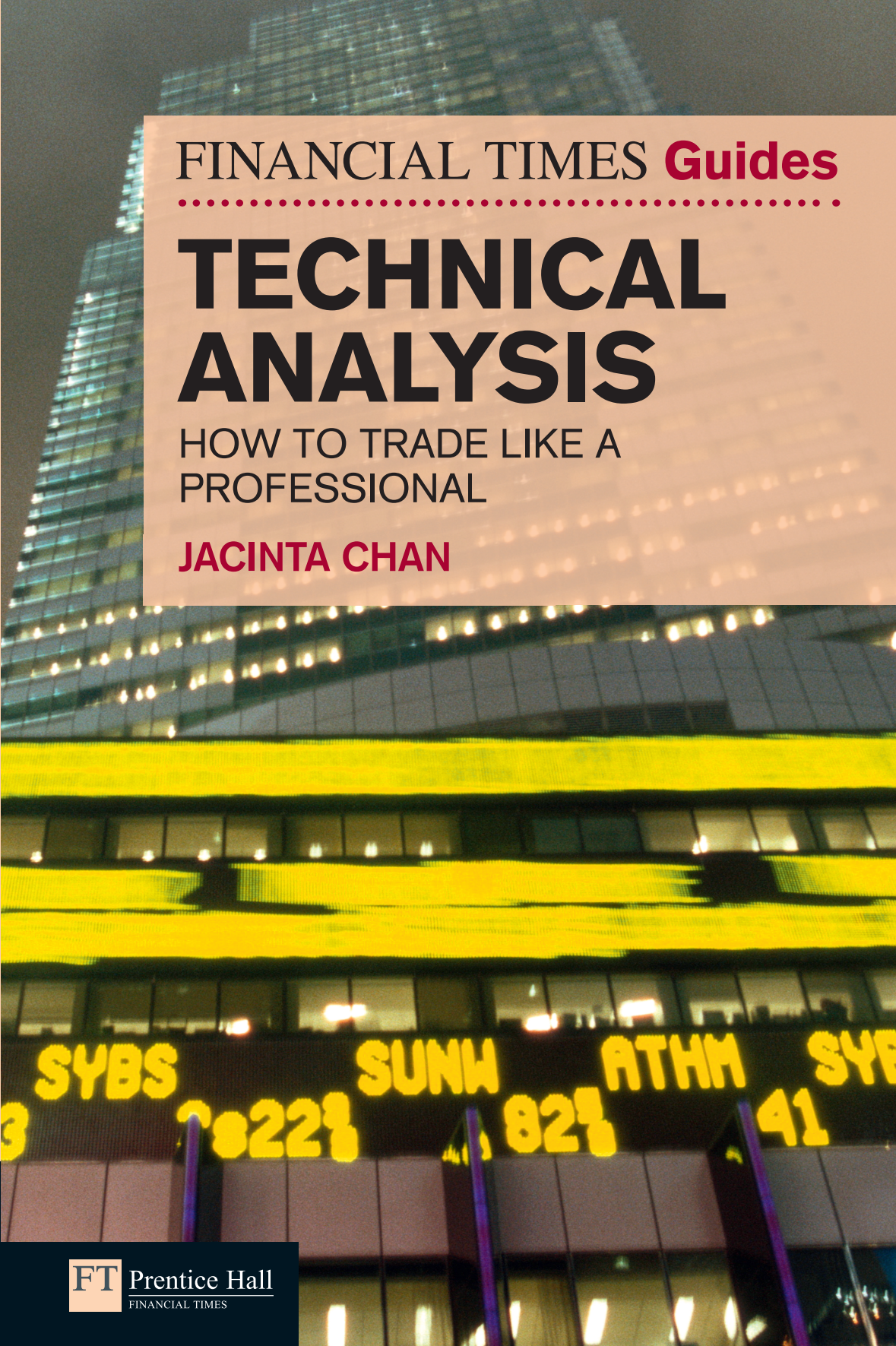

FINANCIAL TIMES **Guides**

TECHNICAL ANALYSIS

HOW TO TRADE LIKE A PROFESSIONAL

JACINTA CHAN

FT Prentice Hall
FINANCIAL TIMES

The Financial Times Guide to Technical Analysis

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How to Trade Like a Professional

Jacinta Chan

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PEARSON EDUCATION LIMITED

Edinburgh Gate
Harlow CM20 2JE
Tel: +44 (0)1279 623623
Fax: +44 (0)1279 431059
Website: www.pearson.com/uk

First published in Great Britain in 2011

ISBN: 978-0-273-75133-5

British Library Cataloguing-in-Publication Data
A catalogue record for this book is available from the British Library

Library of Congress Cataloging-in-Publication Data
Chan, Jacinta.
The Financial times guide to technical analysis : how to trade like a professional / Jacinta Chan.
p. cm.
Includes bibliographical references and index.
ISBN 978-0-273-75133-5 (pbk.)
1. Technical analysis (Investment analysis) 2. Investment analysis. I. Financial times (London, England) II. Title. III. Title: Guide to technical analysis.
HG4529.C446 2011
332.63'2042--dc23

2011024731

10 9 8 7 6 5 4 3 2 1
15 14 13 12 11

Typeset in 9pt Stone Serif by 30
Printed by Ashford Colour Press Ltd., Gosport

Contents

Acknowledgements

The body of technical analysis knowledge did not happen overnight. It is built up over a century by great traders and technicians who have put together their knowledge to form what we know today as technical analysis. Therefore, the first acknowledgement goes to the founder of technical analysis, Charles Dow, whose observations still hold true today and benefit many traders such as myself. There are many great contributors to technical analysis, too many to be mentioned individually here. However, there are some authors whose works must be mentioned: H.M. Gartley (1935) for *Profits in the Stock Markets*, Richard Arms Jr. (1999) for *Profits in Volume: Equivolume Chart* and Gerald Appel, the originator of Moving Average Convergence and Divergence (MACD). One of the greatest technical indicators contributor of all time is Welles Wilder, the author of *New Concepts in Technical Trading Systems* and originator of the Resistance Strength Index (RSI), Directional Movement Index (DMI) and Parabolic Stop-And-Reverse (Parabolic SAR). Other leading technical indicator contributors whose works are mentioned here are George Lane, the originator of Stochastics; Woods, Vignolia and Granville, the developers of On Balance Volume; and Ralph Elliott, the originator of Elliott Waves. Other great technical analysis teachers of all time whose work greatly influenced my thesis and work are John Bollinger (*Bollinger on Bollinger*), Larry Williams (*The Definitive Guide to Futures Market* (Volumes I and II)) and Perry Kaufman (*Trading Systems and Methods*).

Credit is to be given to Equis International whose Metastock software is very useful for profit analysis.

This book did not happen overnight either. It took the efforts of many individuals from different backgrounds and parts of the world whom I have come to know as friends over the years. I thank Dr. Noor Azlinna Azizan for going through this book. I thank Christopher Cudmore, my commissioning editor, for publishing this book and all the team at Pearson Education. I thank all my friends, my colleagues, clients and

readers whose support make my books bestsellers. I thank all my family, especially my parents, Chan Kok Heong and Yap Chin Tuck for their love and support. Lastly and most importantly, I thank God for all these wonderful family, friends, colleagues, clients, editors and the great teachers of technical analysis who contribute to the success of this book.

Jacinta Chan

Publisher's acknowledgements

We are grateful to the following for permission to reproduce copyright material:

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Preface: what makes an exceptional trader

Investment is a fascinating subject that has intrigued many over the centuries. It amasses fortunes for some, loses millions for others. In today's fast-moving financial markets, more fortunes are made and lost than ever before, and in record time.

To be a savvy investor, you need the extra proven edge to ensure that your investments grow at the expense of uninformed investors. In order to make it in this game, you will need a statistical trading edge that has been proven to generate net abnormal returns in the long run. You will need a tool to gain this statistical trading edge and the tool is simply your very own mechanical trading system.

This book is a guide to a trader's journey in search of that 'ideal' algorithm trading system that gives you this statistical trading edge, one that can decipher market patterns and detect trends to generate net abnormal returns in the long run.

The Financial Times Guide to Technical Analysis is a trader's guidebook, written by a trader for traders – and you can become a successful one too. It is hoped that all traders will benefit from the book's content. Using the same concepts and principles as those used by financial institutions, the book places retail investors on level ground with institutional traders. It guides them to make abnormal returns with their own technical professional trading systems.

This book is about how you can be a smarter investor, one who grows capital in the stock and futures markets. It is about how you, the smart amateur investor, take control of your financial future in all the financial markets. This book will show you how to assess the markets technically and time your investment in a way that lets your capital grow while limiting your losses all the way.

You will see how some successful professionals make profits consistently with technical analysis techniques and formulas, and learn how to apply the concepts and principles that professional traders use. You will also be exposed to insider knowledge and concepts from behind the trading desks of financial institutions.

The Financial Times Guide to Technical Analysis consists of two parts. The first part – What do traders know? – is an introduction to technical analysis. This basic level introduction is written for investors who are new to technical analysis. It gives new traders an overview of the tools that are available in technical analysis and guidance on how to use them.

The second part – Trading with professional technical systems – concentrates on the strategies used in trading. This advanced level is written for serious investors who are willing to commit time, money and endurance to trade profitably. It analyses a particular trading system – BBZ – and related trading plans, strategies and risk control management. It gives instructions to traders on how to develop and optimise a trading system; and it shows how simple moving average and standard deviations can be used for model building.

Objectives

The purpose of compiling this book is to ensure that you gain a comprehensive understanding of the tools used by traders. Therefore, one of our objectives is to explore some simple trading techniques from a selection of technical analysis tools to design and build mechanical trading systems. The ultimate aim is to develop you, the reader, into a good trader.

My aim is that anyone who picks up this book will be able to apply the tools and techniques easily. This book condenses the most important investment principles of a full three-year undergraduate finance course into those relevant to the trading practitioner dealing in today's markets. You do not need to go through three years of a full-time finance course to become a professional trader, just start by reading this book.

Important points to remember

What marks an exceptional trader from an average trader is a proven statistical trading edge of producing positive net returns in the long run. An exceptional trader is not born with a natural gaming talent to time purchases and sales. Rather he or she is someone who is an extremely keen

observer of market price patterns. The exceptional trader does his or her homework by researching the markets and backtesting a technical trading system. Anyone can be an exceptional trader if he or she dedicates and commits the time to study and practise technical analysis in the science of trading. This book aims to develop an exceptional trader – you.

The FT Guide to Technical Analysis provides the basic foundations of technical analysis and trading systems. It explains the concepts of technical indicators in the research, design and backtesting of a mechanical trading system. The book begins by looking at the behaviour of market prices and introduces technical analysis to these price patterns. The second part of the book is on trading and the trading systems that professional traders use. These cover the complete subject of technical analysis and trading at beginner and intermediate levels. No prior knowledge is required.

The book introduces insiders' concepts and principles on becoming a professional trader. The approach is of a mentor professional trader guiding a favourite apprentice in the fine science of trading with technical analysis. These insider concepts and principles are simple and effective and they can easily be learnt and applied.

Before investing in anything, at any time, home- and groundwork is a must. This book helps in guiding you through that basic, essential, background work. It is dedicated to showing you how to time the purchase and sale of financial instruments in a way that makes your capital grow in the long run. It aims to fill the gap between the shortcomings in further and higher financial education and the vast, complex markets that confront us all.

So, this book is for anyone who wants to do better in the financial markets, especially the stocks and futures markets. It is for those who want a greater understanding of the stock and futures markets, enabling them to manage their investments better by controlling their risks.

Why you need to know technical analysis to trade

Technical analysis is the study of price patterns to identify trading opportunities; it is about charting data and interpreting charts using technical tools and techniques. These techniques are instilled into formulas which are called mechanical trading systems in accordance with specific trading plans. Good trading plans encompass the estimations of traders' rewards

and risks. Very good trading plans specify the strategies for entry and risk control management. Essentially, good trading plans are part of good money management.

Technical analysis, one of the most important investment subjects, is what every investor needs to learn before making any trading decisions, especially in regard to the timing of a purchase or sale of any financial asset. Every wise investor knows that each financial market has its own cycles, and making abnormal, exceptional profits is all about knowing and following the patterns of these seasons.

This book is all about guiding the average investor to use the right technical indicators to detect these timings in order to make exceptional profits. It is about how you can distinguish yourself from the crowd and make exceptional profits using not only the given tools in this book but also tools that you, yourself, have invented.

The Financial Times Guide to Technical Analysis will appeal to anyone interested in the stock and futures markets. It is a succinct professional trading guide for the individual serious investor, whether an amateur or someone with some knowledge of investment. It begins with a guided tour of the world of investing and gives practical advice on trading opportunities and the corresponding appropriate strategies using well-known and newly innovated technical analysis concepts.

How to use this book

The book is written in an easy to read technical traders' language, for anyone who wants to find the extra edge to trading. It begins with some traders' terms that you need to become familiar with to get a basic overview of this book's subject matter. (These terms are also covered in the glossary at the end of the book.)

You will notice that each chapter begins with two short sections:

- What topics are covered in this chapter?
- What are the objectives?

A brief background introduction sets the scene and the important points are then clearly laid out, followed by in-depth discussion and trading examples and exercises where necessary. The chapter's concepts are summed up in a chapter review for quick revision. Finally, in 'A Note to the trading apprentice' I list some of my observations, theories and trading experiences, often as a caution on where not to tread and when not to trade.

My main note to the trading apprentice – you – is that trading is not an art but a serious profession that can be learnt and applied profitably. Technical analysis is a quantitative science with proven functional theorems that every trader can use. You too can start trading for a living. If at the end of this book you can trade professionally, this guide will have achieved its objective.

It is my hope that after reading this book, you will trade the markets in a different way – a more professional way. It is your personal responsibility to learn trading as a profession and this book will help you towards this goal. I aim to show the way that professional traders play this game, so read this book with an open mind and follow each step carefully. One day soon, using the concepts that I have laid out here, you may be building better trading models than the ones in this book. When that day comes, this book will have achieved its purpose. I would be delighted to learn about and discuss your trading model with you if you email me at tradingforarealiving@lycos.com.

All the best in your trading.

Jacinta Chan

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Some traders' terms

Analysis

Fundamental analysis The study of economic information to forecast prices and to gauge if an asset is overvalued or undervalued. It is an analysis of current economic conditions to calculate the fair value and forecast the future price of an asset.

Technical analysis The study of price movements using past prices, volume and open interest to identify trading opportunities. It is an analysis of historical price data to identify price trends. Technical analysis includes a variety of techniques such as chart analysis, pattern recognition, seasonality and cycle analysis, and algorithm technical trading systems.

Chart analysis

Chart A graphical record of prices and volume, taken at regular intervals.

Close/closing price The last trade price for the period.

High The highest price traded for the period.

Low The lowest price traded for the period.

Open/opening price The first traded price for the period.

Open interest The number of futures contracts that have been opened and have not been closed. The amount of futures contracts that are still open and in existence.

Volume The number of contracts/shares traded for the period.

Technical indicators

Bands Lines constructed around a moving average that define relative high and low.

Bband Z-test statistics (BBZ) A technical trading system that uses as a default one standard deviation around a default 21-day moving average (to give a long signal above the one standard deviation band and a short signal below the one standard deviation band).

Absolute range breakout A technical trading system that indicates a buy signal when the close is above the high of the previous number of days and a sell signal when the close is below the low of the previous number of days.

Moving average (MA) The measure of the average price over the previous periods that is recomputed each succeeding period using the most recent data.

Moving average convergence and divergence (MACD) An indicator that uses the difference between a 12-day and a 26-day moving average to indicate a buy signal if the difference is more than the average difference of the previous nine days and a sell signal if the difference is less than the average difference of the previous nine days.

Optimised Bband Z-test statistics (OptBBZ) A technical trading system that uses optimised parameters for standard deviation and moving average (to give a long signal above the optimised standard deviation band and a short signal below the optimised standard deviation band).

Trading range terms

Trading range A price range in which trading has been confined for an extended period. Generally sideways in character.

Trading range system A trading system that tries to sell at the resistance and to buy at the support on the assumption that the market will pull back at the resistance and support levels.

Resistance An area on a chart above the current price where identifiable trading has occurred before. It is believed that investors who bought at those higher prices will become sellers when those prices are reached again, thus halting an advance.

Support An area where declines are halted and reversed. Support is often associated with perceived value.

Trading trend terms

Algorithm trading system A trading system with a set of trading rules that mathematically computes according to an algorithm (suitable to the prevailing market conditions) mechanically generated signals (long, short or out-of-market) indicating when to enter and when to exit, and executes the trades automatically. Algorithmic trading (or automated or algo, or black box or robo trading) is the computer program that executes trades according to an algorithm that is suitable to prevailing market conditions. The algorithm in the program is derived after intensive backtesting and optimisation. Algorithm trading programmes are popularly employed by professional model trading desks of large financial institutions.

Trend trading system A trading system with a set of trading rules that defines when to initiate a position early to capture the prevailing trend using a mechanically generated signal on the assumption that the trend will continue. Moving average and standard deviation are technical indicators used in trend trading systems.

Downtrend A state in which prices are steadily declining.

Uptrend A state in which prices are steadily increasing.

Tests

Backtest The process of testing using historical data.

Optimisation The process of finding the best performing parameter for a trading system.

Parameter A value assigned to a trading system to vary/optimise the timing of the signal.

Theories

Dow theory An observation (initially by Charles Dow) which states that:

The averages must confirm each other.

- The averages discount everything.
- The market has three movements.
- The major trends have three phases.
- Volume must confirm trend.
- A trend continues until the signal reverses.

Elliott wave theory An observation (initiated by R. N. Elliott) which states that all market activities develop into well-ordered patterns consisting of five primary impulse waves followed by three correction waves.

Fractal geometry An observation (initially by Benoit Mandelbrot) which states that there are repeating patterns in nature including time series.

Random walk theory An observation (initially by Eugene Fama) which states that the history of the series cannot be used to predict the future in any meaningful way and that the future path of the price of a security is no more predictable than the path of a series of cumulated random numbers (Fama, 1965).

Trading terms

Fill Getting the order done.

Long The state of owning a security.

Short The state of being short a security. The act of selling before buying.

Rollover The closing of the front month's position and the opening of the next month's position.

Slippage cost The cost of the difference between the theoretical execution price and the actual price executed due to poor fill.

Volatility The tendency for prices to vary. Standard deviation and variance are measures of volatility.

Whipsaw A period of wrong signals that result in losses

1

Know the market: how to read and construct charts

What topics are covered in this chapter?

Technical analysis is defined as the in-depth study of the behaviour of market prices on charts and it begins with the different types of chart:

- line
- bar
- candlestick
- point and figure
- kagi
- volume
- equivolume
- equivolume with closing price

What are the objectives?

- To know how to construct line, bar and candlestick charts.
- To read volume charts and understand the relationship between price and volume.
- To know what point-and-figure, kagi and equivolume charts are.
- To read and interpret your own chart for your own trading purposes.
- To understand what technical analysis is all about and the basic principles underlying the study of technical analysis.

Introduction

The chart is the most basic and important tool of technical analysis. Charting is important in order to understand the behaviour of market prices. When you can chart your own graph of historical prices, you can also project the probabilities of your trading strategies being profitable in the long run. This chapter will show you how to chart prices and volume in a graph that you can use for your own trading.

Definitions of technical analysis

Technical analysis is the study of historical price data to identify price trends and forecast price movements. It is the analysis of price activities or patterns to identify trading opportunities. As an approach to financial investment, technical analysis is based on the general principle that history tends to repeat itself.

Technical analysis states that all information is discounted in the price, that the result of such information causes the price to trend, and that price patterns tend to repeat. This implies that the recurring price patterns can provide signs to probable future price movements and trends. Thus, the way to trade equity and commodity is to identify patterns and signals that indicate the beginning of new trends.

Technical analysis involves price and sometimes volume study and is different from fundamental analysis. Fundamental analysis involves the study of economic information to forecast prices and to gauge if an asset is overvalued or undervalued. Fundamental analysis looks in depth at the financial conditions and operating results of a specific company and the underlying behavior of its common stock. The value of a stock is established by analysing the fundamental information associated with the company such as accounting, competition and management.

Generally, fundamental analysis evaluates the economic condition of the country it operates in as well as the international economy, the industry, the factors affecting the industry and finally the company itself to determine the intrinsic value of the share. If the intrinsic value is higher than the market price, a buy recommendation will be issued by the research analyst. Similarly, if the intrinsic value is lower than the market price, a sell recommendation will be issued.

However, most stocks cannot be accurately valued due to inadequate representation of the facts and values attached to the management and the

future of the company, the industry and the economy at large. The fundamental factors are overshadowed by the supply and demand of the stock. This supply and demand will result in the prevailing market price.

Technical analysis can be said to focus on the resulting trend and not on the reason for the market trend, whereas fundamental analysis is concerned with the economic and specific reasons for the price increase or decrease.

The underlying basis for technical analysis is that the price not only reflects all the information about that asset but also reflects the opinion of all market participants regarding that information. The information and market opinion reflected by the prices will result in recurring price patterns that provide clues to future price movements, range trading or trend trading. Generally, traditional classical technical analysis deals with price patterns' recognition of possible supports and resistances whereas today's contemporary technical analysis is more concerned with scientific measures of quantitative results to identify trends.

Classical technical analysis can be defined as the art of recognising price behaviours in the historical patterns that they form and forecasting patterns they might form. Classical technical analysis concentrates more on range trading between support and resistance. Therefore, it is more predictive in nature.

Contemporary technical analysis believes that there is systematic statistical dependency in asset returns. It concentrates more on trend trading and therefore is more reactive to the market.

By analysing historical price patterns, technical analysts look for price behaviours that suggest the possible initiation, conclusion or continuation of trends. Therefore, technical analysis makes price forecasts based on past data, looking for patterns and applying trading rules to charts to assess ranges, support levels, resistance levels and trends. From these, market technicians develop buy and sell signals.

A trading system built on technical analysis will give appropriate buy and sell signals based on pattern recognition with the objective of making the maximum amount of money, at minimum risk.

Charting

As technical analysis is a study of price activities or price patterns, it is necessary to plot the historical price data on a chart. A chart provides a concise price history; essential information for the trader.

A chart is used as a timing tool for the trader on when to enter the market and when to exit on taking profit or cutting loss, as in the case of risk management. A chart provides the trader with an idea of the market's expected return and volatility (risk). From the chart and technical indicators such as Bollinger bands, it can be observed that when the deviations are wider, the expected returns are much larger. This is in line with finance theory taught in further education that the higher the risk, the higher the expected return.

Therefore, a good understanding of charting is important and essential for trading profitably.

Constructing your own chart

To construct a chart you need to plot the closing price and some other prices, such as opening price, period high and period low as well as the volume for the period. In constructing a futures chart, the open interest for outstanding contracts can be included.

DEFINITIONS OF PRICE, VOLUME AND OPEN INTEREST

Open – The first trade for the period (e.g. the first traded price of the day).

High – The highest price traded for the period (e.g. the highest traded price of the day).

Low – The lowest price traded for the period (e.g. the lowest traded price of the day).

Close – The last trade for the period (e.g. the last traded price of the day).

Volume – The number of contracts traded during the period (e.g. the number of contracts traded for the day).

Open interest – The number of outstanding contracts (i.e. those contracts that have not been closed or settled).

Bid – The price that a buyer is willing to pay for a contract.

Ask – The price that a seller is willing to receive for a contract.

A chart can incorporate the open, high, low, close, volume and open interest. These are the factors that technical analysts use to determine if the market is in range trading or in trend trading. Different tools and techniques will be required in a range trading market as opposed to a trend trading market.

To study the price patterns, a chart can be constructed with the price levels on the vertical axis and time on the horizontal axis. Volume can be charted at the bottom of the graph.

Prices are depicted on charts. The price chart is the most basic technical analysis tool. A chart is a record, in graphic form, of market information, taken at regular intervals. The intervals or periodity may be by tick, minute, hour, day, week, month or quarter depending on the timeframe (short-term, medium-term or long-term) that the investor is interested in. Usually, the short-term timeframe is used for quicker entries and exits while the long-term timeframe is used to confirm entries and exits.

There are many types of chart but the most popular ones can be categorised as:

- line chart
- bar chart
- candlestick chart
- point and figure chart
- kagi chart
- volume chart
- equivolume chart
- equivolume chart with closing prices.

To see and draw some of these charts, we have included a series of exercises, as below. These exercises are instruction sessions on how to draw charts using http://markets.ft.com/markets/interactiveChart.asp. They are aimed at the novice trader who wants to try everything hands on to gain familiarity with the techniques and skills of drawing charts and constructing technical indicators. As we go, we will read and interpret the charts in the main text.

Exercise

1. Log on to http://markets.ft.com/markets/interactiveChart.asp
2. Type and select FTSE 100 Index. You should see a preconstructed line chart with a marker on the date.
3. Moving the marker, you will see the closing price, opening price, high price, low price and volume for each day.

Line chart

A line chart involves plotting and joining the **close** of each period. A line chart of daily closing prices is constructed in Figure 1.1.

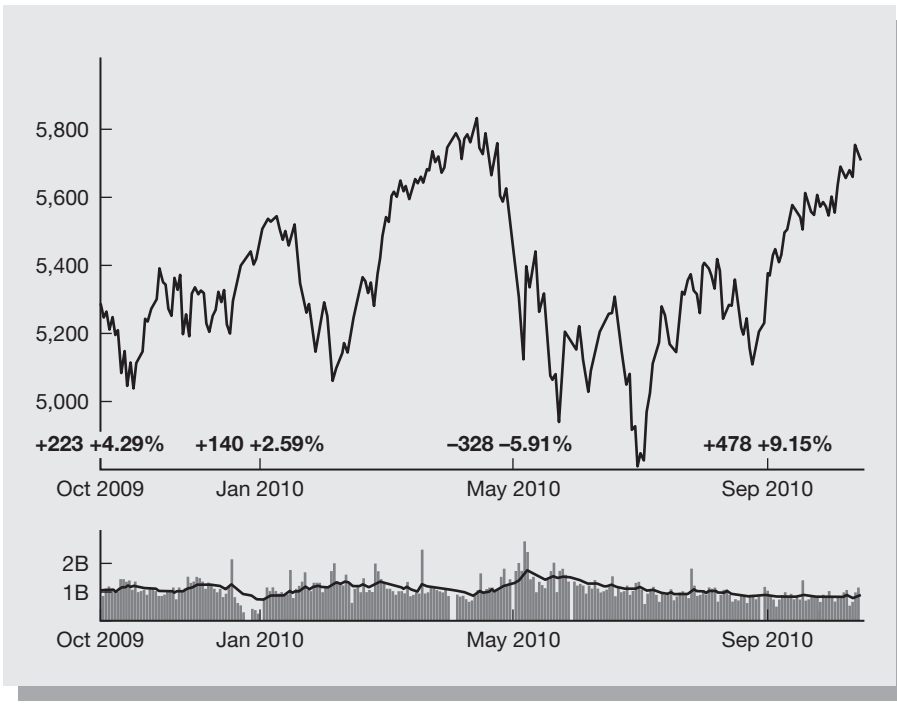


Figure 1.1 Line chart of daily closing prices

Source: From FTSE 100, http://markets.ft.com/markets/interactiveChart.asp

A line chart gives only limited information about the day's closing price. For more information on the day's activities, an open, high, low, close chart can be constructed. A bar chart can depict open, high, low and close.

Bar (OHLC) chart

A bar (OHLC) chart (see Figure 1.2) involves plotting:

- **high** and **low** as a vertical line with the top tip of the vertical line being the period's high and the bottom tip being the period's low

- **open** as a small horizontal line to the left of the vertical line and
- **close** as a small horizontal line to the right of the vertical line.

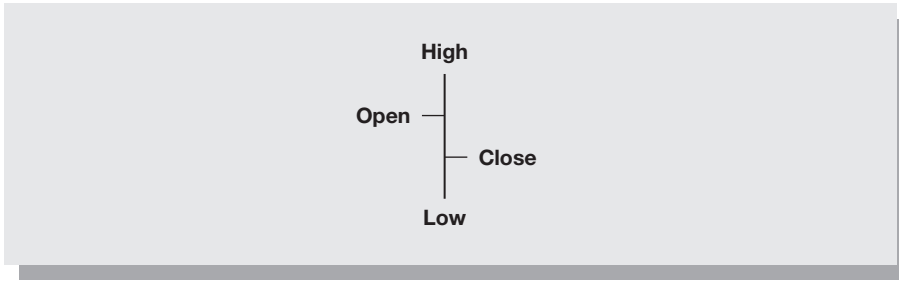


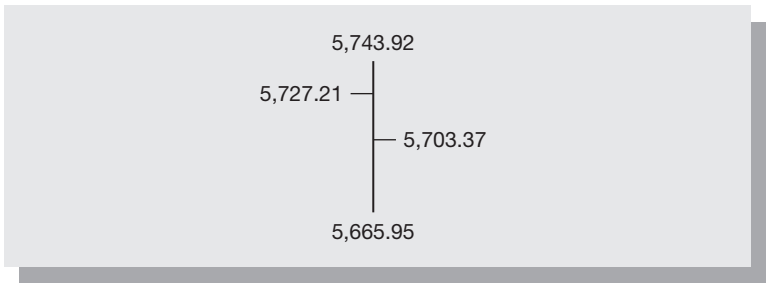
Figure 1.2 A bar chart

Example

On 15/10/2010, for the FTSE 100:

Open = 5,727.21
High = 5,743.92
Low = 5,665.95
Close = 5,703.37.

The bar chart or OHLC chart can be depicted as shown here:



Exercise

In http://markets.ft.com/markets/interactiveChart.asp this bar chart is called OHLC.

1 Change 'Chart Style' to 'OHLC'.

2 A daily bar chart is as shown in Figure 1.3.

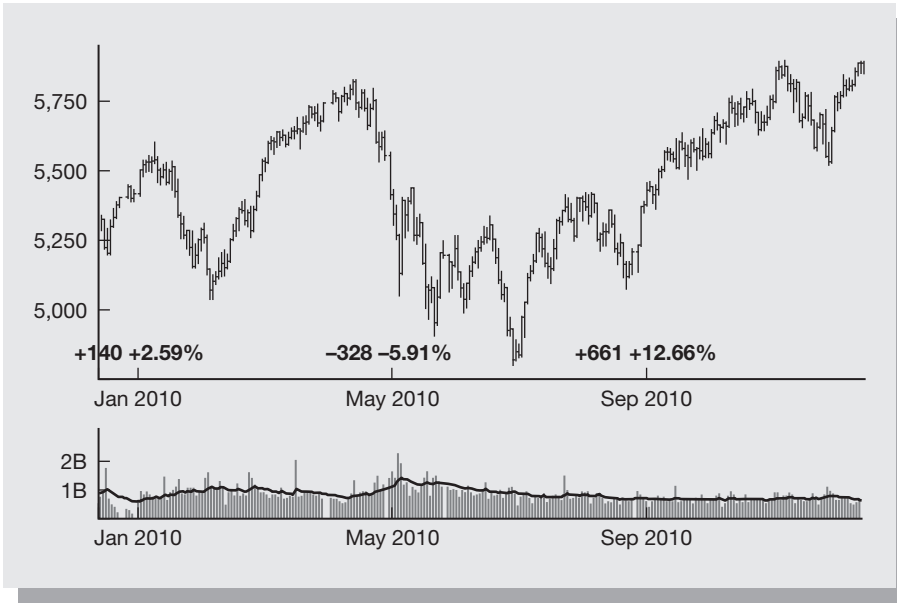


Figure 1.3 A bar chart of daily prices

Source: From FTSE 100, http://markets.ft.com/markets/interactiveChart.asp

Now, we are starting to see more information. To put it more graphically and to see if the close at the end of the day is higher than the open, or vice versa, we can try a candlestick chart.

Candlestick chart

A candlestick chart (see Figure 1.4) involves plotting:

- The body – a rectangular box with the top and bottom representing the period's **open** and **close** or vice versa. It is not filled or white if the period's close is higher than the period's open. It is filled or black if the period's close is lower than the period's open.
- The top shadow – a vertical line that extends from the top of the rectangular box representing the period's **high**.
- The bottom shadow – a vertical line that extends from the bottom of the rectangular box representing the period's **low**.

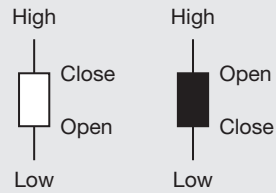


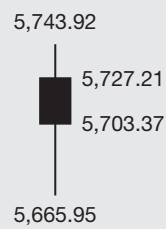
Figure 1.4 **A candlestick chart**

Example

On 15/10/2010, for the FTSE 100:

Open = 5,727.21
High = 5,743.92
Low = 5,665.95
Close = 5,703.37.

The candlestick chart can be depicted as shown here:



Exercise

1. In http://markets.ft.com/markets/interactiveChart.asp change 'Chart Style' to 'Candle'.
2. A daily candlestick chart is as shown in Figure 1.5.

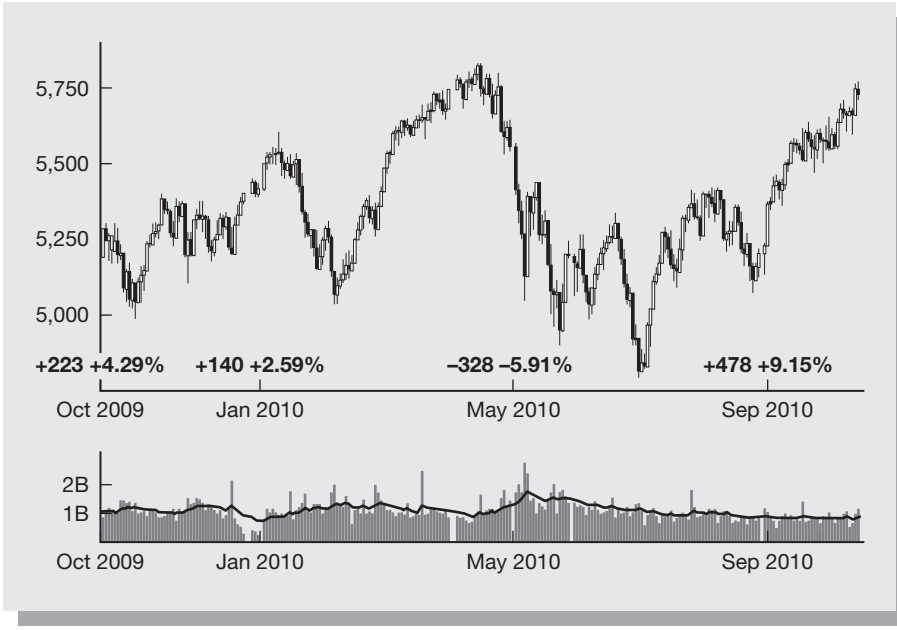


Figure 1.5 A candlestick chart of daily prices

Source: From FTSE 100, http://markets.ft.com/markets/interactiveChart.asp

Originating in Japan, candlestick charts are used to identify price patterns.

A long white candlestick is a bullish formation where there is a wide trading range where the open is near the low and the close is near the high (see Figure 1.6A). A long black candlestick is a bearish formation where there is a wide trading range where the open is near the high and the close is near the low (see Figure 1.6B).

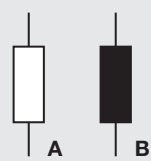


Figure 1.6 A long white candlestick (A) and a long black candlestick (B)

Candlestick reversal signs

Doji is a reversal sign where the open is the same as the close. It is bullish in a downtrend and bearish in an uptrend (see Figure 1.7A).

Bullish engulfing is bullish sign in a downtrend when a big white shadowless candlestick engulfs a small black shadowless candlestick (see Figure 1.7B).

Bearish engulfing is a bearish sign in an uptrend when a big black shadowless candlestick engulfs a small white shadowless candlestick (see Figure 1.7C).

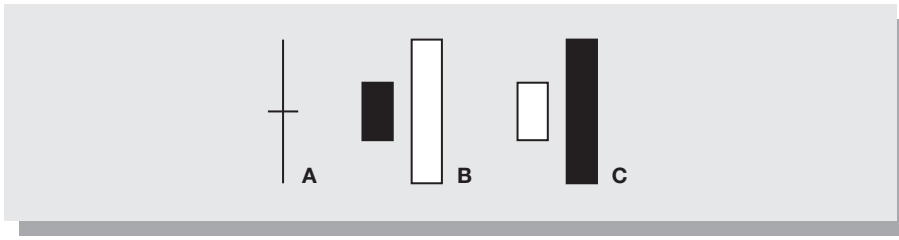


Figure 1.7 Candlestick reversal signs

Point and figure chart

Point and figure was used by floor traders who carried small paper notebooks and pens in their trading vest jackets. It is a convenient way to jot down every tick movement of the prices and refer to them. Floor traders use these as their charts and read from them.

A point and figure chart involves plotting:

- a series of Xs to indicate advancing prices and
- a series of Os to indicate declining prices.

A point and figure chart does not involve a time scale for the horizontal axis. A point and figure chart moves to the next column of price activity only if prices have reversed direction by a predetermined amount known as the reversal number.

Exercise

1. In http://markets.ft.com/markets/tearsheets/performance.asp, click on 'Historic Prices'.
2. Follow the instructions on the website (shade the data you wish, right-click and then select copy).

►

3. Paste the copied data onto a worksheet (highlight a cell, right-click, select Paste Special and then choose text or HTML format).
4. Using only the closing prices, you may start to draw an X for every up day and an O for every down day.
5. Use the next column to show a reversal after three consecutive days of the opposite sign. For example, if prices are advancing, we need three consecutive downdays to draw the three Os in the next column.

Note that a point and figure chart is usually used for tick charting and not daily charting. This exercise is conducted to show that historical prices can be extracted from http://markets.ft.com and that they can be used in a spreadsheet to draw point and figure charts or to calculate any technical indicator for any trading system.

A point and figure chart is shown in Figure 1.8.

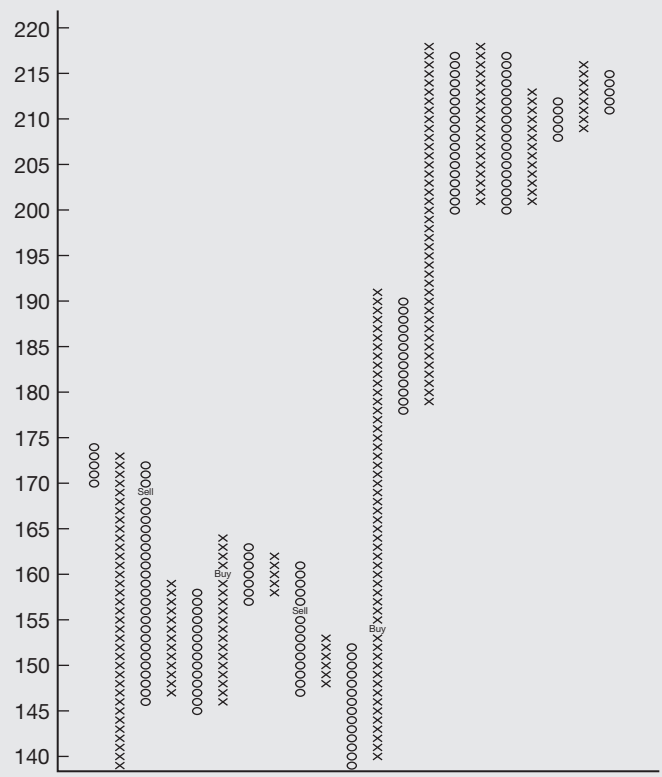


Figure 1.8 Point and figure chart of Apple daily closing prices

Source: Data of AAPL:NSQ from 18/6/2010 to 15/12/2010 from http://markets.ft.com/tearsheets/performance.asp?s=AAPL:NSQ

As a rough guide, the buy signal appears after the price passes above the previous X on the way up and the sell signal appears after the price passes below the previous O on the way down.

Example

In the Apple stock listed on the Nasdaq example shown in Figure 1.8, the buy signal appeared on 22/7/2010 at 260 and the sell signal appeared on 11/8/2010 at 256. The next buy signal appeared on 254 and as of 15/12/2010 the long signal is still on with the price at 320 (a paper gain of 66).

However, note that different traders use point and figure differently. Some traders wait for pullback to enter a new position. The drawback of this technique is that when prices start to break out, sometimes they do not retrace back.

Some traders look for price patterns in the point and figure chart before entering a position. We are going to discuss price patterns in Chapter 2.

Kagi chart

A kagi chart involves plotting:

- blue coloured lines when the current price moves higher than the most recent previous high
- red coloured lines when the current price moves lower than the most recent previous low.

A kagi chart does not involve a time scale for the horizontal axis. It moves to the next column of price activity only if prices have reversed direction by a predetermined amount known as the reversal number.

The kagi chart is similar to a point and figure chart except that it uses red for a short position and blue for a long position.

Exercise

1. In http://markets.ft.com/markets/tearsheets/performance.asp, click on 'Historic Prices'.
2. Follow the instructions in the spreadsheet.
3. Paste the copied data onto a worksheet.

▶

4 Using only the closing prices, you can start to colour blue for every up day and red for every down day.

5 Use the next column to show a reversal after three consecutive days of the opposite sign. For example, if prices are advancing, we need three consecutive downdays to colour the three red boxes on the next column.

Note that kagi charts are usually used for tick charting and not daily charting. This exercise is conducted to show that historical prices can be extracted from http://markets.ft.com and that they can be used in the spreadsheet to draw kagi or to calculate any technical indicator for any trading system.

A kagi chart is shown in Figure 1.9.

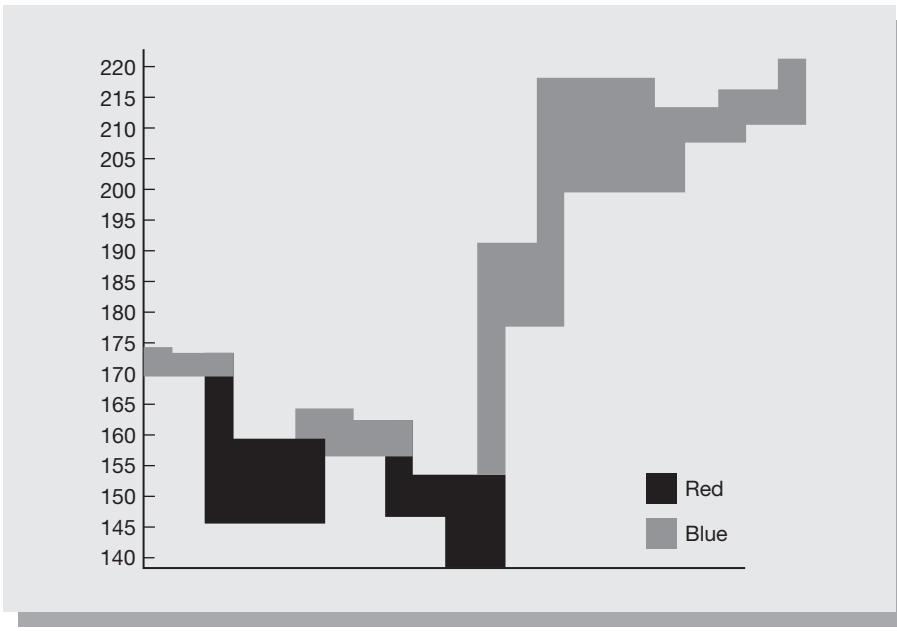


Figure 1.9 **A kagi chart of Apple daily closing prices**

***Source*: Data of AAPL:NSQ from 18/6/2010 to 15/12/2010 from http://markets.ft.com/tearsheets/performance.asp?s=AAPL:NSQ**

As a rough guide, the buy signal appears after the price passes above the previous high and the sell signal appears after the price passes below the previous low.

Example

In the Apple stock listed in the Nasdaq example above, the buy signal appeared on 22/7/2010 at 260 and the sell signal appeared on 11/8/2010 at 256. The next buy signal appeared at 254 and as of 15/12/2010 the long signal is still on with the price at 320 (a paper gain of 66).

Note that the long position (blue) and the short position (red) are clearer in kagi than in point and figure. Also note that some traders use a three tops breakup before they enter a long position and a three bottoms breakdown before they enter a short position.

Now that you have constructed price charts, we can proceed to try to read these charts with a volume indicator.

Volume chart

A volume chart involves plotting the number of contracts traded as bars in a graph at the bottom of the previous chart(s). This is to show the relationship between price movements and volume traded:

- Increasing volume on rising prices is a bullish signal.
- Increasing volume on declining prices is a bearish signal.
- Decreasing volume on rising prices is a signal that a reversal is likely.
- Decreasing volume on declining prices is a signal that a reversal is likely.

A price and volume chart is shown in Figure 1.10.

Equivolume chart

Harold Gartley (better known as H. M. Gartley) in *Profits in the Stock Market* (1935) integrated volume into price charts. In *Profits in the Stock Market* (1935), Edward S. Quinn, writes in his article, 'The Economic Principles Employed in the Use and Interpretation of Trendographs', that in a standard Trendograph chart, the upper rectangles coordinate daily price ranges vertically and volume horizontally. Richard Arms discusses equivolume charts in *Profits in Volume: Equivolume Charting* (1998). All these contributed to the theory of equivolume charts.

An equivolume chart involves plotting equivolume bars (see Figure 1.11):

- The height of each equivolume bar represents the **high** and **low** traded for the period.
- The width of each equivolume bar represents the **volume** traded for the period.

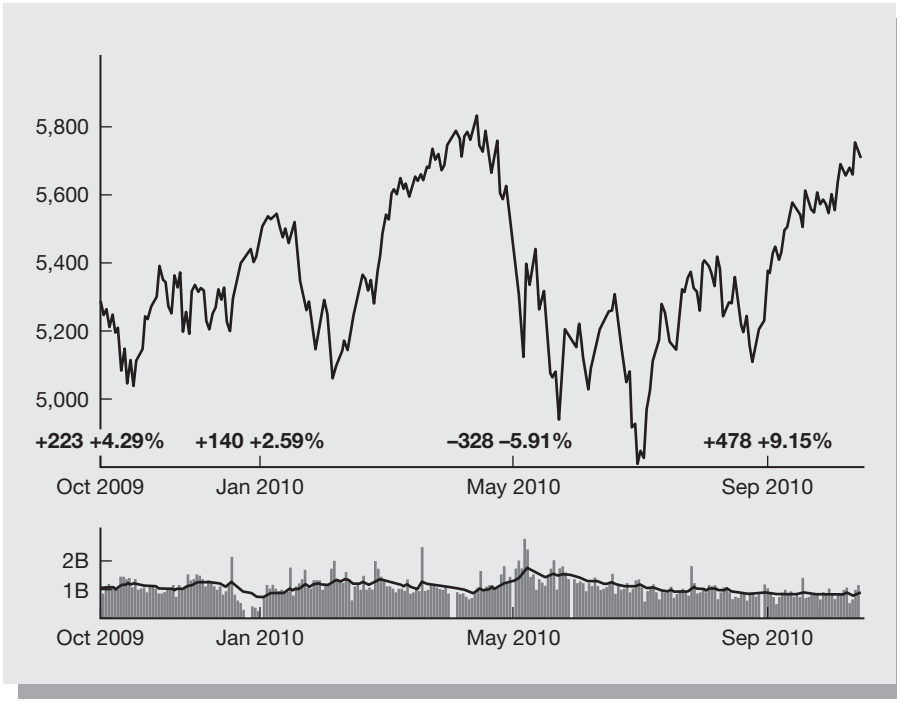


Figure 1.10 A volume chart with daily closing prices

Source: From FTSE 100, http://markets.ft.com/markets/interactiveChart.asp

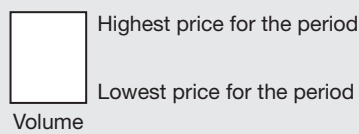


Figure 1.11 An equivolume bar

The shapes of these equivolume bars are used to show the commitment of buyers or sellers:

- A **narrow shape** denotes little commitment from buyers and sellers and therefore price movements are relatively easy (see Figure 1.12A).
- A **square shape** denotes some commitment from buyers and sellers and therefore price movements are relatively difficult (see Figure 1.12B).
- An **oversquare shape** denotes strong commitment from buyers and sellers. This can be a strong sign of reversal after a strong trend (see Figure 1.12C).
- A **power shape** denotes stronger commitment from either buyers or sellers and therefore price movements are in the favour and direction of the stronger party. It can serve as confirmation of breakout (see Figure 1.12D).

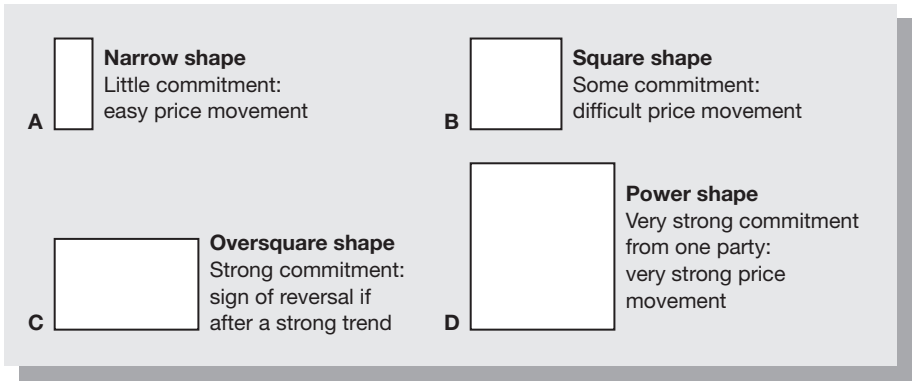


Figure 1.12 Equivolume bar shapes

An equivolume chart of daily prices and volume is shown in Figure 1.13.

Example

It was a square shaped day on 13/10/2010, followed by a narrow shaped day on 14/10/2010, denoting little volume and narrow range, indicating that price movement would be easy. When buyers came in with volume on 15/10/2010, prices rose from a low of 305 to a high of 315 in a power shaped day. The following trading day,18/10/2010 was an oversquare shaped day denoting sellers with volume to match the buyers. This signalled a possible reversal. On 19/10/2010, prices fell from a high of 313 to a low of 300 on huge volume aggressive sellers in a power shaped day.

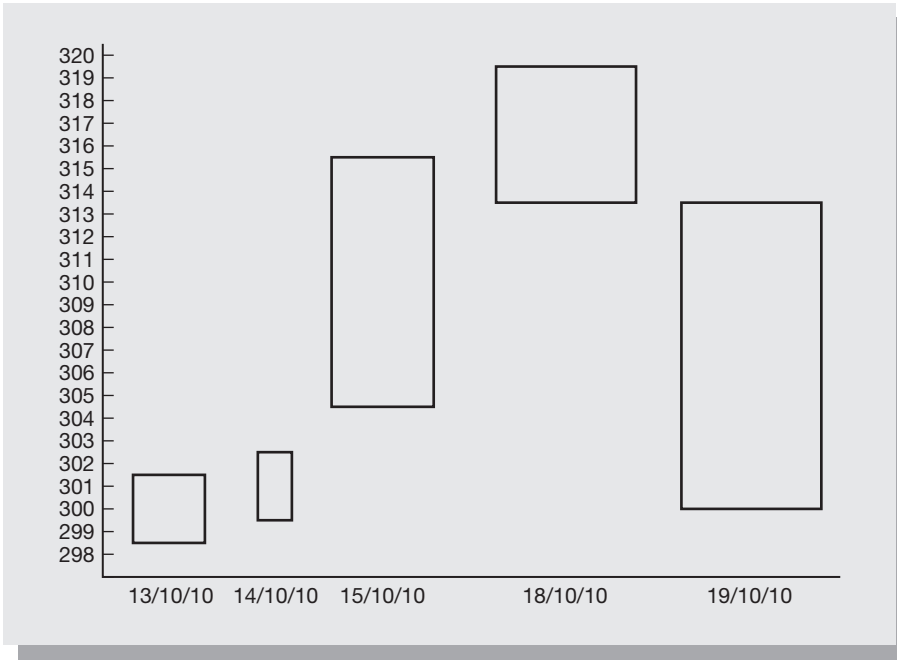


Figure 1.13 Equivolume chart of Apple daily closing prices

Source: Data of AAPL:NSQ from 18/6/2010 to 15/12/2010 from http://markets.ft.com/tearsheets/performance.asp?s=AAPL:NSQ

Equivolume chart with closing prices

An equivolume chart with closing prices involves plotting a horizontal stroke as each closing price in the equivolume bar:

- If the closing price is higher than the previous closing price, the bar will be coloured blue and the area below the closing price will be coloured a deeper blue.
- If the closing price is lower than the previous closing price, the bar will be coloured red and the area above the closing price will be coloured a deeper red.

The position of the closing price in relation to the day's range indicates whether buyers or sellers have control. In an uptrend, if the closing price is nearer to the highest price for the period, buyers have control (see Figure 1.14).

Figure 1.14 **Strong uptrend in equivolume chart with rising closing prices**

In a downtrend, if the closing price is nearer to the lowest price for the period, sellers have control (see Figure 1.15).

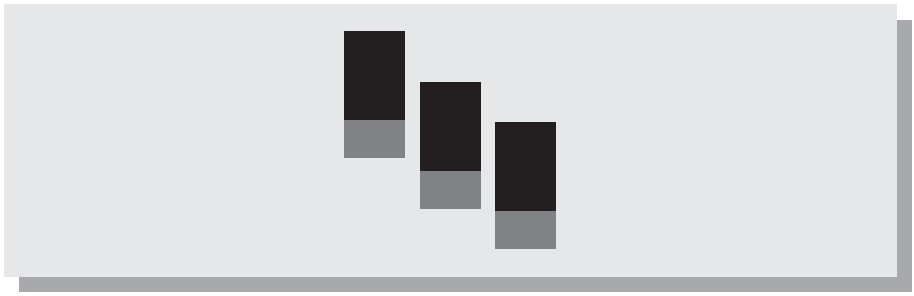


Figure 1.15 **Strong downtrend in equivolume chart with falling closing prices**

An example is shown in Figure 1.16.

Example

If you look at Figure 1.16 you will note that on 13/10/2010 it was a square shaped day with the closing price nearer the top, indicating that buyers have control. This is followed by a narrow shaped day on 14/10/2010, with the closing price at the top, indicating that buyers are more aggressive. When buyers came in with volume on 15/10/2010, prices rose from a low of 305 to a high of 315 in a power shaped day, pushing the price to close near the high at 314. The following trading day, 18/10/2010, was an oversquared day denoting sellers with volume to match the buyers. This signalled a possible reversal. On 19/10/2010, prices fell from a high of 313 to a low of 300 on huge volume sellers in a power shaped day.

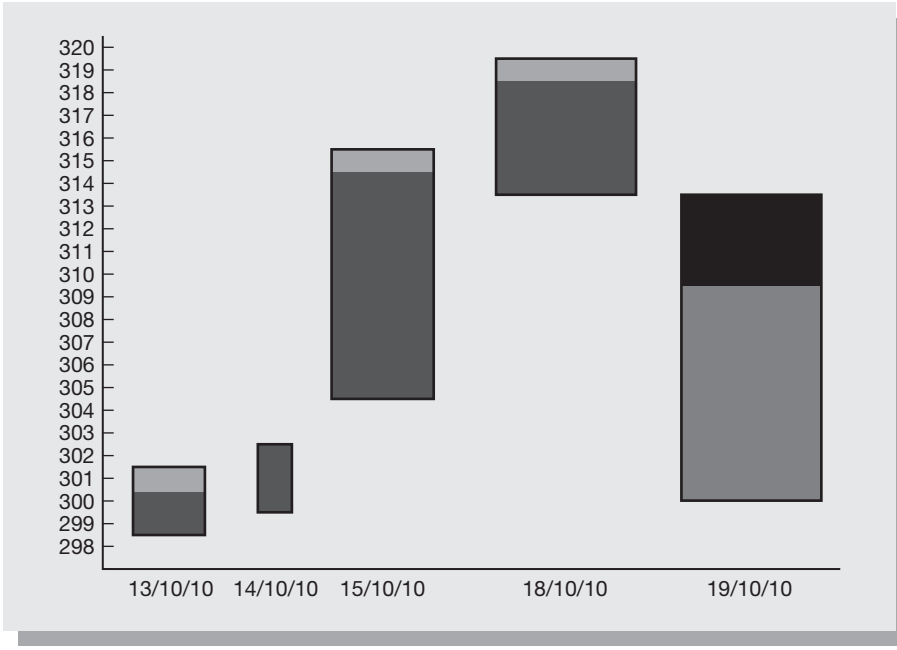


Figure 1.16 Equivolume with closing price chart of Apple daily closing prices

Source: Data of AAPL:NSQ from 18/6/2010 to 15/12/2010 from http://markets.ft.com/tearsheets/performance.asp?s=AAPL:NSQ

Note that equivolume with closing price displays the strength of the buyers (or sellers) more clearly by showing how close the closing price is to the period's high (or low).

Chapter review

- Charts provide concise price history, which gives the trader some expectations of the return and volatility involved.
- Charts can be used as timing tools for trade entry and exit.
- Popular price chart types are the line chart, bar chart and candlestick chart.
- Besides price charts, there are also volume charts and equivolume charts which combine volume with price movements to decipher bullish or bearish price patterns.
- Increasing volumes on rising prices is a bullish sign and increasing volumes on falling prices a bearish sign.

A NOTE TO THE TRADING APPRENTICE

You must read your own chart

If you do not want to be misled by the crowd, you must read your own chart: no one can read it for you. You need to read your own chart to be able to calculate the probability of the profitability of your trades. Your own chart gives you a slight edge above those who do not read charts or rely on so-called experts who tell them what the 'experts' want them to believe.

By now, you should understand why you must never buy on a tip except when it is confirmed by an accumulation phase, followed by rising volume in an uptrend. Otherwise, in most cases, the tip may be a deliberate attempt to ramp the shares up for those who have bought at much lower prices and are looking for buyers to change hands at the higher prices.

Trust your charts but trade accordingly. This means that you should initiate a position on identification of a new trend, but always remember that half the time your entry will be wrong.

This is a probability game and the probability is always only 50% that the market will move in the direction of your trade. If the market moves against you, cut your loss quickly.

If the market moves in your favour, let the trend run its course. If there is a 50% chance of small losses and a 50% chance of huge gains the net trading experience will be large profits in the long run.

You must initiate a trade on identification of a new trend. Other than losses, the trader's greatest regret is missing a huge profit opportunity. If missed it will be very hard for him or her to recoup the small losses that have accumulated.

In reality, there is no expert chart reader; the art of pattern recognition is subjective. However, after the event, certain price patterns can be seen in terms of bullish or bearish signals. In the next chapter, we will go through what the chartists term a reversal or continuation of bullish and bearish signals.

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