us, so leave them alone.

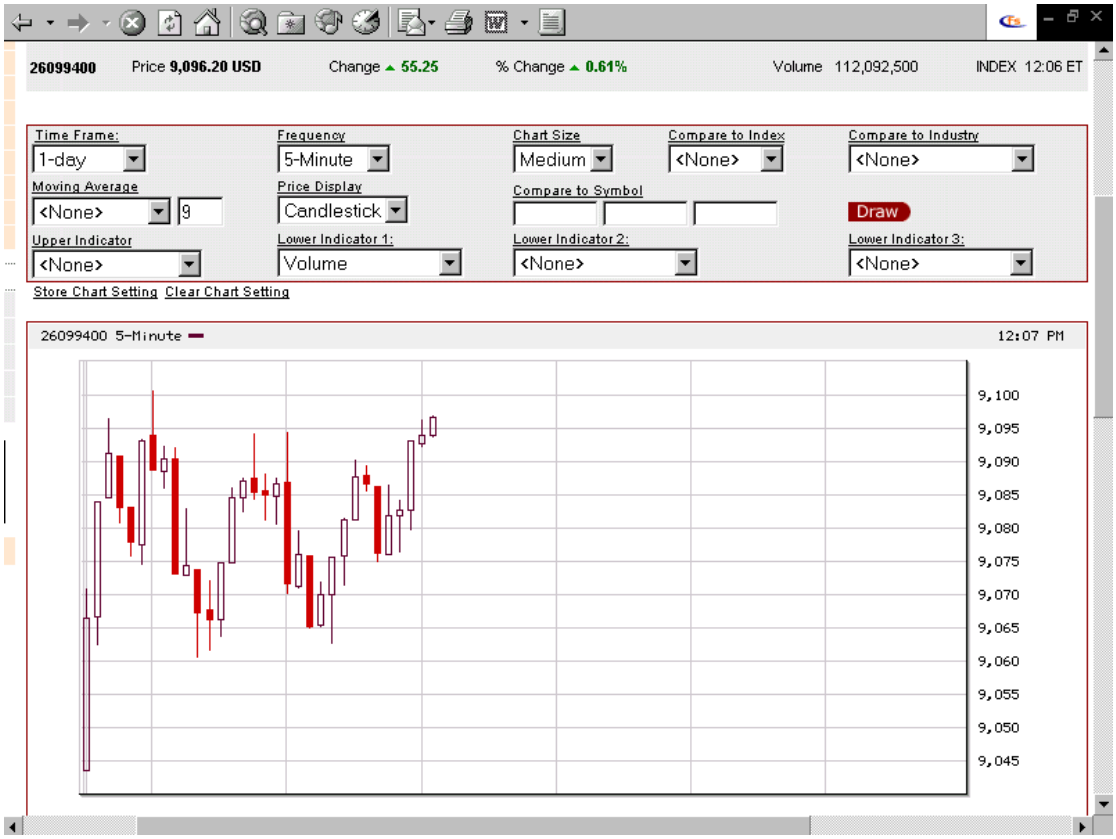
We are going to use all of the boxes on the second line down, but not just yet. We will come back to them soon.

On the third line, we are also going to use all of the facilities offered to us, but not just yet.

For the moment we are going to concentrate on the first two boxes starting from the left, namely 'Chart Size' and 'Price Display'.

Select 'Medium' or 'Large' from the 'Chart Size' drop-down menu and select 'Candlestick' from the 'Price Display' drop down menu.

Finally, click on the red 'Draw' button and you chart should look like this, for the time being at least.



You will have noticed that the control panel for the chart has changed shape somewhat. Not to worry we are nearly done with it anyway.

The chart that is displayed is very simple to read. The bottom scale is the time the market opened to the time that the market closed.

The vertical scale is the actual price of the index at any given moment in time.

The plotting of the chart in candlestick formation represents the movement of the market over a five-minute time scale per candlestick.

Red candlesticks are dropping in price and white candlesticks are

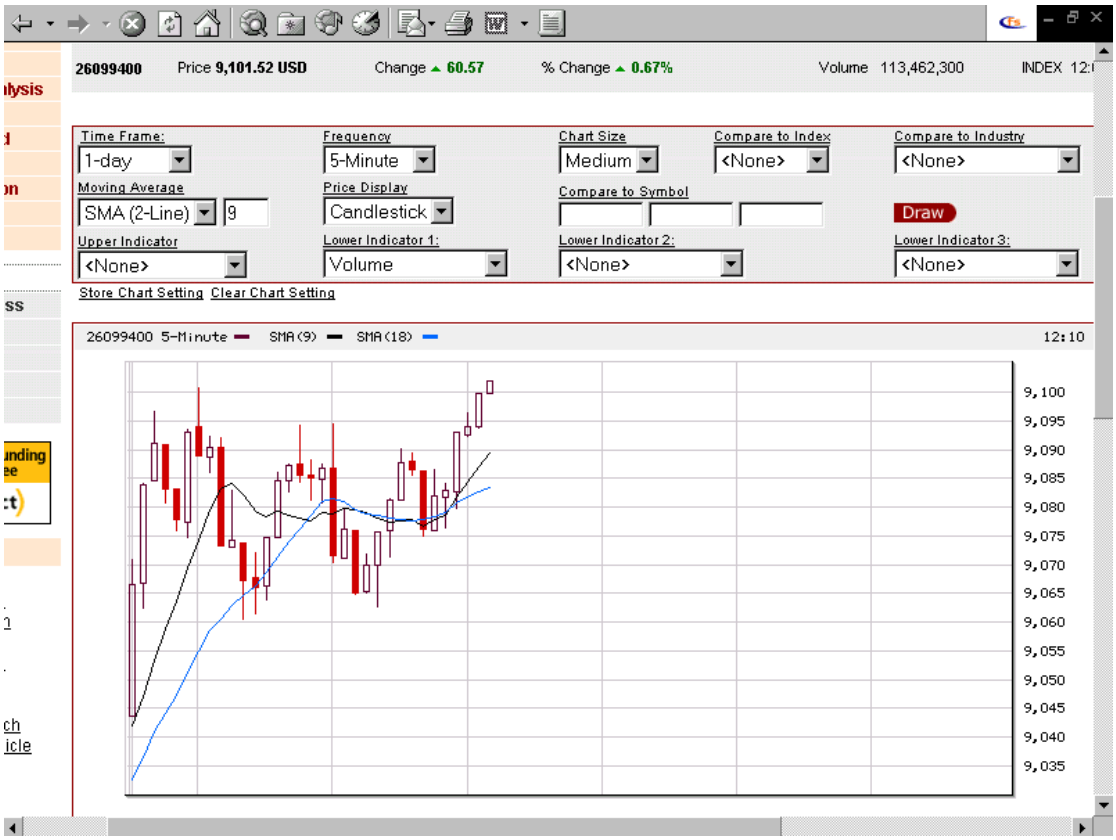
rising in price.

We are now going to add the final indicators to the chart to get a good look at it.

We shall go through the indicators on at a time and apply them to the chart separately, so you know what they look like. I shall be explaining what they mean and how to use them very soon. For now we will just add them to the chart.

On the second line down, on the left-hand side of the control panel select 'SMA (2-lines)' from the drop-down menu of the 'Moving Averages' box.

Click on draw and the chart will now look something like this.



On the bottom line of the control panel, starting at the left-hand side, select 'Bollinger Bands' from the drop-down menu of the 'Upper Indicator' box, select ‘MACD’ from the drop-down menu of the 'Lower Indicator 1' box, select 'Fast Stochastic’ from the drop-down menu of the 'Lower Indicator 2' box and finally select

'RSI' from the drop-down menu of the 'Lower Indicator 3' box.

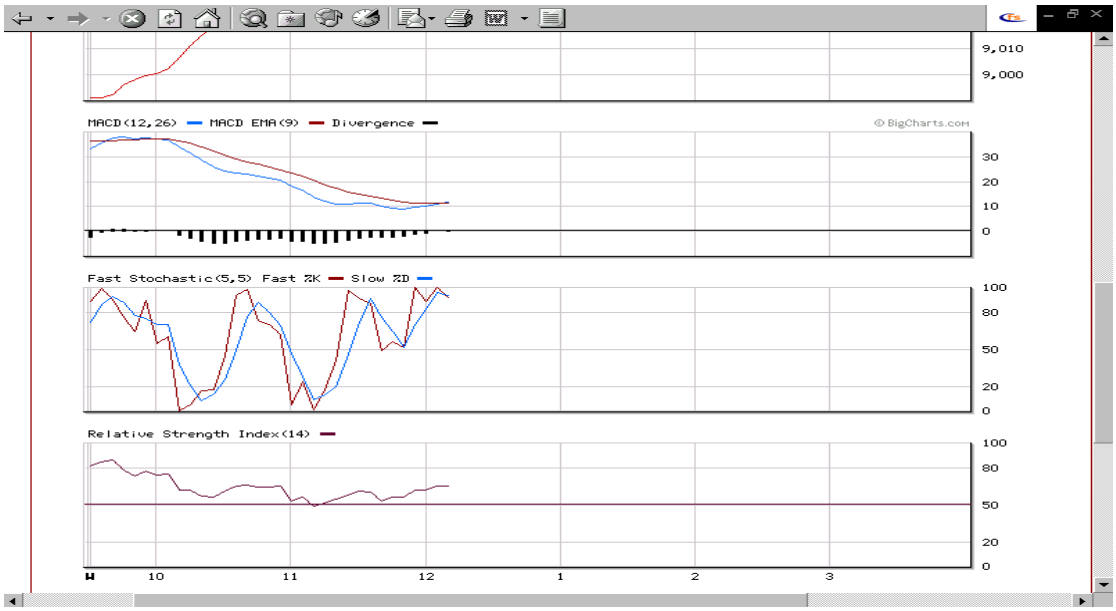
Click on the 'Draw' button and this is what you get.

Chart showing Candlesticks, Moving Averages x 2 and Bollinger Bands.

Scroll down the page and you get another chart below the main chart, this one showing MACD

Keep scrolling, this time we get Fast stochastic

And finally we get RSI



A quick note, to avoid going through this whole set-up procedure

every time you wish to use these charts, scroll back up the page and click on the 'Store Chart Setting'. Which can be found just beneath the chart control panel.

To summarize:

We have now covered:

- Where to get free virtual spread accounts from
- How to place a trade
- How to close a trade
- Where to get free technical analysis
- How to set up the chart (can be applied to any chart)

That just about covers everything. Thanks for your time. It has been real.

I joke (although I do possess courses that have offered me less information) it is now time to put it all together.

Be warned though, this is when you are asked to remember a few details and start to put several rules into place.

So far you have only gathered the tools that you need.

It is time to learn a little more about them and how to use them.

Read on.

7

Technical indicators? Nothing to do with the car.

You are now in the possession of Technical data on your chosen markets. So let's now set about putting it all together.

Whilst creating the charts, you used some settings and indicators that you may or may not be familiar with. Either way I am going to cover them now.

Here is an extract by an author called Arthur Hill, which explains the uses and needs for indicators.

This article is purely for information purposes and does not have to be learned or even understood. It is for those people who feel that they have to have all of the available knowledge on a subject.

For those of you, who are about to read this next article, be warned that it is quite long. So get a cup of coffee and a snack and I will rejoin you in the next chapter.

Please feel free to use the links within this article to get to more information on the web site.

This article is designed to introduce the concept of indicators and explain how to use them in your analysis. We will shed light on the difference between leading and lagging indicators, as well as look into the benefits and drawbacks. Many, if not most, popular indicators are shown as oscillators. With this in mind, we will also show how to read oscillators and explain how signals are derived. Later in this series on indicators, we will turn our focus to specific indicators and provide examples of signals in action.

What is an Indicator?

An indicator is a series of data points that are derived by applying a formula to the price data of a security. Price data includes any combination of the open, high, low or close over a period of time. Some indicators may use only the closing prices, while others incorporate volume and open interest into their formulas. The price data is entered into the formula and a data point is produced.

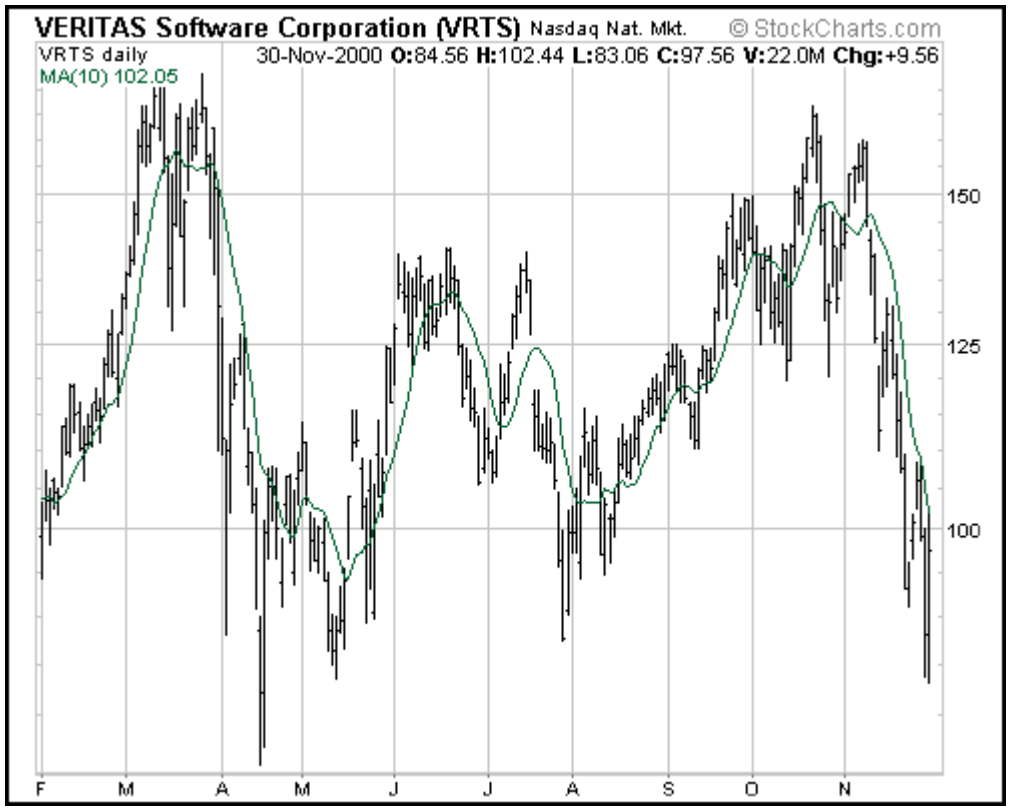
For example, the average of 3 closing prices is one data point ((41+43+43)/3=42.33). However, one data point does not offer much information and does not an indicator make. A series of data points over a period of time is required to create valid reference points to enable analysis. By creating a time series of data points, a comparison can be made between present and past levels. For analysis purposes, indicators are usually shown in a graphical form above or below a security's price chart. Once shown in graphical form, an indicator can then be compared with the corresponding price chart of the security. Sometimes indicators are plotted on top of the price plot for a more direct comparison.

What does an Indicator Offer?

An indicator offers a different perspective from which to analyze the price action. Some, such as moving averages, are derived from simple formulas and the mechanics are relatively easy to understand. Others, such as Stochastics, have complex formulas and require more study to fully understand and appreciate. Regardless of the complexity of the formula, indicators can provide unique perspective on the strength and direction of the underlying price action.

A simple moving average is an indicator that calculates the average price of a security over a specified number of periods. If a security is exceptionally volatile, then a moving average will help to smooth the data. A moving average filters out random noise and offers a smoother perspective of the price action. Veritas (VRTS) displays a lot of volatility and an analyst may have difficulty discerning a trend. By applying a 10-day simple moving

average to the price action, random fluctuations are smoothed to make it easier to identify a trend.



Why Use Indicators?

Indicators serve three broad functions: to alert, to confirm and to predict.

- An indicator can act as an alert to study price action a little more closely. If momentum is waning, it may be a signal to watch for a break of support. Or, if there is a large positive divergence building, it may serve as an alert to watch for a resistance breakout.

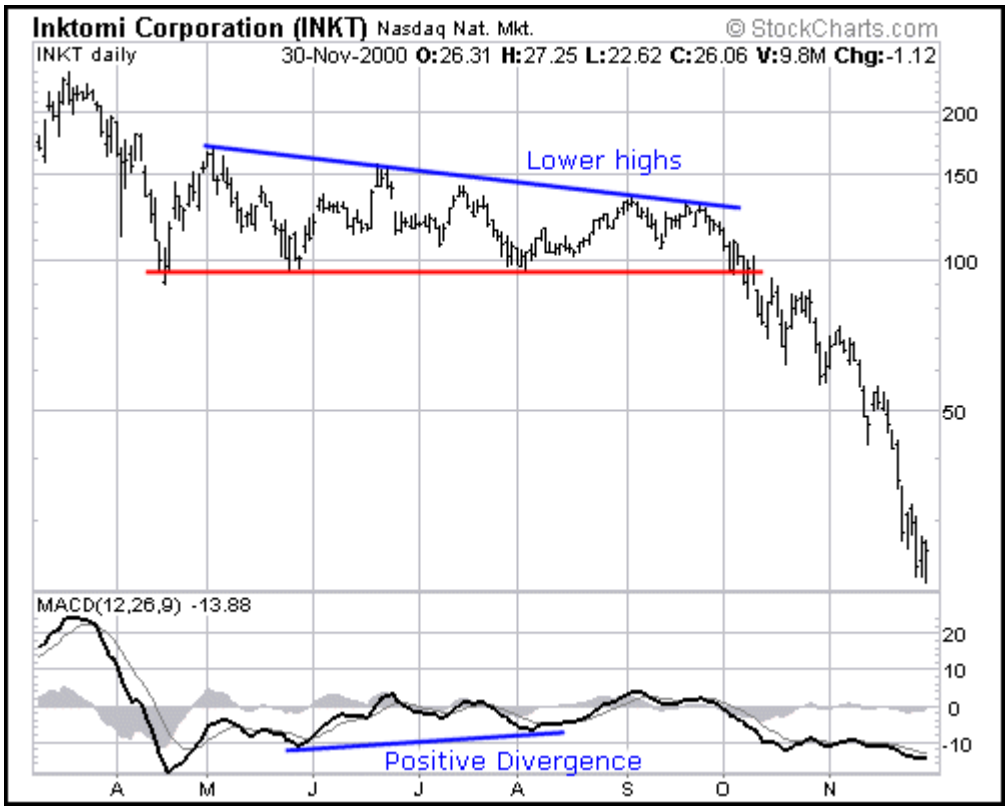
- Indicators can be used to confirm other technical analysis tools. If there is a breakout on the price chart, a corresponding moving average crossover could serve to confirm the breakout. Or, if a stock breaks support, a corresponding low in the On-Balance-Volume (OBV) could serve to confirm the weakness.
- Some investors and traders use indicators to predict the direction of future prices.

Tips for Using Indicators

Indicators indicate. This may sound straightforward, but sometimes traders ignore the price action of a security and focus solely on an indicator. Indicators filter price action with formulas. As such, they are derivatives and not direct reflections of the price action. This should be taken into consideration when applying analysis. Any analysis of an indicator should be taken with the price action in mind. What is the indicator saying about the price action of a security? Is the price action getting stronger? Weaker?

Even though it may be obvious when indicators generate buy and sell signals, the signals should be taken in context with other technical analysis tools. An indicator may flash a buy signal, but if the chart pattern shows a descending triangle with a series of declining peaks, it may be a false signal.

On the Inktomi (INKT) chart, MACD improved from April to August and formed a positive divergence in August. All the earmarks of a MACD buying opportunity were present, but the stock failed to break above the resistance and exceed its previous reaction high. This non-confirmation from the stock should have served as a warning sign against a long position. For the record, a sell signal occurred when the stock broke support from the descending triangle in early Oct-00 .



As always in technical analysis, learning how to read indicators is more of an art than a science. The same indicator may exhibit different behavioral patterns when applied to different stocks. Indicators that work well for IBM might not work the same for Delta Airlines. Through careful study and analysis, expertise with the various indicators will develop over time. As this expertise develops, certain nuances as well as favorite setups will become clear.

There are hundreds of indicators in use today, with new indicators being created every week. Technical analysis software programs come with dozens of indicators built in, and even allow users to create their own. Given the amount of hype that is associated with indicators, choosing an indicator to follow can be a daunting task. Even with the introduction of hundreds of new indicators, only a select few really offer a different perspective and are worthy of attention. Strangely enough, the indicators that usually merit the most attention are those that have been around the longest time and have stood the test of time.

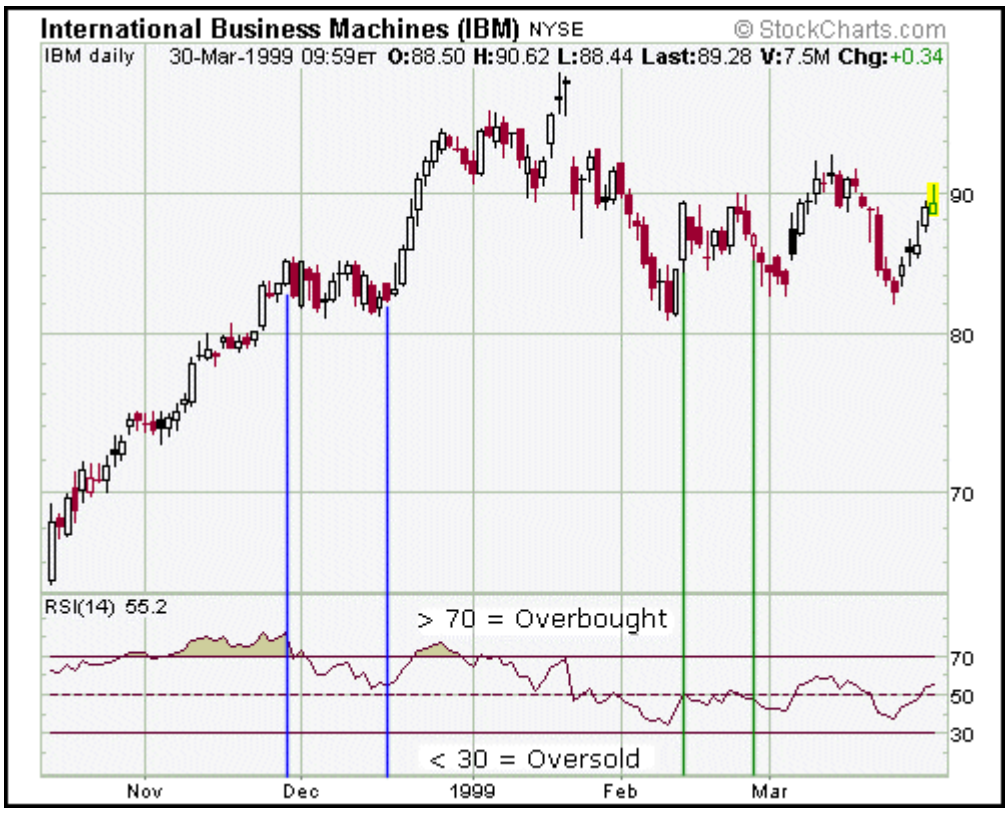
When choosing an indicator to use for analysis, choose carefully and moderately. Attempts to cover more than five indicators are usually futile. It is best to focus on two or three indicators and learn their intricacies inside and out. Try to choose indicators that complement each other, instead of those that move in unison and generate the same signals. For example, it would be redundant to use two indicators that are good for showing overbought and oversold levels, such as Stochastics and RSI. Both of these indicators measure momentum and both have overbought/oversold levels.

Leading Indicators

As their name implies, leading indicators are designed to lead price movements. Most represent a form of price momentum over a fixed look-back period, which is the number of periods used to calculate the indicator. For example, a 20-day Stochastic Oscillator would use the past 20 days of price action (about a month) in its calculation. All prior price action would be ignored. Some of the more popular leading indicators include Commodity Channel Index (CCI), Momentum, Relative Strength Index (RSI), Stochastic Oscillator and Williams %R.

Momentum Oscillators
Many leading indicators come in the form of momentum oscillators. Generally speaking, momentum measures the rate-of-change of a security's price. As the price of a security rises, price momentum increases. The faster the security rises (the greater the period-over-period price change), the larger the increase in momentum. Once this rise begins to slow, momentum will also slow. As a security begins to trade flat, momentum starts to actually decline from previous high levels. However, declining momentum in the face of sideways trading is not always a bearish signal. It simply means that momentum is returning to a more median level.

RSI



Momentum indicators employ various formulas to measure price changes. RSI (a momentum indicator) compares the average price change of the advancing periods with the average change of the declining periods. On the IBM chart, RSI advanced from October to the end of November. During this period, the stock advanced from the upper 60s to the low 80s. When the stock traded sideways in the first half of December, RSI dropped rather sharply (blue lines). This consolidation in the stock was quite normal and actually healthy. From these lofty levels (near 70), flat price action would be expected to cause a a decline in RSI (and momentum). If RSI were trading around 50 and the stock began to trade flat, the indicator would not be expected to decline. The green lines on the chart mark a period of sideways trading in the stock and in RSI. RSI started from a relatively median level, around 50. The subsequent flat price action in the stock also produced relatively flat price action in the indicator and it remains around 50.

Benefits and Drawbacks of Leading Indicators

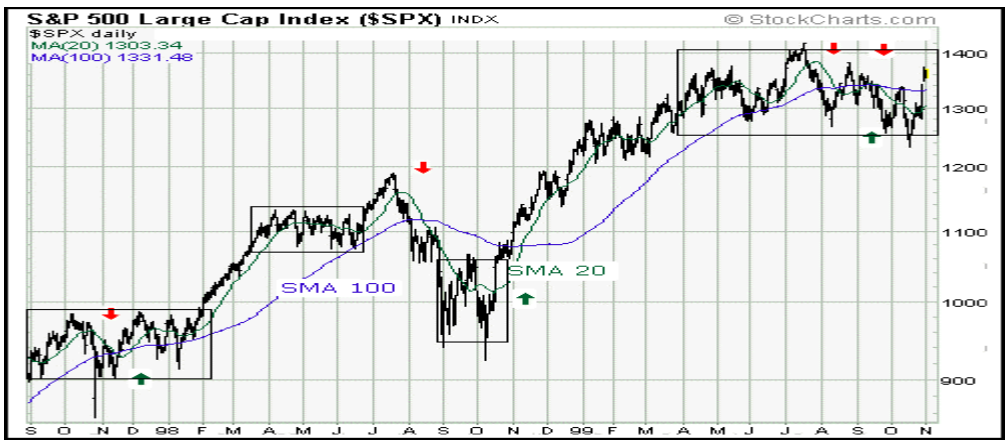
There are clearly many benefits to using leading indicators. Early signaling for entry and exit is the main benefit. Leading indicators generate more signals and allow more opportunities to

trade. Early signals can also act to forewarn against a potential strength or weakness. Because they generate more signals, leading indicators are best used in trading markets. These indicators can be used in trending markets, but usually with the major trend, not against it. In a market trending up, the best use is to help identify oversold conditions for buying opportunities. In a market that is trending down, leading indicators can help identify overbought situations for selling opportunities.

With early signals comes the prospect of higher returns and with higher returns comes the reality of greater risk. More signals and earlier signals mean that the chances of false signals and whipsaws increase. False signals will increase the potential for losses. Whipsaws can generate commissions that can eat away profits and test trading stamina.

Lagging Indicators

As their name implies, lagging indicators follow the price action and are commonly referred to as trend-following indicators. Rarely, if ever, will these indicators lead the price of a security. Trend-following indicators work best when markets or securities develop strong trends. They are designed to get traders in and keep them in as long as the trend is intact. As such, these indicators are not effective in trading or sideways markets. If used in trading markets, trend-following indicators will likely lead to many false signals and whipsaws. Some popular trend-following indicators include moving averages (exponential, simple, weighted, variable) and MACD.



The chart above shows the S&P 500 with the 20-day simple moving average and the 100-day simple moving average. Using a moving average crossover to generate the signals, there were seven signals over the two years covered in the chart. Over these two years, the system would have been enormously profitable. This is due to the strong trends that developed from Oct-97 to Aug-98 and from Nov-98 to Aug-99. However, notice that as soon as the index starts to move sideways in a trading range, the whipsaws begin. The signals in Nov-97 (sell), Aug-99 (sell) and Sept-99 (buy) were reversed in a matter of days. Had these moving averages been longer (50- and 200-day moving averages), there would have been fewer whipsaws. Had these moving average been shorter (10 and 50-day moving average), there would have been more whipsaws, more signals, and earlier signals.

Benefits and Drawbacks of Lagging Indicators
One of the main benefits of trend-following indicators is the ability to catch a move and remain in a move. Provided the market or security in question devlops a sustained move, trend-following indicators can be enormously profitable and easy to use. The longer the trend, the fewer the signals and less trading involved.

The benefits of trend-following indicators are lost when a security moves in a trading range. In the S&P 500 example, the index appears to have been range-bound at least 50% of the time. Even though the index trended higher from 1982 to 1999, there have also been large periods of sideways movement. From 1964 to 1980, the index traded within a large range bound by 85 and 110.

Another drawback of trend-following indicators is that signals tend to be late. By the time a moving average crossover occurs, a significant portion of the move has already occurred. The Nov-98 buy signal occurred at 1130, about 19% above the Oct-98 low of 950. Late entry and exit points can skew the risk/reward ratio.

The Challenge of Indicators

For technical indicators, there is a trade-off between sensitivity and consistency. In an ideal world, we want an indicator that is

sensitive to price movements, gives early signals and has few false signals (whipsaws). If we increase the sensitivity by reducing the number of periods, an indicator will provide early signals, but the number of false signals will increase. If we decrease sensitivity by increasing the number of periods, then the number of false signals will decrease, but the signals will lag and and this will skew the reward-to-risk ratio.

The longer a moving average is, the slower it will react and fewer signals will be generated. As the moving average is shortened, it becomes faster and more volatile, increasing the number of false signals. The same holds true for the various momentum indicators. A 14 period RSI will generate fewer signals than a 5 period RSI. The 5 period RSI will be much more sensitive and have more overbought and oversold readings. It is up to each investor to select a time frame that suits his or her trading style and objectives.

In Part 3, we look at Oscillators in depth, and address the various methods used to generate buy and sell signals. Also, we analyze the mechanics of a very special oscillator that is neither a pure trend follower nor a leader, but part of both camps.

Oscillator Types

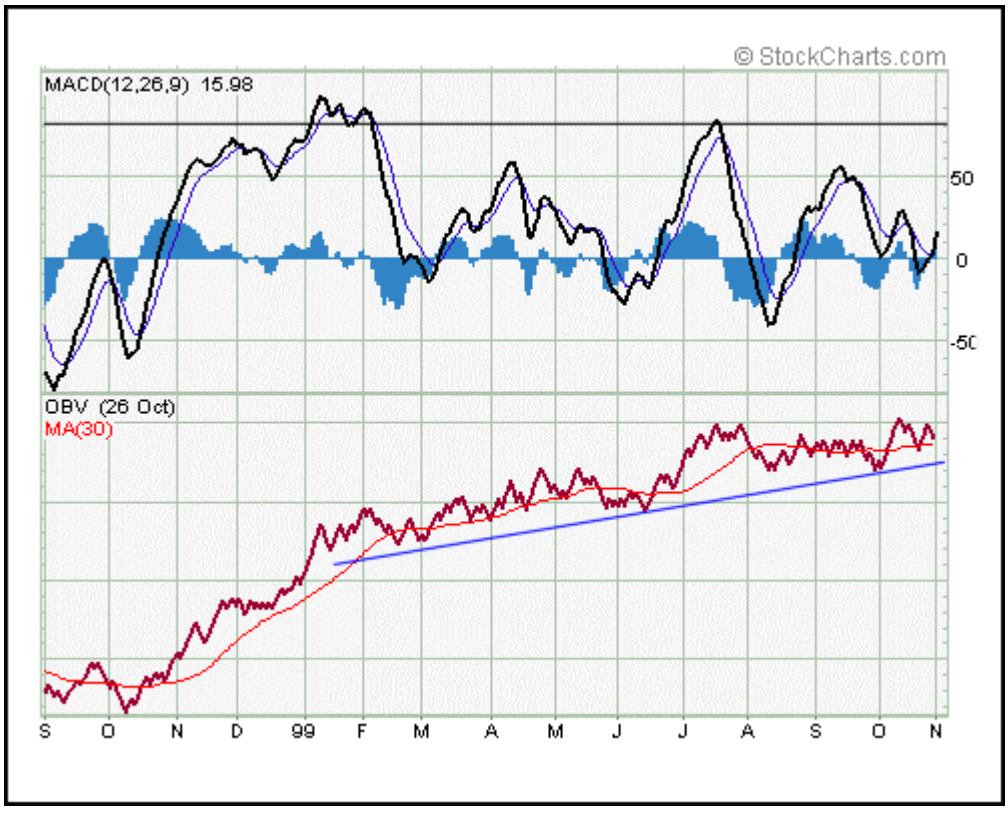
An oscillator is an indicator that fluctuates above and below a centerline or between set levels as its value changes over time. Oscillators can remain at extreme levels (overbought or oversold) for extended periods, but they cannot trend for a sustained period. In contrast, a security or a cumulative indicator like On-Balance-Volume (OBV) can trend as it continually increases or decreases in value over a sustained period of time.

As the indicator comparison chart shows, oscillator movements are more confined and sustained movements (trends) are limited, no matter how long the time period. Over the two year period, Moving Average Convergence Divergence (MACD) fluctuated above and below zero, touching the zero line about twelve times. Also notice that each time MACD surpassed +80 the indicator pulled back. Even though MACD does not have an upper or lower

limit on its range of values, its movements appear confined. OBV, on the other hand, began an uptrend in September 1998 and advanced steadily for the next year. Its movements are not confined and long-term trends can develop.

There are many different types of oscillators and some belong to more than one category. The breakdown of oscillator types begins with two types: **centered oscillators** which fluctuate above and below a center point or line, and **banded oscillators** which fluctuate between overbought and oversold extremes. Generally, centered oscillators are best suited for analyzing the direction of price momentum, while banded oscillators are best suited for identifying overbought and oversold levels.

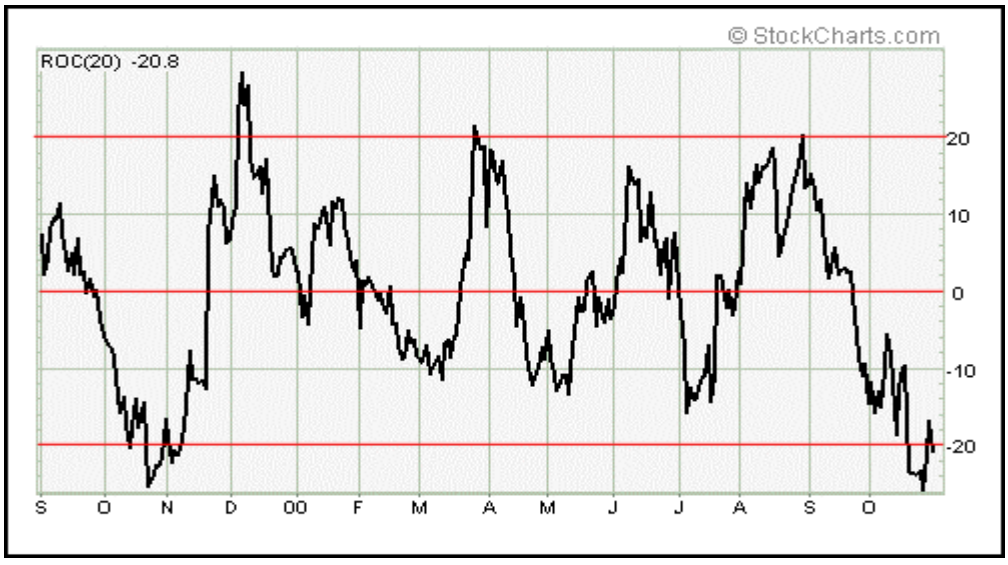
Centered Oscillators
Centered oscillators fluctuate above and below a central point or line. These oscillators are good for identifying the strength or weakness, or direction, of momentum behind a security's move. . In its purest form, momentum is positive (bullish) when a centered oscillator is trading above its center line and negative (bearish) when the oscillator is trading below its center line.



MACD is an example of a centered oscillator that fluctuates above and below zero. MACD is the difference between the 12-day EMA and 26-day EMA of a security. The further one moving average moves away from the other, the higher the reading. Even though there is no range limit to MACD, extremely large differences between the two moving averages are unlikely to last for long.

MACD is unique in that it has lagging elements as well as leading elements. Moving averages are lagging indicators and would be classified as trend-following or lagging elements. However, by taking the differences in the moving averages, MACD incorporates aspects of momentum or leading elements. The difference between the moving averages represents the rate of change. By measuring the rate-of-change, MACD becomes a leading indicator, but still with a bit of lag. With the integration of both moving averages and rate-of-change, MACD has forged a unique spot among oscillators as both a lagging and a leading indicator.

Rate-of-change (ROC) is a centered oscillator that also fluctuates above and below zero. As its name implies, ROC measures the percentage price change over a given time period. For example: 20 day ROC would measure the percentage price change over the last 20 days. The bigger the difference between the current price and the price 20 days ago, the higher the value of the ROC Oscillator. When the indicator is above 0, the percentage price change is positive (bullish). When the indicator is below 0, the percentage price change is negative (bearish).

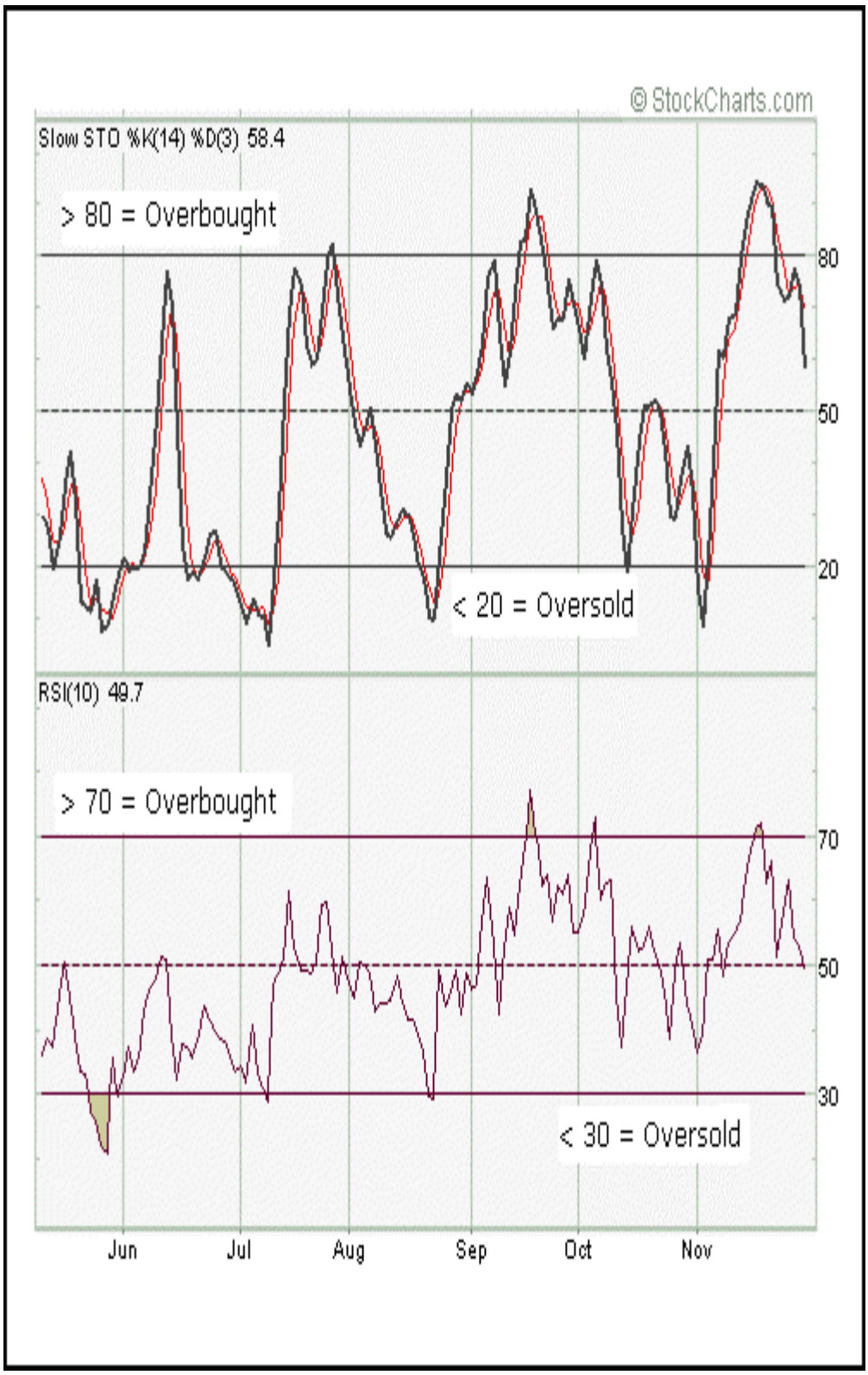


As with MACD, ROC is not bound by upper or lower limits. This is typical of most centered oscillators and can make it difficult to spot overbought and oversold conditions. The ROC chart indicates that readings above +20% and below -20% represent extremes and are unlikely to last for an extended period of time. However, the only way to gauge that +20% and -20% are extreme readings is from past observations. Also, +20% and -20% represent extremes for this particular security and may not be the same for other securities. Banded oscillators offer a better alternative to gauge extreme price levels.

Banded Oscillators

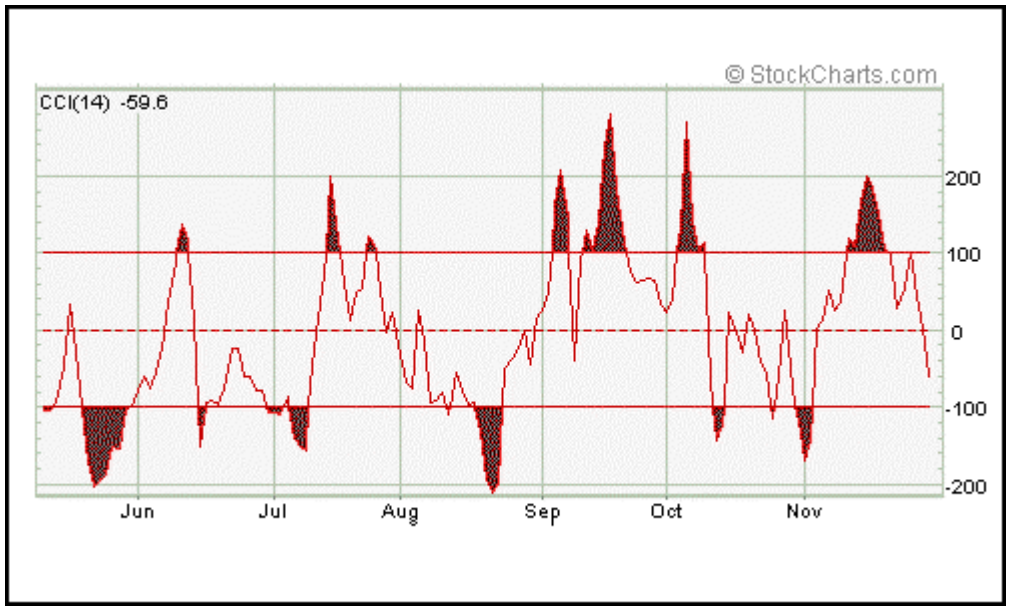
Banded oscillators fluctuate above and below two bands that signify extreme price levels. The lower band represents oversold readings and the upper band represents overbought readings. These set bands are based on the oscillator and change little from security to security, allowing the users to easily identify overbought and oversold conditions. The Relative Strength Index (RSI) and the Stochastic Oscillator are two examples of banded oscillators. (Note: The formulas and rationale behind RSI and the Stochastic Oscillator are more complicated than those for MACD and ROC. As such, calculations are addressed in separate articles.)

Stochastics/RSI



For RSI, the bands for overbought and oversold are usually set at 70 and 30 respectively. A reading greater than 70 would be considered overbought and a reading below 30 would be considered oversold. For the Stochastic Oscillator, a reading above 80 is overbought and a reading below 20 oversold. Even though these are the recommended band settings, certain securities may not adhere to these ranges and might require more fine-tuning. Making adjustments to the bands is usually a judgment call that will reflect a trader's preferences and the volatility of the security.

Many, but not all, banded oscillators fluctuate within set upper and lower limits. The Relative Strength Index (RSI) is range-bound by 0 and 100 and will never go higher than 100 nor lower than zero. The Stochastic Oscillator is another oscillator with a set range and is bound by 100 and 0 as well. However, the Commodity Channel Index (CCI) is a banded oscillator that is not range bound.



Conclusions

Centered oscillators are best used to identify the underlying strength or direction of momentum behind a move. Broadly speaking, readings above the center point indicate bullish momentum and readings below the center point indicate bearish momentum. The biggest difference between centered oscillators and banded oscillators is the latter's ability to identify extreme readings. While it is possible to identify extreme readings with centered oscillators, they are not ideal for this purpose. Banded oscillators are best suited to identify overbought and oversold conditions.

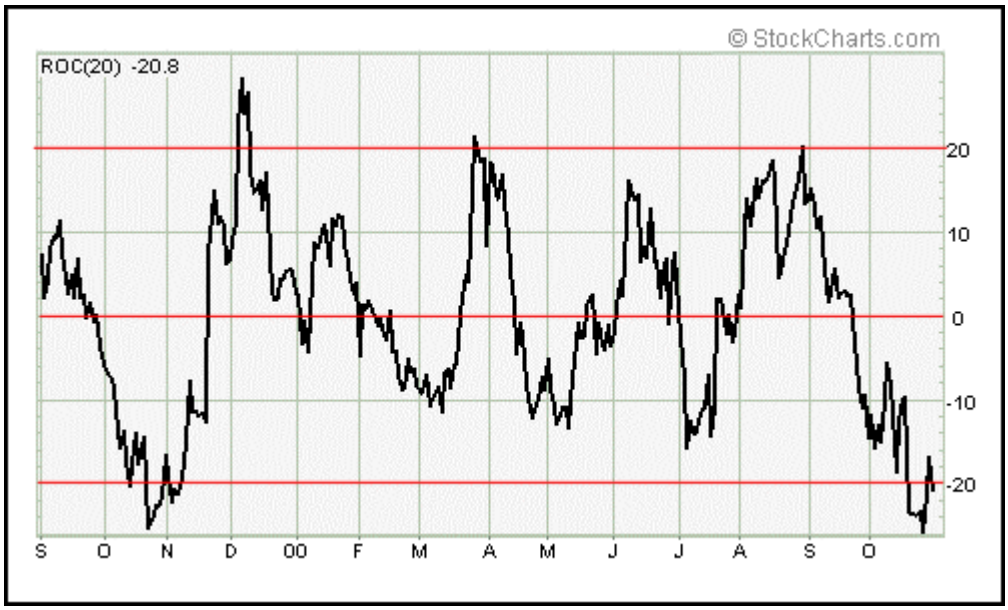
Oscillator Signals

Oscillators generate buy and sell signals in various ways. Some signals are geared towards early entry, while others appear after the trend has begun. In addition to buy and sell signals, oscillators can signal that something is amiss with the current trend or that the current trend is about to change. Even though oscillators can generate their own signals, it is important to use these signals in conjunction with other aspects of technical analysis. Most oscillators are momentum indicators and only reflect one characteristic of a security's price action. Volume, price patterns and support/resistance levels should also be taken into consideration.

Positive and Negative Divergences

Divergence is a key concept behind many signals for oscillators as well as other indicators. Divergences can serve as a warning that the trend is about to change or set up a buy or sell signal. There are two types of divergences: positive and negative. In its most basic form, a positive divergence occurs when the indicator advances and the underlying security declines. A negative divergence occurs when an indicator declines and the underlying security advances.

Merrill Lynch



On the Merrill Lynch (MER) chart, MACD formed a positive divergence in late October. While MER was trading below its previous reaction low, MACD had yet to penetrate its previous low (green arrows). However, MACD had not turned up and the positive divergence was still just a possibility. When MACD turned up and traded above its 9-day EMA, a positive divergence was confirmed. At this point, other signals came together to create a buy signal. Not only had the stock reached support and gapped up, but there was also a MACD positive divergence and a MACD bullish crossover. (Note: The thick line is the MACD and the thin line is the 9-day EMA of the MACD, which acts as a trigger line. A bullish crossover occurs when MACD moves above its 9-day EMA and a bearish crossover occurs when MACD moves below its 9-day EMA.) After these MACD signals, the stock gapped up the very next day on a huge increase in volume.

On the Intel (INTC) chart, the ROC Oscillator formed a negative divergence just prior to the decline that began in September. When INTC recorded a record high in early September, the ROC Oscillator failed to surpass its previous high. The stock then began to decline and the ROC Oscillator turned lower as well, thus completing the lower high and the negative divergence. As there was little else to go on at the time, this negative divergence should have been taken as a warning signal. However, when the ROC Oscillator continued to deteriorate and broke below 0 (centerline), it was clear that the stock was weak and vulnerable to a further decline.

Overbought and Oversold Extremes

Banded oscillators are designed to identify overbought and oversold extremes. Since these oscillators fluctuate between extremes, they can be difficult to use in trending markets. Banded oscillators are best used in trading ranges or with securities that are not trending. In a strong trend, users may see many signals that are not really valid. If a stock is in a strong uptrend, buying on oversold conditions will work much better than selling on overbought conditions.

In a strong trend, oscillator signals against the direction of the underlying trend are less robust than those with the trend. The trend is your friend and can be dangerous to fight it. Even though securities develop trends, they also fluctuate within those trends. If a stock is in a strong uptrend, buying when oscillators reach oversold conditions (and near support tests) will work much better than selling on overbought conditions. During a strong downtrend, selling when oscillators reach overbought conditions would work much better. If the path of least resistance is up (down), then acting on only bullish (bearish) signals would be in harmony with the trend. Attempts to trade against the trend carry added risk.

When the trend is strong, banded oscillators can remain near overbought or oversold levels for extended periods. An overbought condition does not indicate that it is time to sell, nor does an oversold condition indicate that it is time to buy. In a strong uptrend, an oscillator can reach an overbought condition and remain so as the underlying security continues to advance. A negative divergence may form, but a bearish signal against the uptrend should be considered suspect. In a strong downtrend, an oscillator can reach an oversold condition and remain so as the underlying security continues to decline. Similarly, a positive divergence may form, but a bullish signal against the downtrend should be considered suspect. This does not mean counter-trend signals won't work, but they should be viewed in proper context and considered with other aspects of technical analysis.

The first step in using banded oscillators is to identify the upper and lower bands that mark the extremities. For RSI, anything below 30 and above 70 represents an extremity. For the Stochastic Oscillator, anything below 20 and above 80 represents an extremity. We know that when RSI is below 30 or the Stochastic Oscillator is below 20, an oversold condition exists. By

that same token, when RSI is above 70 and the Stochastic Oscillator is above 80, an overbought condition exists. Identification of an overbought or oversold condition should serve as an alert to monitor other technical aspects (price pattern, trend, support, resistance, candlesticks, volume or other indicators) with extra vigilance.

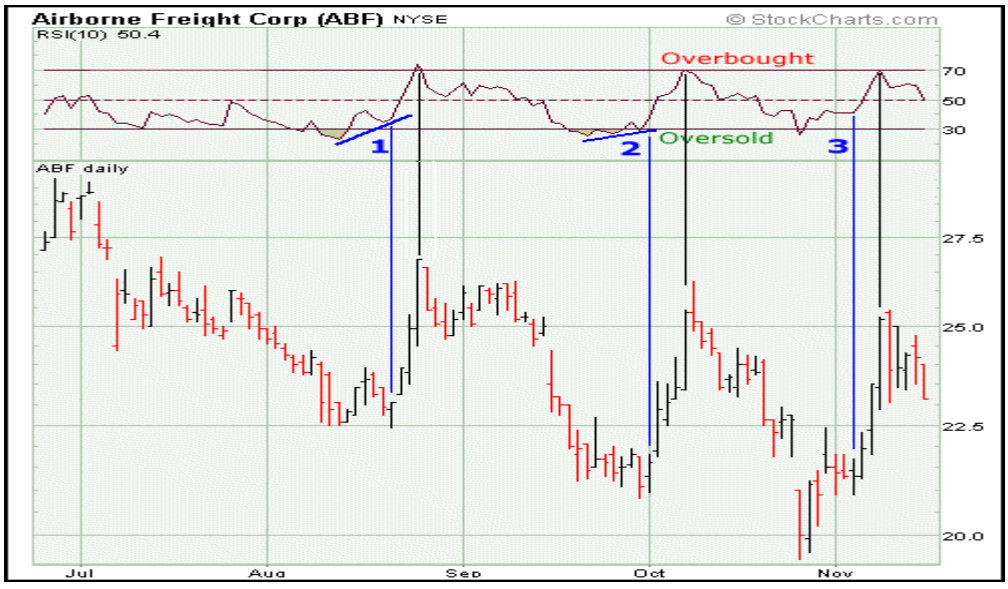
The simplest method to generate signals is to note when the upper and lower bands are crossed. If a security is overbought (above 70 for RSI and 80 for the Stochastic Oscillator) and moves back down below the upper band, then a sell signal is generated. If a security is oversold (below 30 for RSI and 20 for the Stochastic Oscillator) and moves back above the lower band, then a buy signal is generated. Keep in mind that these are the simplest methods.

Simple signals can also be combined with divergences and moving average crossovers to create more robust signals. Once a stock becomes oversold, traders may look for a positive divergence to develop in the RSI and then a cross above 30. With the Stochastic Oscillator overbought, traders may look for a negative divergence and combine that with a moving average crossover and a break below 80 to generate a signal. (Note: The Stochastic Oscillator is usually plotted with a 3-day simple moving average that acts as the trigger line. When the Stochastic Oscillator crosses above the trigger line it is a bullish moving average crossover, and when it crosses below it is bearish).

Cisco

The Cisco (CSCO) chart shows that the Stochastic Oscillator can change from oversold to overbought quite quickly. Much depends on the number of time periods used to calculate the oscillator. A 10-day Slow Stochastic Oscillator will be more volatile than a 20-day. The thin green lines indicate when the Stochastic Oscillator touched or crossed the oversold line at 20. The thin red lines indicate when Stochastic Oscillator touched or crossed the overbought line. CSCO was in a strong up trend at the time and experiencing little selling pressure. Therefore, trying to sell when the oscillator crossed back below 80 would have been against the uptrend and not the proper strategy. When a security is trending up or has a bullish bias, traders would be better off looking for oversold conditions to generate buying opportunities.

We can also see that much of the upside for the stock occurred after the Stochastic Oscillator advanced above 80 (thin red lines). The green circle in August shows a buy signal that was generated with three separate items: one, the oscillator moved above 20 from oversold conditions; two, the oscillator moved above its 3-day MA; and three, the oscillator formed a positive divergence. Confirmation from these three items makes for a more robust signal. After the buy signal, the oscillator was in overbought territory a mere 4 days later. However, the stock continued its advance for 2-3 weeks before reaching its high.



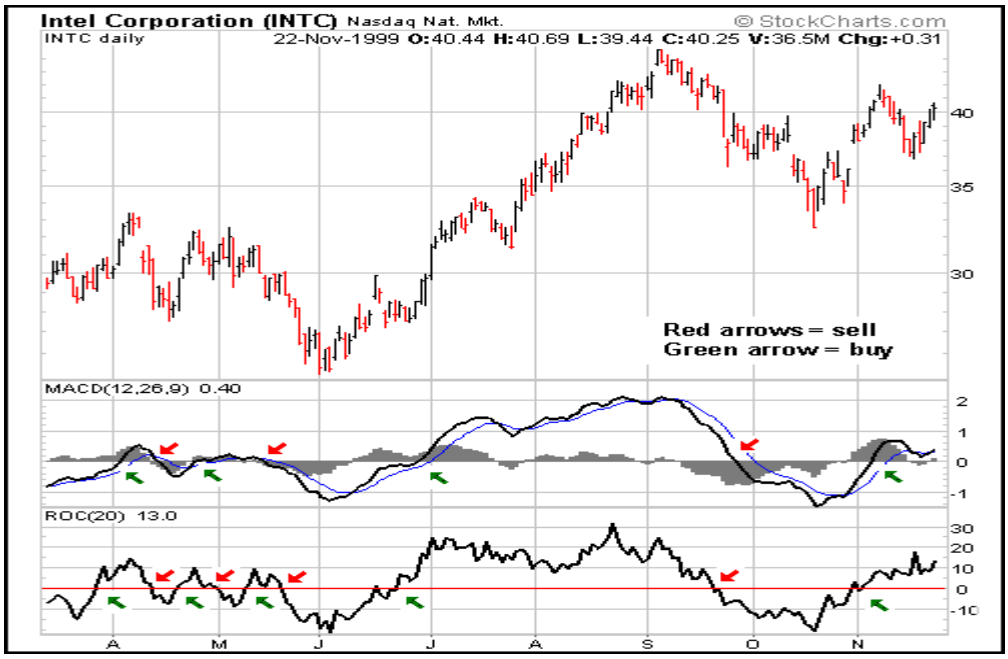
The Airborne Freight (ABF) chart reveals trading opportunities with the Relative Strength Index (RSI). Because a 14-period RSI rarely moved below 30 and above 70, a 10-period RSI was chosen to increase sensitivity. With the intermediate-term and long-term trends decidedly bearish, savey traders could have sold short each time RSI reached overbought (black vertical lines). More aggressive traders could have played the long side each time RSI dipped below 30 and then moved back above this oversold level. The first two buy signals were generated with a positive divergence and a move above 30 from oversold conditions. The third buy signal came after RSI briefly dipped below 30. Keep in mind that these three signals were against the larger downtrend and trading strategies should be adjusted accordingly.

Centerline Crossovers

As the name implies, centerline crossover signals apply mainly to centered oscillators that fluctuate above and below a centerline. Traders have been also known to use centerline crosses with RSI in order validate a divergence or signal generated from an overbought or oversold reading. However, most banded oscillators, such as RSI and Stochastics, rely on divergences and overbought/oversold levels to generate signals. The middle ground is a bit of a no man's land for banded oscillators and is probably best left to other tools. For our purposes, the analysis of centerline crossovers will focus on centered oscillators such as Chaikin Money Flow, MACD and Rate-of-Change (ROC).

A centerline crossover is sometimes interpreted as a buy or sell signal. A buy signal would be generated with a cross above the centerline and a sell signal with a cross below the centerline. For MACD or ROC, a cross above or below zero would act as a signal.

Movements above or below the centerline indicate that momentum has changed from either positive to negative or negative to positive. When a centered momentum oscillator advances above its centerline, momentum turns positive and could be considered bullish. When a centered momentum oscillator declines below its centerline, momentum turns negative and could be considered bearish.



On this Intel chart with MACD and ROC, there have been a number of signals generated from the centerline crossover. There were a couple of excellent signals, but there were also plenty of false signals and whipsaws. This highlights some of the challenges associated with trading oscillator signals. Also, it stresses the importance of combining various signals in order to create more robust buy and sell signals. Some traders also criticize centerline crossover signals as being too late and missing too much of the move.

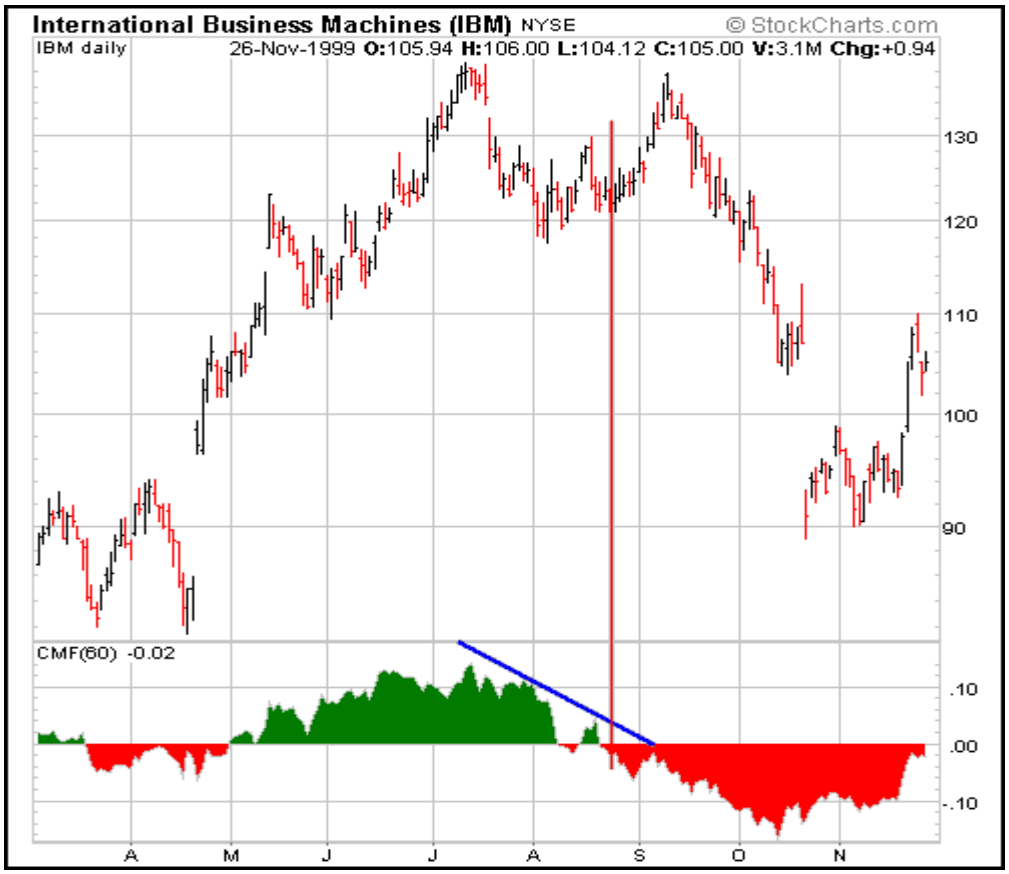
A centerline crossover can also act as a confirmation signal to validate a previous signal or reinforce the current trend. If there were a positive divergence and bullish moving average crossover, then a subsequent advance above the centerline would confirm the previous buy signal. Failure of the oscillator to move above the centerline could be seen as a non-confirmation and act as an alert that something was amiss.

Intel

On the Intel chart with MACD, the centerline crossover acts as the third in a series of bullish signals. Even after the third signal, Intel still has plenty of upside left.

1. There was the higher low forming that signaled a potential positive divergence.
2. There was the bullish moving average crossover to confirm the positive divergence.
3. And finally, there was the bullish centerline crossover.

Some traders would worry about missing too much of the move by waiting for the third and final confirmation. However, this can be a more reliable signal and help to avoid whipsaws and false signals. It is true that waiting for the third signal will reduce profits, but it can also help reduce risk.



Chaikin Money Flow is an example of a centered oscillator that places importance on crosses above and below the centerline. Divergences, overbought levels and oversold levels are all secondary to the absolute level of the indicator. The direction of the oscillator's movement is important, but needs to be placed in the context of the absolute level. The longer the oscillator is above zero, the more evidence of accumulation. The longer the oscillator is below zero, the more evidence of distribution. Hence, Chaikin Money Flow is considered to be bullish when the oscillator is trading above zero and bearish when trading below zero.

On the IBM chart, Chaikin Money Flow began to turn down in July. At this time, the stock was declining with the market and the decline in the oscillator was normal. However, in the second half of August, concerns began to grow when the oscillator failed to continue up with the stock and fell below zero. As the stock advanced further, Chaikin Money Flow continued to deteriorate. This served as a signal that something was amiss.

Oscillator Signals - Conclusions

Banded oscillators are best used to identify overbought and oversold conditions. However, overbought is not meant to act a sell signal and oversold is not meant to act as a buy signal. Overbought and oversold situations serve as an alert that conditions are reaching extreme levels and close attention should be paid to the price action and other indicators.

To improve the robustness of oscillator signals, traders can look for multiple signals. The criteria for a buy or sell signal could depend on three separate yet confirming signals. A buy signal might be generated with an oversold reading, positive divergence and bullish moving average crossover. Conversely, a sell signal might be generated from a negative divergence, bearish moving average crossover and bearish centerline crossover.

Traditional chart pattern analysis can also be applied to oscillators. This is a bit trickier, but can help to identify the strength behind an oscillator's move. Looking for higher highs or lower lows can help confirm previous analysis. A trendline breakout can signal that a change in the direction of the momentum is imminent.

It is dangerous to trade an oscillator signal against the major trend of the market. In bull moves, it is best to look for buying opportunities through oversold signals, positive divergences, bullish moving average crossovers and bullish centerline crossovers. In bear moves, it is best to look for selling opportunities through overbought signals, negative divergences, bearish moving average crossovers and bearish centerline crossovers.

And finally, oscillators are most effective when used in conjunction with pattern analysis, support/resistance identification, trend identification and other technical analysis tools. By being aware of the broader picture, oscillator signals can be put into context. It is important to identify the current trend or even to ascertain if the security is trending at all. Oscillator readings and signals can have different meaning in differing circumstances. By using other analysis techniques in conjunction with oscillator reading, the chances of success can be greatly enhanced.

8

Chart settings – the easy bit.

Welcome back. I do hope that you found the last article fascinating and informative. Not my sort of thing. But there again, I'm not the sort of person that needs to know how a toaster works, before I make the toast. I'm just pleased that it works.

As I have stated previously, I will not be giving you a history lesson on any of the settings or indicators. You will be given a description of what they are and how you are going to benefit from using them.

Should my explanations be insufficient to describe the workings of the various indicators, I have included extracts by various leading authorities on each indicator. This is for your own information and does not need to be committed to memory.

In this chapter I am going to deal with the chart settings only, as they are easily explained, and more akin to adjusting your seat in the car. They make your trading style more comfortable.

The next couple of chapters will be dedicated to covering the remaining indicators.

Time Frame

Lets you view your chosen market over a varying degree of time scales, going back years if you so wish. Although this is a very handy thing to play with, you must remember that it is looking backwards at what has happened. Old news.

I use the '1-day' setting because I want to know what is happening

right now. I do not wish to see any patterns that may or may not be repeating themselves.

That falls into the realms of prediction and the only thing that I predict is boredom and panic at missed opportunities, if you wait for patterns to come forward from the past.

Use this to control to set the way you wish to trade.

Frequency

Lets you fine-tune the time scale you wish to work from. Over shorter time periods, you can view what the market is doing by the minute.

Chart Size

Lets you view your market on varying sizes of chart.

I'm as blind as a bat so I like to have the charts as large as possible.

The easy bit is now taken care of. You have adjusted your seat and are ready to start your journey; it is time to start adding the direction finders.

Let the journey begin.

9

SMA – This is no baby formula

Moving Average

Obviously this indicator shows you the average price of whatever chart you are viewing, over a set time scale.

If you view the moving average as the 'normal price' for that set time scale, then you can better evaluate the present market price, which is almost always higher or lower than the moving average.

The setting used on the chart you set up was 'Sma(2-Line)(9). This means that you are using a Standard Moving Average over a nine-day period and another Standard Moving Average over an eighteen-day period.

Now, the longer the time period set, in this case 9 days and 18 days, the smoother and less volatile the sma becomes. Conversely, the shorter the time scale set, the less smooth and more volatile the sma becomes.

A lot of traders use the moving average as a signal to buy or sell positions. They do this by buying when the price rises above the moving average and selling when the price drops below the moving average.

I do not purely trade off the moving average, because it has a time lag factor and therefore you might lose a lot waiting for the

price to cross the moving average. I use it as a gauge to see how the markets are beginning to react and then I trade off it. But, more on that later.

Play about with the time scales on the sma and see what a difference they would make to your trading if you used them as your only source of trading.

The sma is not essential; if it is cluttering the chart, remove it.

Still confused, read an experts view.

See you in the next chapter.

Arthur Hill writes the following article and if you wish to view more of the same, please follow the links.

Again, this article is very in depth. Having had a drink and a snack previously, it is advisable to have a toilet break before settling down to read this one.

Introduction

Moving averages are one of the most popular and easy to use tools available to the technical analyst. By using an average of prices, moving averages smooth a data series and make it easier to spot trends. This can be especially helpful in volatile markets.

In the first part of this series on moving averages, we will examine the differences between the two most popular moving averages: the simple moving average and the exponential moving average. In part two, we will look at how moving averages can be used as tools of technical analysis.

Simple Moving Average (SMA)

(Click here to see a live example of a Simple Moving Average)

A simple moving average is formed by finding the average price of a security over a set number of periods. Most often, the closing price is used to compute the moving average. For example: a 5-day moving average would be calculated by adding the closing prices for the last 5 days and dividing the total by 5.

$$10 + 11 + 12 + 13 + 14 = 60$$

$$60 \div 5 = 12$$

A moving average *moves* because as the newest period is added, the oldest period is dropped. If the next closing price in the average is 15, then this new period would be added and the oldest day, which is 10, would be dropped. The new 5-day moving average would be calculated as follows:

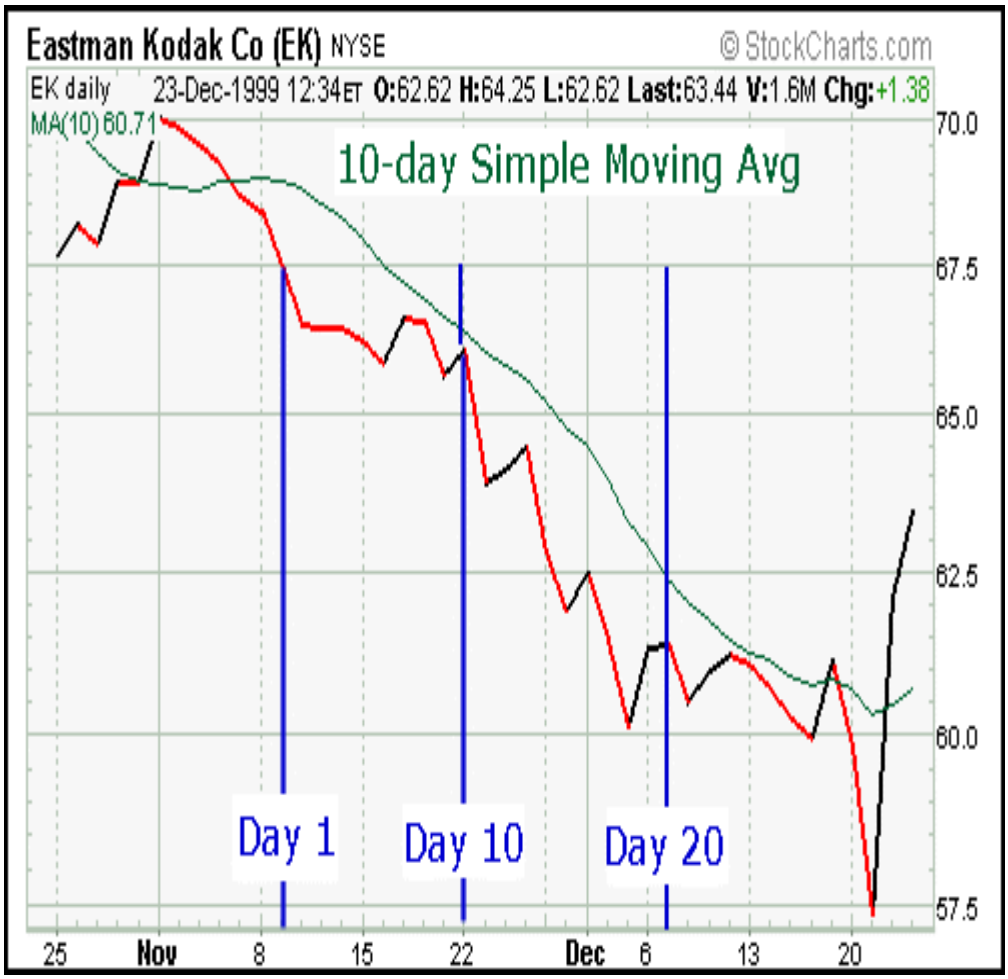
$$11 + 12 + 13 + 14 + 15 = 65$$

$$65 \div 5 = 13$$

Over the last 2 days, the moving average moved from 12 to 13. As new days are added, the old days will be subtracted and the moving average will continue to move over time.

Day	Daily Close	10-day SMA
1	67.50	
2	66.50	
3	66.44	
4	66.44	
5	66.25	
6	65.88	
7	66.63	
8	66.56	
9	65.63	
10	66.06	66.39
11	63.94	66.03
12	64.13	65.79
13	64.50	65.60
14	62.81	65.24
15	61.88	64.80
16	62.50	64.46
17	61.44	63.94
18	60.13	63.30
19	61.31	62.87
20	61.38	62.40

In the example above, using closing prices from Eastman Kodak (EK), day 10 is the first day possible to calculate a 10-day moving average. As the calculation continues, the newest day is added and the oldest day is subtracted. The 10-day moving average for day 11 is calculated by adding the prices of day 2 through day 11 and dividing by 10. The averaging process then moves on to the next day where the 10-day moving average for day 12 is calculated by adding the prices of day 3 through day 12 and dividing by 10.



The chart above is a plot that contains the data sequence in the table. The moving average begins on day 10 and continues.

This simple illustration highlights the fact that moving averages are lagging indicators and will always be behind the price. The price of EK is trending down, but the moving average, which is based on the previous 10 days of data, remains above the price. If the price were rising, the moving average most likely be below. Because moving averages are lagging indicators, they fit in the category of trend following. When prices are trending, moving averages work well. However, when prices are not trending, moving averages do not work.

Exponential Moving Average (EMA)

(Click here to see a live example of an Exponential Moving Average)

In order to reduce the lag in simple moving averages, technicians sometimes use exponential moving averages, or exponentially weighted moving averages. Exponential moving averages reduce the lag by applying more weight to recent prices relative to older prices. The weighting applied to the most recent price depends on the length of the moving average. The shorter the exponential moving average is, the more weight that will be applied to the most recent price. For example: a 10-period exponential moving average weighs the most recent price 18.18% and a 20-period exponential moving average weighs the most recent price 9.52%. The method for calculating the exponential moving average is fairly complicated. The important thing to remember is that the exponential moving average puts more weight on recent prices. As such, it will react quicker to recent price changes than a simple moving average. For those who wish to see an example formula for an exponential moving average, one is provided below. Others may prefer to skip this section and move on the comparison of the moving averages.

Exponential Moving Average Calculation

The formula for an exponential moving average is:

$$X = (K \times (C - P)) + P$$

X = Current EMA
C = Current Price
P = Previous period's EMA*
K = Smoothing constant
(*A SMA is used for first period's calculation)

The smoothing constant applies the appropriate weighting to the most recent price relative to the previous exponential moving average. The formula for the smoothing constant is:

$$K = 2/(1+N)$$

N = Number of periods for EMA

For a 10-period EMA, the smoothing constant would be .1818.

$$\frac{2}{(\text{Time periods} + 1)} = \frac{2}{(10 + 1)} = .1818 \ (18.18\%)$$

The EMA formula works by weighting the difference between the current period's price and the previous period's EMA and adding the result to the previous period's EMA. There are two possible outcomes: the weighted difference is either positive or negative.

1. If the current price (C) is higher than the previous period's EMA (P), the difference will be positive (C - P). The positive difference is weighted by multiplying it by the constant ((C - P) x K) and the answer is added to the previous period's EMA, resulting in a new EMA that is higher ((C - P) x K) + P.

2. If the current price is lower than the previous period's EMA, the difference will be negative (C - P). The negative difference is weighted by multiplying it by the constant ((C - P) x K) and the final result is added to the previous period's EMA, resulting in a new EMA that is lower ((C - P) x K) + P.

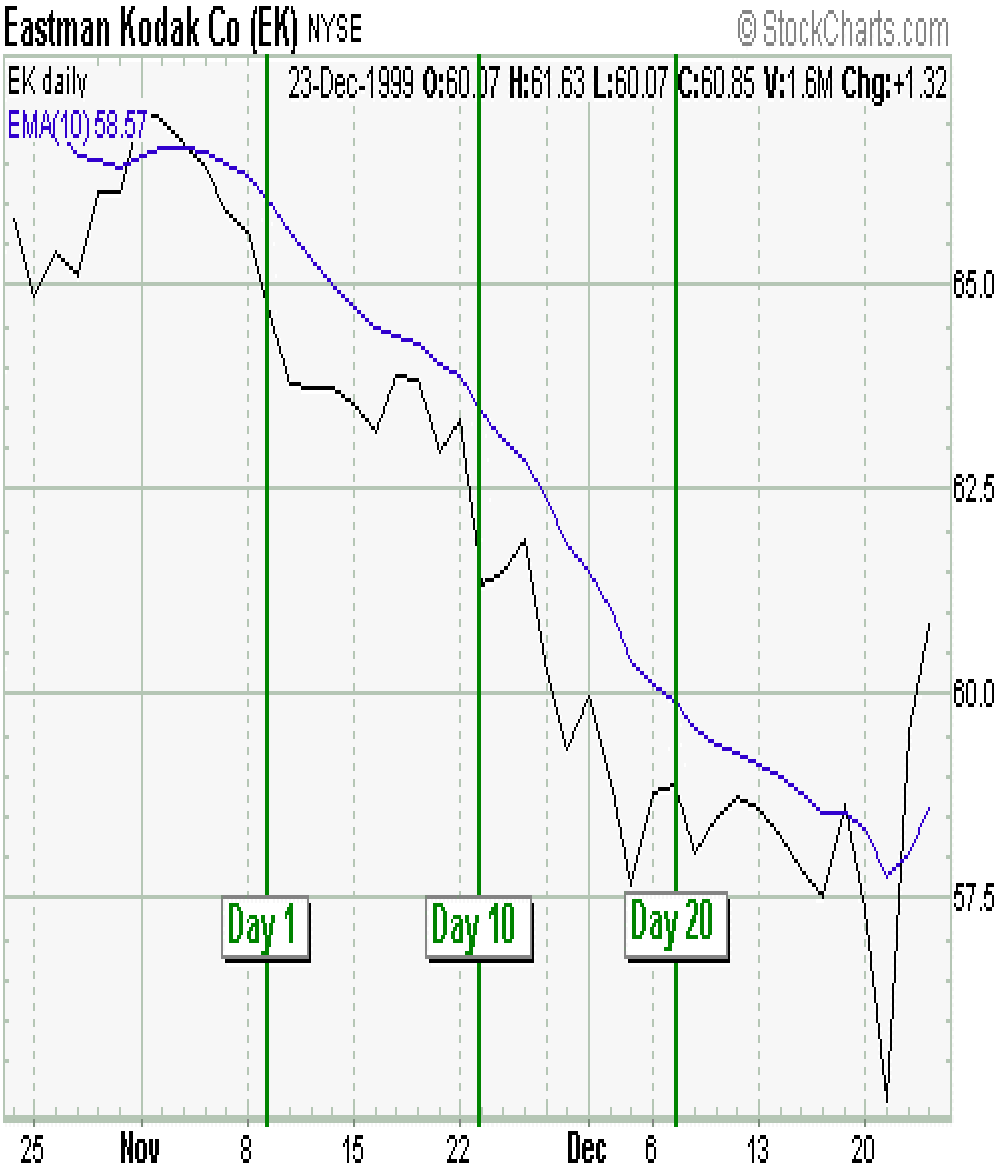
Below is a table with the results of an exponential moving average calculation for Eastman Kodak. For the first period's exponential moving average, the simple moving average was used

as the previous period's exponential moving average (yellow highlight for the 10th period). From period 11 onwards, the previous period's EMA was used. The calculation in period 11 breaks down as follows:

1. (C - P) = (61.33 - 63.682) = -2.352
2. (C - P) x K = -2.352 x .181818 = -0.4276
3. ((C - P) x K) + P = -0.4276 + 63.682 = 63.254

		EMA Period (N):	10	
		Smoothing Constant (K):	0.181818	
Period	Date	Close (C)	Previous Period's EMA (P)	10-Day EMA (X)
1	09-Nov-99	$ 64.75		
2	10-Nov-99	$ 63.79		
3	11-Nov-99	$ 63.73		
4	12-Nov-99	$ 63.73		
5	15-Nov-99	$ 63.55		
6	16-Nov-99	$ 63.19		
7	17-Nov-99	$ 63.91		
8	18-Nov-99	$ 63.85		
9	19-Nov-99	$ 62.95		
10	22-Nov-99	$ 63.37		$ 63.682 - *
11	23-Nov-99	$ 61.33	$ 63.682	$ 63.254
12	24-Nov-99	$ 61.51	$ 63.254	$ 62.937
13	26-Nov-99	$ 61.87	$ 62.937	$ 62.743
14	29-Nov-99	$ 60.25	$ 62.743	$ 62.290
15	30-Nov-99	$ 59.35	$ 62.290	$ 61.755
16	01-Dec-99	$ 59.95	$ 61.755	$ 61.427
17	02-Dec-99	$ 58.93	$ 61.427	$ 60.973
18	03-Dec-99	$ 57.68	$ 60.973	$ 60.374
19	06-Dec-99	$ 58.82	$ 60.374	$ 60.092
20	07-Dec-99	$ 58.87	$ 60.092	$ 59.870

*The 10-period simple moving average is used for the first calculation only. After that the previous period's EMA is used. (Click here to download this table as an Excel spreadsheet.)



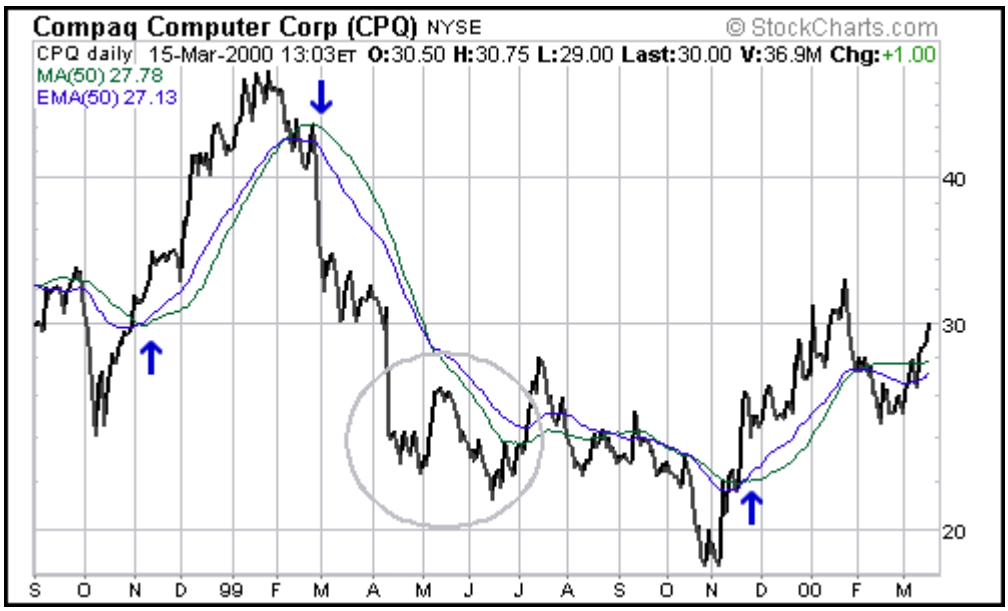
Simple Versus Exponential

From afar, it would appear that the difference between an exponential moving average and a simple moving average is minimal. For this example, which uses only 20 trading days, the difference is minimal, but a difference nonetheless. The exponential moving average is consistently closer to the actual price. On average, the EMA is 3/8 of a point closer to the actual price than the SMA.

Period	EMA Absolute Difference	SMA Absolute Difference
10	1.53	1.88
11	0.39	0.53
12	1.17	1.34
13	0.65	0.99
14	1.91	2.47
15	1.10	1.76
16	0.85	1.58
17	0.02	0.54
18	0.58	0.28
19	0.52	0.51
20	2.27	2.72
Average Difference	1.00	1.33

From day 10 to day 20, the EMA was closer to the price than the SMA 9 out of 10 times. The only time the SMA was closer was in period number 18 (yellow highlight), and this did not last long. The average absolute difference between the exponential moving average and the current price was 1 and the simple moving average had an average absolute difference of 1.33. This means that on average, the exponential moving average was 1 point above or below the current price and the simple moving average was 1.33 points above or below the current price.

When EK stopped falling and started to trade flat, the SMA kept on declining. During this period, the SMA was closer to the actual price than the EMA. The EMA began to level out with the actual price and remain further away. This was because the actual price started to level out. Because of its lag, the SMA continued to decline and even touched the actual price on 13-Dec.



A comparison of a 50-day EMA and a 50-day SMA for Compaq also shows that the EMA picks up on the trend quicker than the SMA. The blue arrows mark points when the stock started a strong trend. By giving more weight to recent prices, the EMA reacted quicker than the SMA and remained closer to the actual price. The gray circle shows when the trend began to slow and a trading range developed. When the change from trend to trading began, the SMA was closer to the price. As the trading range continued into the latter part of 1999, both moving averages converged. In later 1999, CPQ started to trend up and the EMA was quicker to pick up on the recent price change and remain closer to the price.

Which is better?

Which moving average you use will depend on your trading and investing style and preferences. The simple moving average obviously has a lag, but the exponential moving average may be prone to quicker breaks. Some traders prefer to use exponential moving averages for shorter time periods to capture changes quicker. Some investors prefer simple moving averages over long time periods to identify long-term trend changes. In addition, much will depend on the individual security in question. A 50-day SMA might work great for identifying support levels in the Nasdaq, but a 100-day EMA may work better for the Dow Transports. Moving average type and length of time will depend

greatly on the individual security and how it has reacted in the past.

The initial thought for some is that greater sensitivity and quicker signals are bound to be beneficial. This is not always true and brings up a great dilemma for the technical analyst: the trade off between sensitivity and reliability. The more sensitive an indicator is, the more signals that will be given. These signals may prove timely, but with increased sensitivity comes an increase in false signals. The less sensitive an indicator is, the fewer signals that will be given. However, less sensitivity leads to fewer and more reliable signals. Sometimes these signals can be late as well.

For moving averages, the same dilemma applies. Shorter moving averages will be more sensitive and generate more signals. The EMA, which is generally more sensitive than the SMA, will also be likely to generate more signals. However, there will also be an increase in the number of false signals and whipsaws. Longer moving averages will move slower and generate fewer signals. These signals will likely prove more reliable, but they also may come late. Each investor or trader should experiment with different moving average lengths and types to examine the trade-off between sensitivity and signal reliability.

Moving Averages

Trend-Following Indicator

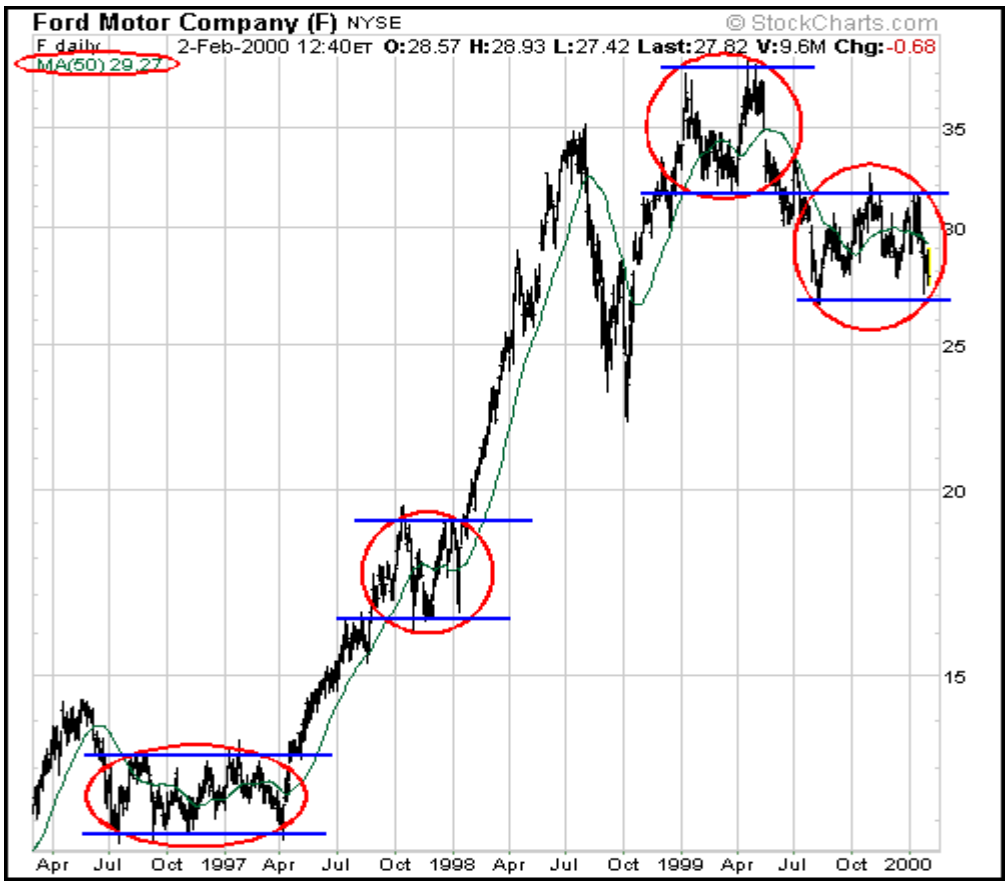
Moving averages smooth out a data series and make it easier to identify the direction of the trend. Because past price data is used to form moving averages, they are considered lagging, or trend following, indicators. Moving averages will not predict a change in trend, but rather follow behind the current trend. Therefore, they are best suited for trend identification and trend following purposes, not for prediction.

When to Use

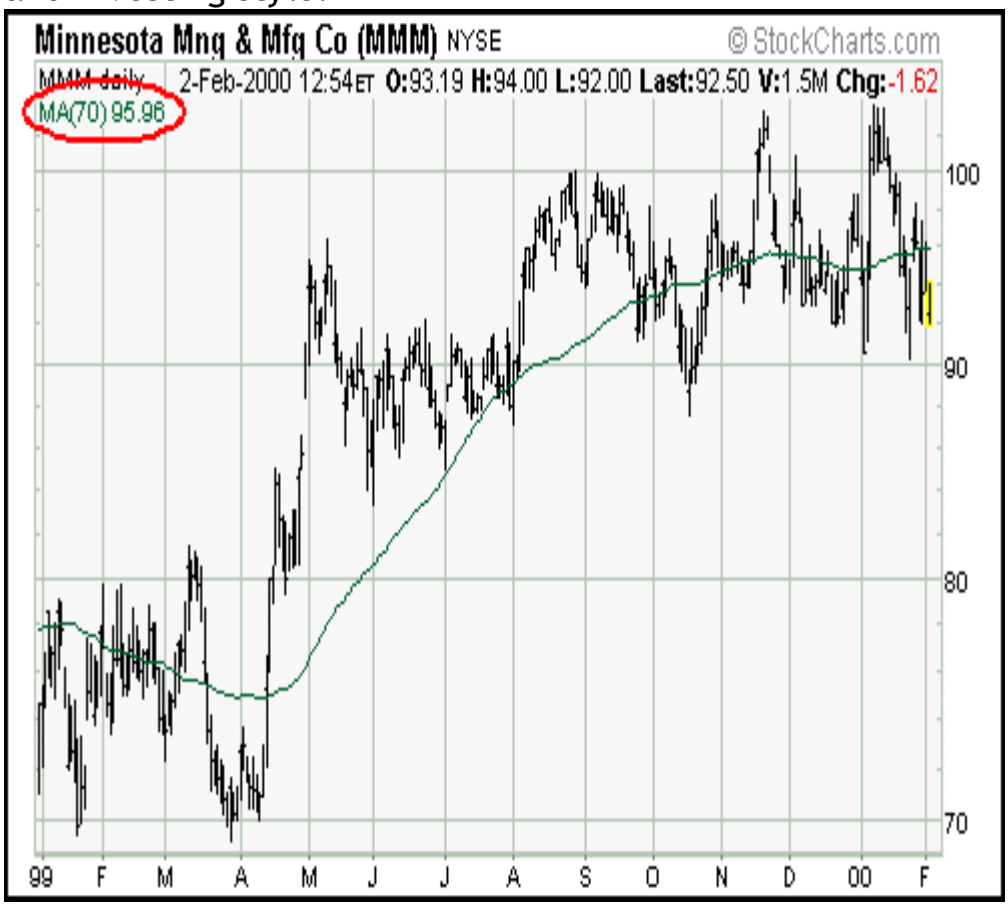
Because moving averages follow the trend, they work best when a security is trending and are ineffective when a security moves in a trading range. With this in mind, investors and traders should first identify securities that display some trending characteristics before attempting to analyze with moving averages. This process

does not have to be a scientific examination. Usually, a simple visual assessment of the price chart can determine if a security exhibits characteristics of trend.

In its simplest form, a security's price can be doing only one of three things: trending up, trending down or trading in a range. An uptrend is established when a security forms a series of higher highs and higher lows. A downtrend is established when a security forms a series of lower lows and lower highs. A trading range is established if a security cannot establish an uptrend or downtrend. If a security is in a trading range, an uptrend is started when the upper boundary of the range is broken and a downtrend begins when the lower boundary is broken.



In the Ford example, it is evident that a stock can go through both trending and trading phases. The red circles indicate trading range phases that are interspersed among trending periods. It is sometimes difficult to determine when a trend will stop and a trading range will begin or when a trading range will stop and a trend will begin. The basic rules for trends and trading ranges laid out above can be applied to Ford. Notice the trading range periods, the breakouts (both up and down) and the trending periods. The moving average worked well in times of trend, but faired poorly in times of trading. Also note how the moving average lags behind the trend: it is always under the price during an uptrend and above the price during a downtrend. A 50-day simple moving average was used for this example. However, the number of periods is optional and much will depend on the characteristics of the security as well as an individual's trading and investing style.



If price movements are choppy and erratic over an extended period of time, then a moving average is probably not the best choice for analysis. The chart for MMM shows a security that moved from 70 to 90 in a few weeks in late April. Prior to this advance, the price gyrated above and below its moving average.

After the advance, the stock continued its erratic behavior without developing much of a trend. Trying to analyze this security based on a moving average is likely to be a lesson in futility.

AOL

A quick look at the chart for AOL shows a different picture than for MMM. Over the same time period, AOL has shown the ability to trend. There are 3 distinct trends or price movements that extend for a number of months. Once the stock moves above or below the 70-day SMA, it usually continues in that direction for a little while longer. MMM, on the other hand, broke above and below its 70-day SMA numerous times and would have been prone to numerous whipsaws. A longer moving average would probably work better for MMM, but it is clear that there are fewer characteristics of trend than in AOL.

Moving Average Settings

Once a security has been deemed to have enough characteristics of trend, the next task will be to select the number of moving average periods and type of moving average. The number of periods used in a moving average will vary according to the security's volatility, trendiness and personal preferences. The more volatility there is, the more smoothing that will be required and hence the longer the moving average. Stocks that do not exhibit strong characteristics of trend may also require longer moving averages. There is no one set length, but some of the more popular lengths include 21, 50, 89, 150 and 200 days as well

as 10, 30 and 40 weeks. Short-term traders may look for evidence of 2-3 week trends with a 21-day moving average, while longer-term investors may look for evidence of 3-4 month trends with a 40-week moving average. Trial and error is usually the best means for finding the best length. Examine how the moving average fits with the price data. If there are too many breaks, lengthen the moving average to decrease its sensitivity. If the moving average is slow to react, shorten the moving average to increase its sensitivity. In addition, you may want to try using both simple and exponential moving averages. Exponential moving averages are usually best for short-term situations that require a responsive moving average. Simple moving averages work well for longer-term situations that do not require a lot of sensitivity.

Uses for Moving Averages

There are many uses for moving averages, but three basic uses stand out:

- Trend identification/confirmation
- Support and Resistance level identification/confirmation
- Trading Systems

Trend Identification/Confirmation
There are three ways to identify the direction of the trend with moving averages: direction, location and crossovers.

The first trend identification technique uses the direction of the moving average to determine the trend. If the moving average is rising, the trend is considered up. If the moving average is declining, the trend is considered down. The direction of a moving average can be determined simply by looking at a plot of the moving average or by applying an indicator to the moving average. In either case, we would not want to act on every subtle change, but rather look at general directional movement and changes.

In the case of Disney, a 100-day exponential moving average (EMA) has been used to determine the trend. We do not want to

act on every little change in the moving average, but rather significant upturns and downturns. This is not a scientific study, but a number of significant turning points can be spotted just based on visual observation (red circles). A few good signals were rendered, but also a few whipsaws and late signals. Much of the performance would depend on your entry and exit points. The length of the moving average influences the number of signals and their timeliness. Moving averages are lagging indicators. Therefore, the longer the moving average is, the further behind the price movement it will be. For quicker signals, a 50-day EMA could have been used.

The second technique for trend identification is price location. The location of the price relative to the moving average can be used to determine the basic trend. If the price is above the moving average, the trend is considered up. If the price is below the moving average, the trend is considered down.

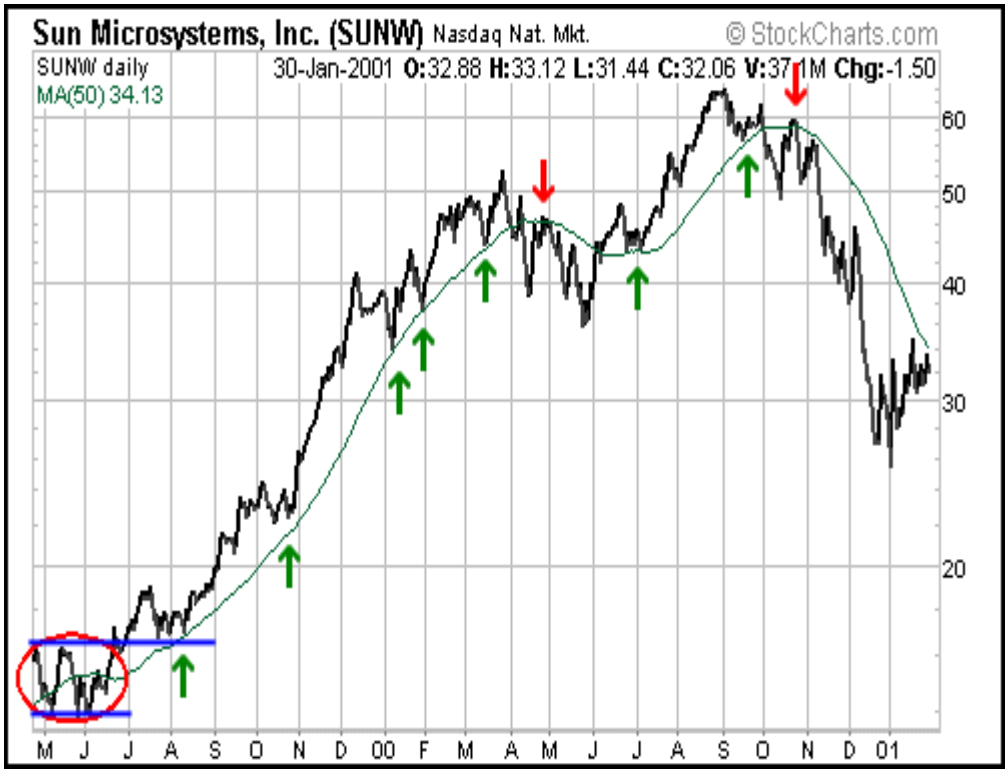
This example is pretty straightforward. The long-term for ENE is determined by the location of the stock relative to its 100-day SMA. When ENE is above its 100-day SMA, the trend is considered bullish. When the stock is below the 100-day SMA, the trend is considered bearish. Buy and sell signals are generated by crosses above and below the moving average. There was a brief sell signal generated in Aug-98 and a false buy signal in Nov-99. Both of these signals occurred when Enron's trend began to weaken. For the most part though, this simple method would have kept an investor in throughout most of the bull move.

The third technique for trend identification is based on the location of the shorter moving average relative to the longer moving average. If the shorter moving average is above the longer moving average, the trend is considered up. If the shorter moving average is below the longer moving average, the trend is considered down.

For Xircom, a 30/100 moving average crossover was used to determine the trend. When the 30-day moving average moves above the 100-day moving average, the trend is considered bullish. When the 30-day moving average declines below the 100-day moving average, the trend is considered bearish. A plot of the 30/100 differential is plotted below the price chart by using the Percentage Price Oscillator (PPO) set to (30,100,1). When the differential is positive the trend is considered up -- when it is negative the trend is considered down. As with all trend-following systems, the signals work well when the stock develops a strong trend, but are ineffective when the stock is in a trading range. Also notice that the signals tend to be late and after the move has begun. Again, trend following indicators are best for identification and following, not predicting.

Support and Resistance Levels

Another use of moving averages is to identify support and resistance levels. This is usually accomplished with one moving average and is based on historical precedent. As with trend identification, support and resistance level identification through moving averages works best in trending markets.



After breaking out of a trading range, Sun Microsystems successfully tested moving average support in late July and early

August. Also notice that the June resistance breakout near 18 turned into support. Therefore, the moving average acted as a confirmation of resistance-turned-support. After this first test, the 50-day moving average went on to 4 more successful support tests over the next several months. A break of support from the 50-day moving average would serve as a warning that the stock may move into a trading range or may be about to change the direction of the trend. Such a break occurred in Apr-00 and the 50-day SMA turned into resistance later that month. When the stock broke above the 50-day SMA in early Jun-00, it returned to a support level until the Oct-00 break. In Oct-00, the 50-day SMA became a resistance level and that held for many months.

Conclusions

Moving averages can be effective tools to identify and confirm trend, identify support and resistance levels, and develop trading systems. However, traders and investors should learn to identify securities that are suitable for analysis with moving averages and how this analysis should be applied. Usually, an assessment can be made with a visual examination of the price chart, but sometimes it will require a more detailed approach. The ADX, Average Directional Index, is one tool that can help identify securities that are trending and those that are not.

The advantages of using moving averages need to be weighed against the disadvantages. Moving averages are trend following, or lagging, indicators that will always be a step behind. This is not necessarily a bad thing though. After all, the trend is your friend and it is best to trade in the direction of the trend. Moving averages will help ensure that a trader is in line with the current trend. However, markets, stocks and securities spend a great deal of time in trading ranges, which render moving averages ineffective. Once in a trend, moving averages will keep you in, but also give late signals. Don't expect to get out at the top and in at the bottom using moving averages. As with most tools of technical analysis, moving averages should not be used on their own, but in conjunction with other tools that complement them. Using moving averages to confirm other indicators and analysis can greatly enhance technical analysis.

10

Bollinger Bands..... No need to be rude, I only asked.

Upper Indicator

Remember that we viewed the moving average as the average or normal price. Bollinger Bands allow us to view how far from the normal price, the current quoted price is. Giving us a measure for short-term volatility.

Without being technical and discussing bell distribution curves and standard deviation, Bollinger Bands move apart during periods of high volatility (anything that causes a large and sudden movement in prices), and they move closer together when the market becomes less volatile.

This gives a very clear view of the current market trading conditions.

Again, this tool is not essential, it is a good over view of the market sentiment.

For a better description of Bollinger Bands, read the following article by Arthur Hill.

The usual warnings apply. See you in the next chapter.

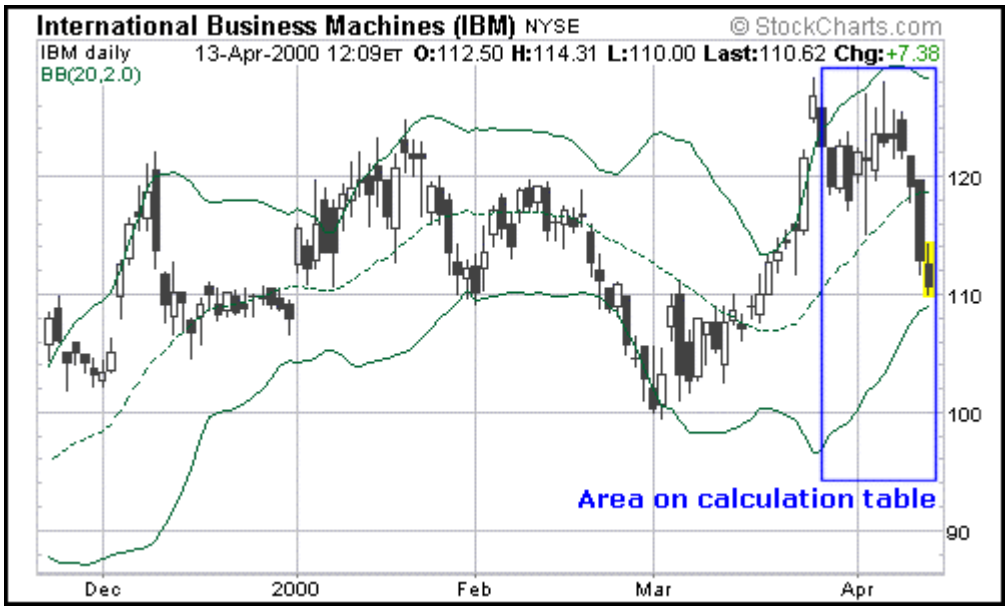
Developed by John Bollinger, Bollinger Bands are an indicator that allows users to compare volatility and relative price levels over a period time. The indicator consists of three bands designed to encompass the majority of a security's price action.

1. A simple moving average in the middle
2. An upper band (SMA plus 2 standard deviations)
3. A lower band (SMA minus 2 standard deviations)

Standard deviation is a statistical term that provides a good indication of volatility. Using the standard deviation ensures that the bands will react quickly to price movements and reflect periods of high and low volatility. Sharp price increases (or decreases), and hence volatility, will lead to a widening of the bands.

Formula

	Close	20-day SMA	StdDev	2 x StdDev	Upper Band	Middle Band	Lower Band
1	103.13						
2	109.00						
3	103.06						
4	102.75						
5	108.00						
6	107.56						
7	105.25						
8	107.69						
9	108.63						
10	107.00						
11	109.00						
12	110.00						
13	112.75						
14	113.50						
15	114.25						
16	115.25						
17	121.50						
18	126.88						
19	122.50						
20	119.00	111.33	6.64	13.29	124.62	111.33	98.05
21	122.50	112.30	6.79	13.57	125.88	112.30	98.73
22	118.00	112.75	6.85	13.70	126.46	112.75	99.05
23	122.00	113.70	6.75	13.51	127.21	113.70	100.19
24	121.19	114.62	6.45	12.90	127.52	114.62	101.73
25	123.63	115.40	6.54	13.09	128.49	115.40	102.31
26	122.75	116.16	6.47	12.94	129.11	116.16	103.22
27	123.13	117.06	6.13	12.26	129.31	117.06	104.80
28	122.13	117.78	5.82	11.65	129.43	117.78	106.13
29	119.00	118.30	5.44	10.87	129.17	118.30	107.43
30	112.69	118.58	4.97	9.93	128.51	118.58	108.65
31	110.63	118.66	4.82	9.64	128.30	118.66	109.03



The centerline is the 20-day simple moving average. The upper band is the 20-day simple moving average plus 2 standard deviations. The lower band is the 20-day simple moving average less 2 standard deviations.

Settings

Closing prices are most often used to compute Bollinger Bands. Other variations, including typical and weighted prices, can also be used.

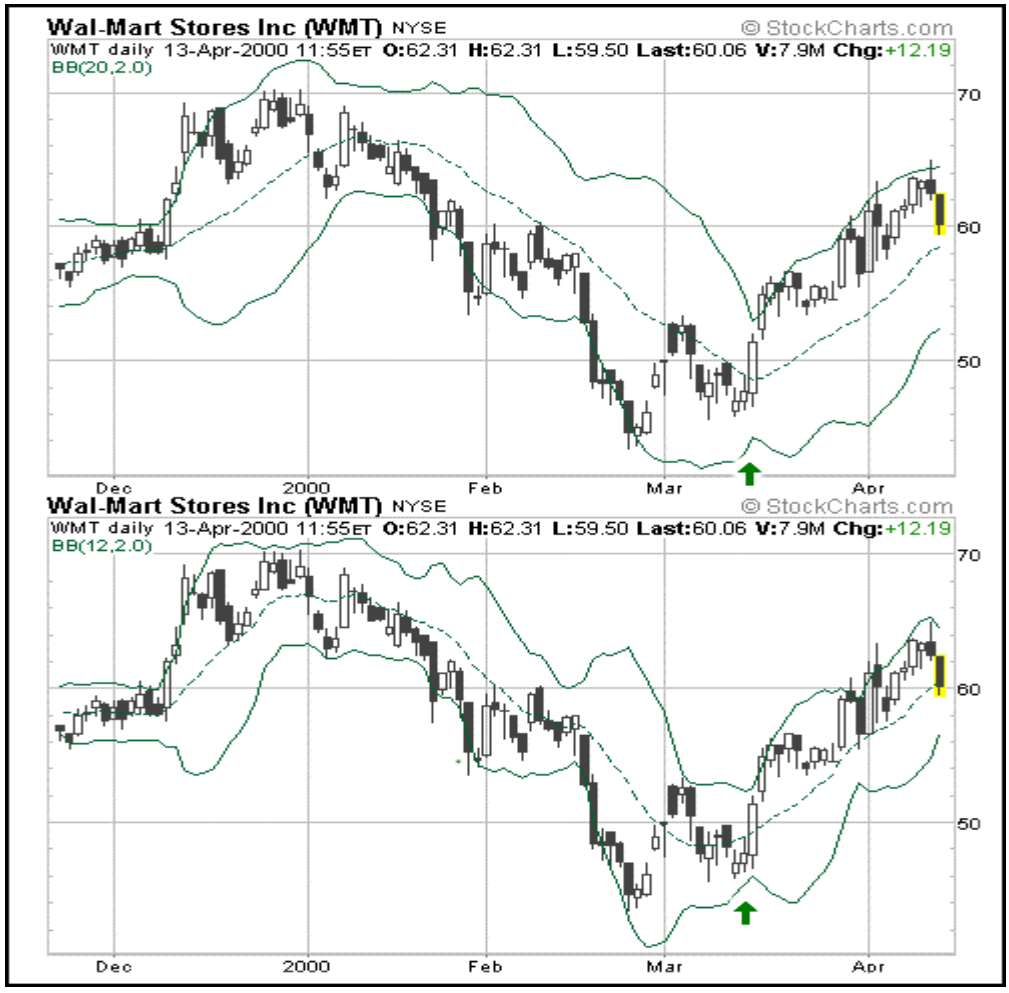
- Typical Price = (high + low + close)/3
- Weighted Price = (high + low + close + close)/4

Bollinger recommends using a 20-day simple moving average for the center band and 2 standard deviations for the outer bands. The length of the moving average and number of deviations can be adjusted to better suit individual preferences and specific characteristics of a security.

Trial and error is one method to determine an appropriate moving average length. A simple visual assessment can be used to determine the appropriate number of periods. Bollinger Bands should encompass the majority of price action, but not all. After

sharp moves, penetration of the bands is normal. If prices appear to penetrate the outer bands too often, then a longer moving average may be required. If prices rarely touch the outer bands, then a shorter moving average may be required.

A more exact method to determine moving average length is by matching it with a reaction low after a bottom. For a bottom to form and a downtrend to reverse, a security needs to form a low that is higher than the previous low. Properly set Bollinger Bands should hold support established by the second (higher) low. If the second low penetrates the lower band, then the moving average is too short. If the second low remains above the lower band, then the moving average is too long. The same logic can be applied to peaks and reaction rallies. The upper band should mark resistance for the first reaction rally after a peak.



For WMT, a 20-period simple moving average proved to be a bit too long for the Bollinger Bands. Notice the wide gap between the

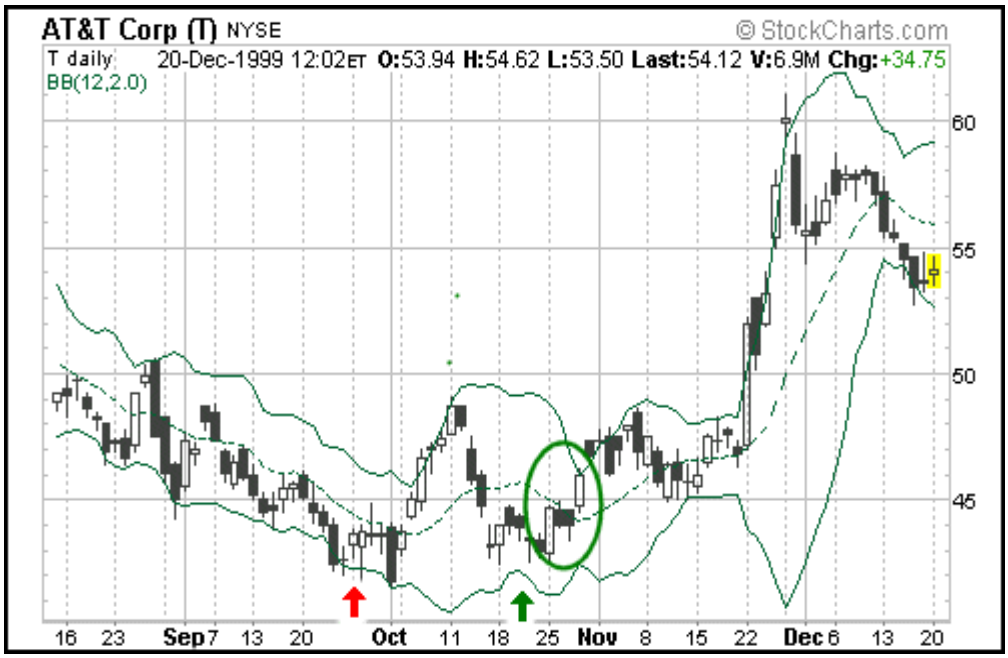
lower band and the higher low in March. Through trial and error, a 12-period simple moving average appears to offer a better fit.

For general timeframes, Bollinger recommends a 10-day moving average for the short term, a 20-day moving average for the intermediate term and 50-day moving average for the long term.

Use

In addition to identifying relative price levels and volatility, Bollinger Bands can be combined with price action and other indicators to generate signals and foreshadow significant moves.

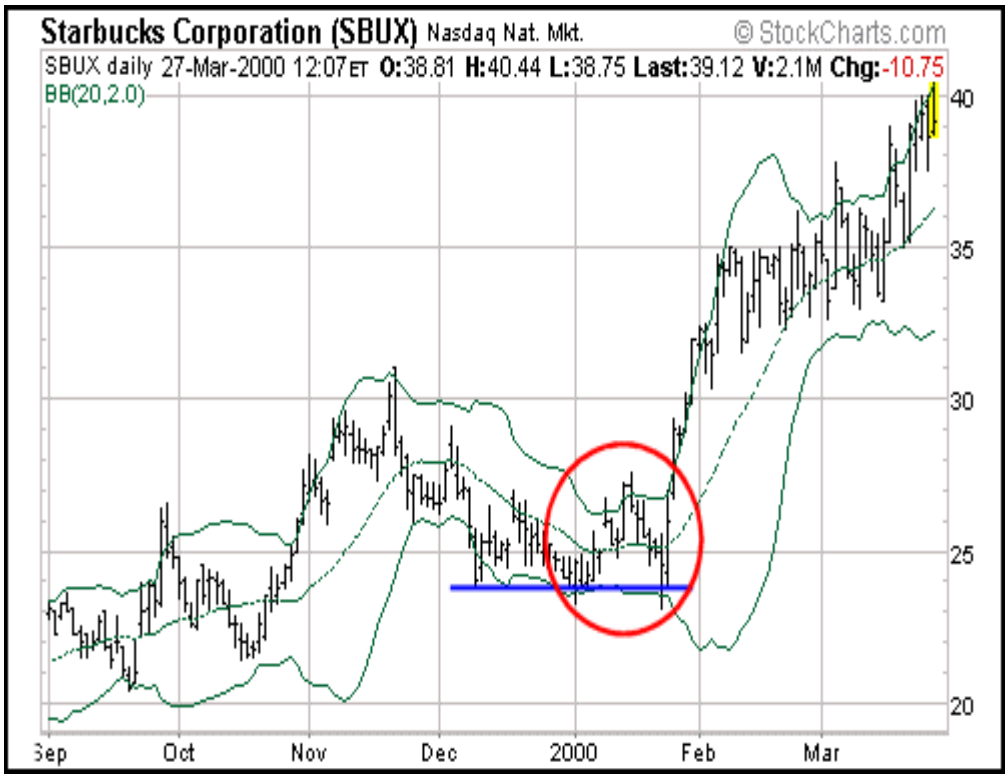
Double bottom buy: A double bottom buy signal is given when prices penetrate the lower band and remain above the lower band after a subsequent low forms. Either low can be higher or lower than the other. The important thing is that the second low remains above the lower band. The bullish setup is confirmed when the price moves above the middle band, or simple moving average.



T provides an example of a double bottom buy signal. The stock penetrated the lower band in late September (red arrow) and then held above on the subsequent test in October. The October breakout above the middle band (green circle) provided the bullish confirmation.

Double top sell: A sell signal is given when prices peak above the upper band and a subsequent peak fails to break above the upper band. The bearish setup is confirmed when prices decline below the middle band.

Sharp price changes can occur after the bands have tightened and volatility is low. In this instance, Bollinger Bands do not give any hint as to the future direction of prices. Direction must be determined using other indicators and aspects of technical analysis. Many securities go through periods of high volatility followed by periods of low volatility. Using Bollinger Bands, these periods can be easily identified with a visual assessment. Tight bands indicate low volatility and wide bands indicate high volatility. Volatility can be important for options players because options prices will be cheaper when volatility is low.



SBUX provides an example of the bands tightening before a big move. In November, the bands were relatively wide and began to tighten over the next 2 months. By early January, the bands were the tightest in over 4 months (red circle). A little over a week later, the stock exploded for a 10+ point gain in less than 2 weeks.

Conclusions

Even though Bollinger Bands can help generate buy and sell signals, they are not designed to determine the future direction of a security. The bands were designed to augment other analysis techniques and indicators. By themselves, Bollinger Bands serve two primary functions:

- To identify periods of high and low volatility
- To identify periods when prices are at extreme, and possibly unsustainable, levels.

As stated above, securities can fluctuate between periods of high volatility and low volatility. Being able to identify a period of low volatility can serve as an alert to monitor the price action of a security. Other aspects of technical analysis, such as momentum, moving averages and retracements, can then be employed to help determine the direction of the potential breakout.

Remember that buy and sell signals are not given when prices reach the upper or lower bands. Such levels merely indicate that prices are high or low on a relative basis. A security can become overbought or oversold for an extended period of time. Knowing whether or not prices are high or low on a relative basis can enhance our interpretation of other indicators and assist with timing issues in trading.

Bollinger Bands

Developed by John Bollinger, Bollinger Bands are an indicator that allows users to compare volatility and relative prices levels over a period of time. The indicator consists of three bands designed to encompass the majority of a security's price action.

1. A simple moving average in the middle
2. An upper band (SMA plus 2 standard deviations)

3. A lower band (SMA minus 2 standard deviations)

Standard deviation is a statistical term that provides a good indication of volatility. Using the standard deviation ensures that the bands will react quickly to price movements and reflect periods of high and low volatility. Sharp increases or decreases in prices, and hence volatility, will lead to a widening of the bands. Long periods of sideways movements will lead to a narrowing.

Bollinger Bands are designed to capture the majority of price movement. When prices move beyond the upper or lower band, they are considered high (overbought) or low (oversold) on a relative basis.

Bollinger Band Width The Bollinger Band Width indicator charts the width of the Bollinger Bands. When the Bollinger Band Width increases in value, it indicates that the volatility of the underlying stock has also increased.

11

MACD or not MACD. What was the question?

LOWER INDICATOR 1

This is the first of the three indicators that are on the three charts below the main chart.

I am not even going to try and explain what these indicators mean, all will be made clear in the final chapter, so do not worry. I shall now hand you straight over to Arthur Hill.

See you in chapter 14.

The Combination Oscillator

Developed by Gerald Appel, Moving Average Convergence Divergence (MACD) is one of the simplest and most reliable indicators available. MACD uses moving averages, which are lagging indicators, to include some trend-following characteristics. These lagging indicators are turned into a momentum oscillator by subtracting the longer moving average from the shorter moving average. The resulting plot forms a line that oscillates above and below zero, without any upper or lower limits. MACD is a centered oscillator and the guidelines for using centered oscillators apply.

MACD Formula

The most popular formula for the "standard" MACD is the difference between a security's 26-day and 12-day exponential moving averages. This is the formula that is used in many popular

technical analysis programs, including SharpCharts, and quoted in most technical analysis books on the subject. Appel and others have since tinkered with these original settings to come up with a MACD that is better suited for faster or slower securities. Using shorter moving averages will produce a quicker, more responsive indicator, while using longer moving averages will produce a slower indicator, less prone to whipsaws. For our purposes in this article, the traditional 12/26 MACD will be used for explanations. Later in the indicator series, we will address the use of different moving averages in calculating MACD.

Of the two moving averages that make up MACD, the 12-day EMA is the faster and the 26-day EMA is the slower. Closing prices are used to form the moving averages. Usually, a 9-day EMA of MACD is plotted along side to act as a trigger line. A bullish crossover occurs when MACD moves above its 9-day EMA and a bearish crossover occurs when MACD moves below its 9-day EMA. The Merrill Lynch chart below shows the 12-day EMA (thin green line) with the 26-day EMA (thin blue line) overlaid the price plot. MACD appears in the box below as the thick black line and its 9-day EMA is the thin blue line. The histogram represents the difference between MACD and its 9-day EMA. The histogram is positive when MACD is above its 9-day EMA and negative when MACD is below its 9-day EMA.

What does MACD do?

MACD measures the difference between two moving averages. A positive MACD indicates that the 12-day EMA is trading above the 26-day EMA. A negative MACD indicates that the 12-day EMA is trading below the 26-day EMA. If MACD is positive and rising, then the gap between the 12-day EMA and the 26-day EMA is widening. This indicates that the rate-of-change of the faster moving average is higher than the rate-of-change for the slower moving average. Positive momentum is increasing and this would be considered bullish. If MACD is negative and declining further, then the negative gap between the faster moving average (green) and the slower moving average (blue) is expanding. Downward momentum is accelerating and this would be considered bearish. MACD centerline crossovers occur when the faster moving average crosses the slower moving average.

This Merrill Lynch chart shows MACD as a solid black line and its 9-day EMA as the thin blue line. Even though moving averages are lagging indicators, notice that MACD moves faster than the moving averages. In this example with Merrill Lynch, MACD also provided a few good trading signals as well.

1. In March and April, MACD turned down ahead of both moving averages and formed a negative divergence ahead of the price peak.
2. In May and June, MACD began to strengthen and make higher lows while both moving averages continued to make lower lows.
3. And finally, MACD formed a positive divergence in October while both moving averages recorded new lows.

MACD Bullish Signals

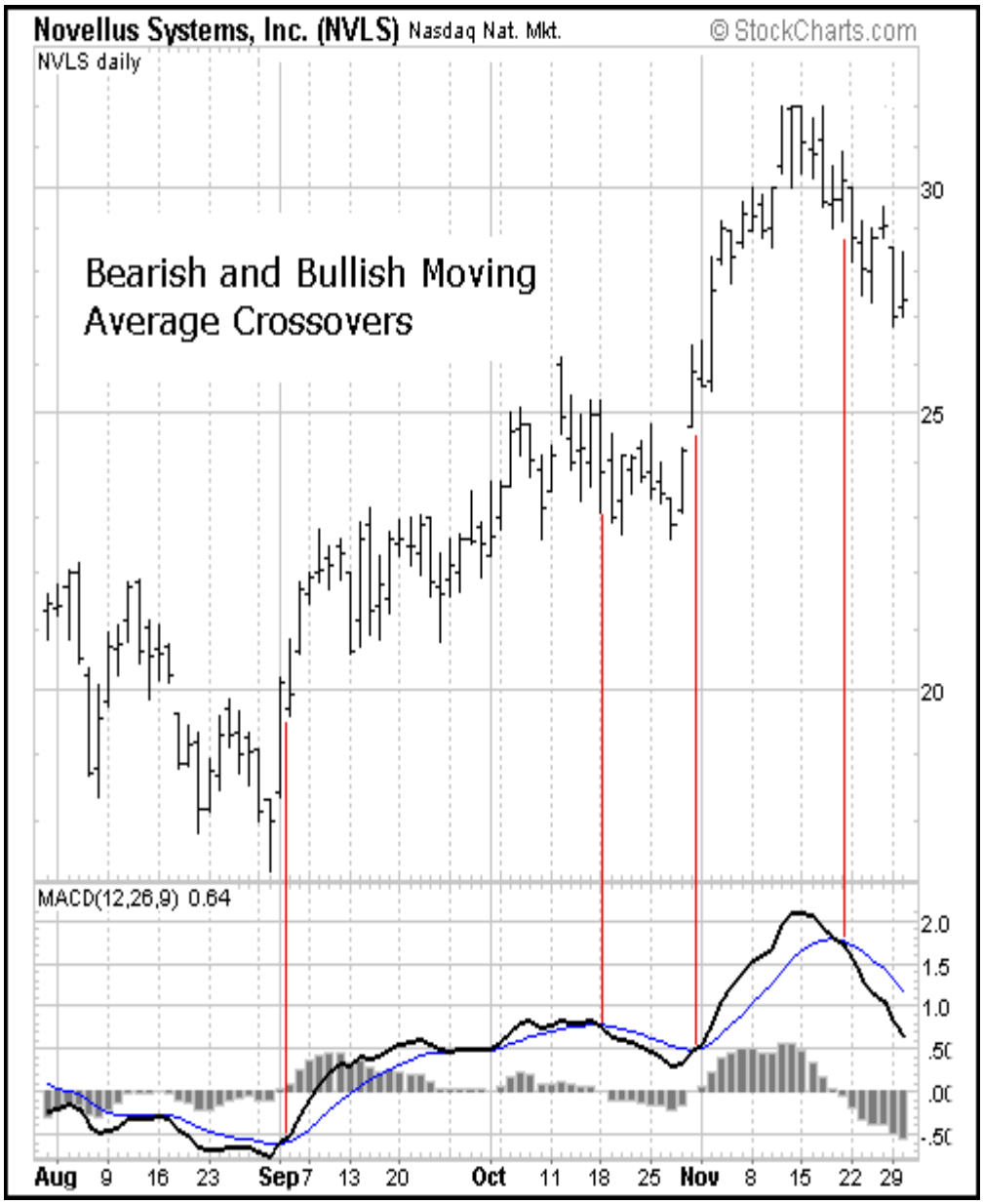
MACD generates bullish signals from three main sources:

1. Positive divergence
2. Bullish moving average crossover
3. Bullish centerline crossover

Positive Divergence

A positive divergence occurs when MACD begins to advance and the security is still in a downtrend and makes a lower reaction low. MACD can either form as a series of higher lows or a second low that is higher than the previous low. Positive divergences are probably the least common of the three signals, but are usually the most reliable and lead to the biggest moves.

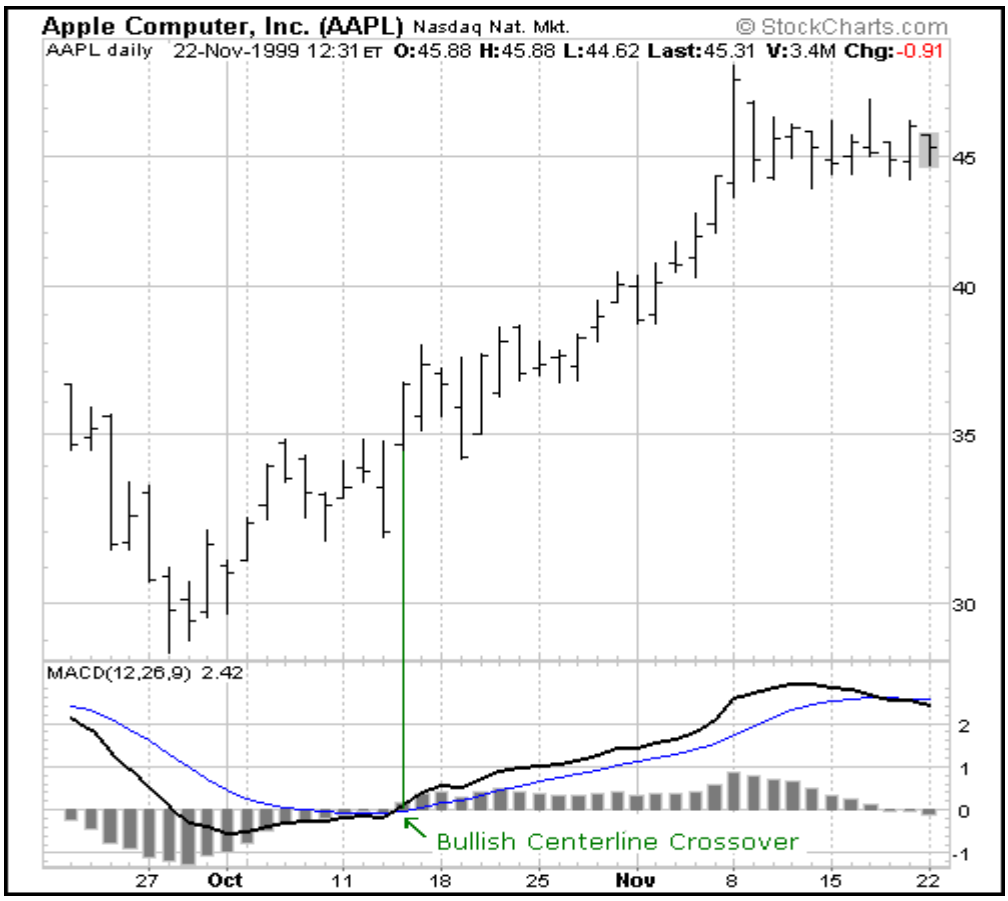
Bullish Moving Average Crossover



A bullish moving average crossover occurs when MACD moves above its 9-day EMA or trigger line. Bullish moving average crossovers are probably the most common signals and as such are the least reliable. If not used in conjunction with other technical analysis tools, these crossovers can lead to whipsaws and many false signals. Moving average crossovers are sometimes used to confirm a positive divergence. The second low or higher low of a positive divergence can be considered valid when it is followed by a bullish moving average crossover.

Sometimes it is prudent to apply a price filter to the moving average crossover in order to ensure that it will hold. An example of a price filter would be to buy if MACD breaks above the 9-day EMA and remains above for three days. The buy signal would then commence at the end of the third day.

Bullish Centerline Crossover



A bullish centerline crossover occurs when MACD moves above the zero line and into positive territory. This is a clear indication that momentum has changed from negative to positive, or from bearish to bullish. After a positive divergence and bullish moving average crossover, the centerline crossover can act as a confirmation signal. Of the three signals, moving average crossover are probably the second most common signals.

Using a Combination of Signals

Even though some traders may use only one of the above signals to form a buy or a sell signal, using a combination can generate more robust signals. In the Halliburton example, all three bullish signals were present and the stock still advanced another 20%. The stock formed a lower low at the end of February, but MACD formed a higher low, thus creating a potential positive divergence. MACD then formed a bullish crossover by moving above its 9-day EMA. And finally, MACD traded above zero to form a bullish centerline crossover. At the time of the bullish centerline crossover, the stock was trading at 32 1/4 and went above 40 immediately after that. In August, the stock traded above 50.

Bearish Signals

MACD generates bearish signals from three main sources. These signals are mirror reflections of the bullish signals.

1. Negative divergence
2. Bearish moving average crossover
3. Bearish centerline crossover

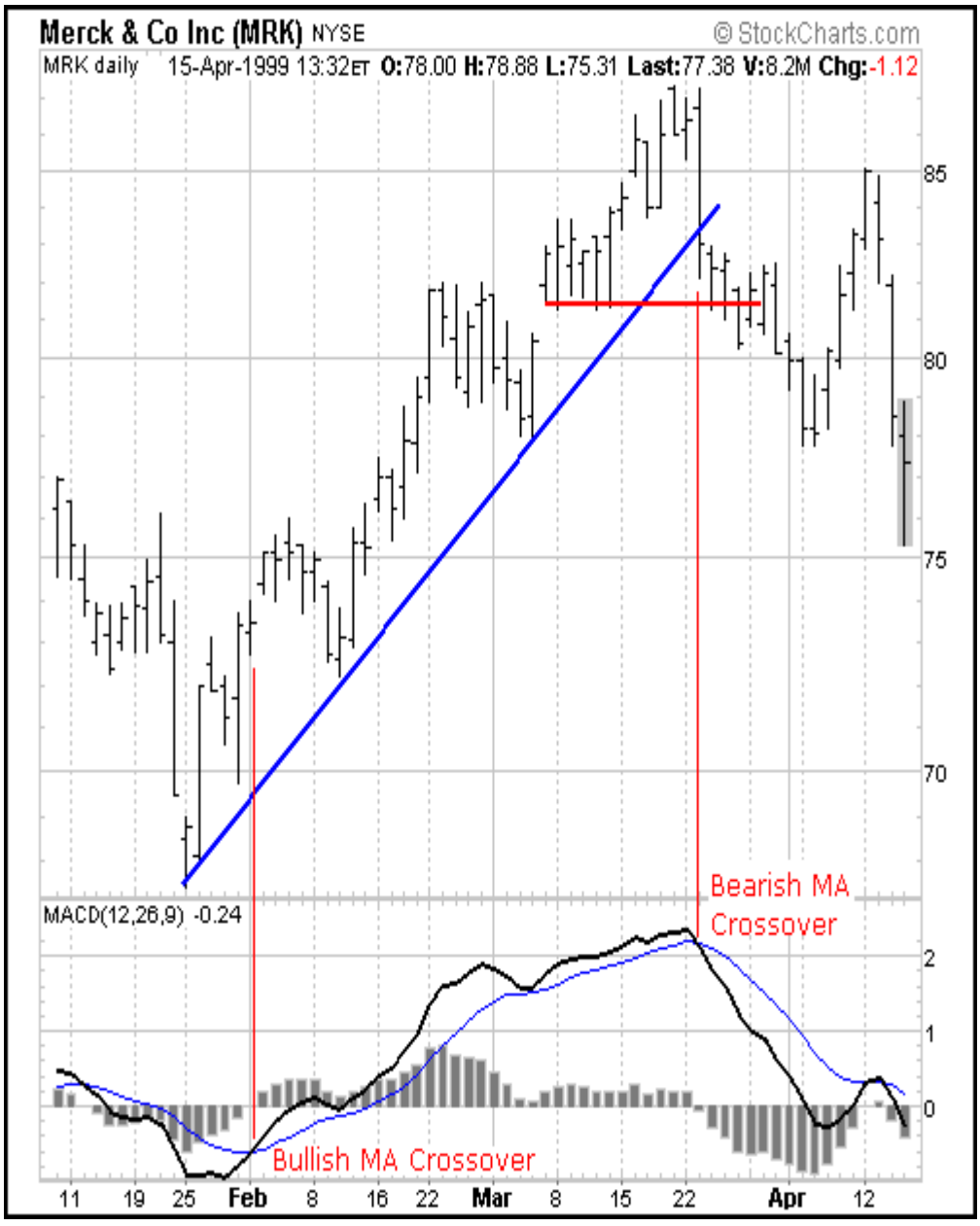
Negative Divergence
A negative divergence forms when the security advances or moves sideways and MACD declines. The negative divergence in MACD can take the form of either a lower high or a straight decline. Negative divergences are probably the least common of the three signals, but are usually the most reliable and can warn of an impending peak.

The FDX chart shows a negative divergence when MACD formed a lower high in May and the stock formed a higher high at the same time. This was a rather blatant negative divergence and signaled that momentum was slowing. A few days later, the stock broke the uptrend line and MACD formed a lower low.

There are two possible means of confirming a negative divergence. First, the indicator can form a lower low. This is traditional peak-and-trough analysis applied to an indicator. With the lower high and subsequent lower low, the up trend for MACD has changed from bullish to bearish. Second, a bearish moving average crossover, which is explained below, can act to confirm a negative divergence. As long as MACD is trading above its 9-day EMA or trigger line, it has not turned down and the lower high is difficult to confirm. When MACD breaks below its 9-day EMA, it signals that the short-term trend for the indicator is weakening, and a possible interim peak has formed.

Bearish moving average crossover

The most common signal for MACD is the moving average crossover. A bearish moving average crossover occurs when MACD declines below its 9-day EMA. Not only are these signals the most common, but they also produce the most false signals. As such, moving average crossovers should be confirmed with other signals to avoid whipsaws and false readings.



Sometimes a stock can be in a strong uptrend and MACD will remain above its trigger line for a sustained period of time. In this case, it is unlikely that a negative divergence will develop. A different signal is needed to identify a potential change in momentum. This was the case with MRK in February and March.

The stock advanced in a strong up trend and MACD remained above its 9-day EMA for 7 weeks. When a bearish moving average crossover occurred, it signaled that upside momentum was slowing. This slowing momentum should have served as an alert to monitor the technical situation for further clues of weakness. Weakness was soon confirmed when the stock broke its uptrend line and MACD continued its decline and moved below zero.

Bearish centerline crossover

A bearish centerline crossover occurs when MACD moves below zero and into negative territory. This is a clear indication that momentum has changed from positive to negative, or from bullish to bearish. The centerline crossover can act as an independent signal, or confirm a prior signal such as a moving average crossover or negative divergence. Once MACD crosses into negative territory, momentum, at least for the short term, has turned bearish.

The significance of the centerline crossover will depend on the previous movements of MACD as well. If MACD is positive for many weeks, begins to trend down and then crosses into negative territory, it would be considered bearish. However, if MACD has been negative for a few months, breaks above zero and then back below, it may be seen as more of a correction. In order to judge the significance of a centerline crossover, traditional

technical analysis can be applied to see if there has been a change in trend, higher high or lower low.

The UIS chart depicts a bearish centerline crossover that preceded a 25% drop in the stock that occurs just off the right edge of the chart. Although there was little time to act once this signal appeared, there were other warnings signs just prior to the dramatic drop.

1. After the drop to trendline support , a bearish moving average crossover formed.
2. When the stock rebounded from the drop, MACD did not even break above the trigger line, indicating weak upside momentum.
3. The peak of the reaction rally was marked by a shooting star candlestick (blue arrow) and a gap down on increased volume (red arrows).
4. After the gap down, the blue trendline extending up from Apr-99 was broken.

In addition to the signal mentioned above, the bearish centerline crossover occurred after MACD had been above zero for almost two months. Since 20-Sept, MACD had been weakening and momentum was slowing. The break below zero acted as the final straw of a long weakening process.

Combining Signals

As with bullish MACD signals, bearish signals can be combined to create more robust signals. In most cases, stocks fall faster than they rise. This was definitely the case with UIS and only two bearish MACD signals were present. Using momentum indicators like MACD, technical analysis can sometimes provide clues to impending weakness. While it may be impossible to predict the length and duration of the decline, being able to spot weakness can enable traders to take a more defensive position.

After issuing a profit warning in late Feb-00, CPQ dropped from above 40 to below 25 in a few months. Without inside information, predicting the profit warning would be pretty much impossible. However, it would seem that smart money began distributing the stock before the actual warnings. Looking at the technical picture, we can spot evidence of this distribution and a serious loss of momentum.

1. In January, a negative divergence formed in MACD.
2. Chaikin Money Flow turned negative on January 21.
3. Also in January, a bearish moving average crossover occurred in MACD (black arrow).
4. The trendline extending up from October was broken on 4-Feb.
5. A bearish centerline crossover occurred in MACD on 10-Feb (green arrow).
6. On 16, 17 and 18-Feb, support at 41 1/2 was violated (red arrow).

A full 10 days passed in which MACD was below zero and continued to decline (thin red lines). The day before the gap down, MACD was at levels not seen since October. For those waiting for a recovery in the stock, the continued decline of momentum suggested that selling pressure was increasing, and not about to decrease. Hindsight is 20/20, but with careful study of past situations, we can learn how to better read the present and prepare for the future.

MACD Benefits

One of the primary benefits of MACD is that it incorporates aspects of both momentum and trend in one indicator. As a trend-following indicator, it will not be wrong for very long. The use of moving averages ensures that the indicator will eventually follow the movements of the underlying security. By using exponential moving averages, as opposed to simple moving averages, some of the lag has been taken out.

As a momentum indicator, MACD has the ability to foreshadow moves in the underlying security. MACD divergences can be key factors in predicting a trend change. A negative divergence signals that bullish momentum is waning and there could be a potential change in trend from bullish to bearish. This can serve as an alert for traders to take some profits in long positions, or for aggressive traders to consider initiating a short position.

MACD can be applied to daily, weekly or monthly charts. MACD represents the convergence and divergence of two moving averages. The standard setting for MACD is the difference between the 12 and 26-period EMA. However, any combination of moving averages can be used. The set of moving averages used in MACD can be tailored for each individual security. For weekly charts, a faster set of moving averages may be appropriate. For volatile stocks, slower moving averages may be needed to help smooth the data. No matter what the characteristics of the underlying security, each individual can set MACD to suit his or her own trading style, objectives and risk tolerance.

MACD Drawbacks

One of the beneficial aspects of MACD may also be a drawback. Moving averages, be they simple, exponential or weighted, are lagging indicators. Even though MACD represents the difference between two moving averages, there can still be some lag in the indicator itself. This is more likely to be the case with weekly charts than daily charts. One solution to this problem is the use of the MACD-Histogram.

MACD is not particularly good for identifying overbought and oversold levels. Even though it is possible to identify levels that historically represent overbought and oversold levels, MACD does not have any upper or lower limits to bind its movement. MACD can continue to overextend beyond historical extremes.

MACD calculates the absolute difference between two moving averages and not the percentage difference. MACD is calculated by subtracting one moving average from the other. As a security increases in price, the difference (both positive and negative) between the two moving averages is destined to grow. This makes its difficult to compare MACD levels over a long period of time, especially for stocks that have grown exponentially.

The AMZN chart demonstrates the difficult in comparing MACD levels over a long period of time. Before 1999, AMZN's MACD is barely recognizable and appears to trade close to the zero line. MACD was indeed quite volatile at the time, but this volatility has been dwarfed since the stock rose from below 20 to almost 100.

An alternative is to use the Price Oscillator, which find the percentage difference between two moving averages:

(12 day EMA - 26 day EMA) / (12 day EMA)

(20 - 18) / 20 = .10 or +10%

The resulting percentage difference can be compared over a longer period of time. On the AMZN chart, we can see that the Price Oscillator provides a better means for a long-term comparison. For the short term, MACD and the Price Oscillator

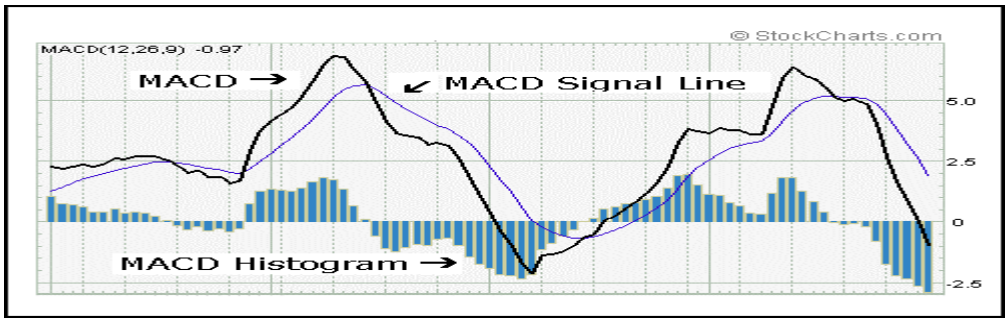
are basically the same. The shape of the lines, the divergences, moving average crossovers and centerline crossovers for MACD and the Price Oscillator are virtually identical.

MACD Conclusion

Since Gerald Appel developed MACD, there have been hundreds of new indicators introduced to technical analysis. While many indicators have come and gone, MACD is an oscillator that has stood the test of time. The concept behind its use is straightforward and its construction simple, yet it remains one of the most reliable indicators around. The effectiveness of MACD will vary for different securities and markets. The lengths of the moving averages can be adapted for a better fit to a particular security or market. As with all indicators , MACD is not infallible and should be used in conjunction with other technical analysis tools.

MACD-Histogram

In 1986, Thomas Aspray developed the MACD-Histogram. Some of his findings were presented in a series of articles for Technical Analysis of Stocks and Commodities. Aspray noted that MACD would sometimes lag important moves in a security, especially when applied to weekly charts. He first experimented by changing the moving averages and found that shorter moving averages did indeed speed up the signals. However, he was looking for a means to anticipate MACD crossovers. One of the answers he came up with was the MACD-Histogram.

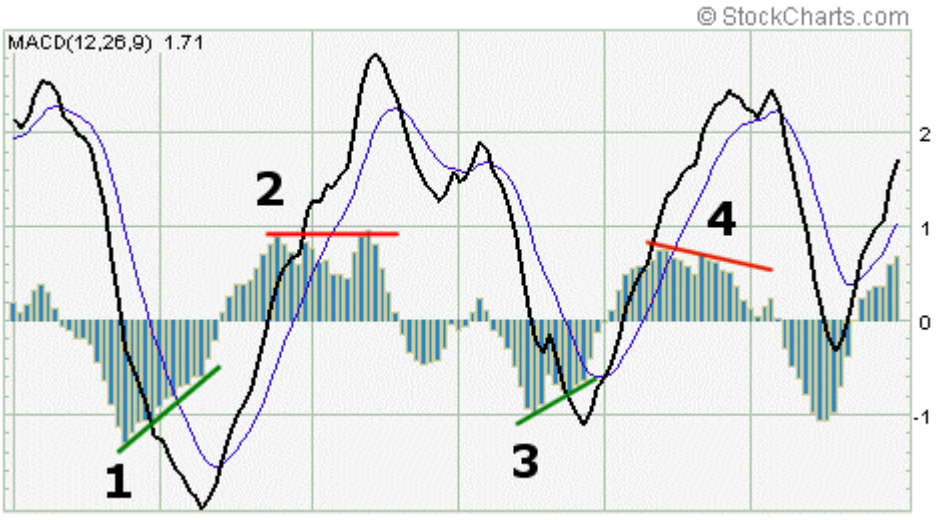


Definition and Construction

The MACD-Histogram represents the difference between MACD and the 9-day EMA of MACD, which can also be referred to as the signal or trigger line. The plot of this difference is presented as a histogram, making centerline crossovers and divergences are easily identifiable. A centerline crossover for the MACD-Histogram is the same as a moving average crossover for MACD. If you will recall, a moving average crossover occurs when MACD moves above or below the signal line.

If the value of MACD is larger than the value of its 9-day EMA, then the value on the MACD-Histogram will be positive. Conversely, if the value of MACD is less than its 9-day EMA, then the value on the MACD-Histogram will be negative.

Further increases or decreases in the gap between MACD and its 9-day EMA will be reflected in the MACD-Histogram. Sharp increases in the MACD-Histogram indicate that MACD is rising faster than its 9-day EMA and bullish momentum is strengthening. Sharp declines in the MACD-Histogram indicate that MACD is falling faster than its 9-day EMA and bearish momentum is increasing.



On the chart above, we can see that MACD-Histogram movements are relatively independent of the actual MACD. Sometimes MACD is rising while the MACD-Histogram is falling. At other times,

MACD is falling while MACD-Histogram is rising. MACD-Histogram does not reflect the absolute value of MACD, but rather the value of MACD relative to its 9-day EMA. Usually, but not always, a move in MACD is preceded by a corresponding divergence in MACD-Histogram.

1. The first point shows a sharp positive divergence in MACD-Histogram that preceded a bullish moving average crossover.
2. On the second point, MACD continued to new highs, but MACD-Histogram formed two equal highs. Although not a textbook positive divergence, the equal high failed to confirm the strength seen in MACD.
3. A positive divergence formed when MACD-Histogram formed a higher low and MACD continued lower.
4. A negative divergence formed when MACD-Histogram formed a lower high and MACD continued higher.

Usage

Thomas Aspray designed the MACD-Histogram as a tool to anticipate a moving average crossover in MACD. Divergences between MACD and the MACD-Histogram are the main tool used to anticipate moving average crossovers. A positive divergence in the MACD-Histogram indicates that MACD is strengthening and could be on the verge of a bullish moving average crossover. A negative divergence in the MACD-Histogram indicates that MACD is weakening and can act to foreshadow a bearish moving average crossover in MACD.

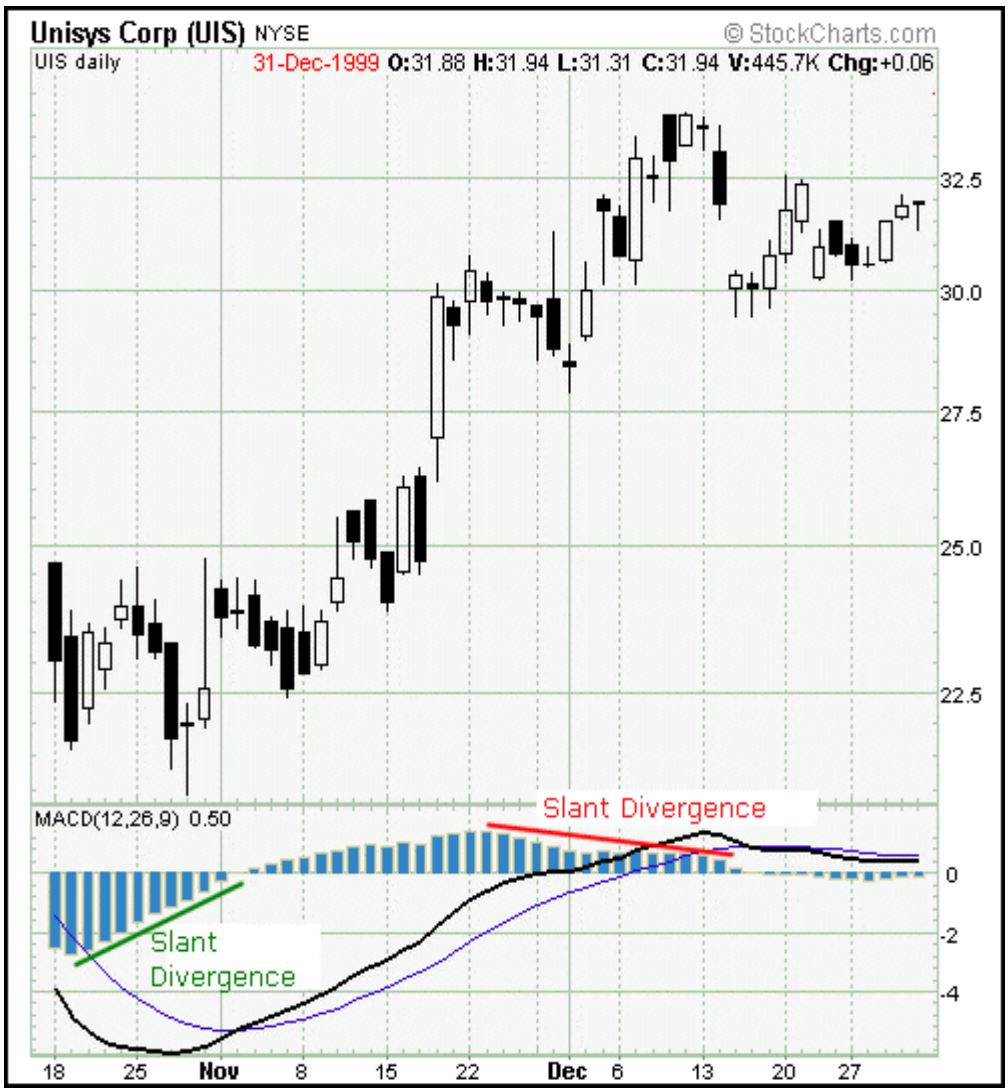
In his book, Technical Analysis of the Financial Markets, John Murphy asserts that the MACD-Histogram is best used to identify periods when the gap between MACD and its 9-day EMA is either widening or shrinking. Broadly speaking, a widening gap indicates strengthening momentum and a shrinking gap indicates weakening momentum. Usually a change in the MACD-Histogram will precede any changes in MACD.

Signals

The main signal generated by the MACD-Histogram is a divergence followed by a moving average crossover. A bullish

signal is generated when a positive divergence forms and there is a bullish centerline crossover. A bearish signal is generated when there is a negative divergence and a bearish centerline crossover. Keep in mind that a **centerline crossover** for the MACD-Histogram represents a **moving average crossover** for MACD.

Divergences can take many forms and varying degrees. Generally speaking, two types of divergences have been identified: the slant divergence and the peak-trough divergence.



A slant divergence forms when there is a continuous and relatively smooth move in one direction (up or down) to form the divergence. Slant divergences generally cover a shorter timeframe than divergences formed with two peaks or two troughs. A slant divergence can contain some small bumps (peaks or troughs) along the way. The world of technical analysis is not

perfect and there are exceptions to most rules and hybrids for many signals.

A peak-trough divergence occurs when at least two peaks or two troughs develop in one direction to form the divergence. A series of two or more rising troughs (higher lows) can form a positive divergence and a series of two or more declining peaks (lower highs) can form a negative divergence. Peak-trough divergences usually cover a longer timeframe than slant divergences. On a

daily chart, a peak-trough divergence can cover a timeframe as short as two weeks or as long as several months.

Usually, the longer and sharper the divergence is, the better any ensuing signal will be. Short and shallow divergences can lead to false signals and whipsaws. In addition, it would appear that peak-trough divergences are a bit more reliable than slant divergences. Peak-trough divergences tend to be sharper and cover a longer time frame than slant divergences.

MACD-Histogram Benefits

The main benefit of the MACD-Histogram is its ability to anticipate MACD signals. Divergences usually appear in the MACD-Histogram before MACD moving average crossovers. Armed with this knowledge, traders and investors can better prepare for potential trend changes.

MACD-Histogram can be applied to daily, weekly or monthly charts. (Note: This may require some tinkering with the number of periods used to form the original MACD; shorter or faster moving averages may be required for weekly and monthly charts.) Using weekly charts, the broad underlying trend of a stock can be determined. Once the broad trend has been determined, daily charts can be used to time entry and exit strategies.

In Technical Analysis of the Financial Markets, John Murphy advocates this type of two-tiered approach to investing in order to avoid making trades against the major trend. The weekly MACD-Histogram can be used to generate a long-term signal in order to establish the tradable trend. Then only short-term signals that jibe with the major trend are eligible for use. If the long-term trend were bullish, only positive divergences with bullish centerline crossovers would be considered valid for the MACD-Histogram. If the long-term trend were bearish, only negative divergences with bearish centerline crossovers would be considered valid.

On the IBM weekly chart, the MACD-Histogram generated four signals. Before each moving average crossover in MACD, a corresponding divergence formed in the MACD-Histogram. To make adjustments for the weekly chart, the moving averages

have been shortened to 6 and 12. This MACD is formed by subtracting the 6-week EMA from the 12-week EMA. A 6-week EMA has been used as the trigger. The MACD-Histogram is calculated by taking the difference between MACD (6/12) and the 6-day EMA of MACD (6/12).

1. The first signal was a bearish moving average crossover in Jan-99. From its peak in late Nov-98, the MACD-Histogram formed a negative divergence that preceded the bearish moving average crossover in MACD.
2. The second signal was a bullish moving average crossover in April. From its low in mid-February, the MACD-Histogram formed a positive divergence that preceded the bullish moving average crossover in MACD.
3. The third signal was a bearish moving average crossover in late July. From its May peak, the MACD-Histogram formed a negative divergence that preceded a bearish moving average crossover in MACD.
4. The final signal was a bullish moving average crossover, which was preceded by a slight positive divergence in MACD-Histogram.

The third signal was based on a peak-trough divergence. Two readily identifiable and consecutive lower peaks formed to create the divergence. The peaks and troughs on the previous divergences, although identifiable, do not stand out as much.

MACD-Histogram Drawbacks

The MACD-Histogram is an indicator of an indicator or a derivative of a derivative. MACD is the first derivative of the price action of a security and the MACD-Histogram is the second derivative of the price action of a security. As the second derivative, the MACD-Histogram is further removed from the actual price action of the underlying security. The further removed an indicator is from the underlying price action, the greater the chances of false signals. Keep in mind that this is an indicator of an indicator. MACD-Histogram should not be compared directly with the price action of the underlying security.

Because MACD-Histogram was designed to anticipate MACD signals, there may be a temptation to jump the gun. The MACD-

Histogram should be used in conjunction with other aspects of technical analysis. This will help to alleviate the temptation for early entry. Another means to guard against early entry is to combine weekly signals with daily signals. There will of course be more daily signals than weekly signals. However, by using only the daily signals that agree with the weekly signals, there will be fewer daily signals to act on. By acting only on those daily signals that are in agreement with the weekly signals, you are also assured of trading with the longer trend and not against it.

Be careful of small and shallow divergences. While these may sometimes lead to good signals, they are also more apt to create false signals. One method to avoid small divergences is to look for larger divergences with two or more readily identifiable peaks or troughs. Compare the peaks and troughs from past action to determine significance. Only peaks and troughs that appear to be significant should warrant attention.

12

Fast stochastic...Is he really?

LOWER INDICATOR 2

Keep the faith, all will be revealed in the last chapter but until then."Over to you, Arthur."

Overview

Developed by George C. Lane in the late 1950s, the Stochastic Oscillator is a momentum indicator that shows the location of the current close relative to the high/low range over a set number of periods. Closing levels that are consistently near the top of the range indicate accumulation (buying pressure) and those near the bottom of the range indicate distribution (selling pressure).

Formula

%K =	100 x (	Recent Close – Lowest Low (n) / Highest High(n) – Lowest Low(n)	)
%D =	3-period moving average of %K		
(n)=	Number of periods used in calculation		

Periods	High	Low	Close
1	119.50	116.00	119.13
2	119.94	116.00	116.75
3	118.44	111.63	113.50
4	114.19	110.06	111.56
5	112.81	109.63	112.25
6	113.44	109.13	110.00
7	115.81	110.38	113.50
8	117.50	114.06	117.13
9	118.44	114.81	115.63
10	116.88	113.13	114.13
11	119.00	116.19	118.81
12	119.75	117.00	117.38
13	119.13	116.88	119.13
14	119.44	114.56	115.38

%K =	100 x (	115.38 – 109.13 / 119.94 – 109.13	)	= 57.81

A 14-day %K (14-period Stochastic Oscillator) would use the most recent close, the highest high over the last 14 days and the lowest low over the last 14 days. The number of periods will vary according to the sensitivity and the type of signals desired. As with RSI, 14 is a popular number of periods for calculation.

%K tells us that the close (115.38) was in the 57th percentile of the high/low range, or just above the mid-point. Because %K is a percentage or ratio, it will fluctuate between 0 and 100. A 3-day simple moving average of %K is usually plotted alongside to act as a signal or trigger line, called %D.

Slow versus Fast versus Full

There are three types of Stochastic Oscillator: Fast, Slow, and Full. The Full Stochastic is discussed later. For now, let's look at Fast versus Slow. As shown above, the Fast Stochastic Oscillator is made up of %K and %D. In order to avoid confusion between the two, I'll use %K (fast) and %D (fast) to refer to those used in the Fast Stochastic Oscillator, and %K (slow) and %D (slow) to refer to those used in the Slow Stochastic Oscillator. The driving force behind both Stochastic Oscillators is %K (fast), which is found using the formula provided above.

(Click here to see a live example of Fast and Slow Stochastics)

In the CSCO example, the Fast Stochastic Oscillator is plotted in the box just below the price plot. The thick black line represents %K (fast) and the thin red line represents %D (fast). Also called the trigger line, %D (fast) is a smoothed version of %K (fast). One method of smoothing data is to apply a moving average. To smooth %K (fast) and create %D (fast), a 3-period simple moving average was applied to %K (fast). Notice how the %K (fast) line pierces the %D (fast) line a number of times during May, June and July. To alleviate some of these false breaks and smooth %K (fast), the Slow Stochastic Oscillator was developed.

The Slow Stochastic Oscillator is plotted in the lower box: the thick black line represents %K (slow) and the thin red line represents %D (slow). To find %K (slow) in the Slow Stochastic Oscillator, a 3-day SMA was applied to %K (fast). This 3-day SMA slowed (or smoothed) the data to form a slower version of %K (fast). A close examination would reveal that %D (Fast), the thin red line in the Fast Stochastic Oscillator, is identical to %K (Slow), the thick black line in the Slow Stochastic Oscillator. To form the trigger line, or %D (slow) in the Slow Stochastic Oscillator, a 3-day SMA was applied to %K (Slow).

The **Full Stochastic Oscillator** takes three parameters. Just as in the Fast and Slow versions, the first parameter is the number of periods used to create the initial %K line and the last parameter is the number of periods used to create the %D (full) signal line. What's new is the additional parameter, the one in the middle. It is a "smoothing factor" for the initial %K line. The %K (full) line that gets plotted is a n-period SMA of the initial %K line (where n is equal to the middle parameter).

The Full Stochastic Oscillator is more advanced and more flexible than it's Fast and Slow cousins. You can even use it to duplicate the other versions. For example, a (14, 3) Fast Stochastic is equivalent to a (14, 1, 3) Full Stochastic and a (12, 2) Slow Stochastic is equal to a (12, 3, 2) Full Stochastic.

%K and %D Recap

- %K (fast) = %K formula presented above using x periods
- %D (fast) = y-day SMA of %K (fast)

- %K (slow) = 3-day SMA of %K (fast)
- %D (slow) = y-day SMA of %K (slow)
- %K (full) = y-day SMA of %K (fast)
- %D (full) = z-day SMA of %K (full)

where x is the first parameter, y is the second parameter and (in the case of Full stochastics), z is the third parameter. In the case of Fast and Slow Stochastics, x is typically 14 and y is usually set to 3.

Use

Readings below 20 are considered oversold and readings above 80 are considered overbought. However, Lane did not believe that a reading above 80 was necessarily bearish or a reading below 20 bullish. A security can continue to rise after the Stochastic Oscillator has reached 80 and continue to fall after the Stochastic Oscillator has reached 20. Lane believed that some of the best signals occurred when the oscillator moved from overbought territory back below 80 and from oversold territory back above 20.

Buy and sell signals can also be given when %K crosses above or below %D. However, crossover signals are quite frequent and can result in a lot of whipsaws.

One of the most reliable signals is to wait for a divergence to develop from overbought or oversold levels. Once the oscillator reaches overbought levels, wait for a negative divergence to develop and then a cross below 80. This usually requires a double dip below 80 and the second dip results in the sell signal. For a buy signal, wait for a positive divergence to develop after the indicator moves below 20. This will usually require a trader to disregard the first break above 20. After the positive divergence forms, the second break above 20 confirms the divergence and a buy signal is given.

Example

In the IBM example above, it is clear that acting solely on overbought and oversold crossovers can generate false signals. Using crossovers of %D (slow) by %K (slow) can result in some good signals, but there are still whipsaws. By looking for divergences and overbought/oversold crossovers together, the 14-day Slow Stochastic Oscillator can produce fewer yet more reliable signals. The Slow Stochastic Oscillator produced 2 solid signals in IBM between Aug-99 and Mar-99. In Nov-99, a buy signal was given when the indicator formed a positive divergence and moved above 20 for the second time. Note that the double top in

Nov-Dec (gray circle) was not a negative divergence -- the stock continued higher after this formed. In Jan-00, a sell signal was given when a negative divergence formed and the indicator dipped below 80 for the second time.

13
RSI....And it has nothing to do with Tennis Elbow

LOWER INDICATOR 3

Deep breath, this is the last one, and having got through this lot I will put it into plain English in the last chapter.

Overview

Developed by J. Welles Wilder and introduced in his 1978 book, New Concepts in Technical Trading Systems, the Relative Strength Index (RSI) is an extremely useful and popular momentum oscillator. The RSI compares the magnitude of a stock's recent gains to the magnitude of its recent losses and turns that information into a number that ranges from 0 to 100. It takes a single parameter, the number of time periods to use in the calculation. In his book, Wilder recommends using 14 periods.

The RSI's full name is actually rather unfortunate as it is easily confused with other forms of Relative Strength analysis such as John Murphy's "Relative Strength" charts and IBD's "Relative Strength" rankings. Most other kinds of "Relative Strength" stuff involve using more than one stock in the calculation. Like most true indicators, the RSI only needs one stock to be computed. In order to avoid confusion, many people avoid using the RSI's full name and just call it "the RSI."

Formula

$$RSI = 100 - \frac{100}{1 + RS}$$

$$\text{Average Gain} = \frac{\text{(Total Gains/n)}}{\text{(Total Losses/n)}} = \text{Average Loss}$$

$$\text{First RS} = \text{(Average Gain/Average Loss)}$$

$$\text{Smoothed RS} = \frac{\text{[(previous Average Gain) x 13 + Current Gain]/14}}{\text{[(previous Average Loss) x 13 + Current Loss]/14}}$$

n = number of RSI periods

To simplify the formula, the RSI has been broken down into its basic components which are **the Average Gain**, **the Average Loss**, **the First RS**, and the subsequent **Smoothed RS's**.

For a 14-period RSI, the Average Gain equals the sum total all gains divided by 14. Even if there are only 5 gains (losses), the total of those 5 gains (losses) is divided by the total number of RSI periods in the calculation (14 in this case). The Average Loss is computed in a similar manner.

Calculation of the First RS value is straightforward: divide the Average Gain by the Average Loss. All subsequent RS calculations use the previous period's Average Gain and Average Loss for smoothing purposes. See the "Smoothed RS" formula above for details. The table below illustrates the formula in action.

	Close	Chg	Adva	Decl	AvgGain	AvgLoss	RS	RSI
	46.1250							
1	47.1250	1.0000	1.0000					
2	46.4375	-0.6875		0.6875				
3	46.9375	0.5000	0.5000					
4	44.9375	-2.0000		2.0000				
5	44.2500	-0.6875		0.6875				
6	44.6250	0.3750	0.3750					
7	45.7500	1.1250	1.1250					
8	47.8125	2.0625	2.0625					
9	47.5625	-0.2500		0.2500				
10	47.0000	-0.5625		0.5625				
11	44.5625	-2.4375		2.4375				
12	46.3125	1.7500	1.7500					
13	47.6875	1.3750	1.3750					
14	46.6875	-1.0000		1.0000	0.5848	0.5446	1.0738	51.779
15	45.6875	-1.0000		1.0000	0.5430	0.5772	0.9409	48.477
16	43.0625	-2.6250		2.6250	0.5043	0.7234	0.6970	41.073
17	43.5625	0.5000	0.5000		0.5040	0.6718	0.7502	42.863
18	44.8750	1.3125	1.3125		0.5617	0.6238	0.9005	47.382
19	43.6875	-1.1875		1.1875	0.5216	0.6640	0.7855	43.992

(Click here for an Excel spreadsheet with this example in it.)

Here's how lines 14 and 15 were calculated:

$$\text{First RS} = \frac{(.5848)}{(.5446)} = 1.0738$$

$$\text{RSI (line 14)} = 100 - \frac{100}{1 + 1.0738} = 51.779$$

$$\text{Smoothed RS} = \frac{(((.5848 \times 13) + 0.00) / 14)}{(((.5446 \times 13) + 1.00) / 14)} = .9409$$

$$\text{RSI (line 15)} = 100 - \frac{100}{1 + .9409} = 48.477$$

Note: *It is important to remember that the Average Gain and Average Loss are **not true averages**! Instead of dividing by the number of gaining (losing) periods, total gains (losses) are always divided by the specified number of time periods - 14 in this case.*

When the Average Gain is greater than the Average Loss, the RSI rises because RS will be greater than 1. Conversely, when the average loss is greater than the average gain, the RSI declines because RS will be less than 1. The last part of the formula ensures that the indicator oscillates between 0 and 100.

Important Note: The more data points that are used to calculate the RSI, the more accurate the results. The smoothing factor is a continuous calculation that - in theory - takes into account *all* of the closing values in the dataset. If you start an RSI calculation in the middle of an existing dataset, your values will only approximate the true RSI value. SharpCharts uses *at least* 250 datapoints prior to the starting date of any chart (assuming that much data exists) when calculating its RSI values. To duplicate its RSI number, you'll need to use at least that much data also.

Use

Overbought/Oversold

Wilder recommended using 70 and 30 and overbought and oversold levels respectively. Generally, if the RSI rises above 30 it is considered bullish for the underlying stock. Conversely, if the RSI falls below 70, it is a bearish signal. Some traders identify the long-term trend and then use extreme readings for entry points. If the long-term trend is bullish, then oversold readings could mark potential entry points.

Divergences

Buy and sell signals can also be generated by looking for positive and negative divergences between the RSI and the underlying stock. For example, consider a falling stock whose RSI rises from a low point of (for example) 15 back up to say, 55. Because of how the RSI is constructed, the underlying stock will often reverse its direction soon after such a divergence. As in that example, divergences that occur after an overbought or oversold reading usually provide more reliable signals.

Centerline Crossover

The centerline for RSI is 50. Readings above and below can give the indicator a bullish or bearish tilt. On the whole, a reading above 50 indicates that average gains are higher than average losses and a reading below 50 indicates that losses are winning the battle. Some traders look for a move above 50 to confirm bullish signals or a move below 50 to confirm bearish signals.

Example

(Click here to see a live example of RSI)

The DELL example shows a number of extreme readings as well as a negative divergence. In Oct-99, RSI reached oversold for a brief moment to mark the low around 38. The next extreme reading (overbought) occurred after a large advance that peaked in Dec-99. RSI reached overbought levels in late Dec-99 and moved below 50 by the second week of Jan-00. The next oversold reading occurred in Feb for another brief moment and marked the low around 35. By the end of Feb-00, RSI moved back above

50 and into overbought territory in March. A negative divergence formed in March and marked the high in the upper fifties.

14

The age of technology and he harps on about candles

Price Display

Finally we get to the most important setting of them all, the rest are just window-dressings. This is the one that will make you money.

This is also the point at which you are going to have to learn one or two things about CANDLESTICK formations.

I have let you skip-over the other chapters on indicators. You are going to have to read this one.

There is a stack of information on the internet regarding candlestick formations.

The following extracts are taken from various authors. It might seem like there is an awful lot of information to take on board but it is not necessary to learn all of the patterns and formations. Just be aware of the main patterns and with a little bit of time and practise you will get the hang of them.

I have tried to include a whole host of different signals, so that you can get a good idea of candlestick patterns.

Have a look at all of the charts and see if you can start to recognize any formations. Once again, I will go over some of the patterns in the final chapter, so take heart.

The History of Candlesticks

Throughout Candlestick Analysis you are going to find many war-like references. Between 1500 and 1600 the territories of today's Japan were at constant war. Each daimyo (feudal lord) was in constant contention to take over their neighbor. This one hundred year period is known as Sengoku Jidai or the "Age of Country at War". This was a definite period of turmoil. It slowly came to order in the early 1600's through three dynamic generals - Nobunaga Oda, Hideyoshi Toyotomi, and Leyasu Tokugawa. Their combined leadership prowess has become legendary folklore in Japan's history. Their achievements are described as: "Nobunaga piled the rice, Hideyoshi kneaded the dough, and Tokugawa ate the cake." All the contributions from these great generals unified Japan into one nation. Tokugawa's family ruled the country from 1615 to 1867. This become known as the Tokugawa Shogunate Era.

While the Candlestick methodology was being developed, a military environment persisted in Japan. Understandably, the Candlestick technique employs extensive military terminology for its explanations. Investing is correlated to battle. It requires the same tactical abilities to win. The investor has to prepare for winning trades as a general prepares for battle. A strategy is required, the psychology of coming events have to be thought through. Competition comes into play. Aggressive maneuvers and strategic withdrawals are required to eventually win the war - to achieve financial success.

As stability settled over the Japanese culture during the early 17th centuy, new opportunities became apparent also. The centralized government lead by Tokugawa diminished the feudal system. Local markets began to expand to a national scale. The demise of local markets created the growth of technical analysis in Japan.

Osaka became regarded as Japan's capital during the Toyotomi reign. Its location near the sea made it a commercial center. Land travel was slow and dangerous, not to mention costly. It became a natural location for the development of the national depot system, assembling and disbursing supplies and market products. It rapidly evolved into Japan's largest city of finance and commerce. Osaka, the "Kitchen of Japan" with its vast system of warehouses, eventually established an atmosphere of price stability by reducing regional imbalances of supply. Osaka became the profit center of all Japan, completely altering the normal social standards. In all other cities the quest for profits was despised. Japan was composed of four classes, the Soldier, the Farmer, the Artisan, and the Merchant. It was not until the 1700's that the merchants broke down the social barrier. "Mokarimakka" which means " are you making a profit?" is still the common greeting in Osaka today.

Under Hideyoshi's reign, a man named Yodoya Keian become a successful war merchant. He had exceptional abilities to transport, distribute and set the price of rice. His reputation become so well known, his front yard become the first rice exchange. Unfortunately, he became very wealthy. Unfortunate because the Bakufu (the military government lead by the Shogun) relieved

him of all his fortune. This was done based upon the charge that he was living a life of luxury beyond his social rank. This was during a period in the mid 1600's when the Bakufu was becoming very leary of the merchant class. A number of merchants tried to corner the rice market. They were punished by having their children executed. They were exiled and their wealth was confiscated.

The Dojima Rice Exchange, the institutionalized market that developed in Yodoya's front yard, was established in the late 1600's. Merchants were now capable of grading the rice, and negotiated setting the market price. After 1710, actual rice trading expanding into issuance and negotiating for rice warehouse receipts. These become known as rice coupons, and were the first forms of futures. The Osaka rice brokerage became the foundation for the city's wealth. 1,300 rice dealers occupied the Exchange. Due to the debasing of coinage, rice became the medium of exchange. A daimyo in need of money could send his surplus rice to Osaka and get a receipt from a warehouse. This receipt (coupon) could then be sold. As with many daimyo, cashflow problems could be eliminated through this method. Sometimes many future years of crops were mortgaged to take care of current expenses.

With the rice coupon becoming an actively traded entity, the Dojima Rice exchange became the world's first futures exchange. Rice coupons were also called "empty rice" coupons, rice that was not in physical possession. Rice futures trading became so established in the Japanese marketplace, that in 1749, 110,000 bales (rice traded in bales) were freely traded while there were only 30,000 bales in existence throughout Japan.

It was during this time period that Candlestick trading became more refined. Candlestick analysis had been developed over the years simply due to the tracking of rice price movements. However, in the mid 1700's they were really fully utilized. "The god of the markets" Homna came into the picture. Munehisa Homna, the youngest son of the Homna family, inherited the family's business due to his extraordinary trading savvy. This at a time when the Japanese culture, as well as many other cultures, thought it common that the eldest son should inherit the family business. The trading firm was moved from their city, Sakata, to Edo (Tokyo). Homna's research into historic price moves and weather conditions established more concrete interpretations into what became known as Candlesticks. His research and findings, known as "Sakata Rules" became the framework for Japanese investment philosophy.

After dominating the Osaka rice markets, Homna eventually went on to amass greater fortunes in the Tokyo exchanges. It was said that he had over one hundred winning trades in a row. His abilities became legendary and were the basis of Candlestick analysis.

Japanese Candlestick analysis was never a hidden or secretive trading system. In was successfully used in Japan for hundreds of years. It has been only recently, about 25 years ago, that it first made its way into the U.S. trading community. Until then, there just wasn't any interest from Western cultures to investigate the Candlestick Technique. Even then, it was not

noticed all that much. The perception has been that it was difficult to learn and very time consuming. That may have been true until recently. The first books introducing it into the U.S. trading arena would describe how to make wooden boxes that were backlit. Then the chart graphs could be better viewed. Fortunately, the advent of computers and computer programming has taken Candlestick analysis ahead by leaps and bounds.

Until recently, the investment community knew about Candlesticks, they just didn't know how to use them effectively. Interest has been increasing dramatically now that the roaring markets have collapsed. Investors, new and old, are now trying to investigate methods that protect them from the severe losses that occurred from March 2000 until now.

Hundreds of years of analysis and interpretation can be much more easily extracted through computer programming. Huge fortunes were amassed with simple charting techniques. The same will be true with all the benefits that computer software provides the investor today.

High Profit Candlestick Patterns And Conventional Technical Analysis - A Beautiful Synergy

Technical analysis is the pursuit of finding indicators or chart patterns that anticipate when a reversal may occur. Adding Candlestick analysis to any conventional technical method improves the return results multifold. The weak link in most technical analysis is the “anticipating” factor.

Trend lines, for example, become established when they connect previous peaks or bottoms and a relatively straight line can be drawn through those points. This is one of the most widely used techniques in technical analysis, because it is simple and obvious to even the inexperienced investor. When a trend line becomes so obvious, it can become a self-fulfilling support or resistance level due to the number of people buying or selling once the line is hit. However, the subjective part of this investing technique relies upon whether that level is going to maintain as a support or resistance level again.

Candlestick analysis dramatically reduces the subjectivity of that technique. Simple observations are all that is required. First, where are the stochastics as a price approaches the trend line? Next, is there the semblance of a Candlestick signal formation about to develop? Upon the approach of a support line, if stochastics appear to have no indication altering its downward course and the candle formations show no signs of a reversal potential, at least the investor has the warning that maybe this time the support level may not hold. However, if the stochastics show signs of the downward trajectory starting to wane, and a candlestick “buy” signal developing, the investor has an early indication that the support level is going to hold once again. This allows the Candlestick investor to step in prior to the rest of the support line watchers, who need to have more confirmation that the support level held.

This visual evidence creates opportunities for investors to take advantage of numerous patterns. It allows the Candlestick investor to establish positions at the extreme bottoms of a potential move. The conventional technicians add profits for the Candlestick investor as they commit money to the move after their indicators confirm the move. What the candlestick signal makes obvious today, the conventional technical investor may not see for another two or three days.

The added visual information provided by the candlestick formations produces profitable pattern opportunities that other techniques do not even identify or only recognize well after the move has begun.

The J-Hook pattern is an example. See Figure 1, LTR - Loews Corporation. Once the trend started up, the pattern formed when the price pulled back for a few days. However, the stochastics never reached the oversold area and they came down only part way before hooking back up. The signals indicated buying before it pulled back too much, showing the buyers were going to test the high of the previous week. The gap above the recent high indicated that the buyers were very anxious to see prices go to much higher levels.

Figure 1, LTR - Loews Corporation.

A J-Hook pattern provides a double profit opportunity. First, the move has a good probability of testing the recent high. This move alone could be a 4%, 6%, or 10% profit potential. Once it gets to the recent high level, the Candlestick investor has another immediate advantage. Analysis of the stochastics and observation of whether a signal is forming gives the

Candlestick investor the ability to maximize profits. If a weak signal occurs as the recent high is being approached again, and the stochastics are flattening out or, even worse, curling down, that is usually an indication that the high is not going to be breached. Take profits here. If, however, no selling is indicated and the stochastics have curled upward and appear strong, that is a good indication that the high will be broken. When that happens, the conventional technicians, watching to see if a breakout will occur at the old high, start piling in.

Strong patterns that are not obvious to investors, other than the Candlestick investor, are Fry-Pan Bottoms and Dumpling Tops. See Figure 2 and Figure 3. The combination of white bodied days and black bodied days that set up the Fry-Pan Bottom and Dumpling Top, provides insights to a reversal that the conventional technical methods do not have to ability to identify. Tower Tops and Tower Bottoms are additional patterns that are more apparent using Candlesticks. (See "Profitable Candlestick Trading", pages 168 - 175, for more information on all the formations mentioned here.)

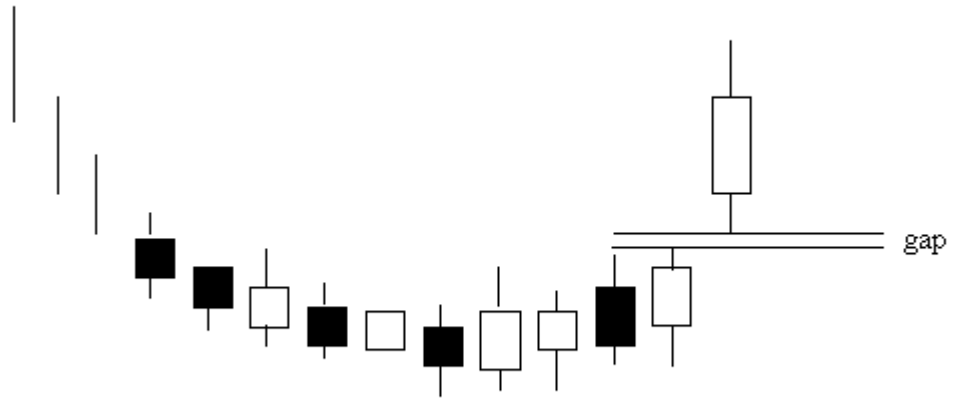


Figure 2, Fry Pan Bottom.

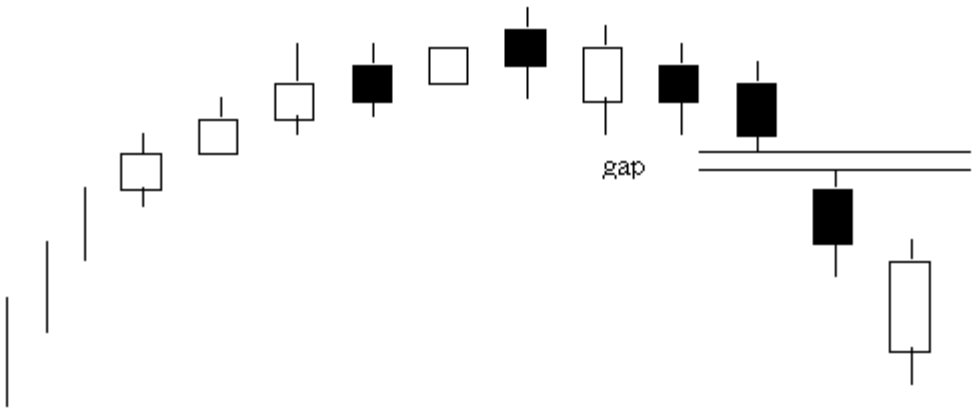


Figure 3, Dumpling Top.

Whether one is using simple trend line techniques or more sophisticated Elliot Wave analysis, the Candlestick formations provide immediate information allowing more intelligent use of those techniques. The same approach, analyzing where the stochastics are and if a signal is forming, better pinpoints which Fibonacci retracement level will be the reversal level.

Studying and becoming familiar with the different patterns can boost profits immensely. Knowing when to commit funds ahead of the rest of the crowd takes advantage of their buying or selling after you have established your position. Being able to anticipate where buying or selling will occur from investors using the conventional technical methods, now acts as alert indicators versus being the main impetus for putting on a position. Your correct trade ratio will climb dramatically.

Candlesticks make “relatively” high probability trades into “extremely” high probability trades. The fact that a pattern has been identified through the years with conventional technical analysis provides the format for taking full advantage of a candlestick formation. The difference between anticipating or wondering whether a potential reversal point will be effective becomes immediately apparent if a candlestick signal is witnessed at the same point. Beating the crowd adds profits almost at the initiation of a trade.

Learn the patterns and you will create a constant source of income for the rest of your life.

Reversal Patterns

Related Topics

Dark Cloud Cover. The Dark Cloud Cover is a two-day bearish pattern found at the end of an upturn or at the top of a congested trading area. The first day of the pattern is a strong white real body. The second day's price opens higher than any of the previous day's trading range.

Piercing Pattern. The Piercing Pattern is a bottom reversal. It is a two candle pattern at the end of a declining market. The first day real body is black. The second day is a long white body. The white day opens sharply lower, under the trading range of the previous day. The price comes up to where it closes above the 50% level of the black body.

Hammer and Hanging Man. Hammer and Hanging-man are candlesticks with long lower shadows, little or no upper shadow, and small real bodies. The bodies are at the top of the trading session. This pattern at the bottom of the down-trend is called a Hammer. This pattern at the top of an up trend is a hanging man.

Morning Star. The Morning Star is a bottom reversal signal. Like the morning star (Mercury) it foretells the sunrise, or the rising prices. The pattern is a three day signal.

Evening Star. The Evening Star is the exact opposite of the morning star. The evening star, the planet Venus, occurs just before the darkness sets in. The evening star is found at the end of the uptrend.

Shooting Star. The shooting star, or inverted hammer, in an up trend sends a warning that the top is near. It got its name by looking like a shooting star. At the bottom of a trend, the shooting

star is considered a bullish signal.

Three White Soldiers. Three consecutive long white days with higher closes each day.

Each day opens within the previous body.

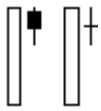
Three Black Crows.

Two Crows, Bearish. This pattern is considered a sell signal and is more significant at heavy resistance levels. The first black candle's real body gaps above the preceding white body. The second, larger black candle opens above the preceding candles open, and closes below its close.

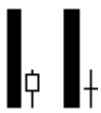
Two Crows, Bullish. This pattern is considered a buy signal and is more significant at strong support levels. The first white candle's real body gaps below the preceding white body. The second, larger white candle opens below the preceding candles open, and closes above its close.

Tasuki Gap, Bearish. The black body of the bearish Tasuki Gap opens within the preceding white body. The two smaller bodies gap above the larger white body.

Tasuki Gap, Bullish. The white body of the bullish Tasuki Gap opens within the preceding black body. The two smaller bodies gap below the larger black body.



Tweezer Top. Tweezer tops have equal highs at a new high. This pattern can consist of any type of candlesticks.



Tweezer Bottom. Tweezer bottoms have equal lows at market bottoms. The type of candlesticks that make up a tweezer bottom does not matter.

Harami. This formation is considered Bearish following an up trend and a Bullish when following a down trend. Most often the classic Harami consists of an opposing real body color, as illustrated at left. However, the two bodies can be the same.

Counter Attack, Bearish. A counter attack line formation occurs in an up trend when two opposite color candles have the same close.

Counter Attack, Bullish. A counter attack line formation occurs in a down trend when two opposite color candles have the same close.

Candlestick Formations

Related Topics

Trend analysis is important in identifying candlestick formations. Many formations are qualified by the existence of an upward or downward trend. Additionally, candlestick analysis relies heavily on confirmation.

The following discussion is intended to provide a primer on candlestick formations.

There are several important candlestick types:

Black and White Marubozu. Marubozu candlesticks do not have upper or lower shadows and the high and low are represented by the open or close. A White Marubozu forms when the open equals the low and the close equals the high. This indicates that buyers controlled the price action from the first trade to the last trade. Black Marubozu form when the open equals the high and the close equals the low. This indicates that sellers controlled the price action from the first trade to the last trade.

Long Black and White Real Bodys. Long white candlesticks indicate aggressive buying. Conversely, long black candlesticks show strong selling pressure. See also, Trend Day.

Spinning Tops. Candlesticks with a long upper shadow, long lower shadow, and small real body are called spinning tops. Spinning tops are said to represent indecision. The small real body shows little movement from open to close, and the shadows indicate that both bulls and bears were active during the session, but neither dominated. See also, Neutral Day.

Doji. Doji form when a instrument's open and close are virtually equal. Some regard open-close equality a necessary Doji qualification while others do not. The length of the upper and lower shadows can vary. Alone, doji are neutral patterns. Any bullish or bearish bias is based on preceding price action and future confirmation.

With these basic candlestick types in mind, review some of the more common candlestick patterns

Engulfing Patterns

Related Topics

Bullish Engulfing. The Bullish Engulfing Pattern is formed at the end of a downtrend. A white body is formed that opens lower and closes higher than the black candle open and close from the previous day. This complete engulfing of the previous day's body represents overwhelming buying pressure dissipating the selling pressure.

Bearish Engulfing. The Bearish Engulfing Pattern is directly opposite to the bullish pattern. It is created at the end of an up-trending market. The black real body completely engulfs the previous day's white body. This shows that the bears are now overwhelming the bulls

Candlestick Formations

Candlestick charting is a market study tool dating back hundreds of years. It was developed in Japan to trade rice futures contracts long before our equity markets were ever conceived. The study has since transcended all financial markets with excellent results.

This style of charting offers a three-dimensional view with a better visual perspective to predict future market action.

Each candle-line body begins at the market open and ends at close. If the close was higher than the open, a clear or green candle is formed. A lower closing price than open creates a red candle instead. Prices that move outside the open/close range form thin lines or "shadows" above and/or below the candle's actual body.

There are numerous signals and formations with different versions of each, but we will focus on a few of the basic patterns that signal market reversals. They are as follows:

Bullish signals:
Tweezer bottom
Morning Star
*Hammer
*Doji
*Engulfing white candle

Bearish Signals:
Tweezer top
Evening Star
Shooting Star
*Hanging Man (hammer)
*Doji
*Engulfing red candle

*Denotes formations that are bullish or bearish depending upon where they form within price action

(Daily chart of NASDAQ)

Here within this chart of NASDAQ exist numerous formations, but we'll focus on those outlined above. First you'll see clear "Shooting Star" candles near the market tops of March 13 and again on the 27th. This lone-candle signal is formed when prices open at one point, rally up for the day and fall back to close near the open once again. When formed at a price peak on the chart it suggests buying is drying up and the market may be nearing a correction.

Around April 12th we see a long red candle formation that exceeds or "engulfs" the clear bullish candle of the previous day. This suggests any bullish sentiment the day before was completely erased and then some by today's "Engulfing Candle" formation. A further move in the direction of the longer candle is expected, in this case to the downside following the bearish red candle.

April 24th shows a lone-day "hammer" pattern. This is formed as prices fell from the open only to rally back and close near the day's open. This shows buyers rallied the market up after sellers took it to the intraday low. The lone candle at the bottom of this pattern looks like an actual hammer, hence the name. It suggests the market may have found a bottom and will advance from there.

Incidentally, the same "hammer" style candle found near the top of a price range is called a "hanging man" formation instead. This is a bearish signal that indicates new buying above the open has exhausted and a move down is likely.

On May 29th we observe a curious candle formation called a "doji" or stalemate. It is formed by a complete shadow line with little if any real body in the middle. Daily prices opened, rose/fell and then returned to close almost unchanged. When

found near a market high or low extreme it suggests a point of equality and indecision between buyers and sellers. Such indecision could mean the current price direction may be nearing a reverse.

(Daily chart of DOW)

This chart of the Dow is rife with clear candle formations. Extreme volatility created numerous reversals in short order.

Around March 15th we note a large white engulfing candle near support of a long decline. This indicates buyers have erased all the prior session's losses to drive prices higher. As indicated, the market indeed moved up from there in record fashion with a 499 point gain the very next day.

After this major rally we witness a pair of doji candles near 3/23 and 4/3 that warn of possible weakness in bullish sentiment. The doji near 4/3 spans an exceptionally large range one session after a long, engulfing white candle. This combination suggests extreme indecision after the big price rise and possibly a move down in the near term.

The "Tweezer Top" April 12th should have been confirmation that this market was on shaky ground. Those who moved to protect profits and/or played the downside with shorts or put options fared incredibly well. Several dominant bearish patterns warned of the massive decline days in advance.

In true volatile fashion, the Dow hit bottom three sessions later as a clear "Tweezer Bottom" complete with shadow line pinchers emerged. Again, fair warning that the bulls were now in charge of near-term price movement.

Late in May we notice a three-day pattern form called a "Morning Star" The first full session formed a bearish candle, the next day ended in a "doji" stalemate while the third day formed a new bullish candle. As you can guess, this suggests the sentiment has turned from bearish to neutral and finally bullish over three trading periods. Prices should advance from there.

Likewise the opposite of this, an "Evening Star" three-day pattern of sorts warned a pending market drop. A bullish white candle was followed by a doji, then met with a bearish red candle. This was matched with an equal white candle as bulls struggled to wrest control but were finally overwhelmed as proven with a longer red candle that sealed the new move down.

(Daily chart of GLW)

We've included a chart of Corning Glassware complete with a few more candle formation examples. There are "Engulfing Candles", "Hammers" towards the bottom of price dips, a decent "Evening Star" near one peak and a "Tweezer Top" complete with even 'pinchers'.

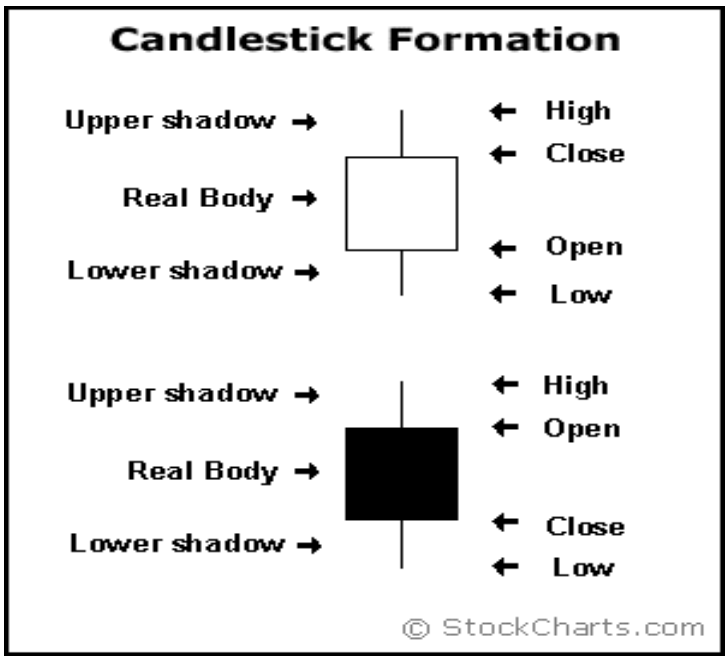
There are others unmarked in this as well. Can you find them? Hints: "dojis" one session before hammers suggest indecision after down move and possible rallies.

How about a "hanging man" (opposite of "hammer" candle) near a price peak in late May?

History
The Japanese began using technical analysis to trade rice in the 17th century. While this early version of technical analysis may have been different from the US version initiated by Charles Dow around 1900, many of the guiding principles were very similar.

- The "what" (price action) is more important than the "why" (news, earnings, and so on).
- All known information is reflected in the price.
- Buyers and sellers move markets based on expectations and emotions (fear and greed).
- Markets fluctuate.
- The actual price may not reflect the underlying value.

According to Steve Nison, candlestick charting came later and probably began sometime after 1850. Much of the credit for candlestick development and charting goes to Homma, a legendary rice trader from Sakata. Even though it is not exactly clear "who" created candlesticks, Nison notes that they likely resulted from a collective effort developed over many years of trading.

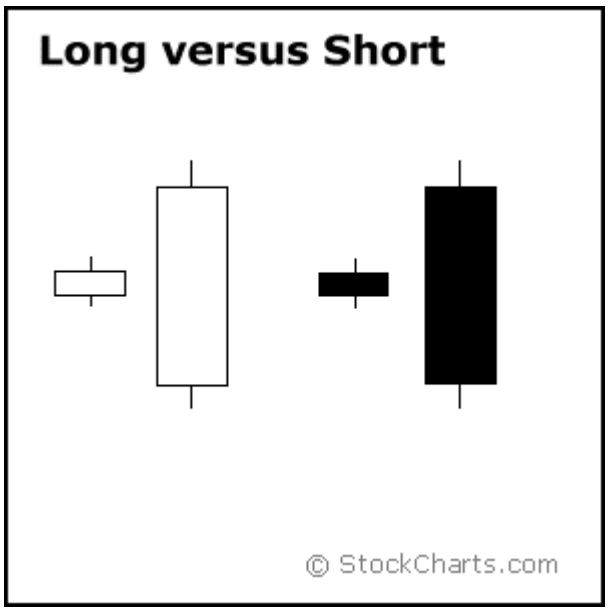


Formation
Candlesticks are formed using the open, high, low and close. Without opening prices, candlestick charts are impossible to draw. If the close is above the open, then a hollow candlestick (usually displayed as white) is drawn. If the close is below the open, then a filled candlestick (usually displayed as black) is drawn. The hollow or filled portion of the candlestick is called the body (also referred to as the "real body"). The long thin lines above and below the body represent the high/low range and are called shadows (also referred to as wicks and tails). The high is marked by the top of the upper shadow and the low by the bottom of the lower shadow.

Compared to traditional bar charts, many traders consider candlestick charts more visually appealing and easier to interpret. Each candlestick provides an easy-to-decipher picture of price action. Immediately a trader can see compare

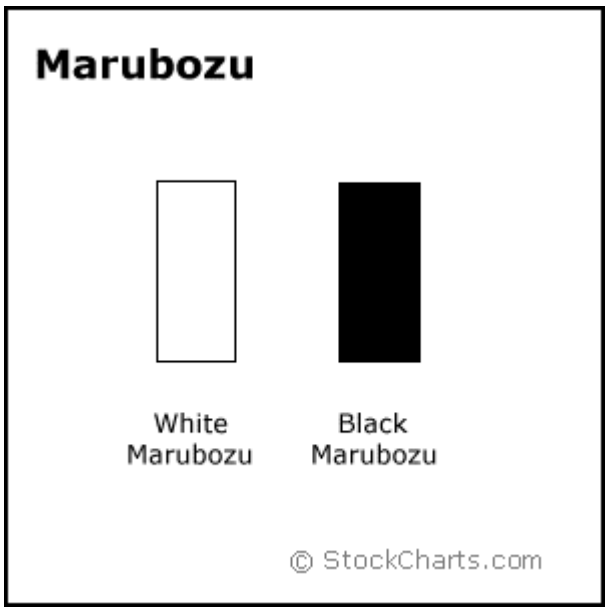
the relationship between the open and close as well as the high and low. The relationship between the open and close is considered vital information and forms the essence of candlesticks. White candlesticks, where the close is greater than the open, indicate buying pressure. Black candlesticks, where the close is less than the open, indicate selling pressure.

Long versus Short Bodies
Generally speaking, the longer the body is, the more intense the buying or selling pressure. Conversely, short candlesticks indicate little price movement and represent consolidation.



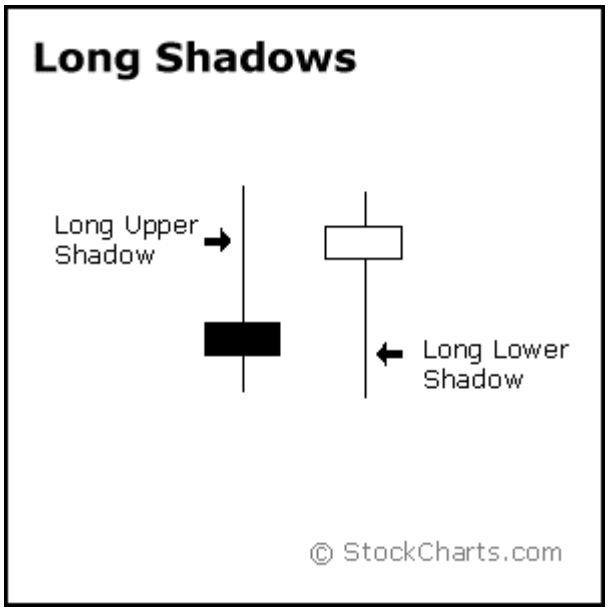
Long white candlesticks show strong buying pressure. The longer the white candlestick is, the further the close is above the open. This indicates that prices advanced significantly from open to close and buyers were aggressive. While long white candlesticks are generally bullish, much depends on their position within the broader technical picture. After extended declines, long white candlesticks can mark a potential turning point or support level. If buying gets too aggressive after a long advance, it can lead to excessive bullishness.

Long black candlesticks show strong selling pressure. The longer the black candlestick is, the further the close is below the open. This indicates that prices declined significantly from the open and sellers were aggressive. After a long advance, a long black candlestick can foreshadow a turning point or mark a future resistance level. After a long decline a long black candlestick can indicate panic or capitulation.



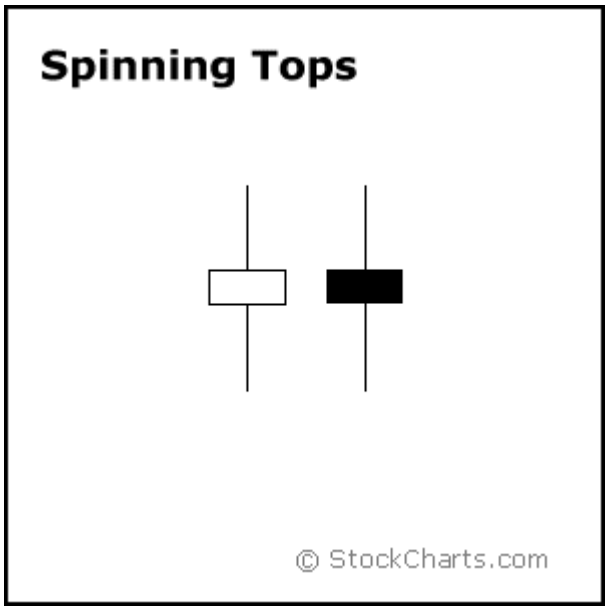
Even more potent long candlesticks are the Marubozu brothers, Black and White. Marubozu do not have upper or lower shadows and the high and low are represented by the open or close. A White Marubozu forms when the open equals the low and the close equals the high. This indicates that buyers controlled the price action from the first trade to the last trade. Black Marubozu form when the open equals the high and the close equals the low. This indicates that sellers controlled the price action from the first trade to the last trade.

Long versus Short Shadows
The upper and lower shadows on candlesticks can provide valuable information about the trading session. Upper shadows represent the session high and lower shadows the session low. Candlesticks with short shadows indicate that most of the trading action was confined near the open and close. Candlestick with long shadows show that traded extended well past the open and close.



Candlesticks with a long upper shadow and short lower shadow indicate that buyers dominated during the session and bid prices higher. However, sellers later

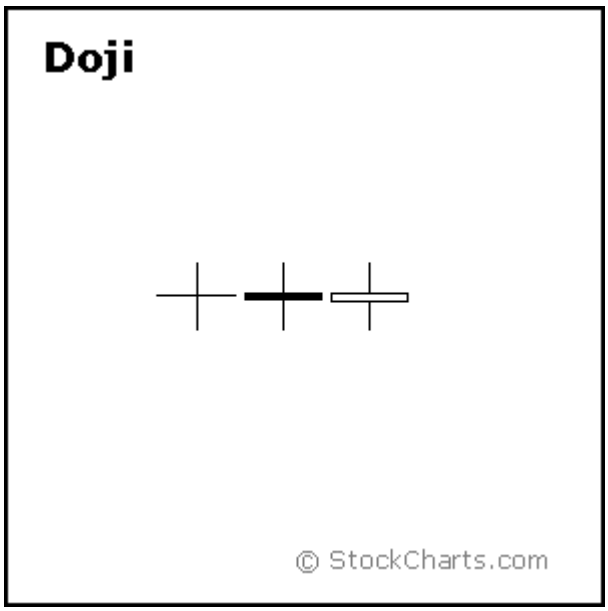
forced prices down off of their highs and the weak close created a long upper shadow. Conversely, candlesticks with long lower shadows and short upper shadows indicate that sellers dominated during the session and drove prices lower. However, buyers later resurfaced to bid prices higher by the end of the session and the strong close created a long lower shadow.



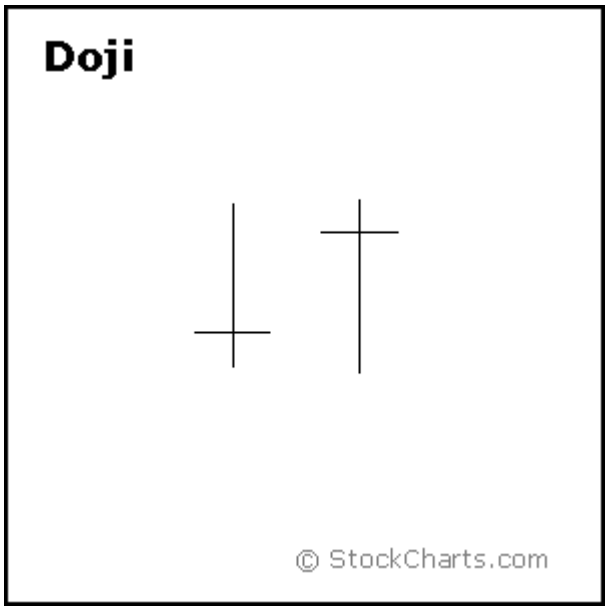
Candlesticks with a long upper shadow, long lower shadow and small real body are called spinning tops. One long shadow represents a reversal of sorts; spinning tops represent indecision. The small real body (whether hollow or filled) shows little movement from open to close, and the shadows indicate that both bulls and bears were active during the session. Even though the session opened and closed with little change, prices moved significantly higher and lower in the mean time. Neither buyers nor sellers could gain the upper hand and the result was a standoff. After a long advance or long white candlestick, a spinning top indicates weakness among the bulls and a potential change or interruption in trend. After a long decline or long black candlestick, a spinning top indicates weakness among the bears and a potential change or interruption in trend.

Doji

Doji are important candlesticks that provide information on their own and also feature in a number of important patterns. Doji form when a security's open and close are virtually equal. The length of the upper and lower shadows can vary and the resulting candlestick looks like a cross, inverted cross or plus sign. Alone, doji are neutral patterns. Any bullish or bearish bias is based on preceding price action and future confirmation. The word "Doji" refers to both the singular and plural form.

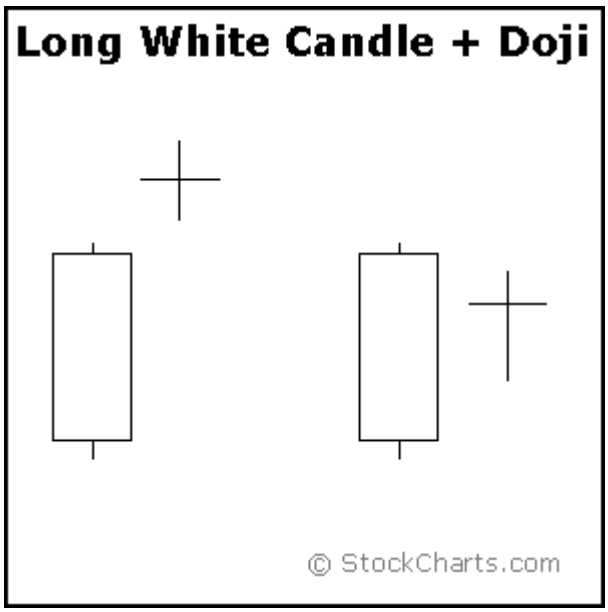


Ideally, but not necessarily, the open and close should be equal. While a doji with an equal open and close would be considered more robust, it is more important to capture the essence of the candlestick. Doji convey a sense of indecision or tug-of-war between buyers and sellers. Prices move above and below the opening level during the session, but close at or near the opening level. The result is a standoff. Neither bulls nor bears were able to gain control and a turning point could be developing.

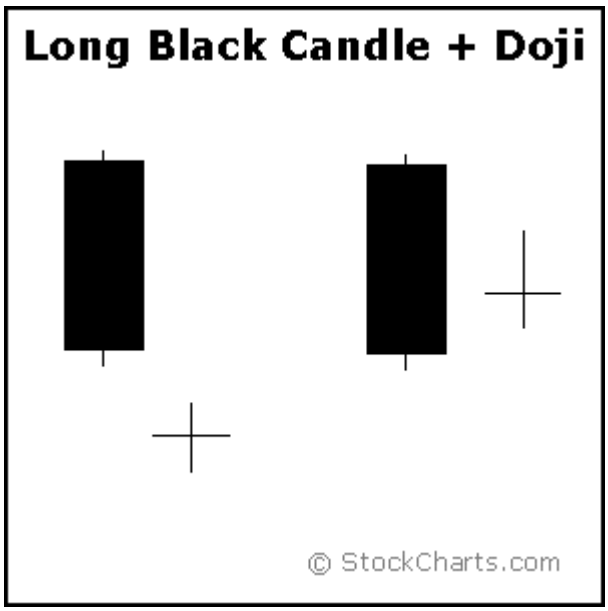


Different securities have different criteria for determining the robustness of a doji. A $20 stock could form a doji with a 1/8 point difference between open and close, while a $200 stock might form one with a 1 1/4 point difference. Determining the robustness of the doji will depend on the price, recent volatility and previous candlesticks. Relative to previous candlesticks, the doji should have a very small body that appears as a thin line. Steven Nison notes that a doji that forms among other candlesticks with small real bodies would not be considered important. However, a doji that forms among candlesticks with long real bodies would be deemed significant.

Doji and Trend
The relevance of a doji depends on the preceding trend or preceding candlesticks. After an advance, or long white candlestick, a doji signals that the buying pressure is starting to weaken. After a decline, or long black candlestick, a doji signals that selling pressure is starting to diminish. Doji indicate that the forces of supply and demand are becoming more evenly matched and a change in trend may be near. Doji alone are not enough to mark a reversal and further confirmation may be warranted.

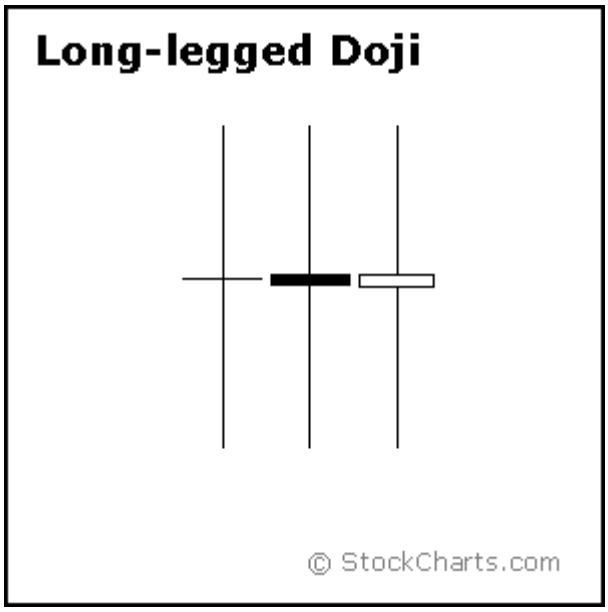


After an advance or long white candlestick, a doji signals that buying pressure may be diminishing and the uptrend could be nearing an end. Whereas a security can decline simply from a lack of buyers, continued buying pressure is required to sustain an uptrend. Therefore, a doji may be more significant after an uptrend or long white candlestick. Even after the doji forms, further downside is required for bearish confirmation. This may come as a gap down, long black candlestick, or decline below the long white candlestick's open. After a long white candlestick and doji, traders should be on the alert for a potential evening doji star.



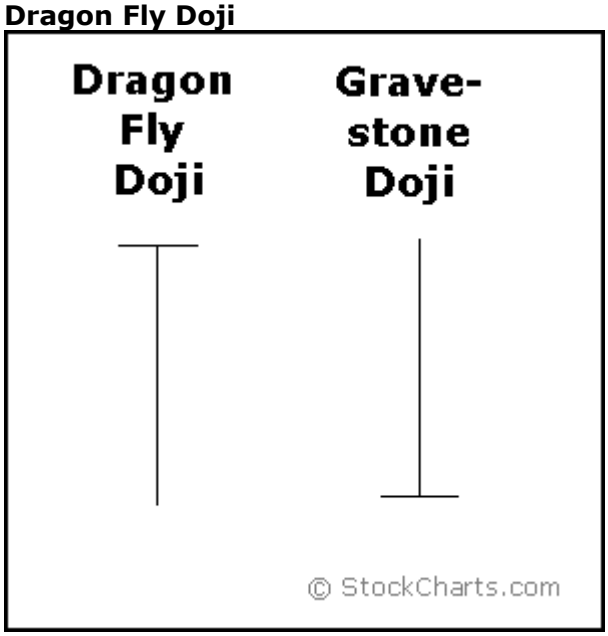
After a decline or long black candlestick, a doji indicates that selling pressure may be diminishing and the downtrend could be nearing an end. Even though the bears are starting to lose control of the decline, further strength is required to confirm any reversal. Bullish confirmation could come from a gap up, long white candlestick or advance above the long black candlestick's open. After a long black candlestick and doji, traders should be on the alert for a potential morning doji star.

Long-legged Doji



Long-legged doji have long upper and lower shadows that are almost equal in length. These doji reflect a great amount of indecision in the market. Long-legged doji indicate that prices traded well above and below the session's opening level, but closed virtually even with the open. After a whole lot of yelling and screaming, the end result showed little change from the initial open.

Dragon Fly Doji



Dragon fly doji form when the open, high and close are equal and the low creates a long lower shadow. The resulting candlestick looks like a "T" with a long lower shadow and no upper shadow. Dragon fly doji indicate that sellers dominated trading and drove prices lower during the session. By the end of the session, buyers resurfaced and pushed prices back to the opening level and the session high.

The reversal implications of a dragon fly doji depend on previous price action and future confirmation. The long lower shadow provides evidence of buying pressure, but the low indicates that plenty of sellers still loom. After a long downtrend, long black candlestick or at support, a dragon fly doji could signal a potential bullish reversal or bottom. After a long uptrend, long white candlestick or at resistance, the long lower shadow could foreshadow a potential bearish reversal or top. Bearish or bullish confirmation is required for both situations.

Gravestone Doji

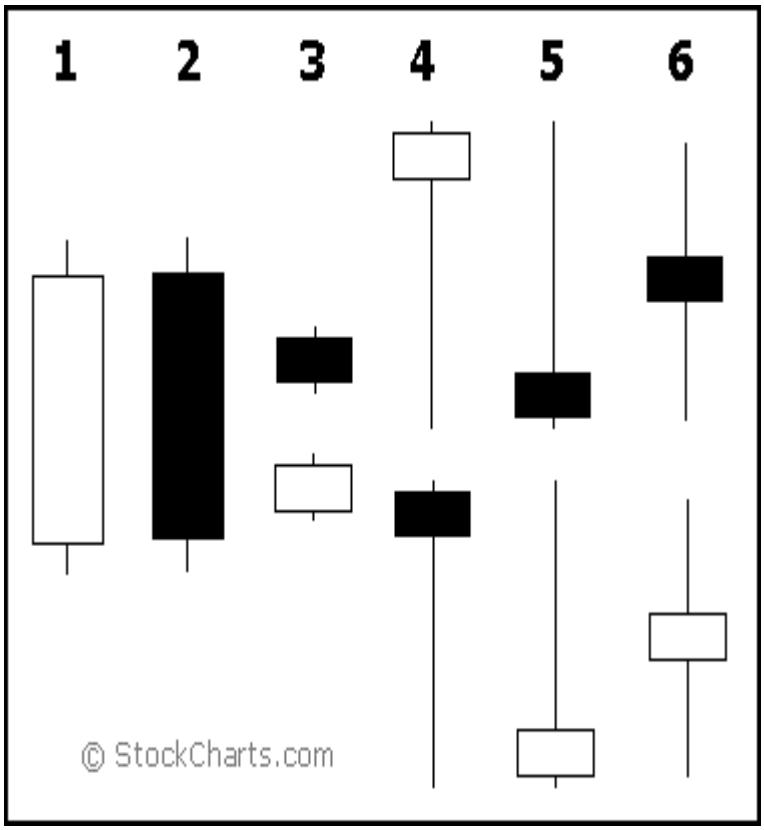
Gravestone doji form when the open, low and close are equal and the high creates a long upper shadow. The resulting candlestick looks like an upside down "T" with a long upper shadow and no lower shadow. Gravestone doji indicate that buyers dominated trading and drove prices higher during the session. However, by the end of the session, sellers resurfaced and pushed prices back to the opening level and the session low.

As with the dragon fly doji and other candlesticks, the reversal implications of gravestone doji depend on previous price action and future confirmation. Even though the long upper shadow indicates a failed rally, the intraday high provides evidence of some buying pressure. After a long downtrend, long black candlestick or at support, focus turns to the evidence of buying pressure and a potential bullish reversal. After a long uptrend, long white candlestick or at resistance,

focus turns to the failed rally and a potential bearish reversal. Bearish or bullish confirmation is required for both situations.

Before turning to the single and multiple candlestick patterns, there are a few general guidelines to cover.

Bulls vs. Bears
A candlestick depicts the battle between Bulls (buyers) and Bears (sellers) over a given period of time. An analogy to this battle can be made between two football teams, which we can also call the Bulls and the Bears. The bottom (intra-session low) of the candlestick represents a touchdown for the Bears and the top (intra-session high) a touchdown for the Bulls. The closer the close is to the high, the closer the Bulls are to a touchdown. The closer the close is to the low, the closer the Bears are to a touchdown. While there are many variations, I have narrowed the field to 6 types of games (or candlesticks):

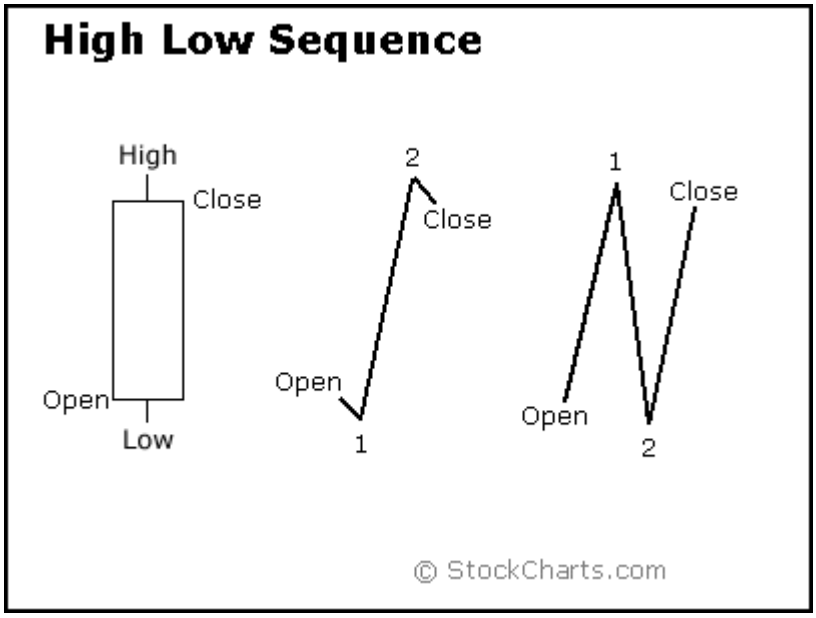


Long white candlesticks indicate that the Bulls controlled the ball (trading) for most of the game.

1. Long black candlesticks indicate that the Bears controlled the ball (trading) for most of the game.
2. Small candlesticks indicate that neither team could move the ball and prices finished about where they started.

3. A long lower shadow indicates that the Bears controlled the ball for part of the game, but lost control by the end and the Bulls made an impressive comeback.
4. A long upper shadow indicates that the Bulls controlled the ball for part of the game, but lost control by the end and the Bears made an impressive comeback.
5. A long upper and lower shadow indicates that the both the Bears and the Bulls had their moments during the game, but neither could put the other away, resulting in a standoff.

What Candlesticks Don't Tell You
Candlesticks do not reflect the sequence of events between the open and close, only the relationship between the open and the close. The high and the low are obvious and indisputable, but candlesticks (and bar charts) cannot tell us which came first.

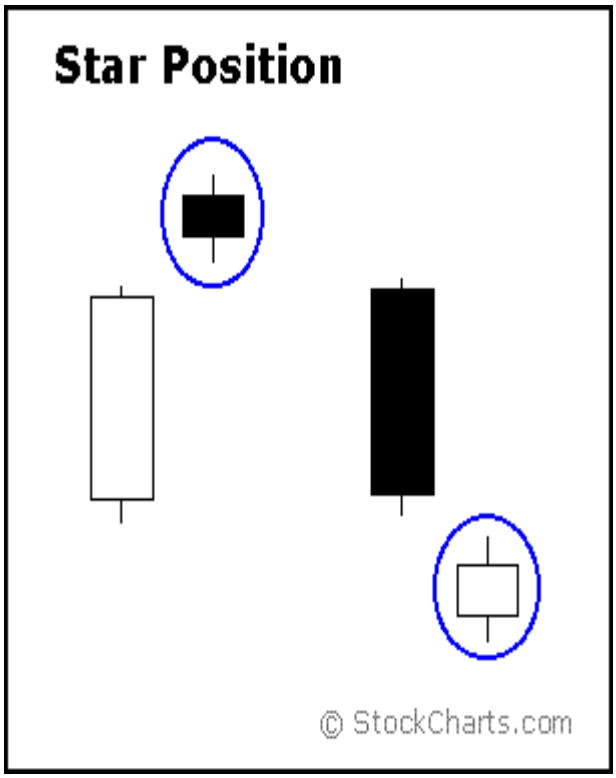


With a long white candlestick, the assumption is that prices advanced most of the session. However, based on the high/low sequence, the session could have been more volatile. The example above depicts two possible high/low sequences that would form the same candlestick. The first sequence shows two small moves and one large move: a small decline off the open to form the low, a sharp advance to form the high and a small decline to form the close. The second sequence shows three rather sharp moves: a sharp advance off the open to form the high, a sharp decline to form the low and a sharp advance to form the close. The first sequence portrays strong sustained buying pressure and would be considered more bullish. The second sequence reflects more volatility and some selling pressure. These are just two examples and there are hundreds of potential combinations that could result in the same candlestick. Candlesticks still offer valuable information on the relative positions of the open, high, low and close. However, the trading activity that forms a particular candlestick can vary.

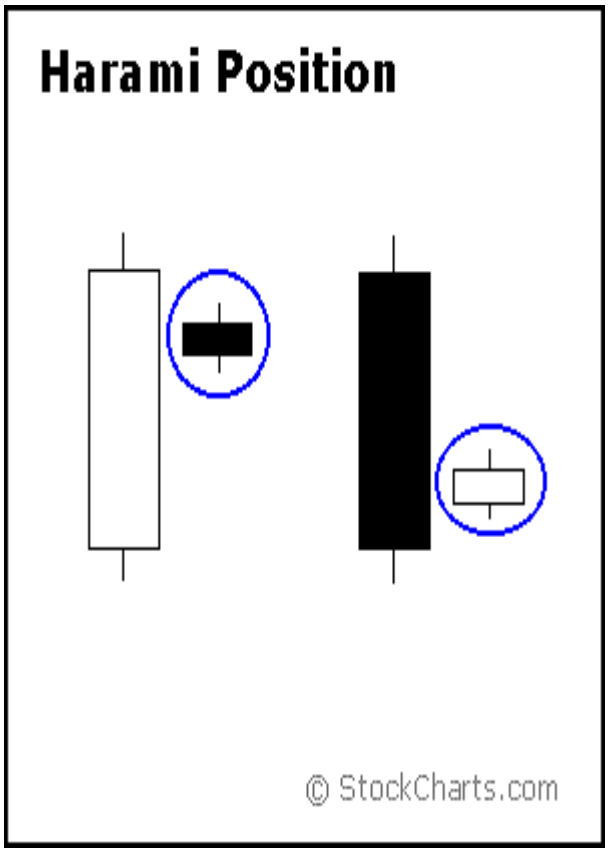
Prior Trend
In his book, Candlestick Charting Explained, Greg Morris notes that for a pattern to qualify as a reversal pattern, there should be a prior trend to reverse. Bullish reversals require a preceding downtrend and bearish reversals require a prior uptrend. The direction of the trend can be determined using trendlines, moving averages, peak/trough analysis or other aspects of technical analysis. A downtrend

might exist as long as the security was trading below its down trendline, below its previous reaction high or below a specific moving average. The length and duration will depend on individual preferences. However, because candlesticks are short-term in nature, it is usually best to consider the last 1-4 weeks of price action.

Candlestick Positioning



Star Position
A candlestick that gaps away from the previous candlestick is said to be in star position. The first candlestick usually has a large real body, but not always, and the second candlestick in star position has a small real body. Depending on the previous candlestick, the star position candlestick gaps up or down and appears isolated from previous price action. The two candlesticks can be any combination of white and black. Doji, hammers, shooting stars and spinning tops have small real bodies and can form in the star position. Later we will examine 2- and 3-candlestick patterns that utilize the star position.

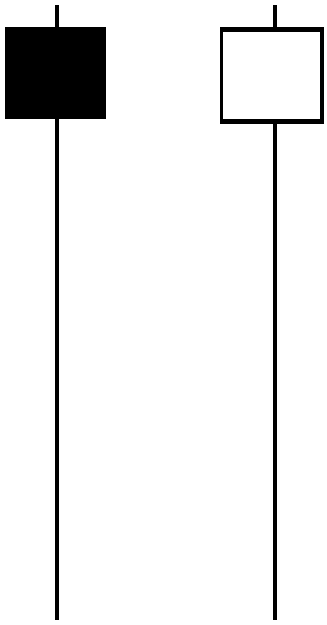


Harami Position
A candlestick that forms within the real body of the previous candlestick is in Harami position. Harami means pregnant in Japanese and the second candlestick is nestled inside the first. The first candlestick usually has a large real body and the second a smaller real body than the first. The shadows (high/low) of the second candlestick do not have to be contained within the first, though it's preferable if they are. Doji and spinning tops have small real bodies and can form in the harami position as well. Later we will examine candlestick patterns that utilize the harami position.

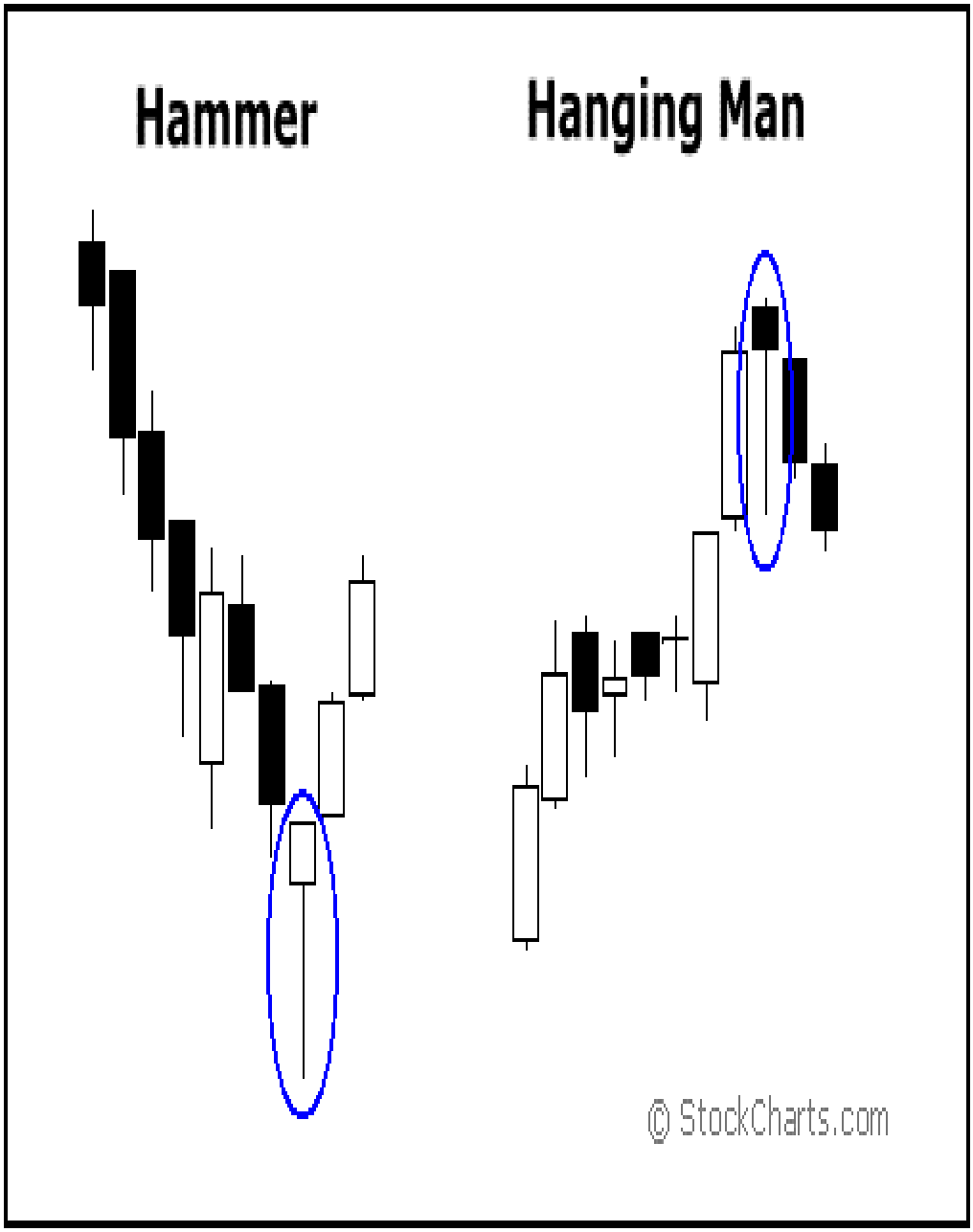
Long Shadow Reversals
There are two pair of single candlestick reversal patterns made up of a small real body, one long shadow and one short or non-existent shadow. Generally, the long shadow should be at least twice the length of the real body, which can be either black or white. The location of the long shadow and preceding price action determine the classification.

The first pair, hammer and hanging man, are identical with small bodies and long lower shadows. The second pair, shooting star and inverted hammer, are also identical with small bodies and long upper shadows. Only preceding price action and further confirmation determine the bullish or bearish nature of these candlesticks. The hammer and inverted hammer form after a decline and are bullish reversal patterns, while the shooting star and hanging man form after an advance and are bearish reversal patterns.

Hammer
Hanging Man



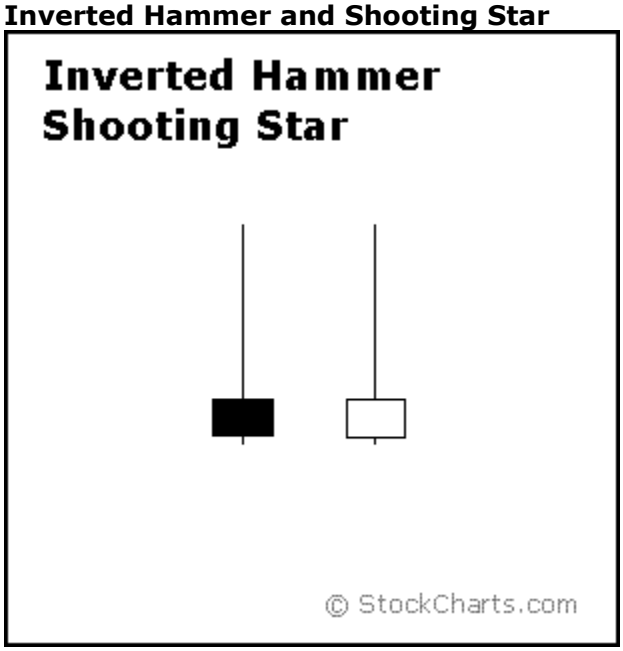
The hammer and hanging man look exactly alike, but have different implications based on the preceding price action. Both have small real bodies (black or white), long lower shadows and short or non-existent upper shadows. As with most single and double candlestick formations, the hammer and hanging man require confirmation before action.



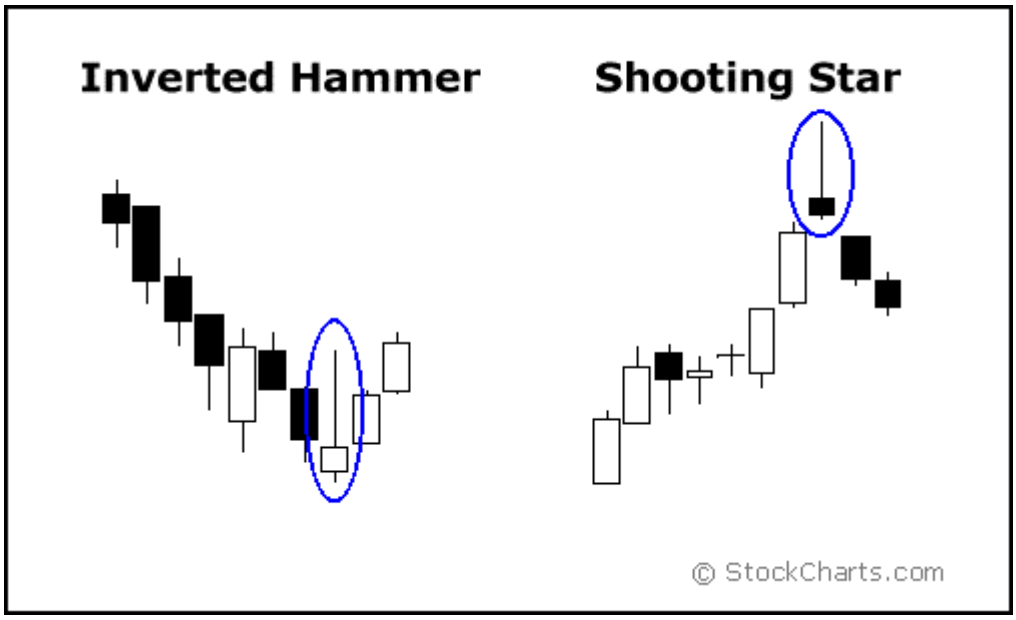
The hammer is a bullish reversal pattern that forms after a decline. In addition to a potential trend reversal, hammers can mark bottoms or support levels. After a decline, hammers signal a bullish revival. The low of the long lower shadow implies that sellers drove prices lower during the session. However, the strong finish indicates that buyers regained their footing to end the session on a strong note. While this may seem enough to act on, hammers require further bullish confirmation. The low of the hammer shows that plenty of sellers remain. Further buying pressure, and preferably on expanding volume, is needed before acting. Such confirmation could come from a gap up or long white candlestick. Hammers are similar to selling climaxes and heavy volume can serve to reinforce the validity of the reversal.

The hanging man is a bearish reversal pattern that can also mark a top or resistance level. Forming after an advance, a hanging man signals that selling pressure is starting to increase. The low of the long lower shadow confirms that sellers pushed prices lower during the session. Even though the bulls regained their footing and drove prices higher by the finish, the appearance of selling pressure raises the yellow flag. As with the hammer, a hanging man requires bearish confirmation before action. Such confirmation can come as a gap down or long black candlestick on heavy volume.

Inverted Hammer and Shooting Star



The inverted hammer and shooting star look exactly alike, but have different implications based on previous price action. Both candlesticks have small real bodies (black or white), long upper shadows and small or non-existent lower shadows. These candlesticks mark potential trend reversals, but require confirmation before action.

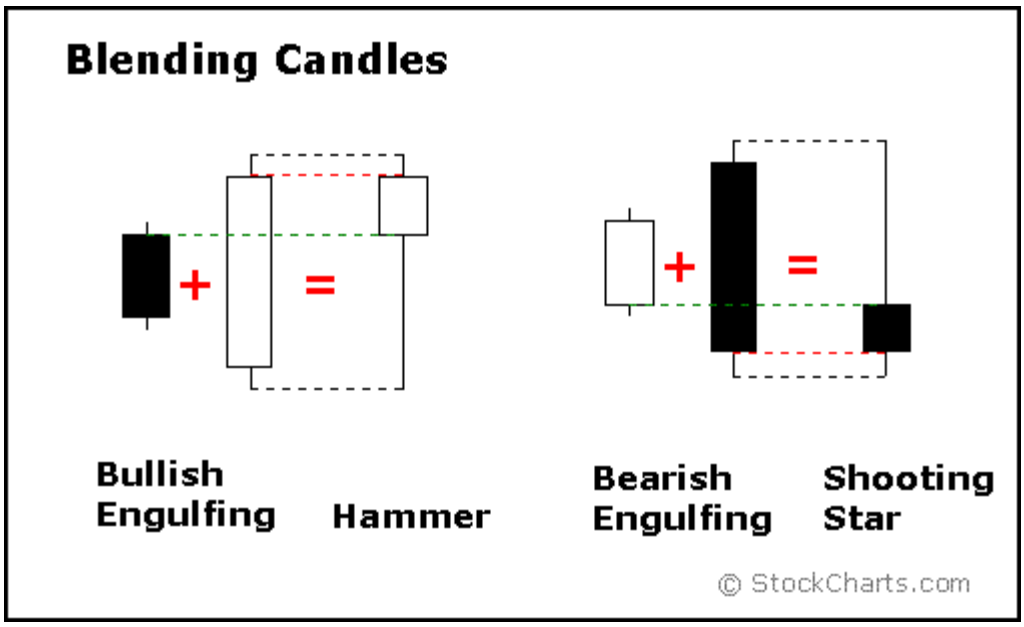


The shooting star is a bearish reversal pattern that forms after an advance and in the star position, hence its name. A shooting star can mark a potential trend reversal or resistance level. The candlestick forms when prices gap higher on the open, advance during the session and close well off their highs. The resulting candlestick has a long upper shadow and small black or white body. After a large advance (the upper shadow), the ability of the bears to force prices down raises the yellow flag. To indicate a substantial reversal, the upper shadow should relatively long and at least 2 times the length of the body. Bearish confirmation is required after the shooting star and can take the form of a gap down or long black candlestick on heavy volume.

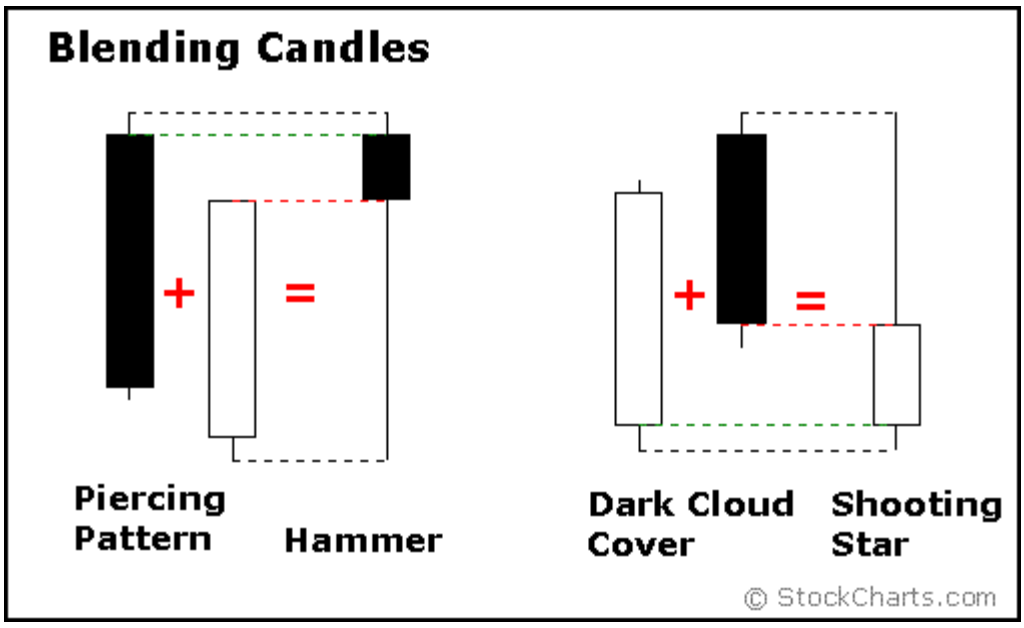
The inverted hammer looks exactly like a shooting star, but forms after a decline or downtrend. Inverted hammers represent a potential trend reversal or support levels. After a decline, the long upper shadow indicates buying pressure during the session. However, the bulls were not able to sustain this buying pressure and prices closed well off of their highs to create the long upper shadow. Because of this failure, bullish confirmation is required before action. An inverted hammer followed by a gap up or long white candlestick with heavy volume could act as bullish confirmation.

Blending Candlesticks
Candlestick patterns are made up of one or more candlesticks and these can be blended together to form one candlestick. This blended candlestick captures the essence of the pattern and can be formed using the following:

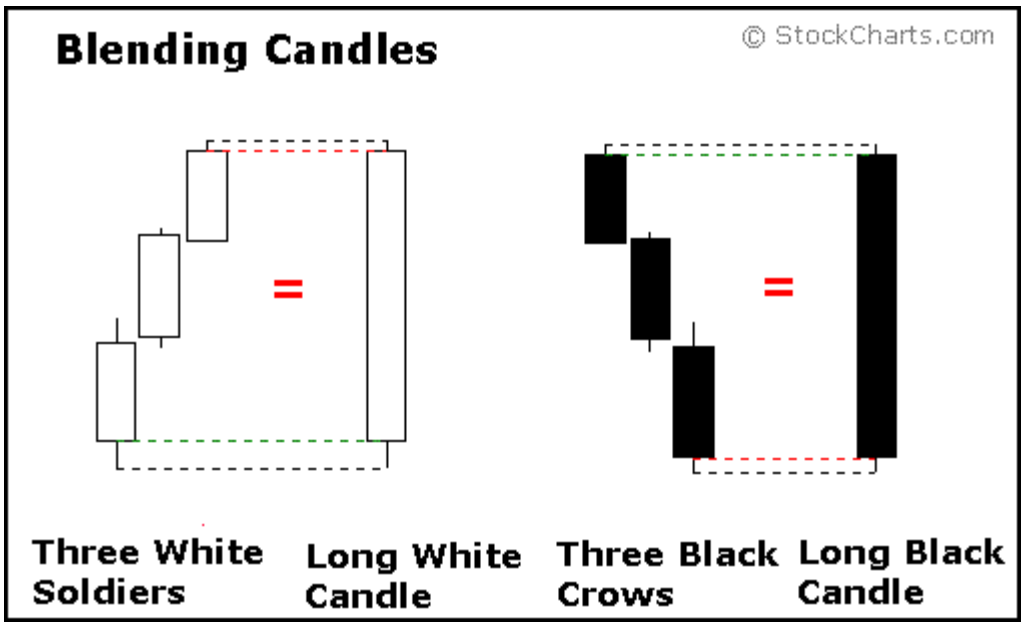
- The open of first candlestick
- The close of the last candlestick
- The high and low of the pattern



By using the open of the first candlestick, close of the second candlestick and high/low of the pattern, a bullish engulfing or piercing pattern blends into a hammer. The long lower shadow of the hammer signals a potential bullish reversal. As with the hammer, both the bullish engulfing and piercing pattern require bullish confirmation.



Blending the candlesticks of a bearish engulfing or dark cloud pattern creates a shooting star. The long upper shadow of the shooting star indicates a potential bearish reversal. As with the shooting star, bearish engulfing and dark cloud cover patterns require bearish confirmation.



More than two candlesticks can be blended using the same guidelines: open from the first, close from the last and high/low of the pattern. Blending three white soldiers creates a long white candlestick and blending three black crows creates a long black candlestick.

Written by Arthur Hill

Single candlesticks and candlestick patterns can be used to confirm or mark support levels. Such a support level could be new after an extended decline or confirm a previous support level within a trading range. In a trading range, candlesticks can help choose entry points for buying near support and selling near resistance. The list below contains some, but not all, of the candlesticks and candlestick patterns that can be used to together with support levels. The bullish reversal patterns are marked (R).

- Bullish Engulfing (R)
- Bullish Harami (R)
- Doji (Normal, Long Legged, Dragon Fly)
- Hammer (R)
- Inverted Hammer (R)
- Long White candlestick or White Marubozu
- Morning Star or Bullish Abandoned Baby (R)
- Piercing Pattern (R)
- Spinning Top
- Three White Soldiers (R)

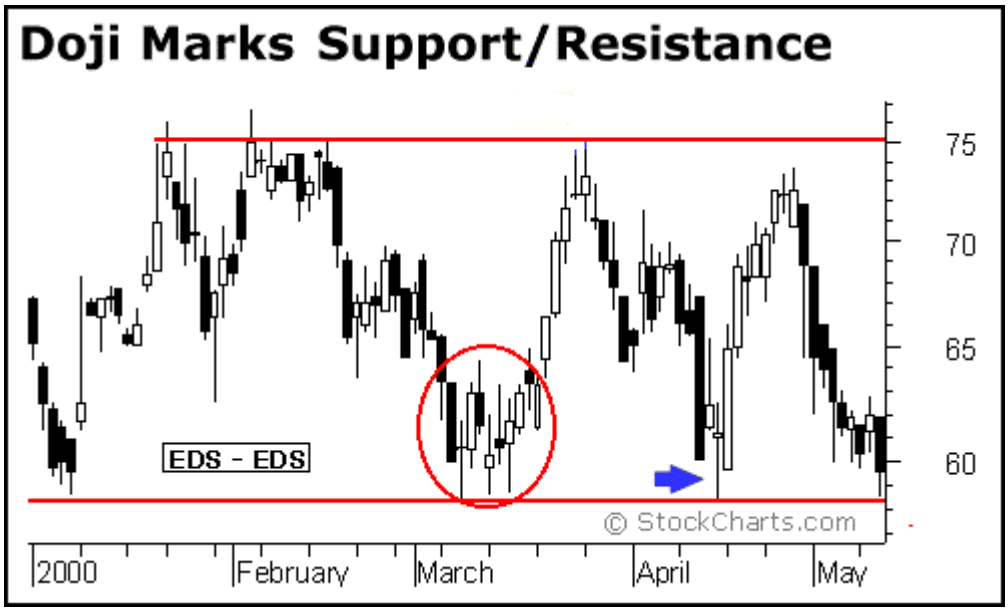
Bullish reversal candlesticks and patterns suggest that early selling pressure was overcome and buying pressure emerged for a strong finish. Such bullish price action indicates strong demand and that support may be found.

The inverted hammer, long white candlestick and marubozu show increased buying pressure rather than an actual price reversal. With its long upper shadow, an inverted hammer signifies intra-session buying interest that faded by the finish. Even though the security finished well below its high, the ability of buyers

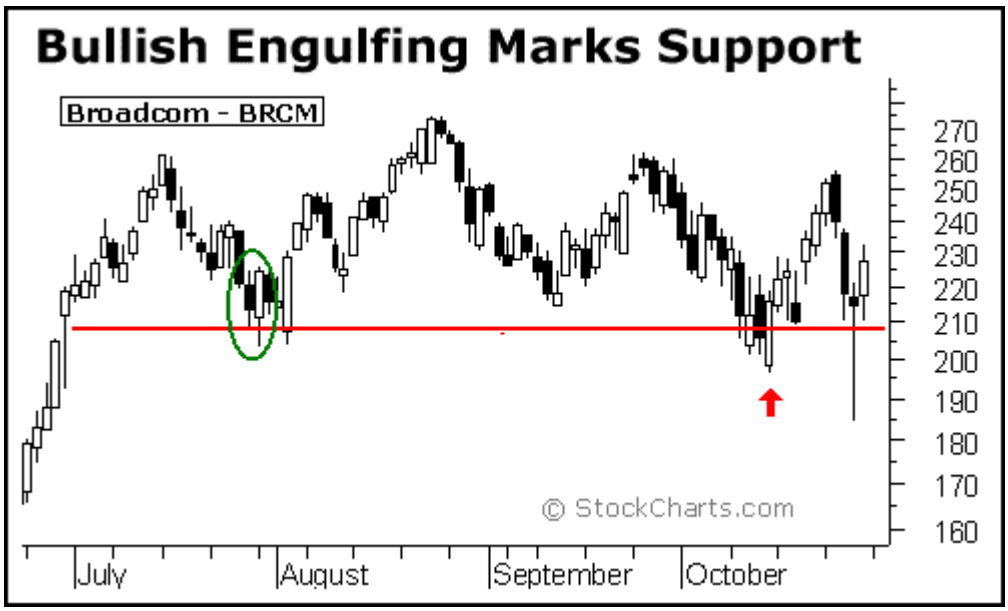
to push prices higher during the session is bullish. The long white candlestick and white marubozu signify sustained buying pressure in which prices advanced sharply from open to close. Signs of increased buying pressure bode well for support.

The doji and spinning top denote indecision and are generally considered neutral. These non-reversal patterns indicate a decrease in selling pressure, but not necessarily a revival of buying pressure. After a decline, the appearance of a doji or spinning top denotes a sudden letup in selling pressure. A stand-off has developed between buyers and sellers, and a support level may form.

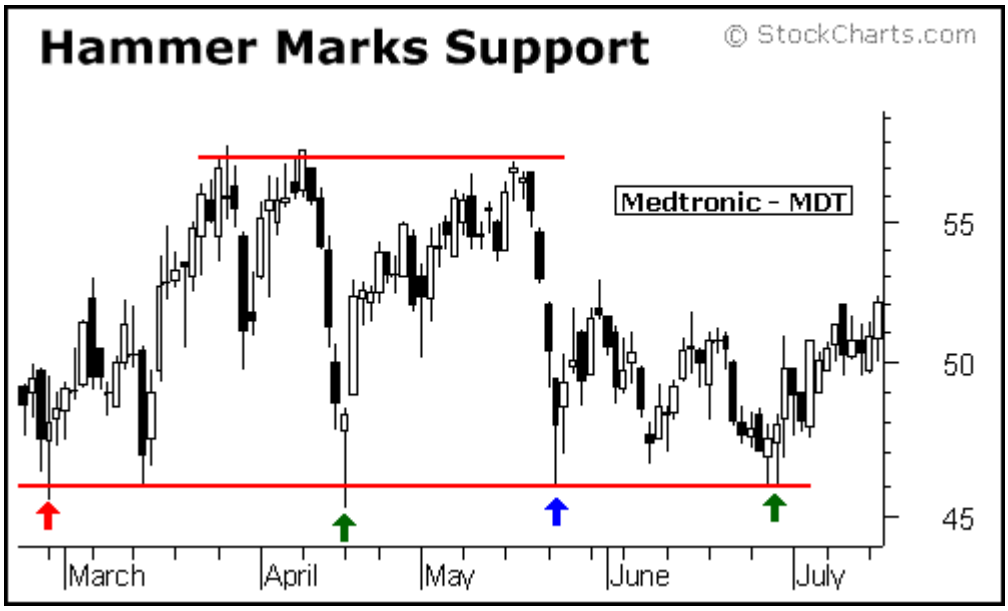
Note: All of the patterns above will be covered in this candlestick series in the next few weeks.



Electronic Data Systems (EDS) traded in a range bound by 58 and 75 for about 4 months at the beginning of 2000. Support at 58 was first established in early January and resistance at 75 in late January. The stock declined to its previous support level in early March, formed a long legged doji and later a spinning top (red circle). Notice that the doji formed immediately after a long black Marubozu (long black candlestick without upper or lower shadows). This doji marked a sudden decrease in relative selling pressure and support held. Support was tested again in April and this test was also marked by a long legged doji (blue arrow).



Broadcom (BRCM) formed a bullish engulfing pattern to mark a new support level just below 210 (green oval) in late July 2000. A few days later a long white candlestick formed and engulfed the previous 4 candlesticks. The combination of the bullish engulfing and long white candlestick served to reinforce the validity of support around 208. The stock has since tested support around 208 once in early September and twice in October. A piercing pattern (red arrow) formed in early October and a large hammer in late October.



Medtronic (MDT) established support around 46 in late February with a spinning top (red arrow) and early March with a harami. The stock declined sharply in April and formed a hammer to confirm support at 46 (green arrow). After a reaction rally to resistance around 57, the stock again declined sharply and again found support around 46 (blue arrow). The black candlestick with the long lower shadow marked support, but the body was too big to qualify as a hammer.

Single candlesticks and candlestick patterns can be used to confirm or mark resistance levels. Such a resistance level could be new after an extended advance,

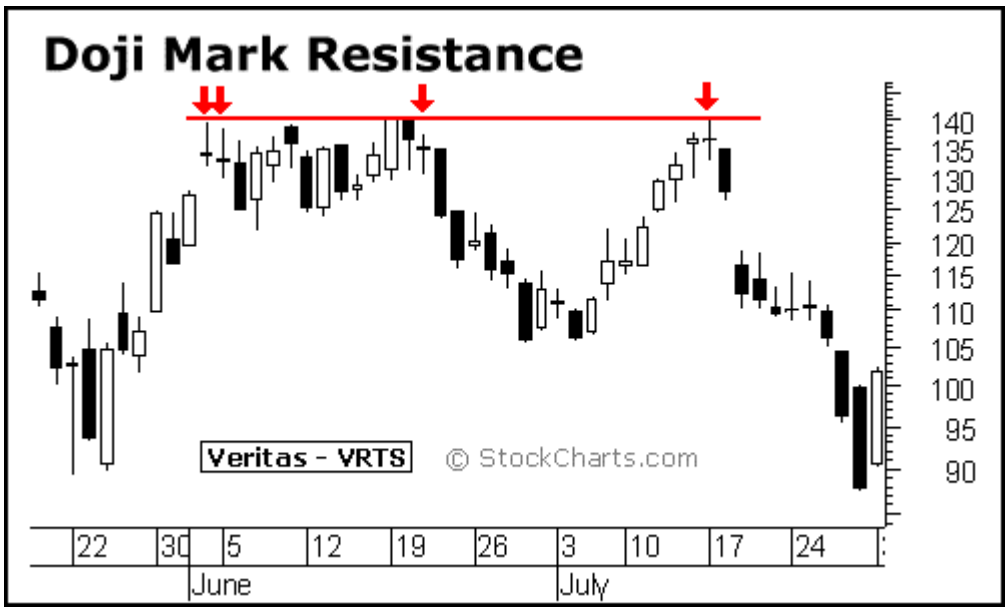
or an existing resistance level confirmed within a trading range. In a trading range, candlesticks can help identify entry points to sell near resistance or buy near support. The list below contains some, but not all, of the candlesticks and candlestick patterns that can be used to identify or confirm resistance levels. The bearish reversal patterns are marked (R).

- Bearish Engulfing (R)
- Bearish Harami (R)
- Dark Cloud Cover (R)
- Doji (Normal, Long Legged, Gravestone)
- Evening Star or Bearish Abandoned Baby (R)
- Hanging Man (R)
- Long Black Candlestick or Black Marubozu
- Shooting Star (R)
- Spinning Top
- Three Black Crows (R)

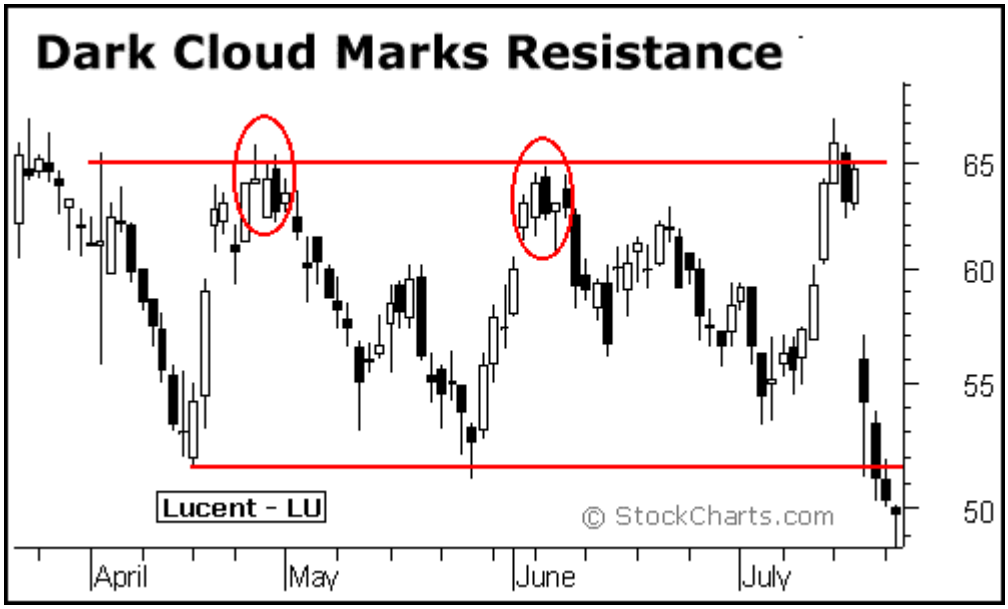
Bearish reversal candlesticks and patterns suggest that buying pressure was suddenly overturned and selling pressure prevailed. Such a quick reversal of fortune indicates overhead supply and a resistance level may form.

The hanging man, long black candlestick and black marubozu signify increased selling pressure rather than an actual reversal. After an advance, the hanging man's long lower shadow indicates intra-session selling pressure that was overcome by the end of the session. Even though the security finished above its low, the ability of sellers to drive prices lower raises a yellow flag. The long black candlestick and black marubozu signify sustained selling pressure that moved prices significantly lower from beginning to end. Such intense selling pressure signals weakness among buyers and a resistance level may be established.

The doji and spinning top show indecision and are generally considered neutral. These non-reversal patterns indicate decreased buying pressure, but no noticeable increase in selling pressure. For an advance to continue, new buyers must be willing to pay higher prices. As noted by the spinning top and doji, a standoff shows lack of conviction among buyers and a possible resistance level.

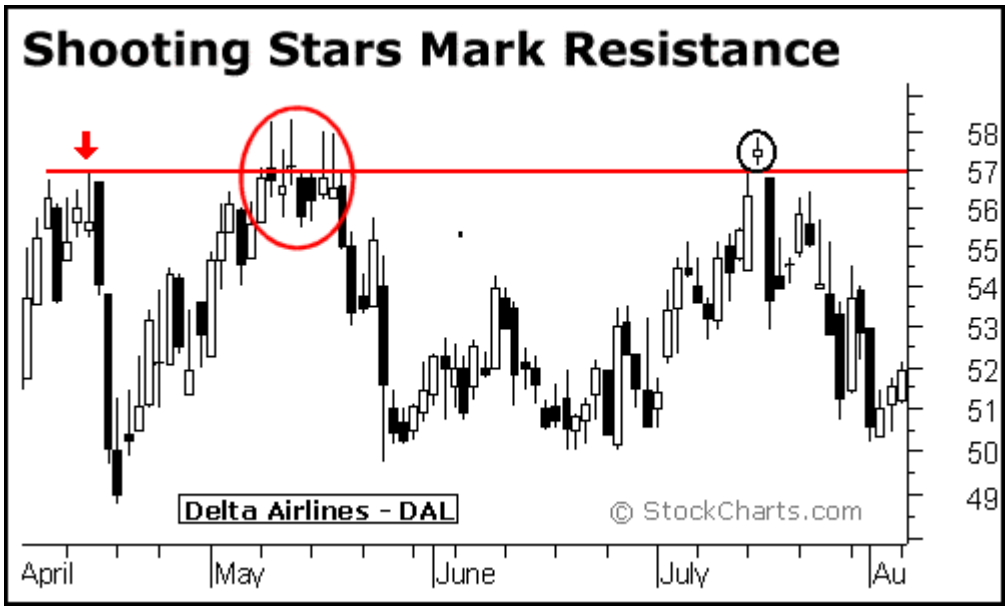


In late May, Veritas (VRTS) advanced from 90 to 140 in about two weeks. The final jump came with a gap up and two doji. These doji marked a sudden stalemate between buyers and sellers, and a resistance level subsequently formed. After a resistance test in mid June, another doji formed to indicate that buyers lacked conviction. This led to a decline and subsequent reaction rally in early July. The advance carried the stock from 105 to 140, where another doji formed to confirm resistance set in early June.



Lucent (LU) traded in a range bound by 65 and 52 for about 4 months. Resistance was first established in late April with a shooting star and dark cloud cover. Both of these bearish reversals were confirmed with a gap down two days later and a test of support at 52. As the stock neared support at 52, candlesticks with long lower shadow started to form and a reversal occurred at the end of May. After a sharp advance, resistance was met at 65 and another dark cloud cover formed at resistance in early June. Buyers clearly lacked conviction near 65 and sellers were all too eager to unload their stock. A final resistance test occurred in mid July.

After a one day breakout above 65, the stock reversed course and closed back below 65. The rest is history.



After a spring advance, DAL first established resistance at 57 in early April with the high of a shooting star. The stock declined sharply, but rebounded to test resistance at 57 again in May. While at resistance in May, a whole slew of shooting stars formed as well as the odd spinning top and long legged doji. The decline that broke below 56 confirmed these as bearish and the stock tested support around 50. After another advance to 57, the stock appeared to be on the verge of a breakout. However, a small white candlestick formed in mid July (black circle). The gap up may have been a positive, but the lack of followthrough signaled by the small white candlestick raised the yellow flag. The subsequent gap down formed a bearish evening star and the stock fell back to support again.

There are dozens of bullish reversal candlestick patterns. I have elected to narrow the field by selecting the most popular for detailed explanations. Below are some of the key bullish reversal patterns with the number of candlesticks required in parentheses.

- Bullish Engulfing (2)
- Piercing Pattern (2)
- Bullish Harami (2)
- Hammer (1)
- Inverted Hammer (1)
- Morning Star (3)
- Bullish Abandoned Baby (3)

The hammer and inverted hammer were covered in Introduction to Candlesticks Part 4. This article will focus on the other six patterns. For a complete list of bullish (and bearish) reversal patterns, see Greg Morris' book, **Candlestick Charting Explained**.

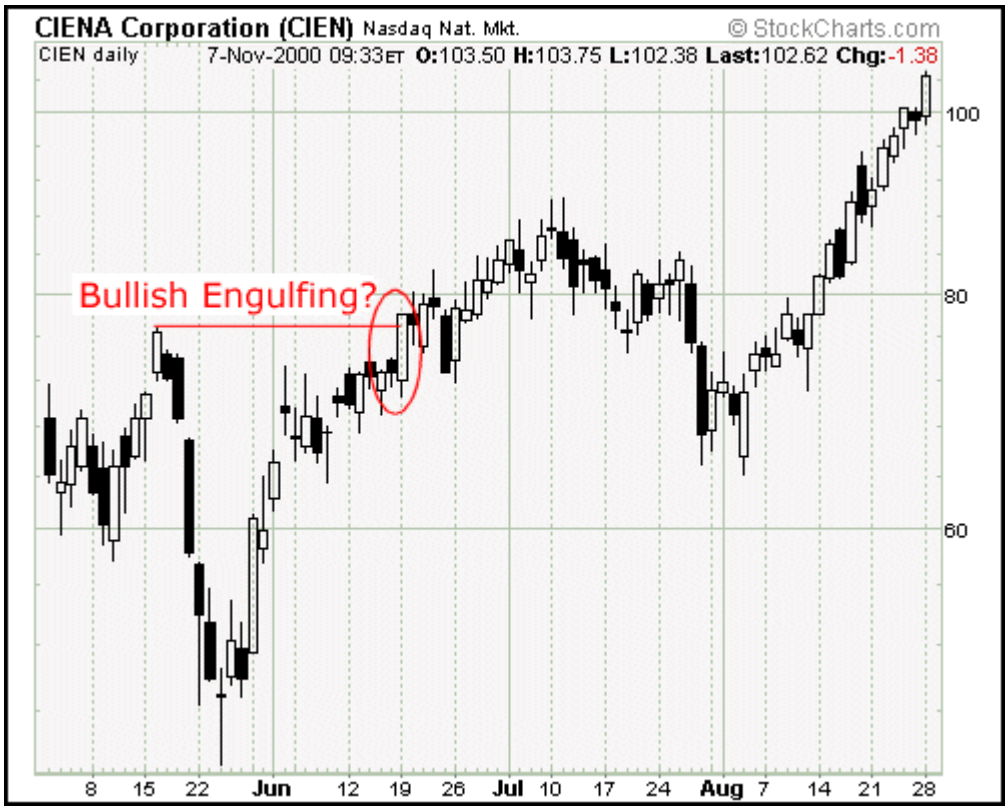
Before moving on to individual patterns, certain guidelines should be established:

- Most patterns require bullish confirmation.
- Bullish reversal patterns should form within a downtrend.

- Other aspects of technical analysis should be used as well.

Bullish Confirmation
Patterns can form with one or more candlesticks; most require bullish confirmation. The actual reversal indicates that buyers overcame prior selling pressure, but it remains unclear whether new buyers will bid prices higher. Without confirmation, these patterns would be considered neutral and merely indicate a potential support level at best. Bullish confirmation means further upside followthrough and can come as a gap up, long white candlestick or high volume advance. Because candlestick patterns are short-term and usually effective for only 1 or 2 weeks, bullish confirmation should come within 1 to 3 days after the pattern.

Existing Downtrend
To be considered a bullish reversal, there should be an existing downtrend to reverse. A bullish engulfing at new highs can hardly be considered a bullish reversal pattern. Such formations would indicate continued buying pressure and could be considered a continuation pattern. In the Ciena example below, the pattern in the red oval looks like a bullish engulfing, but formed near resistance after about a 30 point advance. The pattern does show strength, but is more likely a continuation at this point than a reversal pattern.



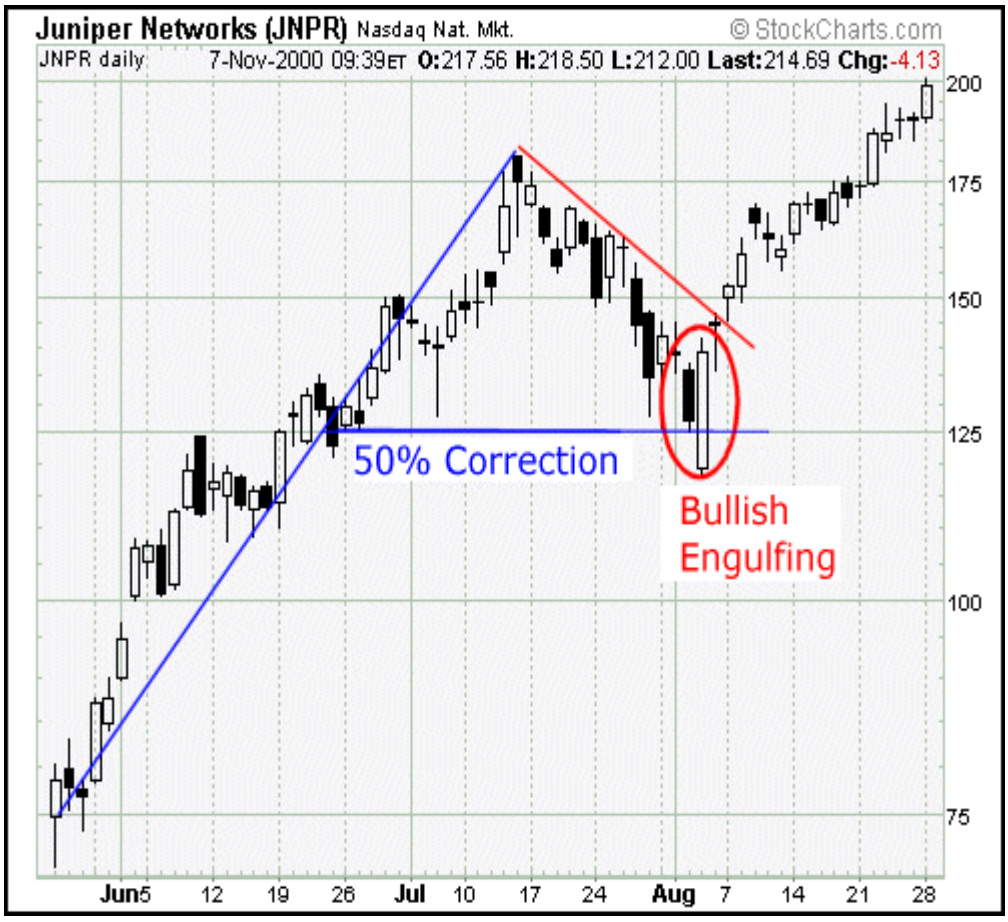
The existence of a downtrend can be determined by using moving averages, peak/trough analysis or trendlines. A security could be deemed in a downtrend based on one of the following:

- The security is trading below its 20-day exponential moving average (EMA).
- Each reaction peak and trough is lower than the previous.
- The security is trading below its trendline.

These are just examples of possible guidelines to determine a downtrend. Some traders may prefer shorter downtrends and consider securities below the 10-day EMA. Defining criteria will depend on your trading style and personal preferences.

Other Technical Analysis
Candlesticks provide an excellent means to identify short-term reversals, but should not be used alone. Other aspects of technical analysis can and should be incorporated to increase reversal robustness. Below are three ideas on how traditional technical analysis might be combined with candlestick analysis.

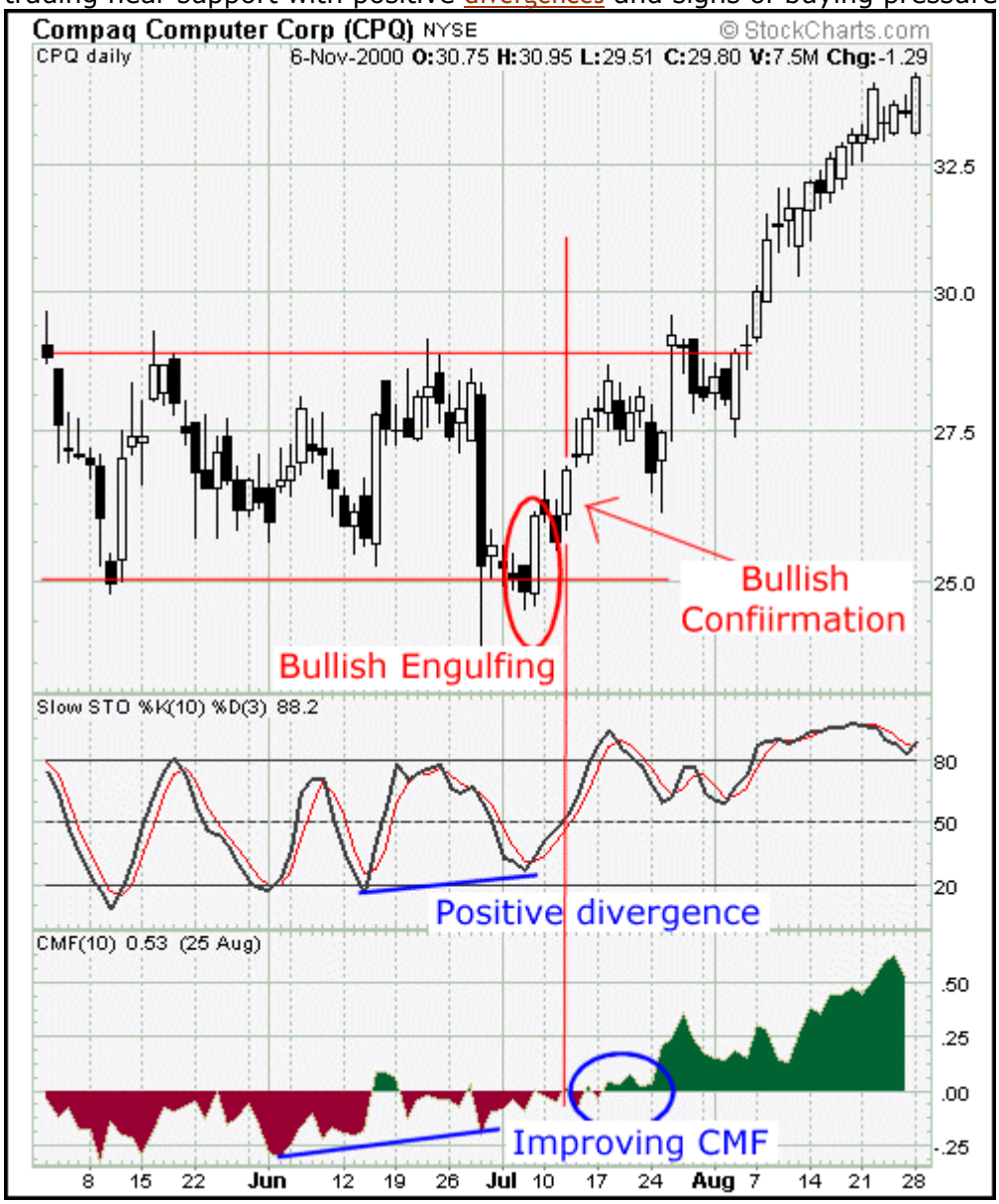
1. **Support**: Look for bullish reversals at support levels to increase robustness. Support levels can be identified with moving averages, previous reaction lows, trendlines or Fibonacci retracements.



1. Juniper Networks (JNPR) advanced from 75 to 175 in less than two months. The stock retraced about 50% of this 100 point advance and formed a large bullish engulfing pattern around 125. This pattern was confirmed with two subsequent advances above the down trendline. **Momentum**: Use oscillators to confirm improving momentum with bullish reversals. Positive divergences in MACD, PPO, Stochastics, RSI, StochRSI or Williams %R would indicate improving momentum and increase the robustness behind a bullish reversal pattern.

2. **Money Flows**: Use volume-based indicators to access buying and selling pressure. On Balance Volume (OBV), Chaikin Money Flow (CMF) and the Accumulation/Distribution Line can be used in conjunction with candlesticks. Strength in any of these would increase the robustness of a reversal.

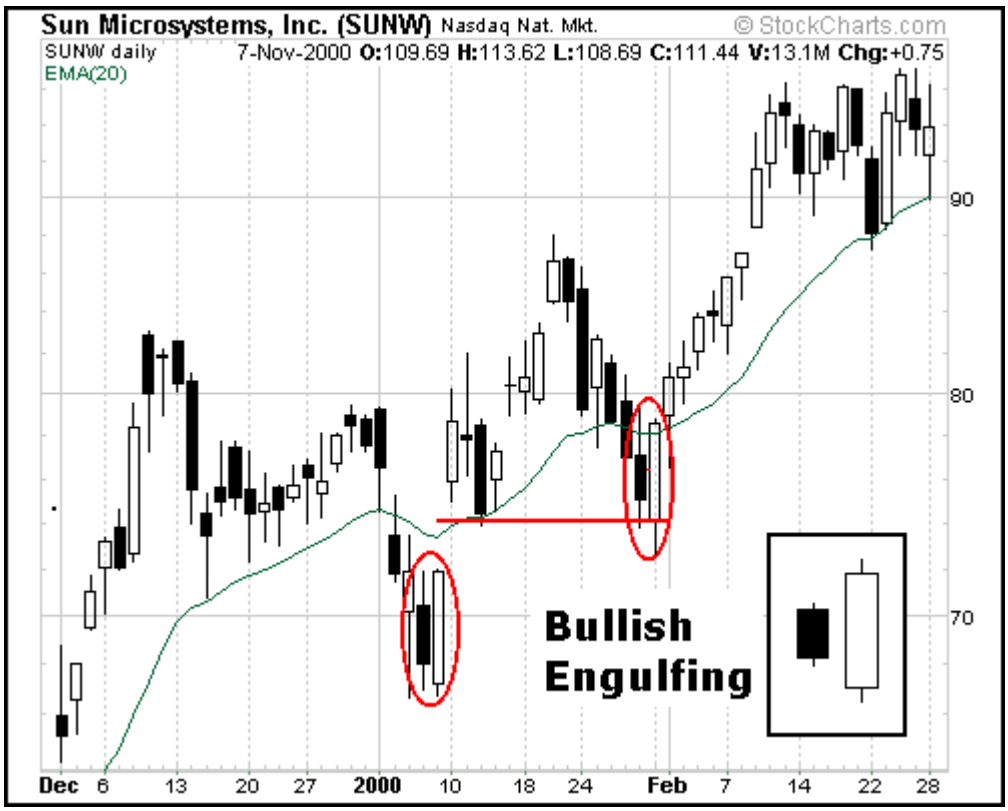
For those that want to take it one step further, all three aspects could be combined for the ultimate signal. Look for bullish candlestick reversal in securities trading near support with positive divergences and signs of buying pressure.



A number of signals came together for Compaq (CPQ) in early July. After a steep decline in late June, the stock formed a series of spinning tops near support at 25. A bullish engulfing pattern formed in early July and this was confirmed three days later with a strong advance above 27. The 10-day Slow Stochastic Oscillator formed a positive divergence and moved above its trigger line just before the stock advanced above 27. Although not in the green yet, CMF showed constant improvement and moved into positive territory a week later.

Bullish Engulfing
The bullish engulfing pattern consists of two candlesticks, the first black and the second white. The size of the black candlestick is not that important, but it should not be a doji which would be relatively easy to engulf. The second should be a long white candlestick -- the bigger it is, the more bullish. The white body must totally engulf the body of the first black candlestick. Ideally, though not necessarily, the white body would engulf the shadows as well. Although shadows are permitted, they are usually small or nonexistent on both candlesticks.

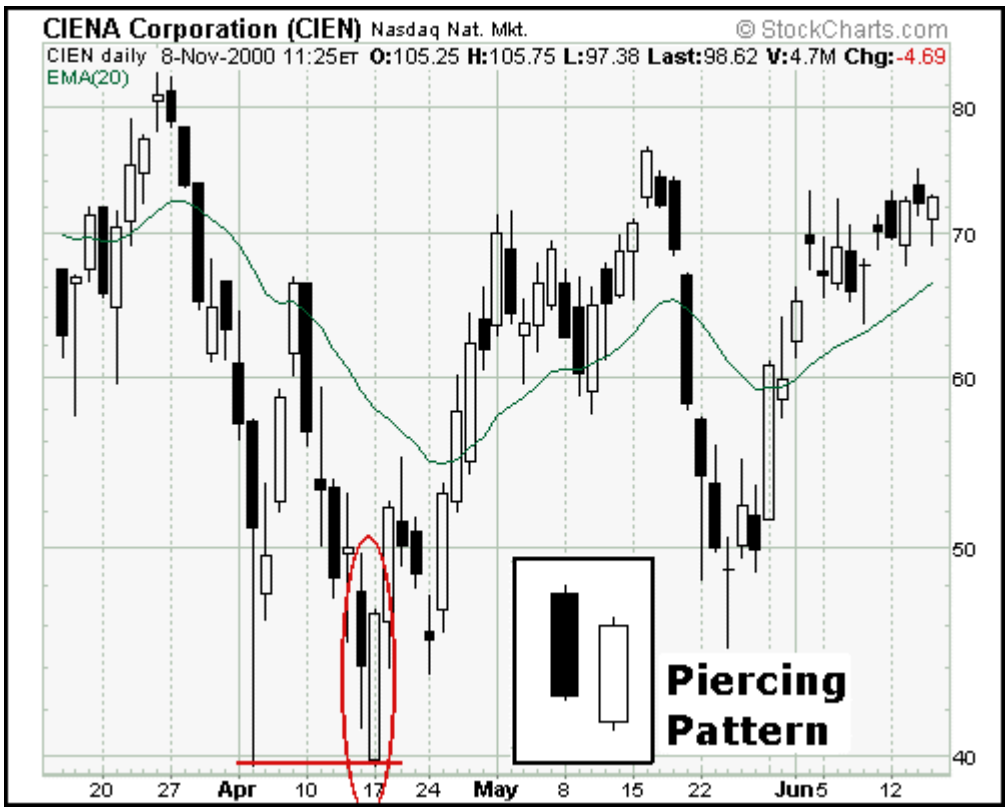
After a decline, the second white candlestick begins to form when selling pressure causes the security to open below the previous close. Buyers step in after the open and push prices above the previous open for a strong finish and potential short-term reversal. Generally, the larger the white candlestick and the greater the engulfing, the more bullish the reversal. Further strength is required to provide bullish confirmation of this reversal pattern.



In Jan-00, Sun Microsystems (SUNW) formed a pair of bullish engulfing patterns that foreshadowed two significant advances. The first formed in early January after a sharp decline that took the stock well below its 20-day exponential moving average (EMA). An immediate gap up confirmed the pattern as bullish and the stock raced ahead to the mid eighties. After correcting to support, the second bullish engulfing pattern formed in late January. The stock declined below its 20-day EMA and found support from its earlier gap up. This also marked a 2/3 correction of the prior advance. A bullish engulfing pattern formed and was confirmed the next day with a strong follow-up advance.

Piercing Pattern
The piercing pattern is made up of two candlesticks, the first black and the second white. Both candlesticks should have fairly large bodies and the shadows are usually, but not necessarily, small or nonexistent. The white candlestick must open below the previous close and close above the midpoint of the black candlestick's body. A close below the midpoint might qualify as a reversal, but would not be considered as bullish.

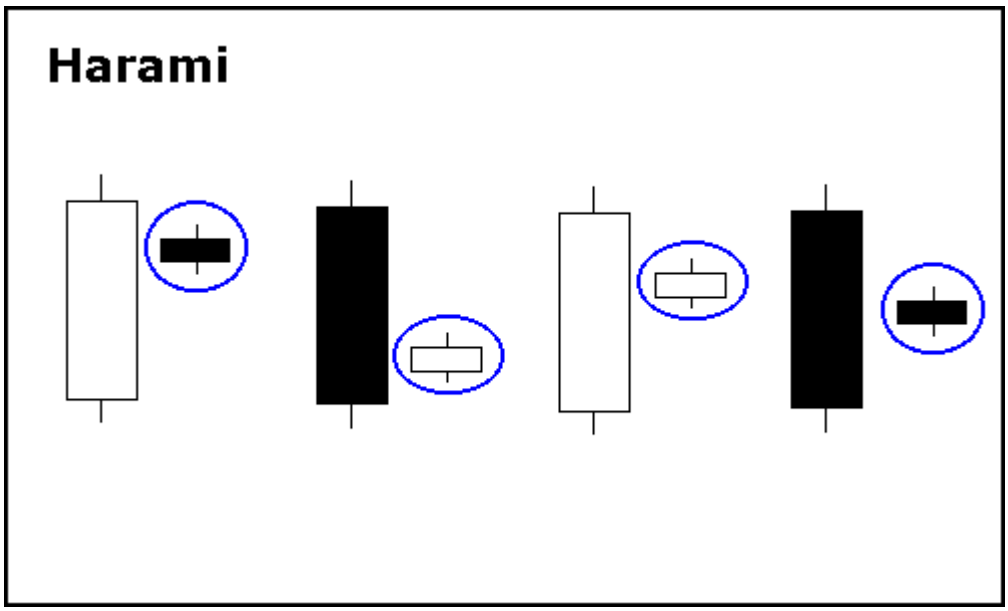
Just as with the bullish engulfing pattern, selling pressure forces the security to open below the previous close, indicating that sellers still have the upper hand on the open. However, buyers step in after the open to push the security higher and it closes above the midpoint of the previous black candlestick's body. Further strength is required to provide bullish confirmation of this reversal pattern.



In late March and early April 2000, Ciena (CIEN) declined from above 80 to around 40. The stock first touched 40 in early April with a long lower shadow. After a bounce, the stock tested support around 40 again in mid April and formed a piercing pattern. The piercing pattern was confirmed the very next day with a strong advance above 50. Even though there was a setback after confirmation, the stock remained above support and advanced above 70. Also notice the morning doji star in late May.

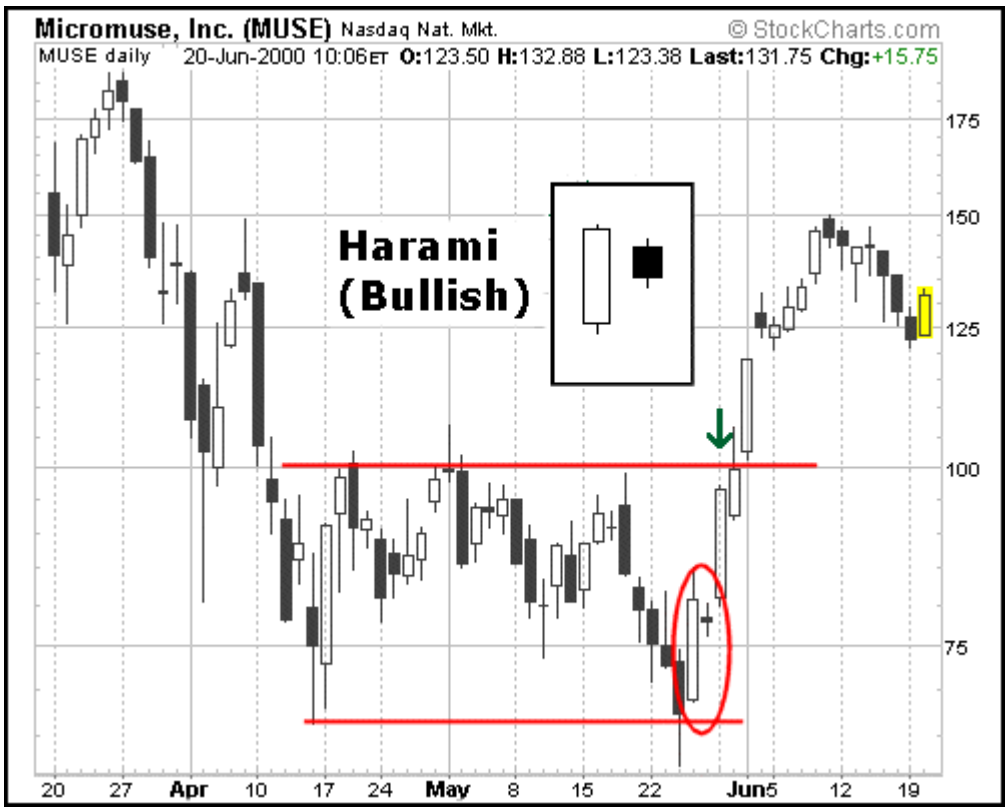
Bullish Harami

The bullish harami is made up of two candlesticks. The first has a large body and the second a small body that is totally encompassed by the first. There are four possible combinations: white/white, white/black, black/white and black/black. Whether they are bullish reversal or bearish reversal patterns, all harami look the same. Their bullish or bearish nature depends on the preceding trend. Harami are considered potential bullish reversals after a decline and potential bearish reversals after an advance. No matter what the color of the first candlestick, the smaller the body of the second candlestick is, the more likely the reversal. If the small candlestick is a doji, the chances of a reversal increase.



In his book **Beyond Candlesticks**, Steve Nison asserts that any combination of colors can form a harami, but that the most bullish are those that form with a white/black or white/white combination. Because the first candlestick has a large body, it implies that the bullish reversal pattern would be stronger if this body were white. The long white candlestick shows a sudden and sustained resurgence of buying pressure. The small candlestick afterwards indicates consolidation. White/white and white/black bullish harami are likely to occur less often than black/black or black/white.

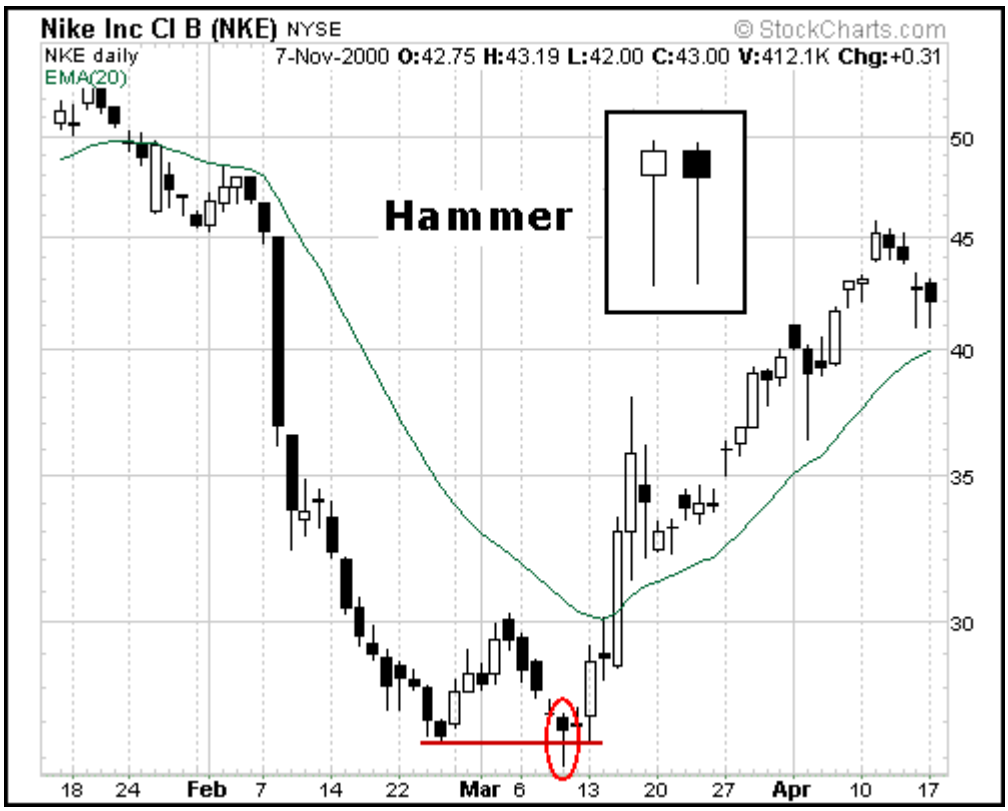
After a decline, a black/black or black/white combination can still be regarded as a bullish harami. The first long black candlestick signals that significant selling pressure remains and could indicate capitulation. The small candlestick immediately following forms with a gap up on the open, indicating a sudden increase in buying pressure and potential reversal.



Micromuse (MUSE) declined to the mid sixties in Apr-00 and began to trade in a range bound by 65 and 100 over the next few weeks. After a 6-day decline back to support in late May, a bullish harami (red oval) formed. The first day formed a long white candlestick, and the second a small black candlestick that could be classified as a doji. The next day's advance provided bullish confirmation and the stock subsequently rose to around 150.

Hammer
The hammer is made up of one candlestick, white or black, with a small body, long lower shadow and small or nonexistent upper shadow. The size of the lower shadow should be a least twice the length of the body and the high/low range should be relatively large. Large is a relative term and the high/low range should be large relative to range over the last 10-20 days.

After a decline, the hammer's intraday low indicates that selling pressure remains. However, the strong close shows that buyers are starting to become active again. Further strength is required to provide bullish confirmation of this reversal pattern.

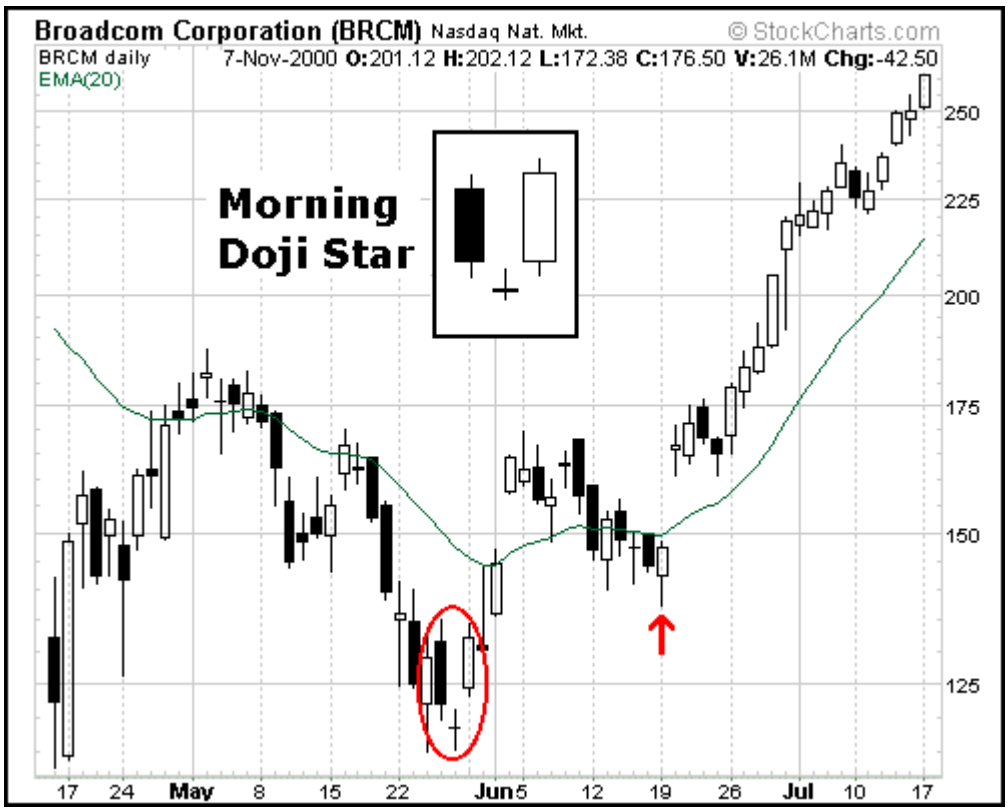


Nike (NKE) declined from the low fifties to the mid thirties before starting to find support in late February. After a small reaction rally, the stock declined back to support in mid March and formed a hammer. Bullish confirmation came two days later with a sharp advance.

Morning Star
The morning star consists of three candlesticks:

1. A long black candlestick.
2. A small white or black candlestick that gaps below the close of the previous candlestick. This candlestick can also be a doji, in which case the pattern would be a morning doji star.
3. A long white candlestick.

The black candlestick confirms that the decline remains in force and selling dominates. When the second candlestick gaps down, it provides further evidence of selling pressure. However, the decline ceases or slows significantly after the gap and a small candlestick forms. The small candlestick indicates indecision and a possible reversal of trend. If the small candlestick is a doji, the chances of a reversal increase. The third long white candlestick provides bullish confirmation of the reversal.

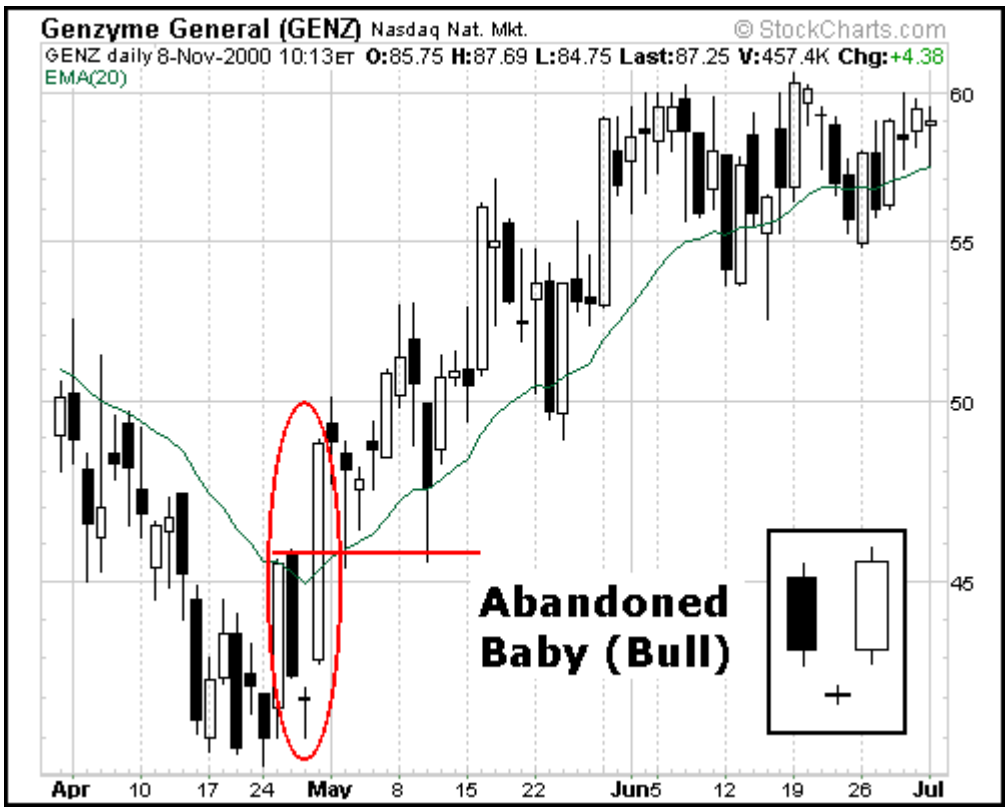


After declining from above 180 to below 120, Broadcom (BRCM) formed a morning doji star and subsequently advanced above 160 in the next three days. These are strong reversal patterns and do not require further bullish confirmation, beyond the long white candlestick on the third day. After the advance above 160, a two-week pullback followed and the stock formed a piecing pattern (red arrow) that was confirmed with a large gap up.

Bullish Abandoned Baby
The bullish abandoned baby resembles the morning doji star and also consists of three candlesticks:

1. A long black candlestick.
2. A doji that gaps below the low of the previous candlestick.
3. A long white candlestick that gaps above the high of the doji.

The main difference between the morning doji star and the bullish abandoned baby are the gaps on either side of the doji. The first gap down signals that selling pressure remains strong. However, selling pressure eases and the security closes at or near the open, creating a doji. Following the doji, the gap up and long white candlestick indicate strong buying pressure and the reversal is complete. Further bullish confirmation is not required.



In April, Genzyme (GENZ) declined below its 20-day EMA and began to find support in the low thirties. The stock began forming a base as early as 17-Apr, but a discernable reversal pattern failed to emerge until the end of May. The bullish abandoned baby formed with a long black candlestick, doji and long white candlestick. The gaps on either side of the doji reinforced the bullish reversal.

There are dozens of bearish reversal patterns. I have elected to narrow the field by selecting a few of the most popular patterns for detailed explanations. For a complete list of bearish and bullish reversal patterns, see Greg Morris' book, **Candlestick Charting Explained**. Below are some of the key bearish reversal patterns, with the number of candlesticks required in parentheses.

- Bearish Abandoned Baby (3)
- Bearish Engulfing (2)
- Bearish Harami (2)
- Dark Cloud Cover (2)
- Evening Star (3)
- Shooting Star (1)

I believe in certain guidelines relating to bearish reversal patterns:

- Most patterns require further bearish confirmation.
- Bearish reversal patterns should form within an uptrend.
- Other aspects of technical analysis should be used as well.

Bearish Confirmation
Bearish reversal patterns can form with one or more candlesticks; most require bearish confirmation. The actual reversal indicates that selling pressure overwhelmed buying pressure for one or more days, but it remains unclear whether or not sustained selling or lack of buyers will continue to push prices

lower. Without confirmation, many of these patterns would be considered neutral and merely indicate a potential resistance level at best. Bearish confirmation means further downside followthrough, such as a gap down, long black candlestick or high volume decline. Because candlestick patterns are short-term and usually effective for 1-2 weeks, bearish confirmation should come within 1-3 days.

AOL advanced from the upper fifties to the low seventies in less than two months. The long white candlestick that took the stock above 70 in late March was followed by a long-legged doji in the harami position. A second long-legged doji immediately followed and indicated that the uptrend was beginning to tire. The dark cloud cover (red oval) increased these suspicions and bearish confirmation was provided by the long black candlestick (red arrow).

Existing Uptrend
To be considered a **bearish** reversal, there should be an existing uptrend to reverse. It does not have to be a major uptrend, but should be up for the short term or at least over the last few days. A dark cloud cover after a sharp decline or near new lows is unlikely to be a valid bearish reversal pattern. Bearish reversal patterns within a downtrend would simply confirm existing selling pressure and could be considered continuation patterns.

There are many methods available to determine the trend. An uptrend can be established using moving averages, peak/trough analysis or trendlines. A security could be deemed in an uptrend based on one or more of the following:

- The security is trading above its 20-day exponential moving average (EMA).
- Each reaction peak and trough is higher than the previous.
- The security is trading above a trendline.

These are just three possible methods. Some traders may prefer shorter uptrends and qualify securities that are trading above their 10-day EMA. Defining criteria will depend on your trading style, time horizon and personal preferences.

Other Technical Analysis
Candlesticks provide an excellent means to identify short-term reversals, but

should not be used alone. Other aspects of technical analysis can and should be incorporated to increase the robustness of bearish reversal patterns.

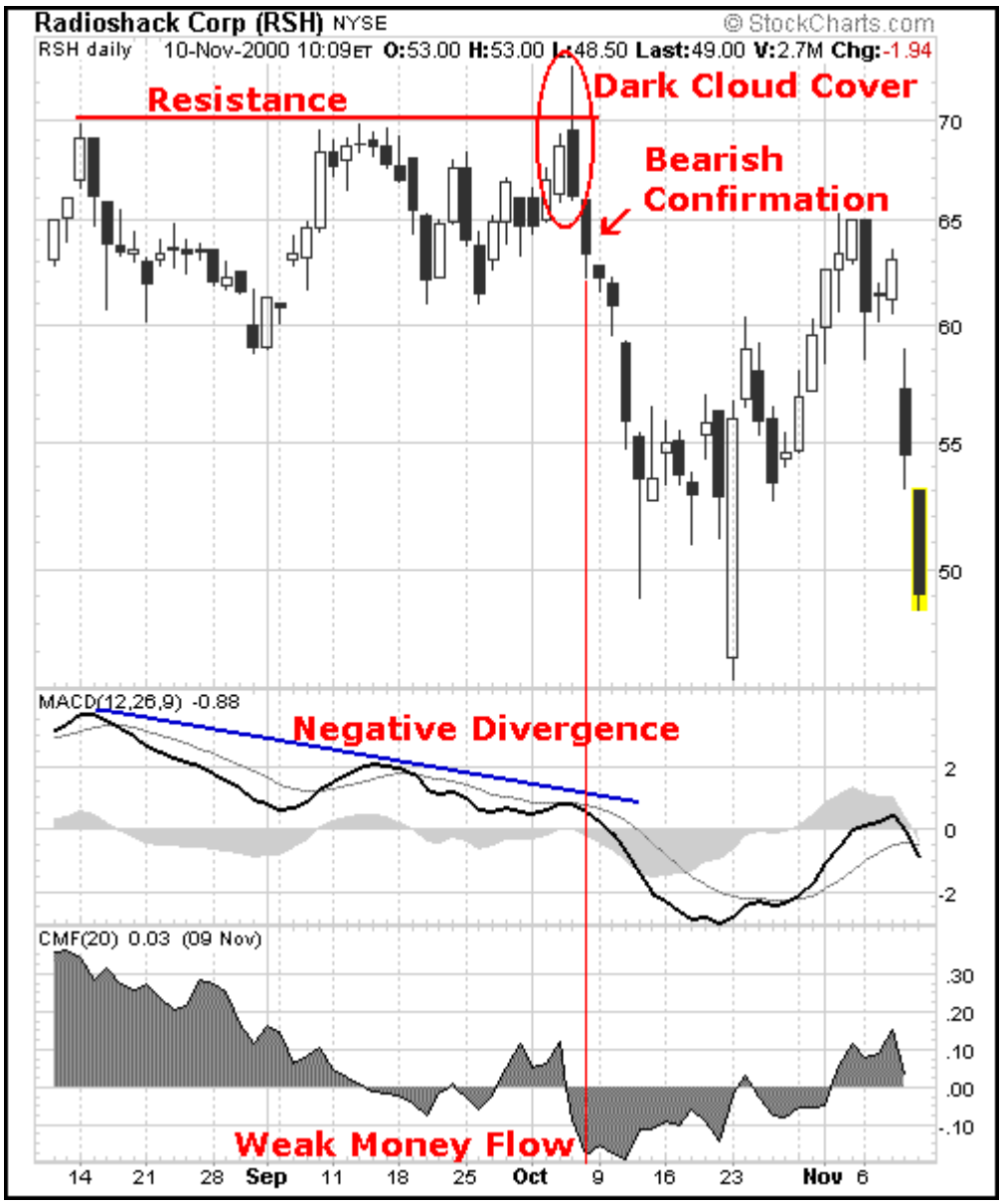
Resistance: Look for bearish reversals near resistance levels to increase robustness. Resistance levels can be determined using moving averages, previous reaction highs or trendlines.

In Jan-00, Nike (NKE) gapped up over 5 points and closed above 50. A candlestick with a long upper shadow formed and the stock subsequently traded down to 45. This established a resistance level around 53. After an advance back to resistance at 53, the stock formed a bearish engulfing pattern (red oval). Bearish confirmation came when the stock declined the next day, gapped down below 50 and broke its short-term trendline two days later.

Momentum: Use oscillators to confirm weakening momentum with bearish reversals. Negative divergences in MACD, PPO, Stochastics, RSI, StochRSI or Williams %R indicate weakening momentum and can increase the robustness of a bearish reversal pattern. In addition, bearish moving average crossovers in the PPO and MACD can provide confirmation, as well as trigger line crossovers for the Slow Stochastic Oscillator.

Money Flows: Use volume-based indicators to assess selling pressure and confirm reversals. On Balance Volume (OBV), Chaikin Money Flow and the Accumulation/Distribution Line can be used to spot negative divergences or simply excessive selling pressure. Signs of increased selling pressure can improve the robustness of a bearish reversal pattern.

For those that want to take it one step further, all three aspects could be combined for the ultimate signal. Look for a bearish candlestick reversal in securities trading near resistance with weakening momentum and signs of increased selling pressure. Such signals would be relatively rare, but could offer above-average profit potential.



A number of signals came together for RadioShack (RSH) in early Oct-00. The stock traded up to resistance at 70 for the third time in two months and formed a dark cloud cover pattern (red oval). In addition, the long black candlestick had a long upper shadow to indicate an intraday reversal. Bearish confirmation came the next day with a sharp decline. The negative divergence in the PPO and extremely weak money flows also provided further bearish confirmation.

Bearish Engulfing

The bearish engulfing pattern consists of two candlesticks; the first is white and the second black. The size of the white candlestick is not that important, but should not be a doji, which would be relatively easy to engulf. The second should be a long black candlestick. The bigger it is, the more bearish the reversal. The black body must totally engulf the body of the first, white, candlestick. Ideally, the black body should engulf the shadows as well, but this is not a requirement. Shadows are permitted, but they are usually small or nonexistent on both candlesticks.

After an advance, the second black candlestick begins to form when residual buying pressure causes the security to open above the previous close. However, sellers step in after this opening gap up and begin to drive prices down. By the end of the session, selling becomes so intense that prices move below the previous close. The resulting candlestick engulfs the previous day's body and creates a potential short-term reversal. Further weakness is required for bearish confirmation of this reversal pattern.

After meeting resistance around 35 in mid-January, Ford (F) formed a bearish engulfing (red oval). The pattern was immediately confirmed with a decline and subsequent support break.

Dark Cloud Cover

The dark cloud cover pattern is made up of two candlesticks; the first is white and the second black. Both candlesticks should have fairly large bodies and the shadows are usually small or nonexistent, though not necessarily. The black candlestick must open above the previous close and close below the midpoint of the white candlestick's body. A close above the midpoint might qualify as a reversal, but would not be considered as bearish.

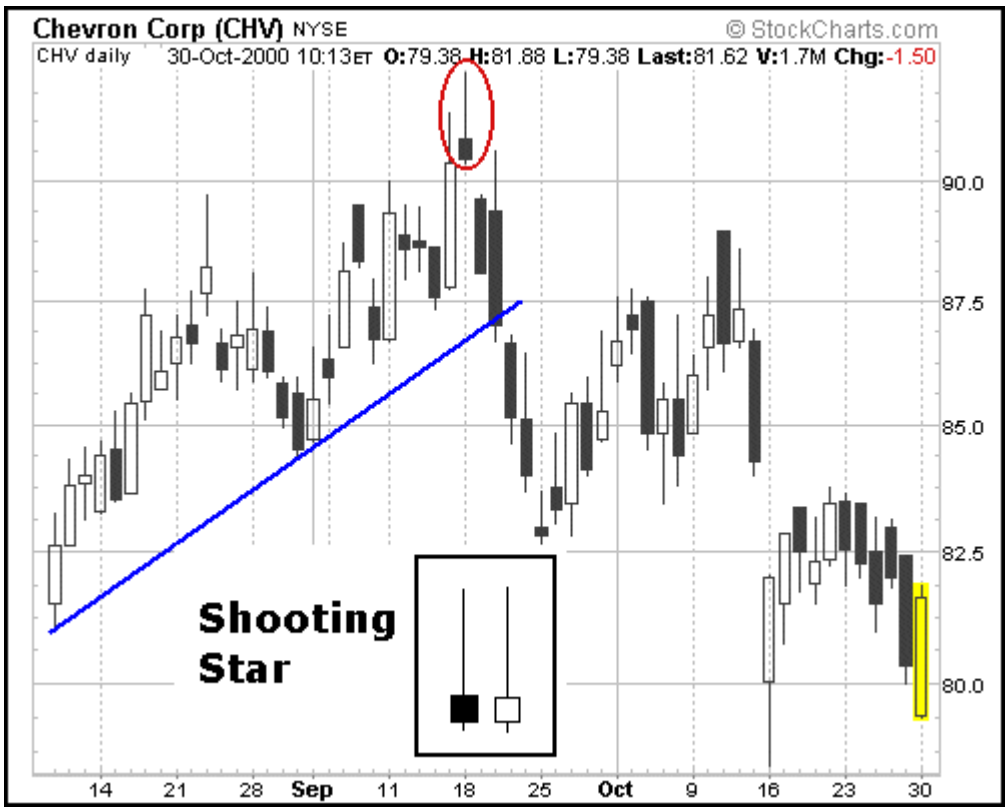
Just as with the bearish engulfing pattern, residual buying pressure forces prices higher on the open, creating an opening gap above the white candlestick's body. However, sellers step in after the strong open and push prices lower. The intensity of the selling drives prices below the midpoint of the white candlestick's body. Further weakness is required for bearish confirmation of this reversal pattern.

After a sharp advance from 37 1/2 to 45 in about 2 weeks, Citigroup (C) formed a dark cloud cover pattern (red oval). This pattern was confirmed with two long black candlesticks and marked an abrupt reversal around 45.

Shooting Star

The shooting star is made up of one candlestick (white or black) with a small body, long upper shadow and small or nonexistent lower shadow. The size of the upper shadow should be a least twice the length of the body and the high/low range should be relatively large. Large is a relative term and the high/low range should be large relative to the range over the last 10-20 days.

For a candlestick to be in star position, it must gap way from the previous candlestick. In **Candlestick Charting Explained**, Greg Morris indicates that a shooting star should gap up from the preceding candlestick. However, in **Beyond Candlesticks**, Steve Nison provides a shooting star example that forms below the previous close. There should be room to maneuver, especially when dealing with stocks and indices, which often open near the previous close. A gap up would definitely enhance the robustness of a shooting star, but the essence of the reversal should not be lost without the gap.



After an advance that was punctuated by a long white candlestick, Chevron (CHV) formed a shooting star candlestick above 90 (red oval). The bearish reversal pattern was confirmed with a gap down the following day

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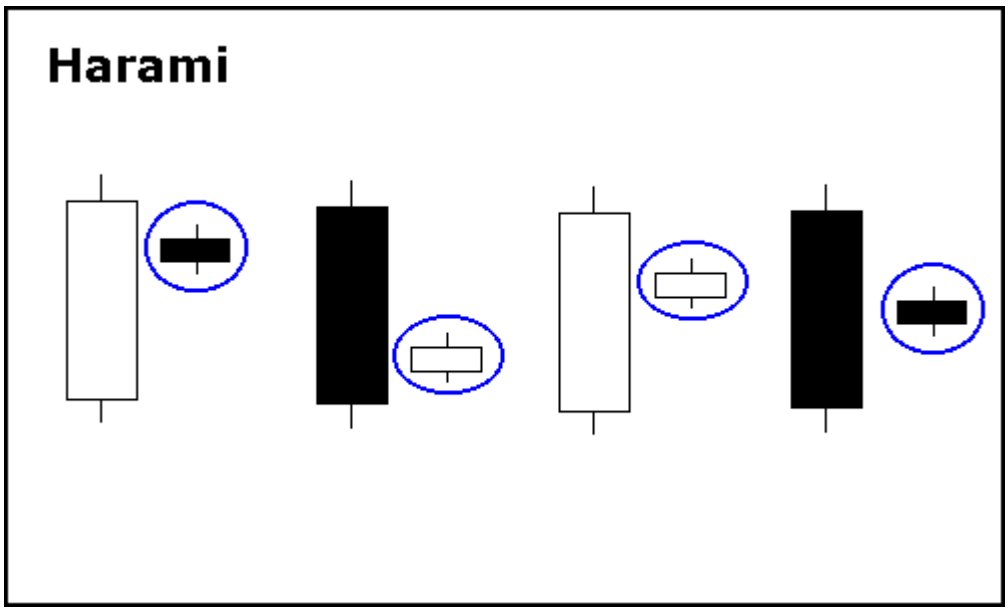
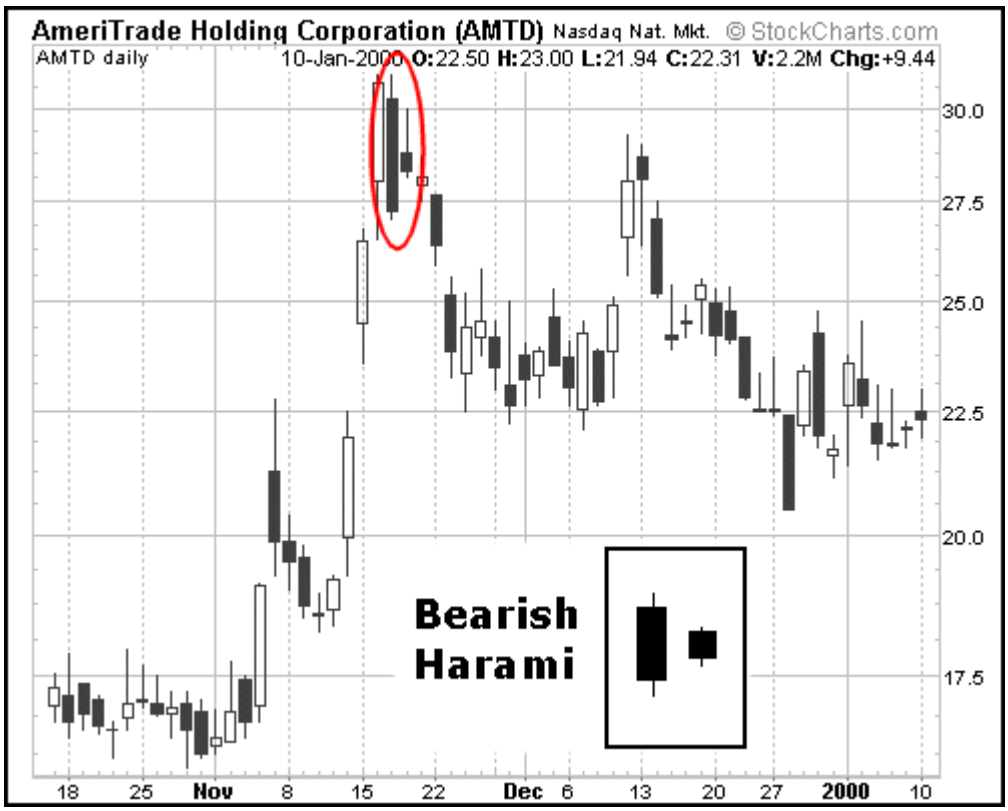
Bearish Harami

The bearish harami is made up of two candlesticks. The first has a large body and the second a small body that is totally encompassed by the first. There are four possible combinations: white/white, white/black, black/white and black/black. Whether a bullish reversal or bearish reversal pattern, all harami look the same. Their bullish or bearish nature depends on the preceding trend. Harami are considered potential bearish reversals after an advance and potential bullish reversals after a decline. No matter what the color of the first candlestick, the smaller the body of the second candlestick is, the more likely the reversal. If the small candlestick is a doji, the chances of a reversal increase.

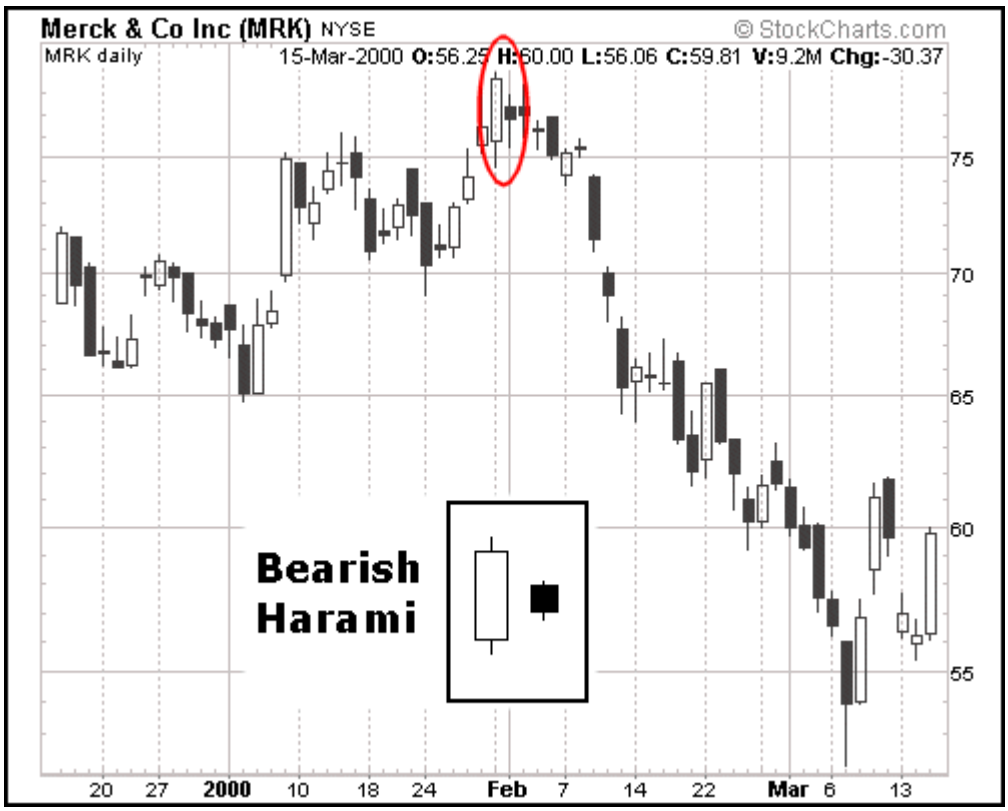


In his book, **Beyond Candlesticks**, Steve Nison asserts that any combination of colors can form a harami, but the most bearish are those that form with a black/white or black/black combination. Because the first candlestick has a large body, it implies that the bearish reversal pattern would be stronger if this body were black. This would indicate a sudden and sustained increase in selling pressure. The small candlestick afterwards indicates consolidation before continuation. After an advance, black/white or black/black bearish harami are not as common as white/black or white/white variations.

A white/black or white/white combination can still be regarded as a bearish harami and signal a potential reversal. The first long white candlestick forms in the direction of the trend. It signals that significant buying pressure remains, but could also indicate excessive bullishness. Immediately following, the small candlestick forms with a gap down on the open, indicating a sudden shift towards the sellers and a potential reversal.



After a gap up and rapid advance to 30, Ameritrade (AMTD) formed a bearish harami (red oval). This harami consists of a long black candlestick and a small black candlestick. The decline two days later confirmed the bearish harami and the stock fell to the low twenties.

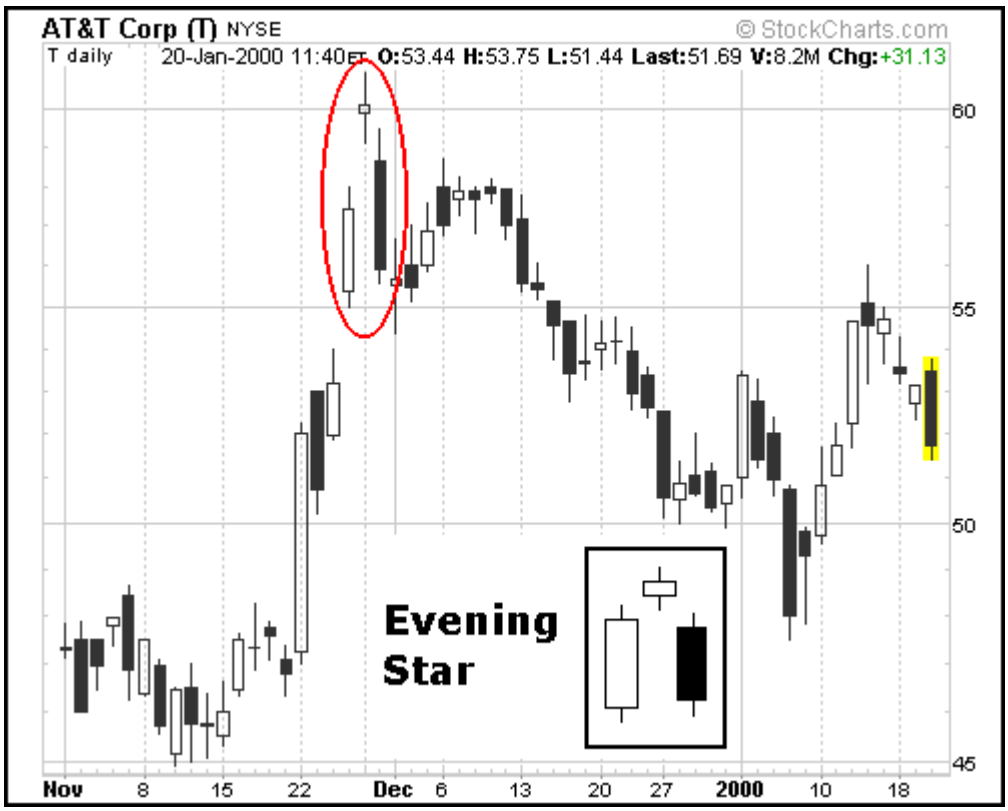


Merck (MRK) formed a bearish harami with a long white candlestick and long black candlestick (red oval). The long white candlestick confirmed the direction of the current trend. However, the stock gapped down the next day and traded in a narrow range. The decline three days later confirmed the pattern as bearish.

Evening Star
The evening star consists of three candlesticks:

1. A long white candlestick.
2. A small white or black candlestick that gaps above the close (body) of the previous candlestick. This candlestick can also be a doji, in which case the pattern would be a evening doji star.
3. A long black candlestick.

The long white candlestick confirms that buying pressure remains strong and the trend is up. When the second candlestick gaps up, it provides further evidence of residual buying pressure. However, the advance ceases or slows significantly after the gap and a small candlestick forms, indicating indecision and a possible reversal of trend. If the small candlestick is a doji, the chances of a reversal increase. The third long black candlestick provides bearish confirmation of the reversal.

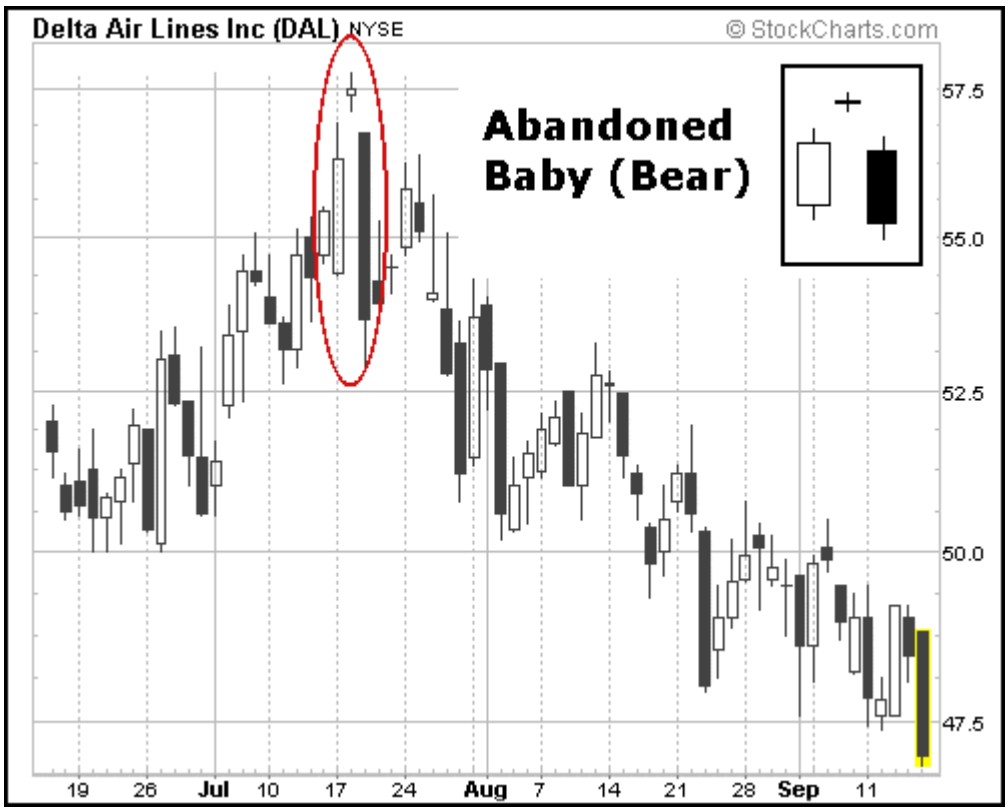


After advancing from 45 to 60 in about two weeks, AT&T (T) formed an evening star (red oval). The middle candlestick is a spinning top, which indicates indecision and possible reversal. The gap above 60 was reversed immediately with a long black candlestick. Even though the stock stabilized in the next few days, it never exceeded the top of the long black candlestick and subsequently fell below 50.

Bearish Abandoned Baby
The bearish abandoned baby resembles the evening doji star and also consists of three candlesticks:

1. A long white candlestick.
2. A doji that gaps above the high of the previous candlestick.
3. A long black candlestick that gaps below the low of the doji.

The main difference between the evening doji star and the bearish abandoned baby are the gaps on either side of the doji. The first gap up signals a continuation of the uptrend and confirms strong buying pressure. However, buying pressure subsides after the gap up and the security closes at or near the open, creating a doji. Following the doji, the gap down and long black candlestick indicate strong and sustained selling pressure to complete the reversal. Further bearish confirmation is not required.



Delta (DAL) formed an abandoned baby to mark a sharp reversal that carried the stock from 57 1/2 to 47 1/2. Although the open and close are not exactly equal, the small white candlestick in the middle captures the essence of a doji. Indecision is reflected with the small body and equal upper and lower shadows. In addition, the middle candlestick is separated by gaps on either side, which add emphasis to the reversal.

I am sorry if some of the information I have included has been duplicated, but you now have at your disposal a huge amount of technical know how.

By the way, I have not broken my word because I did not give you the history lessons. So there!

That is all of the information that you will ever need to know about indicators, in fact, just to put your mind at ease, I have given you way too much. But do with it, as you will.

Now let us disregard all of it and start learning to trade.

15

And finally..... Well, almost.

Whether you have skipped all of the previous chapters, or you have studied everything within this book, it is now time to pay very close attention.

Let me begin.

Firstly, I am going to assume that you have opened an account with one of the financial spread firms. If you have not, it does not matter; you'll just have to play catch up.

I use Finspreads and will be using them for this example, though any other live financial spread account will do.

To have all of the information that I need to trade in front of me, I log into my account through the client area and then click on the online trading tab.

This takes me through to the live prices.

If you have done this, you will notice that you now have two windows open for finspreads. One is the live prices screen and the other is the client area and looks like this:

Open up the client area screen (do not close down the live prices screen) and then direct yourself to the FT chart page, either by typing the address into your browser or hopefully retrieving it from your favourites folder on your browser.

It is always best to save sites that you view and use in your favourites folder. It makes finding them so much easier.

Hopefully you have stored all of your chart settings and the page will load exactly as you want it. If not, set the chart and then store the settings.

You should now still have two windows open, the FT charts page that you have just opened and the finspreads live prices page.

You are now going to have to adjust your viewed pages to enable you to see all of the information that you require at the same time.

To do this you are going to re-size the FT chart page. You do this by clicking on the restore button in the top right-hand corner of your screen.

The restore button is the middle of the three buttons.

Once you have pressed the restore button, the open page that you are viewing will shrink in size and you will be able to move the page around the screen and re-size it.

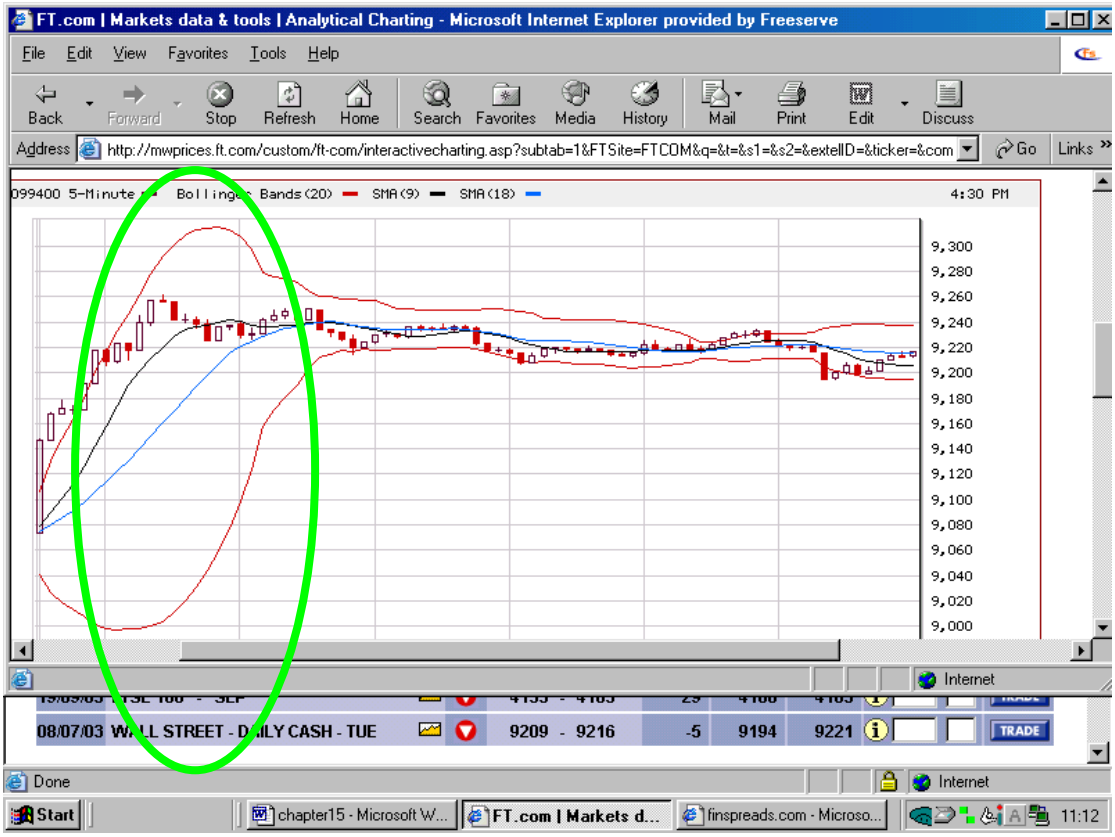
To re-size the page click and drag on the bottom right of the page, so that you are able to see the chart and the live prices on the finspreads page; it should look something like this:

All that is left to do is follow what the markets are doing. You do this by watching the chart patterns and by watching the 'Daily Change' figure on the live prices screen (if it moves more than 5 points at once in any given direction, sit up and pay attention)

Naturally of course, once you are well on your way to making a fortune from trading, you can purchase 2 screens and the soft ware to run them and have the luxury of view both pages on separate screens.

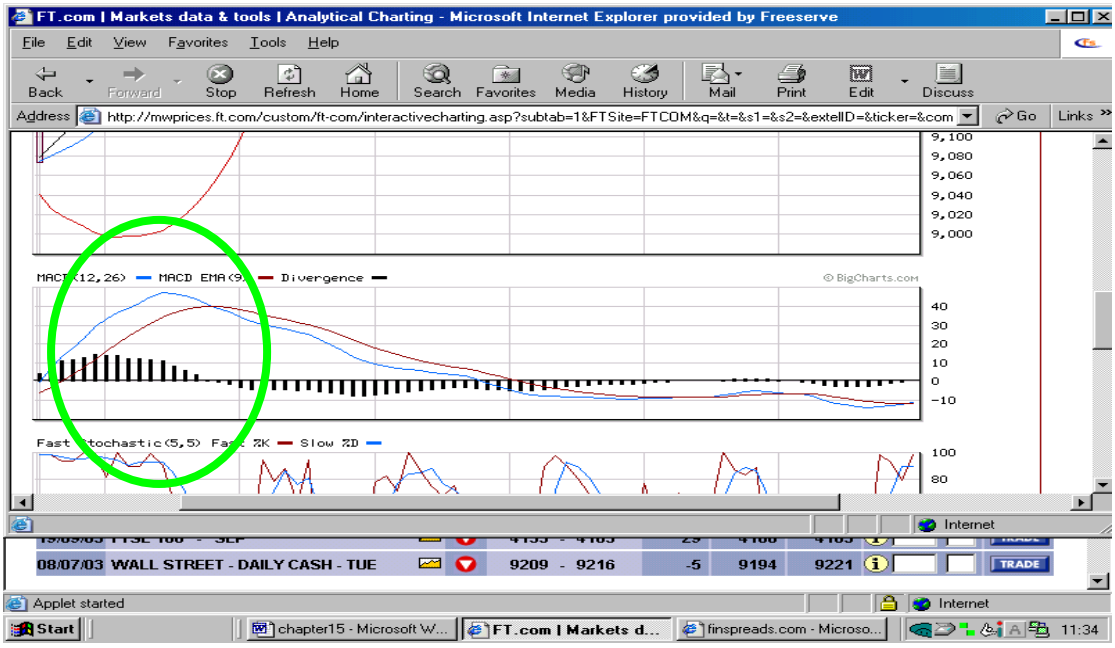
Now, the candlesticks show exactly what the market is doing while all of the indicators on the charts will verify that sentiment.

For instance, if you look at all of the above chart, all of the indicators show strong sentiment for the market to rise (a buy phase) from the moment that the markets open.



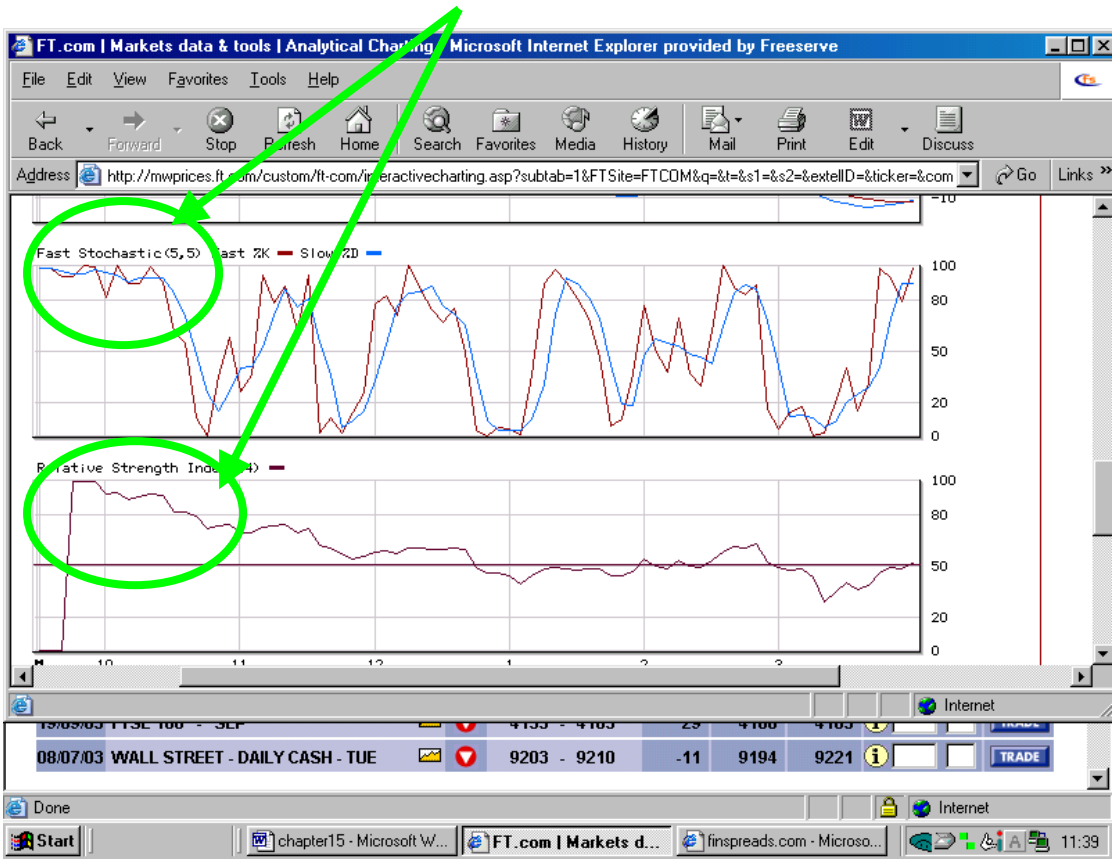
The candlesticks show buying, the Bollinger bands are wide apart which indicates volatility and the moving averages are getting further apart which indicates the same.

If you were to scroll down the screen to the Macd chart, it also shows the moving averages moving apart and rising.



The fast stochastic is at the top of the scale and holding above 80, as is

the rsi.



Within an hour of the markets opening, Bollinger bands and moving averages start to come together and change direction and the stochastic and rsi drop below 80. All sure signs that the market is changing direction and that it is time to get out and see where the market is about to go.

The market has moved 160 points and hopefully you have managed to get at least some of that move.

There is no need to remember all of the candlestick patterns, just be aware of the major candles like 'Doji', 'Spinning top', 'Tweezer top', 'Tweezer bottom', 'Morning star', 'Evening star', 'Hammer', 'Hangman' and 'Engulfing' candles.

These show change in market sentiment and along with the indicators give an excellent idea of market volatility and direction and whether or not the market is currently over bought (becoming expensive and therefore due to drop) or over sold (becoming very cheap and therefore due to rise).

I know you are going to be disappointed, but that is basically all that there is to trading.

But do not be disheartened by all of the technical bumph that has gone on before because I shall endeavour to walk you through how I see the

indicators and how I use them, in the last chapter, **AND IT IS ALL IN PLAIN ENGLISH WITH LOTS OF PRETTY CHARTS.**

There are no special techniques for predicting the markets and anyone who tells you that there are, is either deluding themselves or lying to you. Having said that, I do know of a group of people who use remote viewing to forecast the markets and they have some success with it. Hoo hum!

If you wish to try remote viewing then be my guest. But, like anything else, it will take a lot of practise and trial and error before you work out whether you are guessing the market or predicting it. The best bet is to just follow it.

I have no intention of working out what the market is going to do. I am not trying to guess what it is about to do in the near or distant future and react before it does. I just follow its movements in the here and now and react when it reacts.

Now you will have noticed that the down side to trading with free charting data is that the data is not instantly available on your screen. You have to refresh the chart page every couple of minutes.

It is a minor inconvenience and of little importance to your trading, especially as the information is free. The other drawback is that the information can be delayed by up to 15 mins. But on a site like ft and Yahoo etc. the delay is about 1min.

I do however now use real-time data to trade the Dow. It currently costs me $11.99 per month (about £7) and it comes with a 2-week free trial. There are no credit cards involved for the free trial and therefore no need to cancel your **subscription** should you not get along with the service.

If you are interested, go to Lycos. The service is called Quote.com.

I have no affiliation with this site. I recommend it because it is cheap, easy to use and of excellent quality. If you like free charting, keep using it. I used it for over 2 years.

There are other services for the Ftse etc, but I have never used them and know nothing about them.

In the next chapter, I will deal with little tricks and tips as well as the must do's and no goes that will keep your trading profitable.

The best is saved for last. In the final chapter you will be shown a whole heap of different techniques to trade the markets. You can use them all or you can use any combination to trade with.

This chapter will eliminate the need to know most if not all of the technical stuff. There are techniques that a 7 year old could use (providing he or she

has access to a trading account) to make a decent profit, without ever having to learn the basics.

I will also show you where to get a whole host of free stuff from, such as:

- Free real-time charts. No 15 minute delays.
- Free real-time data. No 15 minute delays.
- A free utility that refreshes your computer browser so that your charts update instantly without the need to click on refresh.
- Free charting software to draw and analyse all of the indicators that you want to use.
- How to double your internet speed for free.
- How to place free long distance calling from anywhere in the world to the U.S!
- How to get faxes and voicemail by e-mail free.
- Free download acceleration software.
- Free guide on how to keep your computer running fast and smooth with a list of performance enhancing software that will prevent it from crashing, clean your hard drive and even boost your ram.

The list goes on so I will not bore you further with the details. Just read on.

This is the end of the free-view part of the course. If you want to purchase the whole course please contact me at: rob@spreadtrade2win.com

Thanks for taking the time to stop by and have a look.

All the best

Rob

